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Privatized pensions: an irrational choice

[Daniel Kahneman](#), [Terrance Odean](#) and [Brad Barber](#)

Classical economics is wrong: we are not all rational agents. So empowering people to make their own investment decisions, like in private pensions, could result in catastrophe, say Daniel Kahneman, Terrance Odean and Brad Barber

In a common nightmare, the pilot comes to the back of the plane and asks you to take the controls. He hands you a short instruction manual, warns you not to trust your intuition when flying in clouds, and informs you that he is going to sleep.

This scenario has little appeal. Yet several governments are contemplating privatized social security programmes in which their citizens will be required to make crucial financial decisions for which they are as badly prepared as they are for piloting a plane. Have these governments been adequately warned about the risks that such schemes pose to their participants? An aspect of training in economics – the assumption of flawless rationality of agents – might play a role in the neglect of these risks.

In a perfect world

Students of introductory mechanics are taught about the behaviour of physical bodies in a frictionless world. Students of introductory economics are taught about the behaviour of markets populated by rational agents, endowed with a perfect ability to make use of uncertain information. The neglect of the complexities of friction and bounded rationality makes for elegant mathematics and for simple laws in both mechanics and economics.

But a difference appears when the theories are applied to the real world. Friction is unlikely to be neglected by the engineers who design roads, but the implications of bounded rationality for social engineering are often ignored.

The adequacy of the rational-agent model as a description of the behaviour involved in making choices has been actively debated for several decades. Early challenges to the model – in the prospect theory developed by Daniel Kahneman and Amos Tversky and in much other work – relied on laboratory demonstrations with only hypothetical, or low, monetary stakes.

Many believers in the rational model were not convinced: they argued that perfect rationality would prevail for decisions that involved weightier consequences and,

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furthermore, that efficient markets would protect investors from systematic pricing errors. Thus, they argued, the rational model could be retained as a description of economic behaviour.

However, recent empirical research in behavioural economics has indicated that people make systematic errors with their actual investments, leading to substantial reductions in investment returns and economic welfare. Like friction in mechanics, departures from perfect rationality have consequences that are too large to be ignored.

Average worker, poor fund manager

Throughout the industrialized world, countries are considering privatizing their social security programmes, and corporations are moving from defined benefit pension plans to defined contribution accounts. Thus workers are increasingly expected to make financial decisions that will determine their standard of living in old age. We are not optimistic that privatization will provide for adequate retirement incomes. Research indicates that decision biases, a lack of understanding of financial markets and too much personal discretion are likely to turn average workers into bad managers of their retirement accounts – to an extent that should not be ignored in discussions of privatization policy.

People tend to overestimate their abilities and to have too much confidence in their hunches and guesses. If, for example, you ask a group of people to rate their own driving abilities, you will find that most consider themselves to have above-average skills. In financial markets, one consequence of overconfidence is that individuals who manage their own accounts trade too often. When these investors make changes in their portfolios, the changes are costly: the stocks they buy, on average, substantially underperform those they sell.

The more ideas investors have, the smaller the returns they earn. Active investors underperform buy-and-hold investors; and men, who tend to be more overconfident in their financial abilities than women, churn their accounts more actively than women, thereby significantly reducing their portfolio returns.

Trading losses of individual investors are economically significant. In Taiwan, for example, aggregate trading losses of individual investors – including commissions and transaction taxes – are equivalent to 2.2% of the gross domestic product and reduce average annual returns by 3.8 percentage points.

Buying on past performance

When it is easier to trade, people trade more, but not better. Investors trade more actively, more speculatively, and less profitably after going online than they did before. Participants in 401(k) schemes (self-select pension plans offered by US companies to their employees) make more changes to their portfolios when they can do so online. There is rarely a good reason for people to trade actively in their retirement accounts. Although fully rational investors can only benefit from greater ease of trading, actual investors are likely to be worse off.

People treat small samples as if they were representative of the underlying distribution. In financial markets, the underestimation of statistical fluctuations leads investors to chase performance. They buy mutual funds and stocks that did well the previous year because they expect past performance to be repeated, contrary to much evidence that the year-to-year correlation of fund performance is close to zero. This preference actually exposes investors to risk because funds with the most extreme returns tend to be less well diversified.

Investors are drawn not only to funds with positive past performance but to those that are heavily marketed. When Sweden launched its private social security accounts, the least knowledgeable citizens were most influenced by non-informative mutual fund advertising. American investors funnel proportionately more money into mutual funds that are marketed aggressively.

The combination of investor insensitivity to fees, responsiveness to marketing and eagerness to chase trends encourages mutual fund companies to charge high fees, to spend heavily on marketing and to launch specialized, poorly diversified funds. Thus investors get lower average net returns and greater potential variation in retirement wealth.

Individual investors often hold underdiversified portfolios. Many people simply do not understand basic portfolio theory and the risk-reducing advantages of diversification. Others are overconfident in their ability to choose winning investments and so see little need to diversify.

The implications for privatization policy are clear: giving individuals the option of investing in individual stocks rather than mutual funds is likely to produce inferior outcomes and wider variation in retirement wealth.

Workers in several countries already have the opportunity to control a fraction of their retirement wealth, making it possible to evaluate their performance against standards of economic rationality or even ordinary prudence. Here again, the evidence is rather discouraging. The findings reflect familiar weaknesses: hasty and superficial consideration of decisions, procrastination, and weakness of will. The degree to which these weaknesses dominate choices that are of great significance in an individual's life still comes as a surprise – especially in the context of the standard model of rational economic agents.

Decisions, decisions

Often the first decision faced by a worker who is offered a personal retirement account is whether to participate. At most US companies, employees must make a phone call or fill out a form to enrol in the 401(k) plan. Although the economic advantages of tax-deferred savings are substantial, many workers postpone enrolling for months or years. If enrolment in the 401(k) plan is automatic and employees have the option of opting out, rather than in, participation is much higher. When surveyed, most employees report that they are saving too little and many intend to raise their 401(k) contribution rates within the next two months. Despite good intentions, employees are slow to increase savings and often simply accept the plan's default savings rate. When default rates are set higher, employees save more.

In addition to opening a personal retirement account and choosing a savings rate, a worker must choose an asset allocation. The importance of this decision is obvious, but few workers have the understanding of financial markets that is needed for an informed choice of allocation. When faced with the confusing decision problem, many will simply accept the default allocation provided by their plan.

When Sweden instituted private social security accounts, 33% of participants chose the default allocation despite the government urging them not to do so. The proportion of default choices rose to 93% three years later, after the government stopped its campaign. Some workers possibly believe that the default allocation is the option recommended by their government or company; others are simply avoiding a difficult decision.

Employees who do not accept 401(k) default asset allocations often choose underdiversified portfolios. Many invest heavily or solely in their employer's stock. No economist would advise an employee to invest a

substantial portion of retirement savings in the employer's stock. Indeed, if people behaved like the rational agents of economic models, no employee would do so. Yet one-third of all 401(k) investments are in the stock of the employing company, and 100% of many 401(k) accounts are so invested. Other employees adopt a mechanical rule of allocating their assets equally among the options they are offered. When employees adopt this "1/n rule" (as the economists Shlomo Benartzi and Richard Thaler named it), the proportion of their wealth that is invested in equities or in bonds is substantially influenced by the representation of these two types of funds in the options offered by their company.

One might expect investors to learn from their mistakes, but financial markets are unreliable teachers. In volatile markets, investors often mistake luck for skill. Thus successful investors are likely to become overconfident and to take larger subsequent risks.

An old Wall Street adage admonishes investors to "not confuse brains with a bull market". Yet bull markets, such as that of the late 1990s in the United States, are invariably accompanied by frenzied, speculative trading. Saving for retirement, like flying an aircraft, is no skill to learn by trial and error.

When Enron collapsed, many of its employees had their entire 401(k) savings invested in Enron stock. These employees lost both job and savings. They may have learnt a valuable lesson about diversification but, for those nearing retirement age, this lesson came too late and at far too high a cost.

An illusion of control

Privatized social security programmes are often politically promoted as opportunities to give citizens personal control over their own retirement savings. However, the control promised by privatized social security programmes is illusory. People get control over which securities they buy and sell, but no control over what they – and we – should really care about: their portfolio returns and the security of their retirement. When people are psychologically disposed to make poor trading decisions, and insufficiently educated to do otherwise, control is as much an opportunity to do harm as to do good.

If people behaved as predicted by classical economics, investors would buy and hold well-diversified portfolios, would only trade when there were benefits to be expected from doing so, and would ignore uninformative

advertising while paying close attention to transaction costs and fees. Workers would save enough for retirement and would be unaffected by the default options in their retirement plans.

However, in the world in which we live, individual investors trade too often, underdiversify, make poor security choices, and pay too much attention to past performance and advertising, and not enough to fees. Employees save too little, underdiversify, accept default savings rates and accept default asset allocations.

These departures from rational behaviour have clear implications for the design of privatized social security plans. Such plans should discourage active trading. If savings rates are optional, default rates should be set adequately high. Plans should offer well-diversified, low-fee mutual funds as default choices. Workers who wish to make other choices may do so; but good options should be available to those who do not choose. If we are going to make people fly their own planes, we should expect them to rely on the autopilot, and it must be designed accordingly.

Daniel Kahneman, Terrance Odean and Brad Barber

Daniel Kahneman is professor of psychology at Princeton University, and is co-winner of the 2002 Nobel Prize for economics. His co-authors Terrance Odean and Brad Barber are professors, respectively, at the University of California, Berkeley, and the University of California, Davis.

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