

SeLFIES: A New Bond to Address Retirement Security and Fund Infrastructure

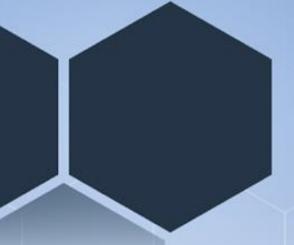
Global Pensions Programme 2020

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Background: Both Sides of the Pension Coin

Pension Reform, Asset Management, and Academic



: Issued Bonds (early 1990s); Manager, Head of Research Pension & Investments Dept (late 1990s)







Calphaengine: Co-Founder; Manage Institutional Assets; Developed Unique Strategy (2002- Today)

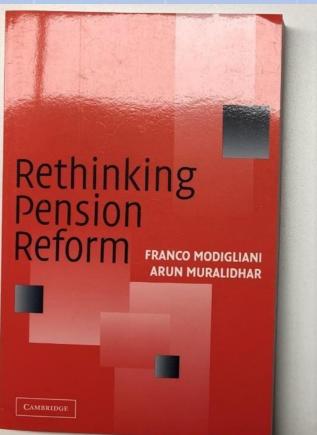


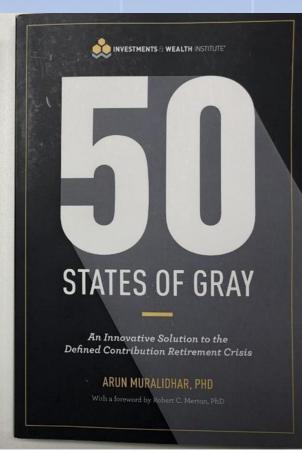
: Innovations in Pension Fund Management (2001)

Rethinking Pension Reform, with Prof. F. Modigliani (2004)

SMART Approach to Portfolio Management (2011)

Fifty States of Gray: An Innovative Solution to the Defined Contribution Crisis (2018)









Retirement Security: Challenges Are Global

Trend Has Been to Pass Responsibility to Individuals in DC Plans

DB Plans Closed/Not Offered to Individuals
Many Individuals Not Covered by Any Plan
Longevity Increasing. Families more Dispersed
Low Financial Literacy.



Yet the Goal is: Be Able to Maintain Pre-Retirement Lifestyle until Death



Need an "Out-of-the-Box" Solution





Biggest Challenge

Mismatch between Investor Goals and Industry Response

❖ Investors Understand Their Goals

- Maintain standard of living with certainty
- Have access to products they understand

Industry Response is Mismatched

- Uses end of period wealth as key metric
- Does not offer a "safety-first" approach for protecting base standard of living
- Solutions that require financial literacy



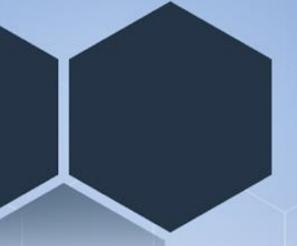
ING International Survey

Bloomberg



Need Solutions that Individuals Can Implement With No Additional Training





DC Pension Plans Have Multiple Challenges

Could Lead to Widespread Retirement Problems

- ☑ Risk transferred to Individuals (one lifetime)
- **Complex Decisions** transferred to individuals
 - ⊠ How much to save?
 - ⊠ How to Invest: What to buy? How much? Rebalancing?
 - ⊠ How best to decumulate? What annuity to buy?
- **▼ Financial Illiteracy** confounds decision-making
- **⊠ High Cost** from involvement of multiple parties





But Goal Unchanged: Seek Guaranteed Real Retirement Income







Lis billoy Cash Flow for Retirement





Industry Uses the Wrong "Safe" Asset

Current T-Bills, Bonds or TIPS are Not "Safe"



T-Bills/bonds protect principal (wealth), not retirement income

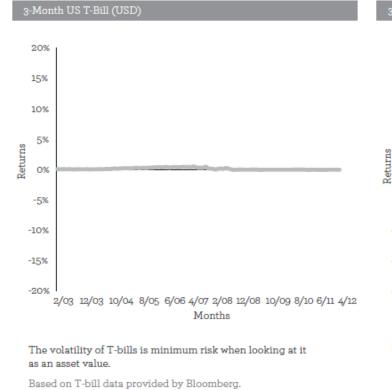


Highly Volatile: Annuity/income perspective

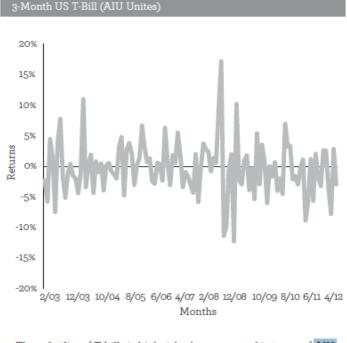


Current products (either Stock-Bond or Life-cycle Funds) are risky





Source: Merton (2014)



The volatility of T-bills is high risk when measured in terms of AIU.

AIU = Annuity Income Units



Current "Safe" Assets Are Risky; Too Much Focus on Wealth vs Income



Even TIPs Are Risky in Retirement Plans



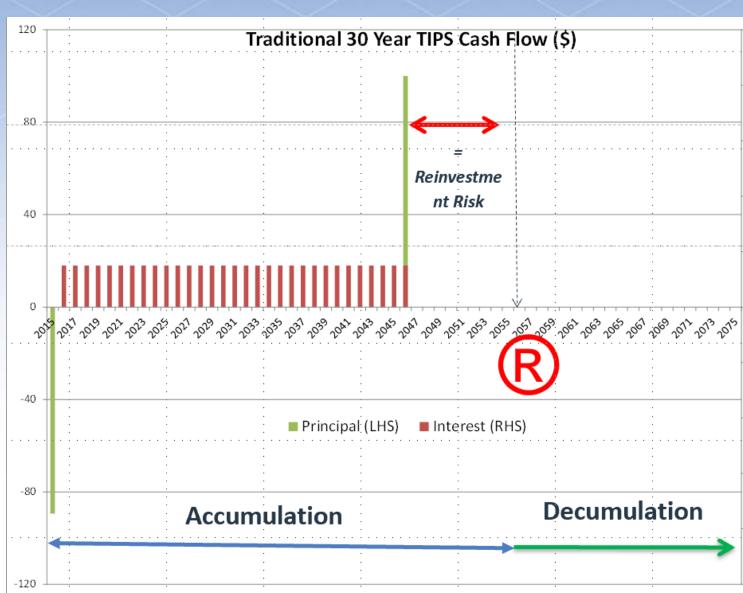
Cash Flow Mismatch/Reinvestment Risk



US TIPs maturity = 30 years maximum (slightly longer in some countries - S.Africa)

- Can only hedge 10 years pre-retirement
- Do not need coupons when working
- Do not need Principal repayment
- Would require 61 additional small transactions to convert to desired outcome









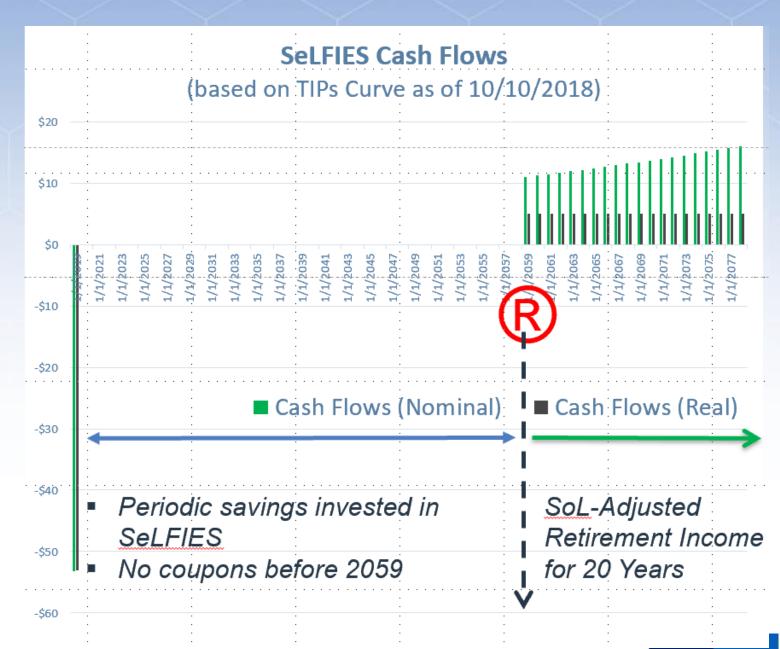
Solution: SeLFIES - A New Retirement Bond

Government Issues a New Bond

• Key Features:

- Payment begins at age 65
- Coupons-only for 20+ years (Life Expectancy)
- \$5 real/year
- Goal of \$50K annual @ \$5 real/year = 10,000 bonds
 - Easy to track: 6,000 bonds = 60% of Goal
- If Individual Dies Early: Heirs Inherit Bonds (Easy to Bequeath) And Can Collect Income or Sell Bonds
- Change Retirement Date/Target Income: Simple





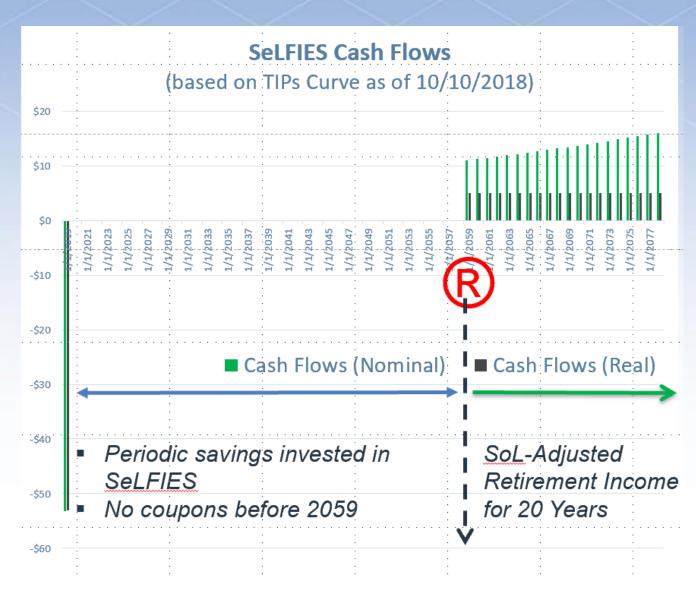




Selfies Deliver What is Needed

Designed to Require No Additional Financial Training

- Bond Cash Flows = Matches Retirement Goal
 - No bullet repayment, only steady Cash Flow
- Payment based on real amounts, not coupon (%)
 - \$5 real/year
- Nominal Index linked to Goal Per Capita Consumption
 - Hedges real Standard-of-Living risk for retirees
- Forward-starting: No cash flows when not needed
- Designed for financially unsophisticated population
 - Embeds Inflation, Compounding and Decumulation

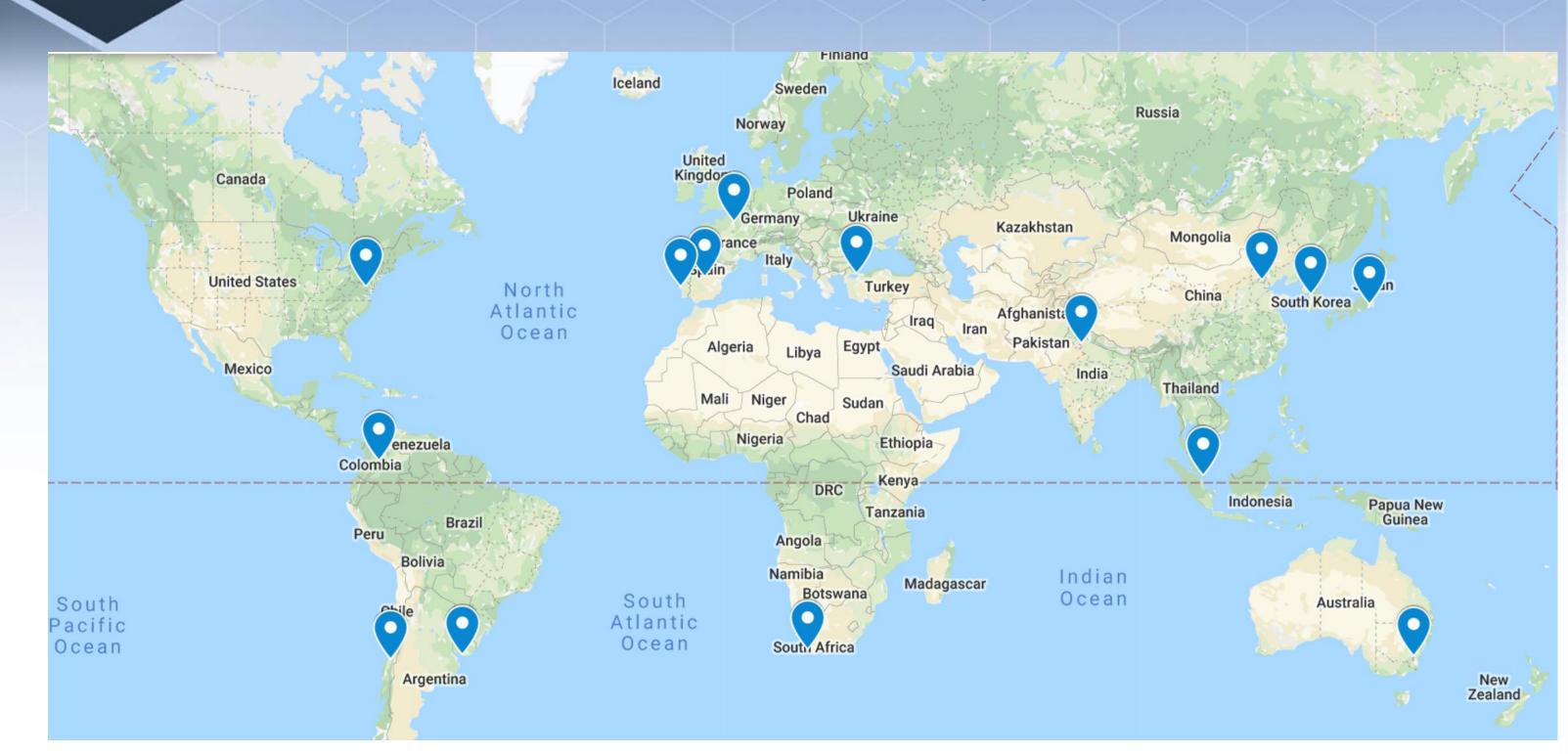






Global Design – Suggested for Many Countries

Countries Can Customize to Their Unique Situation





SeLFIES - Good for Individuals

- Designed to Work with What People Know
 - **✓** Date of Retirement and Target Income
- **Embeds Compounding, Inflation & Decumulation**
 - ✓ Addresses Financial Competence
- **Effective for Uncovered Workers Too**
 - Creates an "Individual DB"; Don't Need Plan
- **Easy to Track Progress Towards Retirement Goal**
 - **✓** Simple Math and Easy Calculations









SeLFIES - Good for Governments

- **✓** Reduces Risk of Retirement Poverty/Bailouts
- Cash flows from bond = Infrastructure needs
- ✓ VAT Regime = Government Hedged
- Boosts National Debt Demand
- **✓** Provides Near-Term Budget Relief
- Could be Transformational in Emerging Markets

Multiple Benefits for Governments Too

THE TIMES OF INDIA, MUMBA

SelFIES For India

These long-term bonds can fund India's infrastructure needs and improve retirement security





its Budget and recognises that the infrastructure sector needs investments of Rs 50 lakh crore to boost GDP (allocating Rs 5.9 lakh crore as a primary step). Simultaneously, certain provisions in the Budget seek to improve the lives of retirees, and finance minister Arun Jaitley specifically noted that, "A life with dignity is a right of every individual, in general, more so for the

One of the major challenges that India will face is ensuring the income security of its senior citizens, especially in a country where financial literacy is relatively low. The government can easily fund infrastructure, especially since i has given permission to the National Highways Authority of India (NHAI) and other institutions to issue bonds, and have an immediate impact on the retirement challenge by issuing a new type of long-term band, one we call SeLFTES - ning leaves many confused about what Standard of Living indexed, Forward-constitutes adequate swings for retire-

starting, Income-only Securities. also advantageous to the ministry of these calculations. Moreover, there is



largely financial illiterate.

ment. Individuals are overwhelmed by Sel.FIES address many of the the information provided and the absence challenges raised in the Budget and are of a robust and uniform method to make finance, especially in light of the recent uncertainty over what to invest in and implementation of a Goods and Services how best to decumulate. Most adults can harely answer questions about compound interest, the effects of inflation or the deep or developed. More importantly, benefit of diversification. Investing in exretirement through death, and the ability isting assets is risky relative to the retire—they can be complex, opaque and illiquid; to lead a lifestyle comparable to pre-ment objective, because these ossets fail to retirement. The Indian government provide a simple or low-cost cash-flow

The complexity of retirement plan- Selfies are designed to pay

many hesitate to buy associties because investors fear not being able to bequeath

living improvements.

SeLFIES are designed to pay people when they need it and how they need it, and greatly simplify retirement investing A 55-year-old today would buy the 2028 hond, which would start paying coupons when he turns 65, in 2026, and keep paying

In this way, even the most financially illiterate individual can be self-reliant with respect to retirement planning. For example, if someone wants to guarantee Rs 50,000 annually, risk-free for 20 years in retirement to maintain their current standard of living, they would need to buy 500 SeLFIES - ie, Rs 50,000 divided by Rs 100-over their working life.

The complex decisions of how much to save, how to invest, and how to draw down are simply folded into an easy calculation of how many bonds to huy SeLFIES do not address all issues including longevity risk, but go a long way toward improving rethrement security.

These securities are a good deal for governments, too. In fact, governments are the biggest beneficiaries. Sel.FIES not only improve retirement outcomes for all citizens saving for rethrement, but also have spill over henefits.

First, cash flows from Sel.FIES refle synergistic cash flows for infrastructure spending: namely, large cash flows opfront for capital expenditure, followed by delayed, inflation-indexed revenues especially given the current Budget government a natural hedge of revenues



SeLFIES – Good for Financial Service Industry

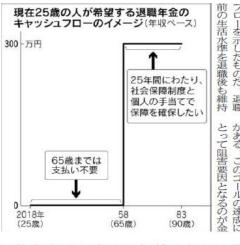
- **✓** Goal of Individuals: Sustainable Retirement Income Buy SeLFIES but Still Have Longevity Risk
- **✓** Goal of Insurance Companies: Profit/Manage Risk

Diversify Longevity Risk by signing large number of people

✓ Well-Designed SeLFIES

For right Maturity, Insurance Cos. would be willing to exchange 1 SeLFIES for Life Annuity paying \$5 real/year till Death.

Price of SeLFIES vs Price of Annuity provides information about Design of Product and Longevity Diversification of Insurance Cos 老後保障向け金融商品



Source: Nikkei June 2018



Supports Product Innovation





SelFIES: A Win/Win/Win

✓ Individuals

Retirement income product that meets actual goals and is easy to use

✓ Financial Services Industry

Improved hedging operations and product innovation

✓ Government

Lower financial pressures, better cash flow match and potentially fund infrastructure

