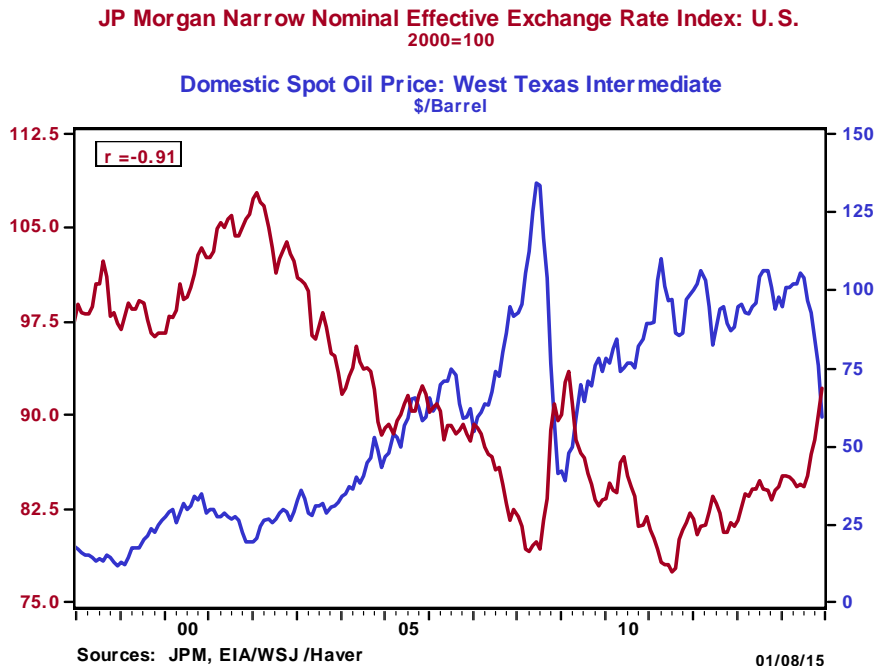


explains a good part of the rise in WTI from about \$ 30 to \$ 100. Similarly the 10% rise in the dollar in the last six months has probably been a major factor in the price decline. From this perspective, Saudi Arabia's announcement was more a trigger than a fundamental cause.

Chart 2



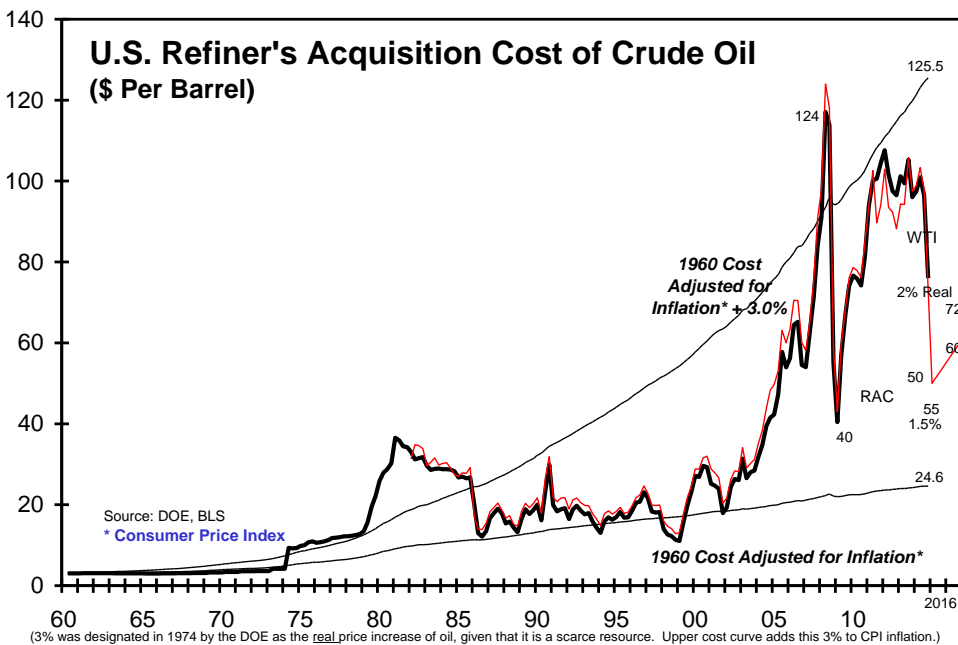
In the very near term, it seems likely that oil prices will continue to move inversely with the dollar. A linear regression based on the last 17 years of quarterly data has a beta coefficient of 3.5 and an R^2 of 0.84. If the dollar strengthens beyond its current figure of 93.8 to, say, 95 to 96, oil prices could well fall to \$ 40. While it would be surprising if it moved much further, each point in the dollar index translates into \$ 3.50 per barrel.

A Longer-term Perspective After the Arab oil embargo in 1973, there was much excited discussion about the longer-term outlook for crude oil prices. The newly-created Federal Energy Administration was charged with administering the price-control system for oil and natural gas. With the Alaskan Pipeline nearing completion, it was realized that it would be unrealistic to apply the then current cap of \$ 5 or so on existing oil production to the new oil from Alaska, or to secondary recovery from existing 'old' oil wells. It was decided that since oil is a finite resource, the price of new oil should be allowed to rise faster than overall inflation by, say, 3% per year. The Department of Energy was founded August 4, 1977 and started doing business on October 1st, 1977. It absorbed the FEA and continued their price control system. Thus as Chart 3 shows, oil prices moved along the inflation plus 3% line for several years. The Iranian Revolution in 1979 blew all these carefully thought-out ideas out the window. Oil prices rose to \$ 35 per barrel, equivalent to a price over \$ 200 in 2014 dollars.

This was a major shock to the U.S. economy. Led by Federal Government fuel efficiency standards and major cost pressures, industry and consumers set about becoming more energy-

efficient. Slowing demand, world-wide, led to a gradual decline in crude-oil prices. Then as Chairman Paul Volcker tightened monetary policy in 1981, U.S. interest rates and the dollar began to rise. The exchange rate spiked in mid-1985. and in early 1986, the price of oil plummeted. For 15 years, prices moved only in line with inflation. As Chart 3 shows, this equilibrium began to be disturbed in 1998. With prices eventually rising to \$ 100 per barrel, analysts began to take the inflation+3% line more seriously, agreeing that we were now in a new environment.

Chart 3ⁱ



Major oil companies accepted this view and began drilling in ever-more difficult environments—the Arctic Ocean and the deepwater Gulf of Mexico. The exploitation of the Canadian Tar Sands accelerated and in the U.S. exploration and production (E & P) Companies swarmed into areas rich in shale oil and gas. U.S. oil output has increased by nearly 3 million barrels per day. This has directly reduced our imports from overseas, dramatically changing the world-wide supply and demand balance.

There undoubtedly is a rising ‘real’ cost, but maybe it is not at a 3% annual rate. Perhaps the periodic jump in prices spurs new technology and new investment which ultimately lead to lower prices. Demand then picks up and prices recover. Perhaps a more realistic range is between inflation plus 1% (about \$ 50) and inflation plus 2% (about \$72). It is certainly true that much of the easy-to-develop oil has been used up, requiring more expensive efforts.

Inflation and Interest Rates With oil prices and the dollar in a mutually reinforcing cycle, there is a double-barreled impact on inflation. Lower gasoline and fuel oil prices as well as cheaper non-oil imports will lower the headline inflation rate. The full effects have not yet been seen and could push U.S. inflation well-below 1% (even close to zero)

in coming months. With capital inflows driven by a flight to safety and opportunities in U.S. markets, the yield on 10-year Treasuries could stay lower longer than most people expect. In its early stages, Fed tightening is likely to have little effect on long-term rates and may even hold them down. The projections in the table are my estimates assuming (1) a modest further rise in the dollar exchange rate, followed by a stabilization at that higher level for an extended period, (2) some cut-back in production in the U.S. and some other countries over the next year and a half, and (3) that the Federal Reserve moves part way toward a ‘normalization’ of monetary policy.

Some Tentative Projections

	6/30/15	12/31/15	12/31/16
WTI	\$ 50.0	\$ 55.0	\$ 60.- 65.
CPI Yr/Yr	0.9%	1.0%	1.5%
10-Year Treasury Yield	1.50 -2.00%	1.25-2.25%	1.00-2.75%
Federal Funds	0.25%	0.75%	1.5%

Conclusionⁱⁱ This virtuous cycle for the U.S. could last for several years. How will we use this gift? Some states have already raised gasoline taxes to pay for much need infrastructure. Could we put together, at the Federal level, a 1.5 trillion dollar program to be implemented over the next decade? If so, we could repair roads and bridges, we could upgrade our mass transit systems, and we could build more light rail networks. On an annual basis, such a program would amount to less than 1% of GDP. Much of it could be financed with long-term bonds at interest rates as low as those in the 1950’s. Our grandchildren would thank us for our foresight as we thank today the brave souls who planned and built the Erie Canal, the Brooklyn Bridge, the Golden Gate and the Verrazano Bridges.

Thomas Synnott
January 27, 2015

ⁱ U.S Refiners’ Acquisition cost (the heavy line) represents the average of all oil prices—imported and domestic—arriving at U.S. refineries. The light line is the price of WTI.

ⁱⁱ The author is very grateful for the helpful comments of Mr. Nicolai Timenes Jr. and Mr. Ian Synnott.