



Fertilizer Primer & Outlook

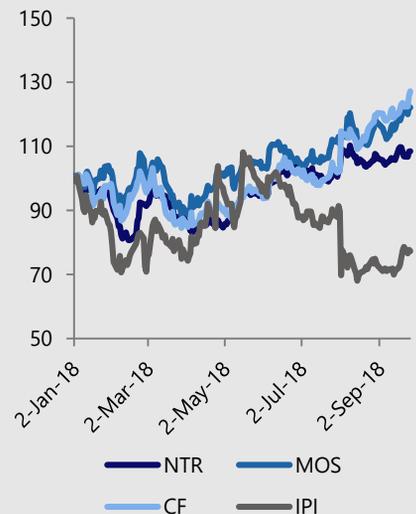
Planting Seeds for Growth

The QUIC Metals and Mining sector is comprised of a variety of commodity-based subsectors including commodity chemicals, agricultural chemicals and fertilizers, and lumber alongside traditional mined commodities such as precious and base metals.

The most significant potash basin is currently in Saskatchewan, which supplies about 33% of the market and contains half of the current reserves.

This report focuses on our investable universe in Canadian agro-chem as we wanted to gain a deeper understanding of the macroeconomic outlook for the fertilizer industry to further supplement our conviction in Nutrien Ltd.

52 Week Performance



Metals & Mining

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What the Fertilizer?

The QUIC Metals and Mining sector is comprised of a variety of commodity-based subsectors including commodity chemicals, agricultural chemicals and fertilizers, and lumber alongside traditional mined commodities such as precious and base metals. This report focuses on our investable universe in Canadian agro-chem as we wanted to gain a deeper understanding of the macroeconomic outlook for the fertilizer industry to further supplement our conviction in Nutrien Ltd.

Crash Course on Fertilizers

Fertilizers are natural or synthetic materials that supply essential nutrients for plant growth. Plants require 13 nutrients from the soil of which the three macronutrients are nitrogen, phosphorus, and potassium (potash). When these elements are not naturally present in sufficient quantities in soil or when nutrients are removed from the soil as a result of harvesting, plants and crops must be supplemented with fertilizers. The three macronutrients are most rapidly stripped from soil and thus are the main components of the fertilizer industry.

Fertilizers can be organic or inorganic. Mined potash, nitrogen, and phosphorus are applied in inorganic

fertilizers, which are a binary or ternary combination of the macronutrients in proportions specific to soil and crop types. There are no direct substitutes to these three fertilizer ingredients although low nutrient content organic alternatives such as animal manure, compost, and bone meal can be used. Since plants absorb nutrients in their inorganic form, the rate of nutrient release is much slower with organic fertilizer, which must first decompose. Organic fertilizers work over time to create healthier growing environments, while inorganic fertilizers provide rapid nutrition.

Applications of Fertilizers

Potash: Potash demand is largely driven by its use as the primary ingredient in the production of agricultural fertilizers. This application accounts for over 90% of potash demand. Other applications of potash include biofuels, particularly in industrialized countries, in addition to some uses in soap, glass, textiles, and ceramics. It is mainly used to regulate plant metabolism and water pressure, making it critical to plant stress tolerance.

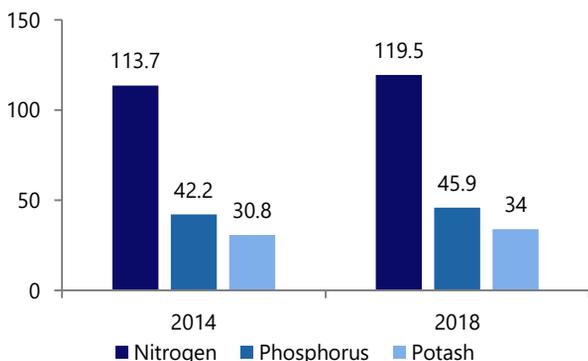
Nitrogen: Nitrogen is central to photosynthesis and energy-transfer in plants. Inadequate supplies of nitrogen in plants leads to poor yield, low quality produce, inefficient water use and depressed protein levels. It is the most important nutrient, is a more fragmented industry, and has more dynamic pricing than the rest of the fertilizer market. Its annual application is also critical, as it is the soil's most commonly lacking nutrient.

Phosphate: Phosphate is required for energy storage and transfer, and can speed up crop maturity when engrained in fertilizer. 90% of it is used for crop applications to support plant growth, and its primary function is to support water retention in plants.

As the only investable company in the Canadian investable space is Nutrien Ltd., we will centre our focus around nitrogen and potash, which represent 58% of their EBITDA split.

EXHIBIT I

Global Macronutrient Supply (MM metric tonnes)



Source(s): Statista

Value Creation in the Fertilizer Market

Fertilizer Value Chain Overview

The majority of potash is mined by the conventional mining method, where large mining machines cut tunnels in the ore around 1,000 meters below the surface. It is then transported through conveyor systems to the surface for processing. Flotation processing, where potash ore is crushed, dissolved in a solution and then purified, results in a potash product whose granule size is most suitable for fertilizer grade potash. Crystallization, which involves heating the solution to dissolve potash, is a chemical process that allows high-purity industrial potash to precipitate. Both processes undergo special treatments with various reagents to protect the potash's integrity during shipping and storage.

Within the inorganic fertilizer value chain, the mined macronutrients must be combined in varying compositions to produce either solid or liquid end-forms. The end form can either be readily soluble, chemically treated, or coated for slower release or for greater efficiency.

Nitrogen is not mined from the Earth, but rather taken from the air through fractional distillation. It is then used as an input to ammonia, nitric acid, ammonium nitrate and urea.

Once products are processed, they are then distributed to wholesalers and dealer networks, which are then sold for both industrial and consumer applications. While Nutrien Ltd. is an extremely integrated company, other similar companies mostly operate in the extraction and processing steps of the value chain.

Feed Ingredients and Other Revenue Streams

Peripheral to the central commodity business, many fertilizer companies have attempted to develop proprietary products to diversify their revenue streams from the commodity market. Feed ingredients can be developed and trademarked by various companies, marketed, and sold directly to farmers.

EXHIBIT II

Major Fertilizer Company Summaries

Company Name	Primary Markets	Fertilizer Offerings	Other Product Offerings
Nutrien Ltd. (TSX:NTR)	North America	Potash, nitrogen, phosphate and sulfate	Feed ingredients, industrial solutions, metal finishing, purified acid
Mosaic Co. (NYSE:MOS)	Worldwide	Potash and phosphates	Proprietary feed ingredients and industrial products
Israel Chemicals Ltd. (TLD:ICL)	Israel, Europe, North America	Potash, phosphates and other specialty fertilizers	Various industrial chemicals, food ingredients and additives
CF Industries (NYSE:CE)	North America, U.K.	Nitrogen variants, compound fertilizers	Exhaust fluid, other nitrogen-based chemicals
Uralkali PAO (MCX:URKA)	Russia, Worldwide	Pink and white potash, carnalite and sodium chloride	N/A
Intrepid Potash	U.S.	Potash, compound fertilizers	Other potash products, water, various salts

Source(s): Capital IQ, Company reports

Supply and Demand Snapshot

Potash Key Performer on a World Stage

The most significant potash basin is currently in Saskatchewan, and supplies about 33% of the market and contains half of the current reserves. Within this basin resides two of the world's largest potash miners, Mosaic Co. and Nutrien Ltd., who both market through a single agency, Canpotex Limited.

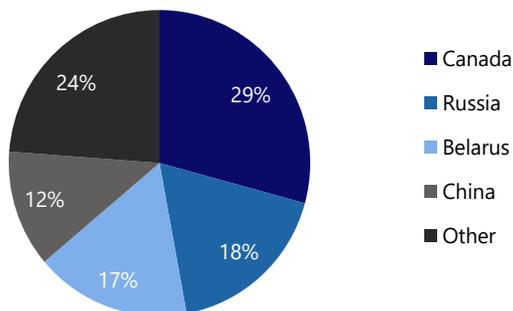
The second largest active basin is Upper Kama in western Russia, which is occupied by Silvinit and Uralkali. Following this basin is Starobin in Belarus, which is mined by a state-owned firm. Russia and Belarus have joint marketing arrangements, and together represent the majority of the competitive pressure for the Canadian players.

As Brazil's economy is very dependent on agriculture, potash is a key factor in helping its potassium-deficient soils. Brazil is the largest international potash import market, with China, India, Indonesia and Malaysia following close behind.

From this analysis, we see that our outlook into potash requires a very macroeconomic and global outlook, due to sheer geographic spread of the key demand and supply players.

EXHIBIT IV

Global Potash Production (MM metric tonnes)



Source(s): Gro Intelligence

Nitrogen: Small Player in Global Market

Three markets dominate global consumption for nitrogen: China, India and the U.S., with an aggregate share of 57%. East and Southeast Asia account for about 40%, South Asia accounts for close to 20%, and North America accounts for just under 12%.

Since nitrogen is not mined, there is no real "reserves"; rather, the ability to produce nitrogen and nitrogen-related goods is contingent on the possession of the suitable infrastructure and technology, a factor that is more difficult to gain complete insight into.

EXHIBIT III

Potash Production Top 4 Concentration (%)

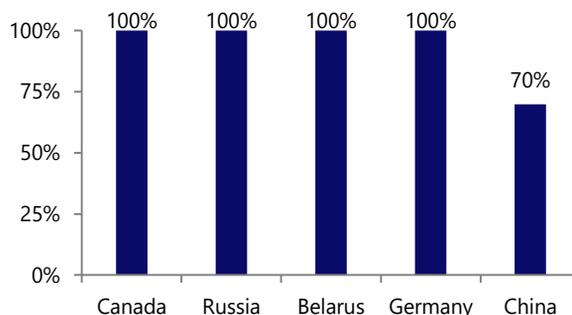
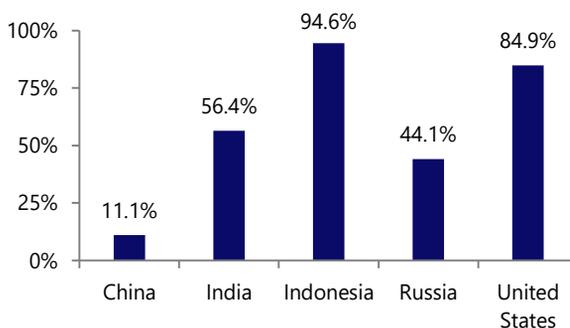


EXHIBIT V

Urea Production Top 4 Concentration (%)



Source(s): International Food Policy Research Institute

Nutrien Ltd. Overview

Nutrien Ltd. is the world's largest provider of crop inputs and services through retail services and the distribution and production of nitrogen, potash, and phosphate products for agricultural, industrial and feed customers, with whom Nutrien has direct partnerships with. Nutrien Ltd. was formed through the merger of Agrium and PotashCorp on Jan 1, 2018, allowing for former Agrium president Chuck Magro to head the newly combined company. Entering the merger the companies identified a minimum of \$500 MM (USD) in annual synergies and \$150 MM in run rate synergies. This allows for an interesting outlook concerning potential bargaining in a highly commoditized industry.

The business of Nutrien consists of 4 main sectors which are retail, potash, nitrogen, and phosphate.

Retail

Nutrien has a network of 1600 farm retail centers in 7 different countries that provide a wide range of retail products and services. Nutrien Retail offers a wide variety of nutrient products which include proprietary micronutrient products as well as nutritionals and biologicals. They also carry all of the national seed brands and utilize proprietary seed breeding capabilities through their Proven Seed and Dyna-Gro Seed operations. Nutrien Retail also caters to the Protection area of the farm retail world, supplying growers with crop protection products and advisory through stocking the major national brands of herbicides, insecticides, fungicide, and seed treatments along with their own Loveland Products. Lastly to complete the Retail aspect of Nutrien is their innovative grower services which allow for extensive application services for the nutrition and protection of crops, technology application through Echelon precision, and financing for growers.

Potash

Nutrien is the worlds largest potash producer with over 22 million tonnes of capacity in 6 company owned mines located in Saskatchewan, a politically

stable area. Having just recently completed multi-year expansions they are well positioned to continue their efficient supply methods of potash resulting in current distribution of potash to 40 countries around the world.

Nitrogen

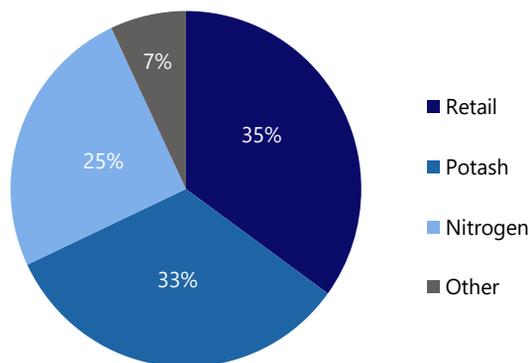
Nutrien also is the third largest nitrogen producer in the world. They utilize 15 nitrogen facilities located across the United States, Canada and Trinidad, which allows for proximity to end-users resulting in lower-cost. Nutrien has close to 8 million tonnes of gross ammonia product capacity and operations, and joint-venture and equity interest in Profertil (Argentina) and MOPCO (Egypt).

Phosphate

Lastly, Nutrien operates two integrated phosphate mining and processing facilities in the United States along with 6 small regional production facilities in the United States and Alberta. This allows Nutrien to offer a diverse portfolio of phosphate products including fertilizer, feed, and industrial phosphate products.

EXHIBIT VI

2017 Adjusted Combined EBITDA Split



Source(s): Company Reports

Key Trends I: Rise of Precision Farming

Precision architecture, also known as precision ag or precision farming, represents the capabilities that technology has on making the practice of farming, growing crops and raising livestock more accurate and controlled. This entails a wide array of new technologies, such as GPS guidance, control systems, robotics, variable rate technology, advanced soil sampling, and much more.

This development is shaped by two overarching technological trends: big-data/advanced analytics, and robotics. For example, IBM has developed Deep Thunder, a highly precise weather-forecast technology that allows farmers to adjust their farming patterns to reflect changing weather conditions. IBM leveraged this technology in a California winery, where they reduced their water usage by 16% while increasing their yield by 30%.

Implications for the Fertilizer Market

The function of applying fertilizer can be completely automated by variable rate application technology (VRT). VRT is designed to optimize the amount and type of fertilizer that goes on particular crops. This can either be map-based, where a map is generated to render a digital image of the location of various crops, or sensor-based, where a system can detect crop health and make a decision based on those inputs.

We do not perceive this trend to imply a demand rise or fall within fertilizers; rather, we believe that it presents a diversification opportunity for fertilizer companies within their product and service development. By combining their expertise with those of their customers, needs can be satisfied more precisely on both ends.

Key Trend II: Tapping into Emerging Markets

Identifying White Space

By 2020, more than half of the global GDP growth is expected to come from countries outside of the OECD. As demand for fertilizer directly parallels economic growth and increased consumption, emerging markets surfaced as promising green-fields for sourcing demand.

Africa

Africa possesses about 60% of the world's total unused arable land, but uses only 24kg of fertilizers per hectare, a quarter of the world average. This is exemplified in their low yields; for example, although sub-Saharan Africa dedicates nearly as much land to growing corn as does the U.S., it produces only about a sixth of the U.S. output. Fertilizer consumption in Eastern and Western Africa is likely to increase three to four-fold in the next 10 to 15 years, representing both

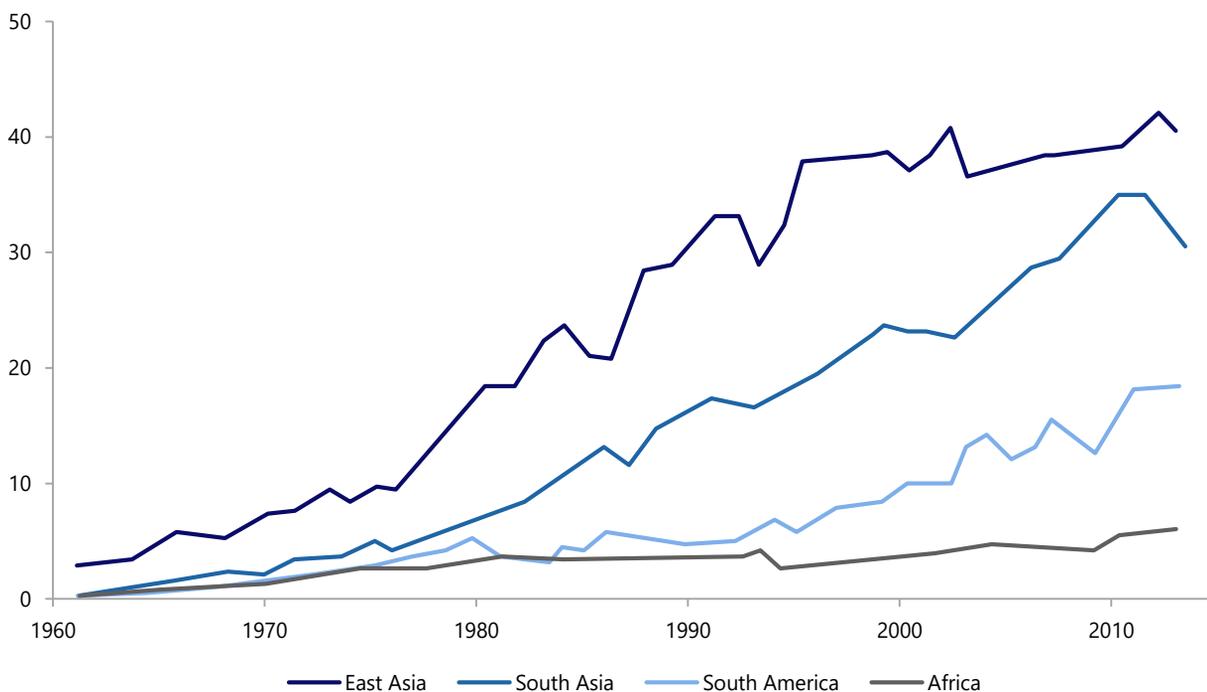
the highest anticipated growth rates in the global fertilizer market and a \$14B opportunity. However, according to a World Bank study, fertilizer use in places such as Nigeria is not profitable due to the high transportation costs; if transportation costs could be reduced by 50-75%, plots with profitable fertilizer use could increase by about 40-65%.

Brazil

The fertilizer market in Brazil is also amongst one of the fastest growing in the world. To build their strong agriculture sector, they must import approximately 90% of its potash demand. In addition, Brazil and the U.S. are the dominant suppliers of soybeans to China, a product that has been particularly vulnerable in the U.S.-China trade war.

EXHIBIT VII

Fertilizer Consumption in Specific Regions (MM metric tonnes)



Source(s): International Fertilizer Association

Key Trends II: Tapping into Emerging Markets (Continued)

By 2050, food production needs will increase by a projected 70%. Only 20% of this growth can be attributed to an expansion in arable land; the rest will have to come from increases in the productivity of the land.

Therefore, there is evidence that the fertilizer industry is steadily growing, and that it will continue on this trajectory for the foreseeable future. Its characteristic “mirroring” of global economic development signals a general upwards trend in demand; however, throughout historical insights, we believe that the fertilizer market is one that is dictated by supply dynamics instead of demand drivers. We will explore the supply-side with more gravity, placing an emphasis on identifying where we are currently in the cycle.

Nitrogen Demand Overview

Internationally, the long-term demand for nitrogen fertilizers is almost entirely tied to cereal crop yields. This has meant that historically demand for nitrogen has risen relatively steadily over the long-term as it has tracked increases in crop yields driven by population growth. In the short term, nitrogen demand is impacted by crop prices and the cost of other key agricultural inputs, as these can affect the willingness of farmers to plant, the crop mix they choose and farmer's purchasing power. Weather conditions can also have a major impact on demand as they change fertilizer requirements and planting patterns.

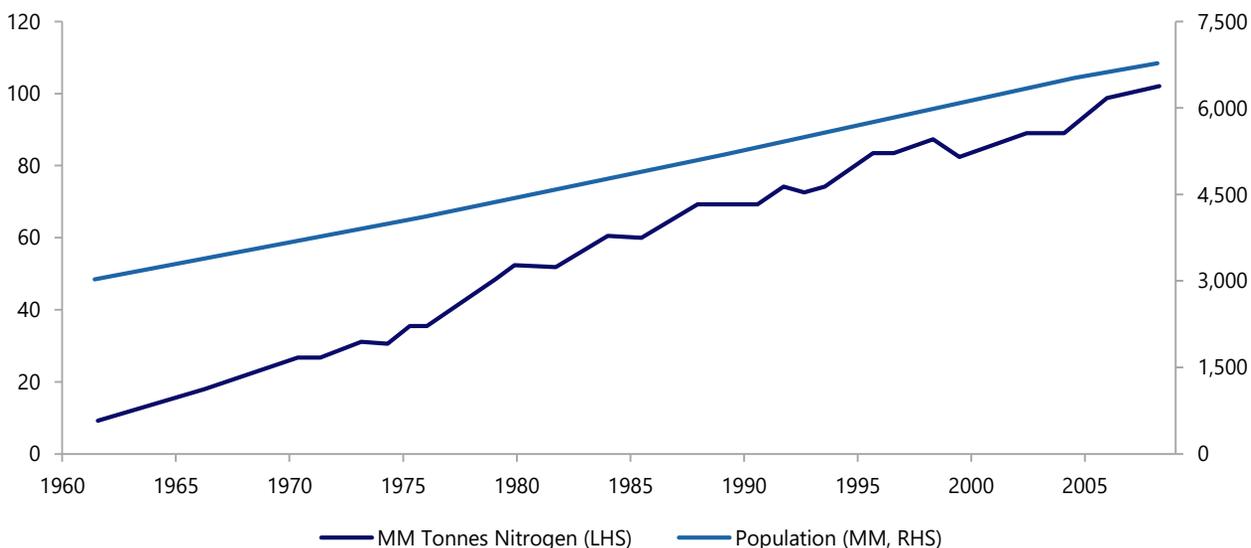
In the long-run, as populations and incomes around the world continue to grow, farmers will have to find ways to produce more food with the same amount of land. This means that the crop yield generated per acre must rise, likely leading to an increased intensity

of fertilization on a per acre basis. However, the agriculture industry as a whole has also shown signs of improving nitrogen use efficiency, allowing farmers to generate more yield per ton of fertilizer. High-level global trends make it a near certainty that the demand for nitrogen fertilizers will continue to grow steadily, roughly in line with population growth.

In the near-term, it is difficult to say with much certainty what demand for nitrogen fertilizers will look like due to the unpredictability of most short-term demand drivers. However, it is expected that demand will remain fairly volatile due to uncertainty surrounding international purchasing patterns in India and Brazil.

EXHIBIT VIII

Population Compared to Nitrogen Fertilizer Use (1961-2009)



Source(s): FAQSTAT 2012, Oxford Research Group

Nitrogen Supply and Price Outlook

Nitrogen Supply

The production of nitrogen fertilizer is inherently different from how other fertilizers are produced in that it is drawn from the air through a highly energy-intensive process, rather than being mined.

This means that the supply of nitrogen fertilizer is far more controlled than a product like potash, which is reliant on new reserves being found and developed. All that is required to add nitrogen production capacity is the desire to do so and the willingness to spend on production facilities. As a result, in the long-run nitrogen supply capacity tends to roughly track demand as production capacity is added when it becomes economically attractive to do so. This corrective action can take some time, causing cyclical in the price of nitrogen fertilizer.

Looking forward, there has been considerable nitrogen capacity added in recent years which should ensure strong supply levels moving forward. In the long-term capacity should continue to be added as necessitated by demand growth. The primary constraint on

nitrogen supply is the fossil fuels used in its production, however this is likely to have a greater effect on prices, rather than truly restricting supply.

Nitrogen Prices

The price of nitrogen fertilizer will continue to be primarily driven by several external factors. First, nitrogen fertilizer will always roughly track crop prices to a degree. Second, the variable cost of producing nitrogen is almost entirely dependent upon the cost of the natural gas or coal used to fuel the extraction process. Thus, elevated fuel prices will have a significant knock-on effect on nitrogen fertilizer. Last, weather conditions have a significant impact on the planting patterns of farmers, affecting fertilizer usage, and also indirectly affect fertilizer prices through their effect on crop prices.

Prices should continue to fall slightly in the short-term as a result of added capacity, flat natural gas prices and relatively steady crop prices.

EXHIBIT IX

Nutrient Overview – Key Production Data

	Potash (KCl)	Nitrogen (Urea)
How Produced	Mined from evaporated sea deposits	Synthesized from hydrogen source, steam and air
Number of Major Producing Countries	15	~65
Percent of Global Production Traded	77%	29%
Largest Importers	Brazil, US, China, India	US, India, Brazil
Time for Greenfield (including ramp-up)	Minimum 7 Years	Minimum 3 Years
Cost for Greenfield (including infrastructure)	CND \$5.1 - \$6.7B 2 MM tonnes KCl	US \$1.8 - \$2.0B 1 MM tonnes

Source(s): Nutrien Ltd.

Potash Supply and Demand History: 1980 - 2013

Recap: Why Do Commodity Cycles Exist?

From oil to packaging, iron, and lumber, nearly all commodities face cyclical prices. Price cycles are most distinct in mined commodities as a primary driver of cyclicality is response lag. Positive demand sentiment creates incentive for producers to startup capacity. Consumers may respond to higher prices with product substitution and prices will begin to further correct as an influx of capacity is brought online – since there is often little barrier to entry, the market tends to respond with too much supply and the cycle remains at a low until demand corrects or producers slow down production. Where there is collusion and the formation of cartels, production is agreed upon and limited.

Origins of Potash

Potash finds its origins through its historical production via burning wood ashes and boiling them in a pot. It was not until the mid-19th century that natural deposits of potash salt were discovered in Germany. This led to the material's usage to take off as an industry and potash become the top ingredient in the new chemical fertilizers, enabling a global boom in agricultural production.

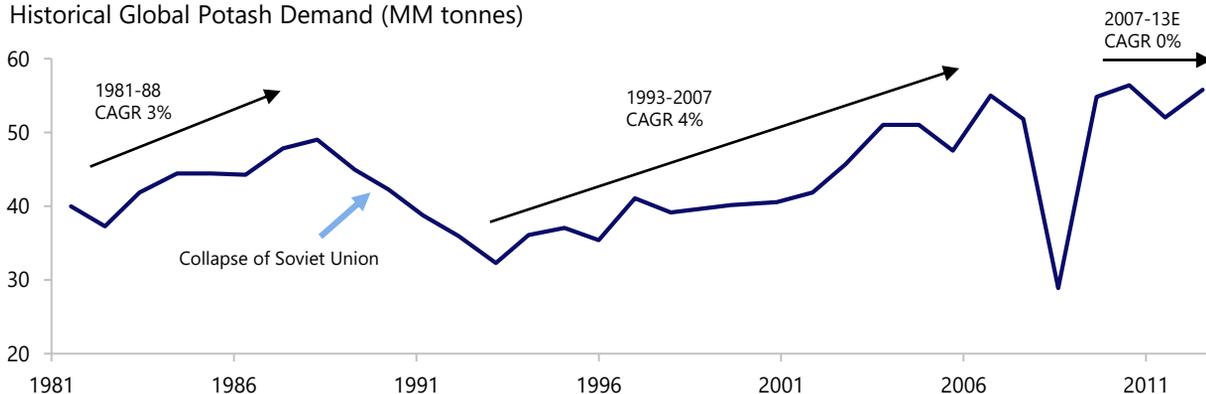
Decades of Potash Price Growth: 1980 - 2013

Potash demand grew at ~3% CAGR from 1981-1988. However, the breakup of the Soviet Union drove demand down by nearly 20% from 1989-1993. Following this market shock, demand progressed to grow at a CAGR of 4% from 1993-2007. Utilization rates at potash mines thus grew as there were no significant capacity additions from the mid-1980s to 2008 and a flood at Uralkali's Mine 1 in 2006 created a further supply constraint. Potash prices peaked in 2008, just before the recession drove reduced farmer affordability and fertilizer subsidy cuts in India, resulting in a notable potash price correction.

As potash prices rose from 2004 to 2008 and sentiment soared, producers were incentivized to invest in new capacity. Existing producers had the competitive advantage of being able to develop new capacity faster via brownfield expansions (i.e. building off of existing mine sites). Industry capacity grew by 10MM tones from 2007 to 2013. Had demand continued to grow at a modest 3% CAGR during this period, it would have kept pace with the growth in supply.

EXHIBIT X

Historical Global Potash Demand (MM tonnes)



Source(s): Company Reports, Odlum Brown Estimates

Potash Supply and Demand History: Collapse of the Cartel

Like many commodities such as oil and commodity chemicals (e.g. lead-based gasoline additives), potash supply has a history of imperfect competition driven by production controls to maintain high prices via “cartels”. A cartel is an association of firms that is able to maintain high prices via restricting competition and/or limiting consumer bargaining power. This market structure contributed to the tight supply and price growth from 2004 to 2013.

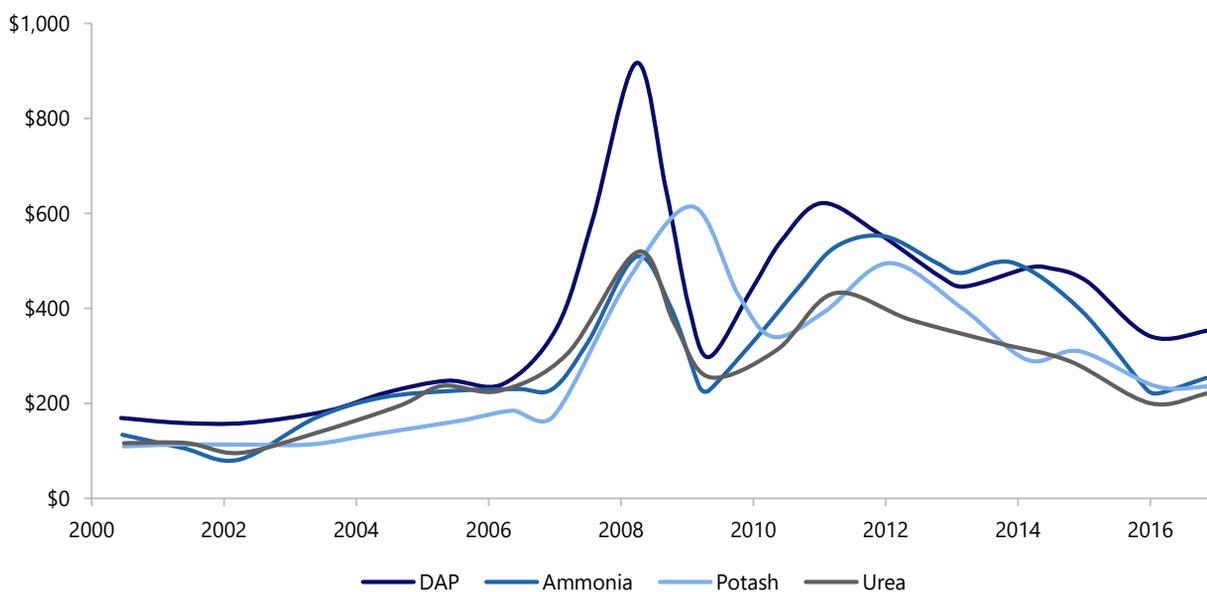
Prior to 2013, nearly 70% of the world’s potash supply was controlled by four producers which were a part of two cartels (calling themselves “marketing associations”): Canpotex and the Belarusian Potash Company (BPC). Canpotex exists in present day and acts as the “overseas marketing arm” for Nutrien and Mosaic. BPC served a similar role for Belarus’ state-owned Belaruskari and Russia’s publicly traded Uralkali.

BPC broke up in 2013 as low demand incentivized Belaruskari to form deals outside of the cartel and the Uralkali’s unevenly high power in the relationship enabled it to break free with low consequences. Prices decreased following the breakup of BPC as the Uralkali sought to increase its market share through production growth.

2015: Potash Corp. of Saskatchewan (presently Nutrien), experienced a ~30% drop in sales compared to the previous fiscal year. The drop was driven by a slowdown in growth for emerging economies, lower crop prices, positive weather conditions in the US, and difficult access to credit in Brazil restricting financing activity for farmers. Moreover, price recovery was delayed as subsidy programs in emerging markets led demand to not be very responsive to decreases in price.

EXHIBIT XI

Historical International Benchmark of Fertilizer Prices (\$US/tonne)



Source(s): Fertilizer of the Week, Green Markets, Nutrien Ltd..

Key Takeaways from Fertilizer History and Outlook

Potash 3 Years Ahead: Supply Glut Persists

In 2016, International Fertilizer Association forecasted that global potassium capacity is to increase by 20% from 2016 to 2021 as large capacity projects add 17Mt of potassium chloride and 19Mt total. This will be driven by new projects in Canada, Russia, Turkmenistan, Belarus, and China. Meanwhile, global demand is to increase by 11%. Thus, a widening supply gap is projected by them in the years ahead. Meanwhile, Nutrien’s most recent estimates predict that capacity closures will partly offset expansions in the coming years and thus, with modest demand growth, the gap will close.

Ingredients for Industry Growth Lag

Fertilizer fundamentals remain weak. According to the World Bank, fertilizer continues to face weaker global demand growth than the past (3-4% CAGR) due to lower crop prices. Meanwhile, new capacity for phosphorus, nitrogen, and potash continue to come online driven by investments made several years ago when farming sentiment was stronger.

Potash prices saw an increase in 2017, however, the industry remains in a state of oversupply with new capacity waiting to come online. The QUIC M&M team can only speculate the pace of capacity expansion and closures given the varying opinions from data sources.

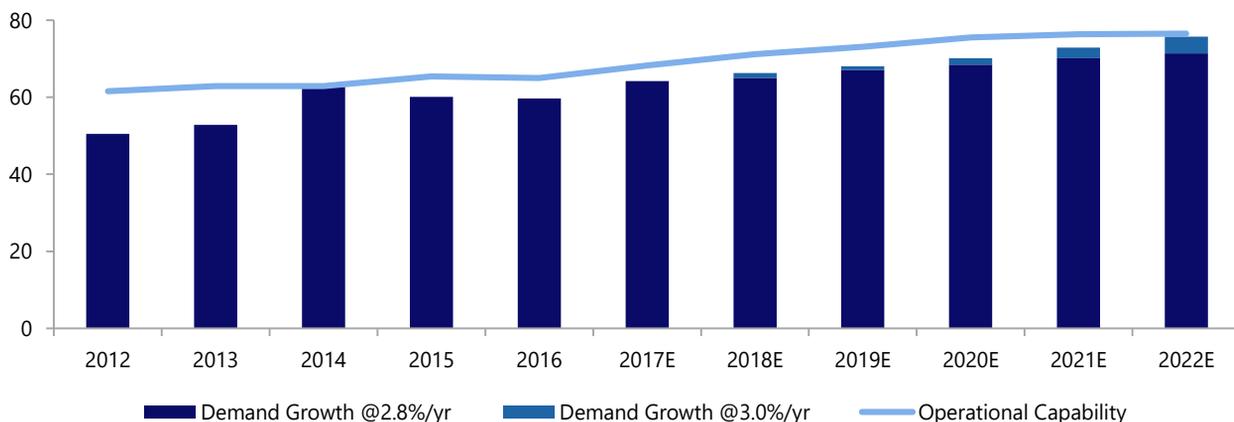
Key Takeaways for Nutrien

Nutrien’s capacity to secure long term contracts at fixed prices will help our team greater confidence in the name’s resistance to price action in the space. This has been an increasing trend following the break-up of the BPC as Uralkali has been securing contracts in China and India at fixed rates.

Despite fertilizer prices being at a present low compared to recent volatile history, it is possible that the market is over penalizing this comparative low, which is still above historical averages in the grand scheme and well above Nutrien’s \$90 production costs (which include depreciation).

EXHIBIT XII

Nutrien’s Potash Supply and Demand Forecast



Source(s): Nutrien Ltd.

Conclusion and Implications for Nutrien

As pictured below, a comparable set of peers to Nutrien has been identified. It is important to note that Nutrien is ~3.0x larger than the second largest peer in the set with a market cap of \$45.8 billion. From an EV/EBITDA perspective, the company is slightly overvalued to its peers with a multiple of 11.0x compared to the mean of 9.7x. However excluding Israel Chemical Ltd., which is one of the world's largest bromine producers that extracts 60% of its raw materials from Israel, the mean is 10.6x.

Nutrien also boasts a significant dividend yield of 2.8% which is inline with its peers but with offer our portfolio steady cash retribution. Lastly, on a P/E basis the company is trading at 22.1x compared to a peer mean of 26.3x. Factoring in the counterbalancing valuation outputs of the EV/EBITDA and P/E analysis, we believe we need to conduct further valuation work before submitting a trade order. However, we think this would be a valuable name to add to our watch list and closely follow in the upcoming months.

In conclusion, this report has been a productive activity for the M&M team to broaden our horizons and investigate a segment of our sector that we were under-informed about.

It is evident that fertilizer prices are at the bottom of a cycle and there is limited room for further decline. If M&M were to apply a true long-term value investing approach to the sector, this could be the best time to enter. However, opportunity cost is a consideration we must also take. Unfortunately, it is difficult to predict the length of this cycle given the market today is substantially different than historically following growth in emerging economies and the cartel breakup. Thus, for our team to be confident in investing in the name, further research is warranted regarding catalysts for Nutrien in retail and services, valuation for Nutrien, and determining if the market is justified in not pricing in Nutrien's announced synergies.

EXHIBIT XIII

Nutrien Comparable Companies

Agriculture	Market Cap (\$MM)	Enterprise Value (\$MM)	EV / EBITDA			P/CF LTM	Dividend Yield	Price / Earnings		Net Debt/EBITDA	
			LTM	2018E	2019E			2018E	2019E	2018E	2019E
Nutrien Ltd.	\$45,864	\$59,157	11.0x	12.1x	10.3x	11.5x	2.8%	22.1x	17.6x	1.8x	1.5x
CF Industries Holdings, Inc.	\$12,710	\$19,443	12.6x	13.2x	11.3x	12.2x	2.2%	41.3x	25.2x	2.5x	1.9x
The Mosaic Company	\$12,519	\$16,722	8.0x	8.8x	7.8x	9.3x	0.3%	19.1x	14.9x	2.0x	1.5x
Israel Chemicals Ltd.	\$7,810	\$10,148	5.2x	8.0x	8.5x	11.9x	2.8%	16.4x	14.8x	1.8x	1.9x
Uralkali PAO	\$7,077	\$12,362	6.4x	5.3x	5.3x	1.6x	-	3.7x	4.0x	2.6x	2.2x
Intrepid Potash, Inc.	\$471	\$504	15.1x	11.2x	8.9x	10.5x	-	55.2x	23.9x	0.4x	nmf
Mean	\$14,408	\$19,723	9.7x	9.8x	8.7x	9.5x	2.0%	26.3x	16.7x	1.9x	1.8x
Median	\$10,165	\$14,542	9.5x	10.0x	8.7x	11.0x	2.5%	20.6x	16.3x	1.9x	1.9x

Source(s): Capital IQ

References

1. BMO Capital Markets
2. CIBC Capital Markets
3. Company Reports
4. Google Images
5. International Fertilizer Association
6. Mother Jones
7. Natural Resources Canada
8. OCP Policy Centre
9. Odlum Brown
10. Oxford Research Group
11. RBC Capital Markets
12. Stanford University
13. The Canadian Encyclopedia
14. The World Bank

Appendix – Indexed Stock Prices of Relevant Peers

EXHIBIT XIV

Indexed Share Prices of Relevant Peers Before Formation of Nutrien (2000 – 2017)

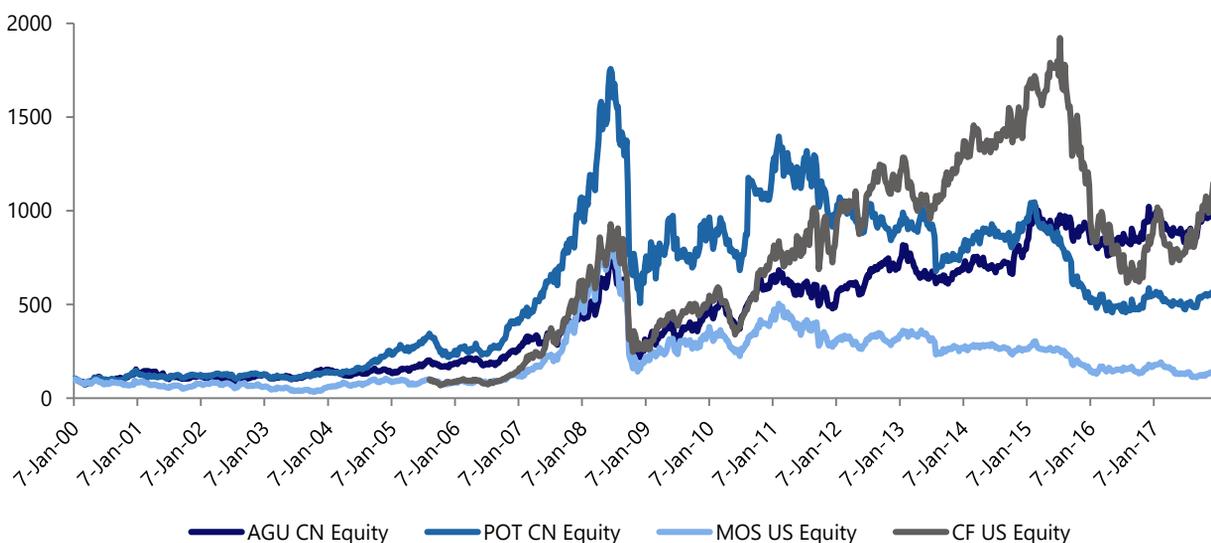
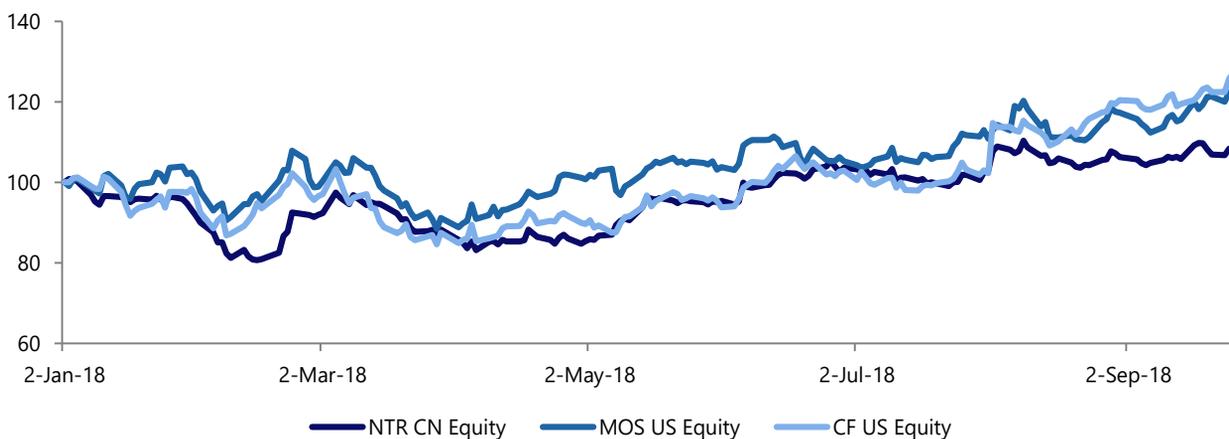


EXHIBIT XV

Indexed Share Prices of Relevant Peers after Formation of Nutrien (2018)



Source: S&P Capital IQ