

Retirement Saving and Investing: a Behavioral Finance Perspective

Shlomo Benartzi

Associate Professor, The Anderson School at UCLA

Partner, Benartzi & DiCenzo, LLC



Overview

- Introduction: behavioral science and policy making
- Participants as money managers: are they doing a good job?
 - Examples: naïve diversification strategies and behavior during the bear market.
- How well do the existing solutions help plan participants?
 - Example: financial education
- The role of managed savings and investing.



Behavioral Science and Tax

- In China, many restaurants did not issue receipts and did not pay tax.
- Any suggestions for a behavioral solution?



Behavioral Science and Tax (Cont.)



Behavioral Science and Organ Donations

- In Singapore, people are presumed to consent to allow their organs to be used, after death, for the benefit of others (unless they explicitly refuse to).
- In the U.S., those who want their organs to be available for others must affirmatively say so.



Behavioral Science and Organ Donations (Cont.)

- In nations like Singapore, over 90% of people make their organs available.
- In the U.S., less than 20% of the people make their organs available.

Source: Thaler and Sunstein



Behavioral Science and Retirement Savings

- In the U.K., there has been a shift to opt-in DB plans, where employees must explicitly join the plan, even if funded by the employer exclusively.
- In such plans, only half (51%) of the eligible employees end up signing up.

Source: Prof. D. Blake; DWP



Naïve Diversification Strategies in Retirement Saving Plans

(American Economic Review, 2001)

Shlomo Benartzi

The Anderson School at UCLA

Richard Thaler

University of Chicago

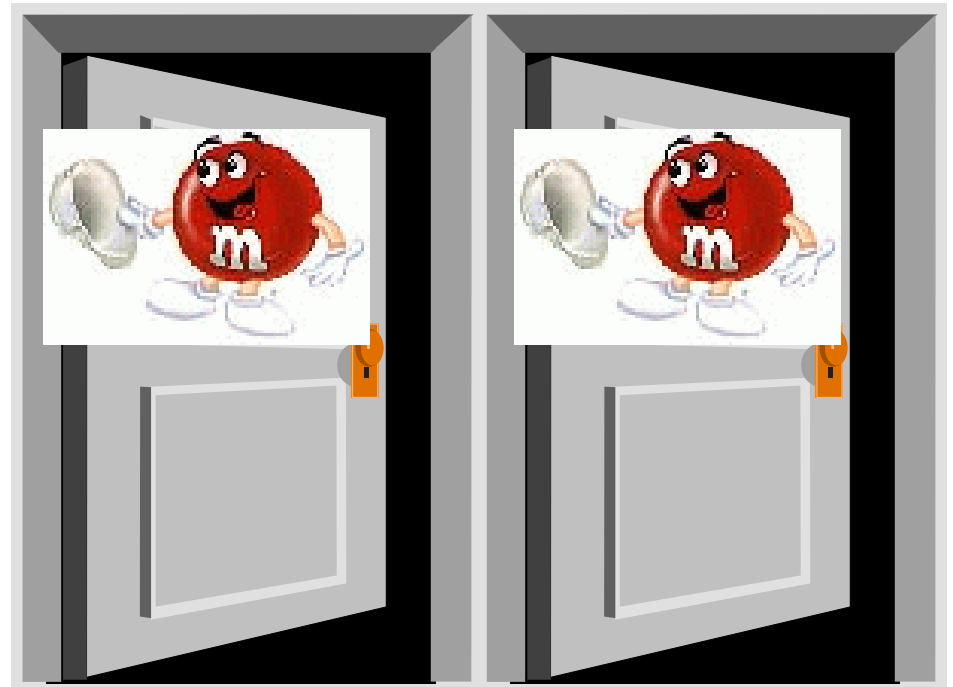
Sponsors: TIAA-CREF and DOL



The Diversification Heuristic



Benartzi



Retirement Saving and Investing



Implications for Retirement Savings

- The “1/n” heuristic.
 - The most popular allocation among TIAA-CREF investors was 50-50.
 - TWA pilots are offered 5 stock funds and 1 fixed income fund. They invest 75% in stocks.
UC employees are offered 1 stock fund and 4 fixed income funds. They invest 34% in stocks.



Harry Markowitz

- “I should have computed the historical co-variances of the asset classes and drawn an efficient frontier.”
- Instead ... “I split my contributions fifty-fifty between bonds and equities... My intention was to minimize my future regret.”

Source: Money, January 1998



Offering UC Employees the TWA Plan

- Method
 - Employees were asked to allocate contributions between five funds (A-E) based on a verbal description of the funds.
 - The number of stock funds was either one or four (between subjects).
 - Subjects were motivated by a \$500 lottery.



UC Results: Mean Allocations

Multiple Fixed Income Funds (N=179)

Money markets	Savings	Stable value	Bonds	Broad equity	Total equities
14%	14%	11%	18%	43%	43%

Multiple Equity Funds (N=169)

Fixed income	Conser. equity	Equity index	Growth stock	Int'l equity	Total equities
32%	15%	16%	26%	11%	68%

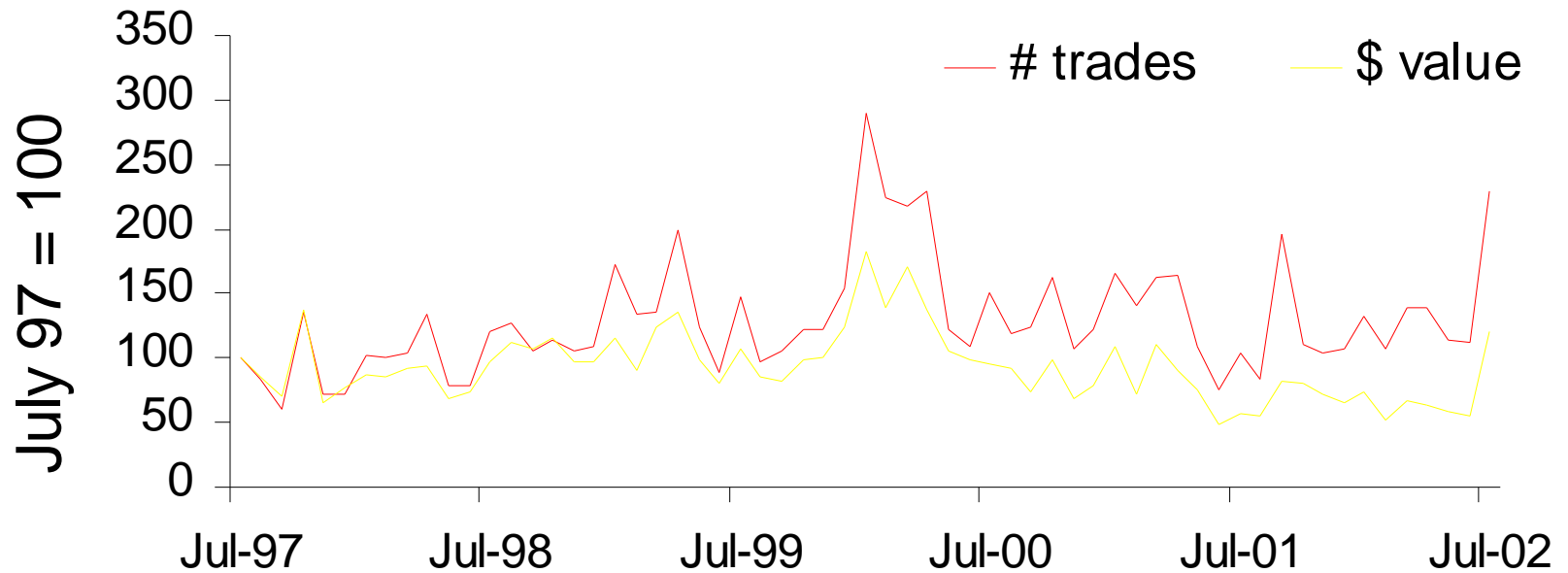


Summary

- Participants in retirement saving plans use the diversification heuristic in making their asset allocation decisions.
- The array of funds offered by the plan affects participants' choices.



Participant Trading Activity

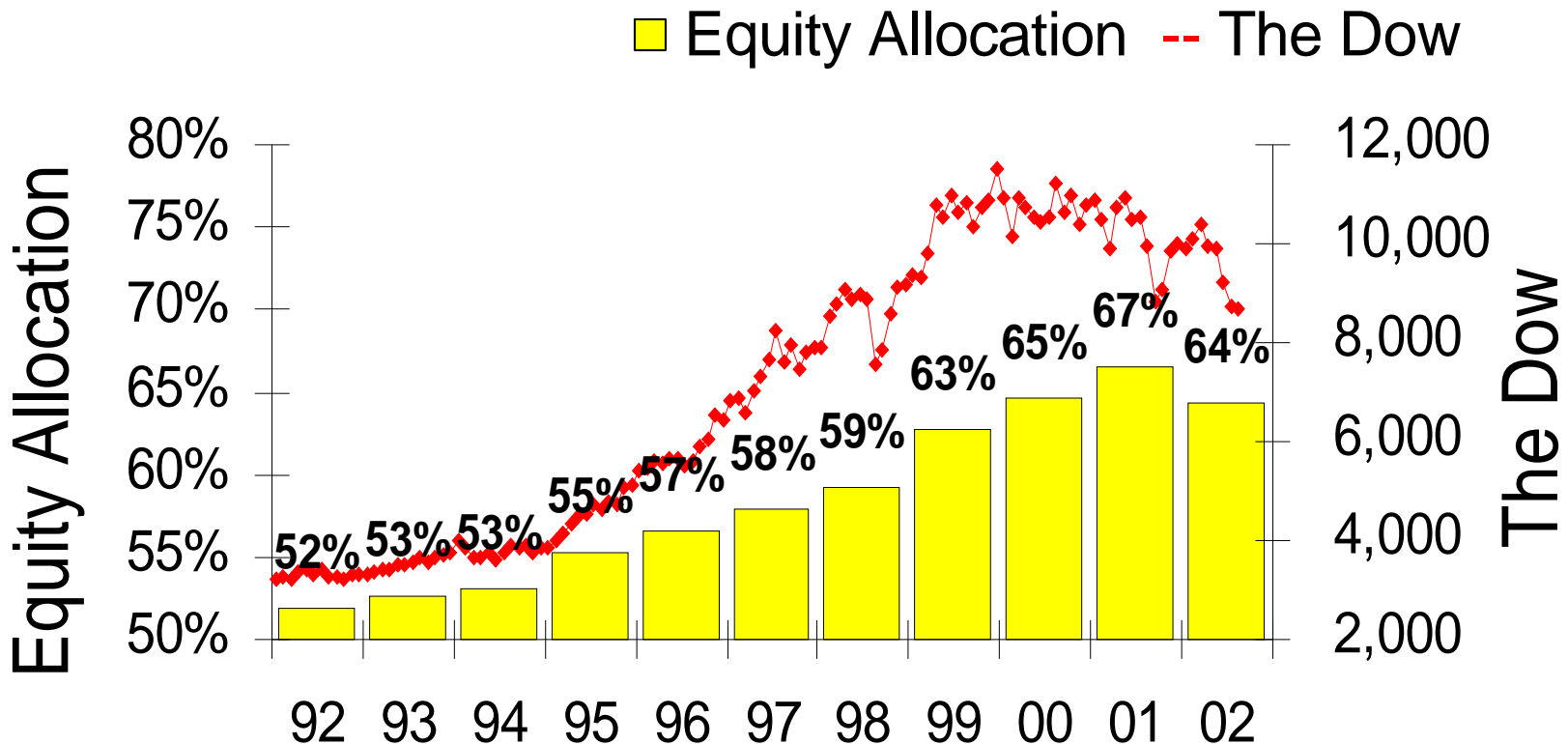


Most Participants Have Not Reacted to the Bear Market

- One explanation, education and communication efforts have taught participants to think long-term.
- Another explanation, inertia prevails.
- Could we devise a test to compare these two explanations?

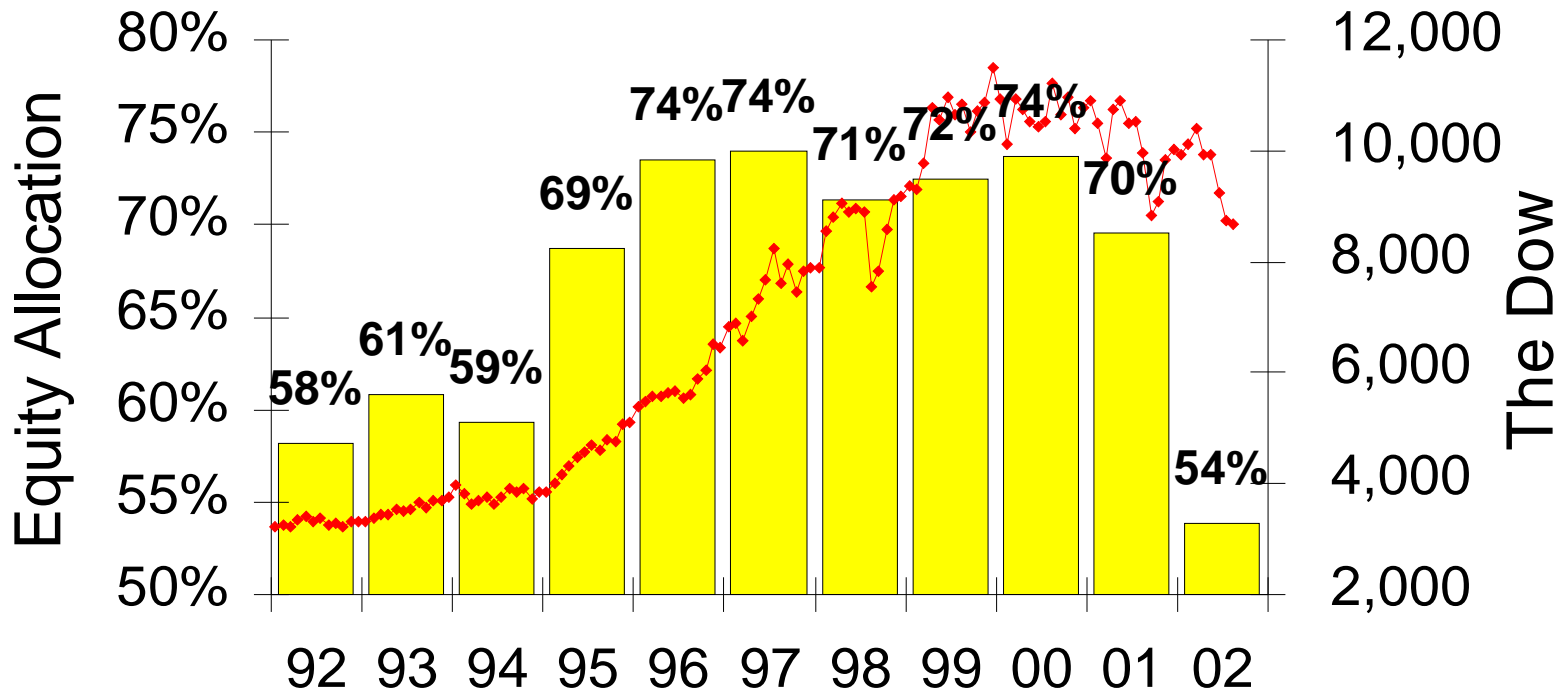


Allocation of Future Contributions: “All” Participants

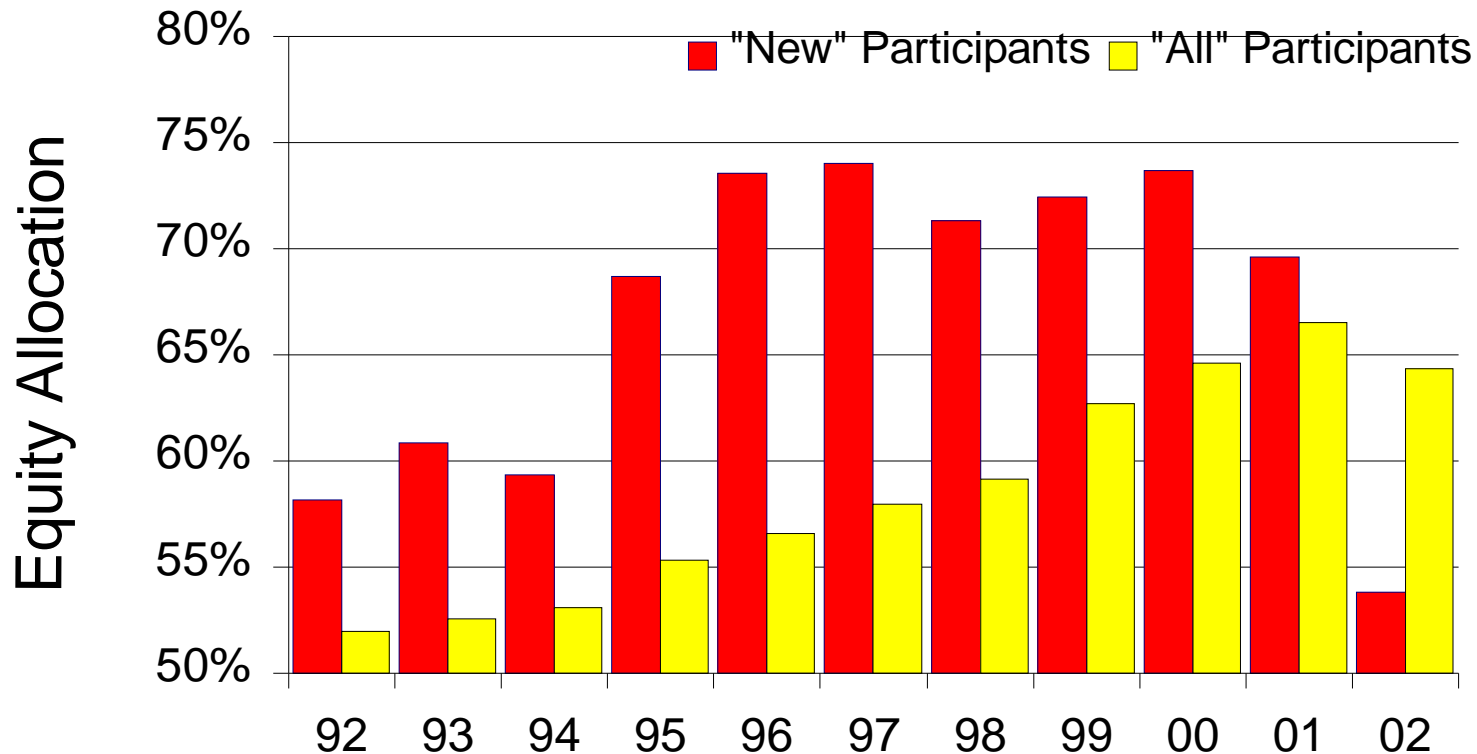


Allocation of Future Contributions: “New” Participants

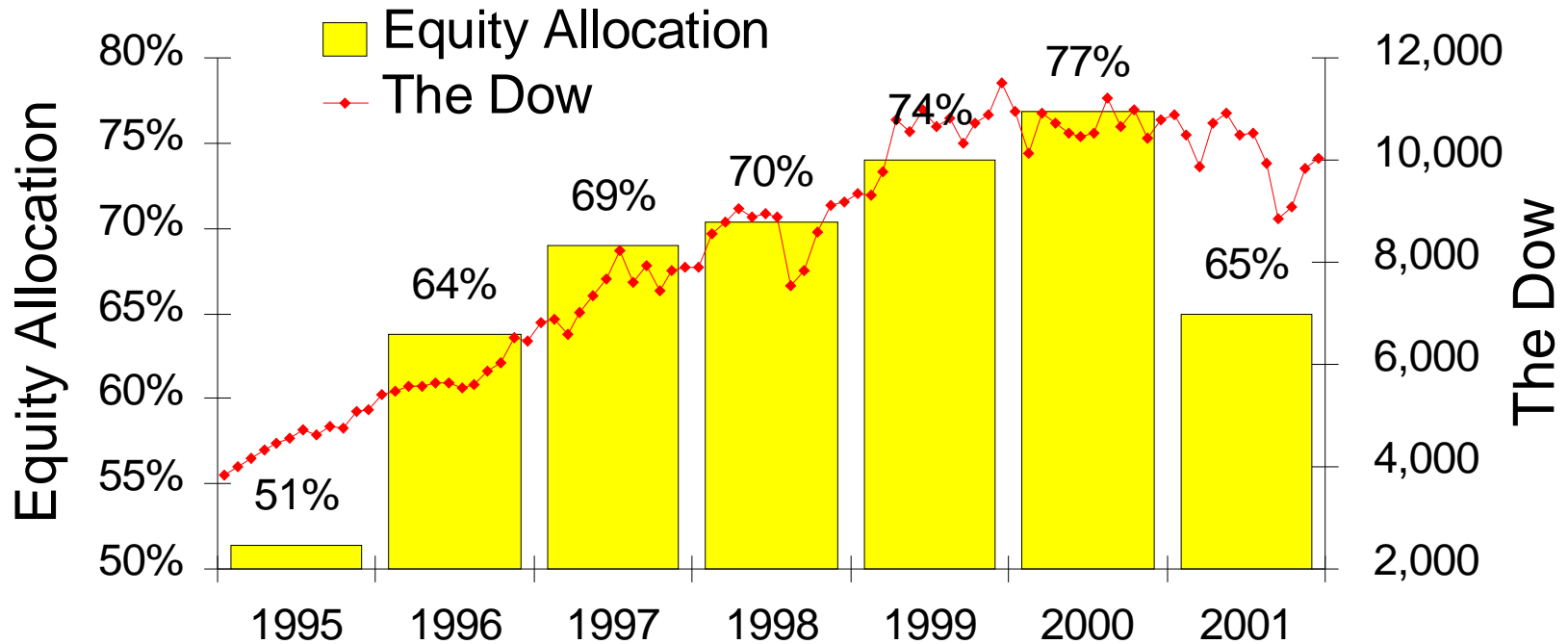
■ Equity Allocation -- The Dow



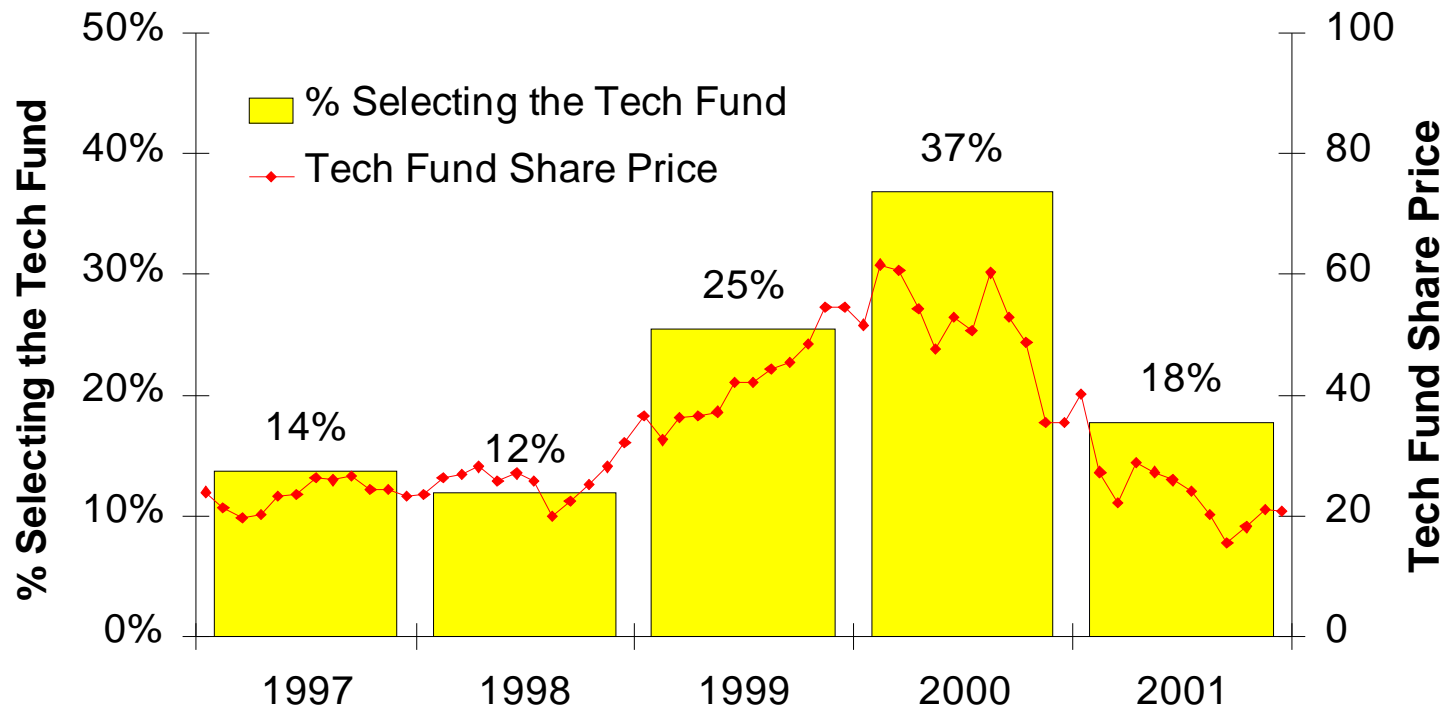
Allocation of "New" vs. "All" Participants



More Data on Future Contributions: New Participants



Percentage of New Participants Selecting the Tech Fund

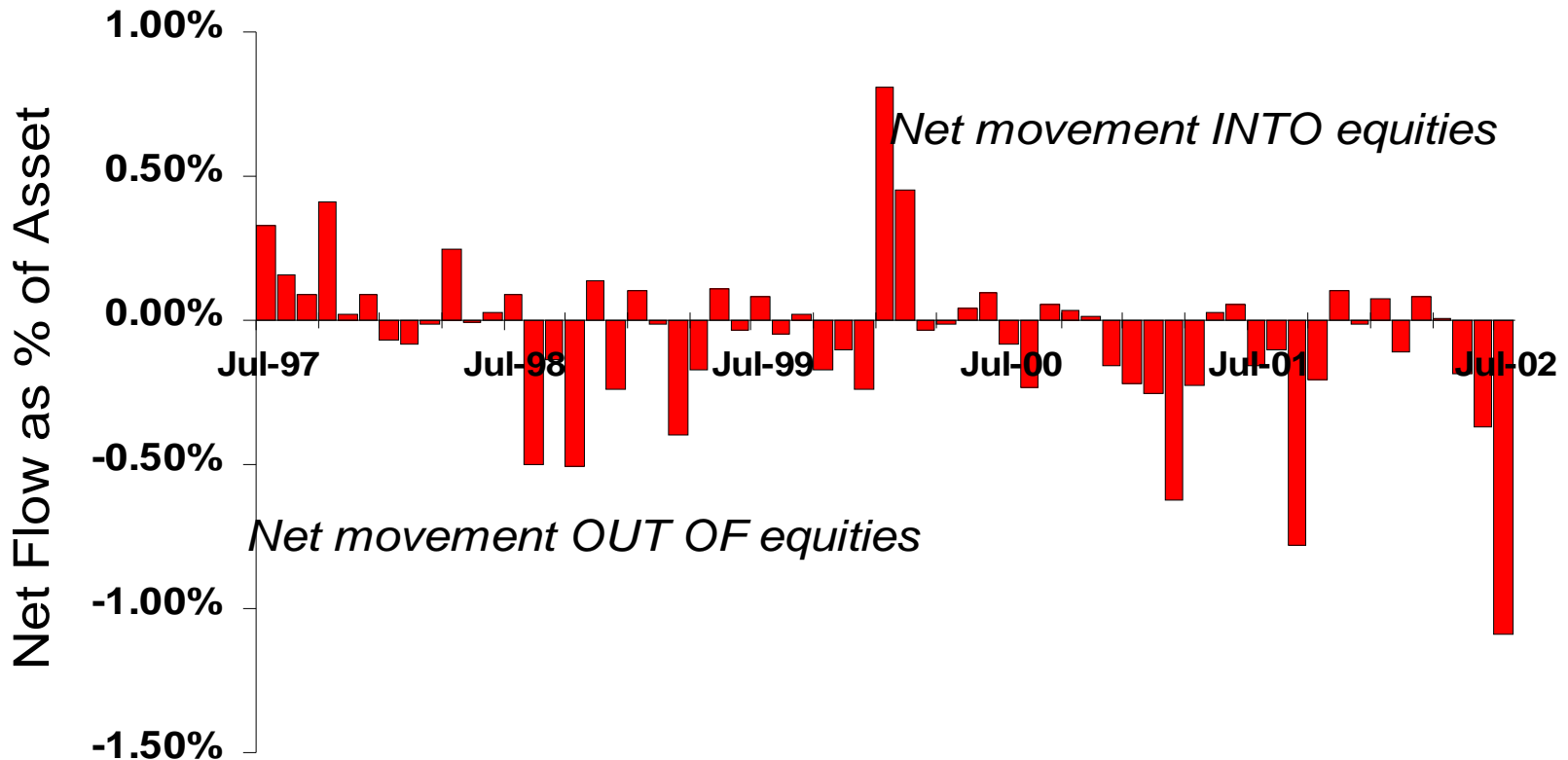


Conclusions

- While most participants seem to follow inertia rather than long-term planning, new participants have reacted to the bear market.
- Next, how do the few participants who actually trade reallocate their funds?



Negative Rebalancing (or “Buy High – Sell Low”)



- Summary: participants do not seem to do a good job as money managers. They often buy high and sell low.
- Next: could financial education provide an effective solution?



Financial Education and 401(k) Savings

	Seminar attendees		Non-Attendees
	Planned Change	Actual Change	Actual Change
Non-Participants			
Enroll in 401(k) Plan	100%	14%	7%
Participants			
Increase contribution rate	28%	8%	5%
Change fund selection	47%	15%	10%
Change asset allocation	36%	10%	6%

Source: Madrian and Shea



The 401 (Know) Index

- A very large employer spent millions on financial education.
- Participants' knowledge was measured before and after the education campaign using 15 yes/no questions.
- The percentage of correct answers prior to the education campaign was 54%.



The 401 (Know) Index

- What was the percentage of correct answers at the end of the education campaign?
 - 55%
 - 60%
 - 70%
 - 80%
 - 90+



- Summary: financial education is not very effective in changing participant behavior.
- Next: could managed accounts provide an effective solution? Or, how much is investor autonomy worth?



How Much is Investor Autonomy Worth?

Shlomo Benartzi

The Anderson School at UCLA

Richard Thaler

University of Chicago

Sponsored by: Financial Engines, ProManage and
SwedishAmerican Health Systems



Retirement Plans Offer More Choice

- 401(k) plans offer an average of 11 investment funds (Hewitt Associates, 1999).
- The Swedish social security system offers 450 investment funds.
- Can an investor have too many options?



Choice Comes at a Cost

- Administering individual social security accounts with some choice will cost \$40 per participant per year (Diamond, forthcoming).
- With the commonly proposed deferral rate of two percent, the administrative costs could exceed the deferrals.



Choice Could Increase Procrastination

- Iyengar and Lepper (2001) set sampling booths with either 6 or 24 jams.
 - More shoppers were attracted to the booth displaying 24 flavors (60% vs. 40%).
 - However, those visiting the extensive-choice booth rarely ended up purchasing jam (3% vs. 30%).



Choice and Utility are not Perfectly Correlated

- The Menu at Charlie Trotter's
 - Grand Menu (\$115)
 - Vegetable Menu (\$100)
- Yet, diners indicated its their favorite restaurant (Zagat, 2001).



Study I

- Main question: do investors prefer the portfolios they have constructed themselves when compared with the average or median portfolio of their co-workers?
- Setting: UCLA employees investing for retirement.



Methodology

- Collect demographic and investment data from UCLA employees.
- Project the range of retirement income each employee could expect from her own portfolio, the sample average, and the median using Financial Engines.
- Ask the employees to rate the three unlabelled portfolios.



Stimuli

	Investment Program A	Investment Program B	Investment Program C
Upside Income	\$60,300	\$81,000	\$95,900
Median Income	\$23,800	\$26,800	\$25,600
Downside Income	\$9,590	\$9,270	\$7,740



Results: Mean Ratings

N	Participants' own portfolios	The average portfolio	The median portfolio
157	3.07	3.05	3.86

- Only 21% of the participants prefer their own portfolios to the median.



Study II

- Main question: do the results hold for investors who explicitly elect to construct their own portfolios?
- Setting: employees of SwedishAmerican Health Systems who opted out of the managed accounts.



Methodology

- Obtain demographic and investment data from record keeper.
- Project the range of retirement income each employee could expect from her own portfolio, the sample average, and ProManage using Financial Engines.
- Ask the employees to rate the three unlabelled portfolios.



Results: Mean Ratings

N	Participants' own portfolios	The average portfolio	Managed accounts
59	2.75	3.03	3.50

- Only 20% of the participants prefer their own portfolios to the managed accounts (which they declined).



Alternative Explanations

- The participants pick the wrong point along the efficient frontier.
 - Could we help by matching individual preferences and portfolios?
 - Only if people's underlying preferences are well-defined.



Study III

- Main question: do investors have well-defined preferences?
- Setting: UCLA employees choosing among (hypothetical) social security programs.



Background

- Extremeness aversion (Simonson and Tversky, 1992)
 - When choosing between two cameras costing \$169 and \$239, 50% prefer the \$239 camera.
 - However, when choosing among three cameras costing \$169, \$239 and \$469, 57% prefer the \$239 camera.



Methodology

- There are four investment programs:
 - A (safest), B, C, and D (riskiest).
- Different people view different sets of programs, and then indicate their 1st, 2nd and 3rd choice.

{A **B** C} (middle = B)

{B C} (no middle)

{B **C** D} (middle = C)



Stimuli

Retirement Income per Month (Pretax in Today's Dollars)

Program A Program B Program C

Favorable market
conditions

\$900

\$1,100

\$1,260

Unfavorable market
conditions

\$900

\$800

\$700



Results

Condition	N	Subjects Preferring C to B
{A, B, C}	96	29.2%
{B, C}	80	39.0%
{B, C, D}	100	53.8%



Summary

- Most participants do not gain much by being able to choose their own portfolio.
 - Many find the median portfolio more attractive than their own portfolios.
 - Similarly, Iyengar and Lepper (2001) report that people choosing from a relatively small set of chocolates find their choices tastier.



Summary (continued)

- Well-constructed managed accounts could provide an effective solution for portfolio selection.
- However, what about the saving rates?



Save More TomorrowTM: Using Behavioral Economics to Increase Employee Savings

Richard Thaler

University of Chicago

Shlomo Benartzi

The Anderson School at UCLA



Psychological Principles to Keep in Mind

- Many people want to save more, but lack the self-control.
 - Choi et al find that 2/3 of 401(k) participants think their saving rate is “too low”.
- Self-control restrictions are easier to accept if they take effect in the future.
 - Present biased preferences (e.g., Laisbon, O’Donoghue and Rabin).



Psychological Principles to Keep in Mind (Cont.)

- People are very sensitive to perceived losses in their welfare.
 - Losses weigh twice as much as gains.
 - Losses are computed in nominal dollars.
- Huge inertia.
 - Many never changed their allocations.
 - Married employees still list their mother as their beneficiary.



One Prescription: Automatic Enrollment

- The default option is changed: participants are enrolled into the plan unless they explicitly opt out.
- Good news: enrollment jumps from 49% to 86% (Madrian and Shea).
- Bad news: most employees adopt the default saving rate of 3% (and the money market fund).



Our Prescription: the SMT Program

- People pre-commit to save more in the future.
- Saving increases are (hopefully) synchronized with pay raises.
- People remain in the program unless they opt out (could also be combined with automatic enrollment).

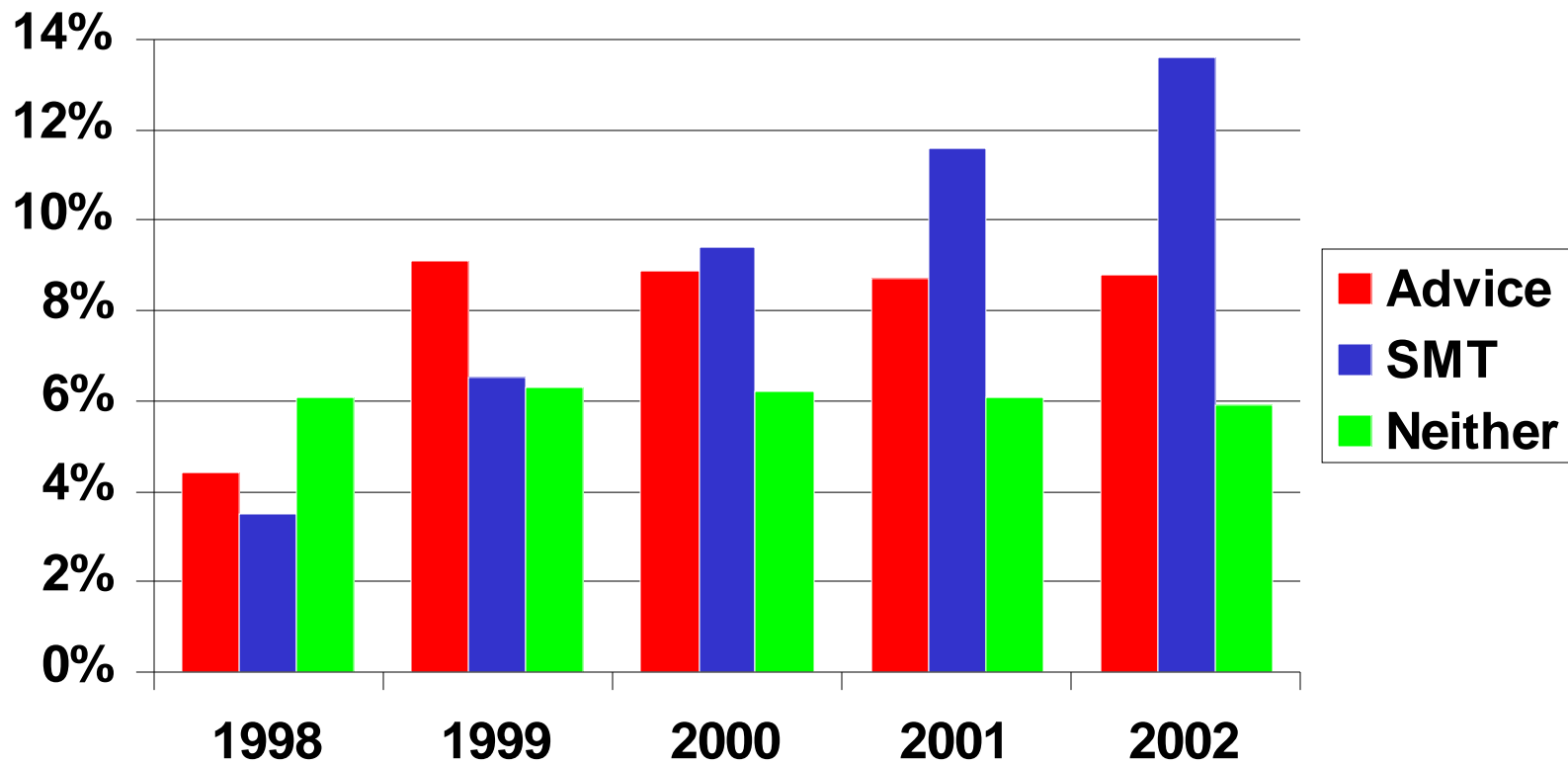


Participation Data

Received advice	286
Accepted the advice	79
Offered the SMT plan as an alternative	207
Accepted the SMT plan	162
Bailed out of SMT before 2 nd pay raise	3
Bailed out of SMT before 3 rd pay raise	23
Bailed out of SMT before 4 th pay raise	6



Saving Rates



Saving Rates for Ispat Inland (2nd Case)

	ALL	Active		Eligible	
		SMT	Non-SMT	SMT	Non-SMT
N	5,817	615	3,197	165	1,840
Pre-SMT	5.5%	7.6%	8.6%	0.0%	0.0%
1 st Pay Raise	5.8%	9.4%	8.5%	2.3%	0.3%



Preliminary Data from Philips Electronics (3rd Case)

- Overall, 27% of those offered the program, made a positive election to join.
- 46% of those attending an education seminar joined SMT.
- 81% of those meeting with a financial advisor joined SMT.



Conclusions

- The SMT program has the potential to increase saving rates dramatically.
- The program was devised using basic psychological principles and it demonstrates the ex-ante predictive ability of behavioral economics.
- Policy makers should incorporate lessons from Behavioral Science.



President Bush as a Behavioral Economist

- The President is proposing to reform the U.S. Social Security system.
- Specifically, workers born 1950 or later will have the option to contribute 4% of earnings to personal accounts, creating an “ownership society”.
- Objective is largely psychological—make people *feel* like capitalists.



President Bush as a Behavioral Economist

- Iyengar and Jiang find that lots of choices could be de-motivating.
- For every 10 funds added:
 - Participation rate drops by 2%.
 - Allocation to money market funds increases by 3.9%.
- Bush envisions a small number of low-costs funds similar to the Federal Thrift and Savings Plan.



President Bush as a Behavioral Economist

- Benartzi and Thaler (2002) find that 4 out of 5 individuals prefer a lifecycle fund to their own self-constructed portfolios.
- Bush envisions people automatically being switched to a lifecycle fund at age 47. Those who opt-out have to state they realize the risk of investing on their own.

