Even God Would Get Fired as an Active Investor

Wesley R. Gray,
Ph.D.

Empirical asset pricing research can sometimes get monotonous because you end up circling back relentlessly to the same conclusions: value works, momentum works, and yet, markets are remarkably efficient. But, *sometimes,* research uncovers absolutely stunning and counter-intuitive results–and this is where things get truly exciting. The study below is what we consider "exciting" research because the results are so profound (at least to us).

Our bottom line result is that perfect foresight has great returns, but gut-wrenching drawdowns. In other words, an active manager who was clairvoyant, and knew ahead of time exactly which stocks were going to be long-term winners and long-term losers, would likely get fired many times over if they were managing other people's money.

Question: if God is omnipotent, could he create a hedge fund that was so good that he could never get fired? No. It turns out even God would most likely get fired as an active investor.

Strategy Background

We compute the 5-year "look ahead" return for all common stocks for the 500 largest firms. For simplicity, we eliminate any firms that do not have returns for a full 60 months. We look at gross returns and all returns are total returns including dividends. Next we create decile portfolios based on the forward five-year compound annual growth rate (CAGR).

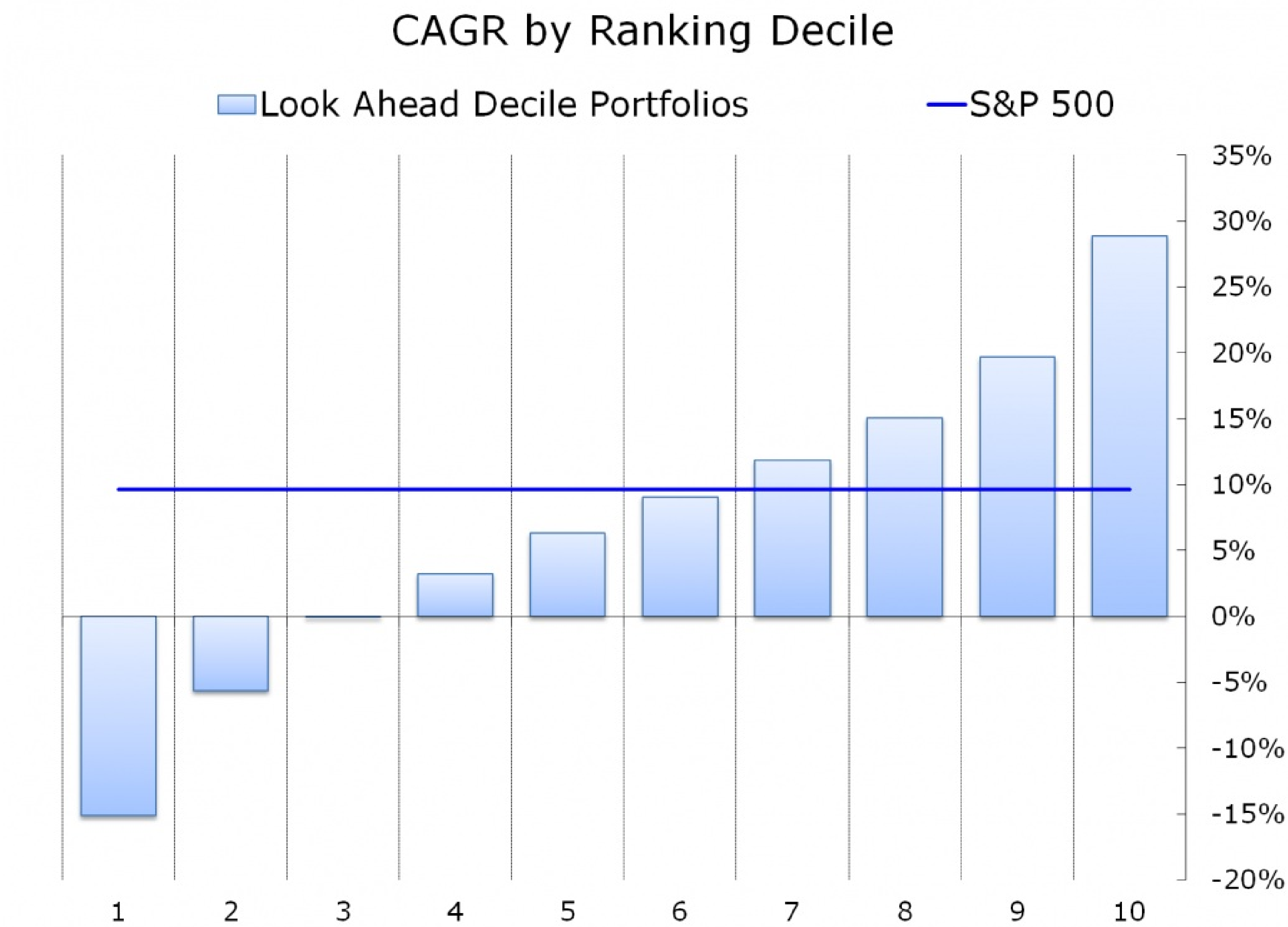
We rebalance the portfolio on July 1st every fifth year. The first portfolio formation is July 1, 1926 and is held until June 30, 1931. The second portfolio is formed on July 1, 1931 and held until June 30, 1936. This pattern repeats every fifth year. To be clear, we know with 100% certainty the performance of the top 500 stocks over the next 5 years.

We are explicitly engaging in look-ahead bias.

Returns are analyzed from 1/1/1927 to 12/31/2009. Portfolios are value-weighted returns for month *t* are weighted using the market capitalization at the end of month *t-1*. All returns are gross of transaction costs, taxes, and fees.

Decile Portfolios

We first look at the decile portfolios rebalanced every 5 years. These portfolios highlight what perfect foresight can achieve. The Decile 10 portfolios represent value-weighted portfolios sorted on future top 5-year performers and the Decile 1 represent value-weighted portfolios sorted on future bottom 5-year performers. The compound annual growth rates for the 10 decile look-ahead portfolios are mapped below:



As expected, a portfolio formed on the names that have the best 5 -year performance, have the best 5-year performance. Duh. But the details are interesting…

Summary Statistics

Here we investigate some statistics and charts on the performance of the 5-year look ahead portfolio.

First, the raw summary statistics (labeling Decile 10 above as High MOM VW):

Summary Statistics*	5 year High MOM VW	SP500
CAGR	28.89%	9.63%
Standard Deviation	21.81%	19.40%
Downside Deviation (MAR=5%)	15.52%	14.44%
Sharpe Ratio	1.12	0.39
Sortino Ratio (MAR=5%)	1.48	0.42
Worst Drawdown	-75.96%	-84.59%
Worst Month Return	-32.69%	-28.73%
Best Month Return	44.20%	41.65%
Profitable Months	69.18%	61.45%

The results are hypothetical results and are NOT an indicator of future results and do NOT represent returns that any investor actually attained. Indexes are unmanaged, do not reflect management or trading fees, and one cannot invest directly in an index. Additional information regarding the construction of these results is available upon request.

The 29% CAGR is obviously awesome for the look-ahead portfolio. Expected.

But how about the drawdown associated with a perfect foresight portfolio? Can't be that bad if you know the future, right?

Wrong! The worst drawdown for the look-ahead portfolio is devastating: **-76%**! (Aug 1929 to May 1932). But the pain doesn't end there…here is a table of the top 10 drawdowns:

Rank	Date Start	Date End	5 year High MOM VW	SP500
1	8/30/1929	5/31/1932	-75.96%	-84.59%
2	3/31/1937	3/31/1938	-44.04%	-51.11%
3	5/31/2008	2/28/2009	-42.18%	-45.72%
4	3/31/2000	3/31/2001	-34.03%	-21.48%
5	10/31/1973	9/30/1974	-30.74%	-38.91%
6	8/31/1987	11/30/1987	-27.94%	-29.58%
7	3/31/1962	6/30/1962	-23.35%	-20.64%
8	11/30/1980	9/30/1981	-22.89%	-13.69%
9	12/31/1974	2/28/1975	-22.11%	19.94%
10	9/30/2002	11/30/2002	-19.91%	15.28%

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Clearly, even a "perfect" long portfolio can cause a long-only investor pain.

How About We Create the Ultimate Hedge Fund?

In the analysis above we highlight that the perfect long portfolio still can create massive pain. But perhaps we can create the ultimate hedge fund portfolio: 1) long the names we know will perform the best over the next 5 years and 2) short the portfolio of names that we know will perform the worst over the next 5 years. Surely, this would be a god-like hedge fund?

The long/short portfolio is constructed as follows:

- Fully funded long book and a short book that earns the risk-free rate on short proceeds.
- The long/short weights are rebalanced monthly.

The following portfolios are examined:

- **5 Year High MOM VW L/S** = Long 5-Year winners; short 5-year losers
- **SP500** = S&P 500 Total Return

Summary Statistics

Here are the high-level stats:

Summary Statistics*	5 year High MOM VW_L/S	SP500
CAGR	39.74%	9.63%
Standard Deviation	24.11%	19.40%
Downside Deviation (MAR=5%)	25.82%	14.44%
Sharpe Ratio	1.39	0.39
Sortino Ratio (MAR=5%)	1.24	0.42
Worst Drawdown	-69.80%	-84.59%
Worst Month Return	-54.84%	-28.73%
Best Month Return	23.87%	41.65%
Profitable Months	77.81%	61.45%

Yowza! Clearly, the ultimate hedge fund does amazingly well — 39% CAGRs would have you owning the world's stock market in short order. Obviously, this sort of return is not possible over a long period — even if someone had perfect "Biff-like" foresight.

Yet check out the worst drawdown on the PERFECT hedge fund — 70%+. Incredible. And it gets better…

Here are the top 15 drawdowns for the ultimate hedge fund and the associated returns on the stock market:

Rank	Date Start	Date End	5 year High MOM VW_L/S	SP500
1	6/30/1932	6/30/1933	-69.80%	168.60%
2	2/28/2009	9/30/2009	-54.59%	45.01%
3	9/30/2002	1/31/2004	-49.36%	42.33%
4	6/29/1935	2/29/1936	-43.59%	46.96%
5	12/31/1974	2/29/1976	-38.07%	52.51%
6	12/31/1933	2/28/1934	-37.08%	7.79%
7	12/31/1930	2/28/1931	-36.01%	17.73%
8	3/31/2000	3/31/2001	-34.03%	-21.48%
9	10/31/1973	9/30/1974	-30.74%	-38.91%
10	12/31/1990	3/31/1991	-28.56%	14.71%
11	6/30/1939	9/30/1939	-28.20%	22.56%
12	8/31/1987	11/30/1987	-27.94%	-29.58%
13	11/30/1980	9/30/1981	-22.89%	-13.69%
14	9/30/1939	10/31/1939	-20.45%	-1.72%
15	12/31/1931	1/30/1932	-19.83%	-1.93%
16	3/31/1938	7/30/1938	-19.69%	47.86%
17	12/31/1929	3/31/1930	-19.02%	16.52%
18	11/30/1970	1/31/1971	-18.39%	10.40%
19	9/30/2001	11/30/2001	-18.34%	9.99%
20	12/31/1973	1/31/1974	-17.95%	-0.81%

Let those numbers soak in a bit.

What the chart highlights is that even GOD HIMSELF would get fired multiple times over. The performance on the perfect hedge fund would get crushed many times over by the passive index.

These results highlight the fickle nature of assessing relative performance over short horizons. We've shown this quantitatively, but Ben Carlson talks about the challenge of short horizon thinking here, and Meb Faber recently highlighted that investors are terrible at timing active investments.

Takeaways:

1. Keynes was right: Markets can remain irrational longer than you can remain solvent
2. Active investors MUST have a long-horizon…and few investors actually have horizon.

Good luck out there…

h.t., Arturo B. . An old Chicago PhD (1980) we met at the Nantucket Project, who suggested we explore this research question…

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