

IAQF Student Competition 2016

Over the past two years, there has been dramatic decline in the price of oil and other commodities. Oil prices have been under pressure primarily because Saudi Arabia, the largest producer in the Organization of the Petroleum Exporting Countries, has refused to slash production. At the same time, and despite low prices, there has been an increase in new production—including unconventional sources such as US light tight oil (LTO), which is produced by horizontal drilling and hydraulic fracturing of shale rock; new offshore sources in Angola, Brazil, Nigeria, and other regions; and rebounding supply from countries that have experienced political or social unrest, for example, Iraq and Libya. Some analysts believe higher interest rates in the United States also affect oil prices because higher interest rates could strengthen the US dollar against other currencies. This could make crude oil supplies more expensive, and reduce the demand for oil.

For consumers, low oil prices are welcome when they are reflected at the gas pump and in their pocketbooks. But it is much less clear what lower oil prices imply for retirement portfolios, or even for jobs. Clearly, airline industry profits have increased. But by reducing the demand for new, fuel-efficient aircraft, low oil prices depress not only large aircraft producers, but the entire supply chain servicing that industry. The oil industry has likewise been negatively impacted, with lower profits, fixed expenses, and higher financing costs. There are indirect effects also. The chemical industry is inextricably linked to oil prices—crude oil is a major cost driver for many key chemical building blocks (for example, ethylene, propylene, and chlorine), all of which have downstream effects on demand for various goods and products. Capital expenditures can be curtailed or extended across a broad range of industries—all of which may affect investment returns and jobs.

In financial markets, high oil prices in the early 2000s brought about a massive redistribution of income to oil exporters, and result in current account surpluses and a rapid buildup of foreign assets. Oil-rich governments have used sovereign wealth funds to manage the resulting large pool of financial assets. Because of the oil price plunge, the major oil-exporting countries now face budget deficits for the first time in years. The growth in the assets of their sovereign

wealth funds, which were rising at a rapid rate until recently, is slowing; some have started drawing on their buffers. In general, a fall in oil prices tends to transfer wealth from oil exporters both to high-saving emerging Asian countries and to many other countries, including large developed economies. In addition, oil-exporters' sovereign wealth funds are significant holders of U.S. treasury debt and private equity. Before the oil price decline, countries of the Gulf Cooperation Council (GCC) alone were projected to have a combined fiscal surplus of about \$100 billion in 2015 and of about \$200 billion between 2015 and 2020; they are now projected to reach a combined deficit of \$145 billion in 2015 and over \$750 billion in 2015-20. This implies a change in net assets available to sovereign wealth funds in the GCC alone of \$250 billion in 2015 and \$950 billion in 2015-20. Considering the tightening in U.S. monetary policy—especially against the background of concerns about market liquidity, increasing risk aversion, and falling reserve holdings by some emerging markets—a substantial change in the path of asset accumulation by sovereign wealth funds could likely have a direct effect on financial markets.

Explore the issues raised above, measuring the differential impact on stocks in various industries (perhaps using Ken French's industry returns data), to see if industry sensitivities to oil prices can be precisely estimated. Then given these measured sensitivities (and their changes over time), estimate the effectiveness of hedges of oil price risks in various industries, such as airlines, autos, oil, chemical, consumer products, and financial. How would these industries hedge oil price risk? What is the "estimation risk" for oil price betas? How could institutional investors (think retirement plans and endowments) hedge or rebalance their portfolios? If sovereign wealth funds begin to liquidate their positions, how would this affect your analysis? What are the redistributive effects on wealth, both across countries around the world, and across states within the United States? What is the net macroeconomic impact on global growth?