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Psychology and Financial Markets: Richard H. Thaler Addresses the Investment Section

by Luke N. Girard

Editor's Note: See Victor Modugno's article on page 11 for more comments on the annual meeting.

Richard H. Thaler is the Robert P. Gwinn Professor of Behavioral Science and Economics at the University of Chicago. He is also well known for writing the best-selling book *The Winner's Curse: Paradoxes & Anomalies of Economic Life*. Dr. Thaler addressed the Investment Section at the Society of Actuaries meeting in New York on October 20. This article provides a review of his talk.

Thaler challenges perceived economic wisdom by revealing many paradoxes that abound. Modern financial economics is based on two rationality assumptions. These assumptions are: (1) rational expectations and (2) expected utility maximization. Over the past 20 years, evidence is mounting that these assumptions are descriptively inaccurate. He mentioned several important results from studies in the psychology of decision making. These include "overconfidence," "anchoring and adjustment," "mental accounting" and "framing."

We all know that overconfidence leads to overpricing which then leads to surprise and then regret. However, Thaler brought this home by asking the audience to rate themselves on their ability to get along with people. This rating was determined relative to the others attending the session. If the attendees had an unbiased evaluation of their ability, then about half the group

would be rated above the 50th percentile and half would be below. As it turned out, 86% of the attendees rated themselves above the 50th percentile. On the bright side, Dr. Thaler did say that the group as a whole had a more realistic expectation than other groups he had tested. Yet, this result does show that we exhibit overconfidence in our abilities relative to our peers, that is, we're still human after all.

Bias in earnings estimates can be introduced by anchoring and adjustment. As example, Thaler provided a couple of tests one of which he calls "The Dating Heuristic." Here, two questions were asked of a student sample: (1) "How happy are you?" and (2) "How often are you dating?" If these two questions are asked in this order, their correlation .12. If they are asked in reverse order, their correlation is .66. This should give us pause when interpreting any survey results, political or economic.

Thaler illustrated mental accounting with the "The House Money Effect." Here investors exhibit different risk aversion depending on whether they are betting their "own money" or "house money." This is also called the two pocket theory of gambling. See the table below and note that the probability distribution of the payoffs for both situations is exactly the same.

For framing, Thaler used the example of consumer attitudes toward price increases. In this example, a shortage has developed for a popular model of automobile and customers



Richard H. Thaler addresses the Investment Section.

must now wait two months for delivery. In Case I, the dealer has been selling the cars at list price and now raises the price by \$200. In Case II, the dealer has been selling the cars at a discount of \$200 below list price and now sells them at list price. In test results, 71% consider the pricing action in Case I to be unfair while 42% consider Case II unfair.

Thaler addressed the "Equity Premium Puzzle." That is, the real return on stocks is about 7% while it is 1% for bonds, so why is any long term investor such as a pension plan willing to hold bonds? Thaler attributes this to mental accounting and loss aversion. Investors exhibit loss aversion in that they weight losses greater than gains by about 2.5 to 1. Also, between evaluation dates, they aggregate gains and losses. That is, they do not look at results between evaluation dates which diminishes risk aversion. Thaler calculated how often investors would need to be evaluating their portfolios in order to be indifferent between investing in bonds and stocks. The answer is 13 months.

Thaler also addressed asset allocation behavior in defined contribution plans where the "1/N Heuristic" is

(continued on page 10, column 1)

Situation I	Situation II
You have won \$30. Now choose either:	Choose between:
A. A 50% chance to win \$9 and a 50% chance to lose \$9.	A. A 50% chance to win \$39 and a 50% chance to win \$21.
B. No further bets.	B. A sure gain of \$30.
Result: 70% choose A	Result: 43% choose A.

Psychology and Financial Markets: Richard H. Thaler Addresses the Investment Section *continued from page 9*

Rational Expectations	Observed Facts
Changes in prices reflect new information.	On October 19, 1987, price changes did not reflect new information.
Everyone buys the market portfolio.	Most portfolios are poorly diversified.
Virtually no trading should occur.	Most equity funds are actively managed and turnover is high.
Prices are unpredictable.	Small firm, prior losers, low p/e and low price to book all outperform index. Also, price drifts after announcements of earnings, dividend and share repurchase.
Only non-diversifiable risk is priced.	CAPM Beta barely matters.
When dividends are taxed higher than capital gains, firms will repurchase shares rather than pay dividends.	Dividends are the norm. When firms announce dividend increases, share prices increase.

observed. That is, the allocation to stocks will tend to follow the number of stock funds being offered relative to the number of bond funds being offered. For example, in the TIAA-CREF plan, there are only two options, stocks and bonds, and the most popular allocation is 50-50. In the TWA pilots plan there are five stock funds and one bond fund and participants invest 75% in stocks. The University of California plan has one stock fund and four bond funds and participants invest 34% in stocks.

Three morals of human behavior:

1. People are more sensitive to losses than to gains.
2. Opportunity costs are under weighted relative to out of pocket costs.
3. The way a decision is framed alters the choice.

So, why do the rationality assumptions prevail? There are two lines of

defense. First, market forces somehow induce participants to act rationally. Second, people behave "as if" they are rational, even though they are not rational. For example, an expert billiards player plays "as if" he knows the laws for physics. With respect to market forces, stupidity does not always create arbitrage opportunities. For example, "Closed-end funds almost always trade at a discount relative to net asset value." However, arbitrage is not possible because the discount could become wider.

As for the "as if" defense, we need to judge theory by its predictions. The table above shows the predictions of the rational efficient market framework and compares this to real world observations.

Thaler concludes that (1) the assumptions are unrealistic and the predictions are poor. It's time for a new theory. (2) There is, as yet, not a fully

developed behavioral equivalent to the CAPM. He states, "The economist may attempt to ignore psychology, but it is impossible for him to ignore human nature. If the economist borrows his concept of man from the psychologist, his constructive work may have some chance of remaining purely economic in character. But if he does not, he will not thereby avoid psychology. Rather, he will force himself to make his own, and it will be bad psychology."

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