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What NFL Coaches and Investors Share

New research suggests a common portfolio mistake shows up on the gridiron, too.

By JACK HOUGH

Excessive fear of risk can be bad for returns -- including kickoff returns.

New research suggests National Football League coaches struggle with a behavioral flub common to stock market investors. They focus so intently on not giving up ground that they gain less of it than they should.

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Economists and psychologists call that "loss aversion," and they've studied it for more than three decades. Consumers, it seems, experience about twice as much pain from a loss as they do joy from a gain of equal size. Loss aversion helps explain why people hoard, and why they're unimpressed with a 5% discount but will go to great lengths to avoid a 5% surcharge. It's why marketers offer free trial periods -- shoppers who are indifferent about buying something are also unhappy to let it go.

Stock investors demonstrate an irrational aversion to losses when they sell winners quickly (to avoid losing their gains) and hold losers for years (to avoid mentally finalizing their losses). They ought to do just the opposite; recent price momentum is a key predictor of near-term performance, so investors would do well to dump losers quickly and stick with winners longer. Even a lack of bias between winners and losers would produce better results.

NFL coaches, like investors, aren't always good at coolly calculating the odds and choosing the best balance of risk and reward. Prior statistical research has shown that they run the ball too often and pass it too seldom, and that they're too keen to punt in "fourth-and-short" situations rather than try for a needed yard or two.

The kickoff was ripe for such analysis. Each contains two key risk-return decisions. First, the kicking team may boot the ball deep down the field as usual or perform a short "onside" kick. If it can recover the ball after it has travelled at least 10 yards, the team maintains possession. Second, if the ball is kicked into the receiving team's end zone, the returner may take a "touchback," after which play starts on the 20-yard line, or he may run the ball and hope for more than 20 yards (but perhaps secure fewer).

Football's rich data archive wasn't quite rich enough for the job. But Jun Zhuang, an economist and engineer who teaches at the University at Buffalo, New York, received a proposal from then-graduate-student and football fan John Urschel. Urschel would watch all 267 football games of the 2009 season and take notes on the 2,592 kickoffs, and Zhuang would co-write a paper on the findings.

The results: One-quarter of onside kicks were successfully recovered by the kicking team. The fraction was even higher when the tactic was a surprise. And scores favored the use of onside kicks. On the possession following a kickoff, the researchers used a scale from negative seven (successful onside kick which led to a score for the kicking team) to positive eight (return leading to a score, including "two-point conversion," for the receiving team). Regular kickoffs averaged 1.39 points for the receiving team but surprise onside kicks, just 0.88 points.

For returns, the average running attempt brought the ball beyond the 26 yard line, a six-yard advantage over low-risk touchbacks. Touchbacks also led to fewer average points for the receiving team.

Yet onside kicks are exceedingly rare, making up just 2% of 2009 kickoffs. End zone returns are more common but not common enough. Receiving teams ran the ball out of the end zone about three times for each two times they took a touchback, but the six-yard premium for end zone returns suggests they should have run more.

"We suspect that deviations of coaches' decisions from seemingly optimal play can be decomposed into two components: that due to non-neutral risk preferences and that due to imperfect optimization," wrote Zhuang in the paper, which was published this summer in the Journal of Quantitative Analysis in Sports. In other words, coaches either hate losing more than they love winning or they're not up on their statistics, or both.

In fairness to coaches, some decisions are made by players on the go without the benefit of consultation -- like whether to take a touchback. But then, these players are presumably guided in their decision-making by prior coaching.

Football players, it seems, could benefit from a little more derring-do. Investors, on the other hand, have plenty to be cautious about at the moment, from fiscal trouble in Europe to the possibility of recession in America. But if crisis brings opportunity, perhaps it's time for them, too, to get a little greedier.