The 1-2-3 of Investing
Part 5: the Gambler's Fallacy

by Dr. Ladd Kochman
(Full Professor of Finance, Kennesaw State University)

The investors who sell stocks because they think that successive gains have to end served as an example of behavioral finance in Part 4 of this series. Their belief that repetitive outcomes are transitory now invites a discussion of the *Gambler's Fallacy* in this segment. The fallacy is the mistaken belief that independent past outcomes can influence future ones. The best example might be the night at a Monte Carlo casino in 1913 when the ball on a roulette wheel landed on the color black 26 times in a row. Gamblers there lost millions betting on the color red believing it was overdue. Lesser known are the 32 times a roulette wheel spun red at an American casino in 1943.

A streak—not to be confused with the 1970s prank of running naked in public—refers to consecutive outcomes. A 2007 paper by Carlson and Shue reported that streaks lose their streakiness after three consecutive outcomes—a finding that resonates with the "rule of three." It is believed that people have neurologically and culturally adapted to the number three. The examples are almost endless: the three little pigs, Goldilocks and the three bears, Caesar's *I came, I saw, I conquered*, the three wise men, *location, location, location*, Lincoln's *of the people, by the people, for the people*, three strikes and you're out, and faith, hope, and charity.

The odds of three consecutive independent outcomes suggest that they are not commonplace. The equation $[1 / (0.5)^3]$ tells us that the odds of three in a row are 8-to-1. The odds of a roulette ball landing on the same color 26 straight times at the Monte Carlo casino in

This article is part of the Financial Literacy Improvement Project (FLIP) initiative of the Bagwell Center for the Study of Markets and Economic Opportunity.

1913 are $[1 / (0.5)^{26}]$—or 67.1 million-to-1. The odds of the 32 straight times in 1943 are 4.3 billion-to-1.

Apart from long odds, streaks may have predictive value. If the outcome that follows three consecutive outcomes is more likely to end a streak than to grow, the implications are significant. One would be that the gambler's fallacy is not valid since independent past outcomes do affect future ones. While it would be exciting to exploit an outcome that could be predicted by those preceding it, investing on the basis of an emotion was clearly discouraged earlier in this series. Investments prompted by emotions such as excitement, anxiety, anger and fear are judged unwise.

Even if the stock market made a mistake by allowing a stock to behave in a predictable way, short-term gains resulting from the market's temporary inefficiency are not the path for young investors. "Inefficiency" refers to a mistake by the market to underprice or overprice a stock which leads to an abnormal return. Although a long-term outlook may blow a chance for a quick profit, investors with that outlook are compensated with the ability to sustain the market's ups and downs over time. In sum, streaks are an interesting phenomenon but are relevant chiefly for gamblers, sports-bettors and stock traders—youthful investors excluded.