

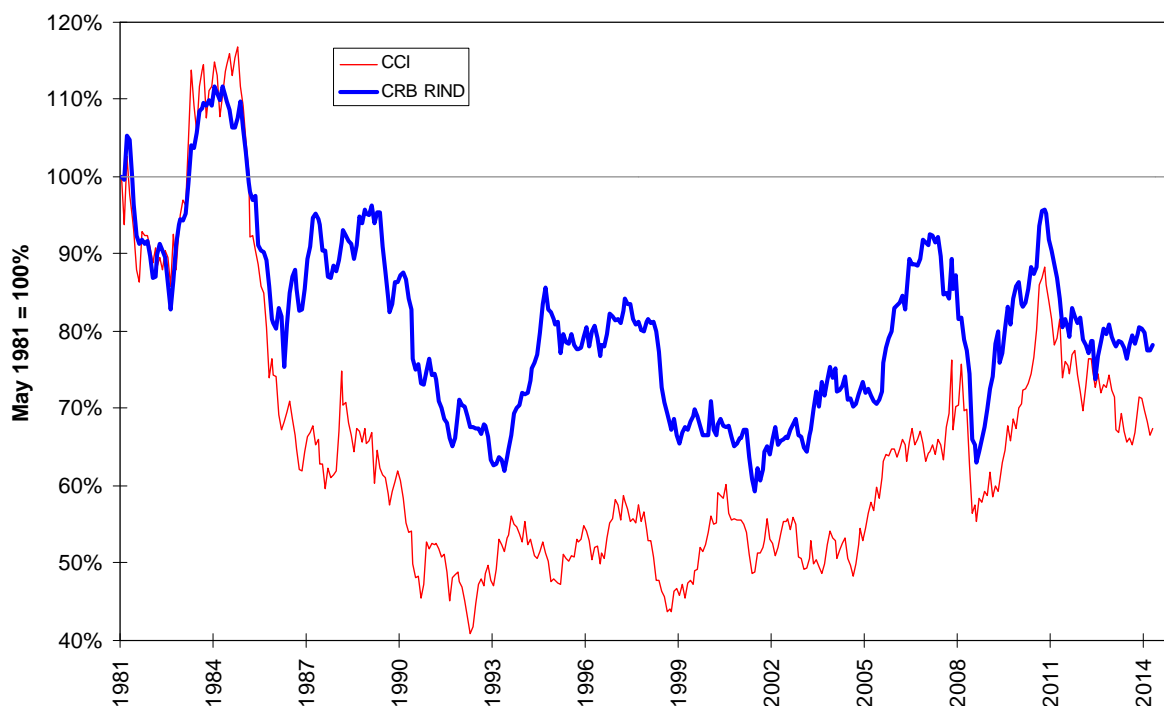
## Commodity Indices' Long-Term Underperformance Continues

There is no secret physical commodities have been having a rough go of it lately. The S&P Goldman Sachs and Bloomberg commodity indices are down 6.13% and 5.20%, respectively, year-to-date. The price declines preceded the dollar's upside breakout against commonly traded currencies and are attributable mainly to agricultural production increases and slowing Chinese demand.

While the conditions of 2014 are by definition transient, the simple fact of the matter is financial assets have outperformed commodity index investments over time and therefore have offered greater protection against inflation and currency debasement by definition.

Let's illustrate this first with the untraded Continuous Commodity and the CRB Spot Raw Materials indices. They fail to match producer price inflation either by itself or in combination with the Federal Reserve's broad trade-weighted dollar index. The CRB Spot Raw Materials index has failed to overcome either deflator since its May 1981 inception. Neither spot index has offset the combination of the PPI and the trade-weighted dollar since June 1985.

**Constant Dollar Commodity Indices**  
Deflated By PPI & Adjusted For Trade-Weighted Dollar



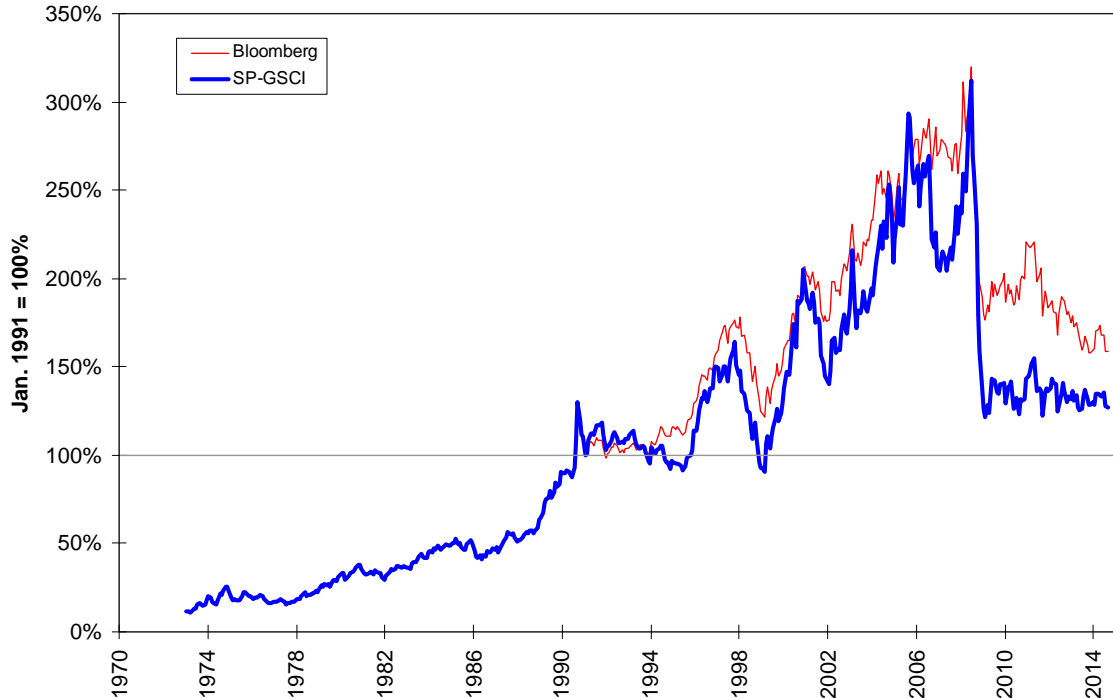
### Investable Indices

If we switch the basis of comparison from spot commodity indices to the Bloomberg and S&P-GSCI total return indices, which bring roll yield and return on collateral into the mix, and re-index the start date of the analysis to the January 1991 inception of the Bloomberg total return indices through August 2014, we see the S&P-GSCI adjusted for the PPI alone and with the dual adjustment has gained 1.13% and 1.02% per annum, respectively. Comparable figures for the Bloomberg indices are 2.07% and 1.96%, respectively.

The average annual increase for the PPI since January 1991 has been 2.10%; the Federal Reserve's trade-weighted dollar has lost 0.11% per annum.

For purposes of comparison, the average annual PPI- and PPI/USD-adjusted rates of return for the Russell 3000 index have been 7.64% and 7.75% since January 1991. If we move to the Treasury market, the average annual returns for three-month bills and 7-10 year notes have been 0.96% and 1.07% for the bills and 4.63% and 4.74% for the notes.

### Constant Dollar Commodity Total Return Indices Deflated By PPI & Adjusted For Trade-Weighted Dollar



While a January 1991 declaration 7-10 year Treasuries would outperform commodity indices through August 2014 would have been met with skepticism at best, that skepticism should have been based on bonds entering a three-decade+ bull market, not on real commodity prices declining. Going forward, the ability of 7-10 year Treasuries to maintain a bull market for another 23 years+ given the present level of interest rates is unlikely.

The declaration equity returns exceeding commodity index returns should have been accepted without comment. A bet on commodity index total returns outpacing equity returns over a long period of time such as the post-January 1991 period is a dual bet against human ingenuity. We would have to believe two unlikely things simultaneously. First, higher prices for physical commodities would not lead to demand destruction via conservation, substitution and technological improvement or to the development of new supply sources. Second, we would have to believe the ability of new enterprises to add value via innovation and improved efficiency would disappear or at least fall below the rate of inflation cum currency debasement. Neither argument can be supported over the long-term.

None of this precludes index-level commodity investments from delivering positive returns over multi-year periods; one such episode happened in two parts during the 1970s following a rise in inflation in the 1960s and the collapse of the Bretton Woods fixed-rate exchange-rate system. Another such period came last decade with the integration of China into the global manufacturing economy. Both the 1970s and 2000s episodes followed long periods of slack investment in productive capacity.

As the present environment is one of slow global demand growth and stable levels of inflation and as it follows a period of high investment in productive capacity, we should not expect significantly higher returns on commodity indices in the absence of a supply shock.