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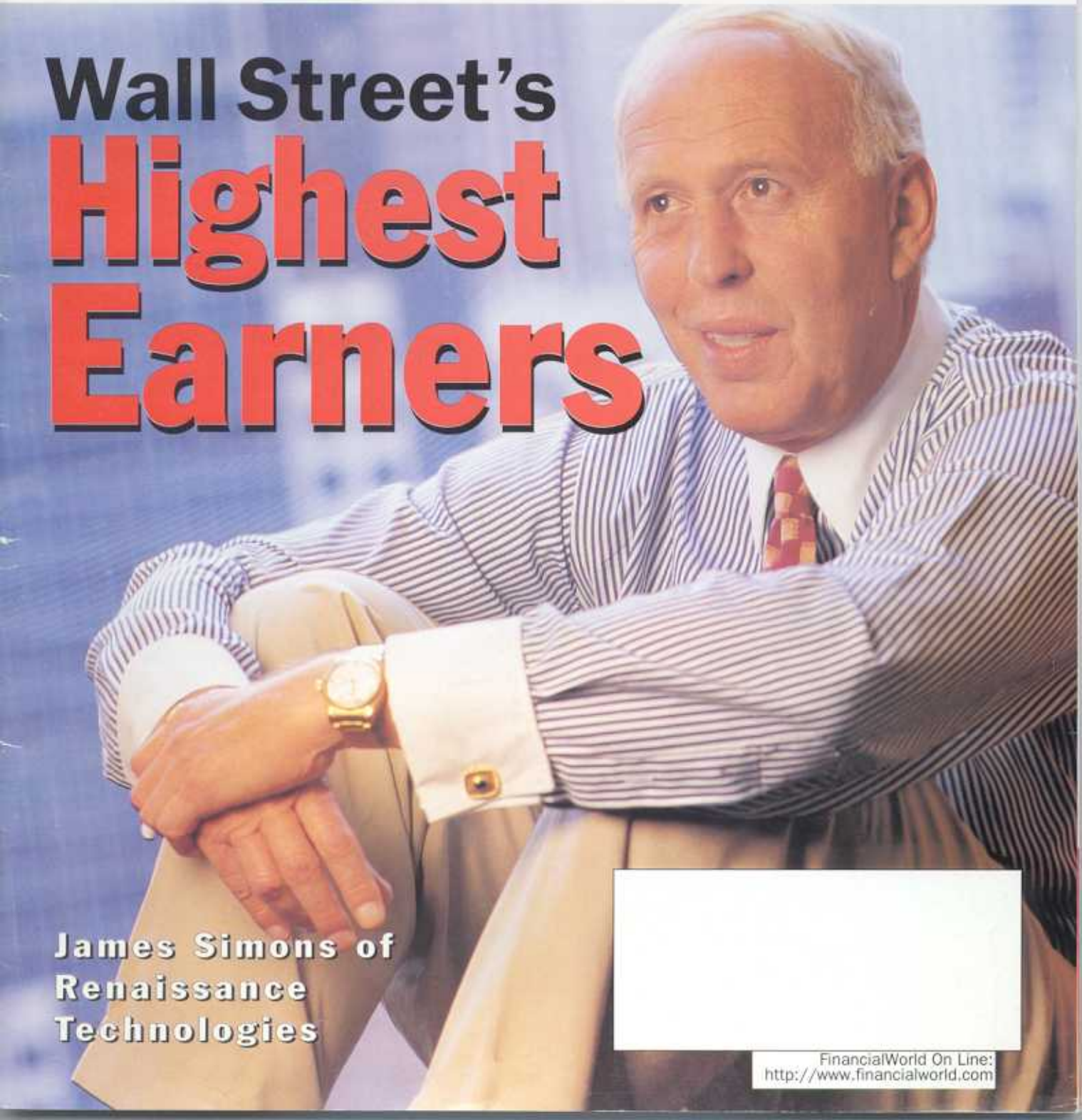

Wall Street's Highest Earners

James Simons of Renaissance Technologies

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Simons Doesn't Say

Meet the man whose 1990s returns (but not compensation) are better than George Soros's.

by John F. Geer Jr.

"WE DON'T WANT TO GIVE AWAY OUR BIG SECRETS HERE," SAYS JAMES SIMONS.

Simons, the 58-year-old president of Renaissance Technologies, is sitting in his corner office in midtown Manhattan, sockless in suit pants and a tie, sucking down cigarettes and dancing around questions about his investment techniques. Can you blame him?

His firm's Medallion offshore futures fund has a 44% compounded annual return since late 1989 (net of his hefty 5% annual management fee and 20% performance fee). Had you invested $100 in Medallion at the start of 1990, you would have made $956 by the end of last year. To put that in perspective, George Soros's Quantum fund would have generated $166 less. So what if George personally made 50 times more than the $30 million that Simons earned. At least Simons's investors have made more over the past few years.

Renaissance, founded and run by Simons, specializes in technical trading, using computer models to track short-term price movements of futures and other instruments. The problem is that Simons and his associates face a constant struggle to develop new trading models before the current ones lose their effectiveness. "The system is always leaking, and we keep having to add water to keep it ahead of the game," he explains.

Come on, Jim, won't you throw something our way? "Nothing," he stonewalls.

Paranoid? Maybe not. Back in 1989, the firm stopped the Medallion fund's trading for six months because the fund—started the year before—began losing money. At the time, Medallion focused on momentum investing: trading based on the assumption that price movements in a particular direction are likely to continue in the same direction. It took a relatively long-term approach, holding positions for around two weeks.

Simons doesn't know why the system, which Renaissance had used for several years, faltered, although he suspects that the growing popularity of momentum investing broke its back. "It's supply and demand. If gold is discovered, then it gets harder to make money mining gold because everyone's competing with you."

So with the help of Henry Laufer, a mathematician who's now vice president for research, he built a new short-term trading system, based in part on existing components of the old strategy. Since then, Medallion has been pulling in astonishing, consistent returns. Its lowest was 34% in 1992 (net of fees). The highest, 71% in 1994.

Medallion's current approach is based on time series analysis—essentially observing a series of numbers, with the aim of recognizing patterns and investing based on the notion that the patterns will be repeated a given percentage of the time. Not exactly fundamental analysis. But it seems to work better.

"Patterns of price movement are not random. However, they're close enough to random so that getting some excess, some edge out of it, is not easy and not so obvious—thank God," says Simons with a belly laugh. "God probably doesn't care. Thank whoever."

So what accounts for these statistical patterns? Mass psychology, Simons says. Investors reacting in groups to data on fundamentals and price. Of course, he can't prove causation, but he often finds reasonable explanations that strengthen the case for investing in a particular way. Even when he and his cohorts have no explanation for a pattern they've identified, they may rely on it if it's repeated consistently.

That's pretty heady stuff, so don't try this at home. But Simons can handle it since he's a math wiz with a Ph.D. from Berkeley who has taught at Massachusetts Institute of Technology, Harvard University and the State University of New York at Stony Brook.

In fact, back in the Sixties, he cracked codes for the Institute for Defense Analyses in Princeton, N.J., only to get fired by General Maxwell Taylor after writing a letter to the *New York Times* voicing his opposition to the Vietnam War. He rebounded, becom-

James Simons of Renaissance Technologies

ing chairman of Stony Brook's math department in 1968 at the age of 30.

But after a few years he became restless, and began dabbling in investing. In 1974 he organized a trading pool run by another mathematician. Then in 1976 he started a new fund, which he worked on part time.

Simons's first efforts paid well, but he's aware that luck played a big part in those successes, which he remembers "had nothing to do with mathematics. Happily, more things went for us than against us. In this business it's easy to confuse luck with brains."

In 1978, he left academia altogether to run a precursor to Medallion called Limroy, which traded commodities and financial instruments on a discretionary basis, and later branched into technical analysis and venture capital. (Simons currently sits on the boards of several small high-tech companies such as Franklin Electronic Publishers, which makes electronic dictionaries.) In 1981, James Ax, another mathematician, began developing the firm's futures models, which Medallion began using in 1988.

Since then, Renaissance has worked to improve its system, adding new models to replace those that have lost their effectiveness over time. On the case are about 60 employees, including a number of mathematicians, physicists and computer scientists who work out of the firm's New York City and Stony Brook offices.

Medallion trades some 40 instruments, moving between short and long positions—usually within a couple of days. Because it's so short-term oriented, volatility is crucial. It made most of its 1995 trading profits in the roiling Japanese yen, Nikkei average and government bond markets—but the actual direction of the markets didn't matter.

Roughly 75% of the fund's exposure is in interest rate instruments such as German and French bonds, currencies and stock indexes, with the balance in commodities like wheat and crude oil. In part, the allocation is based on the liquidity of the markets.

Even though it has been closed since 1993, when it had assets of $280 million, Medallion has grown rapidly. It's now at $717 million. That makes it hard to make large trades in traditional commodity markets without affecting prices. "Size works against you in a fund like this," says Simons.

In spite of its high returns, the fund is not particularly volatile. Its standard deviation is only 80% of the S&P 500.

Renaissance also pays close attention to cash management, since on average just 25% of Medallion's capital is used for trading due to the inherent leverage of the futures markets, where margin requirements often amount to only a few percentage points.

Medallion puts Treasuries in its margin accounts, which earn interest. Overall, 75% of the fund's cash is in Treasury bills and bonds, with an average duration of about three years. Ten percent is in mortgage pass-through instruments and the remaining 15% is in unleveraged mortgage-

photograph by PETER HAMBLIN

backed derivatives. Roughly a third of last year's 38% return came from this portfolio.

Interestingly, while Medallion has racked up gains greater than Soros's Quantum fund, another of Simons's offshore funds, Nova, has been struggling since its 1993 inception. For this computer-driven stock-trading fund, Simons deploys a market-neutral strategy with equal short and long positions, adjusted for volatility. So, for example, if he is short a highly volatile stock by $2, he will go long a steadier stock by $3. The idea is to take advantage of short-term price fluctuations without betting on the market as a whole.

Unfortunately, it started poorly, losing 5% in 1994. The problem? Transaction costs are far higher for stocks than for commodities, making it harder to find short-term positions worth taking. But tinkering with models and trading costs has helped of late. Last year, Nova, which is closed to new investors, was up 12% (net) and is up another 18% this year through August.

Renaissance has had better luck with Matrix, a mortgage-backed derivatives fund it started last year. Managed by Judah Frankel of Fibonacci Partners, who also runs the mortgage money in Medallion, Matrix gained 27% in 1995, and was up a mind-boggling 90% through August, benefiting from cheap prices and a steepening of the yield curve.

Finally, a new math-driven stock investing system for institutions, called Equimetrics, is also in the works.

Meanwhile, Simons and his crew keep trying to develop new secrets for Medallion before the old ones slip out or become irrelevant. "There's no such thing as the goose that lays the golden egg forever," he says.

Of course, things must not be going too badly. Simons managed to spend six weeks away with his family in the Mediterranean this summer. A longtime powerboater, he shipped his 85-footer from Long Island for the stay.

But don't tell anyone. ■