Lo, Andrew – Adaptive Markets

Princeton University Press, 2017, [Finance] Grade ★★★★

Due to the immense influence of Paul Samuelson economics in the mid twentieth century adopted much of the mathematical and statistical methodology of physics. The economic theories became all-explaining, exact and mathematically beautiful - but wrong. Starting in the 1980s a bunch of half-economists and half-psychologists emerged and formed the sub-discipline behavioral economics and were rude enough to point to the inaccuracies. Still, these new guys had no real alternative economic system to offer. They could tear down what was foul but had little ability to build anew. "It takes a theory to beat a theory" to speak with Milton Friedman. Then the Hong Kong born Andrew Lo, one of the more free-thinking economists of our age, a Professor at MIT and chairman of the hedge fund AlphaSimplex, launched a theory that it might actually be concepts from biology that will fit both traditional economics and behavioral economics into one unifying grand scheme. The framework became known as the adaptive market hypothesis (AMH) and it is the topic of this important book.

Broadly the book is structured so that chapters 1 through 5 give the reader background knowledge of the efficient market hypothesis of traditional finance, behavioral economics, neurofinance and biology's evolutionary theory. Then chapters 6 to 8 present and exemplify the AMH. Finally, the last 4 chapters try to show that financial crises could be understood through the AMH and how we by this could form regulation and practices to if not prevent a crisis, at least stop it from escalating into something more severe.

Lo is a very good storyteller with a fair dose of humor. My only big complaint of *Adaptive Markets* is that it's too comprehensive and thorough. The first 175 pages give necessary pieces of the puzzle so that the reader can understand Lo's theory, but the reader probably hasn't bought the book to read exactly these long sections on the basics and history of economics, psychology, biology etc. – we want the juicy stuff; the AMH. Then in chapter 9 there are another 30 pages giving a basic context behind the recent financial crisis. All in all these background stories are long enough to fill a normal length book by themselves. Although they clearly show the broad scholarship and knowledge of the author these sections should probably be cut in half for the second edition.

According to Lo price formation in markets follows the principles of evolution with its competition, adaptation and natural selection – or death - of spices in an ever changing environment. The spices in question are different groups of market participants that in a "satisficing" manner apply varying strategies and heuristics to compete for market profits. The choice of strategies are decided by an innovative (mutational) is interactive trial-and-error process, where the market feedback reinforces the use of some and deters the practice of other in an ever ongoing feedback loop towards refinement. A strategy that doesn't fit the current environment would be deemed irrational by the traditional economist but is simply not adapted to the surroundings in an evolutionary meaning.

Now, unfortunately the environment isn't static but depends on both external forces and the behavior of the competing spices. When too many populate the same habitat, i.e. uses the same strategies, the potential for profits is exhausted and a strategy that was well adopted becomes unprofitable, leading to a flight from the habitat. Eventually this exodus might restore the potential for returns and we get an ever oscillating market environment. An efficient market is simply a model of an unchanging market, something that only exists for so long. Interestingly, some "irrational" behaviors discovered by behavioral finance look to be unconsciously designed to spread one's bets in case of change.

Anyone with an intention to have an edge in financial markets should really have read Adaptive Markets – because their competitors will have.

Mats Larsson, July 24, 2018