



## Commodity Futures Index Trading and Spot Oil Prices

William T. Gavin, *Vice President and Economist*

A commodity futures index fund invests in a basket of commodity futures, allowing ordinary investors to speculate on, or hedge, commodity price movements. Such index funds are large: In 2008 when commodity prices peaked, index funds held an estimated one-third or more of the outstanding long futures contracts.<sup>1</sup> Politicians, market participants, and economists have argued about whether the increased trading induced by the growth of index funds over the past decade is a cause of high commodity prices.

The largest and oldest of the commodity futures index funds is the Standard & Poor's–Goldman Sachs Commodity Index Fund (SPGSCI), an index of 24 commodities. Every month the SPGSCI rolls over its entire portfolio, selling 1-month futures contracts and buying 2-month futures contracts. The fund holds the 2-month contracts for 1 month and then sells, rolling over again to the new 2-month futures contracts. To avoid upsetting the market with such large transactions, the SPGSCI agreed to roll over 20 percent of its portfolio on 5 consecutive days, the fifth through the ninth trading days of the month. The trading activity during these 5 days has become known as the Goldman roll. People in the market know there will be a large supply of 1-month contracts and an equally large demand for 2-month contracts during these 5 days.

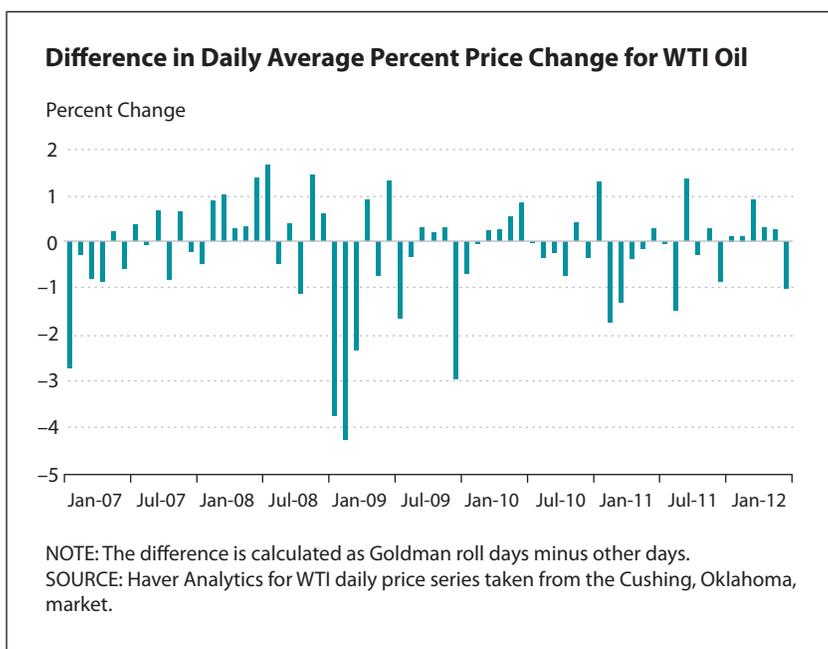
Market arbitragers should nearly eliminate any predictable price changes arising from this regular trading activity. The growth in the demand for the 2-month contract is offset with a comparable increase in the supply of 1-month contracts.

How much does index fund trading affect commodity price volatility? To check how such trading affects the spot price in a particular commodity I compare the average daily price changes on the Goldman roll days with comparable values on the other days of the month. The daily data

are from the spot market for West Texas Intermediate (WTI) crude oil, which is the commodity with the largest share in the SPGSCI. Since 2009 this fund has invested 68 percent of its portfolio in energy commodities, with between 20 and 30 percent in WTI crude oil.

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The chart depicts the monthly time series of the difference between the average daily price changes (in percent), subtracting the average change on other days from the



average change on the Goldman roll days. As the chart shows, the differences are centered near zero. The mean difference is  $-0.2$  percent and the standard deviation of the mean is  $0.16$  percent. Although the differences average out over time, there were persistent positive values in the first half of 2008 when oil prices were rising rapidly and some big negative values in the second half of 2008 and early 2009 when oil prices fell sharply.

The volatility of the daily price changes is very similar and slightly lower on Goldman roll days. It is not really possible to know how the world would be different had the commodity futures index funds never been created, but this analysis shows no evidence of systematic or predictable effects on daily price changes in the spot market for oil as a result of large passive demand for long contracts. ■

## Note

<sup>1</sup> See footnote 16 in Masters, Michael W. "Testimony before the Committee on Homeland Security and Governmental Affairs." United States Senate, May 20, 2008; [http://hsgac.senate.gov/public/\\_files/052008Masters.pdf](http://hsgac.senate.gov/public/_files/052008Masters.pdf).