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## Financial Advisers Miss Mark by Ignoring Dynamic Method

Consumption smoothing puts savings goals within reach

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We've criticized conventional financial planning from the beginning of this series. We've said the industry engages in target practice, promotes consumption disruption, solicits risk, provides quick but erroneous "solutions," and makes outrageously bad saving and insurance recommendations.

In short, we've suggested that advice-givers, particularly large marketing-driven financial institutions, are engaging in financial malpractice.

The Oxford Dictionary defines malpractice as "improper, illegal or negligent professional activity or treatment." We're not suggesting there's anything illegal about the advice being dispensed. But we do believe it is improper and negligent.

When it comes to providing financial advice, everyone from the neighborhood financial planner to TIAA-CREF has a fiduciary obligation to provide the appropriate "standard of care." Economists have spent a century defining and refining the proper standard of care when it comes to financial advice.

But the actuaries, who have developed conventional planning tools, have yet to make contact with consumption-smoothing, even though it's the foundation for the economic theory behind saving, insurance and diversification.

Much of the blame here lies with economists. They've ignored the bad advice being delivered, preferring the comfort of their research work. Imagine doctors doing nothing but research and never leaving their labs. The public would be forced to turn to Abe Lincoln's doctors for their health care.

Economists can prescribe financial behavior, not just describe it. In particular, they are in a position to apply dynamic programming, an advanced mathematical technique that is essential for smoothing a household's living standard without

putting it into debt. Unfortunately, dynamic programming is not something actuaries learn in school.

### **A case study**

To see the need for dynamic programming, let's look at Dan and Elaine Grunberg – a middle-age couple who have significant "off-the-top" expenditures, including mortgage payments, college tuition and 401(k) contributions. Since the Grunbergs can't borrow against their future 401(k) withdrawals, they're forced to accept a lower living standard before retirement.

Let's make this concrete. Dan and Elaine are 35, make \$50,000 each, have two kids, ages 10 and 13, a \$300,000 house with a 20-year, \$2,000-per-month mortgage, a \$3,000 annual property tax bill and \$3,000 in other yearly housing expenses. Each spouse has \$100,000 in a 401(k) and makes annual contributions of 5 percent of his or her salary, which triggers an equal employer match.

The Grunbergs plan to spend \$30,000 per child per year for four years of college. Finally, the Grunbergs have \$50,000 in regular assets, plan to stop contributing to and start withdrawing from their 401(k) at 59, and plan to retire at 62.

According to ESPlanner (Mr. Kotlikoff's company's software), which uses dynamic programming, the household's living standard (per equivalent adult) is \$26,241 before the kids go to college (age 58) and \$31,333 thereafter, after housing costs.

The Grunbergs face not one but two consumption-smoothing problems. They need to smooth their living standard before *and* after age 58. And they need to ensure that the rise in their standard of living at 58 – their consumption disruption – is as small as possible.

To smooth their initial living standard, the Grunbergs need to accumulate \$101,985 before the oldest child starts college. Then, for the next seven years, the Grunbergs will spend down this wealth on college tuition and on their own standard of living. When they make their last tuition payment at age 57, they can finally start saving for retirement, which they can reach with \$114,713 in new savings. These assets, combined with Social Security benefits and 401(k) withdrawals, will support their higher living standard in retirement.

Dynamic programming works by making general plans, starting with the household's last year of life and working backward to the present. The plan for the next to the last year of life is based on the plan for the last year. The plan for two years before the end is based on the plan for the next to the last year, etc.

## **Facing a trade-off**

This technique turns out to be critical for figuring out the intervals during which the Grunbergs are constrained from borrowing as well as determining how much they need to save during each interval. Dynamic programming will also allow them to evaluate the advantage of additional retirement account contributions.

Cash-constrained households – and few aren't – face a trade-off from extra contributions, namely a lower living standard now but a higher one later. In the Grunbergs' case, contributing an extra \$1,000 each to their 401(k) plans lowers their annual living standard before age 57 by 2.6 percent and raises it thereafter by 4.5 percent. This is an 8-second calculation with the right dynamic program that's impossible to make without it.

So what's the bottom line as we conclude this series on financial advice and consumption-smoothing? It's an appeal to advice-givers to either do it right or get out of the business. It's also a warning to the public that most professional advice is not worth the taking.

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