

CRUDE OIL PRICE PREDICTION : PROBLEM STATEMENT

1. Supply

Supply and demand has to do with how much oil is available.

Supply has historically been determined by countries that are part of [OPEC](#). But now, the United States is playing a bigger role in supply thanks to booming production from American shale fields. So if major oil-producing countries are pumping out a lot of crude, the supply will be high.

Just look at what happened in 2014.

“Saudi Arabia made the decision that they were not going to cut back production, they were going to continue to produce at record high levels,” said Tamar Essner, senior energy director at Nasdaq IR Solutions.

“At the same time, you had very robust output from the United States, and from other producers around the world.”

Oil prices fell sharply as producers pumped more than the world could consume. OPEC was largely blamed for the free fall in oil prices because it refused to cut down its production. But OPEC said U.S. shale drillers were to blame for pumping too much, and should cut their production first.

In 1973, Arab members of OPEC put an embargo against the United States as a retaliatory measure for U.S. support of Israel during the Yom Kippur War. After the embargo, the oil supply in the U.S. was so scarce and the demand was so high, it drove the price of crude to the point that gas stations began rationing gasoline.

2. Demand

Demand on the other hand is determined by how much need there is for oil at a given time. That need is often for things like heat, electricity and transportation. The more economic growth a region sees, the more demand there will be for oil.

“Economies around the world have picked up since the financial crisis, and growth has gotten stronger so people have been using more energy,” Essner said.

And then there's the question of how the market will react to renewable energy.

"A lot of this will be impacted by public policy, but at the end of the day renewable can only displace hydrocarbons if it's economically feasible," Essner said.

"Right now, renewables are still more expensive than hydrocarbons, so consumers aren't going to voluntarily make the switch."

3. Geopolitics

Since supply is determined by the big oil-producing countries, tension with one of those nations can cause major problems. So if there's war or conflict in an oil-producing region, crude inventories could seem threatened, and that could ultimately alter the price of oil.

"Geopolitics has traditionally been a factor in the oil price," Essner said.

"Particularly when situations in the Middle East or other oil-rich regions of the world would flare up and there would be conflict, you would generally speaking see a little bit of an uptick in the price of oil as a result, just by virtue of the risk of supply being disrupted, or of means of transportation being disrupted, such as a canal or pipeline or workers going on protest, things like that."

Just think back to the Gulf War of 1991. Oil production fell, which caused prices to rise.

And in 2003, oil prices soared after the U.S. invaded Iraq. That Middle Eastern nation produces a lot of oil, and with instability in the region, people weren't immediately sure what would happen to the supply.

"That's what makes the oil markets so fascinating, is that it's really a very interesting interplay of financial markets, the economy, and those are two very different things, the currency market, geopolitics and the environment," Essner said.

The energy industry is sure to evolve, and experts are watching to see what role oil will play in the future. But for now, the oil markets remain a powerful force in the world of economics, geopolitics and your commuting budget.