

THE EFFICIENCY OF PENSION MENUS AND INDIVIDUAL PORTFOLIO CHOICE IN 401(K) PENSIONS

NING TANG, OLIVIA S. MITCHELL, GARY MOTTOLA, AND STEVE UTKUS* September 2009

Considering the large amount of money and the large number of people involved in 401(k) retirement accounts, and the crucial role of these plans in retirement financing, it is crucial to evaluate whether 401(k) investments are managed efficiently. Portfolio performance in the 401(k) context depends on two factors: the choice of investment menu by plan sponsors, and the investment choices made by participants. In previous work, we concluded that 94 percent of plan menus we evaluated are efficient, meaning plan sponsors do a good job offering well-diversified investment opportunities to participants. But the question remains as to whether workers do a good job selecting their own portfolios, given the menus offered. To date no study has separately identified the losses resulting from individual investment choice inefficiency versus those due to plan design.

Our recent research uses data on over one million participants in more than 1,000 defined-contribution (DC) plans to explore this question. We use panel data on both plans and individual workers, which permits us to not only evaluate the outcome of 401(k) individual portfolios, but also to distinguish the two sources of inefficiency. We consider three efficiency measures: (a) the *total return loss*, which computes participant portfolio losses attributable to both participant investment choice inefficiency and plan menu inefficiency; (b) the *relative return loss*, which excludes inefficiency resulting from menu restrictions, thus successfully distinguishing participant investment mistakes from menu effects; and (c) *idiosyncratic risk share*, which captures the diversification level of a 401(k) portfolio. The three measures enable us to detect the inefficiency of individual portfolios coming from participant investment choices, plan menu restrictions, and under-diversification.

Our data are derived from the 401(k) plans managed by the Vanguard mutual fund company. Plan-level information includes both the number and type of investment choices offered to participants, total assets under management, numbers of accounts, plan type, and the monthly total return for each fund. Participant information is available for active accounts including account balances and amounts held by fund, source (employer or employee contributions), and participant socio-demographics (age, sex, plan tenure, non-retirement financial wealth, household income, home ownership status).

We show that many real-world 401(k) participants do poorly, even if their plan menu is efficient. On average, the mean monthly total return loss was 0.1093 percent. To put these results into context, if the participant could

*Olivia S. Mitchell is the International Foundation of Employee Benefit Plans Professor of Insurance and Risk Management and the Executive Director of the Pension Research Council at the Wharton School, University of Pennsylvania. Stephen P. Utkus is director of the Vanguard Center for Retirement Research. This Research Brief is based on MRRC Working Paper WP 2009-203.

earn a monthly return of 0.5 percent by investing more efficiently, his retirement wealth would be 30 percent higher (assuming a 20-year holding period). Additionally, under the same assumption, those in the highest one percentile of the return loss distribution have their wealth more than cut in half over a 20-year period. On average, such mistakes can be important, producing one-fifth less retirement wealth in a 20-year period.

Evidently, plan participants forgo a substantial component of retirement accruals by not investing optimally, as measured by return losses and idiosyncratic risk shares. And these errors are substantial, amounting to more than three-quarters of the total losses sustained in an average portfolio. Our research has implications for plan design: better-designed default options are required in an auto-enrollment framework. We also believe that inefficiencies we have found in the retirement context are replicated in the remainder of savers' portfolios. To combat such inefficiency, it therefore will be critical to provide financial education and advice regarding investment patterns. Better retirement saving requires investor financial literacy.

UNIVERSITY OF MICHIGAN RETIREMENT RESEARCH CENTER
INSTITUTE FOR SOCIAL RESEARCH 426 THOMPSON STREET ROOM 3026 ANN ARBOR, MI 48104-2321
PHONE: (734) 615-0422 FAX: (734) 615-2180 MRRRC@ISR.UMICH.EDU WWW.MRRRC.ISR.UMICH.EDU

The research reported herein was performed pursuant to a grant from the U.S. Social Security administration (SSA) through the Michigan Retirement Research Center (MRRRC). The findings and conclusions expressed are solely those of the author(s) and do not represent the views of SSA, any agency of the federal government, or the MRRRC.

Regents of the University of Michigan: Julia Donovan Darlow, Laurence B. Deitch, Denise Ilitch, Olivia P. Maynard, Andrea Fischer Newman, Andrew C. Richner, S. Martin Taylor, Katherine E. White, Mary Sue Coleman, Ex Officio