An Introduction to the Fertiliser Markets: Making a case for Mosaic

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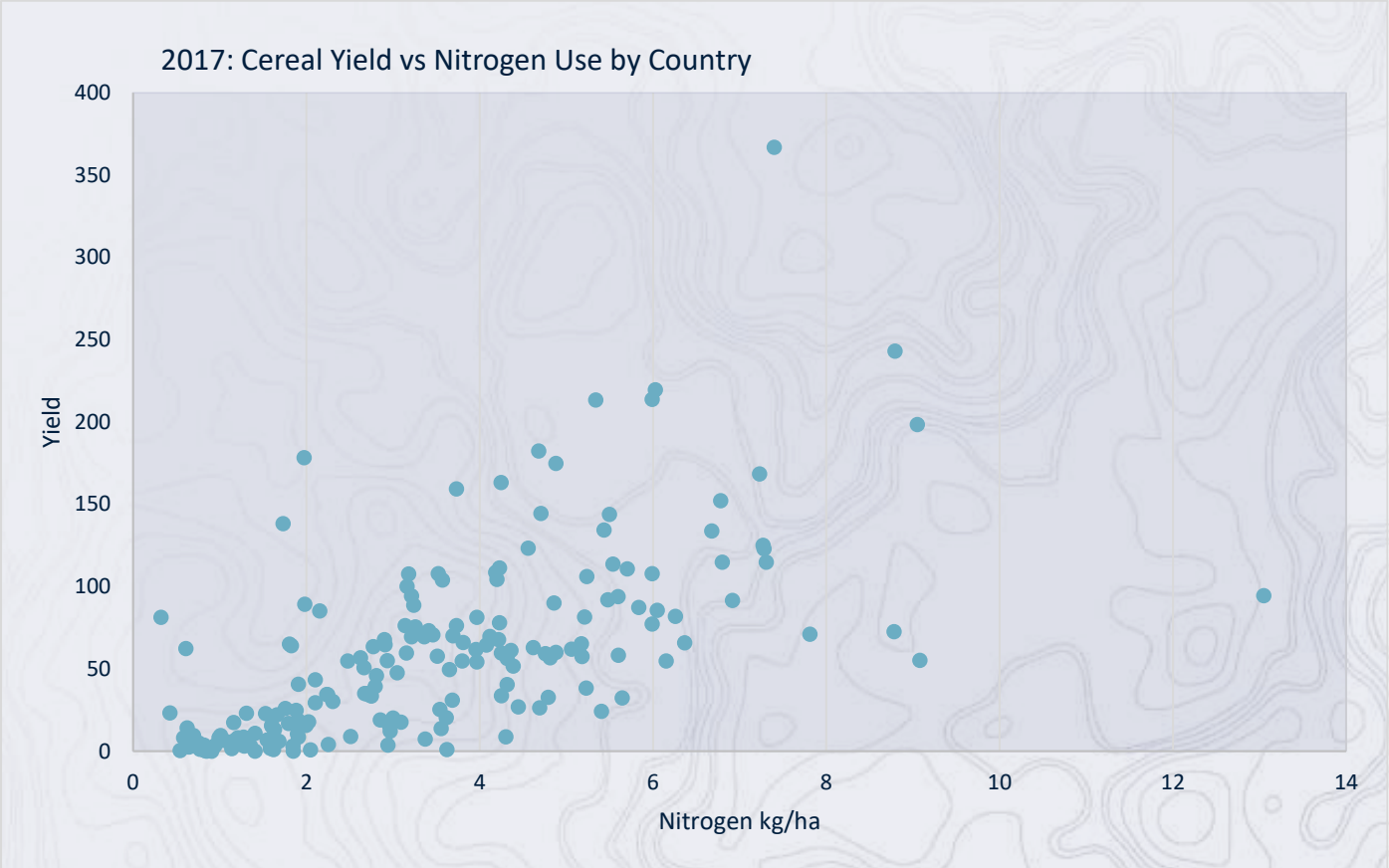
The Basics

To start at the very beginning, in addition to Carbon, Hydrogen, Oxygen supplied from air and water, crop growth is dependent on three macronutrients: **Nitrogen(N), Phosphorus(P) and Potassium(K)** that are supplied by the soil. There are of course many other secondary nutrients & micronutrients that the soil needs, most of this analysis will ignore them for the sake of this not turning into an elementary biology lesson.

Given who you ask and what research you reference, 40-60% of cereal yields are dependent on fertilisers. Why? The Law of the Minimum published around 1837 states that plant yield is proportional to the amount available of the most limiting nutrient, and if that nutrient deficiency is corrected, yield will improve to the point of the next most limiting nutrient in the soil. A barrel is a common analogy representing yield, which can only be filled to the point of the shortest stave (the most limiting input). The nitrogen stave being the shortest, it represents the most limiting nutrient.

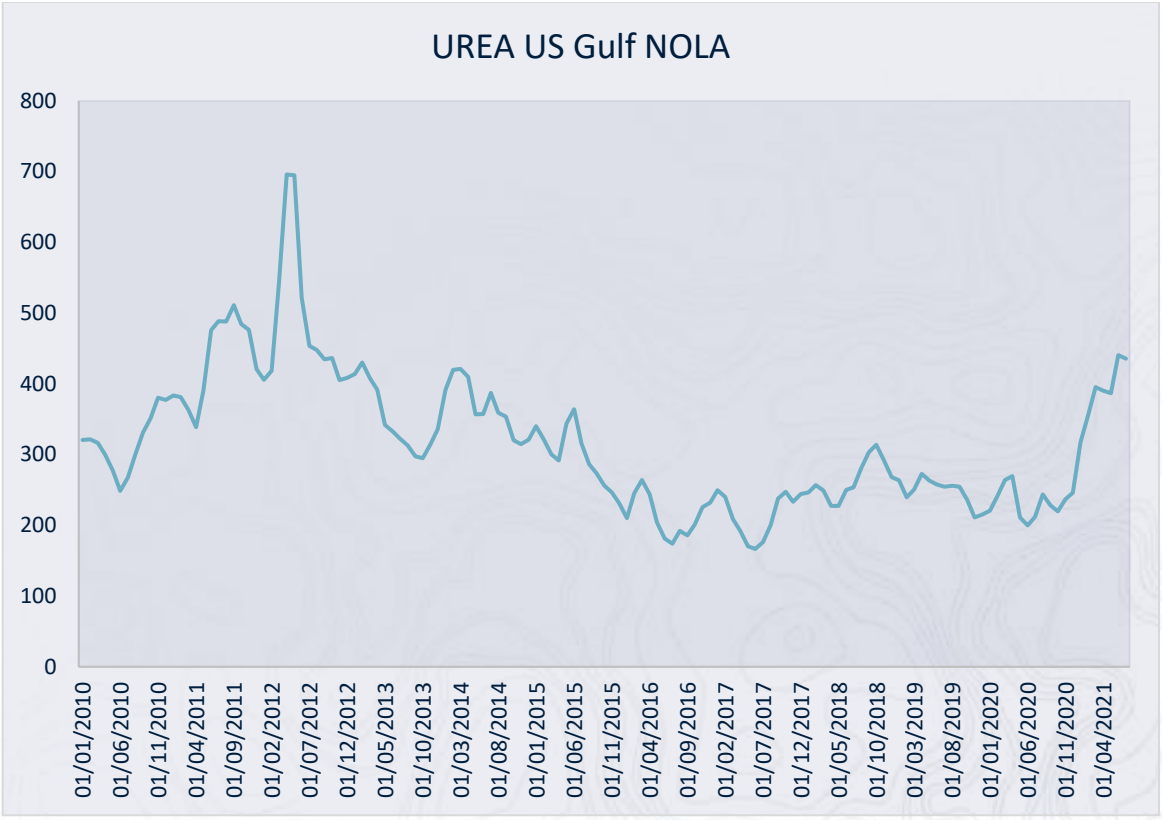
Nitrogen

Nitrogen is a key component of amino acids and proteins. Adequate supplies of N are needed to support photosynthesis and to produce proteins in harvested crops. There is no getting away from Nitrogen, with intensive farming the soil needs its replenishment every year and it is the most used fertilizer. The below chart shows the strong relationship between Nitrogen Use and Cereal Yield.



Source: UN Food and Agriculture Organization (FAO)

Nitrogen fertilizers all essentially begin with anhydrous ammonia (NH_3-82% N) which is manufactured from air and natural gas by the Haber-Bosch process through the chemical reaction [$3H_2+N_2 \rightarrow 2NH_3$] under high temperature and pressure. Urea (46% N) is the most widely used solid N fertilizer in the world. The production of urea fertilizer involves controlled reaction of ammonia gas (NH_3) and carbon dioxide (CO_2) with elevated temperature and pressure.



Source: IMF Cross Country Macroeconomic Statistics (US Gulf NOLA Urea Granular Spot Price; USD/Short Ton)

Phosphorus (P) & Potassium (K)

Phosphorus (P) is vital for adequate root development and plant growth and development, such as the ripening of seed and fruit. Diammonium Phosphate (DAP) is the most widely used P fertilizer, produced by reacting ammonia + Phosphoric Acid. Standard Grade: 18(N)-46(P)-0(K). Morocco + disputed region of Western Sahara control over 72% of global phosphate reserves followed by 6% in China! I am not aware of any other natural resource that is so critical to modern life yet so heavily concentrated in one country/region. In the coming decades as everyone else runs out, the great games of geopolitics might be played in the region.

Potassium (K) is central to the photosynthesis of crops. Potassium helps improve crop quality and crop resistance to lodging, disease and drought. Potassium chloride (KCl) (0-0-60) or Muriate of Potash (MOP) is the most common form of Potash and production/reserves are highly concentrated and mined in the following few countries.

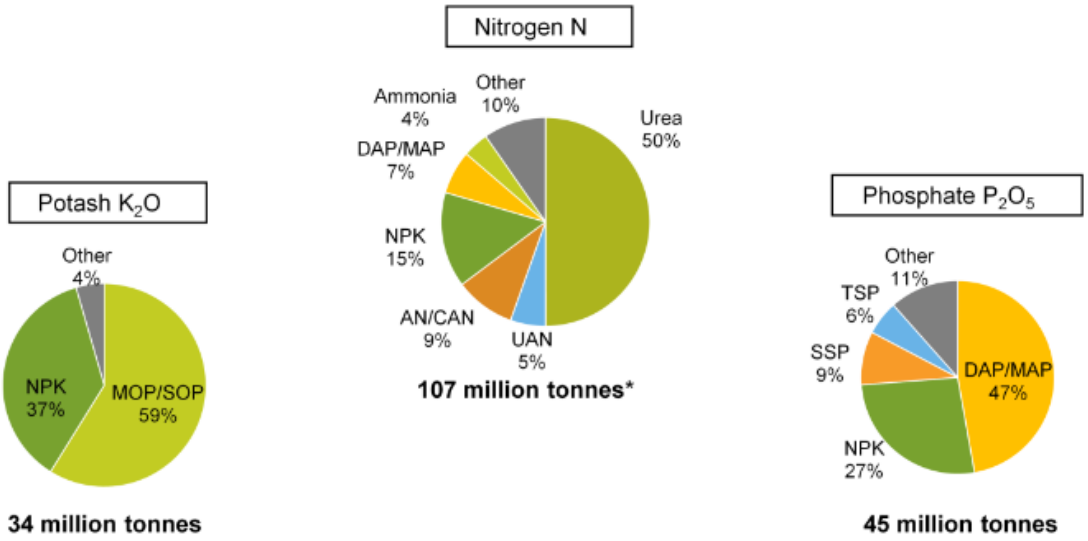
World Production of Potash (Potassium Chloride) by country -2019			
Ranking	**Country**	**Tonnes (thousands)**	**(%) of Total**
1	Canada	20,934	31.60%
2	Russia	13,052	19.70%
3	Belarus	12,046	18.20%
4	China	7,445	11.30%
5	Other Countries	12,691	19.20%
	Total	**66,168**	**100.00%**

Source: Natural Resources Canada

(Take note of Belarus here, more to come on a despot diverting a commercial aircraft to arrest a journalist and reality being stranger than fiction)

The chart below summarises global fertiliser products with Nitrogen representing over 50% share. Overall, to proxy the individual three macronutrients into actively available fertilisers: Urea (46% N), DAP (Diammonium Phosphate:18% N + 46% Phosphorous), MOP (Muriate of Potash: 60% Potassium) as well as NPK (12% N, 32% Phosphorous, 16% Potassium) should suffice for discussions below.

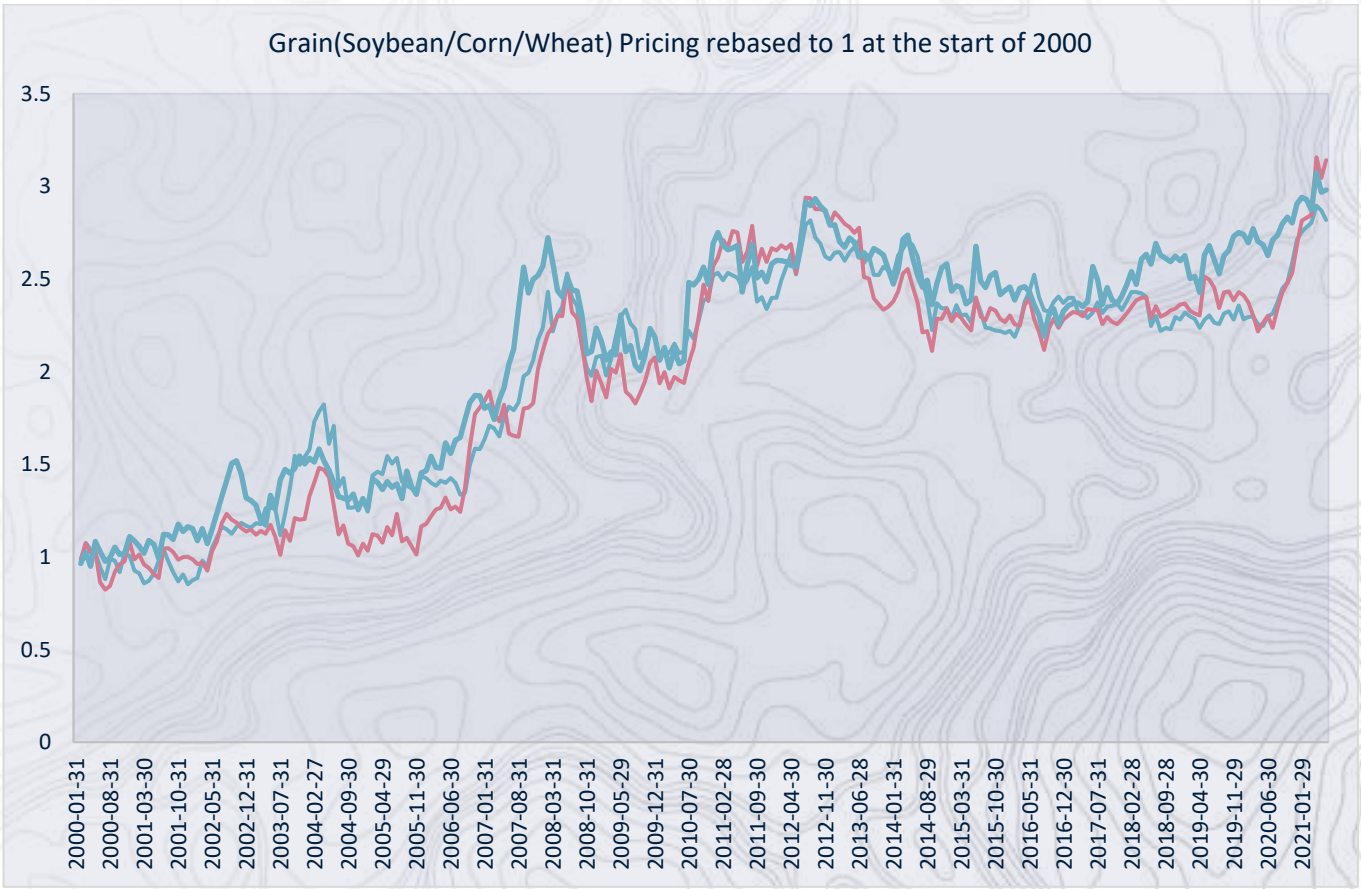
Key global fertilizer products



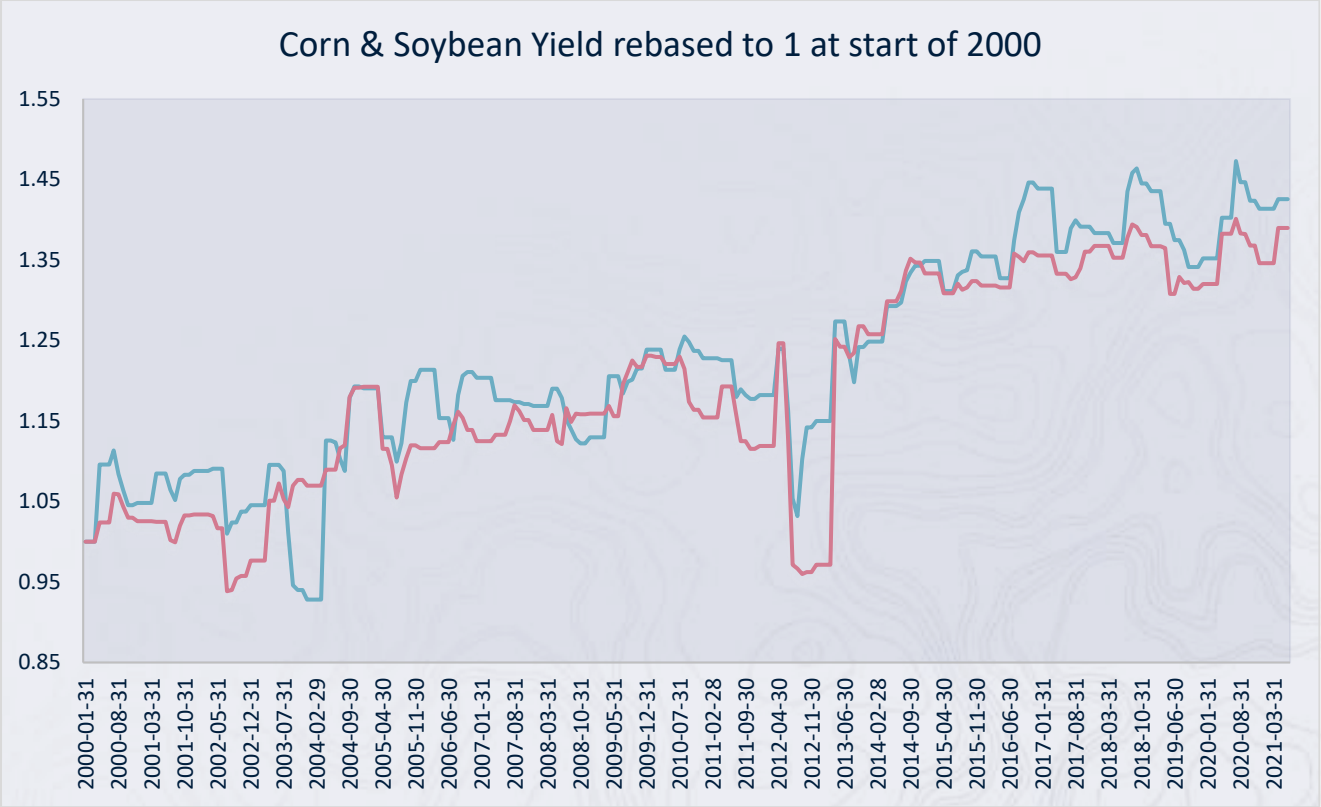
Source: IFA 2016 (nutrient totals) and 2015 (product split) * Does not include industrial nitrogen applications

The Grain Market: Higher Prices lead to higher Prices?

The grain market has been a dull place this last decade, with prices largely unchanged over the period. The commodity super cycle turbo charged grains in the mid-2000s and after taking out previous highs, prices almost doubled for corn/soybean/wheat. It unravelled in the financial crisis, and one had to wait till 2011-2012 for a collapse in production/yields on the back of a global drought to see temporary pre-crisis levels. Prices reverted to the mean as yields kept rising however, with greater climate variability over the past few years, yields are largely unchanged.



Copyright: Bloomberg Finance LP (Rolling Active Future: Chicago Board of Trade), Rebalanced to 1 at the start of 2000

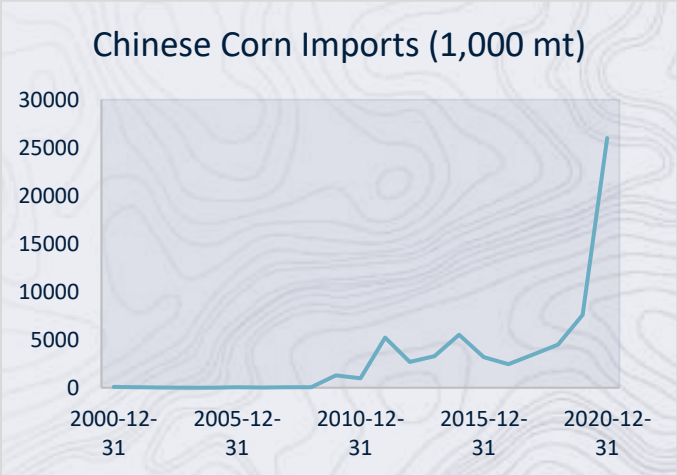


Source: USDA, rebalanced to 1 at the start of 2000

Let's talk about Corn

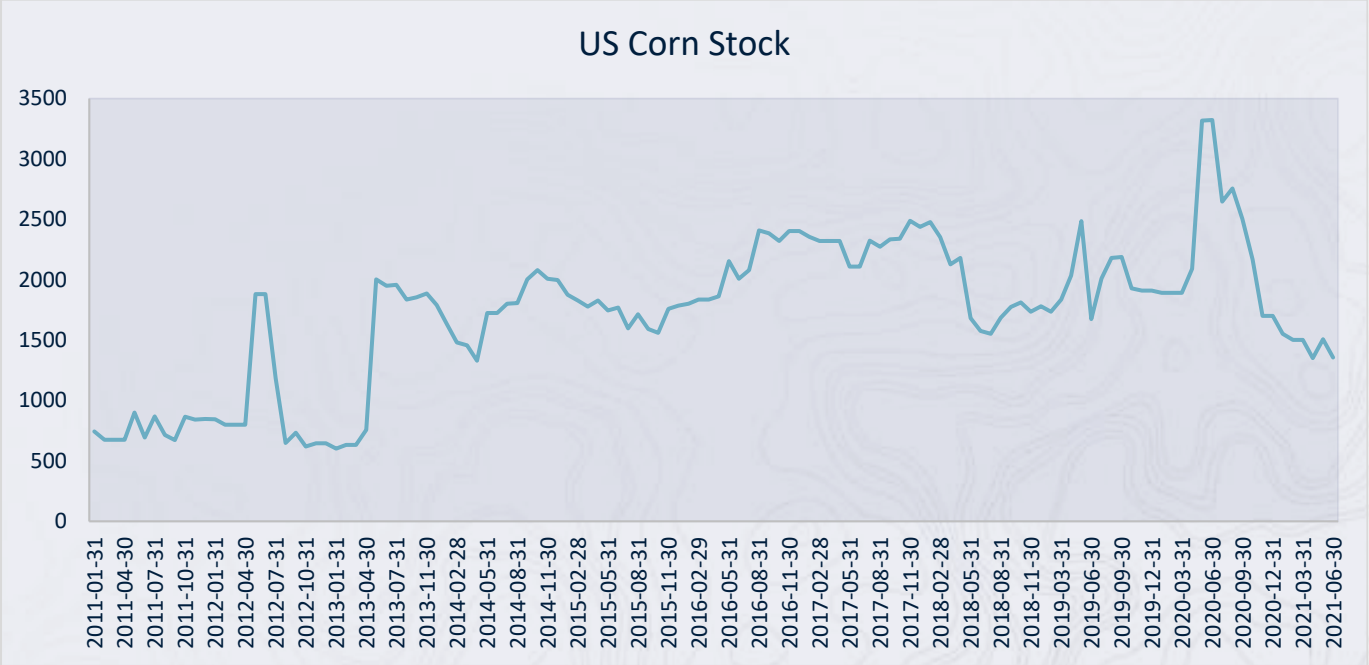
At the peak of COVID (around June 2020) the USDA expected year end 2020-21 inventories to climb to a record of over 3bn bushels, levels not been reached since the grain glut of the 1980s. By the end of the season ending stocks were revised lower almost monthly and came in close to record low levels at 1.35bn bushels, so what happened?

Ethanol and feed demand came roaring back domestically and yields were revised lower. The African Swine Flu that devastated Chinese hog herds in 2019 disrupted global corn markets as China became one of world's biggest importers of corn almost overnight, while trying to rebuild stock. The question that everyone is trying to figure out is whether this is a temporary jump or a more structural shift. With growing milk and protein consumption comes the need for much greater domestic feed. In addition, weather has been an issue over the past year as flooding, followed by a summer drought in the north-eastern provinces, . 2021-22 Chinese imports are expected to be 26mn tonnes (1.023bn bu) which is about 7% of expected US output.



Source:USDA Foreign Agricultural Service

Talk about the weight of great expectations. Analysts in March'21 expected planted acreage for the 2021-22 season to be close to 97mn acres while actual USDA estimates has only come in at 92.7mn acres. To complicate the picture further, grain stocks are already at historically low levels and estimates of expected yield are close to all-time highs of 179.5 Bu/acre. Last year's yield estimates were around 178 Bu/acre vs actual yields coming in at "only" 172 Bu/acre. Add to that the drought that exists in the western corn belt and, if yields came in at last year's numbers, around 600mn bushels would disappear from the market.

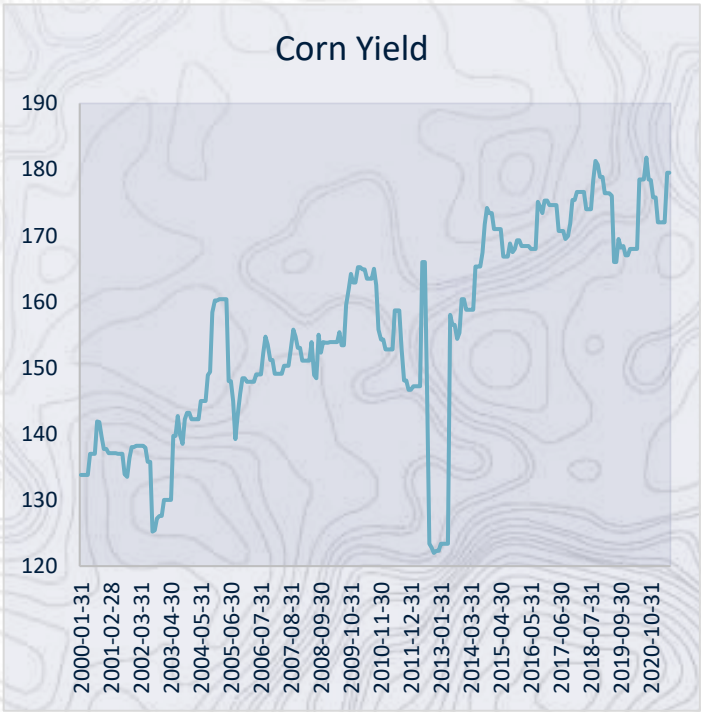


Source: USDA WASDE Supply & Use US Corn Ending stocks/ Mn Bushels

The margin of safety is minimal. Weather, the hardest variable to predict, has the greatest impact on yields. There is minimal room to manoeuvre, and any disappointment could catch the market out once again, and if that does happen expect prices to be higher, a lot higher.

USDA SUPPLY/DEMAND				
US CORN	**Jul USDA 19-20**	**Jul USDA 20-21**	**Jun USDA 21-22**	**Jul USDA 21-22**
Area (M Acres)				
Planted	**89.7**	**90.8**	**91.1**	**92.7**
Harvested	81.3	82.5	83.5	84.5
Yield (Bu/Acre)	**167.5**	**172.0**	**179.5**	**179.5**
Beginning Stocks (M Bu)	2,221	1,919	1,107	1,082
Production	13,620	14,182	14,990	15,165
Imports	42	25	25	25
Supply, Total	**15,883**	**16,127**	**16,122**	**16,272**
Feed & Residual	5,898	5,725	5,700	5,725
Food, Seed & Industry	6,288	6,470	6,615	6,615
Ethanol for Fuel	4,857	5,050	5,200	5,200
Domestic Total	12,186	12,195	12,315	12,340
Total Exports	1,777	2,850	2,450	2,500
Use, Total	13,963	15,045	14,765	14,840
Ending Stocks	**1,919**	**1,082**	**1,357**	**1,432**
Stocks/Use Ratio	**13.7%**	**7.2%**	**9.2%**	**9.6%**

Source:USDA CME Report

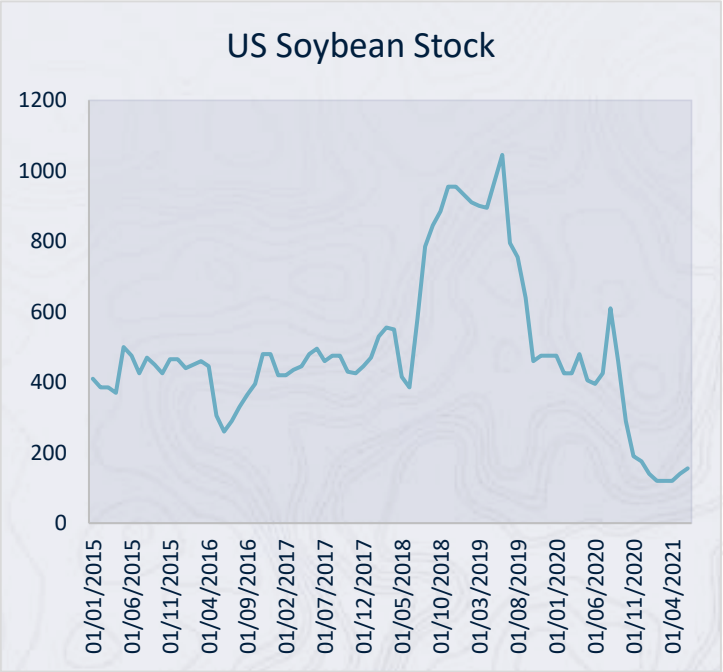


Source: USDA

While I wont delve into Soybean, I think you get the drift. The factors facing the market are similar. Forward Stock/Use Ratios in the US are even lower and as figure (x) shows, for the sake of simplicity, price correlation in the grain markets is very high.

USDA SUPPLY/DEMAND				
US SOYBEANS	**Jul USDA 19-20**	**Jul USDA 20-21**	**Jun USDA 21-22**	**Jul USDA 21-22**
Area (M Acres)				
Planted	**76.1**	**83.1**	**87.6**	**87.6**
Harvested	74.9	82.3	86.7	86.7
Yield (Bu/Acre)	**47.4**	**50.2**	**50.8**	**50.8**
Beginning Stocks (M Bu)	909	525	135	135
Production	3,552	4,135	4,405	4,405
Imports	15	20	35	35
Supply,Total	**4,476**	**4,680**	**4,575**	**4,575**
Crushings	2,165	2,170	2,225	2,225
Exports	1,682	2,270	2,075	2,075
Seed	96	102	104	104
Residual	9	4	15	15
Use, Total	3,952	4,545	4,420	4,420
Ending Stocks	**525**	**135**	**155**	**155**
Stocks/Use Ratio	**13.3%**	**3.0%**	**3.5%**	**3.5%**

Source: USDA CME Report

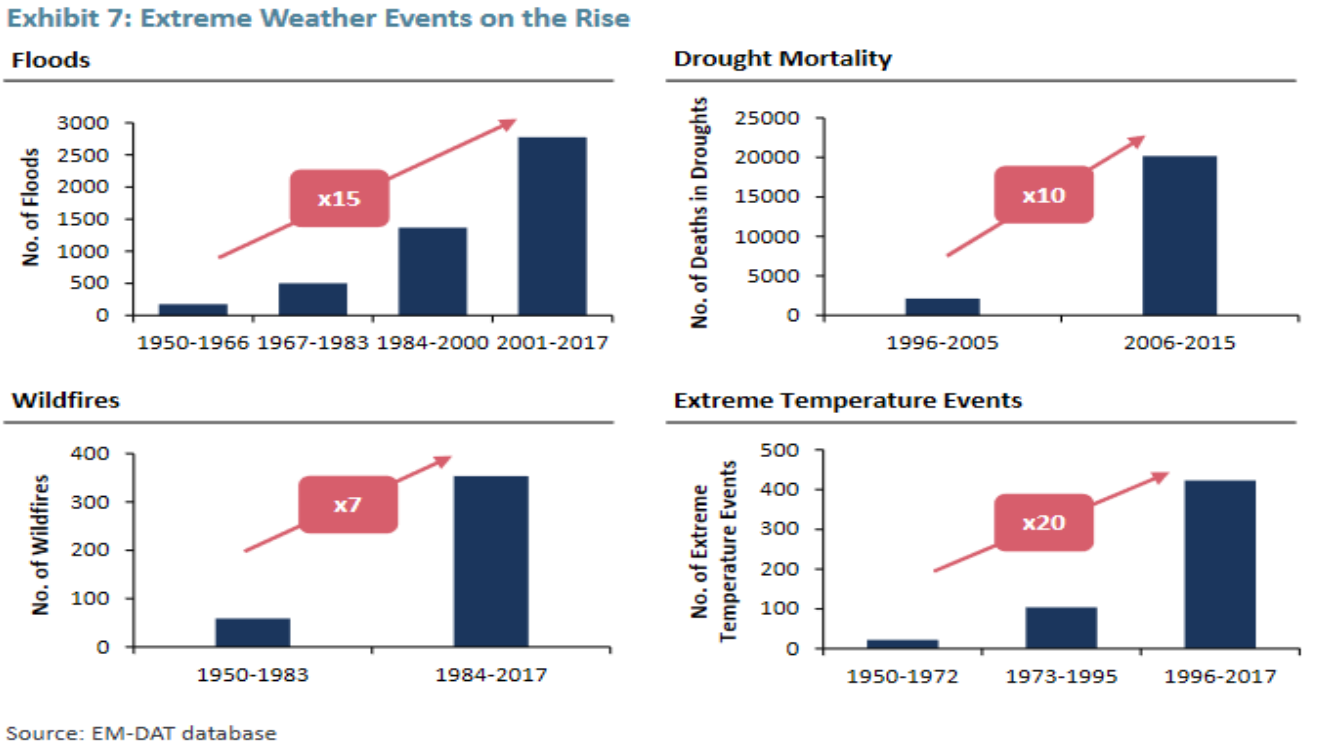


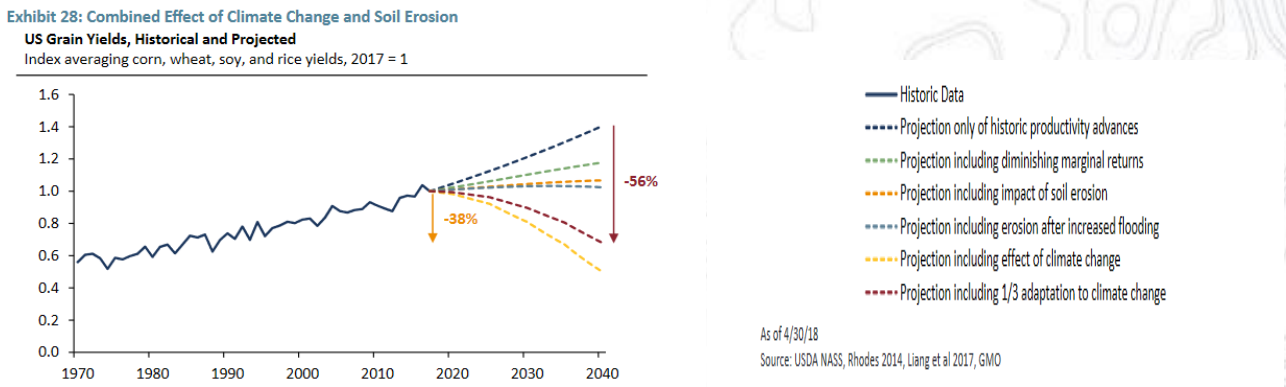
Source: USDA WASDE Supply & Use US Soybeans Ending stocks/Mn Bushels

The Elephant in the Room

So far, we have simply talked about short term cycles of demand/supply while yields have been at all time highs. What about long term factors like Global warming, soil erosion and climate variability?

While the actual increase in temperature across the globe might balance out with winners and losers, there is no question that extreme weather is here to stay. I would highly recommend going through Jeremy Grantham's The Race of Our Lives Revisited from August 2018. It is a sombre reminder of what lies ahead and goes into the depth of population growth, energy transition, climate change and environmental challenges facing humanity. I have taken the following two charts from his presentation:

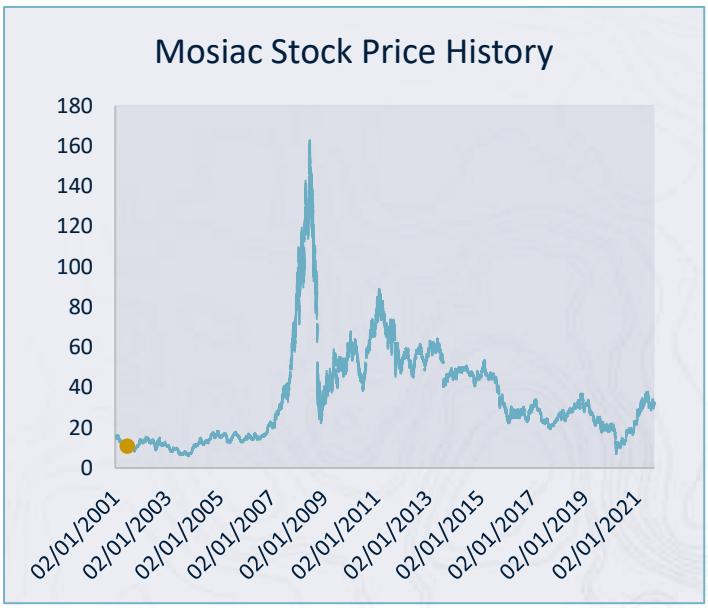


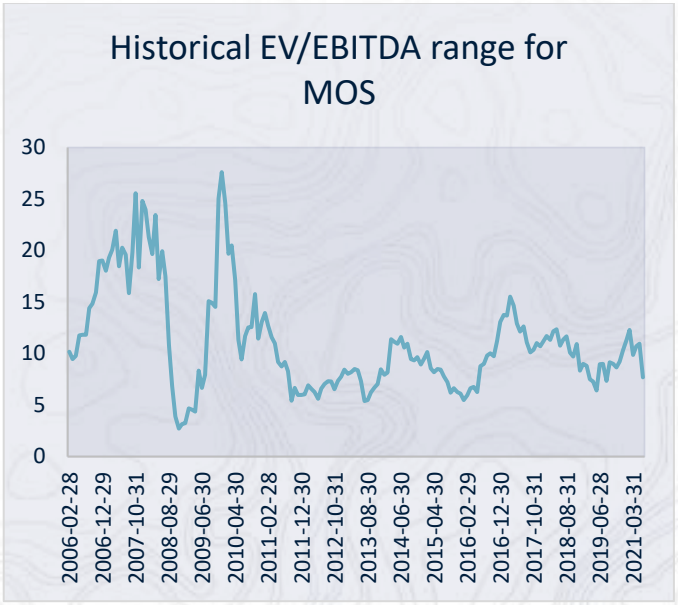


With estimated global population expected to grow by another 2bn people over the next 30 years (9.7bn people by 2050), there is just no scope for Exhibit 28 to turn into a reality.

In the Long run we are all dead

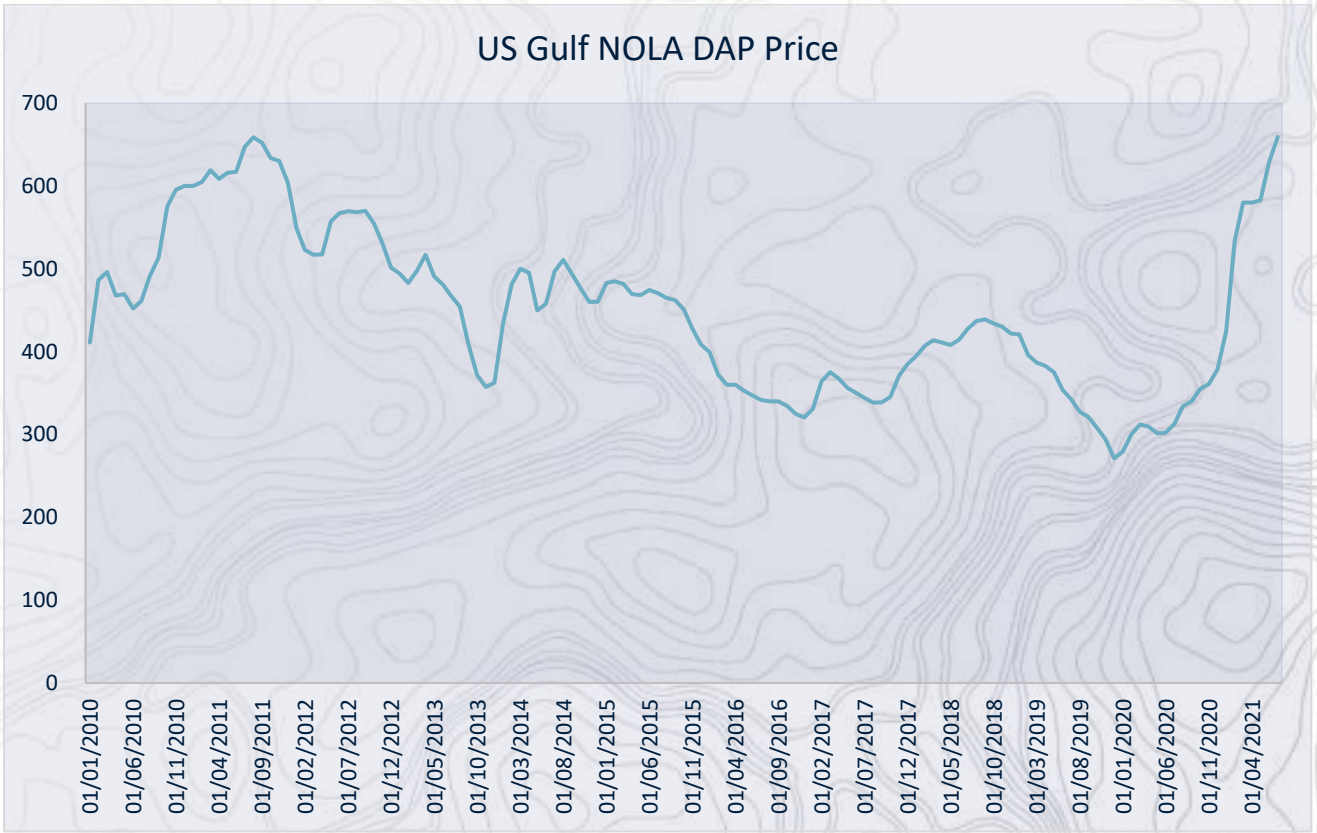
As morbid as it may sound, talk to me in the PRESENT. So right here, right now, bringing our discussion back to the markets the elevator pitch for **Mosaic** (or for that matter Nutrien even CF) is you get to own the dominant Phosphate producer in the US, generating Adjusted EBITDA of $3.7bn (2021), $3.1bn ('22) and $2.7bn ('23) vs EV of $14bn averaging EV/EBITDA of 5x for the next three years. Over the past 10 years the market has not traded at these multiples and averaging around 10x. General analyst perception is pricing is too good to be true and can't last. Can you blame them? Mosaic's stock price is down 50% over the past 10 years, underperforming the S&P 500 by 360% over the period.





Copyright: Bloomberg Finance LP (Historical Stock Price History and EV/EBITDA Range)

Are things about to change? Anyone covering MOS must feel short-changed for a very long time now but is their luck about to even out, are price moves in DAP(Phosphate), MOP(Potash) and Urea signalling things are changing very quickly? Let's investigate...



Source: IMF Cross Country Macroeconomic Statistics (US Gulf NOLA DAP Spot Price; USD/Short Ton)

In June 2020 Mosaic petitioned for an investigation into Subsidised Phosphate fertilizer imports from Morocco and Russia into the US which was "damaging" domestic competitiveness.

Country	Volume/Value	2017	2018	2019
Morocco	Volume (Metric Tons)	1,378,096	1,818,276	2,049,024
	Value (USD)	$483,871,144	$771,011,517	$729,409,533
Russia	Volume (Metric Tons)	523,660	936,277	767,288
	Value (USD)	$179,012,512	$381,044,298	$299,415,641

Source: U.S. Census Bureau, accessed through Global Trade Atlas (Harmonized Tariff Schedule of the United States subheadings 3103.11.0000, 3103.19.0000, 3105.20.0000, 3105.30.0000, 3105.40.0010, 3105.40.0050, 3105.51.0000, and 3105.59.0000).

In March 2021, the investigation resulted in the U.S. Department of Commerce to issue countervailing duty orders on phosphate fertilizers from Russia and Morocco, which remain in place for at least five years. The cash deposit rates for such imports are expected to be approximately 20 percent for Moroccan producer OCP, 9 percent and 47 percent for Russian producers PhosAgro and EuroChem, respectively, and 17 percent for all other Russian producers. While this does not detach the US from the rest of the world it resulted in the US markets switching from trading a discount to premium and boasting MOS's medium term margins.

Secondly, legislation in the Yangtze River economic region: New phosphate mines with the capacity of below 500,000 tonnes per year are not permitted to be built.

Phosphates: All about realised Price

(Note: All tables presented below relating to Mosaic have been modelled with in-house assumptions taking into account general analyst consensus, they may deviate materially from actual future results)

I have summarised Mosaic's Phosphate $/mt financials across (DAP/MAP, Micro essentials, and Feed) in the table below. The range in Volume over the 6-year horizon is only about 5%, so we can assume it to be steady. I have carried forward production Volume to remain same for 2022 and 2023, which is a rough mid-point.

Phosphate	2018	2019	2020	2021E	2022E	2023E
Revenue/mt	$465	$396	$365	$613	$477	$453
COGS/mt	$393	$402	$349	$437	$408	$403
Gross Profit/mt	$72	($6)	$16	$176	$70	$49
Volume	8,358	8,179	8,534	8,384	8,384	8,384

Let's first breakdown COGS further. DAP or Diammonium Phosphate is chemically $(NH_4)_2HPO_4$ and contains 18%N and 46% p_2O_5. The input required at Mosaic to produce one ton of DAP fertilizer are approximately 1.5-2 tons of phosphate rock, 0.42 tons of Sulfur (S) to dissolve the rock, and 0.23 tons of ammonia.

Phosphate Rock costs have averaged about 60$/mt and average consumption of 1.75x equates to about $105/mt. Freight costs for 2021 are averaging around 50$/mt. Sulfur and ammonia, both inputs in the manufacturing process, have tracked fertiliser markets up YoY to $78 and $89/mt respectively. The cash conversion costs have been kept constant at $65/mt. Depreciation & Amortisation has largely remained constant over time. What is interesting here is that if Volume can be maintained around present levels, other than ammonia and sulfur, everything else is largely fixed i.e., 60% of COGS is fixed. The other input costs track general fertiliser markets and roughly equate to a $100-$160 range depending on the strength of the market. A sales price (including freight) of $370-$430 equates to a zero gross margin.

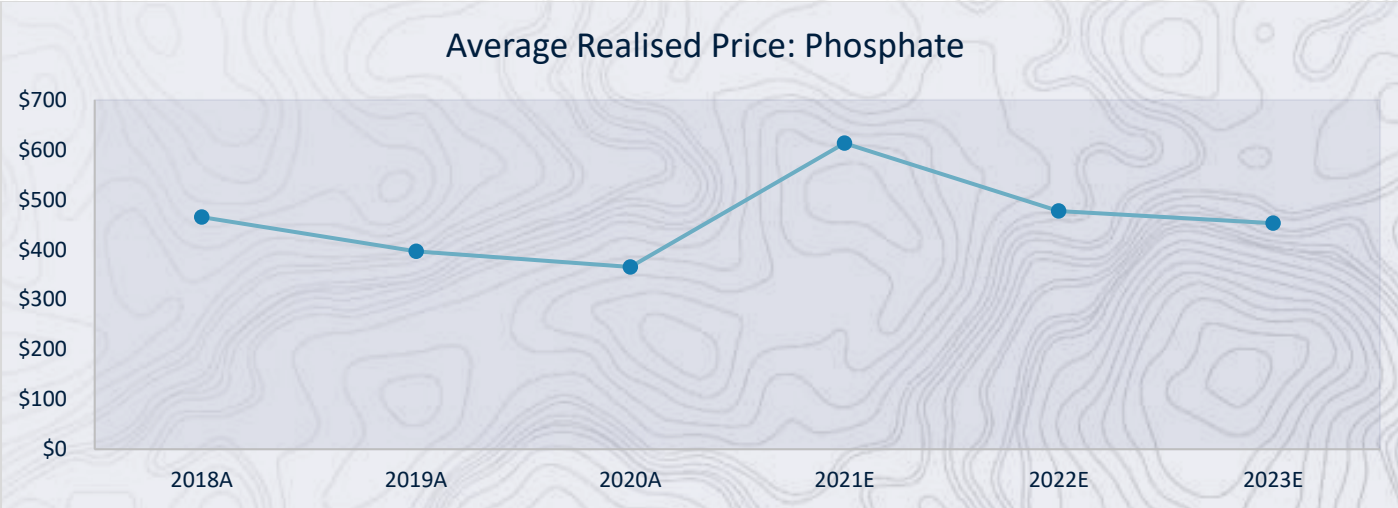
COGS	2018	2019	2020	2021E	2022E	2023E
Phosphate Rock/mt	$101	$110	$107	$105	$105	$105
Sulfur Cost/mt	$58	$54	$35	$78	$60	$58
Ammonia/mt	$73	$70	$62	$84	$77	$75
Conversion Cost/mt	$63	$63	$62	$65	$65	$65
Frieght/mt	$42	$42	$42	$50	$48	$48
Depreciation	$48	$53	$52	$49	$49	$49
Other	$8	$10	($11)	$5	$3	$3
Total COGS/mt	$393	$402	$349	$437	$408	$403
Fixed Costs/mt	$254	$268	$262	$270	$267	$267
Input Costs(Sulfur+Ammonia)	$131	$124	$97	$162	$137	$133
Yoy Chang(%)		-5%	-21%	66%	-15%	-3%

For context Q2 2021, Mosaic achieved $ 592/mt sale price vs COGS of $437/mt, equating to a Gross Profit of $155/mt. The company expects to realize $90 to $100 per tonne average realized price improvement in the third quarter over the second quarter, while Raw material costs are expected to increase $15 to $25 per finished tonne in the third quarter from the second quarter. That would lead to an additional $65-$85 of gross margin (SP: $680-690/t vs COGS: $450-465/t). I have modelled sensitivity of price to Gross Margin given average costs of $437/mt. Given it's a mining/production operation, Depreciation & Amortisation form part of COGS and lower gross margin even further. To reiterate the operational leverage built into the business, a $100 price increase vs Cost drives the business from .mediocre to highly profitable.

Modelled Phosphate Price vs Gross Margin for 2021

In aggregate, that means the expected $250 shift up in price in 2021 would take Gross Profits of the division from 140mn to 1,475mn! Analysts so far haven't gotten excited and are reverting to their historical playbook of disappointment, with prices reverting. For now, let's follow their arguments through with a .25% correction and prices stabilising around $450/t by 2023. Putting it all together for the Phosphate division:

Phosphate	2018	2019	2020	2021E	2022E	2023E
Revenue	$3,886	$3,241	$3,117	$5,140	$4,002	$3,795
COGS	($3,283)	($3,286)	($2,978)	($3,664)	($3,417)	($3,380)
Gross Profit	$603	($45)	$139	$1,477	$585	$415
Margin	16%	-1%	4%	29%	15%	11%

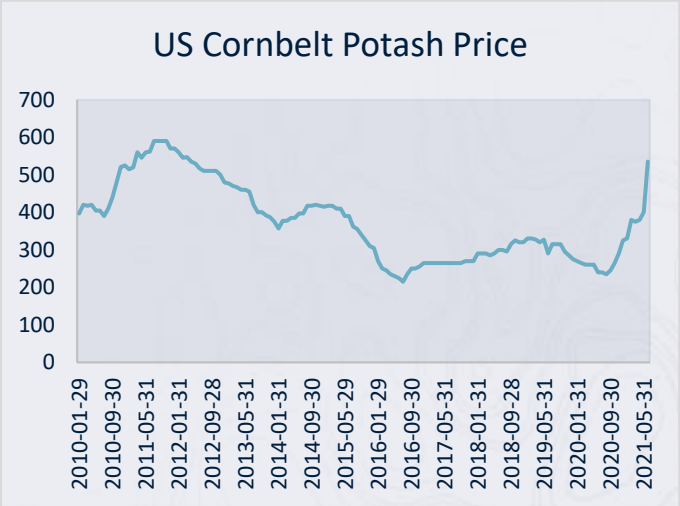


Modelled Average Phosphate Price

Potash

Any discussion relating to Potash must start with Belarus. In May the regime used a fighter jet to intercept a Ryanair flight from Athens to Lithuania on the pretence of a bomb alert. 26-year-old journalist and activist Roamn Protasevich, a fierce critic of President Lukashenko, was led away by police and is now under "house arrest". To recap, Belarus supplies almost 20% of the global potash market and 97% of their exports are handled by the Baltic port of Klaipeda in Lithuania. The EU has imposed sanctions and banned potash imports; however, they have excluded Belarus's primary grade of Potash (60% potassium content) and so far, only 20% of their output has been hit. The warning shot has been fired, worth keeping an eye on to see if this escalates further.

In the meantime, MOP Markets have come alive (Corn belt Potash has rallied 60% VS. a 6% rally in DAP in the past 3 months)



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The price action has been so fierce that it hasn't even made its way to Mosaic's earnings or analyst expectations (current price indices in the US are $500+) while the table below summarises analyst expectation. In Q2 results management commented:

"If we turn to North America, a lot of the times that we're delivering now and what delivered for the quarter three are times that we sold in early May for August shipment to meet summer field demand. And of course, those were delaying further due to the K1 K2 closure, which means a lot of the main volume won't be priced or shipped until October. And so, the pricing lag is higher than that would normally be. But I will emphasize that we are in our distribution business, seeing and selling the $600 plus price that we're talking about being the spot market."

For context, Mosaic is a member of Canpotex Ltd, an export association of Canadian potash producers through which they sell potash outside North America (55% of total sales distributed: 20% China, 32% Brazil, 14% India, 34% Rest of the World).

Potash	2018	2019	2020	2021E	2022E	2023E
Revenue/mt	$248	$270	$215	$297	$320	$293
COGS/mt	$178	$187	$157	$170	$168	$165
Gross Profit/mt	$69	$83	$58	$127	$152	$128
Volume	8,783	7,844	9,397	8,321	9,175	9,650

In the context of Q2, realised price was $285 and Q3 guidance is for $25-35 increase. In Q2, management decided to shut down its K1 and K2 shafts, accelerating the shift of ore production to the new K3 project at Esterhazy which will be fully online in early 2022. Costs for the Esterhazy closures in the quarter. are primarily reflecting asset write-downs of about $158 million. Think we might have to wait till Q4 to see if there is a material shift up in price if the market holds up here. In any case, forward expectations for 2022-23 are conservative.

	2018	2019	2020	2021E	2022E	2023E
Revenue	$2,174	$2,114	$2,020	$2,474	$2,938	$2,823
COGS	($1,567)	($1,463)	($1,473)	($1,417)	($1,540)	($1,592)
Gross Profit	$607	$651	$547	$1,057	$1,398	$1,231
Margin	28%	31%	27%	43%	48%	44%

Margins are materially higher, and ignoring a right tail bump up, gross profit for the division could be around $1bn-$1.4bn over the next few years at 40%+ gross margin.

Mosaic Fertilizantes

Mosaic purchased Vale's Fertilizantes division in 2018 to strategically gain a bigger share in the faster growing South American markets and focus on Brazil, one of the top agricultural producers in the world. They acquired five Phosphate rock mines, four phosphate chemical plants and a Potash mine. This segment also includes their legacy distribution network in South America, which consists of sales offices, crop nutrient blending and bagging facilities, port terminals and warehouses in Brazil and Paraguay.

The distribution business is a low margin business, with roughly 5% Gross Margin of about $25-40/mt. It can put through about 7mn tonnes of purchased nutrients/yr through its networks for the foreseeable future. That adds stability of $175mn of gross margin($25/mt) held steady for 2021,2022 and 2023. They also operate one Potash mine and is expected to produce 300k tonnes of output for the foreseeable future, producing gross Profits of $40-50mn over the next few years ($140-175/mt)

The phosphate division is the key driver of the fortunes of the Fertilizantes division, looking to produce about 3.2mn mt in 2021 of the Phosphate product mix. The price increase expected to be realised in 2021 feeds straight through to Gross Profit and takes it to 750mn from 370mn in 2020. In actual Q2 results, the realised gross margins are in line with 2021 estimations and, following the guidance, it is only going to improve near term. As followed through in the main American division, the projections below assume prices correct 25% by end of 2023.

COGS	2018	2019	2020	2021E	2022E	2023E
Phosphate cash conversion costs (BRL/mt)	$266	$335	$304	$378	$353	$328
Mined rock costs (BRL/mt)	$346	$327	$327	$406	$381	$356
Total Cash Cost (BRL/mt)	$613	$661	$631	$784	$734	$684
Average BRL/USD	4	4	5	5	6	6
Total Phosphate Cost ($/mt)	164	167	121	148	133	119

Phosphate	2018	2019	2020	2021E	2022E	2023E
Revenue/mt	$278	$248	$218	$382	$299	$282
COGS/mt	$164	$167	$121	$148	$133	$119
Gross Profit/mt	$114	$81	$97	$234	$166	$164
Volume	2,847	2,605	3,813	3,222	3,500	3,500

Putting all three business's together for the Fertilizantes division:

	2018	2019	2020	2021E	2022E	2023E
Revenue	$3,747	$3,783	$3,481	$5,009	$4,533	$4,176
COGS	($3,365)	($3,494)	($3,061)	($4,165)	($3,861)	($3,558)
Gross Profit	$382	$289	$420	$844	$672	$618
Margin	10%	8%	12%	17%	15%	15%

Separating the forest from the Trees

For the sake of completeness, I have added an Income statement below to highlight the earning potential of Mosaic. The goal here is not accuracy of estimation but rather familiarity with the variables and the reiterating of the operation leverage. Operating costs have largely stayed around $425-450mn, while Interest expenses have hovered around $150mn barring that we are left with Income tax expense of roughly 25%. Back of the envelope, **0.75 X (Gross Profit -600mn)** gets us to earnings available to shareholders barring anything one-off.

Income Statement	2018	2019	2020	2021E	2022E	2023E
Sales	$9,588	$8,906	$8,683	$12,724	$11,573	$10,895
COGS	$8,025	$7,978	$7,548	$9,285	$8,856	$8,569
Gross Profit	**$1,563**	**$928**	**$1,135**	**$3,439**	**$2,717**	**$2,326**
Margin(%)	16%	10%	13%	27%	23%	21%
SG&A	$341	$354	$372	$408	$385	$395
Restructuring loss (gain)	$0	$0	$0	$0	$0	$0
Other operating expense	$64	$114	$30	$52	$67	$67
Operating Profit	**$1,158**	**$460**	**$734**	**$2,979**	**$2,264**	**$1,864**
Margin(%)	12%	5%	8%	23%	20%	17%
Interest, net	$166	$183	$181	$167	$146	$126
FX transaction (gain) loss	$0	$0	$0	$0	$0	$0
Loss (gain) on extinguishment of debt	$0	$0	$0	$0	$0	$0
Other (income) expense	$7	$12	$1	$22	$22	$22
Profit before tax	**$985**	**$265**	**$552**	**$2,790**	**$2,097**	**$1,716**
Income tax, reported	$77	($225)	($579)	$651	$524	$429
Income tax adjustment extraordinary items	$85	$395	$712	$31	$0	$0
Income Tax	$162	$170	$134	$682	$524	$429
Tax Rate	16%	64%	24%	24%	25%	25%
Net earnings of non-consolidated companies	($5)	($59)	($94)	($31)	($72)	($68)
Minority Interests in net earnings	$0	$23	$1	($4)	($4)	($4)
Net Income, continuing	**$819**	**$59**	**$326**	**$2,073**	**$1,497**	**$1,215**
Change in acct policy	$0	$0	$0	$0	$0	$0
Discontinued ops	$0	$0	$0	$0	$0	$0
One time items	($349)	($1,150)	$341	($115)	$0	$0
Net income, GAAP	$470	($1,091)	$666	$1,958	$1,497	$1,215
Preferred Stock Dividend	$0	$0	$0	$0	$0	$0
Earnings available for common stockholders	**$470**	**($1,091)**	**$666**	**$1,958**	**$1,497**	**$1,215**
Basic Shares (WA)	384.8	383.8	379.0	363.9	354.1	337.8
Diluted Shares (WA)	386.4	383.8	381.3	366.2	356.4	340.1
EPS, basic, continuing	**$2.13**	**$0.15**	**$0.86**	**$5.70**	**$4.23**	**$3.60**
EPS, diluted, continuing	$2.12	$0.15	$0.85	$5.66	$4.20	$3.57

If there is just one table that you take away from here and remember just one point, then it's all about PRICE and both are summarised very well in the table below (from earnings presentation). Mosaic's operational leverage, in my view, adds nitro-glycerine to the Ag market.

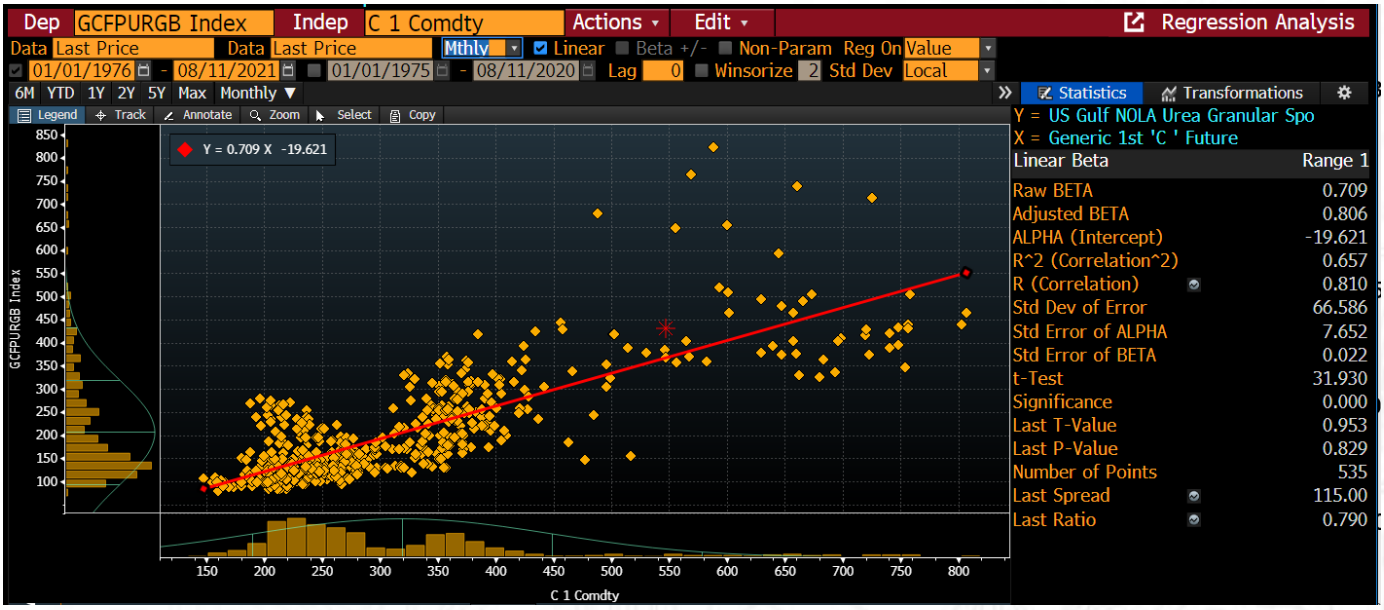
Let's take a best-case scenario of prices persisting at these levels till 2023. The phosphate division can easily add an additional $1.5bn of EBITDA over the next two years (realising $550 selling price for 22/23). Meanwhile, even though Potash is being realised 60% below spot indices today, expect another $1.5bn of EBITDA over 22-23 if realised price hits $400. If these scenarios play out, then that's about another $750mn from the Fertilizantes division as well. That's cumulatively another $3.5bn of EBITDA on top of the $9.5bn expected over 2021-23 vs. an EV of $14bn today. Or in earning terms, $10 of EPS on top of the $13.5 for 2021-23? What's that worth to the market.

Sensitivity	Full year Adjusted EBITDA Impact	2020 Actual
Average MOP Price/tonne (fob mine)	$10/mt price change = $65 million	$181
Average DAP Price/tonne (fob plant)	$10/mt price change = $105 million	$310
Average BRL/USD	0.01 change, unhedged =$13 million	5.15
Average CAD/USD	0.10 change, unhedged =$13 million	1.35

	2018	2019	2020	2021E	2022E	2023E
Operating income	$1,158	$460	$734	$2,979	$2,264	$1,864
D&A	$884	$883	$848	$810	$888	$888
Other	$68	$64	($19)	($44)	($59)	($56)
Adjusted EBITDA	$2,110	$1,406	$1,563	$3,745	$3,093	$2,696

And even if none of that happens and prices correct 25%, you still get a business trading at less than 5x EV/EBITDA, 12% FCF Yield and 8x P/E for the foreseeable future.

To Sum it Up



Copyright: Bloomberg Finance LP (Regression: Corn vs NOLA Urea Price monthly since 1976 (Correlation 0.81))

For all the nuance and analysis, it seems any miner lives and dies by the sword of pricing in the underlying markets. Fertilizer producers are a second derivative of getting the Ag picture correct. Higher Demand/Lesser supply -- > Higher Ag Market → Higher fertiliser Demand → Prices→ Fertiliser Producers boom. These chain of events and underlying operational leverage ensures that most of the time returns remain mediocre at best. On those rare occasions, when it all falls into place, price action can turn explosive. May 2007 prices are largely where they are today (around $32) and, in one-year, prices went parabolic and they peaked 5x higher around $150 in June 2008. We have not revisited these levels since, even though earning/cashflows levels today match similar levels back then. What needs to change is forward expectations and we feel the ingredients are in place for perceptions to change, for food to be important again and the sector to reprice multiples higher.

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