

Wednesday - April
2 - 2008

Most people can't beat the market

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The Gazette

Monday, March 31, 2008

At one point in the new gambling movie *21*, the main character is filmed reading a book called *Beat the Dealer*.

The shot is a fitting tip of the hat to the book's author, Edward Thorp, the mathematician who pioneered the use of blackjack card-counting techniques and presented them in his 1962 landmark bestseller.

The movie, and the 2002 book *Bringing Down the House*, upon which it's loosely based, tell the story of a group of Massachusetts Institute of Technology math whizzes who took Las Vegas casinos for millions with their blackjack card-counting expertise in the 1990s.

Some 40 years earlier, Thorp, then a MIT math professor, studied blackjack and devised a technique for shifting the advantage from the house to the player by counting cards as they came out of the deck and carefully calibrating bets. Then, he took what he had learned to the gambling tables including one trip to Nevada in 1961, where he won \$11,000 U.S. (close to \$80,000 in today's money) in 20 hours of playing.

Thorp went on to use his mathematical gifts to even greater effect in the financial markets. Playing on probabilities and asset-price anomalies, he was able to achieve remarkable returns for two hedge funds he operated from Newport Beach, California. The funds went nearly 30 years without a down year and averaged 19 to 20 per cent annual returns, he told the *Wall Street Journal* recently.

Thorp's sophisticated strategies required advanced brain and computer power and couldn't be imitated by ordinary investors. Indeed, Thorp doesn't believe most people can beat the market and advises against trying it.

He observes that ordinary investors can almost never be sure they have an edge of the kind he had at the blackjack table or in his hedge-fund bets.

That's especially true because their returns are eroded by management fees, brokerage commissions and taxes. What's more, their decisions are influenced by the the hype and salesmanship of the investment industry.

"Collectively, people who make active decisions about which stocks to buy or which funds to buy ... have gone into the casino," Thorp said in an interview from his Newport Beach office. "On average, as a group, they will lose to the market casino."

That's why Thorp argues the best strategy for most people is to buy and hold broadly diversified index funds where management fees and other costs are minimized.

Through his career, Thorp's success has been built on exploiting small advantages while controlling the risk of going bust by over betting.

In this regard, he's made extensive use of what's known as the Kelly Criterion, a formula invented in the 1950s by a Bell Labs scientist named John Kelly. It is used to determine how much to bet when you have an edge so as to maximize long-term capital growth while avoiding over-betting and being wiped out.

"You tend to load up on things where you have a bigger advantage and tend to back off on things where it is less safe," Thorp explained.

"That sounds intuitively reasonable and the mathematics will back it up. What will happen if you bet substantially more than what this Kelly Criterion calls for is that you will be almost certainly ruined."

In recent weeks and months, we've seen all too many examples of big financial bets going ruinously wrong, including at investment bank Bear Stearns and several hedge funds that have shut down under the weight of their losses.

Another example is Long-Term Capital Management, a hedge fund that failed in 1998 when its highly leveraged investments went sour.

Today, Thorp notes, the amount of capital in hedge funds has ballooned to \$2 trillion from about \$200 billion over the last 10 years ago, and all this money is chasing the same investment opportunities.

"So there's less to go around for each participant. So I think one reaction is to take on more capital and lever up more."

What conclusion should we draw from Thorp's extraordinary career? For me, there are two basic lessons.

First, you can't beat the house if you don't have an edge. And, as an investor, you should be honest with yourself about the chances when you do have an edge and act accordingly.

Second, you have to try to understand your risk and ensure your eggs are in enough baskets to benefit from market

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