

AI Stands for Amazing Intelligence!

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**TrackMacro™ is a software tool
providing equity risk signals in 40
countries**

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TrackMacro could be viewed as an infant Artificial Intelligence, with only a few hundred connections in its three-layer brain, as compared to “adult” deep neural networks, with up to 152 layers and a billion connections. AI systems’ faculty for surprising their own designers does not, however, depend on their size.

Building new, non-parasitized, bold forms of intelligence

In 1957, Franck Rosenblatt creates the first artificial neural network in Cornell’s space laboratory, to help sort and cluster photographs. In 2017, AlphaGo, Google’s AI algorithm, beats Ke Jie, world master of the game of Go. AlphaGo’s programmers themselves were astonished by the speed at which their progeny had been learning and by the inventive new strategies it had discovered.

Human brains are pre-programmed by the 3.7 billion years of co-evolution of living organisms and by cultural epigenetic influences. AI brains are new forms of intelligence, simply reset from scratch. Three months after its mediatised victory, Google’s machine was given early retirement, since no serious human competition could be projected in the future.

AlphaGo’s artificial “aunts and uncles” caused surprise as well, in their ability to find unexpected statistical solutions to human questions. London University, for instance, developed a neural network to classify music according to categories such as jazz, disco, blues, reggae etc. The AI program studied the complete spectrum of frequencies of thousands of recordings. It learned and self-adapted the non-linear response of its connections, and decided to focus mainly on infrasound (below 20 Hz).

Human intelligence would have simply been incapable of finding this solution, because human ears can't perceive ultra or infrasound. The infrasound signature was hidden in a veritable "no-man's" land.

Inside TrackMacro's brain

TrackMacro has only three layers of connected nodes in its "brain", computing 10,000 elements of data per month, to anticipate equity risks in 40 countries:

- The first layer transforms continuous economic and financial data into "trend states", controlled by statistical confidence.
- The second layer crosses signals according to Charles Gave's fundamental macro-economic rules to provide "equity-risk states" from seven angles: growth quality, liquidity, equity valuation, wealth effect, currency competitiveness, external demand, and cost of commodities.
- The third layer is the learning layer to properly weight each of the risk states of the seven rules, and to provide binary "risk on" or "risk off" signals for the following month.

We used a proprietary genetic algorithm, developed over more than 10 years, to speed-up the learning process and to control the output. The AI program creates random genes (the weights of risk states) and let them co-evolve, mute, and copulate, to imitate a high-speed natural selection process.

Fig1. Genetic Algorithm in Four Steps



Unexpected results!

The algorithm spontaneously differentiated the weighting of each state and, even more surprisingly, eliminated many of them. This explains why, starting from five risk states, a few of the seven rules ended up with only two, three, or four informative states.

Equity valuation, for instance, was left with only two states: positive, when valuations are cheap, or neutral. AI informed us that rich valuations do not provide any statistical information on equity risks for the following month. Expensive markets can remain expensive for a prolonged period.

The surprising AI lesson is two-fold:

1. Human intelligence confuses short-term and medium-term risks. The risk-asset market in the US, for instance, especially that of small-cap stocks or high-yield bonds, is expensive in many respects, hence the temptation to adopt a cautious investment stance ahead of a potential crash. TrackMacro concludes to the opposite: the US equity market is not at risk right now. Crash risk cannot be anticipated by overpriced multiples, on a short time scale.
2. Human intelligence sometimes deviates from reason: irrational exuberance or panic simply destroy the statistical link between rational expectations and prices. TrackMacro never deviates from reason: it focuses on the favorable combinations of macro factors providing high risk/return expectations for equity investors. When the macro situation is not equity-friendly enough, TrackMacro sounds the alarm. This statistical and non-emotional thinking process has been ahead of most irrational markets for forty years, back-tested and live for two years.