Employer matching and 401(k) saving: Evidence from the health and retirement study ☆

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Abstract

Employer matching of employee 401(k) contributions is often touted as a powerful incentive to save for retirement and is a key component in pension-plan design in the United States. Using detailed administrative contribution, earnings, and pension-plan data from the Health and Retirement Study, this analysis formulates a life-cycle-consistent econometric specification of 401(k) saving and estimates the determinants of saving accounting for non-linearities in the household budget set induced by matching. The participation estimates indicate that an increase in the match rate by 25 cents per dollar of employee contribution raises 401(k) participation by 5 percentage points. The parametric and semi-parametric

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estimates for saving indicate that an increase in the match rate by 25 cents per dollar of employee contribution raises 401(k) saving by $365 (in 1991 dollars). Overall, the analysis reveals that the 401(k) saving response to matching is quite inelastic, and, hence, matching is a rather poor policy instrument with which to raise retirement saving.

1. Introduction

As 401(k)s have come to dominate the private pension landscape in the United States, researchers and policy makers have given increased attention to the impact of plan characteristics on retirement-saving decisions.[1] One important characteristic is whether and to what extent the employer matches employee contributions. A typical match might be 50 cents for each dollar of contribution, up to a maximum percentage of pay, say, 6%. Although much of the discussion by the popular press and policy makers presumes employer matching raises saving, there is actually strikingly little consensus among researchers. Some studies have found that increases in the match rate raise 401(k) saving (Papke and Poterba, 1995; Clark and Schieber, 1998; Vanderhei and Copeland, 2001; Choi et al., 2002). Others have found that it is not the match rate *per se* that matters, but whether the firm offers a match at all (Even and Macpherson, 1996; Bassett et al., 1998; Papke, 1995; Kusko et al., 1998). That is, providing a match raises 401(k) saving, but an increase in the level of the match rate (conditional on providing a match) does not. Finally, still other studies (Employee Benefit Research Institute, 1994; Andrews, 1992; Munnell et al., 2002; General Accounting Office, 1997) have suggested that, conditional on being eligible for a match, an increase in the match rate *lowers* 401(k) contributions, which, when interpreted in the context of a simple two-period model of saving, suggests that the income effect dominates the substitution effect from the higher rate of return matching provides. Overall, this ambiguity has emerged as an important empirical puzzle in the literature on saving behavior (Bernheim, 2003).

Unfortunately, previous studies have had three important shortcomings. First, they have not couched their analyses in formal models of intertemporal choice, even though saving involves the substitution of resources across time. This means that previous estimates cannot be interpreted as estimates of life-cycle-consistent determinants of 401(k) saving necessarily, because the empirical specifications may not have been consistent with underlying utility maximization. So, while the existing literature has provided quite informative descriptive analyses, it has said little about how 401(k) saving may respond to prospective changes in employer matching or what the optimal match rate should be to achieve a saving target.

Second, with the exception of Choi et al. (2002), Mitchell et al. (2005), and Vanderhei and Copeland (2001), previous studies have failed to exploit the fact that multiple-match-rate schedules and caps on matching induce kinks in the budget set. As has been long recognized in the study of taxation on labor supply, reduced-form estimates of behavioral elasticities are biased and inconsistent unless the non-linearity is accounted for explicitly (Hausman, 1985; Moffitt, 1986, 1990; Blundell and MaCurdy, 1999). Indeed, the presence of budget-set kinks may reconcile some of the findings of previous studies: for example, the provision of a match may raise 401(k) saving if

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[1] This includes work on automatic enrollment (Madrian and Shea, 2001; Choi et al., 2002, 2004), investment in company stock (Poterba, 2003; Brown et al., 2006; Mitchell and Utkus, 2002), portfolio choice and trading in 401(k) plans (Benartzi and Thaler, 2001; Agnew et al., 2003).