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Trends and Issues
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Health Savings Accounts and life-cycle saving: Implications for retirement preparedness

Key takeaways

- By bridging health insurance and retirement saving decisions, Health Savings Accounts (HSAs) complicate the set of choices regarding how much to save and when to withdraw assets across accounts.
- Determining how HSAs should be used in conjunction with other savings vehicles requires machine-learning techniques, rather than standard methods of solving life-cycle models.
- HSAs raise optimal tax-preferred saving, compared to a system with only tax-preferred illiquid retirement accounts and taxable liquid saving.
- At low levels of contribution rates, which are what is commonly observed in practice, HSAs and illiquid retirement accounts are complements rather than substitutes.

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Background

Most employees at large firms today have access to Health Savings Accounts (HSAs), and over 1 in 5 employees across all firms are enrolled in one (Claxton et al. 2021). Since HSAs were created by the Medicare Modernization Act in 2003, they have grown in popularity as more employers that offer health insurance embrace high-deductible health plans (HDHPs). HSAs offer powerful tax advantages, even compared to retirement accounts. As with a defined contribution (DC) plan like a 401(k) or 403(b) account, HSA contributions are income tax-deductible and interest grows tax-deferred; yet contributions are also exempt from FICA taxes, and assets are not subject to required minimum distributions in old age. Moreover, HSA funds remain accessible on a pre-tax basis for health care expenses incurred at not just the current but also at earlier times, providing unparalleled flexibility. They can finance Medicare premiums and long-term care tax-free in retirement. Funds can also be used to finance health care expenses while working. Unlike Flexible Spending Accounts (FSAs), all the money in HSAs rolls over from one year to the next.

While these features should, in principle, make HSAs an attractive vehicle for saving, HSA balances remain small. The average balance is just $3,600, and funds are rarely invested (Fronstin and Spiegel 2021). Many employees avoid HDHP/HSA plans altogether, even when they (commonly) save the employee substantial amounts of money compared to other health insurance choices (Leive, Friedberg and Davis 2022, Liu and Sydnor 2022). Several factors may explain why many consumers avoid HDHPs, including information frictions and perceived hassle costs (Handel and Kolstad 2015), inertia (Handel 2013), liquidity constraints (Ericson and Sydnor 2018, Davis, Leive and Gellert 2022), and financial literacy (Davis, Leive and Gellert 2022). There has been relatively less research on the implications of HSAs for household finances and retirement preparedness (Aaron, Healy and Khitatrakun 2008, Peter, Soika and Steinorth 2016, Leive 2022), and the existing work has not considered the role of liquidity constraints, which are likely to be important for households facing high deductibles.

How should people use HSAs

By bridging health insurance and retirement saving, HSAs offer a complicated set of choices regarding how much to save and when to withdraw. The accounts provide flexibility both to finance current health care expenses or save for either health or other expenses in retirement. This study examines how people should use these accounts in conjunction with tax-preferred defined contribution retirement plans and taxable liquid savings.

Determining the optimal amount to save for retirement and when to withdraw assets is an extremely challenging problem that depends on many factors. This problem is further complicated when people have multiple accounts in which they can save. We make headway on the question of how HSAs should be used alongside other savings vehicles by building an economic model of consumption and savings over the life-cycle. While models by definition ignore some features of reality, our model incorporates three accounts with different tax and liquidity characteristics: an HSA, a tax-deferred DC account, and a liquid after-tax account. The model incorporates uncertainty in health spending both while working and in retirement, and we keep track of the stock of out-of-pocket medical expenses, which may be reimbursed out of the HSA at any time. We allow for health spending to vary by age, gender, and health status. The model also includes a second shock to consumption unrelated to health care that is intended to capture the importance of moderately sized shocks such as vehicle or home repairs. Households are unable to borrow in our model, which gives rise to a tension between liquidity and the benefits of tax-preferred saving.

Even with just those components, the standard techniques used by economists to solve lifetime savings models fail. With multiple accounts, each with different features and limitations, the combination of saving and withdrawal decisions across all of them becomes large very quickly. These decisions depend on both choices and shocks in previous periods. As a result, determining the set of decisions each year that maximize a person's well-being over their life-cycle requires substantial time to solve, even with modern computing power. Furthermore, incorporating constraints on how much a person can save, withdraw, or borrow can make the solution even more difficult to find.

Therefore, we draw on advances in machine learning to determine how much a person should save and withdraw over their life-cycle. While such methods have been available for decades (Hornik, Stinchcombe and White 1989), the economics literature has only recently begun to utilize them to solve complex models (Fernández-Villaverde, Hurtado and Nuño 2019, Maliar, Maliar and Winant 2021, Duarte et al. 2022, Azinovic, Gaegauf and Scheidegger forthcoming). Our model determines how

the optimal net saving rate in the taxable liquid account and the optimal withdrawal strategy from the HSA each year vary as we alter fixed contribution rates to the HSA and illiquid account while working. The illiquid account is converted to an annuity at retirement. We then search for which combination of contribution rates to the HSA and illiquid retirement account while working yields the highest lifetime utility.

Fixing the contribution rate across all working years is helpful from a computational perspective and also represents a simple decision rule that is likely to be useful in practice since we do not observe individuals altering their HSA or DC contribution rates frequently.

Therefore, this approach lends itself to considering simple strategies for how much to save while working. It is well known that many individuals apply rules of thumb, seek guidance from multiple sources, and respond to features that should not matter, like defaults (Thaler and Sunstein 2008), while failing to respond to features that should, like employer contributions (Friedberg, Leive and Cai 2020) and employer matches (Bubb and Warren 2020). The employer setting for both HSA and retirement saving decisions, in an era of increasing employer attention to financial wellness, provides opportunities to offer simple contribution strategies or defaults that work in concert.

To explore how decisions may vary across different types of people, we consider employees with different salaries and different levels of initial assets in the taxable, liquid account. Given differing capacities to access cash on hand, along with our progressive income tax system, it is not surprising that the value of HSAs in conjunction with other savings vehicles differs by income and initial assets. We consider earners who start their career earning $65,000 and higher earners who start their career at $105,000. The lower salary of $65,000 corresponds to roughly the median of earnings from the large university setting studied in Leive, Friedberg and Davis (2022), while the higher salary of $105,000 corresponds to the 75th percentile. In both cases, we assume 3 percent real wage growth every 5 years throughout a person's career. For both salary levels, we model behavior assuming people are endowed either with no liquid assets or with $10,000 in liquid assets. We also separately analyze savings by gender given differences in the life-cycle profile and amount of health spending for men and women.

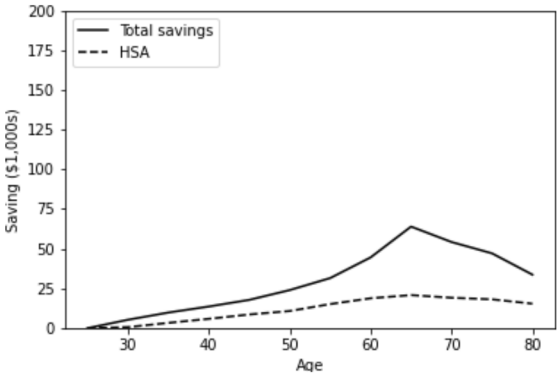
Findings and implications

Our model delivers several findings on the links between HSAs and defined contribution retirement accounts. First, the addition of HSAs to defined contribution accounts is predicted to raise total tax-preferred saving, compared to a situation where people only have illiquid retirement accounts and taxable liquid savings accounts. We observe this pattern for all groups. In our model, the preferred contribution rates to illiquid saving either remains the same or increases slightly, while the maximum contribution is made to the HSA. Relatedly, we observe complementarity between HSAs and illiquid retirement accounts at low to moderate levels of contribution rates. We find at low levels of DC saving, HSAs are complementary to DC accounts but at high levels of DC saving, HSAs are substitutes. Complementarity arises because HSAs provide liquidity to finance health care spending, which allows people to lock up more saving in illiquid DC accounts.

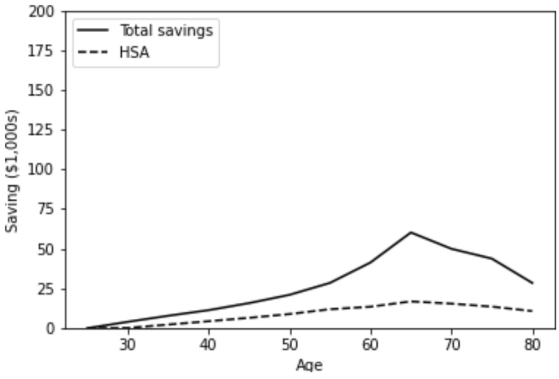
In our model, workers at both salary levels benefit from HSAs. Higher earners benefit more from higher marginal tax rates and higher savings levels, consistent with the empirical patterns observed in tax data (Helmchen et al. 2015). HSAs also offer value to lower earners, providing liquidity insurance that is otherwise difficult to access in current retirement saving vehicles. Optimal saving rates differ mainly by salary, rather than by gender or level of initial assets.

Figure 1. Savings flows over the life-cycle ($)

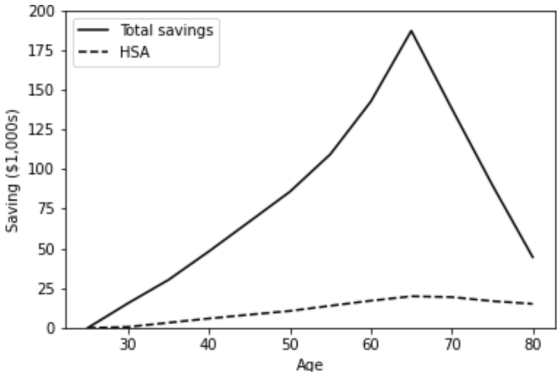
(a) $65,000 salary, men



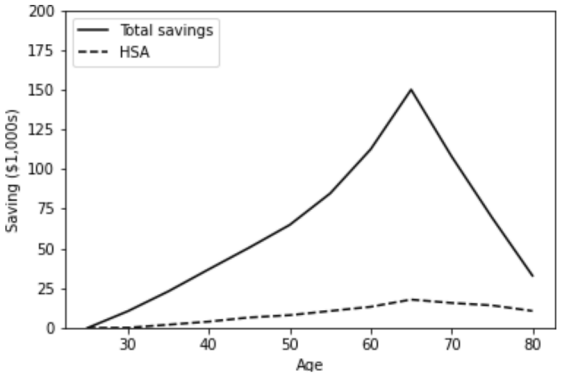
(b) $65,000 salary, women



(c) $105,000 salary, men



(d) $105,000 salary, women



Notes: Figures plot the path of total savings and HSA savings over the life-cycle for the optimal contribution rates from the model. Total savings include balances in the taxable liquid account, illiquid account, and HSA. For all groups, wage growth is set at 3 percent between each 5-year period while working.

Figure 1 simulates the path of total savings (solid line) and HSA assets (dashed line) over time from the model for employees with different salary levels. HSA assets peak at the start of retirement for each group, at the same time that the other assets—which are larger by comparison—also peak. HSAs comprise a substantially larger share of total savings for lower earners than higher earners, since absolute amounts of HSA balances are similar between groups. All groups also withdraw money from the HSA while working. Even though the HSA has superior tax advantages to the illiquid account and medical expenses rise over the life-cycle, the inability to borrow induces people to use some HSA assets to finance health expenses before retirement.

By unifying the analysis of both health insurance and retirement plan choices—often viewed as unrelated—we demonstrate the dual life-cycle savings possibilities and liquidity insurance features of HSAs. Our findings build on research demonstrating the correlation of mistakes across both health insurance and retirement saving domains. These mistakes do not take the form of scrimping on cash outlays; rather, with surprising frequency, individuals who fail to take advantage of employer-matching funds overpay for health insurance by avoiding the HDHP/HSA plan (Leive, Friedberg and Davis 2022), suggesting gains that are possible from considering both decisions jointly. While an important subset of employees lack access to one or both types of employer benefits, our analysis applies similarly to Individual Retirement Accounts (IRAs). Our research also begins to provide an analytical framework to guide the recent policy focus on emergency savings accounts (Beshears et al. 2019), which may particularly suit individuals who face both difficulty committing to a savings plan and also genuine liquidity needs.

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