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GUEST COMMENT: This Time It Really Is Different - The Uses, Limits Of Game Theory For Investors

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Game theory has its uses in explaining certain types of behavior but also carries limitations in today's complex market, so the author of this commentary argues.

There is a saying that past performance is no guide to future returns. Another goes that history may not repeat itself, but it rhymes. We have, in many commentaries around the 2008 financial crisis and its aftermath, been reminded of how policymakers can claim that this or that market episode is unprecedented and unique (remember the talk about a "New Economy" in the dotcom era?) or that inflation will not recur despite massive amounts of quantitative easing. Clearly, therefore, looking to history as a guide about the future is still a necessary act so long as plenty of caution is exercised. The past few months have given investors plenty of reasons to reach for their history books. The election of Donald Trump and Brexit are two of the most obvious cases.

How should all this uncertainty be approached? In this article, DeFred G Folts, chief investment strategist at 3EDGE Asset Management. He has served on the investment committees at both Windward and Windhaven Investment Management and most recently, he was chief investment strategist at Windhaven Investment Management. The editors here are pleased to share these comments and invite readers to respond.

As Eric Beinhocker describes in his book, *The Origin of Wealth*, "There is no one best strategy; rather, the evolutionary process creates an eco-system of strategies - an ecosystem that changes over time through creative destruction." At 3EDGE Asset Management we believe in the inter-connectedness of the global markets viewed in terms of a non-linear, complex system. Based on this belief, in addition to our other analytical tools including quantitative analysis, sound judgment and practical investment experience we have incorporated a multi-player game theory framework into our investment research process.

Uncharted territory

Typically, when analyzing the global capital markets, it is helpful to look back over history to find periods of time when similar conditions may have existed in order to attempt to understand what the future may hold. However, in many respects, the stunning US Presidential election, Brexit and even the massive intervention by the world's central banks since the onset of the financial crisis of 2008 have created an environment that has no clear historical precedent.

Never before have the world's central banks been so enmeshed in the global economy and the markets. For example, as a result of unprecedented and ongoing central bank activism, much of the world is experiencing an increase in the degree of currency manipulation, expanding government debt levels, and even negative interest rates in Japan and Europe. At the same time, the US Federal Reserve has inflated its balance sheet to over $4.0 trillion. Since one cannot easily turn to history as a guide to investing in the current environment, applying a multi-player game theory framework could be helpful because game theory is a method of analysis that is much less reliant on past history.

Game theory

Many people may know of the concept of game theory through the example of the Prisoner's Dilemma, or Nash's Equilibrium from the movie A Beautiful Mind. In its simplest form, game theory is used to study situations in which there are a set of players, each with certain goals. As the game begins each player must make a series of decisions in the hope of achieving his or her goal. There also exists a set of rules that map each player's decisions to a set of future payoffs and the players involved could be seen to be striving towards some measure of equilibrium.

Game theory is fairly simple if there are a limited number of players and if the game or decisions present themselves a finite number of times. Unfortunately, the global capital markets present an environment where there are a multitude of players including the world's central banks, governments, investors, consumers and producers. Further, in some respects there is no clear end point. Therefore, in order to successfully apply a multi-player game theory framework as a tool to assist in analyzing the global capital markets, it becomes necessary to somewhat relax the aforementioned concept of equilibrium. This adjustment away from seeking equilibrium is consistent with our belief that the global markets, particularly when analyzed at the asset class level, are rarely, if ever, in a state of equilibrium. Quoting again from Beinhocker, "…the broad arc is leading us away from an equilibrium view of the economy (and the markets) toward an evolutionary, complexity-based perspective."

Applying a Multi-Player Game Theory framework as an additional layer of investment research makes sense since the global capital markets themselves represent an environment of constantly adapting strategies, actions and counter-actions among a variety of actors - all components of game theory. More importantly, in the current environment where historical precedent is difficult to come by (a result of eight years of unprecedented monetary intervention by the world's central banks), a Multi-Player Game Theory framework could potentially play an even more important role since it is a method of analysis that is not reliant on historical precedent.

However, regardless of how helpful applying a multi-player game theory framework to analysis of the global capital markets may prove to be, it should be considered as supplemental, hopefully additive, but still only a part of the overall investment research process.

Note

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