

Long: Methanex (MEOH) - \$37.24

### **Investment Rationale**

Methanex is a vancouver-based producer of methanol, a chemical with a broad array of uses but is generally linked to consumer demand and energy usage, as well as the prices of its main input, natural gas, and high-level substitutes of naphtha-based chemicals, linked to crude oil prices. The chemical came to prominence as an easily-transported natural gas derivative with flexible use-cases that can offer consumers low-emissions, lower input costs, and alternative sources of energy. Most of its applications don't solely rely on the chemical, but given its convenience it has risen in use at a high single digits CAGR over the last decade, with over half of the world's supply finding its way to China and surrounding nations.

Methanex was shocked by COVID and saw prices reach the lows last seen in 2016, essentially forcing a downcycle. The reopening in China paints a simple picture. Based on my call with IR (notes at end of write-up), demand has normalized in the country after their recovery from far-reaching lockdowns (A14). As the rest of the world follows suit, demand should at least recover, if not grow. The simplest story is that of a reopening play. The vaccines for COVID are bringing in a steady decline in worldwide cases and deaths (A13) and demonstrates that normalcy is on the horizon. With that comes demand for everything from concerts to methanol.

To be abundantly clear: methanol is trading at above \$400 with so much of the world still struck by the effects of COVID and lockdowns. The vaccine works. Herd immunity will be achieved. We will eventually be able to go to bars which: increases the demand for plastic straws that were made using a process using methanol as a feedstock, putting money in the Chinese factory-owner's pocket that pays for a taxi running on methanol, paying for the heat in the taxi-driver's home, insulated with methanol byproducts, with a methanol-based furnace... Prices are up, which is in part forward-looking, but likely misses the true magnitude that the rest of the world opening up has - much of that set to be reflecting natural and spring-loaded demand.

In fact, looking at the segmented demand of the market, 2020 may have been a solid year for methanol production due to new Methanol-to-Olefin (plastic) plants coming online at the end of 2019. That segment was up 12% throughout 2020 while every other use was down at least 5%. MTO represents 16% of the total market (A4) and once factories come online, they cannot switch fuel sources, they are locked in. Further, there are still two plants with the capacity for 1,800 tons each in annual demand under construction in China (A12). The combination of this and a natural resurgence in demand for energy and other end-products (say, homebuilding) has the potential to have 2021 and 2022 compare well to not just 2020, but 2019.

The supply-side is very challenging in the near-term. The company, despite having natural gas contracts in place at every one of their locations, some spanning over a decade, cannot ensure

deliveries. The sum-total of these conditions will leave 2021 production about equal to that of 2020, at 6.7M tons produced. On one hand, this is troubling since there's no side-hustle and a lack of methanol produced is money not made/lost. On the other, they have no substantial maturities (A5) and, as the largest producer of methanol, likely share these issues with most other players. Almost everywhere in the world methanol is made using natural gas - China is the only country to use coal but also imports natural gas for the same purpose. This may be shaping up to be a industry-wide supply shock that causes prices to rocket into 2022. As the largest producer, with 15% share, they would disproportionately benefit.

And then, not crucial to the long, is the chance of an inflationary environment. Commodities are in a long bout of underperformance relative to the S&P (A6) and there has been an unprecedented inflow of money being pumped into the economy at near-0 nominal rates and what may be sub-0 real rates (A7). Commodities benefit disproportionately in inflationary conditions. Part of the reason why would be that new capex would stall (there has been a long-looming thread of production in the middle east ruining the market; inflation would be the nail in that coffin), alternatives would be expensive (crude), shipping would be expensive (MEOH owns their fleet, which runs on methanol), and their contract structure would help shield the blow related to natural gas (70% in NA is fixed, vast majority of the rest of the world relies on methanol price-linked contracts).

### Valuation

As such, I believe that MEOH is a long. When approaching the thesis I tried a few different methods in order to model market methanol prices but felt that it was too inaccurate, and a random number generator between 200 and 500 would have the same effect. As a result I've chosen 3 historic scenarios and 2 fixed-price scenarios as the "what-if" numbers for 2021-2024. 2016-2019 is an upcycle due to tight market conditions and what I base my price target on, since I find it most applicable to the events at hand. 2012-2015 is a supercycle, with prices reaching \$500 (vs LT average of \$350). 2015-2018 is a downcycle with some recovery towards the end. And then \$300 and \$250 flat as a benchmark of downside scenarios.

On top of that, instead of basing my price target on calendar year financials, since this is a commodity the price should go up and then go down. We should do our best to sell when the price is up (ie at the peak/when our price target is reached) so I take the peak EBITDA or EPS produced by each regime, attach a multiple based on historic averages, and base my investment decision on how returns based on how long it would take to achieve those conditions. A 10% return is excellent if it's done in a day, solid for a year, pathetic for a decade.

My price target for MEOH is \$66, which represents the 2016-2019 cycle and peak valuations that should be achieved within 4 years. As such, the 80% upside is more accurately described as a 16% IRR in the base case scenario.

### Risk

Ultimately I think that the biggest risk to this thesis is the fact that methanol is not a lynchpin chemical. If it were to cease existing there would be turmoil tomorrow. In a year or two we would forget what it was. If oil supply dried up, society might collapse. That adds a level of doubt to projections, especially when most of the demand is from China, a government that has the power to flip switches more-so than most others. Their planning can reduce the usage of this largely-foreign chemical or ensure continued support of the marginal producers who rely on high-cost natural gas and coal. The fate of the market can be decided by decree.

The next tier of risks comes from timing and magnitude. It's hard to know exactly what will happen while others are still in the dark. I do believe that Methanex is a long and is worth more than it is currently valued at. The crux of that projection is that methanol demand should grow/rebound faster than supply or that supply will be impaired and unable to meet demand but eventually recover. The two problems with this rest on how this translates to the return that would be received by investors. For example, if I thought that MEOH equity was undervalued by 20%, I could be right, but if it took more than 3 years to achieve that I would be lagging historical equity returns. And then, what if it isn't 20% but 10%?

### Further Questions

#### **- How does the company make money? What is the business model?**

The company sells methanol. They produce the majority of their product, have the rights to sell production owned by partners, and sometimes buy products on the open market to sell later. The vast majority of money is made on their own production, with some commission from the sale of the interest of partners, and virtually no margin on open market purchases (likely just done to appease client demand). They operate their plants around the world at varying rates, depending on market dynamics and natural gas availability, to deliver methanol to customers around the world using their shipping fleet. They are paid based on the market price for the commodity usually minus a discount given to customers.

#### **- Does the company have a good business model? Why or why not? (short answer for this, bullet points preferred).**

Generally, for this industry, yes:

1. Production across the cost curve - lower cost near natural gas rich states like Chile and Argentina but forced to deal with state-owned entities. As a result they operate in NA and NZ as well with more consistent output. This also helps sustain planned and unplanned shocks since no plant is more than 25% of total capacity.
2. Owns shipping fleet so is only subject to the commodities they must be subject to. Their biggest cost is natural gas (~50% according to IR).
3. Mix of long term fixed (&hedged) (in NA) and methanol price dependent natural gas contracts helps survive varying market conditions similar to their geographic diversity.
4. Pure play status simplifies capital allocation. They offer buybacks in times of plenty and constant dividend payments (sans COVID) while retaining enough capital to maintain a healthy balance sheet and expand if needed. (A1)

**- What are the most sensitive variable/drivers in the profitability of the company?**

The company relies on natural gas so is largely subject to availability and can be hurt by higher prices. As mentioned earlier, their contracts aim to prevent supply-shocks, but if natural gas prices were to rise independent of methanol prices, this should hurt the profitability of the company.

The company is also subject to oil prices in an indirect way. Consumers of methanol may have the ability of supplementing their demand with additional oil consumption (this would be the case in energy - methanol is largely an additive but can be swapped for more oil-derivatives). Additionally, if less-flexible consumers forecast lower oil-prices in the longer term, they are more likely to link their production to oil, thereby locking themselves in away from methanol.

The company also has many competitors. Methanex is the largest player in the market and has worldwide operations, but since the market is so fragmented it is possible that if local inputs to smaller players decrease in price, they may be able to undercut the company. Essentially they are going to have higher fixed costs but much lower variable costs and rely on larger contracts.

Demand is also linked to global economic demand. Broadly speaking it's pretty much 50-50 energy and products. Ignoring the concept of competition as an input to production, the company is going to depend on customer output demand to determine how much they can sell.

- Choose the most important driver of profitability and project EPS sensitivity.

Based on Peak EPS		Methanol Price									
	\$	12.81	250	300	350	400	450				
P/E	4	\$	6.40	\$	13.52	\$	21.66	\$	30.68	\$	40.85
	6	\$	9.61	\$	20.27	\$	32.50	\$	46.02	\$	61.27
	8	\$	12.81	\$	27.03	\$	43.33	\$	61.36	\$	81.70
	10	\$	16.01	\$	33.79	\$	54.16	\$	76.70	\$	102.12
	12	\$	19.21	\$	40.55	\$	64.99	\$	92.05	\$	122.55

<b>Based on AVG EPS</b>		<b>Methanol Price</b>									
	\$	2.74	250	300	350	400	450				
<b>P/E</b>	4	\$	1.37	\$	7.19	\$	13.96	\$	21.48	\$	29.95
	6	\$	2.05	\$	10.78	\$	20.93	\$	32.21	\$	44.93
	8	\$	2.74	\$	14.37	\$	27.91	\$	42.95	\$	59.91
	10	\$	3.42	\$	17.97	\$	34.89	\$	53.69	\$	74.89
	12	\$	4.11	\$	21.56	\$	41.87	\$	64.43	\$	89.86

The most important driver is the price of methanol that they can realize in sale to their customers. As investors, it also matters what the market values earnings at, and if we can correctly identify the peak and sell our shares in time. Note the significant difference between what the company is worth if we sit through a full cycle at those average prices vs sell at the peak.

- **Determine a price target; explain how you get to your price target and what is the time frame to reach your PT.**

I simply chose 2016-2019 as the most likely and conservative scenario and took the average of the peak valuations based on EV/EBITDA and P/E. The former is probably more accurate because the company provides a rough estimate of their cost curve (A2) which I used to determine adjusted EBITDA but the latter reflects capital allocation policies in the form of buybacks (modeled only to occur when prices are above \$400). Combining both methods gives a target price of \$66, or 80% upside, meant to be realized within 4 years, equating to a 16% IRR from the current price of \$37.

Years Until Peak	SP	1	2	3	4	5	6	7
Input	\$ 12.35	11%	6%	4%	3%	2%	2%	2%
2016-2019 Cycle	\$ 57.71	55%	24%	16%	12%	9%	8%	6%
2012-2015 Cycle	\$ 67.21	80%	34%	22%	16%	13%	10%	9%
2015-2018 Cycle	\$ 71.69	93%	39%	24%	18%	14%	12%	10%
300 Flat	\$ 25.17	-32%	-18%	-12%	-9%	-8%	-6%	-5%
250 Flat	\$ 12.35	-67%	-42%	-31%	-24%	-20%	-17%	-15%

Years Until Peak	SP	1	2	3	4	5	6	7
Input	\$ 12.81	-66%	-41%	-30%	-23%	-19%	-16%	-14%
2016-2019 Cycle	\$ 76.15	104%	43%	27%	20%	15%	13%	11%
2012-2015 Cycle	\$ 97.53	162%	62%	38%	27%	21%	17%	15%
2015-2018 Cycle	\$ 100.30	169%	64%	39%	28%	22%	18%	15%
300 Flat	\$ 27.03	-27%	-15%	-10%	-8%	-6%	-5%	-4%
250 Flat	\$ 12.81	-66%	-41%	-30%	-23%	-19%	-16%	-14%

This is a full reflection of upside/downside in different scenarios using a multiple of 6x EV/EBITDA and 8x P/E which I believe reflects long term averages (A8)/what the market will likely pay for the company at peak. Ignore the input row. 2016-2019 is what my target is based on.

**- Articulate your variant view; where and how you differ from consensus.**

Short term (1y): Natural gas surge in the US should not matter due to preponderance of fixed contracts in the geography (70%). Shortages in other geographies should work themselves out before 2022 and the company can weather the storm for another year.

Medium term (2-4y): Supply problems may be indicative of what is faced by competitors, fueling a demand imbalance, raising prices. Inflation and broad economic recovery should fuel a surge in commodity prices and make new supply that won't be completed soon less desirable. If not for COVID, demand in 2020 would have actually been substantially higher due to MTO plants coming online in late 2019. More MTO plants are under construction. As the other sectors that use methanol come back online, demand should at least level out with the additional 12% increase in MTO and then grow more. From there, elevated demand with lower prospects of new supply should at least maintain current methanol prices of ~\$450 (at which MEOH is a long) if not drive them further as even more MTO plants come to completion and alternatives like coal and high-level substitutes like naphtha are less attractive due to the higher cost. I think that the signs of these events should be clear soon, which would drive the stock higher before they are actually realized.

Longer term(5y+): I don't endorse holding this over the longer term simply because the opportunity cost is too great. If one had to, they would own the market leader with a track record in an industry with modest growth. They could also count on capital being returned to shareholders in the form of dividends and buybacks.

**- Identify the opposing view and where you could be wrong.**

I don't give too much weight to significant new supply coming online, particularly in the Middle East. It may also be an error to not break out my model in terms of market supply and demand given the potential for these developments. Essentially, just because the long-term price has been \$350, it doesn't mean that it should continue as so. There is some quantitative ignorance to the actual price drivers. BAML does find that there is significant total-market supply growth planned, essentially matching their modeled 5% growth for demand (BAML June 2020).

Further, new supply doesn't even have to be lower on the cost curve. China can easily subsidize production in order to prop up manufacturing and transportation industries that rely on the product. China can also pull the rug on global demand by favoring alternative inputs.

Demand does not have to grow at long term rates. Demand anchored to methanol may persist but newer additions to target industries may favor alternative inputs.

**- Include a section that addresses outstanding diligence items and the questions/methods you would use to address the outstanding issues.**

I think that there is a potential for market analysis over a longer timeframe. I've tried to find linear relations between methanol price and the commodity prices provided with some tweaking but was not fruitful.

The goal would be to recognize the signs of peaks/troughs and what had contributed to those events. I'd like the opportunity to revisit this with longer spanning and more detailed data but also believe that a good portion would be qualitative (ie causing the quantitative trends) so a useful exercise may be to visit research, calls, competitors, oil markets, and other related materials in 2005, 2009, 2012, 2014 and so on to develop pattern recognition.

Additionally I saw one estimate of a detailed cost curve in a sell side report from 2011. I think that this is an important driver and in order to get more info I think it would be possible to pose as a customer in the same geography (NZ->NZ) in order to compare across countries and competitors.

**- Address how you could gain further conviction in your thesis.**

How serious are gas delivery issues? If conditions in NZ persist there can be extra costs in order to supply Asia. If conditions in Chile and Trinidad persist, the company can take a large hit during a downturn since the low cost plants will not be able to meet their matched demand.

Learning more about new supply and addressing the likelihood of it coming online. Mentions of Iran dooming the industry with their low cost supply and focus on China (given sanctions) have been floated for a while but have not been realized. I don't understand the level of difficulty in starting a plant and don't understand why the market is so fragmented if it was so difficult.

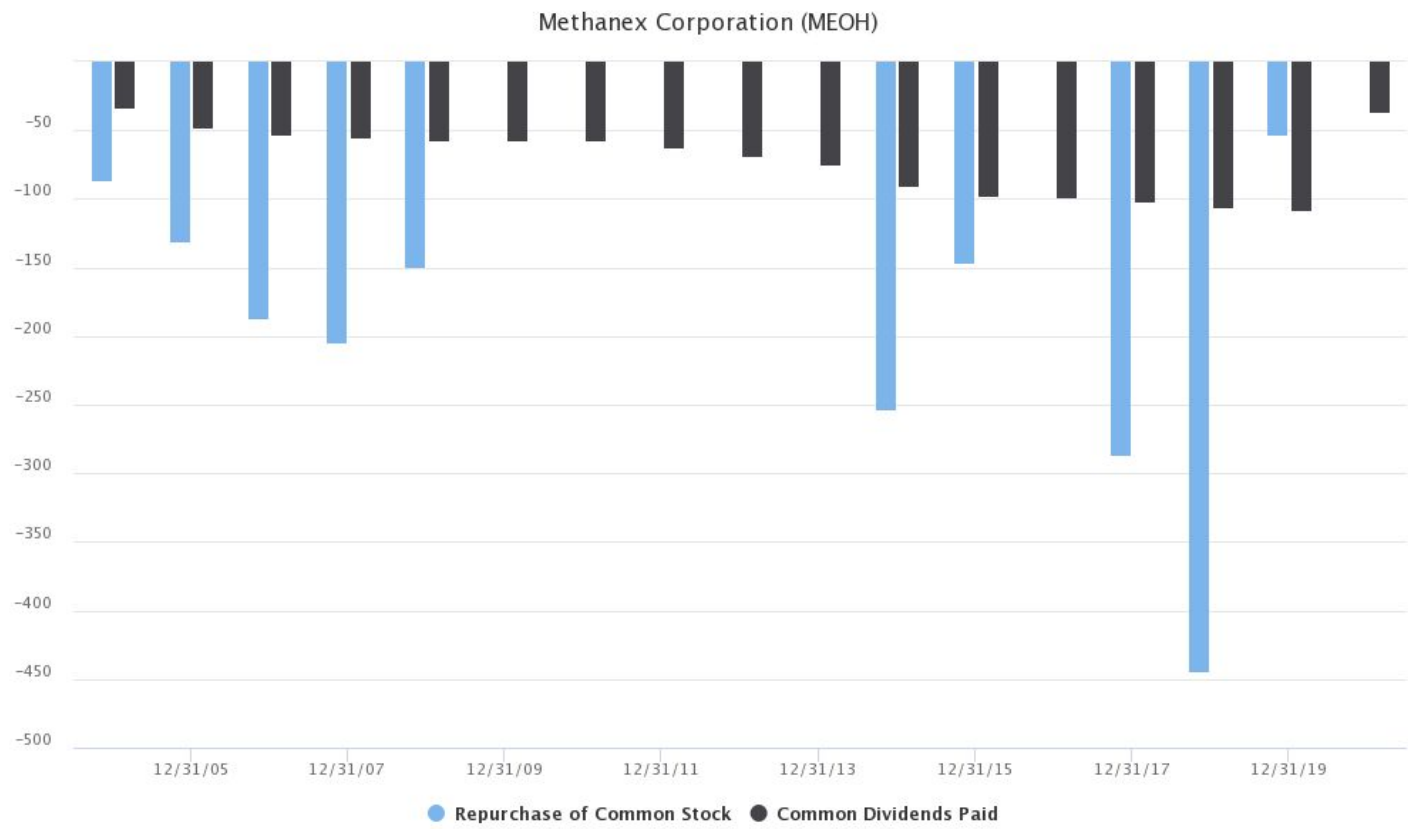
I am not confident in predicting oil and gas prices which play a substantial role in influencing other drivers of this thesis. I have a general idea of the levers in the industry but given the heavy role localized production plays in the business of Methanex it would take more sophisticated analysis to connect those factors with the economics of the business.

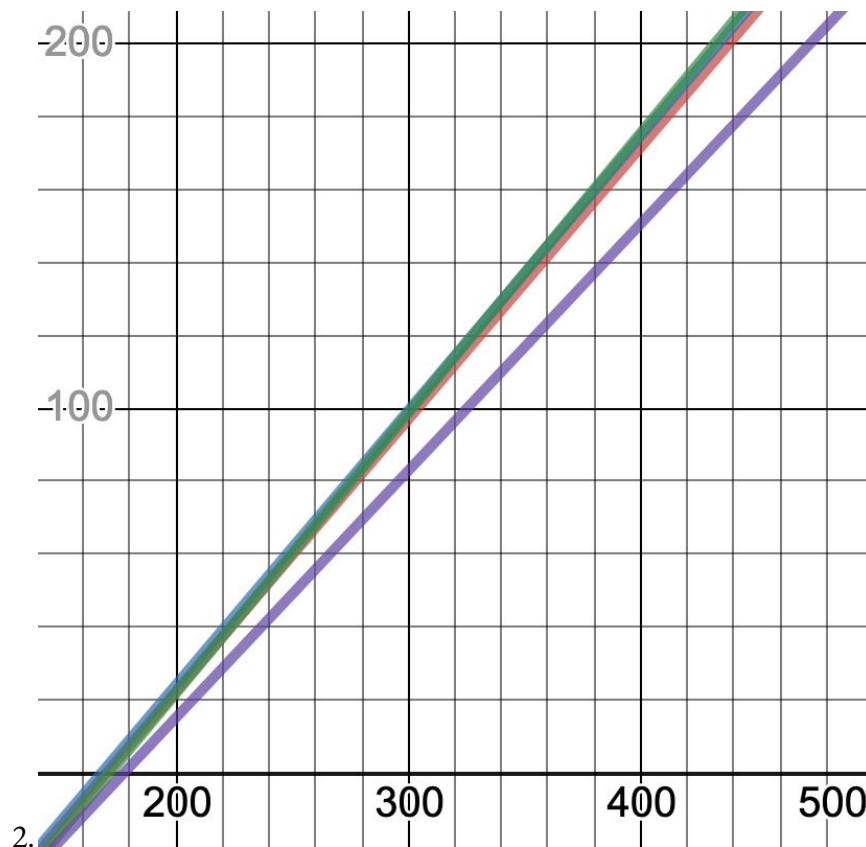
Is it possible that their ramp up into existing supply, and then the construction of additional supply reduces the long-term average price in the market? Similarly, do increases in price hurt longer-term demand? BAML finds that MTO is usually unprofitable standalone, but makes sense as step-1.



Appendix

1.



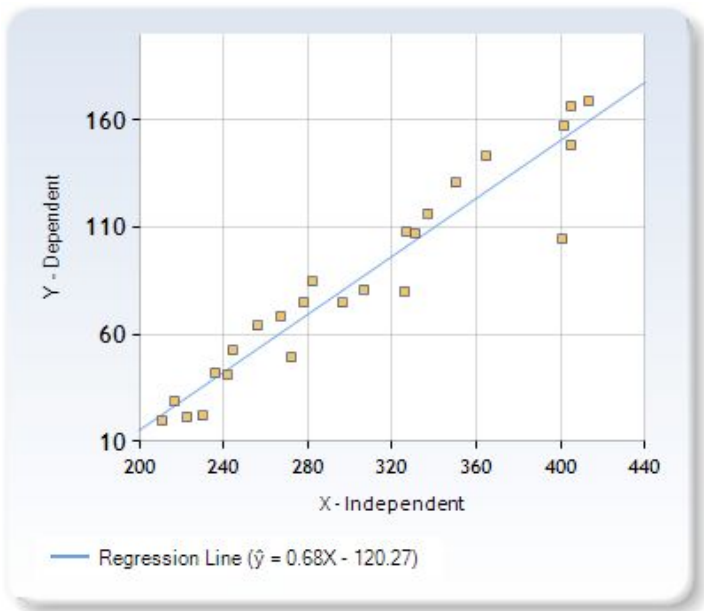


Purple = historic, Others = future cost curves

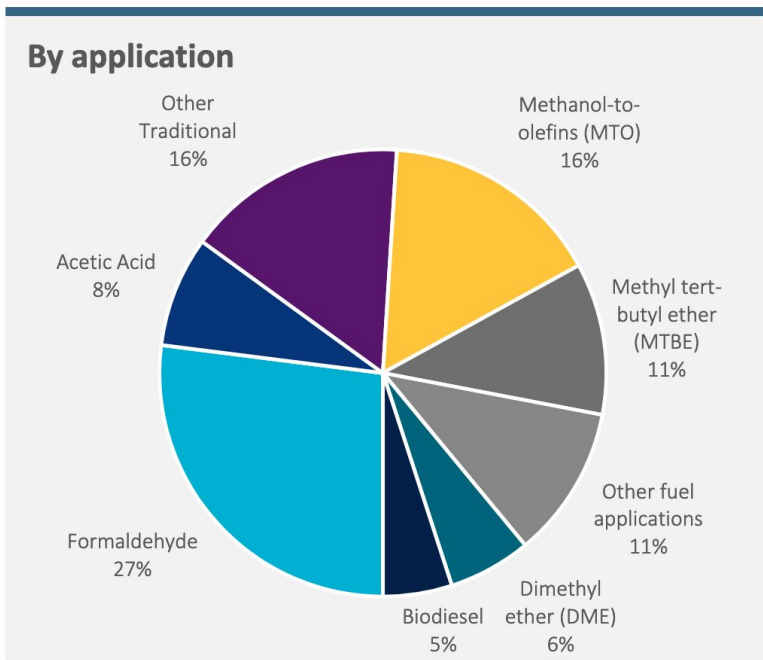
Y axis = EBITDA per million tons produced

X axis = Methanol price realized (post discount)

~170 is where unit economics are negative and business model is invalidated, in theory should eventually exit the market. Losing money before that, due to adjustments and ITDA (DA~capex). Able to sustain below average conditions for longer periods of time. 350 is LT avg, profitable.



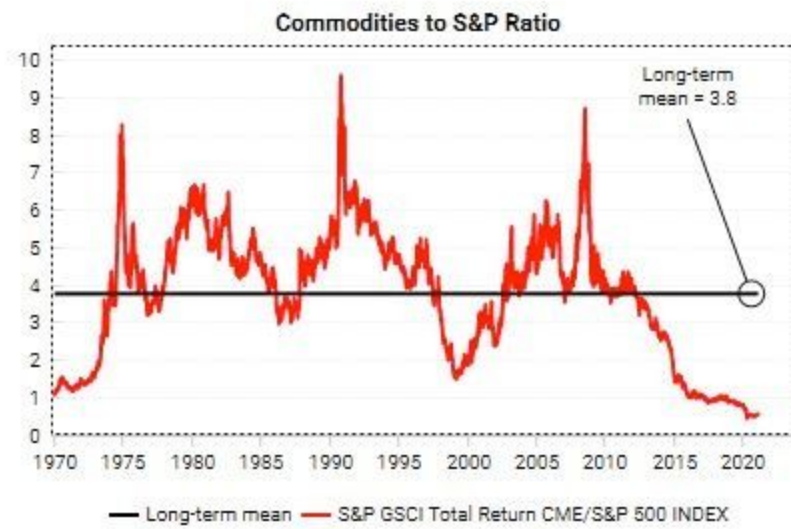
3. Historic relation between methanol price realized (X) and EBITDA per million ton produced.



4.

Maturity Date	Issuer	Security Type	Seniority	Coupon	Offer Date	Amt. Outstdg. (\$mm)
Oct-15-2027	Methanex Corporation (TSX:MX)	Corporate Debentures	Senior Unsecured	5.125	Sep-17-2020	700.00
Dec-15-2029	Methanex Corporation (TSX:MX)	Corporate Debentures	Senior Unsecured	5.250	Sep-09-2019	700.00
Dec-01-2044	Methanex Corporation (TSX:MX)	Corporate Debentures	Senior Unsecured	5.650	Nov-13-2014	300.00
Dec-01-2024	Methanex Corporation (TSX:MX)	Corporate Debentures	Senior Unsecured	4.250	Nov-13-2014	300.00
Mar-01-2022	Methanex Corporation (TSX:MX)	Corporate Debentures	Senior Unsecured	5.250	Feb-21-2012	250.00

5.

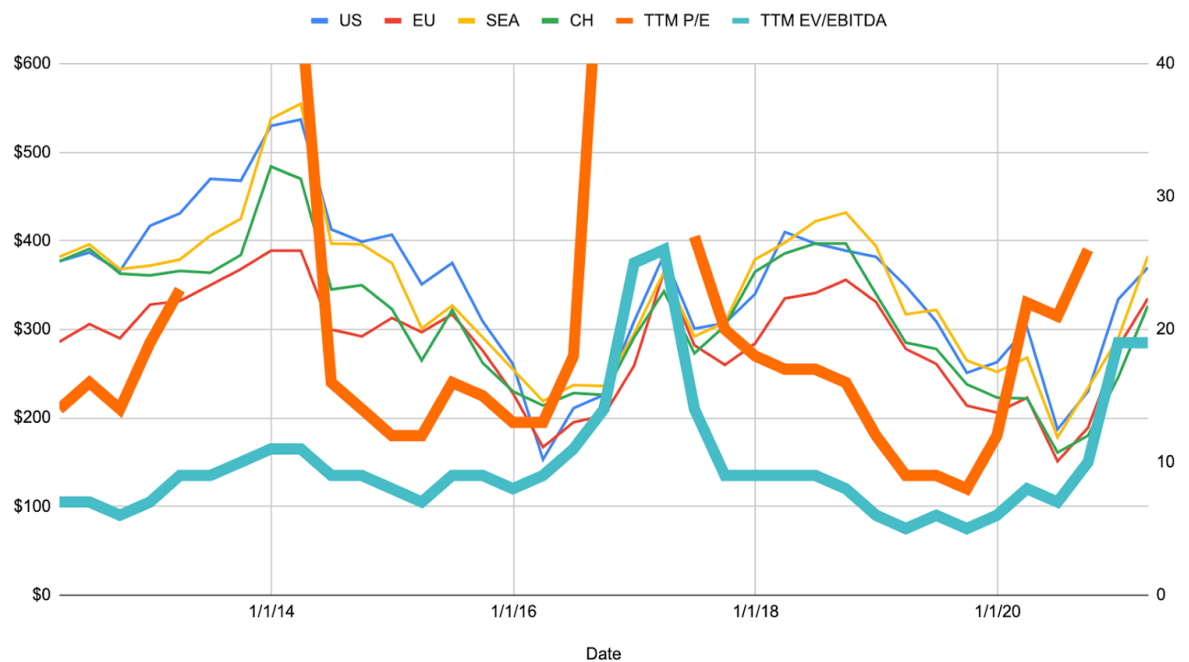


6.



7.

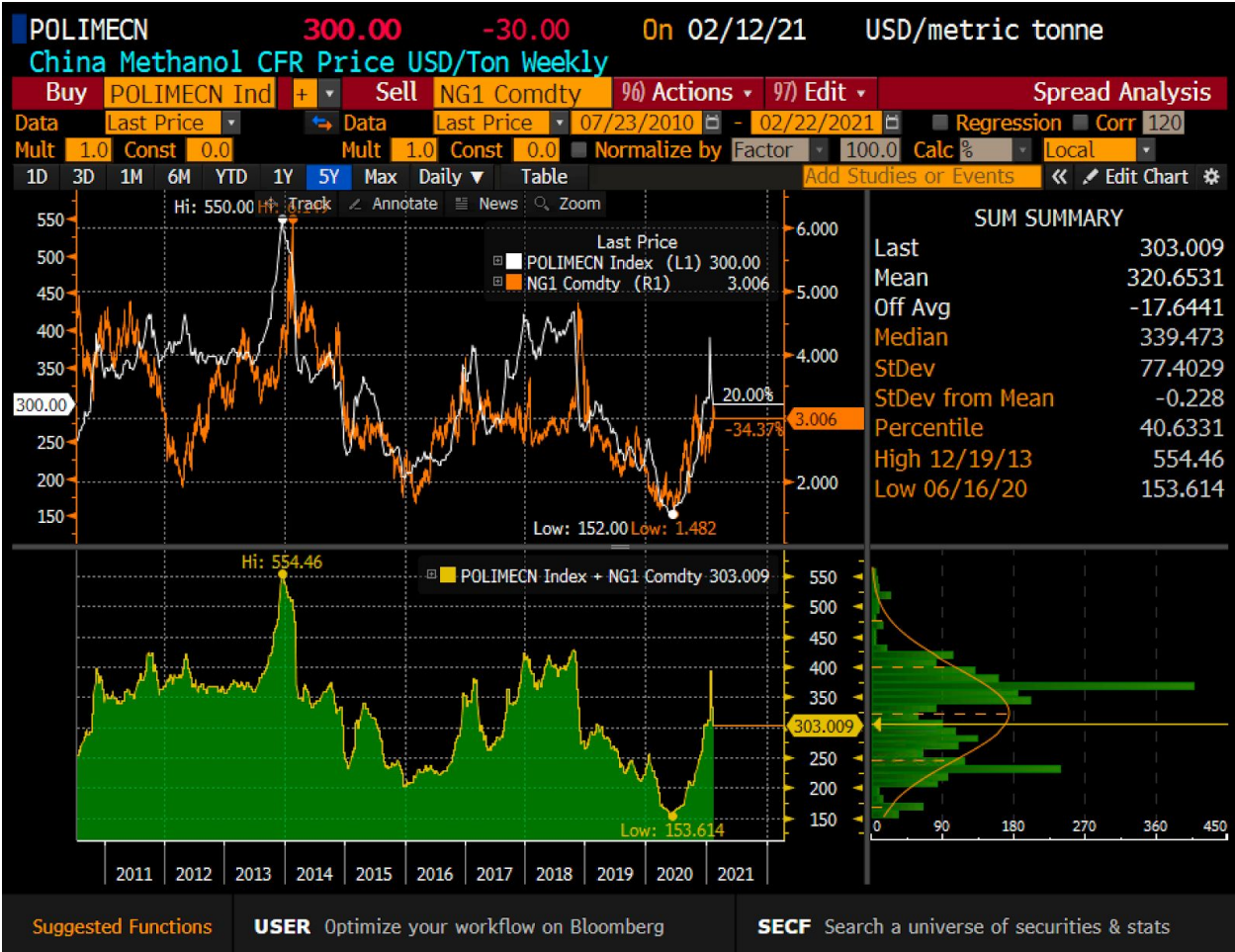
MEOH Multiples and Methanol Prices



8.



9.



10.





11.

**Table 12: Chinese MTO Projects**

(Capacity in thousand metric tons)

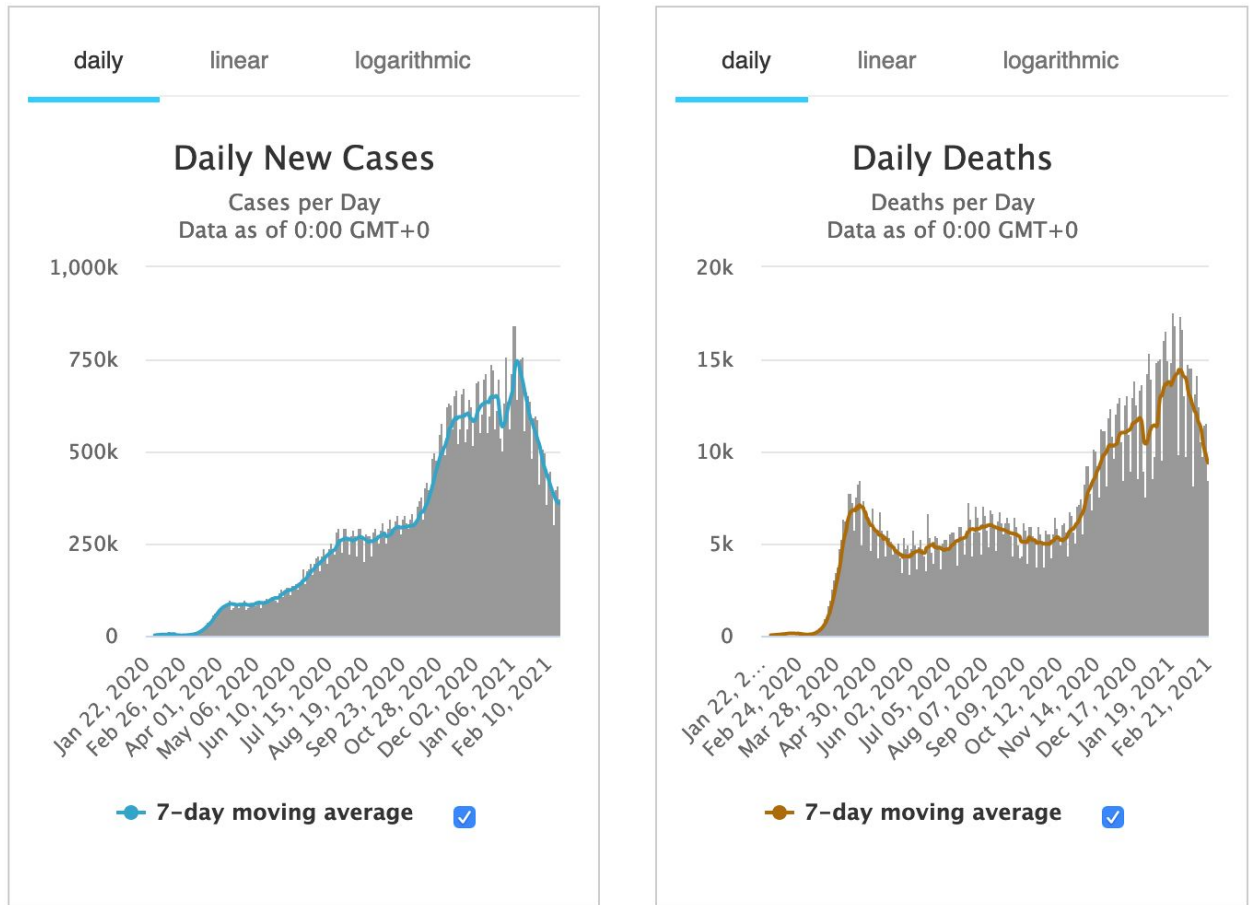
Company	Location	Capacity	Comments
Luxi Chemical	Liaocheng Shandong	300	Dec. 2019 start-up
Connell Chemical	Jilin, Jilin	600	April 2020 start-up of 300 kt phase I 120 kt ethylene 180 kt propylene
Qinghai Damei	Xining, Qinghai	1,800	In construction 300 kt polyethylene 400 kt polypropylene
Tianjin Bohai <sup>(1)</sup>	Tianjin	1,800	In construction – installed reactor in July 2019 300 kt polyethylene 300 kt x 2 polypropylene
<b>Total</b>		<b>4,500</b>	

Source: BofA Global Research

(1) Tianjin Bohai is also planning to build a 600,000 mt caustic soda/chlorine, 800,000 kt PVC, 60,000 kt ethylene oxide + derivatives, 200,000/450,000 kt propylene oxide/styrene monomer (POSM), and a 100,000 mt hydrogen peroxide (H2O2) plants.

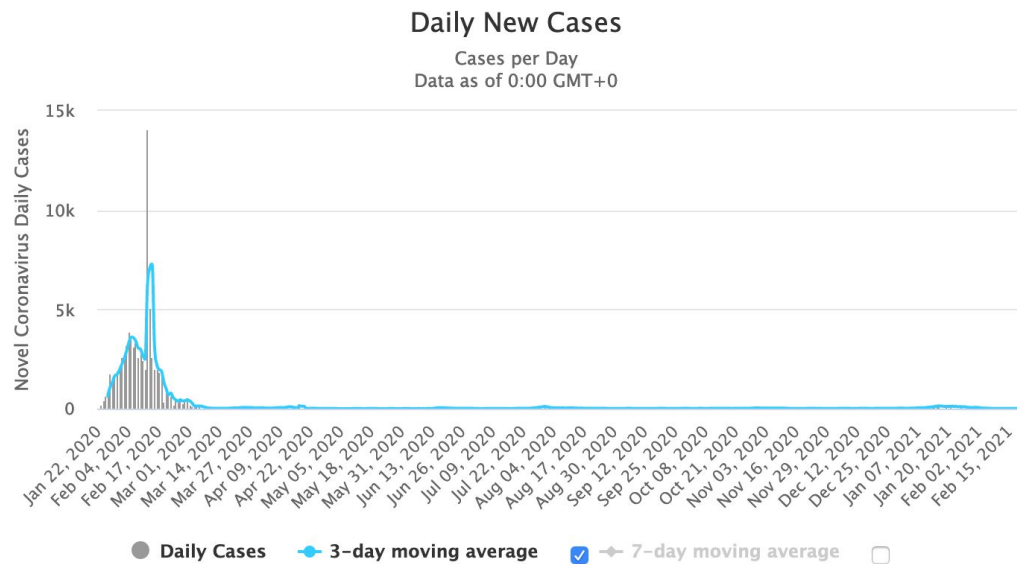
12.

13.



## Daily New Cases in China

14.





## **IR Call with Kim Campbell 2/19/2021 Notes**

### **When modeling the business what are the most important drivers?**

**Price** - published on website on monthly basis - paid less discount

Sales mix - 55-50 Asia, 30 NA rest EU

**Volume** - 80% own (also included the non-owned egypt and atlas - counted as commission - de minimis), 20% 3rd party - all margin is from original ---- assume that the 20% is just to connect the dots for customers

**Cost** - half of cost is NG as a feedstock + shipping and fixed costs

Most shipping is on own vessels

-backhaul sometimes taken - biggest focus is moving product

### **Extremely fragmented market - will continue as such?**

-China is 51% of production capacity, smaller independent producers there

- Most in china is done by coal or high cost NG, - marginal producer is in China

--still investing in coal production fwd

-built on consolidation - not too much in the last decade

### **Where does new supply land on the cost curve?**

- I see a large fraction of production is still dedicated to coal in China - is this sustainable in the LT and why are more plants coming online using this still

ME production is on the lower end, less availability coming online in Iran due to seasons, sanctions, and shipping.

**Why is “the industry cost curve set in china” - because of demand? - update on MTO/legislation and so on. What are the reasons this does not continue trucking on with gdp growth?**

Highest cost producers coming from China B/C forced to work with coal and imported NG

Marine industry- regulations by IMO in 2020 from sulfur oxide, more regulation in 2030 on carbon emissions

Methanol is one of some options -- “merrisk” shippers (?) (Maersk I think)  
-not a golden bullet still

-China air quality = vehicle fuel, 20k taxis capable today on 100% methanol  
-China = industrial broilers - heating +  
-China Kilns - pottery and tobacco --- coal -> methanol

### **State of new production (vs demand growth)**

- **Why was MTO up 12? Simply new plants coming online?**
- **MTO in 2021 grows or at least stays the same?**

New MTO plants in end of 2019

Stability in demand from feedstock for products

Demand was higher - consider furniture and other plastics due to COVID

Feedstock is not fungible - locked in, so doesn't matter if oil is cheaper if the plant is set to work with methanol

MTO is not going to have a huge increase but is probably sustainable - -only new construction will complete, no revolution on the horizon (good or bad)

Rebound in 2H but not back to pre-covid outside of China -- China is back

### **Capital allocation during downcycle**

Low visibility - focus on saving

Nothing past US so far (investments)

Grow in line with market --- demand growth is uncertain = no projects until visible

### **How has texas impacted things - beyond short term**

70% fixed supply, 30% spot in NA. No other comment