

# The Myth of Bernard Madoff: A Personal Recollection

Exactly how revered was Bernard Madoff before his Ponzi scheme was exposed? Professor Marco Avellaneda recalls his first (indirect) encounter with the legend of Madoff.

**T**he collapse of the phenomenal Ponzi scheme perpetrated by Bernard Madoff Investment Securities has already inflicted significant pain on those who trusted the firm. Many investors were, of course, directed to Madoff by intermediaries — the so-called funds of hedge funds — who now will have to answer for not doing proper due diligence on behalf of their clients.

However, the demise of Madoff also showcases a fact about alternative investments that few are willing to admit. Investors and funds of hedge funds, despite their claims to the contrary, often act superficially and fail to investigate

potential investments thoroughly. This is due to greed, to the pursuit of commissions, and, let's face it, to the uncanny ability of some smart operators to reverse engineer investors' minds and tell them what they want to hear.

It was in 2004, during a trip to Geneva, that I first became interested in Madoff. At the time, I was working for a French hedge fund. My role was to advise on the development of a new fund that was based on trading equity option volatility using purely quantitative methods.

The idea was to invest in short-term option contracts on US stocks (General Motors, Intel, etc.), both buying and selling, so as to be market neutral. Managers of the fund could



buy and sell options based on whether (statistically) the option prices were deemed expensive or cheap with regard to their peers in their industry. It was —and still is — a relatively novel idea, born in the world of option market making.

Devising a purely quantitative version of this strategy was not easy. I worked with two physicists full time for a year to write the code and also designed the risk management system and the order management system for electronic trading.

We successfully raised an initial capital of \$15 million to start the fund, and, despite the market gyrations of late 2004 — e.g., the rise of commodities markets, the US presidential election and other events — our strategy was yielding modest positive returns. Encouraged by these results, we decided to approach European investors to raise additional capital.

### Magical Madoff?

This prompted my first trip to Geneva, to visit potential clients and tell them about this new investment opportunity. My employer (the French hedge fund) was hoping to raise a moderate amount of money to grow the business organically and to impress our new investors with this high-tech product.

One of the potential clients that we visited was a venerable asset-management firm, well known in Geneva circles. I found myself pitching the new fund to none other than one of the principals of the firm, whom we shall call Mr. E. Our encounter came over a cup of tea in a wood-paneled conference room in the City by the Lake. This was an exciting moment for me — serious quants meeting serious investors.

My presentation lasted for approximately 15 minutes, consisting of a careful description, in layman's terms, of a volatility fund. I stayed away from mathematical jargon and did my best to cross that divide that existed between the lab rat that I was and the world of savvy Geneva investors. The latter, I was told, were very sharp and could pick up any mistake immediately, rendering my trip to Geneva pointless.

I tried to be succinct and to the point. When my 15 minutes were up, Mr. E. said: “We are not interested in investing with you. Your fund is too young, and we do not really understand what you do. We are very conservative here, and we invest only in people with a stellar track record and in the top managers.”

I tried to hide my disappointment. Sales are sales and the customer knows best. Chin up!

Then, before ending the interview, Mr. E. gave me some unsolicited advice. “I see that you are interested in options investments. The only fund with options that we invest in is Bernard Madoff,” he said. “Bernard Madoff is a wizard. He uses a strategy of buying put options in the Standard

& Poor's 500 Index and selling calls. Then he buys stocks that he carefully selects. This mixture produces very stable returns and is one of the best strategies that we know with options, and the only one that we would invest in.”

I was intrigued. How was it that we had never heard of Madoff? By then, I had spent 15 years studying theory at New York University and five years in New York trading floors. Moreover, I had performed careful studies of the relative value of option contracts across thousands of stocks. So, I wondered, how was someone with a simple vertical spread in indexes consistently beating the market? How does he do it?

“How was it that we had never heard of Madoff? ... How was someone with a simple vertical spread in indexes consistently beating the market?”

Mr. E. replied that he was not exactly sure, but was certain that if we could replicate what Madoff was doing — or execute a similar strategy — we'd be very successful. “Half of Geneva's asset management companies are invested with Madoff,” he elaborated.

Returning to Paris, I pondered the mysterious Madoff fund. How come I did not discover something like that? By looking at the math (trees), had I missed the profitable trades (forest)?

Back at my desk the next day, I tried to discover the magic of the Standard & Poor's (S&P) options spread applied to various stock-picking and futures strategies. I worked hard, trying to find out how the magic of using S&P options would diminish risk and enhance returns. The math just would not oblige.

As hard as I tried — and, believe me, I tried — my investigation could not yield anything of value. The mathematician was trumped. My boss was disappointed, and in a few days I was back to my old tricks, obsessed with number crunching, juggling the Greeks (as in Delta, Gamma, Vega, Theta and other Black-Scholes sensitivities), looking for that sweet spot, or arbitrage, in the options markets.

I have since moved on from the French hedge fund, went to other funds, and then back to teaching. I never lost interest in options and still run my own portfolio. However, that afternoon in Geneva always stayed in my mind — the gray sky over Lake Lemman, the steaming hot tea brought by a nice Swiss lady, the venerable Mr. E. and that unbeatable Madoff. ■