C-MACC

Chemical Market Analysis & Consulting Company

April 3, 2020

Sectors Mentioned:
- *Oil and Gas*
- *Refining*
- *The Permian*

Companies Mentioned:
- *Exxon*
- *Chevron*

Commodities Mentioned
- *Oil*
- *Natural Gas*
- *Gasoline*
- *Jet Fuel*
- *Diesel*
- *Naphtha*
- *Ethane*

The 5th Second Derivative

Most weeks we scan the reporting, news flow, fundamentals and profitability of the chemical industry and publish our findings every day, but there are times to also take a step back to frame and provide any updates to our perspective on items that we deem relevant facing the chemical industry – this is the basis for our 2nd derivative work.

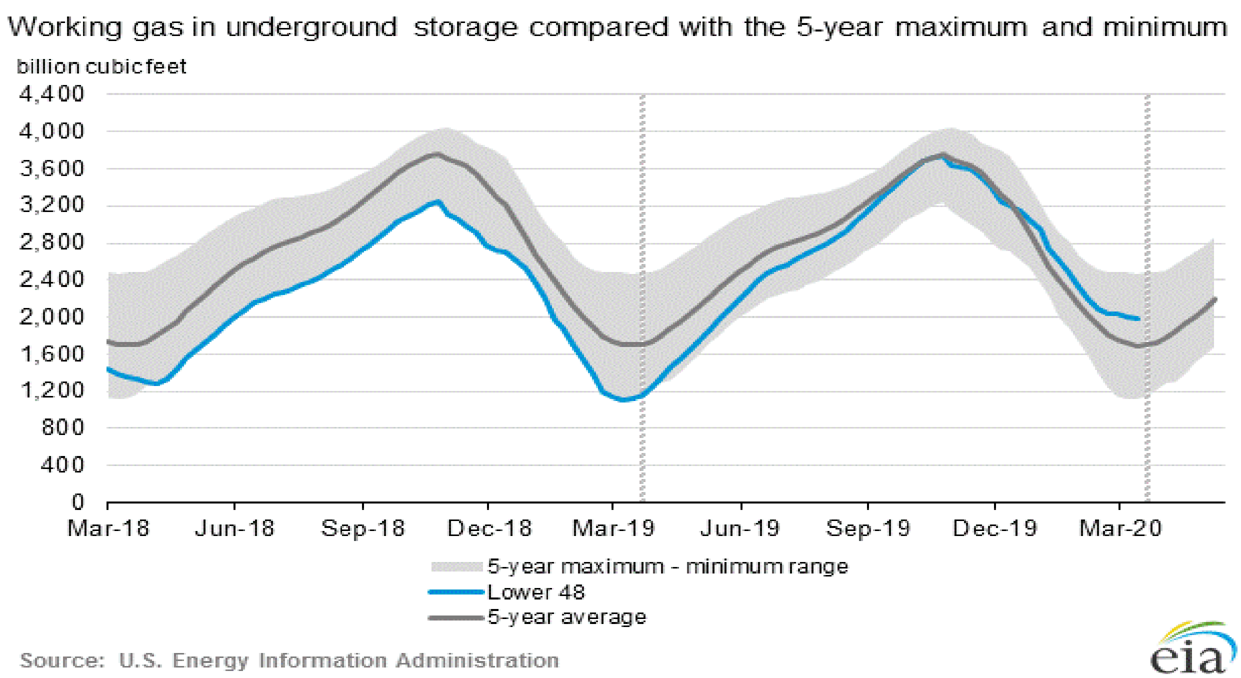
The Wrong Economic Model – Still – This Time Energy

We still believe that the historic proxies being used to attempt to frame current events are all giving the wrong signals. But, some of the old models are being thrown out and the word "unprecedented" is appearing more frequently – and appropriately so.

This week we are focusing on Energy – it seems appropriate given the noise and volatility of the week and given the reception that we have had to the oil at $20 cost study we published Monday. We are not energy analysts; we are amateur economists and expert mathematicians (and Graham has worked for two of the majors – albeit 35 years ago). Plus, we know a thing or two about the chemical industry which is closely connected with the energy sector. So, with that, these are the highlights:

- **We have zero confidence in the notion that the world can coordinate enough oil production cuts to offset the precipitous decline in oil demand in the second quarter.** At best we might see some elective cuts, but we think the more likely consequence is that no agreement is reached, and the World keeps pumping until we reach storage limits – sometime later this month.
  - With global demand likely to fall by 20-25% this quarter and possibly next, a market balance cannot be achieved without coordinated cuts in the US as well as Russia and within OPEC. This is probably not legal in the US; it will force some companies into Chapter 11 at least as fast as with lower oil, as they could see equally low cash flows (higher price, lower volume) and some could face law suits with respect to supply contracts that were agreed at the time of funding for more E&P spending – especially if the cuts push oil prices back to a level where the same companies could make more of a contribution to fixed costs and interest by pumping more.
  - Why would Saudi Arabia and Russia cut production and their own income in order to keep US Shale in business? This is especially true if you do not believe you will avoid the impending bloodbath – just delay it for a couple of weeks
  - The math does not work – regardless of the politics – oil must fall to a level that forces production cutbacks – so back to our $20 case.
- **Natural gas prices in the US continue to weaken despite production cutbacks that have been ongoing since early December (Bloomberg chart below).** Despite the cutbacks – which are deliberate from the uneconomic gas-based shale fields – US inventory is not falling – see second chart. This is because demand cannot keep up with the higher levels of US production and because of a relatively mild winter.
  - There is talk of production cutbacks for oil in the Permian, impacting gas availability further – which would be the case, because of the large amount of associated gas that comes along with Permian crude. See our comments above on Permian crude – we think that production in the Permian will be cut, but that it will be for economic reasons because of low prices not because of a production cut agreement

- **Note that a cut in Permian production that raises gas prices, while crude oil demand is depressed and prices are depressed is exactly the bear case scenario painted in our [ethylene cost study]** – where US ethane based ethylene producers become the highest cost producers in the world, while sitting on a 30% capacity surplus versus domestic consumption – before adjusting for the negative impact on domestic demand that will come with the Pandemic. ***Note that this analysis looks at multiple oil/gas scenarios and can be customized to fit whatever assumptions that a client needs.***



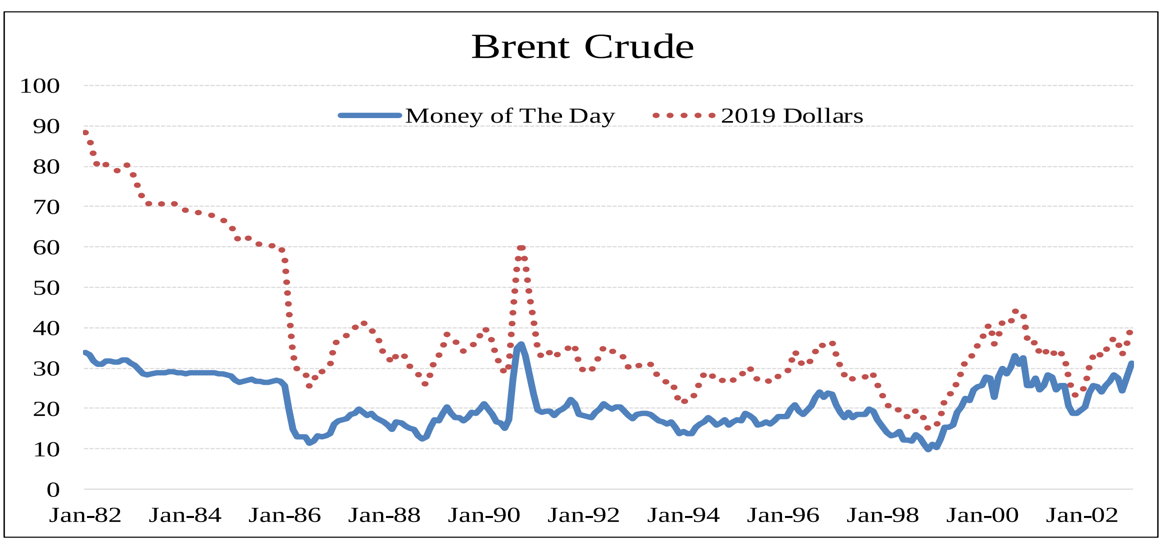
On the subject of domestic and global demand, the unemployment figures last week were a strong pointer to the idea that there is nothing familiar about what effect the Pandemic is having on the world and we should prepare to be surprised again and again. These lack of clarity sentiments were echoed by Andrew Liveris in the [call we hosted yesterday]. Chemical companies that have pre-reported strong first quarters are those largely focused outside China and where March orders were placed before things really got out of hand – most will also have benefited from falling raw material prices as Energy reacted more quickly, while not as precipitously as it has in recent weeks. All of those reporting have withdrawn near-term guidance and, in many cases, talked about liquidity, suggesting that they are preparing for bad times ahead. See our [Perspectives Piece from Wednesday]

Over the next few weeks we expect:

- Refiners to announce sweeping operating rates cuts because they cannot sell refined products – especially jet fuel and gasoline, but also some diesel. This will further back up crude demand.
- Chemical companies in Europe and the US to announce production cutbacks and possibly declare "force majeure" where they can to get out of feedstock purchase agreements – this will back up naphtha creating more pain for the refiners and back up ethane in the US which will cause problems and add to the need to cut back overall production in the Permian.
  - By the time we reach this point at both the refiners and the chemical companies we will likely have overall chain inventories at the highest levels we have seen in decades and when we see a pick up demand again it will take time to work through the inventories – prolonging the pain for the oil producers, refiners and chemical companies.
  - The exception will be for packaging polymers focused in the food and household products sectors, medical related products and detergents, but, while significant, this will not be enough to save any one company – all of those stepping up and making more hand sanitizer and masks and disinfectants are doing so in incremental production capacity.
  - The other factor to consider is that many companies are going to need to take substantial inventory write downs in their Q1 reports and Q2 reports and we may also see come substantial asset write downs related to recent capital expenditure and/or acquisitions. It may be the end of Q2 before some of these can reasonably be declared as "impaired".

While **financial institutions** are likely to be supported by the government bail-out, there are plenty of energy related companies and chemical companies that will face real financial stress over the next couple of months and write down for bad debts should rise. Separately, someone(s) is on the wrong side of many oil hedges that are keeping many of the independents operating in US Shale today. We could see some defaults because of the scale of the hedging losses – and we have no confidence that oil is going to rise any time soon – see our recent oil study and the Perspectives piece we released on March 31st

Our longer term view is unchanged – we anticipate real pain for oil in the near-term – driving huge structural change in the US Shale plays that will see significant consolidation – Exxon and Chevron emerging as the clear leaders, and some others emerging larger (in terms of acreage) and better financed through Chapter 11 reorganized balance sheets. However, just like the industry saw in 1986/87 (chart), what emerges will have a step down in costs with the pain felt right through the oil services chain, such that Finding and Developing costs drop meaningfully. We will likely see a Permian basis that is profitable enough to support investment and $35-40 per barrel, but with much more streamlined operations and far fewer employees. This Pandemic will likely not stop the US Oil machine – it will just make it more efficient on the other side of a brutal restructuring process.



All data for this publication sourced from Bloomberg or corporate reports.

 Sources: Corporate Reports, Bloomberg, Government Publications.