

MARTIAL CAPITAL WHITEPAPER: HOW DOES OUR MODEL WORK?



MARTIAL CAPITAL

Martial Capital, the portfolio manager of the Martial Funds, uses Behavioral Finance as the basis of its approach to investing.

“To invest successfully over a lifetime does not require a stratospheric IQ, unusual business insights, or inside information. What’s needed is a sound intellectual framework for making decisions and the ability to keep emotions from corroding that framework.”

WARREN E. BUFFET ¹

Behavioral Finance studies the behavior of those who buy and sell stocks and other marketable securities and attempts to understand how they will act, given the market conditions and the market sentiment of that moment. It is based on the pioneering work of:

- ▶ Richard Thaler (1945 -), on the faculty at University of Chicago Business School
- ▶ Daniel Kahneman (1934 -), an Israeli-American psychologist and Nobel laureate, on the faculty at Princeton
- ▶ Amos Tversky (1937 - 1996), on the faculty at Stanford University when he died
- ▶ Robert Shiller (1946 -) on the faculty of Yale and author of the best-selling book, “Irrational Exuberance”

Simply put, behavioral finance leads us not to creating a list of undervalued stocks, but to understanding what investors are likely to think is an undervalued stock.

We do not attempt to establish what a stock ‘should’ sell for. We do not try to find hidden clues buried in the data. We simply focus on what the buyers and sellers are likely to do. We look at any piece of information that seems to be predictive of investor behavior, whether it comes from fundamental theory, technical analysis, industry statistics, or psychology. No sophisticated investor, familiar with decades of real-world market behavior, would be surprised by any of the rules our investment model uses.

¹Preface to “*The Intelligent Investor*” by Benjamin Graham

If this seems a bit abstract, consider the rules of the road:

“ This process works because....it is relentless, extremely fast, and immune to emotion....[It] did not buy any Internet stocks at all during the 1990’s, and thus the model was significantly outperforming the broad market while the Internet world was collapsing.”

▶ All of us were taught to drive in the right lane unless you are passing, in which case you change lanes to the left and pass the slower traffic in the right lane. (Apologies to those reading this from the UK, Australia...) This is the right thing to do. It’s what’s supposed to happen.

▶ But those who have driven for a while have learned that if you want to get somewhere fast, the fastest lane is not the left lane, but more often than not, the right lane. The fastest lane is sometimes the ‘slow lane’.

Our approach to investing focuses not on the theory of investing, but on observing what actually happens in the real world and picking the fastest lane.

Our model is deliberately conservative. It is restricted to long positions in listed securities on the NYSE, American Stock Exchange, and NASDAQ in the US and the TSX in Canada. It does not use leverage, options, or derivatives nor does it invest in anything other than listed securities. Furthermore, the model is required to diversify across many sectors and it won’t invest in a stock it doesn’t think can be effectively traded given the size of our position.

The rules we have developed are stored in the form of a computer program which is run every night on every available stock in North America, thousands of them, using millions of items of data that are only hours old. The model decides on the spot which stocks to sell and which to buy. The technical term for our computer model is an “Expert System”: a computer program that implements a set of rules created by human experts. It is important to note that an expert system doesn’t do anything a very smart human could not do. It simply does it faster and more accurately.

The strength of the model, the reason it achieves the performance it does, is because it does in about 30 minutes what an enormous team of experts might require many months to do, and it does it every night. The model doesn’t get excited, anxious, tired, hungry, nor does it have ‘bad days’. It is immune to fads or enthusiasms. This process works because the model applies its common sense rigorously, accurately, and quickly, on every stock in the entire market every night.

The nearest example is a chess-playing computer program. With today’s technology, a chess-playing program

will beat the world's best grand master the vast majority of the time. Not because it's smarter, but because it is relentless, extremely fast, and immune to emotion.

There are some drawbacks to using algorithmic investing. It cannot look at things that cannot be quantified. It cannot have dinner with the management team and come away with a 'good feeling'. It cannot get caught up in the CFO's presentation about the company's future. Therefore it might miss opportunities that others might see. The model did not buy Google, for example. On the other hand, it did not buy any Internet stocks at all during the 1990's, and thus the model was significantly outperforming the broad market while the Internet world was collapsing.

On balance, we believe that investing based on the approach of Behavioral Finance implemented in a computer-based Expert System is a stronger method of investing than a team of individuals picking individual stocks, no matter how talented or hard working they may be. Those individuals cannot evaluate every stock in the market, and they certainly cannot do so every night, free from bias or emotion. This, we believe, is the reason our model works as well as it does.

IS THIS ANOTHER NAME FOR BLACK BOX TRADING?

No. Black Box Trading looks at the minute-by-minute movements of prices hoping to identify opportunities to make a few points on a shortly held-trade. One black box fund we heard of makes 1,500 trades per day.

We look for much longer-term opportunities. Our average hold time is 5 to 6 months in calm markets; shorter in periods of high volatility.

Their models are based on nonlinear regression and other exotic techniques. Our model is based on fundamental and technical rules and common sense.

The only things we have in common with 'black box' funds are high returns and custom-built high performance computers. The programming inside is completely different.

IS THIS ANOTHER NAME FOR DATA MINING?

No. In fact, quite the reverse. With "data mining" you start with a data set and no preconceived notions of what you are going to find. Using regression analysis and other similar techniques, you try to uncover relationships that may be revealed in the data.

The problems with data mining are well-known: you can be led to conclusions that are not true, but are merely statistical artifacts. It's called "overfitting." This problem in data mining is so pervasive that elaborate safeguards are used (by some firms) to avoid falling into this trap.

Our process is the exact opposite: we start with some strong ideas of what should be effective in identifying stocks that are likely to increase in value in the near to intermediate term, based on the experience of experts. We use our dataset merely to test and refine the model that we had already constructed out of our own experience and common sense.

We never used regression analysis in developing our models, not once. Regression and its pitfalls are not part of our approach.

GIVE ME A REAL WORLD EXAMPLE

Teaching people to fly jets is a challenge:



Inside the cockpit of the Citation Sovereign FAA-approved Level D full-flight, full-motion simulator at FlightSafety's Cessna Center in Wichita, Kansas.

- ▶ It is expensive to train a pilot in a real jet. An hour shooting missed approaches in a 747-400 might cost \$100,000 or more. On the other hand, you don't want a pilot who isn't well trained flying a real airplane.
- ▶ You don't want to crash a real airplane. But how else do you teach a pilot what happens if they let their engines spool down on short final or if they forget to lower their landing gear or screw-up a V1 cut?
- ▶ There are some things you just wouldn't want to do in an airplane, but things you'd like to train the pilot how to handle if it ever comes up. Fuel exhaustion. Complete hydraulic failure. Engine fires. Cabin fires. Explosive decompression.

The answer is a simulator.

A flight simulator is an example of an expert system. At its heart it is a computer program that uses rules to draw conclusions about what will happen following every possible action of the pilot. These computer-generated conclusions are then fed to actuators, video displays, engine instruments, even loudspeakers that simulate for the pilot-in-training what would happen if he did it in a real airplane.

These simulators are so realistic that a pilot can go to 747 ground school, take a course of “flight training” in a simulator, take his/her FAA check ride in the simulator, and be given a type rating in a 747, without ever having sat in one. They could then walk from the simulator building into a real 747, sit in the left seat, and fly it full of passengers to Singapore².

Martial Capital, Ltd has built an investment simulator, an expert system. It allows us to test investment strategies and see what would have happened. Our early models sometimes ‘crash’ just as virtually every pilot ‘crashes’ the simulator. Like the pilot, we learn and improve the model. We test it again. And again. Only when we are satisfied do we invest real money, our own money, in what is called the ‘seeded period’. Only when we have proven that the model really works in the real world do we accept subscriptions from clients.

Like that 747 pilot, having a simulator allows Martial Capital to develop investment strategies that are more likely to be effective in the real world than those companies who have no way to thoroughly test their theories before they launch them.

² This would never happen in the real world. The airline itself has its own regulations that are often more strict than the FAA. The insurance company that has the hull and liability insurance on the airplane has their own rules. And no pilot in his/her right mind would ever do this (we hope). But from the point of strict legality, they could. In practice, this new pilot (new to 747's) would spend considerable time in the right seat first. It is possible, however, that this is your co-pilot's first time in a real 747.