



REKENTHALER REPORT

Medallion Fund Is Like No Other

Its success is inspiring, but it doesn't seem to be repeatable.

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Into the Spotlight

The holiday issue of *The New Yorker* caught my attention, as it profiled James Simons, arguably the greatest of all hedge fund managers. (Sorry, no link, as the article is paywalled.) Simons retired from Renaissance Technologies several years ago but still pocketed a cool \$1.6 billion last year from his company ownership. That qualifies as a success.

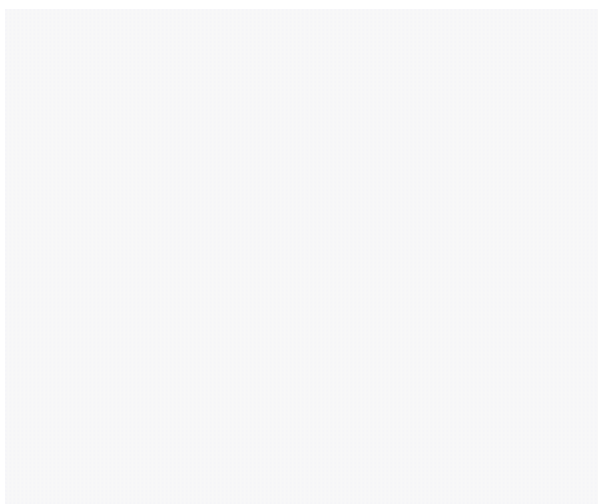
The article was mostly concerned with his philanthropic work: Simons underwrites a computational organization called Flatiron Institute that helps scientists sort out the massive data bases that they have assembled but cannot properly mine. So, there weren't many investment lessons to collect. But it did pique my curiosity to learn more about his flagship Medallion Fund.

My first visit, naturally, was the company's website. No luck there; access is by invitation only, except for the help wanted section. Too bad I am neither a research scientist, a network engineer, nor a tax analyst. I could envision working at a company that not only pays fabulously well, but which also has two on-site gyms; squash, tennis, and basketball courts; and a jogging trail. (Are you reading, Kunal?)

Before Costs

Onto Renaissance's Wiki page. It informs me that Medallion Fund's average annual return from 1994 through 2014 was 71.8%, before fees. That is a very, very large number. I ponder. If the fund had made 100% per year, that would amount to a gain of 210 over a decade, which equals 1,024. Thus, for 20 years the cumulative growth is 1,024², which is slightly more than 1 million. Not

quite as many grains of rice as on the Indian king's chessboard, but a handsome sum indeed. To turn one dollar into a million within two decades!



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Naturally, Medallion appreciating by 71.8% annualized rather than 100%, its precast total would be lower than one million. How much lower? Time to replace mental math with Excel. The spreadsheet promptly informs me that 1.718 taken to the 20th power equals 50,172. That is not bad either. Had Medallion been kind enough to accept my \$10,000 check in 1994, and kinder yet in rendering its services for free, that account would have grown to more than \$500 million 20 years later. I've always wanted to own a meaningful share of an NBA team.

After Costs

Of course, Renaissance does expect compensation; that lavish campus doesn't pay for itself. And some compensation it extracts! Conventional hedge fund fees aren't exactly Vanguard-like, consisting of a 2% flat expense ratio and a performance incentive that gobbles up 20% of the fund's annual profits. Medallion, however, can't be bothered working for a mere two and 20. It charges a 5% expense ratio followed by 44% of the remaining profits. (Whether that is of all profits, or only those profits that exceed a certain benchmark--the so-called hurdle rate--I cannot find.)

That changes the investment math considerably. Five percentage points off the top of 71.8% leads to 66.8%, which after the performance fee becomes 37.4%. That sounds right; Wiki cites a 35.6% after-cost return for Medallion over a slightly different time period, and Bloomberg gives 40% for a third time

horizon. After paying its extraordinarily high costs, Medallion has compounded at a rate of 35%-40% over almost three decades since its 1988 inception.

That wouldn't enable me to sit in an NBA owner's box like the guy who was the next room over in my freshman dorm, but it would nonetheless have turned my \$10,000 into almost \$6 million over two decades, and a far more-impressive \$100 million for the fund's full, 29-year history. (Hmmm, perhaps that NBA team would be calling.) Even when halved by fees, Medallion's raw returns have been strong enough to turn ordinary investors into tycoons.

Home Cooking

Ordinary investors, of course, aren't permitted to buy Medallion. In fact, nobody is permitted to buy it except for Renaissance employees. In 2006, according to Bloomberg, the company cashed out Medallion's outside investors, so that the fund's only current shareholders are people who work at the company. That makes the fund's fee structure somewhat puzzling, because all those dollars it generates come strictly from within. Effectively, Renaissance employees tax themselves, with the proceeds from those steep taxes heading directly back into the firm, which then has more money with which to pay those very same employees. My head hurts.

There is also the question of why, with such a high growth rate, the fund hasn't become large enough by now to purchase Saudi Arabia. After all, it didn't begin with my measly hypothetical \$10,000 investment, and it has taken in a great deal of money along the way. So, why does Medallion hold only \$3.5 billion? The answer: It disburses nearly all its profits, so that it can stay relatively small and nimble.

A Species of One

That's great in theory--Morningstar often praises funds for "having the courage" to close their doors when they become popular, so that they can preserve their investment agility--but unpleasant in practice. Because wherever Medallion shareholders put those cash distributions, that place will be worse than Medallion--probably much worse.

That includes Renaissance's other funds. *The New Yorker* states, "Renaissance's other, bigger funds have done less well," a comment with which Simons agrees. Its Institutional Equities fund gained a net 21.5% in 2016, and its Institutional Diversified Alpha fund 10.7%, while Medallion, even

after paying higher fees, was up 25%. And that was a relatively slow year for Medallion, which lessened the performance gap.

In summary:

1. Through its proprietary, highly complex trading algorithms (Simons began his career as a topnotch mathematician before switching to investments), Medallion Fund has confounded efficient-markets advocates. Before costs, it has beaten the stock market, surely after all risk adjustments, again and again.
2. That statement probably applies to its after-cost results as well, although only insiders could judge, as they alone would know what risk adjustments to make.
3. However, that fund is very much the exception. Not only has no other fund sponsor matched Medallion's performance, but neither has Renaissance Technologies been able to do so with its other funds.

Therefore, while the fund serves as a useful counterexample for efficient-markets theorists, it offers few (if any) investment insights. It stands alone.

And Now, a Geography Lesson

Writes Michelle Turner, of my memory of lazily tubing on Sacramento's American River: "You must be talking about the stretch of the American River between Folsom Lake and Sacramento, which is for lazy tubing. The middle fork and north fork of the American River have class 4+ rapids. Even the south fork has class 3 rapids. We are sensitive about things like that out here in Gold Country."

Duly noted, Michelle. If my parents were still alive, I would chide them for taking me to the dull part of the river. But I suppose they could be pardoned for not wishing for their 12-year-old to be drowned.

Edit: Javier Estrada writes, "I don't think a counter-example in a finance/economic/social theory disproves a larger point. It does in physics, not in the social sciences." I was about to inform Professor Estrada that "confounded" means to puzzle, not to disprove. However, an online dictionary claims that disprove is a secondary meaning for confound. That finding left me ... confounded. And outdone in the English language by an Argentine.

So, please read my meaning in the first sense, not in the second. James Simons' investment results are one item of evidence, no more and no less.

As a side note, Professor Estrada breakfasted with Mr. Simons last year. Par for the course, this being a column where the readers lead, and the writer struggles to follow.

Thanks for your comments throughout this year; I'll try to keep up better in 2018.

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