Timely post. Before we dive in, let's level set. **The cost of crude oil is the number one contributor to fuel manufacturing costs and the prices that consumers see at the pump**. The U.S. Energy Information Administration (EIA) estimates that the cost of crude oil accounts for about 60% of finished gasoline costs and about 50% for finished diesel. Also contributing are state and federal taxes, marketing and distribution costs and refining costs, which include refining profits.

In the last year, while fuel demand has recovered to near-pre-pandemic levels, crude oil production has not. As a result, crude oil prices increased more than 30% and pushed gasoline and diesel fuel prices higher. Supply chain challenges—such as the shortage of truck drivers to deliver fuel to retail stations—along with decreases in global fuel supplies (b/c of Russia's invasion of Ukraine, China's highly restrictive fuel export policy, etc.) and declines in global refining capacity have created an exceptionally tight market for transportation fuels. In these circumstances, global and U.S. inventories of refined products have fallen well below the bottom of the five-year-average range.

All of these factors—the return of fuel demand to pre-pandemic levels and the slower rebound of crude oil and fuel production; loss of global refining capacity; reduced fuel supplies coming from refineries in Russia, China and India; and low product inventories around the world—have created concerns about whether supplies of gasoline, diesel and jet fuel will be sufficient to meet global demand. That's the big picture driving up prices for refined products and pushing refining margins considerably higher.

Are "margins" and "crack spreads" communicating profit?

This is important. There is a lot of discussion about increases in "crack spreads," refining margins and refinery profits, and it's important to understand these terms are not interchangeable.

- **The "crack spread" is a proxy for a refining margin.** It tracks the difference between the spot prices for crude oil that refineries purchase and the spot prices for wholesale gasoline and diesel that refineries sell (wholesale prices are less than the prices consumers see at the pump). It is not a measure of refinery profit because (1) it does not subtract costs associated with fuel manufacturing, such as labor, utilities, facility maintenance, etc.; and (2) it also presumes refineries produce just two popular products: gasoline and diesel. In reality, refineries manufacture a range of products—some of which sell at a loss compared to crude oil.
- **Gross margins for refineries also aren't communicating profit.** They reflect the difference between refineries' product revenues and costs to manufacture those products. What the gross margin doesn't account for are other business and administrative costs that refineries bear, things like taxes, property payments, selling costs and paying down debt.

Every refinery input cost, regulatory requirement and business expense needs to be deducted from product revenues to arrive at actual profit. Neither the "crack spread" nor the gross margin does this.

Why are earnings today so much higher than in previous years?

Refinery earnings right now are certainly atypical.

In 2020 and the first half of 2021, U.S. refiners posted huge losses as the pandemic destroyed demand for gasoline, diesel, jet fuel and other refinery products. Some refineries were forced to idle in this time and, for a few, the shuttering has been made permanent.

Now, halfway through 2022, U.S. refineries are up and running at near maximum utilization to meet demand in the United States and around the world. Other major refining countries, for a variety of reasons, have not kept pace bringing their facilities back into operation or resuming sales of fuel to the market. As a result, wholesale fuel prices have increased and so have refinery "crack spreads."

The experience of the last several years underscores how the refining industry moves through periods of earnings and losses. It is a long-view, cyclical industry and, on average, gross refinery margins and profits tend to be narrow.

Who sets the cost of wholesale gasoline?

Wholesale gasoline prices are set by the market. The U.S. Energy Information Administration uses a very helpful analogy to explain this. They write that fuel markets work much like a global auction with buyers and sellers competing around the world for the same products.

Demand for gasoline and diesel is fast returning to pre-pandemic levels, and it's outpacing global crude oil production and refinery outputs. Because of concerns about tight fuel supplies and falling fuel inventories, buyers around the world have increased their bids to secure gasoline and diesel.

As frustrating as this is, it's how fuel markets work.

Are U.S. refiners able to correct the imbalance that's driving prices higher?

U.S. refiners are doing our part to provide fuel as efficiently as possible to U.S. consumers and the global market. Refinery earnings, specifically, are increasing because demand is high, but it's being met with less refining capacity here in the U.S. and around the world, and less fuel supplied to the global market from refineries outside the United States.

Since January 2020, the global market has lost a total of 3.3 million barrels per day of refining capacity, one-third of that, or 1.1 million barrels per day, came from the United States. Fuel demand has not fallen in kind. In fact, it's largely recovered.

Refiners in the United States had the most capacity going into the pandemic and even with less today, we're running our sizeable kit, with roughly 18 million barrels per day of petroleum refining capacity, full-out (in the ballpark of 95% utilization). Other major refining countries are nowhere near U.S. utilization rates for a variety of reasons. Global utilization is reported to be around 80%.

No other country's refining industry is doing as much as ours to supply and calm the market. U.S. refiners are the world's top producers of gasoline, diesel and jet fuel.

Can't U.S. refiners make do with less profit and voluntarily cut prices?

If U.S. refiners were to voluntarily cut prices, it would not likely reduce the price of gasoline and diesel for consumers. Refineries in other countries would continue to keep prices at market levels and their decisions would determine fuel prices for the global market—which includes the U.S. fuel market.

U.S. refineries do not set prices at the pump. Voluntarily cutting wholesale fuel prices would likely reduce U.S. refinery profits with marginal impact on prices at the pump. Longer term, setting artificially low wholesale fuel prices would undermine the competitiveness and viability of the U.S. refining industry, creating more uncertainty about adequate fuel supplies.

Separately, as Econ 101 will teach you, lower prices can be a trigger for higher demand. In a tight supply environment, that's not the signal we should be sending. In India, where the government put price controls in place, demand for gasoline and diesel fuel has increased dramatically, and as a result, India has had to look even more to the global market for additional fuel supplies.

Other measures intended to cut consumer costs and reduce refinery profits—such as windfall profit taxes—have never worked. Instead, as the Congressional Research Service reports, they have a record of raising little-to-no money, depressing U.S. energy production and making supply disruptions worse.

Wouldn't a transition away from fuels to alternative forms of energy solve this problem?

Alternative forms of energy are also governed by the laws of supply and demand. There's no escaping them. Consider minerals, for example, which are critical to alternative energy technologies like electric vehicles. Minerals are global commodities with prices that fluctuate as supply, demand and policy change. Look no further than lithium to see this at work.

Electricity also isn't a limitless resource. As any Californian or Texan will tell you, when demand overwhelms electricity grid supply, prices spike and/or blackouts and brownouts become a recurring reality.

What would lower margins?

Problems rooted in supply and demand require solutions rooted in the same. Refinery margins will likely fall when gasoline and diesel supply and demand come back into balance. Gasoline and diesel prices for consumers are likely to fall when crude oil supply and demand comes back into balance as well.

What's a better way to address the supply/demand challenge?

Our position has not changed. These are the steps our policymakers should be taking to address the

fuel supply v. demand challenge and bring relief to consumers:

1. Stop the anti-oil rhetoric that is discouraging public and investor confidence.
2. Encourage more energy production from financially, geopolitically stable countries, including the United States.
3. Expand energy infrastructure and improve transportation policies so it's easier and less expensive to move fuel and energy around the United States and North America.
4. Support U.S. refining capacity and be mindful of policies that increase refinery operating and regulatory costs. A smaller RFS burden would mean slimmer refinery crack spreads.

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