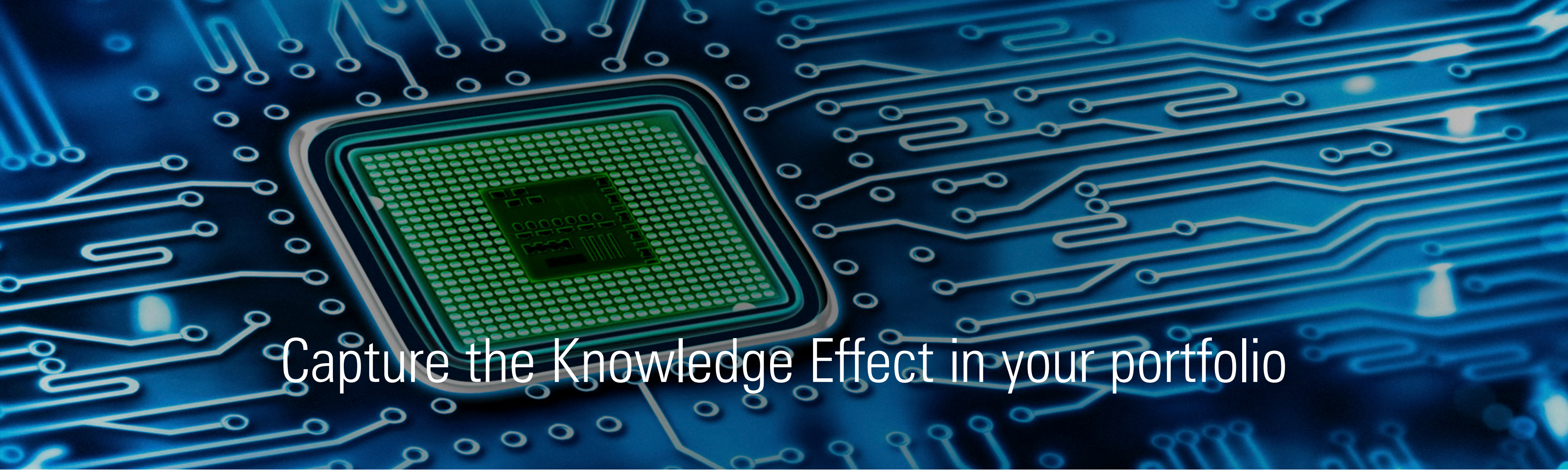
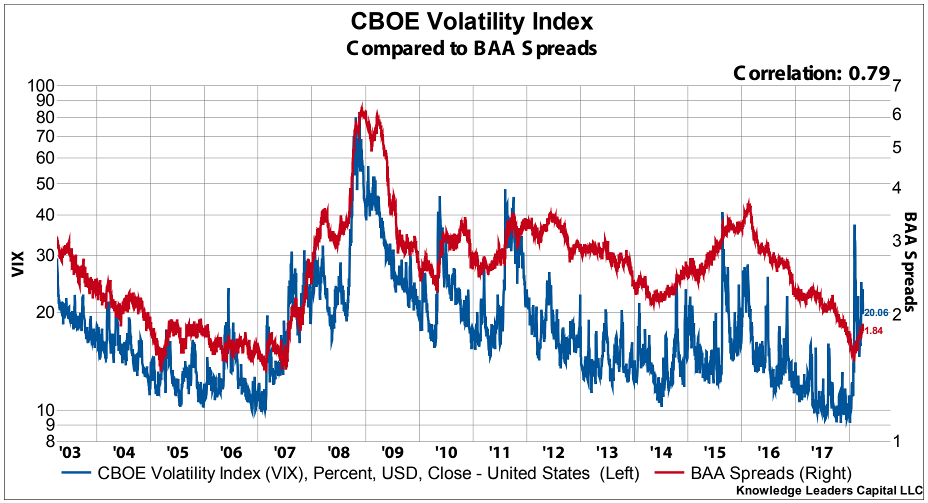


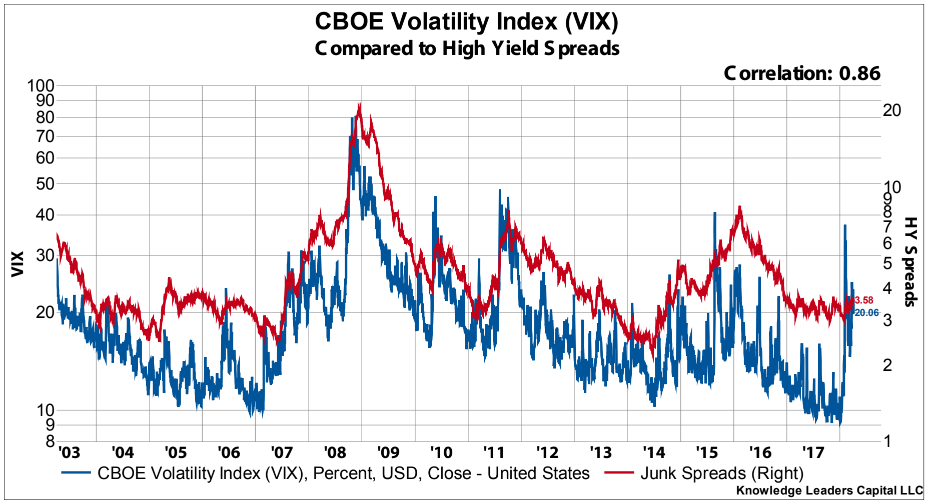
First Quarter 2018 Update and Commentary

Knowledge Leaders Strategy

KNOWLEDGE LEADERS CAPITAL

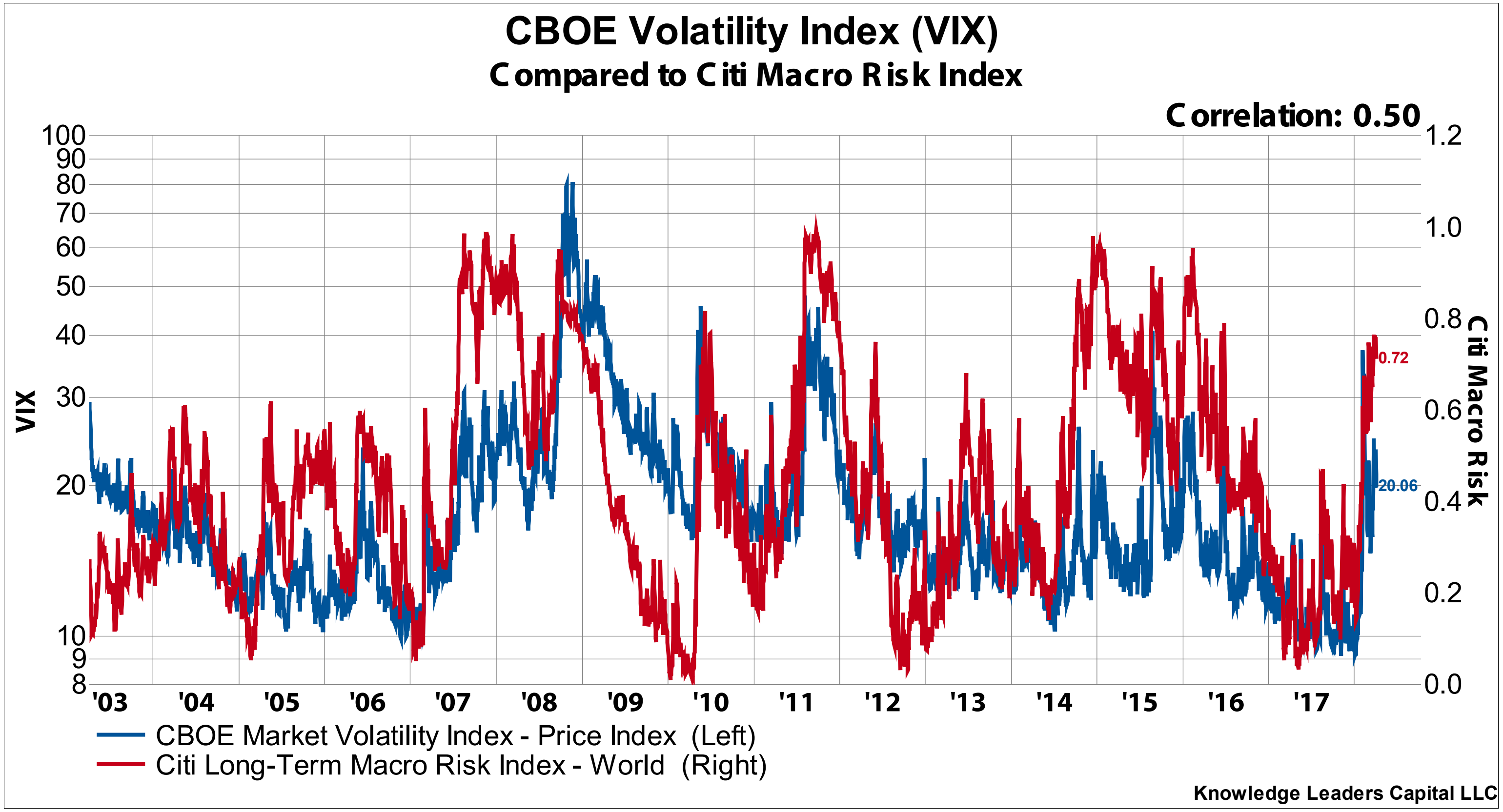
Volatility and credit spreads are highly correlated. Does the rise in volatility prove durable and pull up credit spreads?





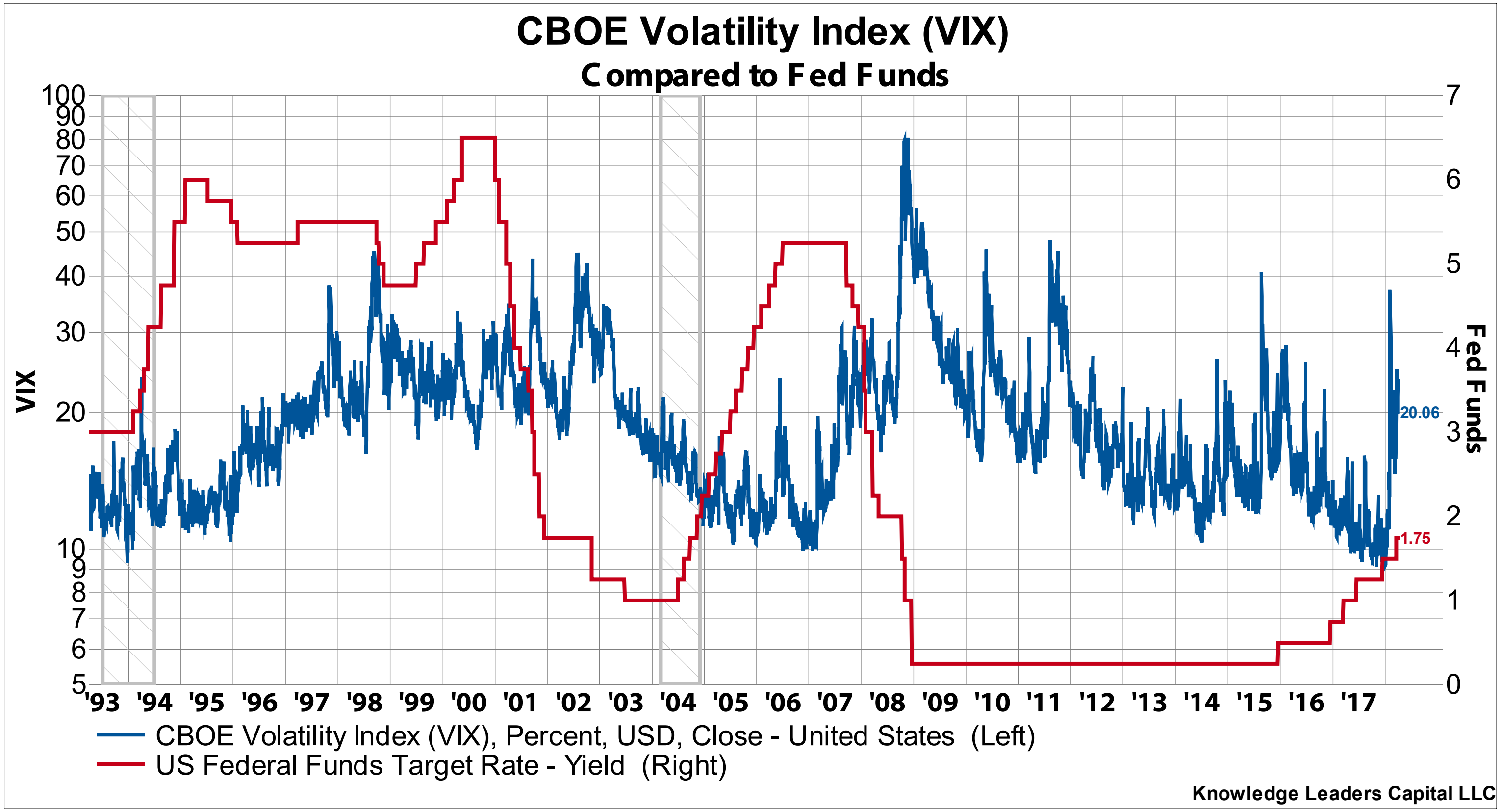
Source: Factset. As of 4/6/2018.

Volatility and macro-risk is also highly correlated. The volatility shock wave is being transmitted throughout the globe.



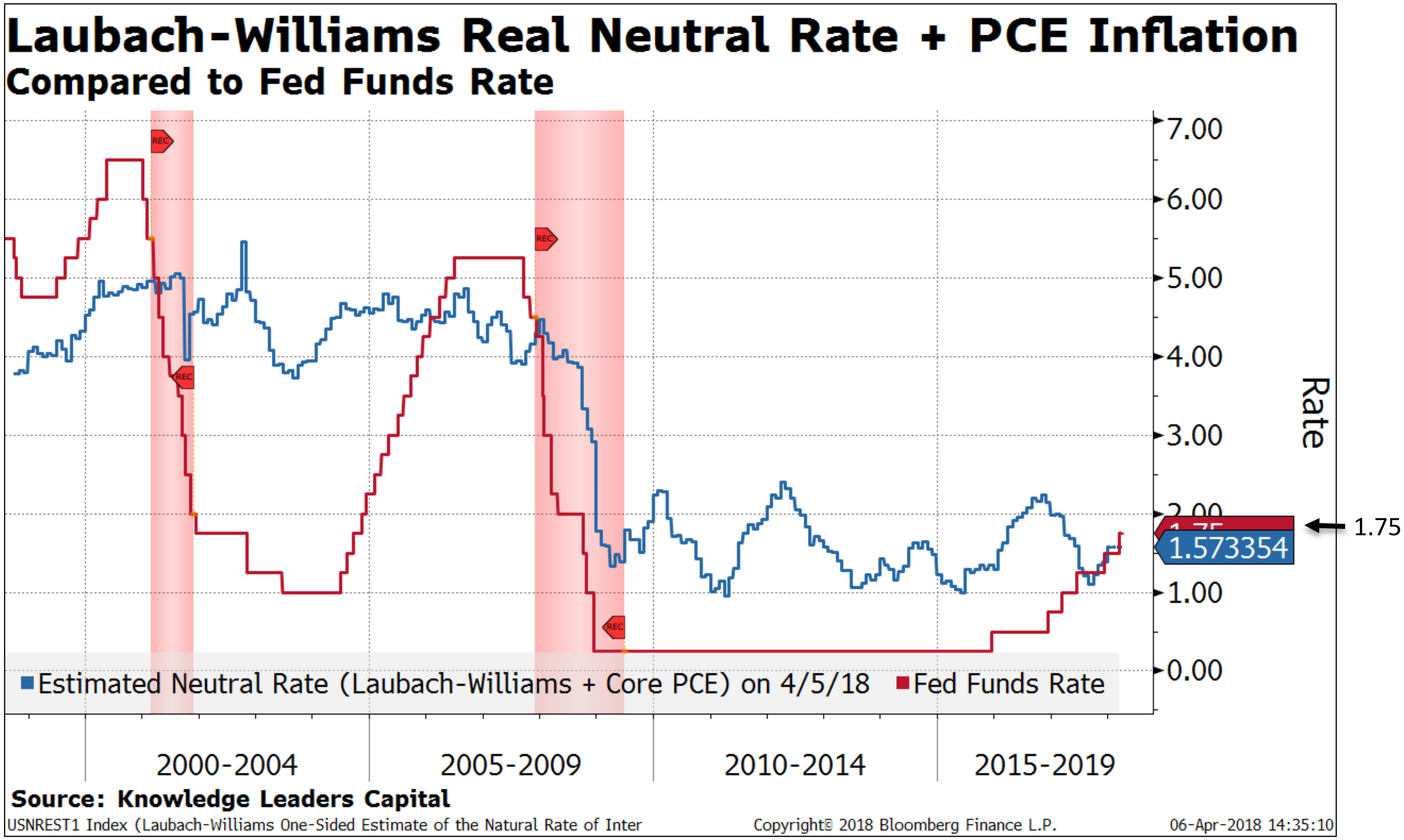
Source: Factset. As of 4/6/2018.

Historically volatility edges lower when the FRB is raising rates and tends to spike in easing cycles. The steady rise in volatility in 2007/2008 was in retrospect a good leading indicator.



Source: Factset. As of 4/6/2018.

Interest rates could be quickly approaching a neutral level, which may be alarming the market.

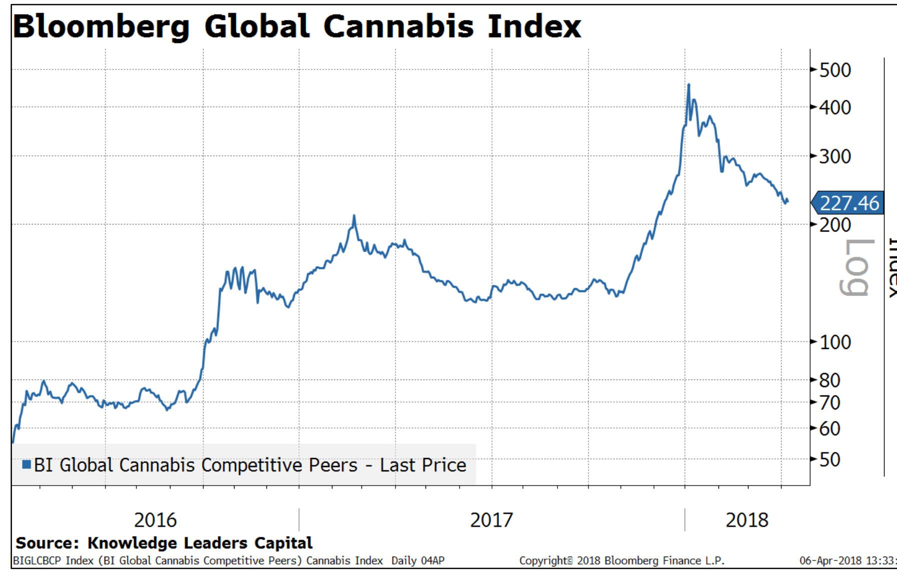


Source: Bloomberg.

Perhaps reflecting how close to neutral the Fed really is, financial conditions (credit spreads) have tumbled this year.

Source: Bloomberg. The Bloomberg Financial Conditions Index reflects credit spreads and volatility.

The spike in volatility and increasing interest rates have combined to put a lot of pressure on speculative investments.

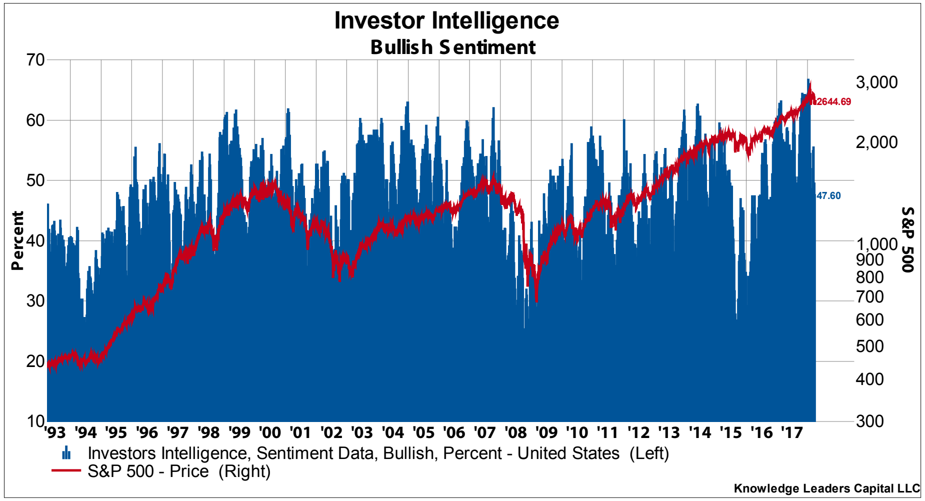


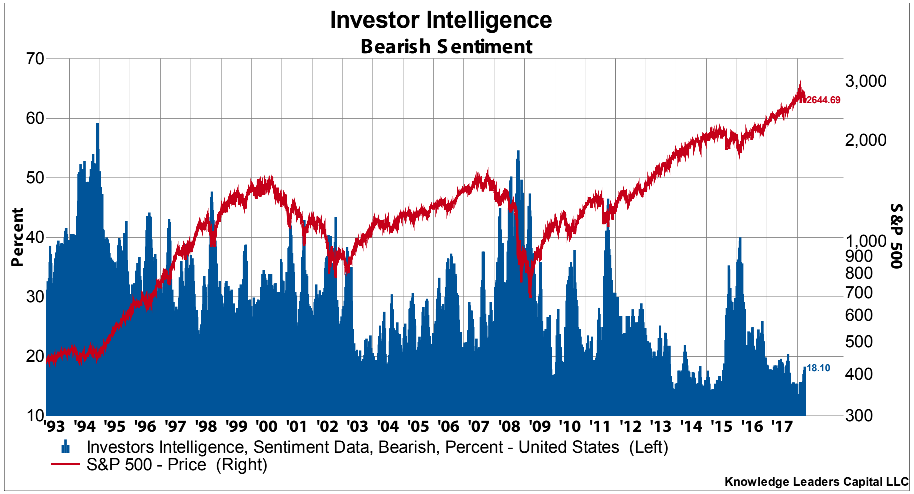
Source: Bloomberg

Trade concerns are also biting. Chinese stocks are making new YTD lows along with bond yields.

Source: Factset

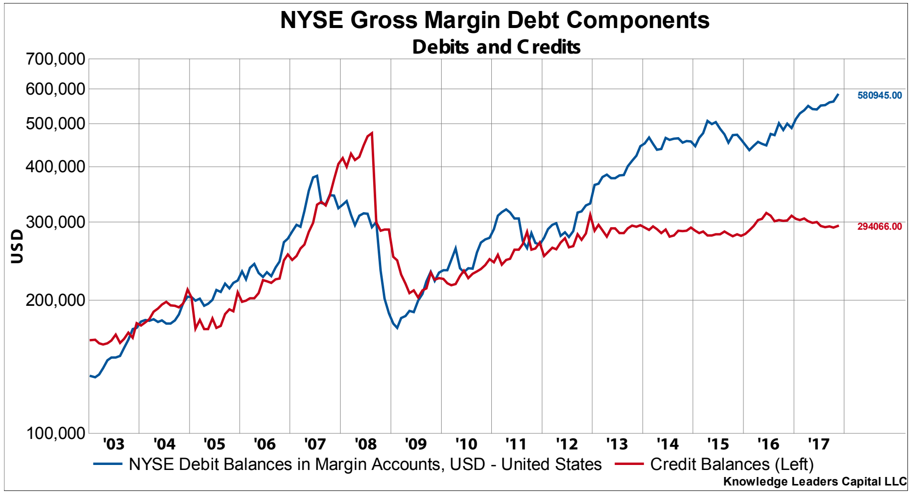
Investor sentiment is more bullish than any time in history while bearish sentiment hit the lowest level ever in early February.

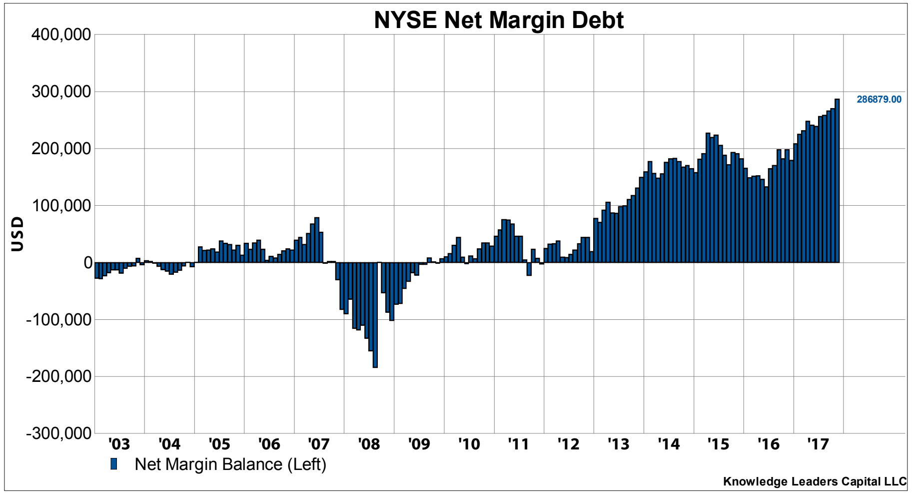




Source: Factset. As of 4/6/2018.

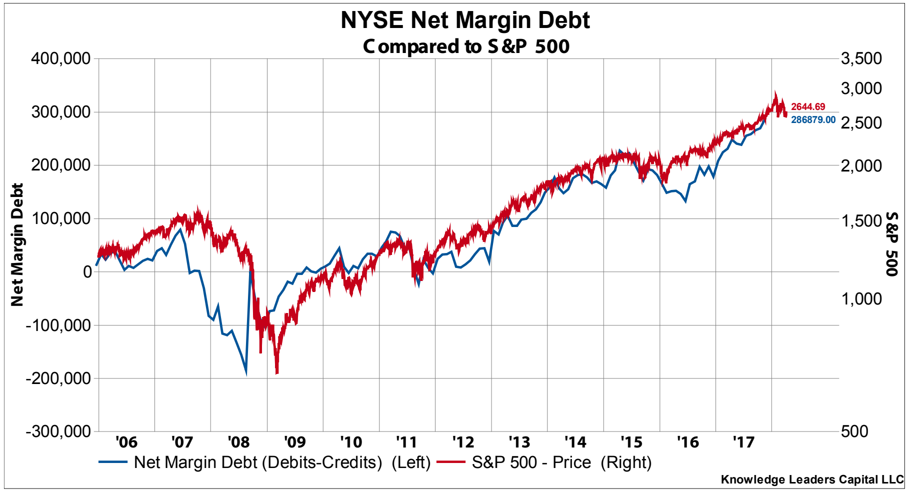
Gross and net margin debt are at historical extremes. This is one of the excesses built up over a long bull market.

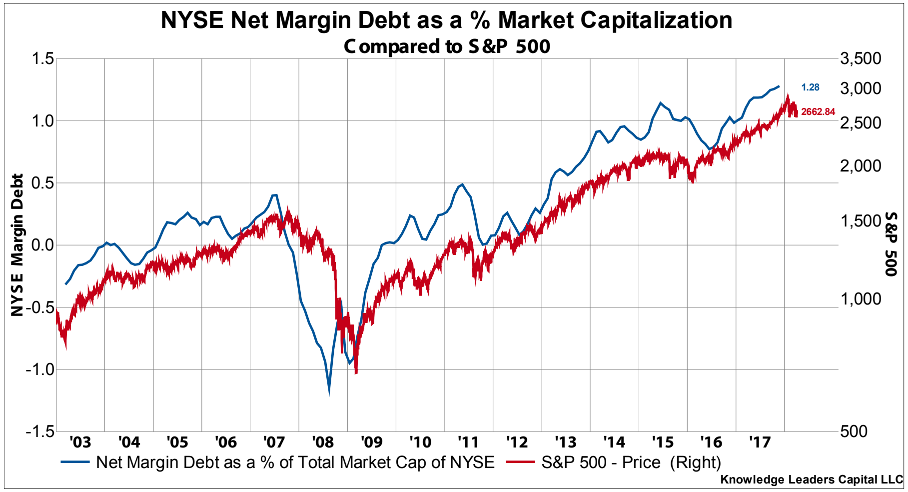




Source: Factset. As of 4/6/2018.

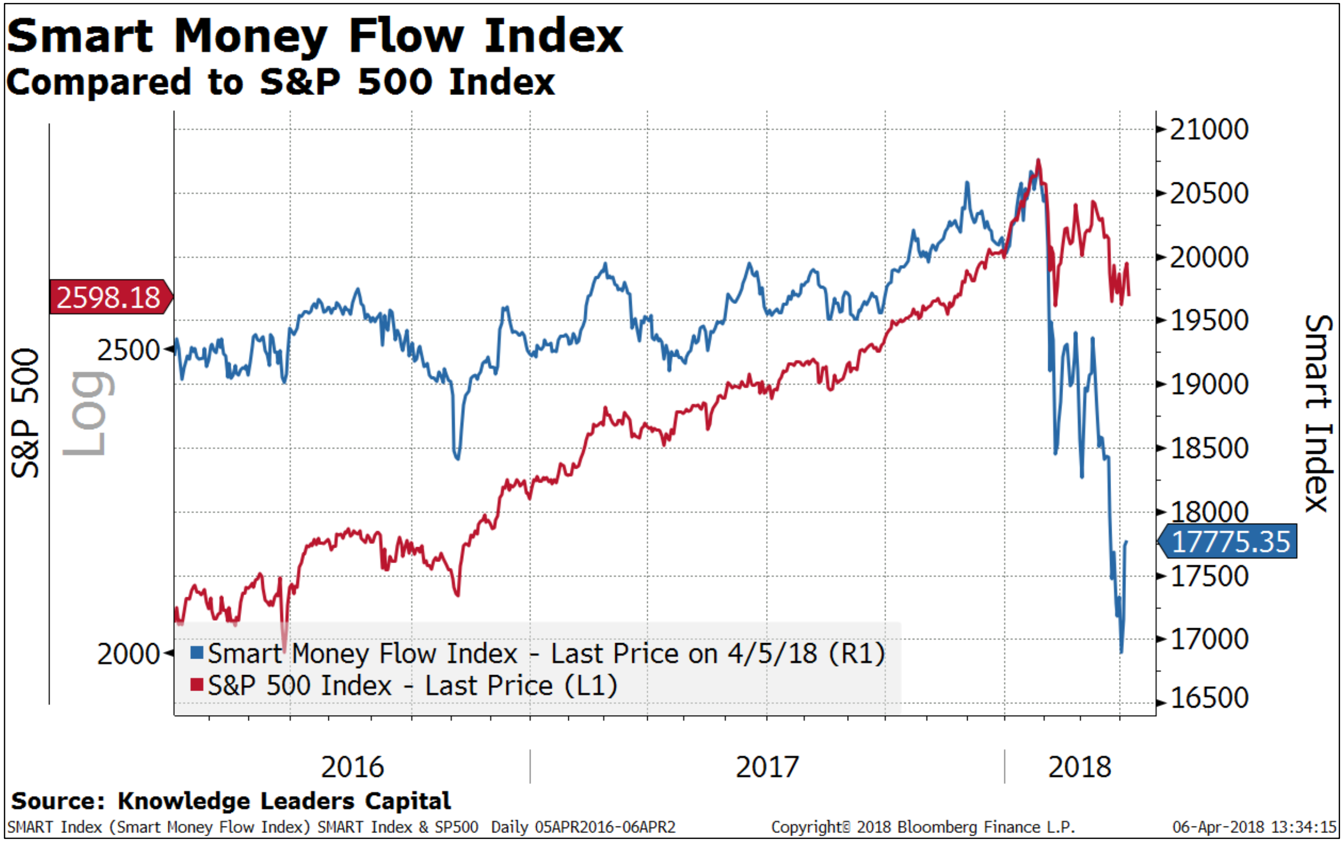
Compared to the last market peak in 2007, the amount of margin debt is about three times larger relative to the market cap of the S&P 500. This is a source of instability for markets.





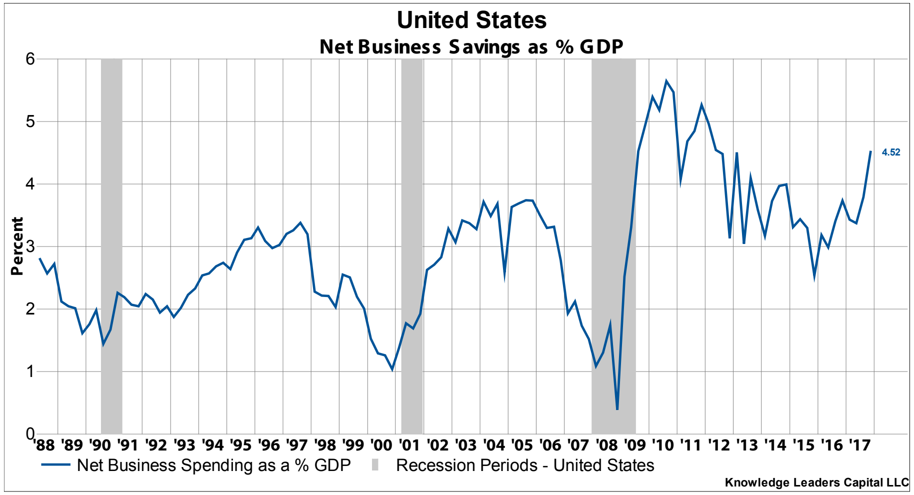
Source: Factset. As of 4/6/2018.

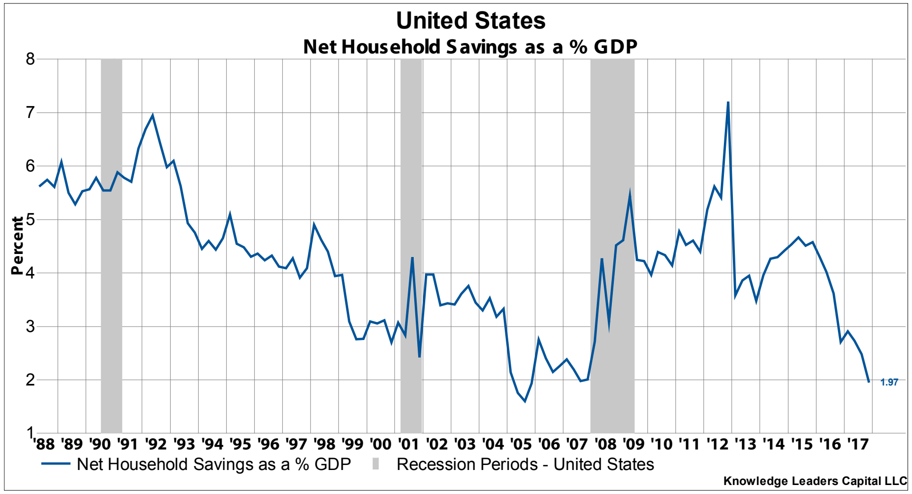
The SMART Index looks at NYSE price performance in the first half hour compared to the last hour. It is designed to capture trading by professionals, who have been very negative recently.

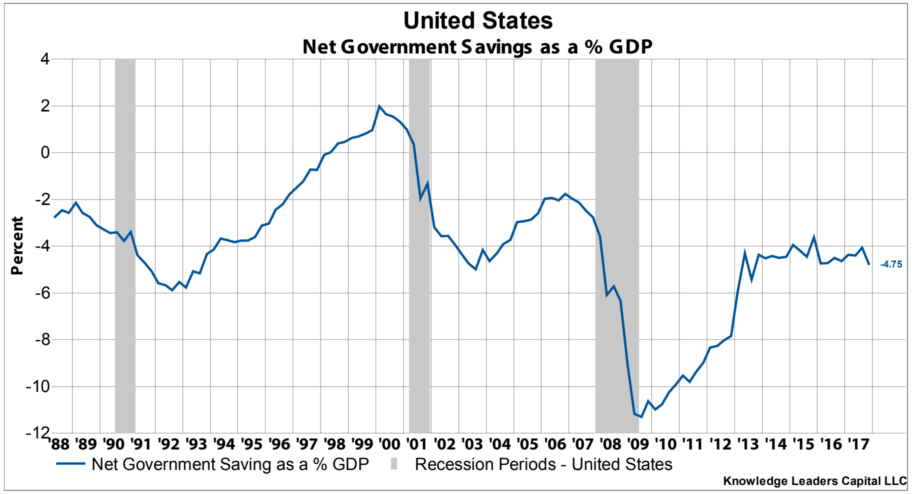


Source: Bloomberg

There are three sources of savings in the US: 1) households, 2) corporations and 3) the US government. The household sector has run down its savings rate to near record lows. With new fiscal stimulus the amount of government dis-saving will increase.

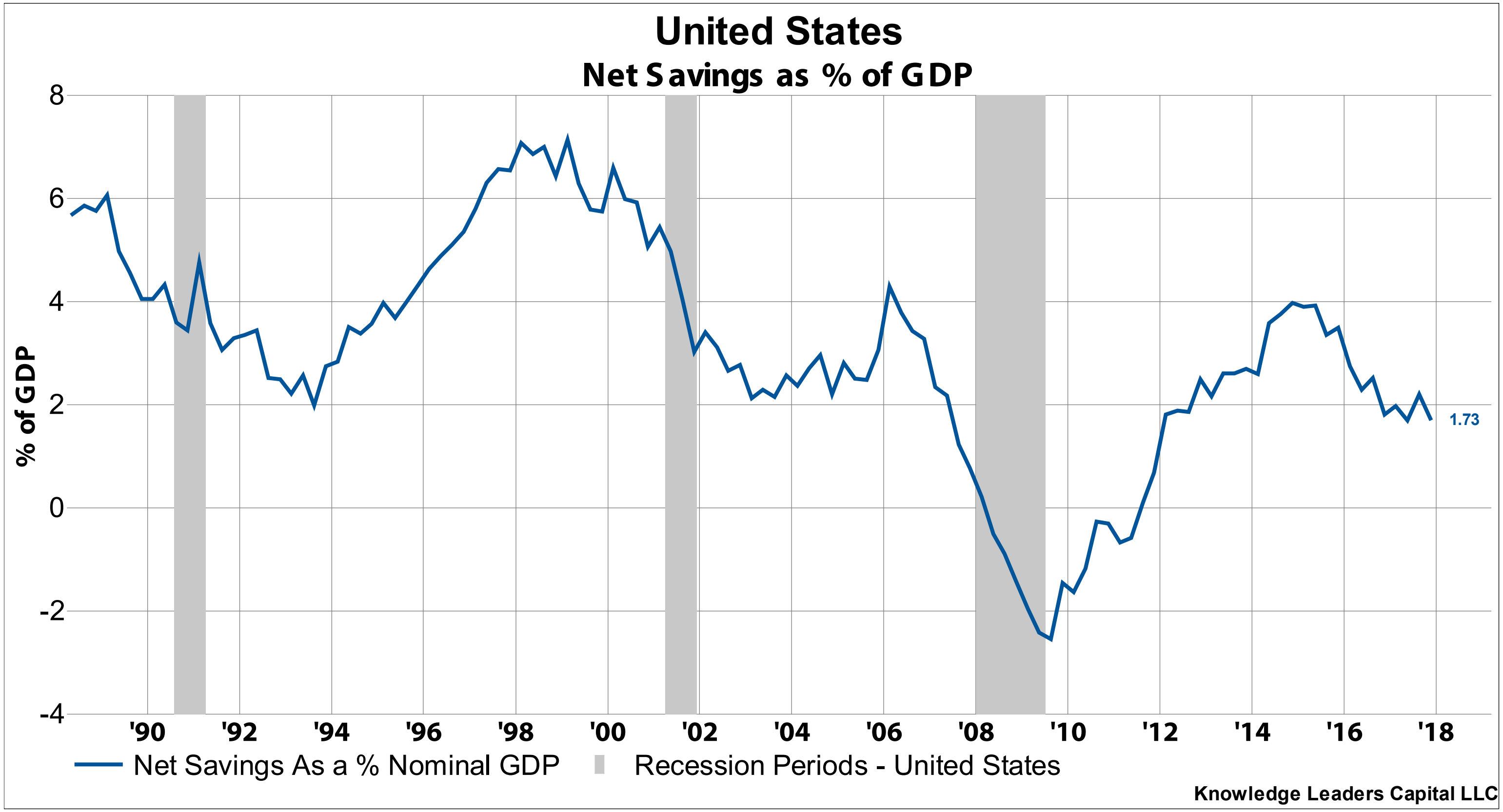






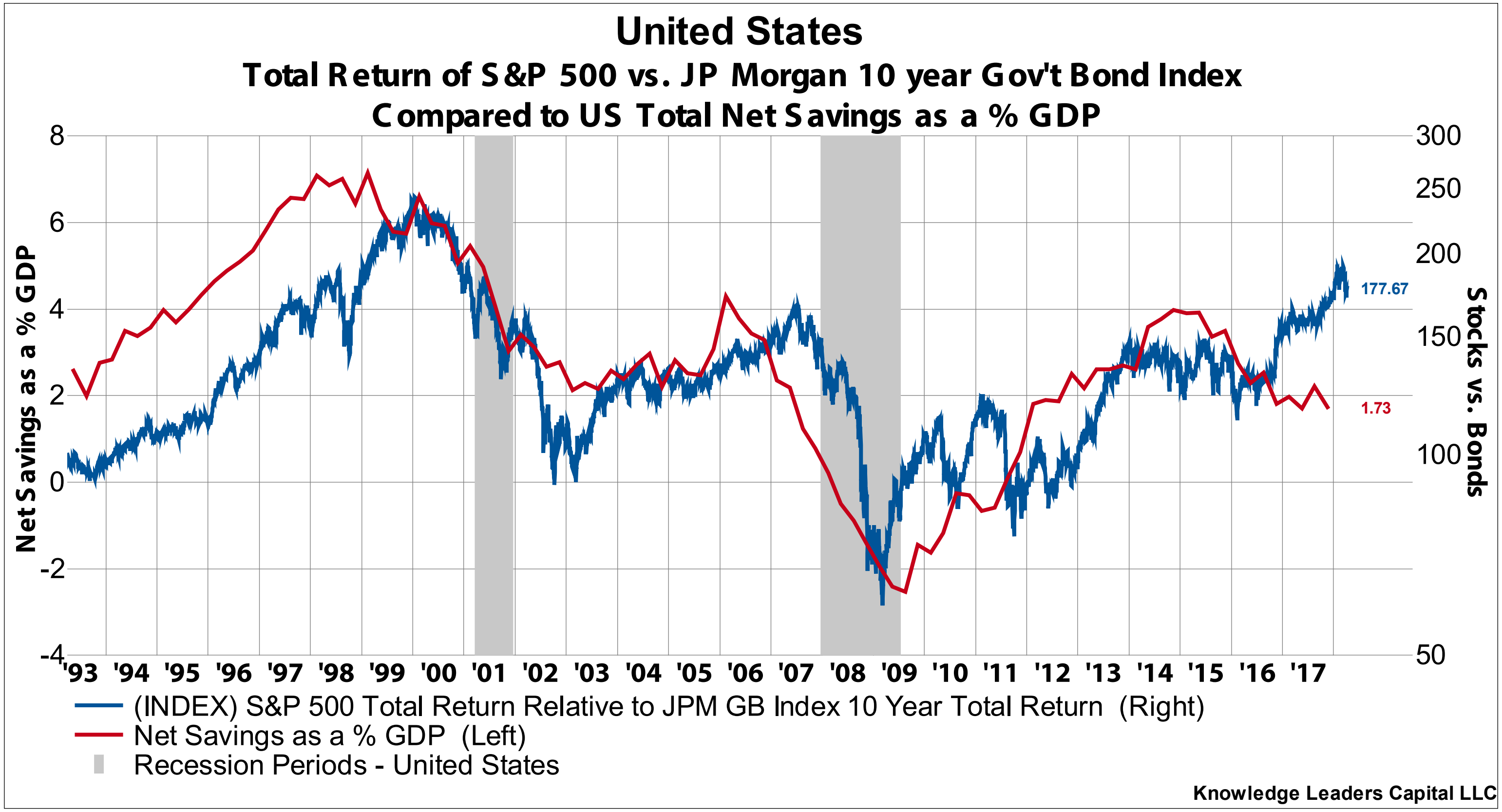
Source: Factset. As of 4/6/2018.

We combine these savings flows into an aggregate measure of net national savings. Net savings have been declining for two years.



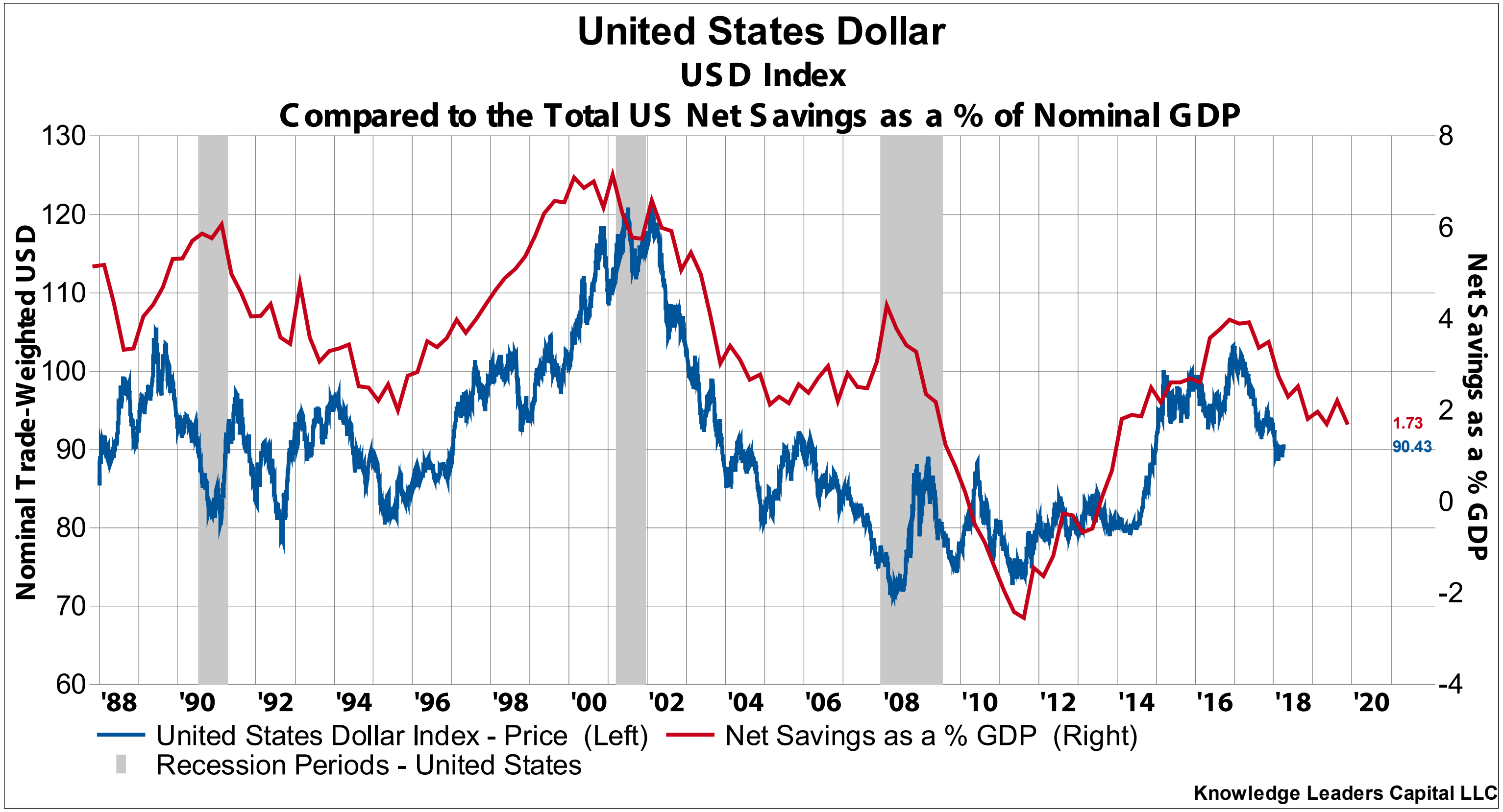
Source: Factset. As of 4/6/2018.

Changes in net savings tend to correlate to the relative performance of stocks vs. bonds. Stocks are hanging over a cliff by this measure.



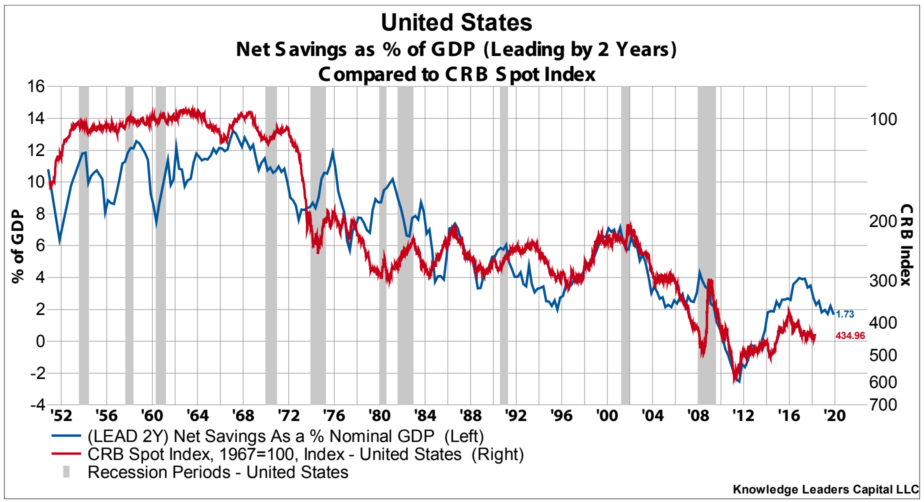
Source: Factset. As of 4/6/2018.

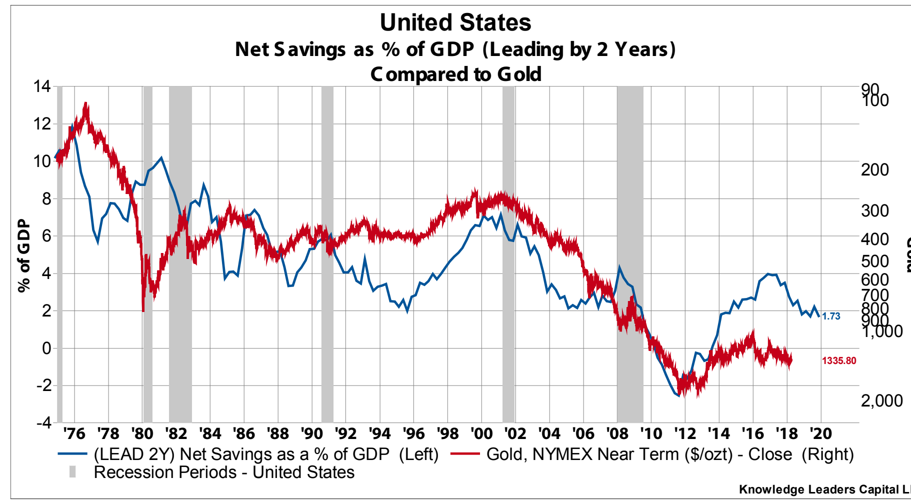
Trends in net savings also tend to be well correlated to the USD. When net savings fall, the USD tends to fall.



Source: Factset. As of 4/6/2018.

Net savings trends also correlate with commodity prices, especially gold prices. A deterioration in net savings has tended to be favorable for commodities.



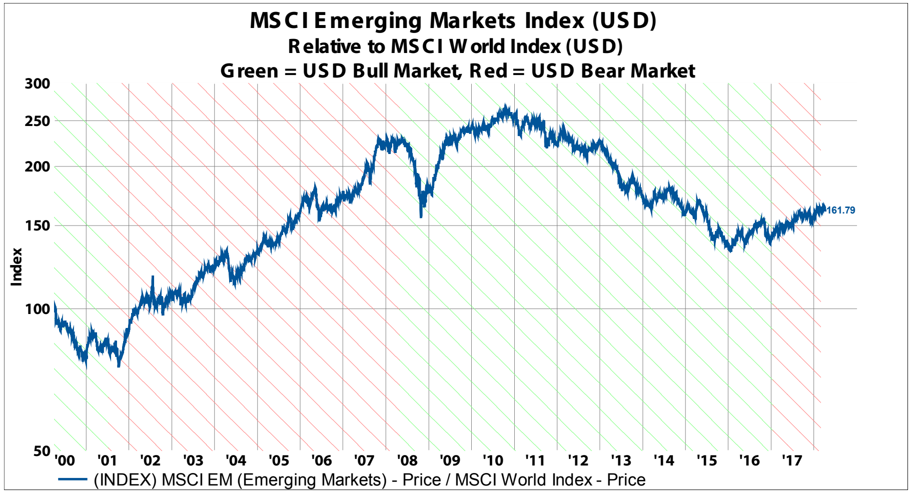


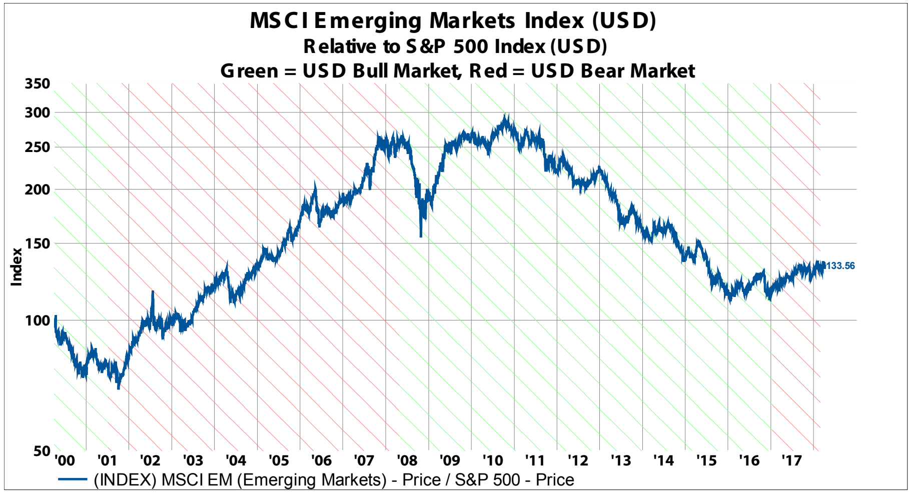
Source: Factset. As of 4/6/2018.

In the last US Dollar bear market, foreign stocks outperformed US stocks.

Source: Factset. As of 4/6/2018.

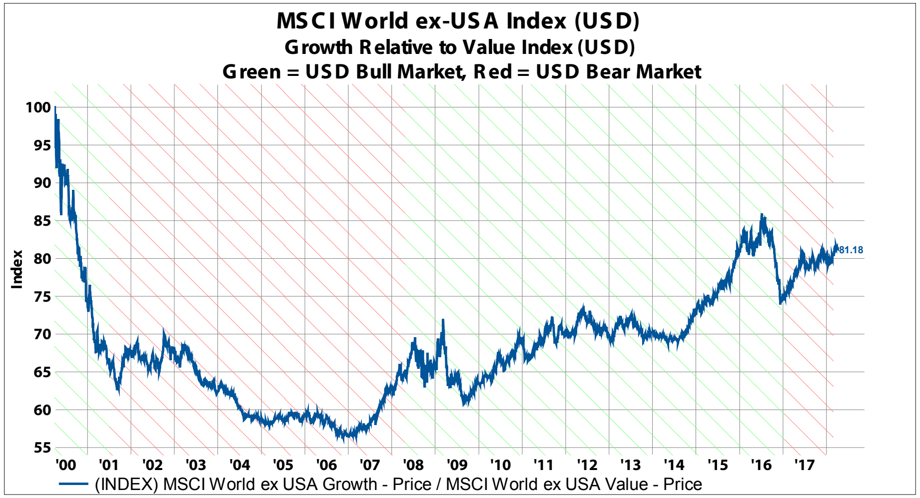
Emerging market stocks outperformed global developed market equities and US stocks in particular in the last US Dollar bear market.





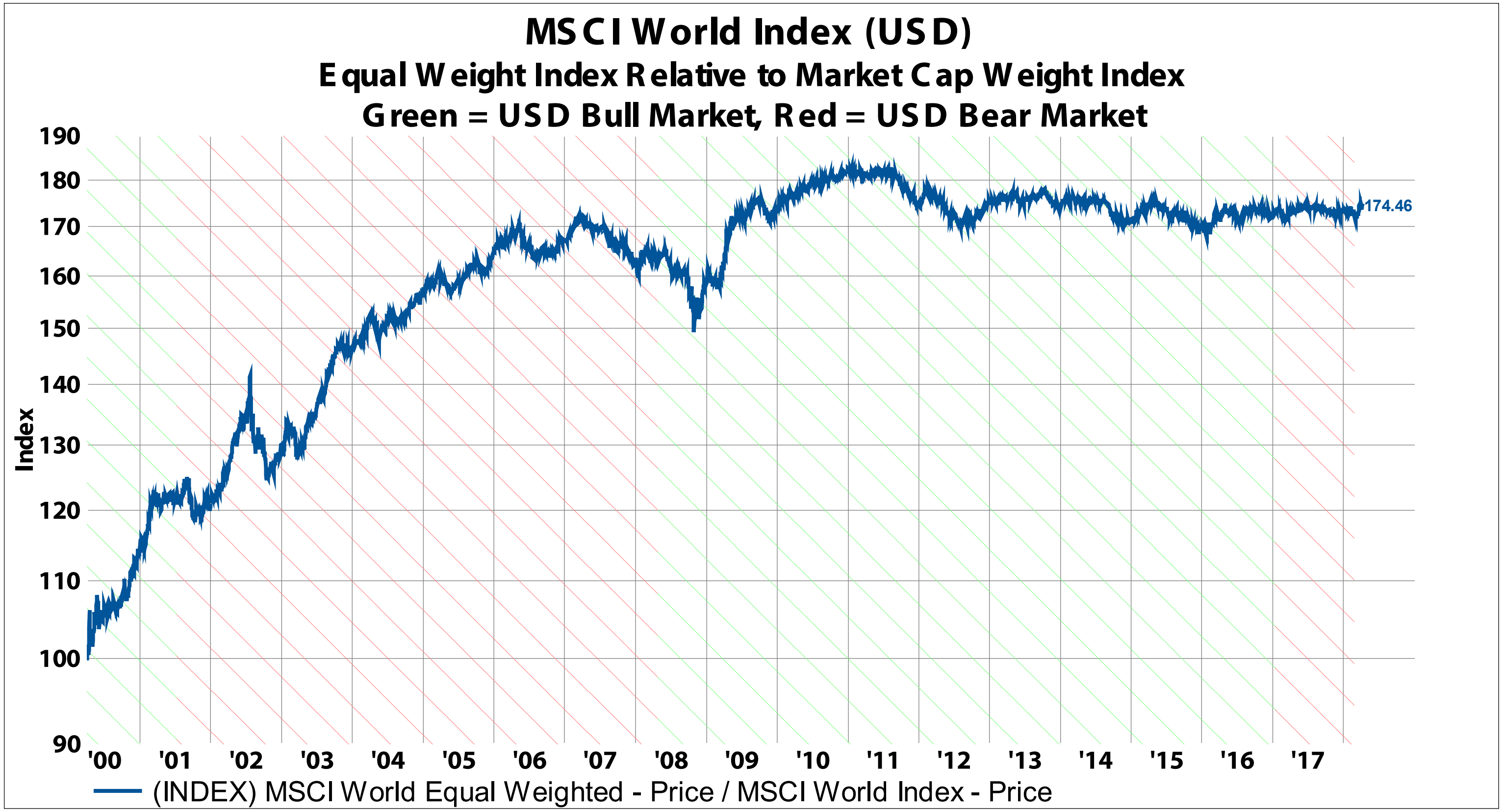
Source: Factset. As of 4/6/2018.

Value outperformed growth in the last US Dollar bear market. While this is not yet playing out in the US, this rotation into value can be seen in foreign stocks.



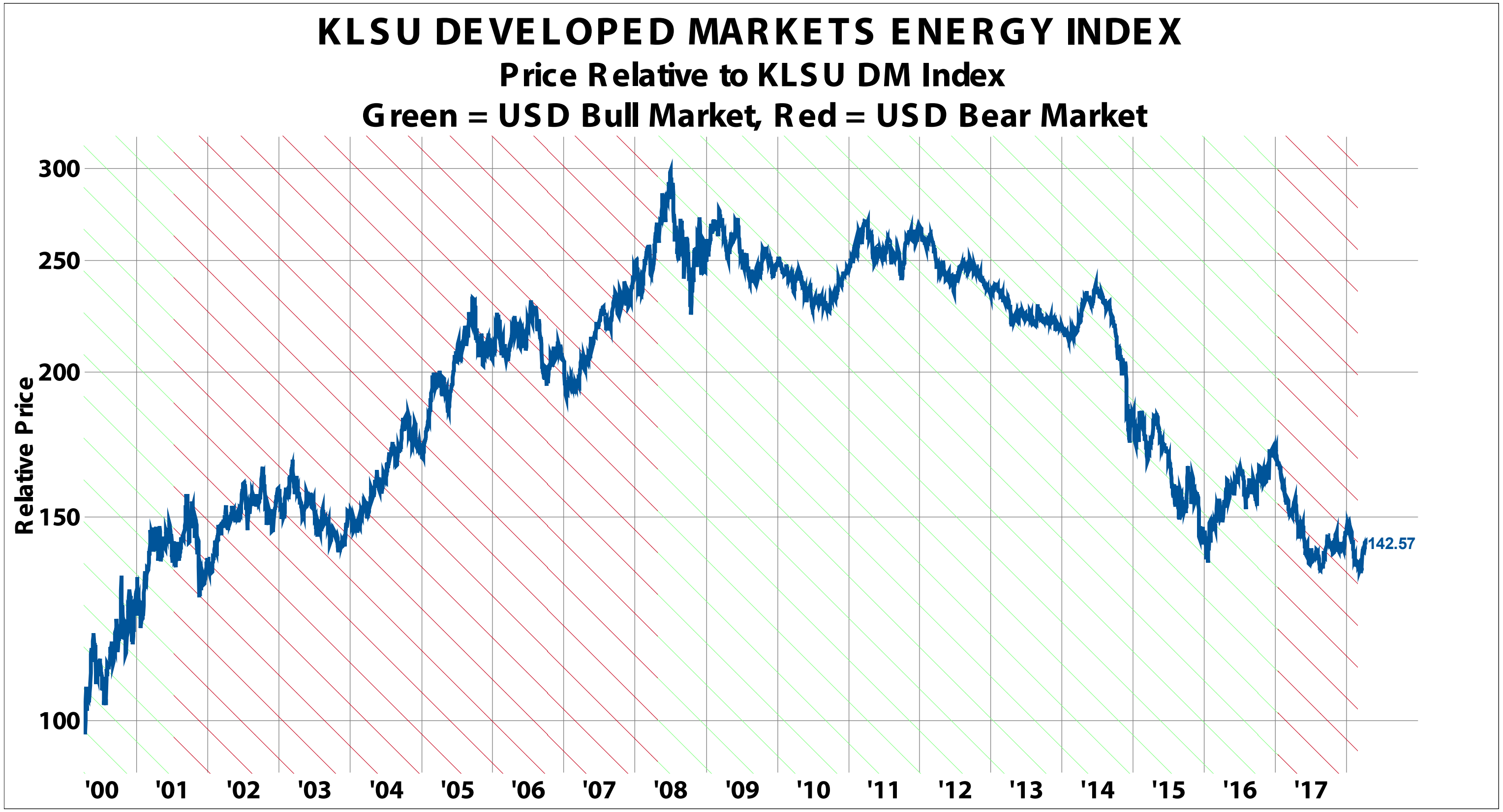
Source: Factset. As of 4/6/2018.

The MSCI World Equal Weight Index is a good proxy for the performance of smaller companies. In the last USD bear market, smaller stocks outperformed.



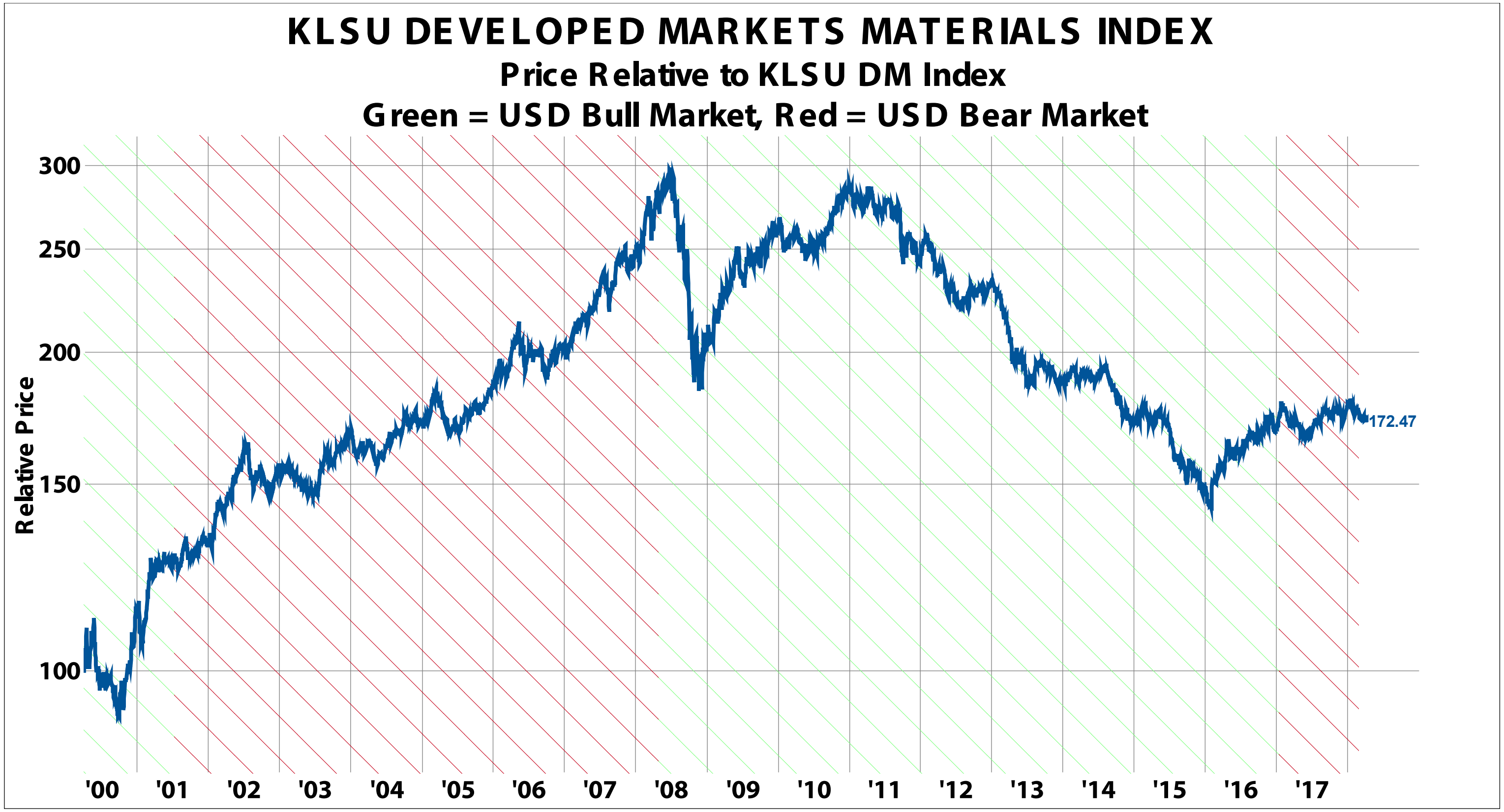
Source: Factset. As of 4/6/2018.

Energy companies in the developed world tend to be beneficiaries of a USD bear market. The double bottom in the last couple years is meaningful.



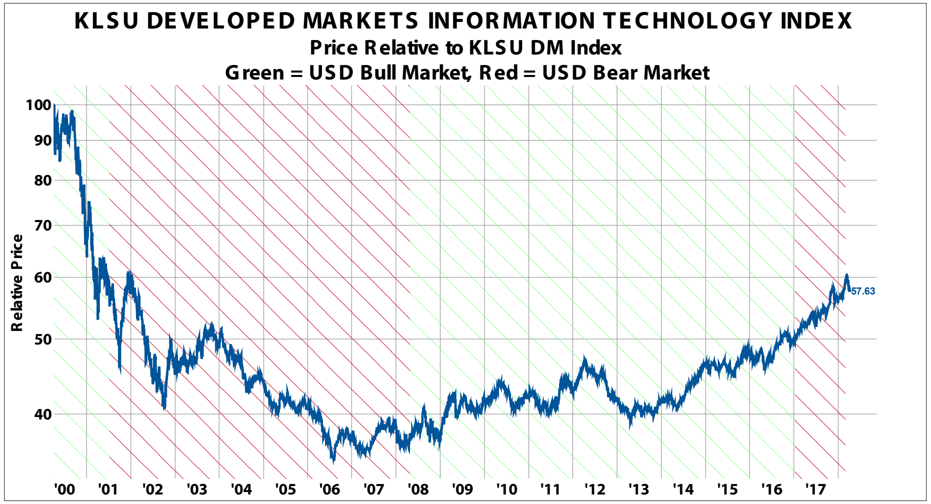
Source: Factset. As of 4/6/2018.

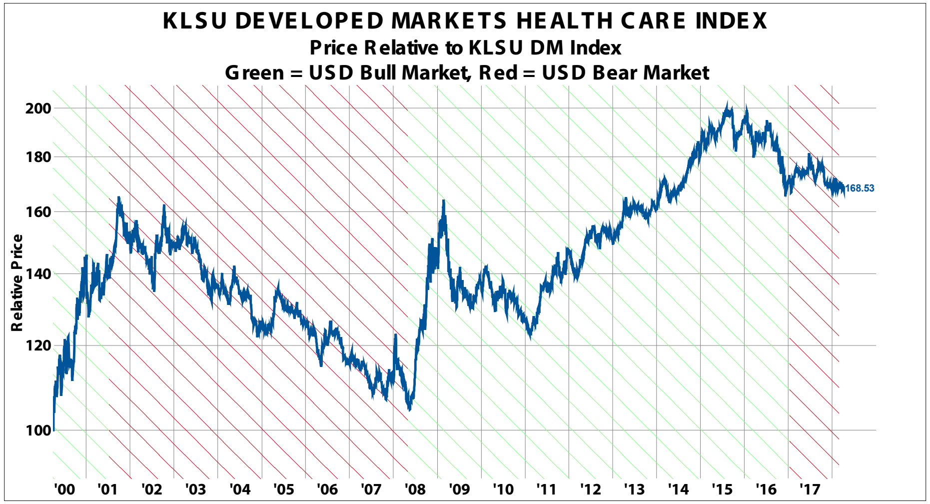
Materials companies in the developed world are another sector that outperformed in the last USD bear market.



Source: Factset. As of 4/6/2018.

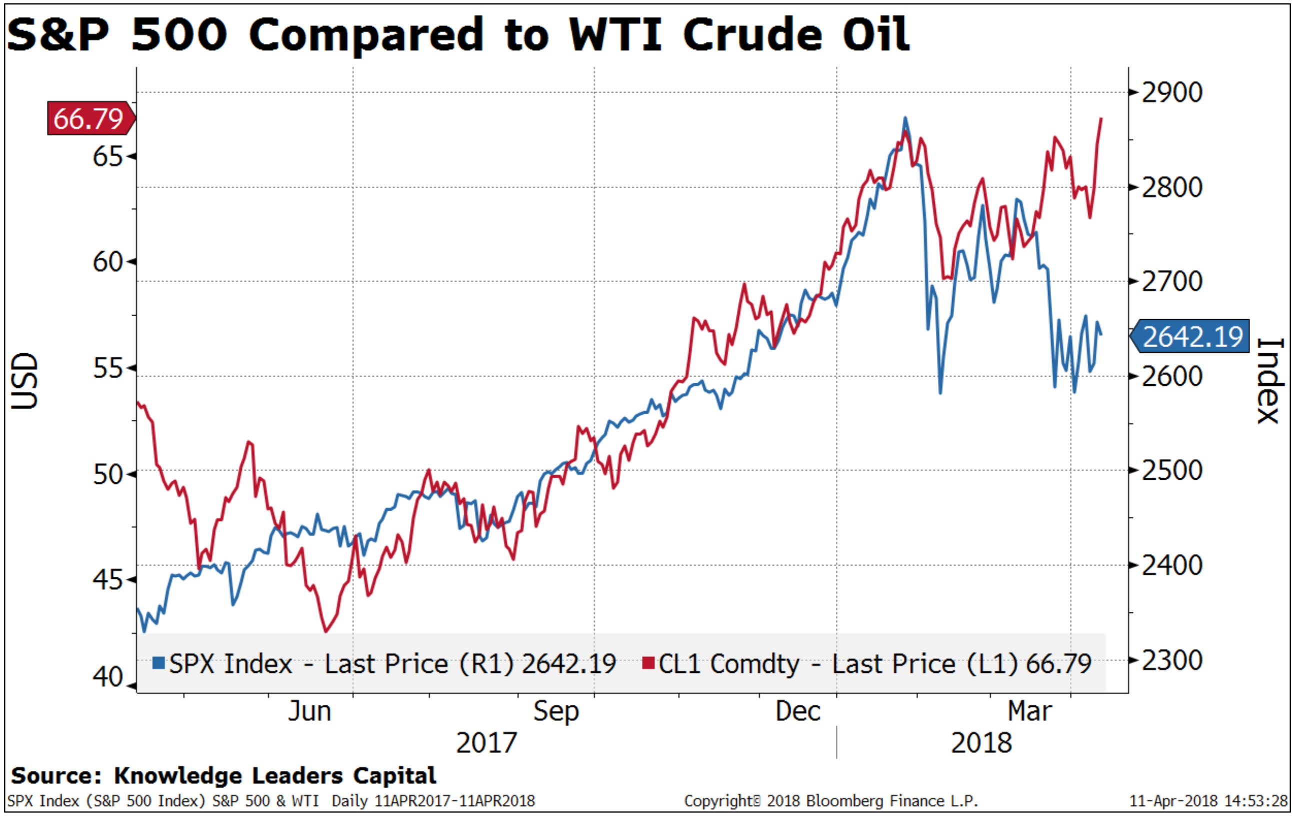
The growthier sectors in the developed world tend to underperform in USD bear markets. We can already see the turn toward underperformance in the health care sector.





Source: Factset. As of 4/6/2018.

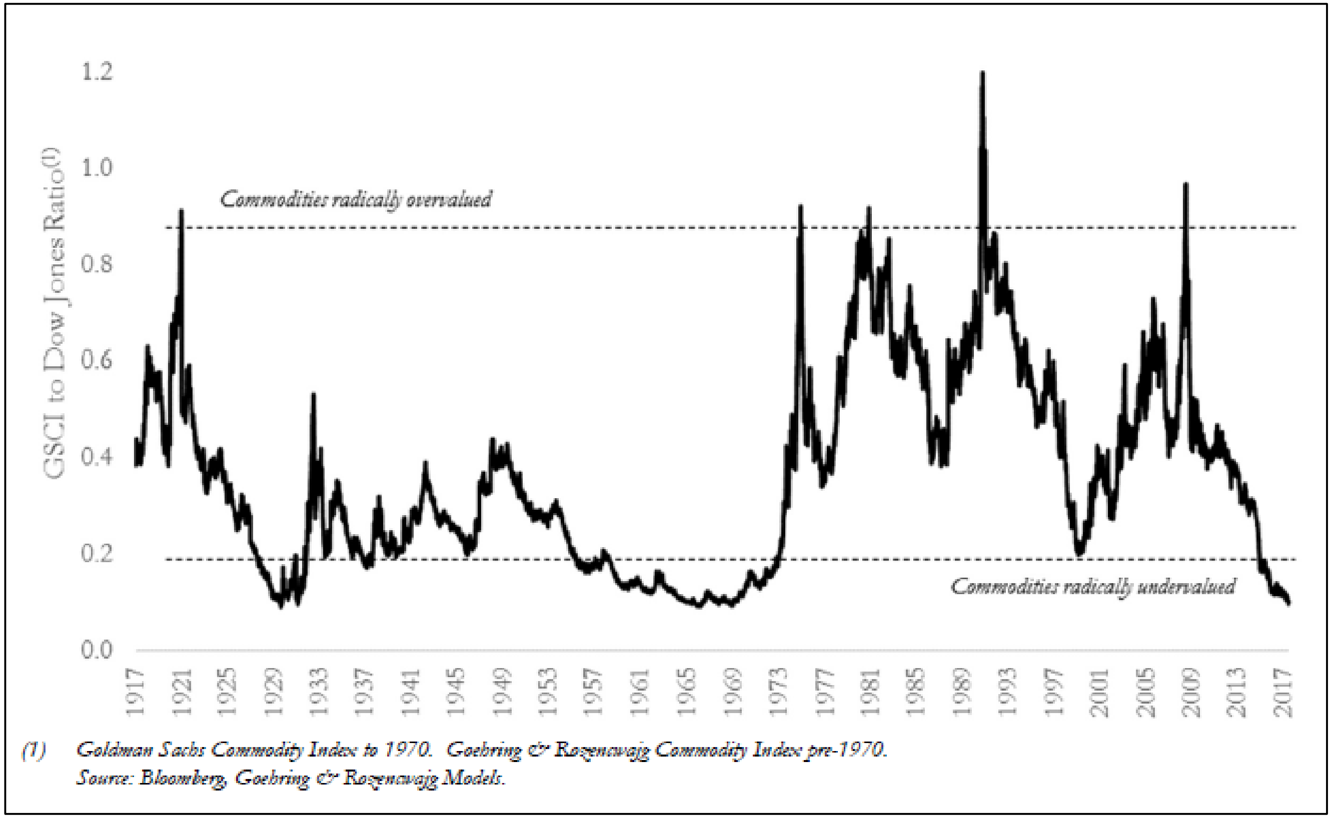
While stocks are testing lows for the year, commodities are breaking out. We prefer to hedge equity exposure with commodity exposure right now.



Source: Bloomberg

Over the long-term stock prices appear to be quite extended relative to commodity prices.

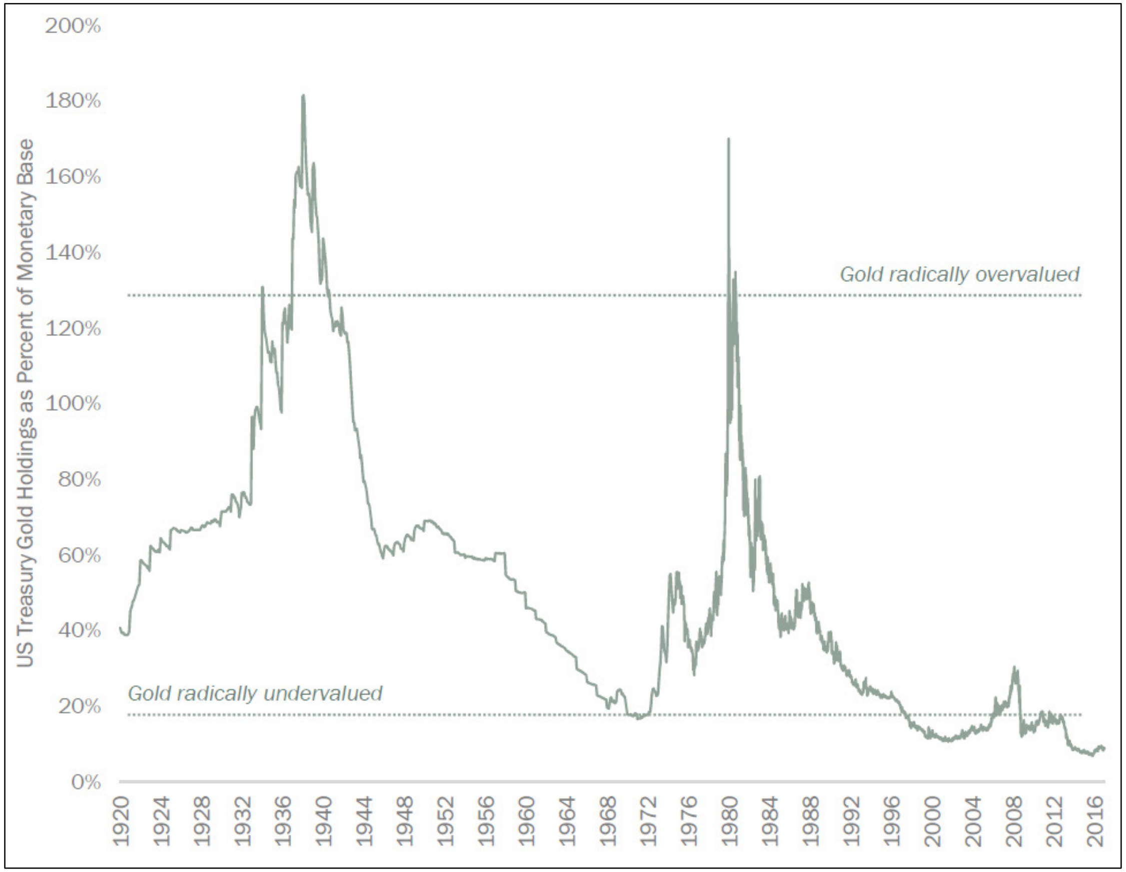
GSCI relative to Dow Jones Industrial Average



Source: Goehring & Rozencwajg, 2nd Quarter 2017 Commentary

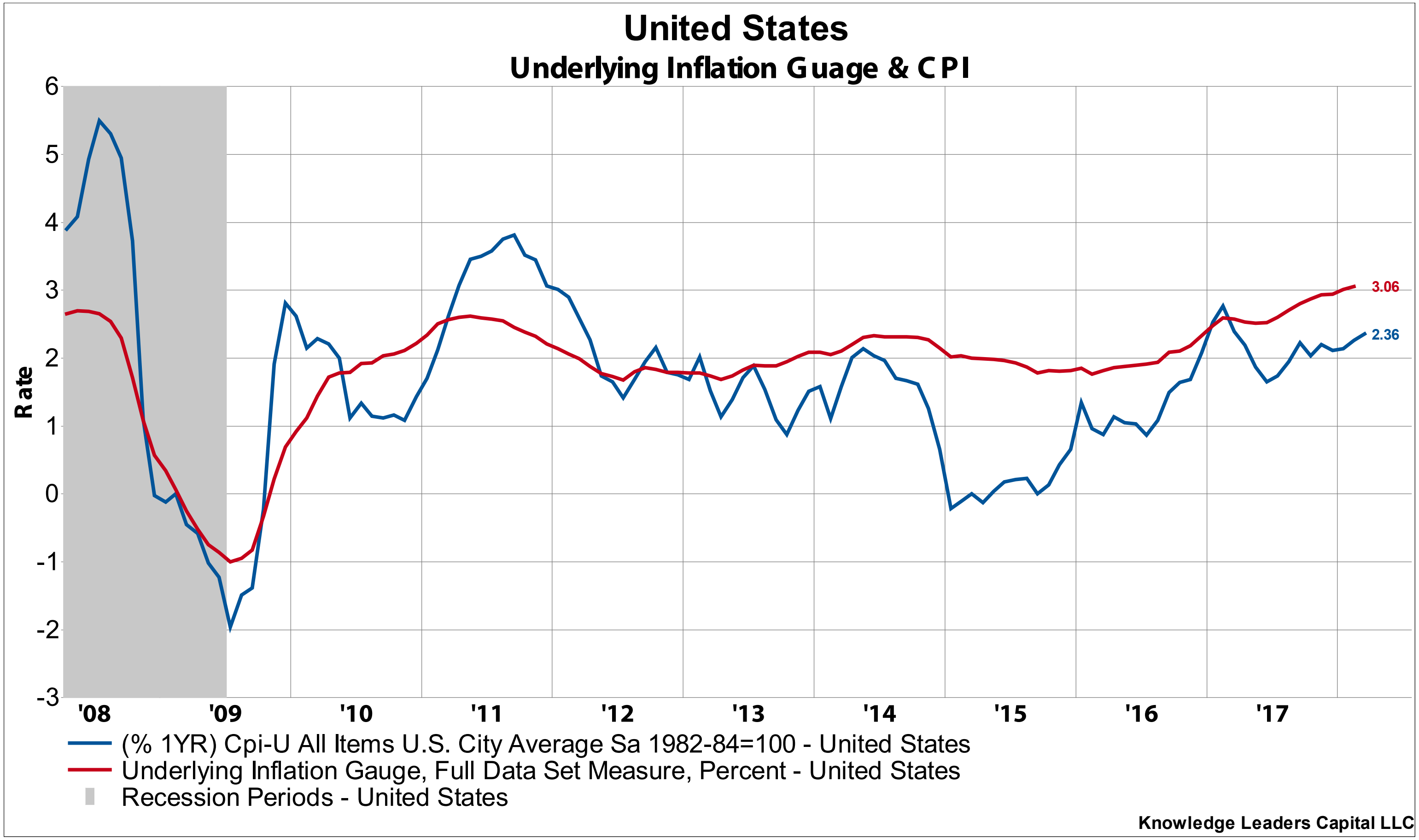
Gold appears tremendously undervalued when considering the huge expansion in the monetary base in recent years.

Gold as a Percent of US Monetary Base



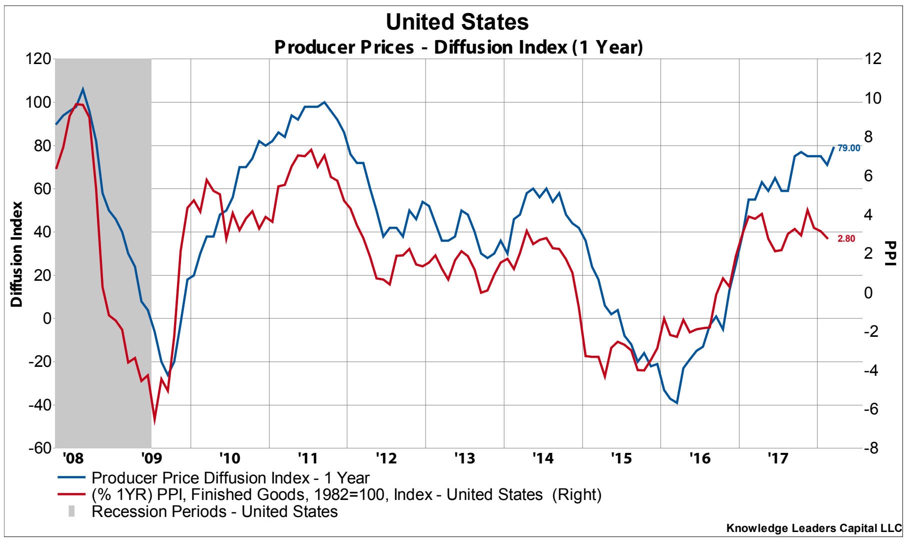
Source: Goehring & Rozencwajg, 2nd Quarter 2017 Commentary

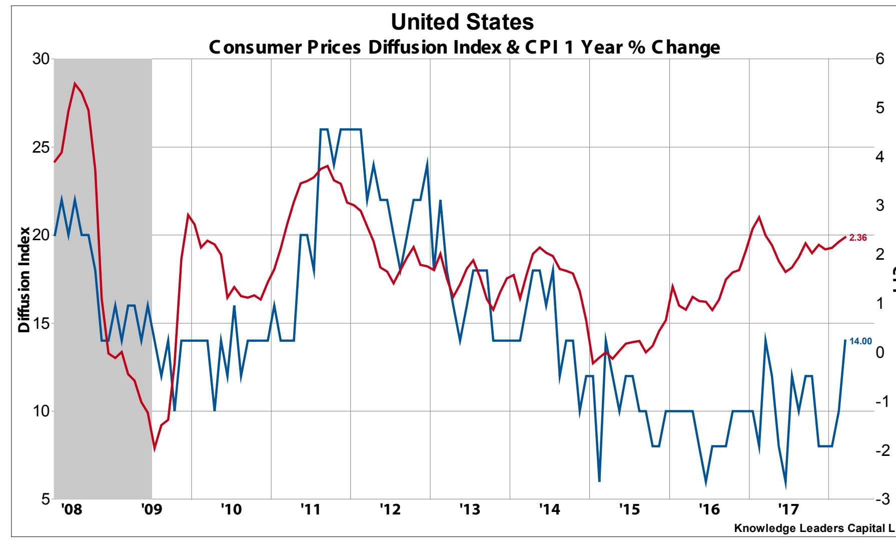
All signs point to an acceleration in inflation. The NY Fed's Underlying Inflation Gauge suggests the CPI moves up to 3%.



Source: Factset. As of 4/6/2018.

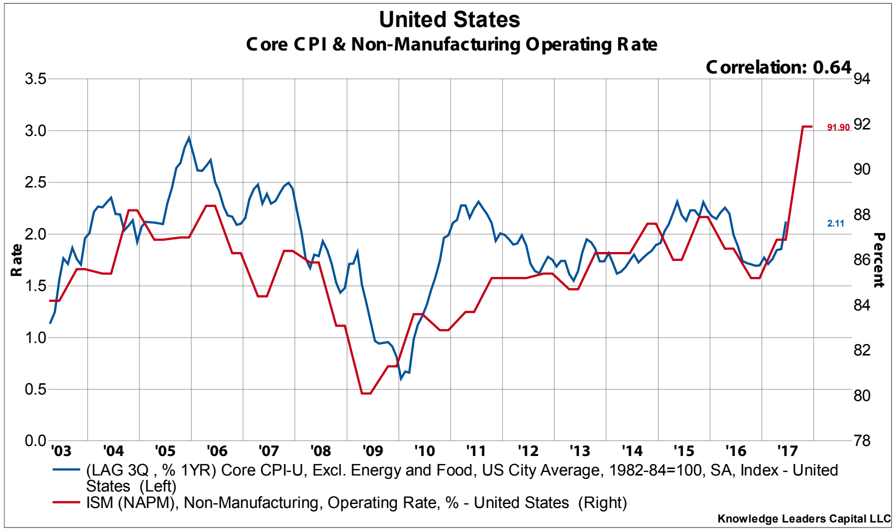
Our PPI and CPI diffusion indexes are rising and point in the direction of higher inflation also.

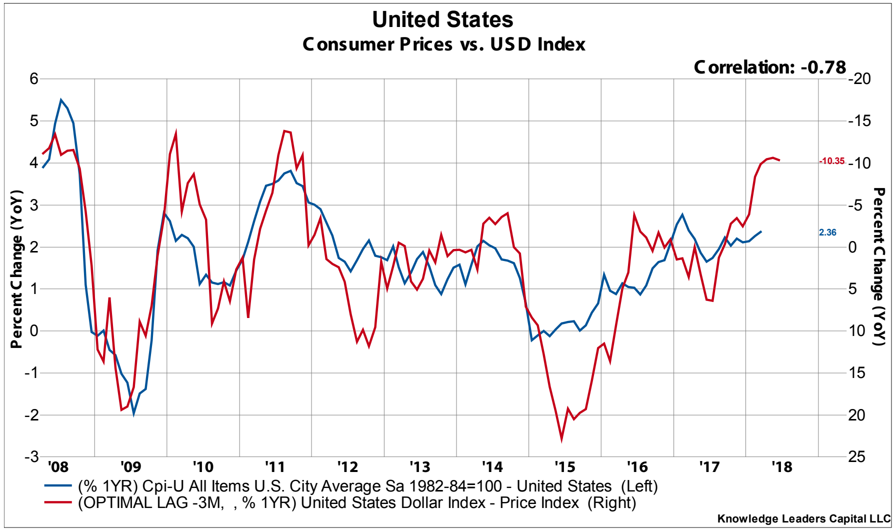




Source: Factset. As of 4/6/2018.

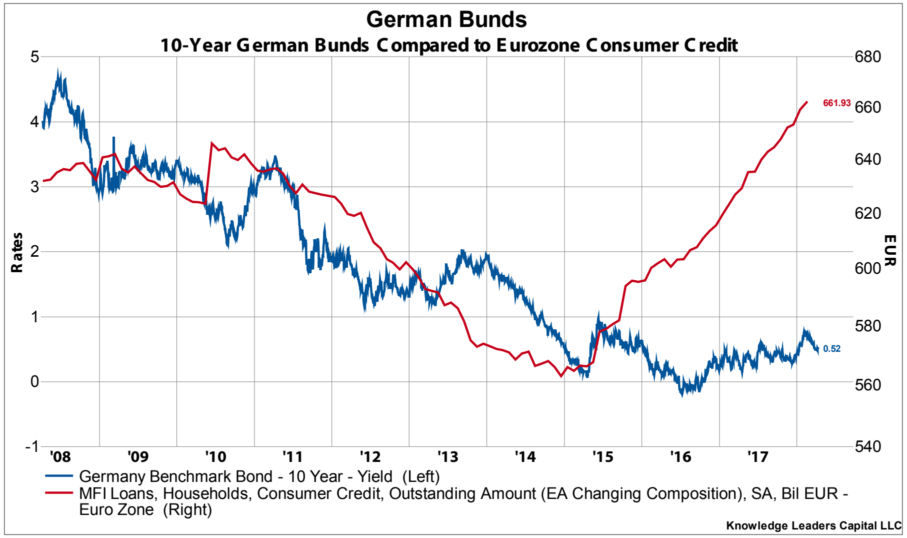
Services and imports should also drive inflation higher. Again, 3% looks like a reasonable target for inflation in the next year.

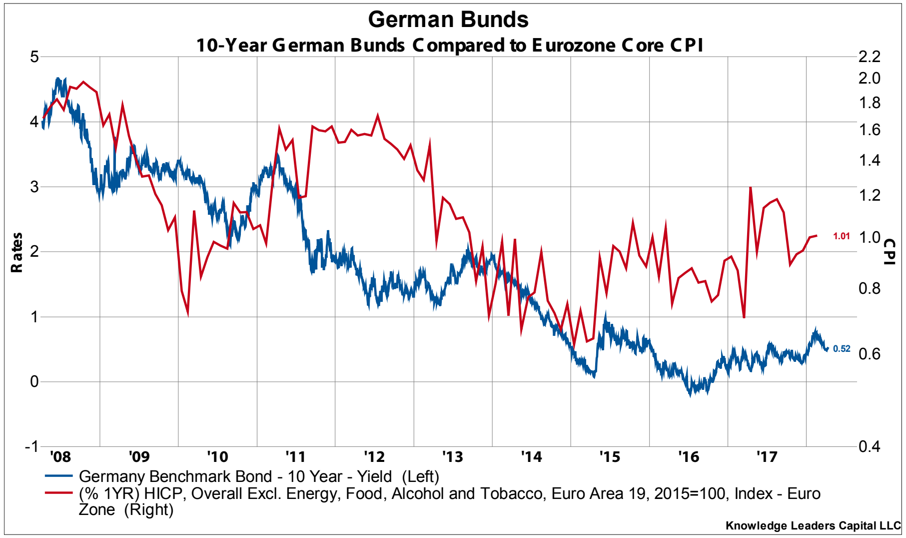




Source: Factset. As of 4/6/2018.

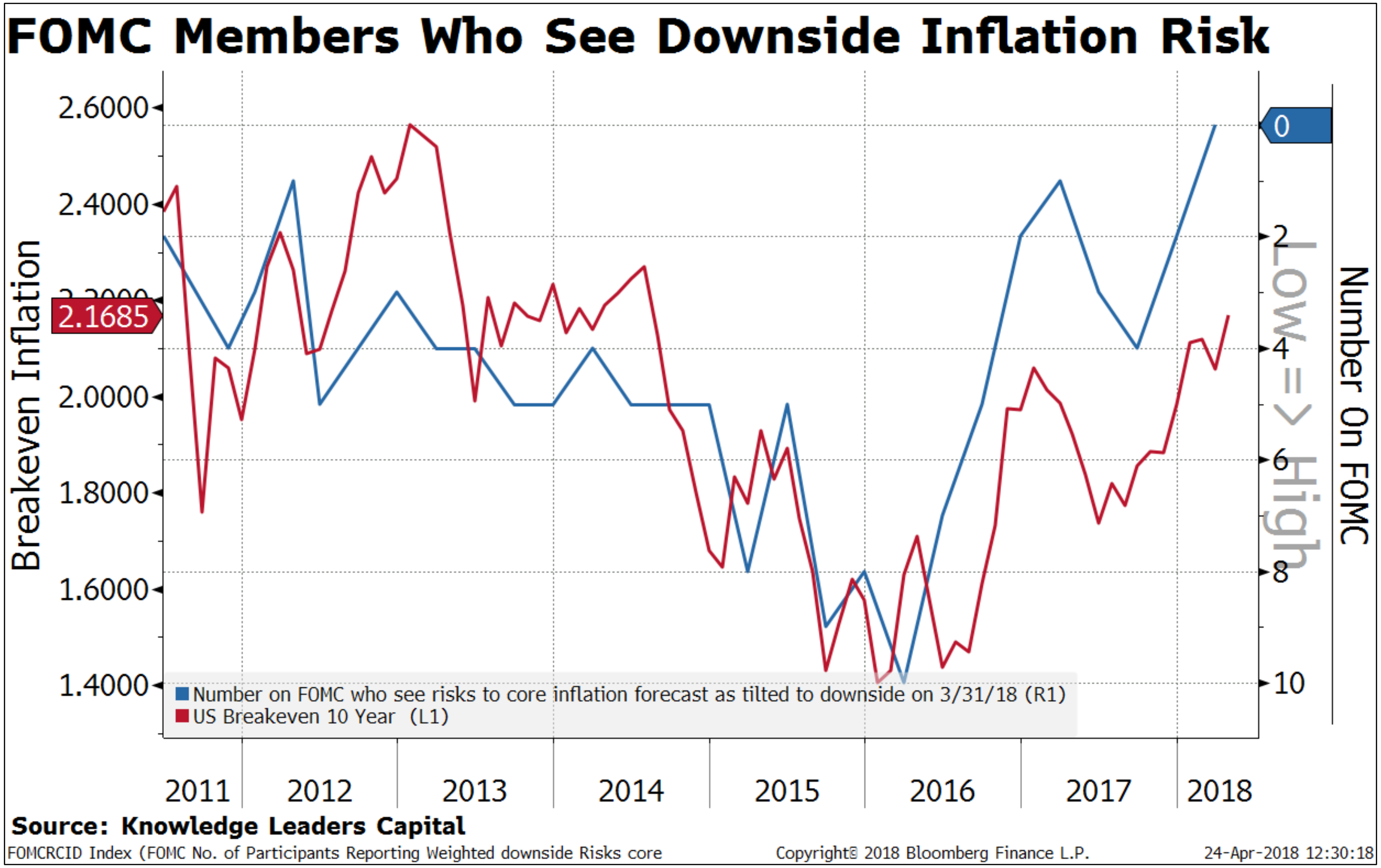
Inflationary pressures are building in Europe also. Consumer credit has taken off and core inflation is now rising.





Source: Factset. As of 4/6/2018.

Fed is unanimous in its thinking: zero members see a downside risk to their inflation forecast.



Source: Bloomberg

Tax cuts in the 1920s led to an overheated economy, which makes for an interesting analog to 2018.

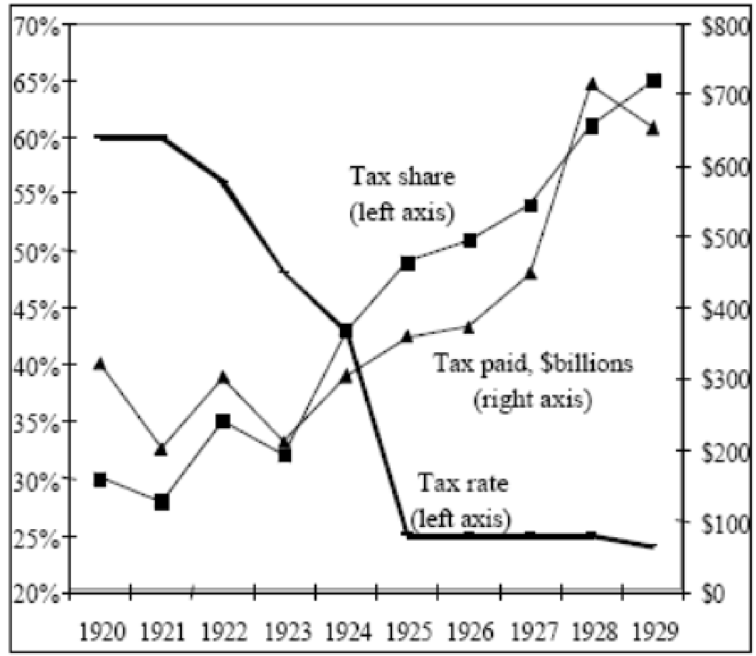
When the federal income tax was enacted in 1913, the top rate was just 7 percent. By the end of World War I, rates had been greatly increased at all income levels, with the top rate jacked up to 77 percent (for income over $1 million). After five years of very high tax rates, rates were cut sharply under the Revenue Acts of 1921, 1924, and 1926. The combined top marginal normal and surtax rate fell from 73 percent to 58 percent in 1922, and then to 50 percent in 1923 (income over $200,000). In 1924, the top tax rate fell to 46 percent (income over $500,000). The top rate was just 25 percent (income over $100,000) from 1925 to 1928, and then fell to 24 percent in 1929.

The tax cuts allowed the U.S. economy to grow rapidly during the mid- and late-1920s.

Between 1922 and 1929, real gross national product grew at an annual average rate of 4.7 percent and the unemployment rate fell from 6.7 percent to 3.2 percent.

The tax cuts of the 1920s were the first federal experiment with supply-side income tax rate cuts.

Figure 1. Marginal Tax Rate, Tax Paid, and Tax Share for Those with Income over $100,000

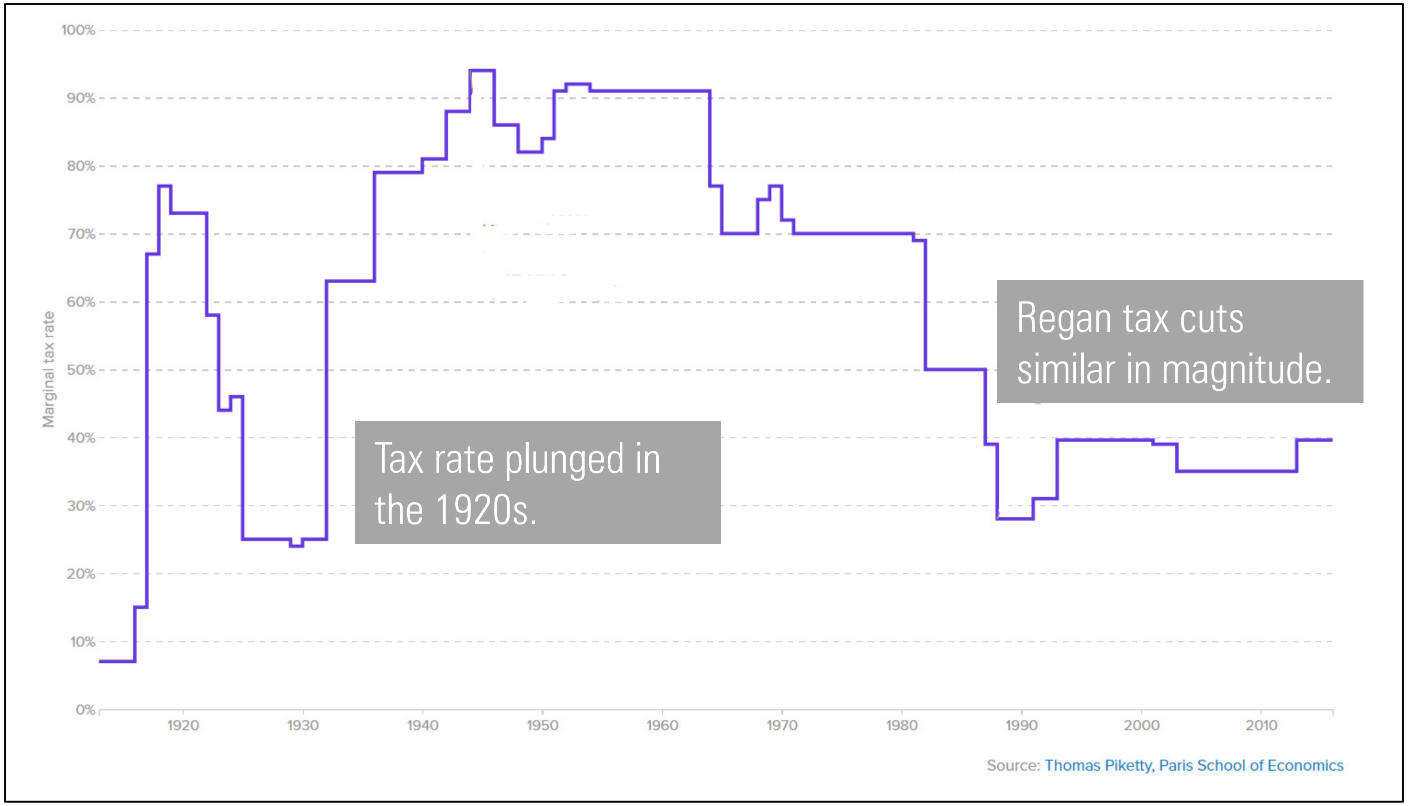


Source: U.S. Department of Treasury, "Statistics of Income," annual 1920 to 1929. The tax rate shown is for taxpayers at $100,000; for years before 1925, the top rate was even higher.

Source: 1920s Income Tax Cuts Sparked Economic Growth and Raised Federal Revenues: https://www.cato.org/publications/commentary/1920s-income-tax-cuts-sparked-economic-growth-raised-federal-revenues

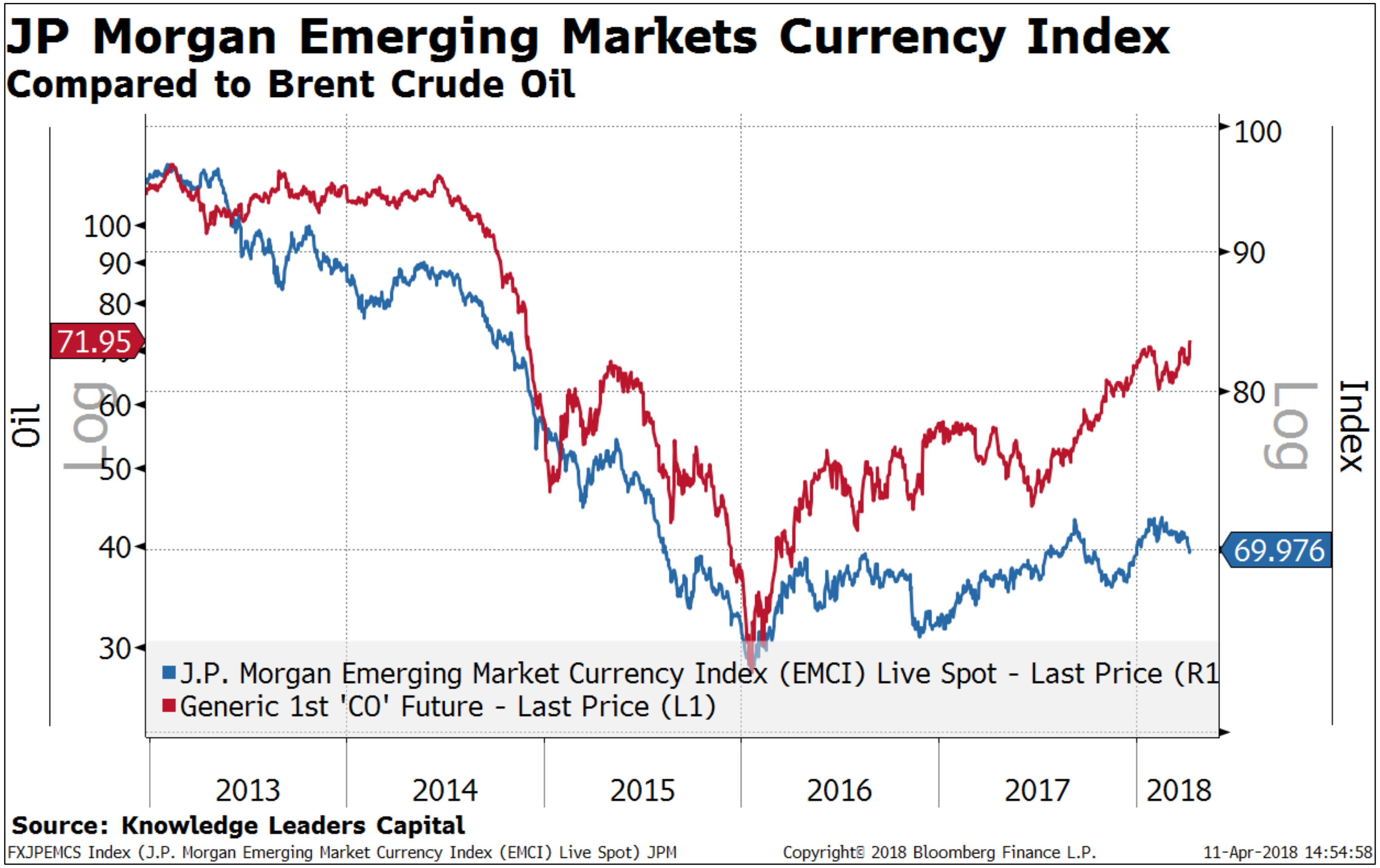
The Reagan tax cuts of the 1980s were the only experience similar to the 1920s rate reductions.

US Income Tax Rate



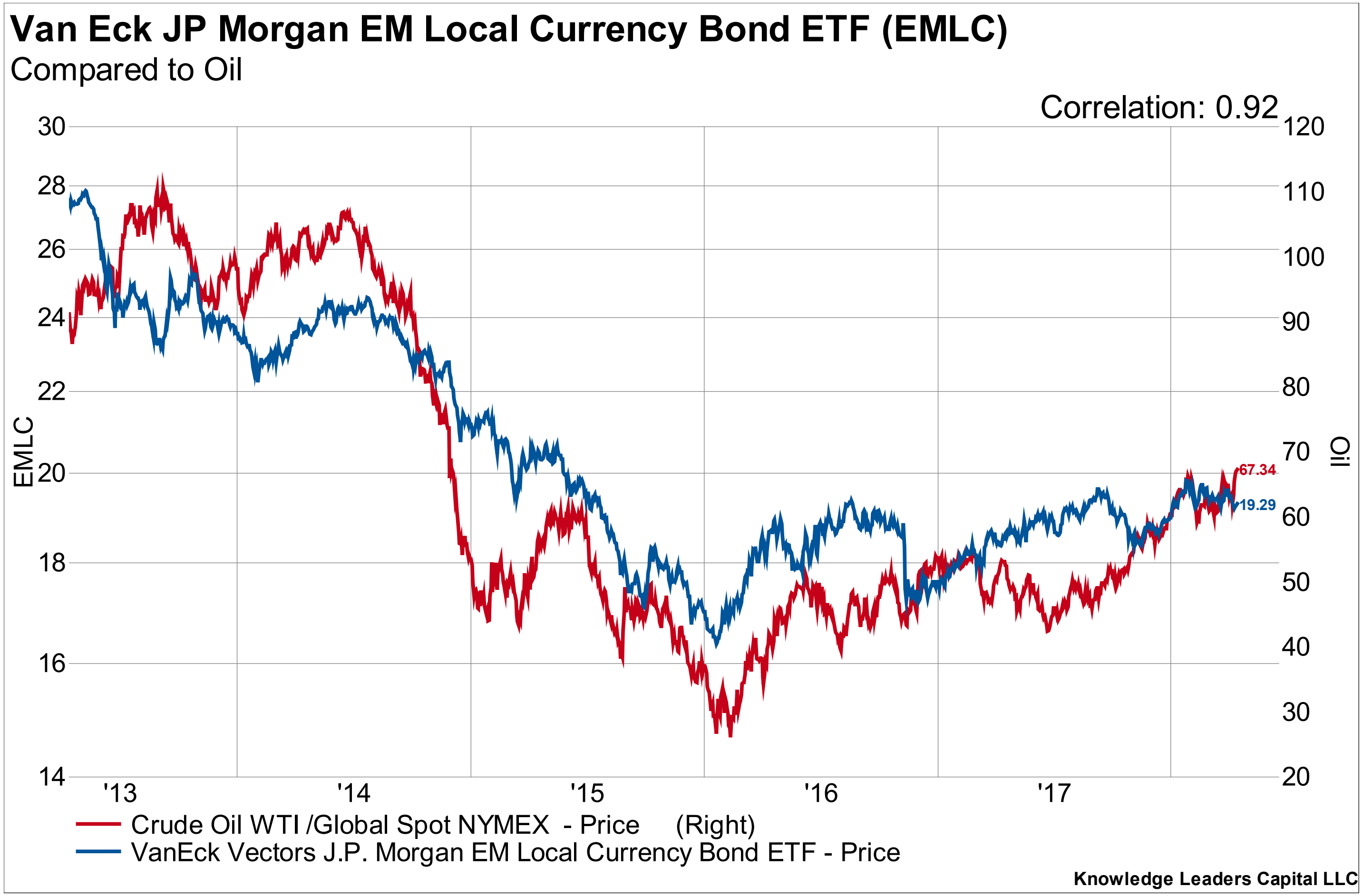
Source: How past income tax rate cuts on the wealthy affected the economy: https://www.politico.com/interactives/2017/gop-tax-rate-cut-wealthy/

In addition to gold, we think foreign currencies represent the next best hedge to equities.



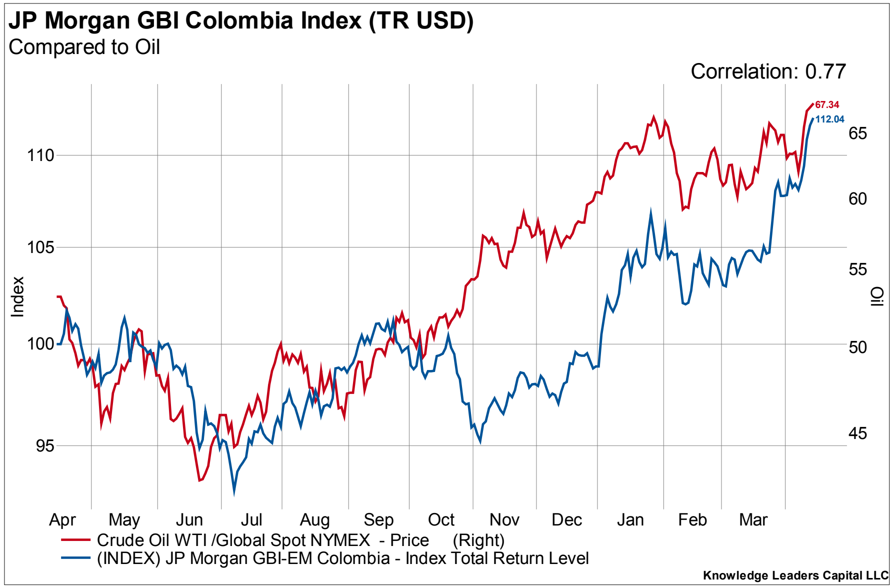
Source: Bloomberg

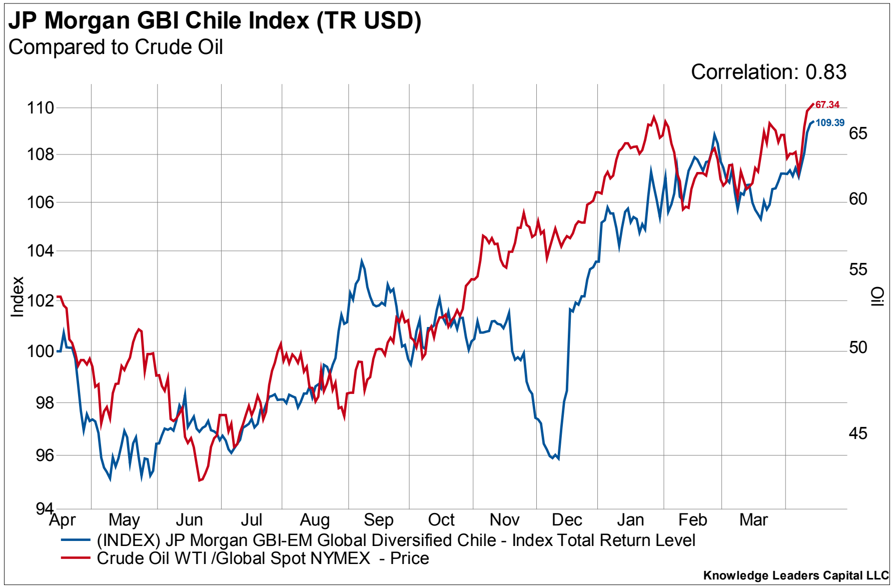
In turn, unhedged EM local currency bonds look attractive to us as well. With oil prices breaking on the upside, EM local debt may follow.



Source: Factset. As of 4/13/2018.

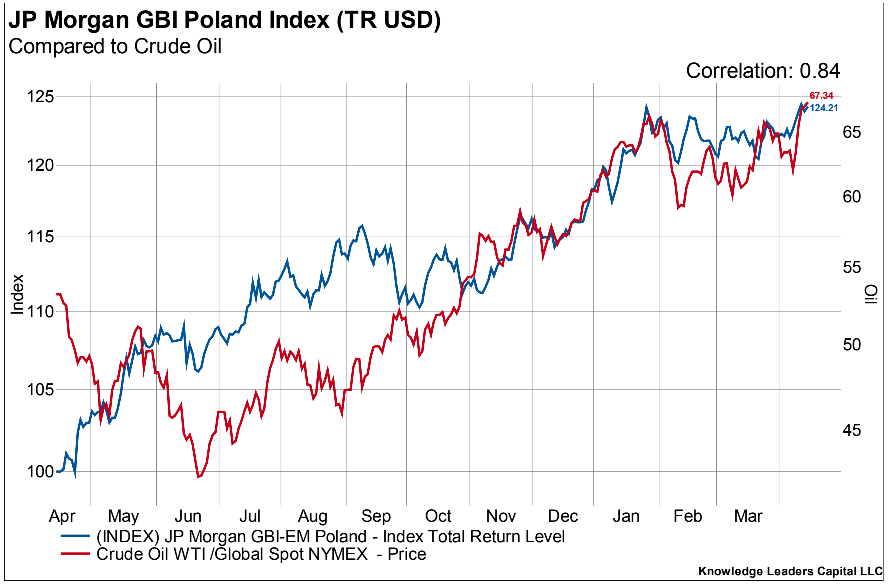
Generally, the resource related countries appear most attractive to us. Latin America is dominated by resource related countries like Colombia or Chile.

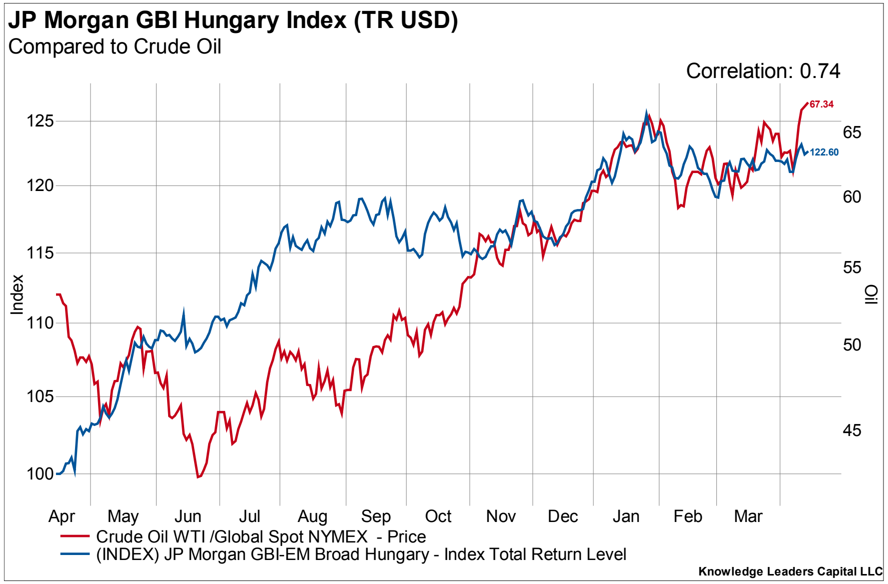




Source: Factset. As of 4/13/2018.

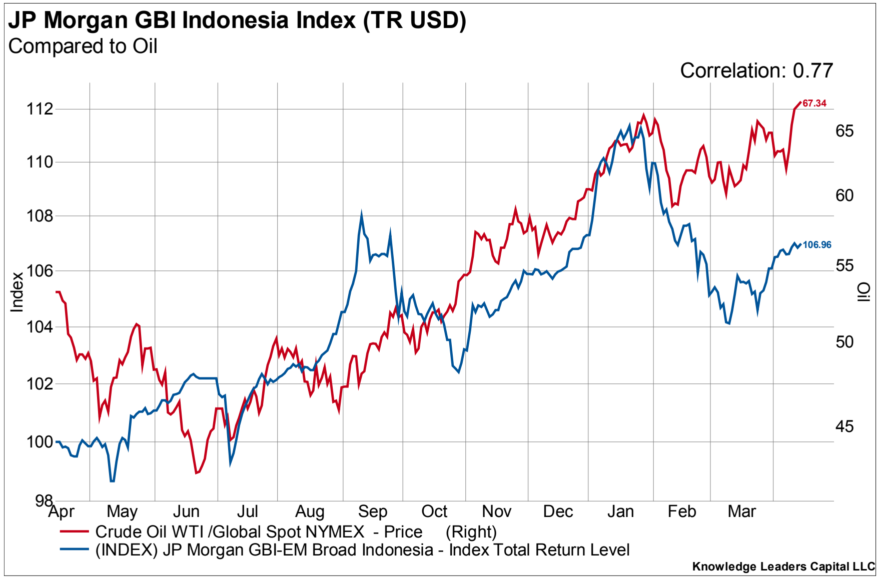
In Europe, countries like Poland and Hungary are tightly connected to basic resources and we would favor them too.

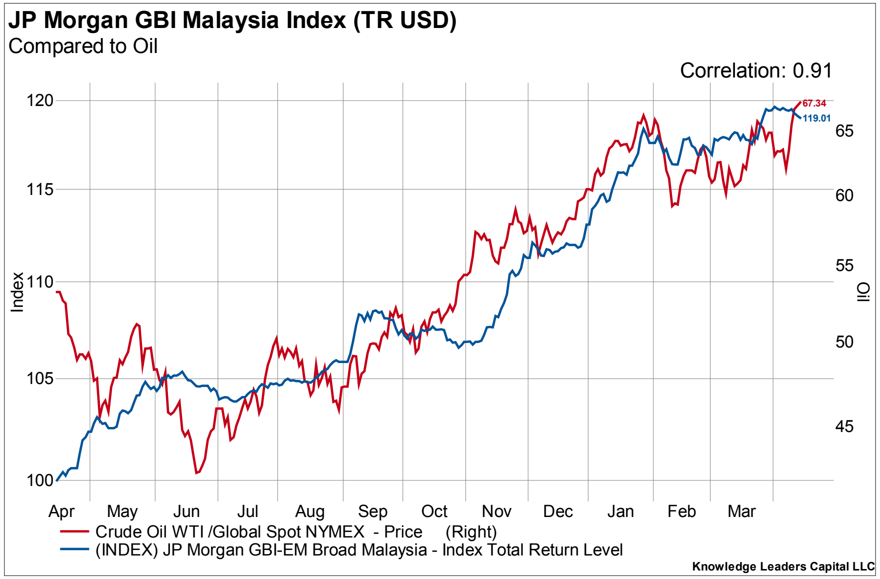




Source: Factset. As of 4/13/2018.

In Asia, the resource heavy countries are in Southeast Asia, such as Indonesia and Malaysia.





Source: Factset. As of 4/13/2018.

Knowledge Leader Spotlight: Rio Tinto

Later this year, Rio Tinto will seek board approval to spend $2.2B to build the world's first "intelligent" mine, a network of robots and autonomous vehicles all working together on the site of the earth's largest iron ore complex in Western Australia. Whether or not the project is approved, the firm already is 10 years ahead of rivals in autonomous technology, the firm's CEO told the *Economist* in a recent article.

The site of the first intelligent mine and Rio Tinto's most visible (and expensive) innovations is Pilbara, Western Australia, a complex of 16 iron ore mines, plants and distribution centers. Already at work on the ground is "AutoHaul," a fully autonomous, high-speed, long-distance rail system, in addition to a new fleet of autonomous Komatsu trucks. In this case, Komatsu also has partnered with Rio Tinto to retrofit existing trucks in the direction of full autonomy.

Iron Ore, which accounts for about two-thirds of Rio Tinto's earnings, is the home of the firm's greatest investments in innovation, with the expectation that these advancements eventually will trickle down to other groups much like breakthroughs from NASA's Space Program – memory foam, cordless power tools, lithium ion batteries in our phones — trickled down to life on earth.

Speaking of lithium, at the moment, it makes up only a fraction of Rio Tinto's assets, and management seems to exhibit restraint while discussing it. The firm's one lithium project is located in Serbia, where geologists discovered a deposit of the mineral "jadarite" in 2004. Interestingly, jadarite has almost the same chemical composition as the fictional kryptonite of Superman fame. The site is now in the prefeasibility stage to assess viability for mining both lithium (rechargeable batteries) and borates (wind turbines). Jadar is a frontier project in the firm's Energy and Materials group, which had revenues of $7.7B in 2017. The Iron Ore group brought in $18B, Aluminum $11B, and Copper and Diamonds $4.8B.

If Rio Tinto receives approval to continue investing in mining innovations and maintains a set of intangible assets that preserve its Knowledge Leader status, we could expect to see copycat "intelligent mine" deployments worldwide as a result. Looking forward, and with the divesting of mines rich in the fuels that power fading technologies, the mining industry may be offering us a unique view into the new technologies it expects to power a greener future.

Source: Knowledge Leaders Capital. As of 3/31/2018 Rio Tinto and Komatsu were held in the Knowledge Leaders Strategy.

Disclosures

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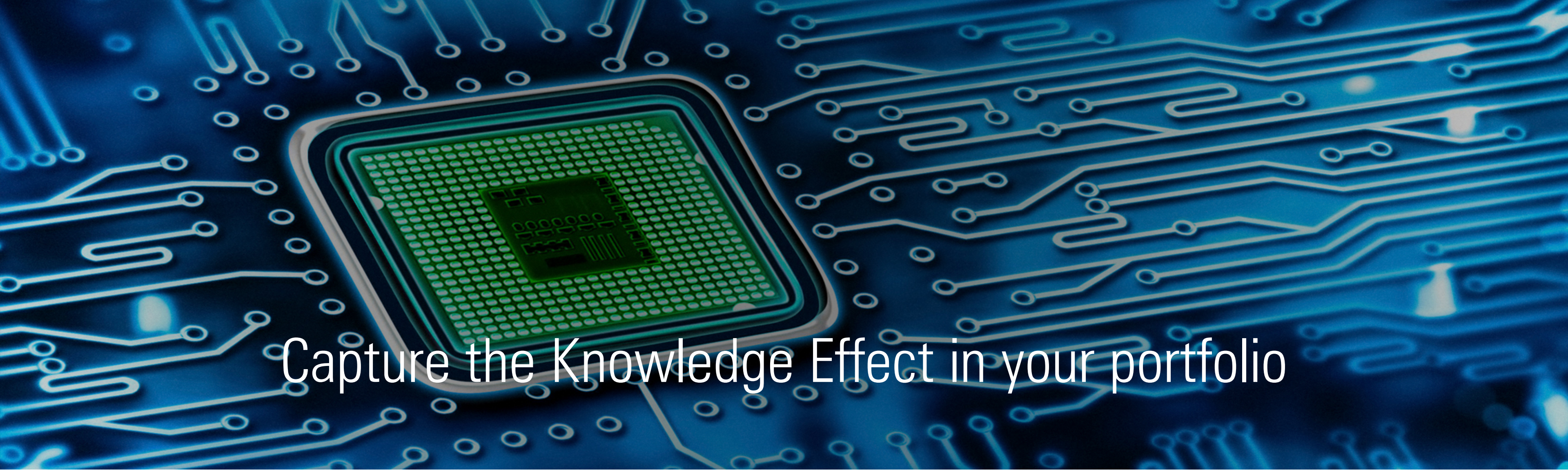
Past performance is not necessarily indicative of future results.

An investor cannot invest directly in an index.



For investors interested in the Knowledge Leaders Strategy,
please contact Shawn Paulk, Head of Distribution,
at spaulk@klcapital.com or 704.844.6844.

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Knowledge Leaders Capital, LLC | 370 17th Street, Ste. 4930 | Denver, CO 80202