

The Man Who Solved the Market

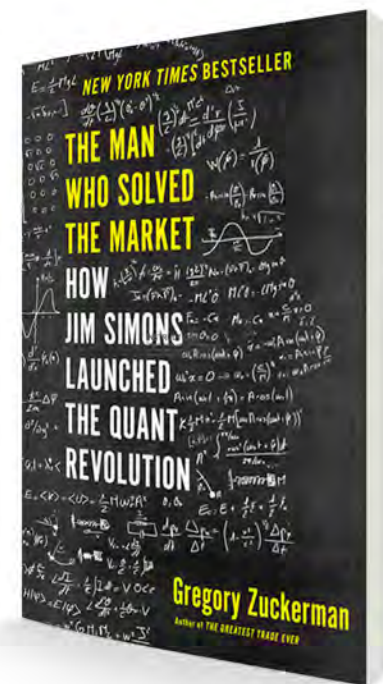
Review by Ashutosh Shahi, CFA and Patrick Bronger

The Man Who Solved the Markets released late last year, and as enthusiasts looking for additional insights in the world of the secretive hedge fund that Renaissance Technologies (Rentec) is, we were quick to grab a copy.

The book is an extremely easy read, and also suitable as a nice holiday present. The book is filled with interesting anecdotes on how even the smartest of mathematicians found initial quant-based investing approach unnatural. Jim Simons is "the man who solved the market". We also learn more on the behind the scenes contribution of his comrade Robert Mercer's to Donald Trump's election in 2016.

We are sharing some of the takeaways more relevant to the quantitative approach to investing which brought Renaissance the success.

- **No substitute for smart people** – The biggest skill of Jim was the ability to hire the best. While Jim is a great mathematician, his main contribution to Renaissance was getting the smartest people on board – and it was far from easy, it took him more than a decade. The book could as well be named The man who learned how to build a team.
- **Financial knowledge is optional** – A big difference between Renaissance and other quant funds is that their team consists of scientists and information theory experts, not MBAs. With little finance background, they treat financial data like the other data they have played with. An embarrassing scene happened when Mercer was asked how they made so much money with their models. He replied that "sometimes it tells us to buy Chrysler, sometimes it tells us to sell." This was when Chrysler was no longer trading after having been acquired!
- **Rationalizing the model's predictions is secondary** – A side effect of hiring scientists and not economists was that they care more about how statistically significant the trading anomalies are than how explainable they can be. As such, they dare to trade non-intuitive anomalies that are hard to understand.
- **A single trading system** – Instead of creating a unique trading model for every asset class, Rentec felt that one big model for all asset classes would let them leverage the huge swathes of data they had collected and model correlations between different asset classes. This allows future ideas to be added on easily as the model already has an implicit understanding of market movements. This approach is similar to how people are using transfer learning in the field of neural networks.
- **Industrial grade coding is crucial** – Mercer and Brown, with their years of coding big systems at IBM, built a single dynamic trading system. As we enter an era where "anyone can do machine learning in 4 lines of code", it's good to remember that industrial-grade coding skills is crucial to ensure production-ready systems.
- **"There is no data like more data"** – in the words of Mercer. We are seeing that revolution play out now with the abundance of the so called alternate data.
- **Trade your edges to its capacity** – People have wondered why competitors have not caught up or replicated Renaissance's success yet, and one possible reason is that once they find an edge, they trade it to its maximum capacity, such that the anomaly no longer appears.
- **Trust your model with caution** – In 1998, a much bigger quant fund at the time, Long Term Capital Management, went bust due to their unwavering confidence in their models, making them double down even when they were facing losses that were supposed to be near-impossible. In Renaissance, their system conservatively



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cuts positions when the signal is not working.

- **Longer term anomalies are harder to profit from** – The Medallion Fund trades mostly short term anomalies, and leave the longer term strategies for the funds they open to outsiders – these funds, while competitive, have not managed to replicate the success of Medallion,
- **Even the best have their weak moments** – Many parts of the story describe how Jim acts emotionally to market moves and news, which is really not what we expect of him. This shows how hard it is to keep your cool even when you are the greatest quant.

As the author states – "Investors tend to focus on the most basic forces, but there are dozens of factors, perhaps whole dimensions of them, that are missed". From the experience of Renaissance it is clear that beating the markets with machines, while possible, is far from easy. The takeaway from the story of the man who solved the market is that perseverance in your belief and getting the right team remain the key.