



The Big, Big Picture

Most individual investors only scratch the surface when operating in the world of finance. They view investing as an *art*, using rumor, casual advice or intuition to make decisions completely ignoring the *science* behind it all.

Finance undoubtedly is a science based on valuation methodologies, debt-to-equity ratios, weighted cost of capital, earnings growth rates, return on invested capital, competitive positioning, macroeconomic trends and several other numerical factors.

You cannot understand investing by merely observing the fruit of the tree – you must know how deep and strong its roots grow beneath the soil, and whether those roots can withstand a heavy storm or will give way to merely a strong breeze.

[Paradigm](#)

Scientists use the word *paradigm* (pronounced para-dime) to describe a pattern, model or framework that stands true for long periods of time. Paradigms generally hold true until internal or external changes cause fundamental and often disruptive *shifts* in the model or framework.

In finance, studying historical *paradigm shifts* helps us understand disruptive factors and predict future trends.

In an April 2011 newsletter, prominent investment strategist Jeremy Grantham identified four *paradigm shifts* in the global economy – in oil, metals, agricultural commodities and weather patterns.

Let's get his take on each.

Oil

In 1974, while most commodities trended downward, oil rose abruptly. Caused in large part by the formation of the Organization of Petroleum Exporting Countries (OPEC), a global cartel formed to regulate each member-nation's oil production and export volume. However, OPEC seemed to have the complete opposite effect – prices rose even more after its founding.

Grantham has analyzed oil price trends and statistics and concluded that oil prices trade for long periods within a narrow band, but occasionally trade higher into a new band. In other words, they experience – a *paradigm shift*.

- First shift: Oil prices averaged \$16 per barrel for nearly 20 years but in 1971 jumped to a new level at \$35 per barrel.

- Second shift: Oil prices averaged \$35, and jumped to a new average price of \$75 in 2007.

- Possible third shift: Right now, prices average \$75, and could rise to a new average of \$180 if history holds true.

Grantham expects oil prices to reach a new average price of \$180 per barrel as another paradigm shift takes hold. (Yes, I too am hoping this does not come true.)

Metals

Due to the rapid growth of several emerging economies, many industrial metals have seen dramatic increases in demand over the past decade. One such metal is copper, which is currently trading near the top of its long historical price level partly because of high demand from countries like China, and partly because the costs of extracting and processing the metal have gone up.

All easily minable copper has been exhausted so miners now have to dig up 50% more ore to extract the same amount of copper or develop new mines in remote locations. As Ivan Glasenberg, CEO of copper mining powerhouse Glencore, says “We took the nice, simple easy stuff from Australia, the U.S, we went to South America and now we have to go to remote places.”

Grantham's research shows that copper trended down for nearly 100 years until 2002 when it hit a 110-year high in 2010. This leads him to predict a second paradigm shift in copper prices to a new higher price band.

[Agricultural Commodities](#)

Wheat, Rice, Corn, and Soybeans - unlike other commodities, are still considerably below their previous highs experiencing only minimal price swings. Historical price data does not suggest a paradigm shift based on Grantham's model, but prices could move dramatically if weather patterns impact crop yields. We'll have to pay close attention to the weatherman.

[Weather](#)

Very rarely do all agricultural commodities move in tandem, either during a drought or after a flood, both of which are the result of unstable weather patterns. Recently unstable weather has been the norm over the past 12 months (the central U.S. has just experienced the worst floods in 80 years). Prices are expected to decline next year as the weather improves.

[Paradigm Shifts and You](#)

To be successful, every investor should know as much about the global markets as possible and hopefully this article will deepen your knowledge and understanding of the events which impact the markets. Having an unshakeable idea of the fundamental nature of trends can give you the perspective needed to understand current events.

You see, it is the use of science not art that will help you create the most wealth.