Liquidity in Retirement Savings Systems

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Households under age 55 make $0.40 of taxable withdrawals from retirement accounts for every $1.00 of contributions (Argento, Bryant, and Sabelhaus, 2015)
The U.S. employer-sponsored DC system

• Account balances can be moved to an IRA once the individual no longer works for the employer, which enables liquidation before the withdrawal-eligibility age of 59½ at a 10% tax penalty

• What is the socially optimal level of liquidity?
  • Liquid retirement savings are desirable if liquidity enables households to flexibly respond to pre-retirement shocks
  • On the other hand, pre-retirement liquidity is undesirable when it leads to under-saving arising from planning mistakes or self-control problems
International comparison

Compare the liquidity that six developed economies have built into their employer-based defined contribution (DC) retirement savings systems

Compute MRT between withdrawal-funded consumption at pre-eligible ages (under 55) and withdrawal-funded consumption at eligible ages (at least 63)

\[ MRT = \frac{[1 - \tau(\text{pre}, y)]}{[1 - \tau(\text{eligible}, Y)]} \]
Ontario, Canada

- Ontario basic reduction fully phases out
- WITB fully phases out
- Ontario Sales Credit and Ontario Energy and Property Tax Credit begin phasing out
- Ontario health premium goes flat
- Ontario net income taxes become positive
- Federal net income taxes become positive
- Working Income Tax Benefit (WITB) begins to phase out based on total income (which includes pension withdrawals)
- Not eligible for "low expected income" hardship provision

Reduction in Income
New South Wales, Australia

Reduction in Income

Not eligible for the severe financial hardship withdrawal

Medicare Levy rate decreases from 10% to 1.5%

Federal income tax rate increases, lump sum offset kicks in, and low income offset begins phasing out

Federal net income taxes become positive

Medicare Levy kicks in
Germany, Singapore, and United Kingdom

MRT

Reduction in Income

$0 $10,000 $20,000 $30,000 $40,000 $50,000 $60,000

0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4
Texas, U.S.

MRT

Reduction in Income

- Federal income tax rate increases
- Federal net income taxes become positive
- EITC fully phases out
- Earned Income Tax Credit (EITC) begins to phase out based on adjusted gross income (which includes pension withdrawals)
Theoretical analysis

• Specify a model of household behavior
  • Three periods: “set up,” working life, retirement
  • Short-run taste shocks change the marginal utility of consumption
  • Quasi-hyperbolic (present-biased) households with discount function \{1, \beta\delta, \beta\delta^2, \ldots\}

• Specify the policy maker’s objective
  • Exponential (time-consistent) discount function \{1, \delta, \delta^2, \ldots\}
  • Population is heterogeneous in the degree of present bias

• Solve for the institutions that maximize the policy maker’s objective function, conditional on the theory of household behavior
  • Set up a system of accounts with varying degrees of liquidity
  • Use numerical methods and apply to a range of parameter values and taste shock distributions
Choosing accounts

• Assume a population of households with heterogeneous $\beta$

• The policy maker creates different accounts, ranging from completely liquid to completely illiquid, and allocates resources across them subject to the budget constraint with transfers

• The first account that a policy maker will add beyond the completely liquid account is the completely illiquid account, improving welfare by about 3% of wealth

• Intuition: it is more important from a social welfare perspective to choose the appropriate penalty for the low $\beta$ people
Adding a third account

Three accounts

1. Perfectly liquid account
2. Perfectly illiquid retirement account
3. Partially illiquid retirement account with penalty of about 10%
   - Fraction of illiquid savings in partially illiquid account: 15%
   - Equilibrium leakage rate: 50%

Consequence of eliminating the 3rd account: welfare loss 0.02% of wealth
Implications of the analysis

• If the size of the completely illiquid account is optimal
  • Low-penalty (10%), high-leakage retirement accounts are socially optimal supplements to completely illiquid retirement accounts
  • But eliminating such supplemental, low-penalty retirement accounts generates extremely small welfare costs (0.02% of wealth)

• If the completely illiquid account is smaller than optimal
  • It may be beneficial to make 401(k) and IRA accounts extensions of the illiquid account
  • At the same time, to help smooth over short-run shocks, it would be important to boost emergency savings
Conclusion

1. Conditional liquidity: Canada and Australia
2. No liquidity: Germany, Singapore, U.K.
3. Universal liquidity: U.S.

This cross-country heterogeneity begs the question of why the U.S. has chosen a different path from its peers