Optimal Illiquidity in the Retirement Savings System

John Beshears
Harvard Business School

James J. Choi
Yale School of Management

Christopher Clayton
Harvard University

Christopher Harris
University of Cambridge

David Laibson
Harvard University

Brigitte C. Madrian
Harvard Kennedy School

Prepared for the 16th Annual Joint Meeting of the Retirement Research Consortium
August 7-8, 2014
Washington, DC

The research reported herein was pursuant to a grant from the U.S. Social Security Administration (SSA), funded as part of the Retirement Research Consortium (RRC). The findings and conclusions expressed are solely those of the authors and do not represent the views of SSA, any agency of the federal government, Harvard University, Yale University, or the University of Cambridge.

U.S. defined contribution savings accounts – e.g., 401(k) plans and Individual Retirement Accounts (IRAs) – are more liquid than retirement savings accounts in most other countries. In the U.S., certain types of pre-retirement withdrawals are allowed without penalty, and, for IRAs, withdrawals may be made for *any reason* if a 10-percent penalty is paid. Liquidity allows significant pre-retirement "leakage:" for every $1 contributed to the accounts of savers under age 55, $0.40 simultaneously flows out of the 401(k)/IRA system, *not* counting loans (Argento, Bryant, and Sabelhaus 2014). This leakage is sometimes desirable (when it funds legitimate spending needs, like a medical emergency or investment in human capital) and sometimes self-defeating (when it is driven by planning mistakes and self-control problems).

Our analysis evaluates the optimality of the U.S. defined contribution savings system, using a model that includes both legitimate spending shocks (e.g., costly medical emergencies and other sources of financial hardship) and self-control problems. The self-control problems are modeled as the consequence of present bias (Phelps and Pollak 1968, Laibson 1997): i.e., a discount function with weights $\{1, \beta\delta, \beta\delta^2, \ldots, \beta\delta^t\}$, where the degree of present bias is 1-β.

Using a mechanism design framework (cf. Angeletos, Werning, and Amador 2006), we derive the socially *optimal* level of illiquidity in retirement savings accounts. Our model implies that average societal well-being (i.e., population average utility) would rise if defined contribution accounts came in two forms: a relatively liquid account (much like existing DC accounts with a modest or non-existent pre-retirement withdrawal penalty) and an illiquid account that cannot be drawn down until retirement (or disability). Savings would be spread across these two accounts. Savings in the liquid account would be used to fund pre-retirement spending, serving as a rainy day fund for short-term financial emergencies. Savings in the illiquid account would be locked away until retirement.

Our conclusions are sensitive to assumptions about population heterogeneity in self-control problems. If all consumers have similar self-control problems (e.g., uniform present bias with $\beta = 0.7$), then *all* retirement savings accounts should allow pre-retirement withdrawals (with a modest penalty). On the other hand, if consumers have highly heterogeneous self-control problems, then some retirement savings should be invested in highly illiquid accounts to protect the subpopulation with the most extreme self-control problems (the households with the lowest β values). Highly illiquid retirement savings generates *welfare gains* for these low-β agents that swamp (by a ratio of 1,000 to 1) the *welfare losses* of the high-β agents (who are made worse off

by the illiquidity). Hence, optimal policy caters disproportionately to the agents with the most severe self-control problems.