

Individual account investment options and portfolio choice: Behavioral lessons from 401(k) plans

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Abstract

This paper examines how the menu of investment options made available to workers in defined contribution plans influences portfolio choice. Using unique panel data of 401(k) plans in the U.S., we present three principle findings. First, we show that the share of investment options in a particular asset class (i.e., company stock, equities, fixed income, and balanced funds) has a significant effect on aggregate participant portfolio allocations across these asset classes. Second, we document that the vast majority of the new funds added to 401(k) plans are high-cost actively-managed equity funds, as opposed to lower-cost equity index funds. Third, because the average share of assets invested in low-cost equity index funds declines with an increase in the number of options, average portfolio expenses increase and average portfolio performance is thus depressed. All of these findings are obtained from a panel data set, enabling us to control for heterogeneity in the investment preferences of workers across firms and across time. © 2007 Elsevier B.V. All rights reserved.

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1. Introduction

Over two dozen countries around the world now include individual investment accounts as part of their public pension systems. Other countries, notably including the U.S., are also considering reforms that would allow individuals to directly invest part of their Social Security contributions in individual accounts. A key issue in designing such a program is determining what investment choices to offer individual participants. The simplest portfolio theory suggests that it is

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sufficient to provide a choice consisting of one portfolio of risky assets – the market portfolio – and one risk-free asset, and then to allow individuals to mix these two portfolios in accordance with their individual risk preferences. Most public and private plans in the U.S. and abroad, however, provide a large number and broad range of choices. For example, in the U.S., the vast majority of private sector defined contribution pension plans offer multiple investment options, often allowing individuals to choose from among several equity, bond, market and balanced fund options. Individuals also have thousands of mutual funds to choose from when allocating their non-pension portfolios. In Sweden, the Social Security system provides participants a menu of investment options that includes over 650 funds from which to choose.

The central question of this paper is whether the mix of investment options available to participants in an individual accounts program matters for portfolio allocation. In particular, we are interested in the “behavioral” response to the selection of fund options, over and above any “mechanical” link by which we mean changes that flow directly from adding or relaxing a binding constraint. For example, suppose an individual is prohibited from owning a particular asset class. It is clearly the case that this constraint will alter their portfolio choice if, in the absence of the constraint, the individual would have invested in this asset class. Instead, our focus is on the “behavioral” response, which might occur when a change in the menu of investment options leads to a large change in asset allocation, even though the investment opportunity set has not significantly changed. For example, imagine that an investor, faced with a choice between a diversified stock fund and a diversified bond fund, chose to allocate 50% of her portfolio to each fund. If this individual were provided a second diversified stock fund as a third investment alternative, then the overall investment opportunity set of this individual has not substantially changed because the additional stock fund is largely redundant of the first. In this case, standard portfolio theory suggests that this individual’s optimal allocation would still be close to 50% bonds and 50% stocks.

A growing body of evidence suggests, however, that many individual portfolio decisions may be influenced by plan design. For example, [Benartzi and Thaler \(2001\)](#) suggest that many people follow a “naïve” diversification strategy, such as evenly dividing contributions across all available assets (e.g., a “ $1/n$ ” strategy). If this is the case, then simply changing the relative number of stock and bond funds may alter the allocation of an investor’s portfolio between stocks and bonds. If people behave in this way, then firm managers or policymakers who are charged with determining the set of investment options to make available to participants in a corporate or government individual accounts program should consider how the choice of fund options will influence individual portfolio allocations.

The private pension system in the U.S. – in particular, 401(k) plans, which are now the single most common private pension in the U.S. – provides a useful research laboratory with which to learn about these issues. Because plan sponsors have significant leeway in choosing which investment options to make available, there is considerable time series and cross-sectional variation in the set of investment opportunities facing 401(k) participants. Using a rich panel data set on fund options and fund contributions to 401(k) plans during the 1990s, we examine several issues in this paper related to how the structure of investment options within a plan affects participant diversification. Unlike past work in this area that focuses on cross-sectional analyses, we are able to exploit the panel nature of our data to control for differences in the investment preferences of workers across firms and over time to better identify the effect of a change in 401(k) plan characteristics on participant behavior.

We focus primarily on how the set of investment alternatives affects portfolio diversification. While some prior research has suggested that overall portfolio diversification is affected by the

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