THE PENSION PROMISE
History, Evolution & Mechanics of a Pension

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AGENDA

1. History
2. Evolution
3. Mechanics
4. Funding

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HISTORY

WORLD

- Roman empire to the early-modern nation state
  - Pensions for public workers and military pensions, in particular, have a long history and have been used as a key element to attract, retain, and motivate personnel throughout time.

- Vagabonds and Beggars Act 1445
  - Imprisoned beggars, made poverty a quasi criminal act.

- Brehon Law
  - Middle ages - imposed, a legal responsibility for the ‘community’ to provide for the aged, blind, deaf, sick and the insane.

- Widows’ and Orphan Funds
  - Documented back to 1645 in Germany. Originally established for clergy, and later expanded to teachers.

- Old Age and Disability Insurance
  - Started in the 1880’s in Germany and England to provide a pension annuity. Financed by a tax on workers. Original retirement age was set at 70, and eventually lowered to 65 in 1916. Average life expectancy was 45 in Prussia during 1916.

- The National Insurance Act (Greater Europe Standard)
  - 1940’s system resembling Social Security

HISTORY

UNITED STATES - PUBLIC PENSIONS

• Public Pensions for disabled military personnel predate the signing of the Constitution (1775).
  – If a soldier left honorably (termed severance), was killed in action or died in the service, he or his widow or heir(s) would receive 160 acres of land from the military reserve. The reservation price of public land at that time was $2.00 per acre. So, the severance package would have been worth $350, which, annuitized at six percent, would have yielded less than $2.00 a month in perpetuity.
• First recorded ‘regular’ retirement was for Civil War Veterans
  – Established 30 years as the minimum service requirement, 75 percent of base pay as the standard pension, and age 64 as the mandatory retirement age. This was the basic army pension plan until 1920!
  – Funded on a "pay-as-you-go" basis from the general revenues of the U.S. Treasury.
• First Public Pensions limited to (3) groups: police officers, firefighters, and teachers
  – New York City established the first such plan for its police officers in 1857. Like the early military plans, the New York City police pension plan was a disability plan until a retirement feature was added in 1878
  – The Chicago Police Pension Fund in 1912 reported: "It is to be regretted that there are no complete statistical records showing the operation of this fund. . . It is hard to imagine that the records were simply misplaced by accident" (Clark, Craig, and Wilson 2003, 213)
  – 1920 Civil Service Retirement System formed to provide retirement, disability and survivor benefits to civilian federal workers

UNITED STATES – PRIVATE SECTOR

• Industrial Pensions – Railroad, Banking and Public Utilities
  – 1875 American Express Company is the first private employer to provide a “Traditional” defined benefit plan.
  – B&O Railroad in 1880 was the first to jointly finance a formal ‘Plan’ with employer and employee contributions. The railroad had been in existence for over 50 years! Other railroads shortly followed suit.

• Insurance Annuities
  – 1921 Metropolitan Life issues the first group annuity contract. This provided the structure for pooling assets and risk under a life based annuity framework for a group of employees.

• Internal Revenue Act
  – Enacted in 1921 and clarified in 1926, the Act provided that contributions to ‘Qualified’ Pension Trusts would be exempt from Corporate Income Tax, and earnings and contributions would not be taxable to the beneficiaries until actually distributed.
  – By 1930, 20% of all labor union members and 1/10 of all workers were covered by a pension plan
  – All were discretionary – employers could modify, suspend or annul the pension program at any time.

UNITED STATES – EVOLVING LEGISLATION

- Federal Insurance and Contribution Act (F.I.C.A.)
  - Passed 1935 as a payroll tax used to fund Social Security and Medicare
  - No mandate for retirement savings, disability insurance or disability/survivor income existed.
  - Medicaid for elderly health care passed 1960
- Employee Retirement Income and Security Act (E.R.I.S.A.)
  - Federal Law enacted 1974, resulted from strong public opinion arising from the Studebaker Corporation’s failure to pay pensions to its 7600 vested retirees.
  - Establishes minimum standards for pension plans in private industry and provides for extensive rules on the federal income tax effects of transactions associated with employee benefit plans:
    - Requiring the disclosure of financial and other information concerning the plan to beneficiaries;
    - Establishing standards of conduct for plan fiduciaries;
    - Providing for appropriate remedies and access to the federal courts.
  - Created Pension Benefit Guarantee Corporation

EVOLUTION

UNITED STATES – EVOLUTION CONTINUED

• Glory days pass you by!
  – In 1980
    • 80% of all fulltime workers were covered by a defined benefit plan
    • 16% by a defined contribution plan
  – In 2005
    • 10% of all fulltime workers were covered by a defined benefit plan
    • 63% by a defined contribution plan

• Pension Protection Act
  – Passed 2006, provided for 100% vesting of contributions in defined contribution plans
  – Established standards and requirements for defined benefit funding

• Patient Protection & Affordability Act
  – Passed 2010
  – First step to mandate nationalized health insurance

• Northern Mariana Island Retirement Fund
  – Declares Chapter 11 bankruptcy and becomes the first US based public pension to default!

MECHANICS

RETIRMENT SCHEMES ARE STRUCTURED AROUND (4) MACRO DESIGN CHOICES:

– PAYROLL TAXES
– DEFERRED PAYROLL (EARNINGS)
– TAX DEFERRED EARNINGS & SAVINGS
– SAVINGS (INDIVIDUAL)

MECHANICS

• Qualified Plan
  – The term *qualified* has special meaning regarding defined benefit plans. The IRS defines strict requirements a plan must meet in order to receive favorable tax treatment, including:
    • *A plan must offer a Single Life Annuity (SLA) and a Qualified Joint & Survivor Annuity (QJSA)*
    • *A plan must maintain sufficient funding levels*
    • *A plan must be administered according to the plan document*
    • *Benefits are required to commence at retirement age*
    • *Once earned, benefits may not be forfeited*
    • *A plan may not discriminate in favor of highly-compensated employees*
    • *Failure to meet IRS requirements can lead to plan disqualification, which carries with it enormous tax consequences*

• Non Qualified Plan
  – 403(b) & 457 plans are not considered qualified plans, but are treated and taxed almost identically
  – Tax deferred savings accounts, SEP, SIMPLE and Rabbi Trusts
MECHANICS

• Pension
  – Fixed sum paid regularly to a person following a retirement from service, typically in the form of a guaranteed life annuity
  – Set up by Employers, Insurance Companies, Employer Associations and Trade Unions
  – Terms are pre-determined, legal and/or contractually binding
  – Disability and survivor benefits are typically structured as insurance – ‘Event Based’

• Defined Benefit Plan – Created under US, 26 U.S.C. 414(i)
  – Terms of the benefit are defined and not variable
  – ‘Traditional’ DB is final or average salary (FAP), creditable service (accrual rate), and age
  – Pooled Risk – investment, life span, event, work longevity, inflation
  – Hybrid plans attempt to create a notional or hypothetical account inside of a DB structure
    • Deigned to shift risk or modify group behavior

• Defined Contribution Plan
  – Individual ownership, risk & responsibility
  – Benefits are based solely on an account balance
  – Heavily regulated by the Internal Revenue Service and the Department of Labor
  – Target benefit plans attempt to mirror (resemble) defined benefit structures within individual account format
MECHANICS

STRUCTURE – PAYROLL TAXES

– FEDERALLY MANDATED

• Social Security is a **DEFINED BENEFIT**

• Goal - **LIVING WAGE REPLACEMENT**

• When & How much?

  – VESTING (qualifier) based on Age, Service Quarters or Event

  – Benefits are defined based on **SALARY AND AGE**

• How Long? - **LIFE TIME**

MECHANICS

STRUCTURE – DEFERRED PAYROLL (EARNINGS)

– TRADITIONAL DEFINED BENEFIT PLAN (SALARY, AGE & SERVICE CREDIT)
  – EMPLOYER SPONSORED
  – FORM OF DEFERRED COMPENSATION
  – INCOME TAX DEFERRED
  – POOLED ASSETS AND RISK DISTRIBUTION
  – EMPLOYER BEARS INVESTMENT RISK
  – DYNAMIC FUNDING REQUIREMENTS

• Goal - LIFE TIME % WAGE REPLACEMENT

• When & How much
  – Vesting (qualifier) based on formulary of Age, Creditable Service or Event
  – Similar to Group Insurance Annuity - Insurance benefit is defined by the dollar amount, not employment conditions, which would preclude this from being a defined benefit

• How Long - LIFE TIME

MECHANICS

STRUCTURE – DEFERRED PAYROLL (EARNINGS)

– HYBRID DEFINED BENEFIT PLAN (Mimics similar features of a defined contribution plan)
  – **EMPLOYER SPONSORED**
  – **FORM OF DEFERRED COMPENSATION**
  – **INCOME TAX DEFERRED**
  – **POOLED ASSETS AND RISK DISTRIBUTION**
  – **EMPLOYER BEARS modified INVESTMENT RISK**
    » INVESTMENT RISK DETERMINED BY PLAN DESIGN
    » FUNDING REQUIREMENTS DEPENDENT ON PLAN DESIGN
  • **Types** – usually an addendum or a conversion to/from an existing DB Plan
    – Reciprocity, Lump Sum (DROP), Flexible COLA provisions, etc
    – Cash Balance Plan, Money Purchase Plan, Minimum Balance Plan, etc.
  • **Goal**
    – Flexibility
    – Ownership
    – Level or predictable funding requirements

STRUCTURE – DEFERRED PAYROLL (EARNINGS) - DEFINED CONTRIBUTION

- 401(k) PLANS, PROFIT SHARING, KEOGH, ESOP, SIMPLE, ETC.
  - EMPLOYER SPONSORED
  - FORM OF DEFERRED COMPENSATION
  - STATIC CONTRIBUTIONS (if applicable)
  - TAX DEFERRED INVESTMENT
    » Ownership/Control/Hardship & Loans
  - SELF DIRECTED INVESTMENTS
    » Risk shifts to the employee

• Goal
  - Wage replacement
  - Portability
  - Competitive rate of return

• When & how much - Optimal account balance & age

• How long? - Unknown

STRUCTURE – TAX DEFERRED EARNINGS. SAVINGS & TAXABLE SAVINGS

1. EMPLOYER SPONSORED
   • FORM OF **DEFERRED COMPENSATION or SAVINGS**
   • **INCOME TAX DEFERRED**
     – Non Qualified Plans: Top Hat, 457, 403(b)

2. TAX DEFERRED (SAVINGS) ACCOUNTS
   • **IRA (Roth & Traditional)**

3. TAXABLE SAVINGS ACCOUNTS
   – Goal
     • *Supplemental income*
     • *Wealth accumulation*
       – Competitive rate of return

A contract formed for the purpose of covering certain types of events for a usually related group of stakeholders. Insurance involves:

- **Risk Shifting**: Risk shifting occurs if a person facing the possibility of an economic loss transfers some or all of the financial consequences of the potential loss to the insurer.

- **Risk Distribution**: Risk distribution incorporates the statistical phenomenon known as the law of large numbers. Distributing risk allows the insurer to reduce the possibility that a single claim will exceed the amount taken in as individual payment.

- **Asset Protection**: Assets are generally not subject to creditors’ claims and are held in Trust.

- **Primary reasons to Self Insure:**
  - Lower cost
  - Obtain protection not otherwise available
  - Custom design
  - Investment potential of reserve
  - Control of the claims process

JOHN Q. PUBLIC WINS $1,000,000 IN THE LOTTERY (DEFINED BENEFIT)!

– Winners have (2) options to receive their money:
  
  • **Lump Sum**
    – Lottery must provide the lump sum payment now or,
  
  • **Annuity**
    – pay the annuity periodically over a time certain period (e.g. 20 Years).

– The Lottery has (2) ways to fund the payout:
  
  • **Pay As You Go**
    – Payouts funded from ‘Annual Revenue’ or,
  
  • **Asset Pool**
    – Funded from a ‘Pool’ of set aside assets.

Used for illustrative purposes only and may vary, based on circumstances.
FUNDING - PAY AS YOU GO

PAYMENTS ARE MADE FROM EARNINGS OR SURPLUS.

This concept applies to Social Security in its current form.

Used for illustrative purposes only and may vary, based on circumstances.
FUNDING - LUMP SUM vs. ANNUITY

CALCULATING THE LOTTERY’S $1,000,000 LUMP SUM payment or PV:

– Solving for Present Value (PV):
  • 7% = RATE (Discount Rate)
  • 20 years = NPER (Number of Periods)
  • $50,000 = PMT (Annual Payment)
  • $0 = FV (Future Value)
  • 1 = TYPE (Payment at the beginning of the period)

– Cash lump sum amount received by the winner = $566,780

CALCULATING THE LOTTERY’S $1,000,000 ANNUITY:

– Solving for a simple annuity:
  • 20 years = Contract Term
  • $50,000 = Annual Payment

– Cash received by the winner over the contract term $1,000,000

Used for illustrative purposes only and may vary, based on circumstances.
PAYMENTS FUNDED FROM A ‘POOL,’ REQUIRE:

- **Assets** – Market Value (MV)
- **Systematic Contributions** – Payment (PMT)
  - Contract Terms
  - Static – Fixed Amount or %
  - Dynamic – Based on a Formulary
- **How long or how many?** – Periods (NPER)
  - Contract Terms
  - Career Estimate
  - Life Expectancy (Retirees & Survivors)
- **Actuarial Rate of Return** - Discount Rate (RATE)
  - Contract Terms
  - Asset Allocation
  - Tiered Corporate Debt Rates
- **Actuarial Equivalent Liability - Today** - Present Value (PV)
- **Actuarial Equivalent Liability - At a Future Point** - Future Value (FV)

Used for illustrative purposes only and may vary, based on circumstances.
CONTRIBUTION REQUIRED TO FUND THE EXPECTED LIABILITY:

– **Solving for the required annual contribution (PMT):**
  - $566,780 = FV (Future Liability)
  - $0 Beginning Value = PV
  - 7% = RATE (Discount Rate)
  - 25 Years = NPER (Number of Periods – Random Selection)
  - TYPE 0 = Contributions made at the end of the Period

– Annual contribution (PMT) = **$8,961**
  - Total contribution **$224,027** or 42% or ($8,961(PMT) x 25 (PER))
  - Earnings attribution = **58%**

Used for illustrative purposes only and may vary, based on circumstances.
CALCULATING A TYPICAL RETIREMENT PAYMENT*:

– A normal retirement with no survivors

• Final Average Pay (FAP) = $66,700
• Creditable Service = 25 Years
• Creditable Service Formula (Accrual Rate) = 3%
• Retirement Age 54 - Life Expectancy 74 years = 20 Years
• Pension Annuity = $66,700 x 75% = $50,000

– Solving for the amount to fund the benefit (PV):

• 7% = RATE (Actuarial Rate of Return)
• 20 years = NPER (Life Expectancy)
• $50,000 = PMT (Pension Annuity Amount)
• $0 = FV (Value at Death)
• 1 = TYPE (Payment at the beginning of the period)

– Actuarial Equivalent Liability = $566,780 (PV)
– 8% Actuarial Rate of Return requires a PV of $530,179
– 6% Actuarial Rate of Return requires a PV of $607,904

– If the Plan is 70% funded, it has $400,000 on hand (MV) to fund the benefit

*Used for illustrative purposes only and may vary, based on circumstances.
CONTRIBUTION AMOUNT REQUIRED TO FUND THE RETIREMENT PAYMENT:

– Retirement benefit on an employee retiring in 25 years*
  • Retirement Payment (Annuity) = 20 annual payments of $50,000

– Solving for the required annual contribution (PMT):
  • $566,780 = FV (Future Liability)
  • $0 Beginning Value = PV
  • 7% = RATE (Actuarial Rate of Return)
  • 25 Years = NPER (Career Length)
  • TYPE 0 = Contributions made at the end of the Period

– Annual required contribution (PMT) = $8,961
  • Total contributions = ($8,961 x 25 = $224,027) or 42%
  • Earnings = 58%
  • Earnings + Employee Contributions (Assumption 10%)

2/3 OF REQUIRED ACTUARIAL EQUIVALENT LIABILITY

*Used for illustrative purposes only and may vary, based on circumstances.
ILLUSTRATED FUNDED DEFINED BENEFIT PLAN

Plan Sponsor Contribution Valve

Employer Contributions

Dynamic Employee Contribution Valve

Static

Pension Fund

Investment Return Gauge

Investment pump pressure reflects a realistic return assumption

‘LOW RISK’

Benefit Valve

Administrative Costs

To Pensioners

Retirement Benefits

Actuarial DIP STICK

Low funding drives investment pump pressure to extreme levels!

FUNDING – A DEFINED BENEFIT REALITY

- **INCREASE INFLOWS**
  - **Employer**
    - Increase tax rate
    - Increase tax base
  - **System**
    - Increase investment earnings
    - Increase risk
  - **Employee**
    - Increase contributions

- **ACTUARIAL & ACCOUNTING CHANGES** (New Dip Stick)
  - ‘Mark to Market’
  - Discount rate changes
  - Smoothing
  - ‘Market Value Liability’

- **JUDICIAL & LEGAL CHALLENGES**
  - Constitutional Protection
  - Municipal Bankruptcy
  - Sovereign Bankruptcy

- **REDUCE OUTFLOWS**
  - **Employer**
    - Seek legislative relief on benefit structures
    - Diminish Collective Bargaining Rights
    - Reduce salary
    - Provide benefits to less people (layoffs)
    - Freeze Plan/Liability
  - **System**
    - Redefine variable salary supplements (spikes)
    - Reduce/limit inflation protection (Cost of Living Increases)
    - Define work-related disabilities and survivor benefits more rigorously
    - Consolidate to reduce expenses
  - **Employee**
    - Accept benefit reductions
    - Accept Tiering for new employees
    - Higher hurdle for future benefit enhancements
Kelly J. Weller, Director Client Service & Sales

- Kelly is the Director of Client Service and Sales for Great Lakes Advisors, LLC. With over 19 years of experience in the financial and investment business, he specializes in investment solutions for public, corporate, and multi-employer retirement plans. A former public fund trustee and lobbyist, Kelly brings a strong investment background and practical retirement plan experience to the Advisory Board.

Prior to joining Great Lakes Advisors, LLC, Kelly held similar positions with PNC Capital Advisors, LLC, and JP Morgan Asset Management Company. He received his undergraduate degree in accounting from Illinois College, an MBA from the University of Illinois, Springfield, and is a Certified Public Accountant (not in practice).