September 2017

Oil—Will It Go the Way of Salt?

DOMINIQUE BARKER, CFA

Associate Portfolio Manager
Equities—Real Estate and Socially
Responsible Investing (SRI) mandates

Dominique Barker is a member of the Equities Research team. She is responsible for the research coverage of the real estate sector and leads the firm's efforts to incorporate environmental, social and governance (ESG) factors into the research process. In addition to these accountabilities, Ms. Barker has a socially responsible investing (SRI) mandate.

For thousands of years, salt was a critical part of world history—at the heart of numerous conflicts and a creator of wealth disparity. In recent times, however, salt has moved from a valued commodity to a common household item.

Today's oil markets bear many similarities to the historical importance of the trade in salt. Oil reserves are found primarily in specific geographic areas and have produced tremendous wealth for citizens of those regions. Oil has been at the heart of global conflict and has been seen as a highly valued commodity.

But is oil destined to suffer a fate similar to salt?

> The word salt is associated with wealth—the Latin word for salt, salarium, is the root word for salary. The phrase 'worth his salt' comes from a Roman's evaluation of a slave's net worth.[1]

Why Was Salt Once So Valuable?

As early as the Bronze Age (3200-600 BC), salt was used to preserve food. Salt made it possible to ship food over long distances, as well as make food available regardless of season. Salt kills bacteria and draws out moisture, which helps prevent the growth of bacteria. Salt was also difficult to obtain, making it a highly valued commodity. It may have even been considered a form of currency at one time.

During the 19th and 20th centuries, salt in North America took on an important role as a critical element in human and animal nutrition, as well as in leather tanning. Syracuse, New York, was a leader in salt production and helped the North win the U.S. civil war by cutting off salt supplies to the South.

Historically, salt ownership has been at the center of many wars and conflicts, and the location of salt deposits has helped determine the location of important cities. Liverpool, England, for example, first developed into a large port to facilitate the export of salt. Many trade routes, known as salt roads, developed around the salt trade.

What Changed?

Why is salt less valuable today? Why is salt not traded on major commodity exchanges? The answer is *disruption*.

Refrigeration, which began in the mid-1750s, was a major disruptor to salt. Salt had limited alternate uses other than to improve the taste of food, which requires vastly smaller quantities than is used for food preservation.

Because the time horizon stretches so far back, it is impossible to determine an inflation-adjusted price for salt. However, one source[2] references five pounds of salt (circa 1500 to 200 BC) as equivalent in value to eight grams of gold or $300 USD in today's market. When refrigeration came along, the demand for salt dropped and its value declined—presumably to a value close to zero[3].

Suffice it to say, salt was once valuable, prompted the movement of a large number of people and resulted in numerous conflicts. Does this sound familiar?

The Lesson for Oil?

Perhaps we should think about oil through the same "sustainability" lens. For each barrel of oil produced globally, just under half goes into gasoline production. The rest of the barrel goes to petrochemical industries, jet fuel and other products (Exhibit 1). If electric vehicles disrupt the use of the internal combustion engine, what will happen to the demand for oil? Recently, Volvo announced it is no longer producing automobiles that have only internal combustion engines. In July, the U.K. announced that it will outlaw the sale of vehicles with internal combustion engines by 2040.

There are several other announcements and initiatives that suggest that the path to oil losing its relevance as a valued commodity could be upon us. Historically, demand growth for oil was directly related to GDP growth. As a rule of thumb, a 1% increase in GDP has equated to an increase in demand for oil of 600,000 barrels/day[4]. It is conceivable that the link between GDP growth and oil demand growth will decouple. If this happens, we could see demand for oil diminish even as economic growth expands. Depending on the supply response, an imbalance could be created which could result in a reduction in the price for oil. All of this could be driven by reduced gasoline demand, which currently consumes almost half of a barrel of oil.

A catalyst for this event could be the initial public offering of Saudi Aramco, expected sometime in 2019. At that time, we will have a glimpse into the actual marginal cost of producing oil in the Middle East. In a scenario where supply exceeds demand, the marginal cost could help set the price of oil globally. The bad news: there are estimates that Saudi Aramco's cost of production could be as low as \$10[5] per barrel (compared to current Brent pricing of around \$50).

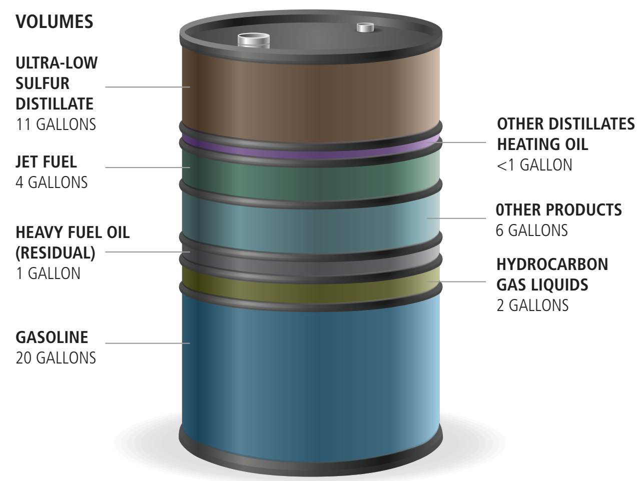
Investment Opportunities?

Investors could consider underweighting oil and overweighting renewable energy and natural gas in their portfolios. It is unlikely that the electricity system will be able to handle the demand for power using only renewable energy. Natural gas is in a good position to continue to act as a cleaner bridge fuel for electricity production. In addition, batteries will continue to play an important role—not only for electric vehicles, but in helping to store electricity generated from renewable energy sources. Exposure to zinc, cobalt, lithium, nickel and other rare earth metals would help investors to capitalize on this opportunity.

The International Monetary Fund recently produced a study that shows that small shocks to oil supply or demand can result in large movements in the price of oil over time.[6] We surmise that the growth in electric vehicles, and the resultant move away from gasoline, could be that small shock disruptor. This could result in a decline in demand and potentially a large oil price decline.

Sustainable investing recognizes the risks and challenges that exist within our rapidly changing world and focuses on anticipating and positioning portfolios for the disruption that lies ahead. Are you ready for change?

Exhibit 1: Petroleum products made from a barrel of crude oil, 2016



Note: A 42-gallon (U.S) barrel of crude oil yields about 45 gallons of petroleum products because of refinery processing gain. The sum of the product amounts in the image may not equal 45 because of independent rounding.

Source: U.S. Energy information Administration, Petroleum Supply Mounthly, February 2017, preliminary data for 2016

[1]Onondaga Salt Museum: http://www.onondagacountyparks.com/parks/onondaga-lake-park/salt-museum/

[2]https://history.stackexchange.com/questions/673/when-and-where-was-salt-as-valuable-as-gold

[3]The difference in value is difficult to measure precisely, as salt has never been a quoted commodity.

[4]Credit Suisse, 1989.

[5]Credit Suisse, 2017

[6]International Monetary Fund, 2017 Oil Prices and the Global Economy