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Saturday July 21, 2012

# Long hot summer, adaptive markets

Think Asian

By ANDREW SHENG

The summer heat wave in the US Corn Belt is going to hit grain production and has already raised food prices. So far, such price increases have yet not translated into global inflation, thanks to better food crop production in other parts of the world.

Commodity traders today use satellite maps to track global crop production and weather conditions in order to predict commodity prices. In 1878, English economist William Stanley Jevons (1835-1882) even suggested that economic cycles are related to sunspots, because sunspots affected the weather, which in turn affected crop production and the economy.

The summer heat is also adding to political tension in many countries, on top of the European debt crisis and the fear of the Chinese economy slowing, all adding to market volatility and uncertainty. The question is what is the best economic framework to make sense of what is happening around us? All we can say with some certainty is that the current Efficient Market Hypothesis economic and risk management models are not working well at all.



Theoretic: The Peltzman studies in 1975 on seat belts safety requirements suggest that highway deaths did not decline that much because people became more reckless, since they felt more safe.

MIT Sloan School [professor Andrew Lo](#), through a recent paper, *Adaptive Markets and the New World Order* (December 2011) suggests that we should view financial markets and institutions from the perspective of evolutionary biology rather than physics. He simply suggests that the current generation of efficient market hypothesis models is not so much wrong as incomplete. These models worked reasonably well from the 1930s (the Great Depression) to the mid-2000s in the US financial markets, but he suggests that the last decade is really the beginning of a New World Order of higher volatility, due to larger population and seismic economic shifts caused by technology, competition for resources from population giants like China and India and of course, rising leverage and global imbalances.

The adaptive market hypothesis (AMH) is a behavioural theory of interactions between market players, recognising that efficient and irrational markets are extremes, whereby most market conditions are somewhere in between at any point of

time. The market adapts to changes in the environment, such as policy changes. There are well known puzzles in economics, which suggest that market behaviour changes due to changes in regulations. For example, the Peltzman studies in 1975 on seat belts safety requirements suggest that highway deaths did not decline that much because people became more reckless, since they felt more safe.

The idea that the market knows best underpins current corporate governance theory, that share prices reflect the market assessment of how good a company is performing. However, the rule change to allow share buybacks meant that a company can use its own cash to keep its share price up, at least delaying the signalling effect of weak share prices on performance.

The AMH suggests that rather than thinking that there is always “the wisdom of crowds” the logical extension that markets are always right one should think about the creative tension between the wisdom of crowds and “the madness of mobs.” The European crisis shows that there is already a flight to quality, as German bond yields are at record lows, whereas Italian and Spanish bond yields remain under pressure. European politicians keep responding to crisis by decisions at the brink, and markets are responding accordingly.

A very useful insight brought by the AMH is that conventional wisdom can become wrong over time, such as the notion of diversification. We are taught that we should diversify our risks, but increasingly, most markets have become highly correlated to each other, so moving money to emerging markets may not be a diversification, if these economies and markets have not decoupled from the advanced economies.

Such innovative work by Andrew Lo is needed because we live today in a highly complex world, where the only way to comprehend it is to have a system-wide view that looks at the interconnectivity, the interdependence and feedback mechanisms between the parts and the whole. George Soros is right to point out that reflexivity the feedback between the parts that create new situations that give rise to new opportunities as well as risks, may be more important an insight about current world order, than the idea that we would all eventually go back to equilibrium.

Climate warming, ecology and economics converge because the issues are all interrelated and can no longer be thought of as independent of each other. What we have not understood is how to link these patterns of change into a new order. We can only do this when we see this graphically, by using big data (as well as micro-data), which companies and governments have not mined and analysed. This is now made possible by the rise of super-fast computers and new mathematics of complexity.

Biological scientists have long argued that biological organisms evolve through patterns changing from one order to another through evolution. The big debate in using biological science to explain economic behaviour is whether collective human behaviour and human social order can be an imitation of biological life, which belongs to the realm of natural science.

Social science has always been differentiated from natural science because of human determinism the fact that man alone from other animals has been able to shape (some people think destroy) his natural environment and to impose social order. The fact that political leadership and order is being challenged almost throughout the world raises the thought whether we are as able to shape social order as we thought, or are we in the midst of a major move to a new order?

The study of the interaction between market and state (the latter the control of markets) needs to draw in lessons from biology, ecology and systems theory. Markets are about self-organisation, and according to biology, self organisation is the emergence of new structures and new forms of behaviour in opens system far from equilibrium. Change is dynamically complex and feels like chaos.

So summer heat, political heat and market volatility are all inter-related. Sounds familiar?

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