The Ghost In The Machine

Q1 EDITION 2022

ADM

ADM Investor Services International Limited

EDITORS NOTE

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Inflation, War, Sanctions, Pandemic, Grains, Oilseeds, Coal, Sugar, Fertilizers, Energy, Cloud, Traders, Agriculture, Supply Chains, Safe Assets

Welcome to the March 2022 edition of the Ghost In The Machine, which tragically stands under the long shadow of the devastating war in Ukraine, as the world economy continues to deal with the economic fall-out of the Covid-19 pandemic.

These two themes unsurprisingly are dominant features in many of the articles, though there are also contributions which examine how decarbonization is ushering in the fourth agricultural revolution, and how 'Cloud' based computing solutions are starting to transform trading and systems architecture for exchanges and financial market participants.

Talking of trading, one of the eternal questions has been 'what does it take to be a trader?', which is examined through the lens of interviews with leading agricultural commodity traders.

The energy crisis in Europe and elsewhere, which pre-dated the threat to the supply of oil and gas due to the war in Ukraine, has prompted an unanticipated revival of demand for coal, so what is the outlook now, particularly as the practical realities of energy security impinge more heavily on the ideals of energy transition?

The energy crisis in Europe has also put a lot more focus on how this is a critical element in the production and availability of fertilizers, we take a closer look at the implications, with a spotlight on the impact in the UK.

Skyrocketing oil prices have also changed the dynamics of demand for sugar, grains and oilseeds as ethanol demand for blending purposes unsurprisingly increases, while the war in Ukraine puts an even greater focus on the fact that Russia and Ukraine are critical to the worldwide supply of both grains and oilseeds. Last but not least, the sanctions

on Russia, above all the freezing of Russian central bank assets begs a whole array of questions about what is a 'safe asset'.

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THE GHOST IN THE MACHINE

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WAR IN THE BREADBASKET OF EUROPE: THE EFFECTS FOR GRAIN AND OILSEED MARKETS

On Wednesday the 23rd of February, a full scale war on the European continent seemed an unprecedented and extreme suggestion by many in both the EU and Kyiv.

By Thursday the 24th of February, that suggestion became a reality. Vladimir Putin's forces poured across the Russian/Ukrainian border for a 'special military operation' which would turn the lives and the economy of one of the world's key breadbaskets upside down. The economic impact of this is becoming apparent and will most certainly be felt going forward.

Ukraine and Russia have reinforced their respective positions as world leading exporters of grains and vegetable oils in recent years as their production recovered and propelled forwards at a phenomenal pace post the fall of the Soviet Union and subsequent years of mayhem. Both countries were on track to add 50Mmt of wheat, 42Mmt of corn and 20Mmt of sunflower seed to global production since 2010 – 2011 (USDA). For wheat alone, this is 40% of the world's production growth. Ukraine alone was expected to supply 16.4% of the world's corn exports in the 2021/22 marketing year. Even more amazingly, Russia and Ukraine were on track to supply 78.5% of the world's sunflower oil exports – used predominantly for human consumption and increasingly as an alternative to first generation bio diesel feedstocks.

The importance of Russia and Ukraine to global markets can be seen in the recent price rallies in grain and oilseed markets in both the US and Europe. CBOT wheat has rallied by more than 70% this year with prices breaking above US$13.50/bu and passing levels not seen since 2008. Corn has also seen support with prices rallying almost 30% this year. The Euronext milling wheat contract also hit new contract highs passing the €400/t barrier and Euronext rapeseed contract surged to new highs of over €900/t. ICE London feed wheat contract passed values of £315/t. Continuing uncertainty moving forward will sustain the risk premium, especially with the unknowns thus far regarding the export potential and supply from Ukraine and Russia this season which will play an impeding factor in this season's outlook.

> *"RUSSIA IS ESTIMATED TO HAVE PRODUCED CIRCA 75.5MMT IN 2021/22, WHICH IS CONSIDERABLY DOWN DUE TO DROUGHT, AS IT USUALLY PRODUCES IN THE REGION OF 80-85MM."*

USDA expectations were for Ukraine to produce circa 42Mmt of corn in the 2021/22 marketing year with an exportable surplus of 33.5Mmt. This would equate to around 17% of global exports which would make Ukraine the world's fourth largest exporter. USDA put Ukrainian wheat production for 2021/22 at 33Mmt with an exportable surplus of 24Mmt. This puts Ukraine as the world's third largest exporter with circa 12% of the global export market. But Ukraine holds the crown for the world's largest sunflower seed producer with USDA estimates pegging production for 2021/22 at 17.5Mmt, equating to circa 30% of global output.

Russia is estimated to have produced circa 75.5Mmt in 2021/22, which is considerably down due to drought, as it usually produces in the region of 80-85Mm. Exports for 2021/22 were estimated to be circa 35Mmt which firmly places the crown on Russia as the world's largest grains exporter holding circa 17 – 20% of global export supply. Russia is also the world's second largest sunflower producer making up circa 27% of global supply.

> *EVEN MORE AMAZINGLY, RUSSIA AND UKRAINE WERE ON TRACK TO SUPPLY 78.5% OF THE WORLD'S SUNFLOWER OIL EXPORTS*

Primary concerns in Ukraine are largely related to the ability to sustain production and to export, both new crop and crop from the 21/22 marketing year.

Ukrainian ports have been shut since the 28th February 2022 since the start of the invasion. At the time of writing, the ports of Mariupol and Mykolaiv have fallen under Russian control with an anticipated invasion of Odessa imminent. Once the conflict eases and an agreement is reached, how long this will be is open to debate currently, but there will also be the issue of infrastructure capability and damage. There may also be an element of hesitancy from for ship owners and insurers to send vessels into Black Sea ports, especially if they end up under Russian control. Ukraine reportedly still has around 6 – 8Mmt of grains to export this season before the end of June which may prove tricky.

Production could also be effected. Disruption in the supply of key inputs such as fuel, chemicals and fertilisers could result in lower yields due to the lack of application or lack of supply when harvest starts in June/July 2022. If the conflict continues, then there will be questions in regards to the extent of the harvest. A large predicament remains regarding the spring crop as planting is due to start at the beginning of April and if things do not improve, there will undoubtably be a downside impact upon corn and sunflower plantings.

Concerns toward Russia fall in the area of Russian imposed sanctions to counter the Western sanctions that have been implemented. The Kremlin have announced that there will be sanctions imposed on commodities which will be a further hit to the trade. Western companies are also shunning Russian supply due to political pressures. Rising food prices and the importance of food security cannot be overlooked at these times where food inflation is prevailing across the world.

The crux of the situation is the duration for which the conflict will continue and how it will pan out post fighting. The situation is still very much fluid but a disruption in supply and future impact down the line is still an unknown. Increased plantings and harvest from other countries has been shown by the USDA as a potential offset in supply but for the time being, expect the market volatility to continue. Vladimir Putin has created a global wheat superpower, but how global will it remain?

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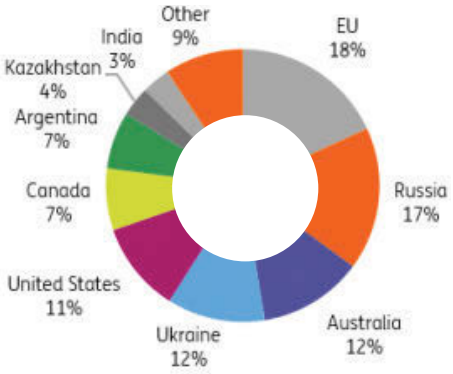
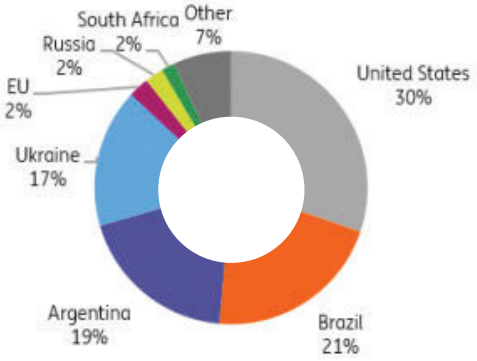
Chart 1: 2021/22 estimated wheat export split (%)



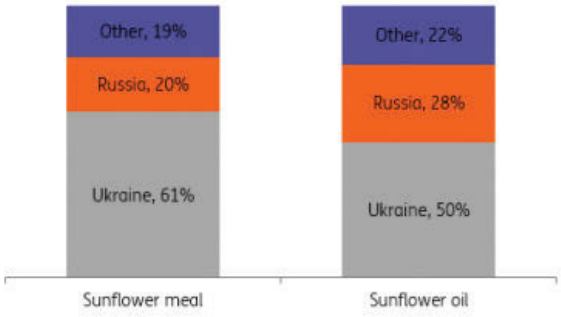
Source: USDA, ING Research

Chart 2: 2021/22 estimated corn export split (%)



Source: USDA, ING Research

Chart 3: 2021/22 estimated sunflower seed product export (%)



Source: USDA, ING Research

THE FOURTH AGRICULTURAL REVOLUTION

Agriculture is the most healthful, most useful and most noble employment of man.
George Washington, 1st US President.

In broad-brush terms, historians divide agricultural progress into three stages. The First Agricultural Revolution defines the shift from hunting-gathering to farming 7-10,000 years ago. The Second Agricultural Revolution refers to the introduction of mineral fertilisers and the initial industrialisation of farming in the 19th century.

The Third Agricultural Revolution began in the middle of the 20th century and involved improved crop yields through breeding and agricultural inputs such as chemical fertilisers and pesticides. We are now in the foothills of the Fourth Agricultural Revolution – the decarbonisation of our food supply chain.

In his book, Enriching the Earth: Fritz Haber, Carl Bosch and the Transformation of World Food Production, Vaclav Smil explains that "there is no way to grow crops and human bodies without nitrogen."

Even though the earth's atmosphere is about 80 per cent nitrogen, nitrogen atoms must be split and fixed to hydrogen atoms before being used for fertiliser. A chemist named Fritz Haber worked out how to do that in 1909. Before he made that discovery, all the usable nitrogen on earth had to be fixed by soil bacteria or electrical lightning, which breaks down nitrogen bonds in the atmosphere.

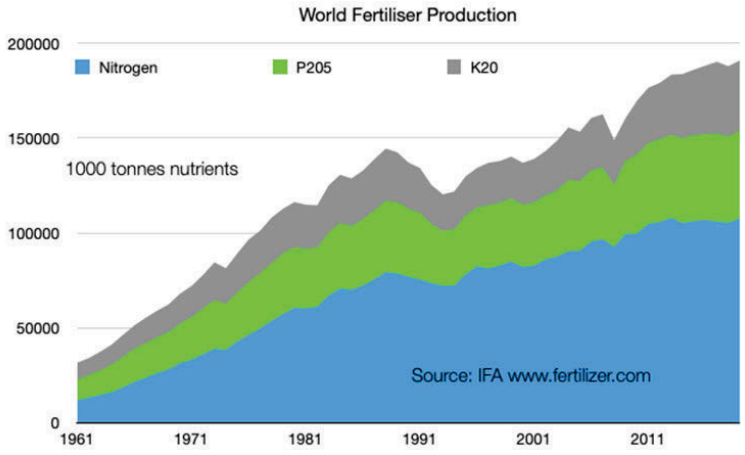
Mr Smil argues that the Haber-Bosch process for fixing nitrogen (Bosch commercialised Haber's idea) was the most important invention of the 20th century. He estimates that 40 per cent of the people on the planet today would not be alive if Haber hadn't invented it. Without synthetic fertiliser, billions of people would never have been born.

> *"THE HABER-BOSCH PROCESS WORKS BY COMBINING NITROGEN AND HYDROGEN GASES UNDER IMMENSE HEAT AND PRESSURE."*

The Haber-Bosch process works by combining nitrogen and hydrogen gases under immense heat and pressure, with the power supplied by electricity from oil, coal or, most commonly today, natural gas. Once humankind had acquired the power to fix nitrogen, the basis of soil fertility shifted from a total reliance on the sun's energy to a new dependency on fossil fuel.

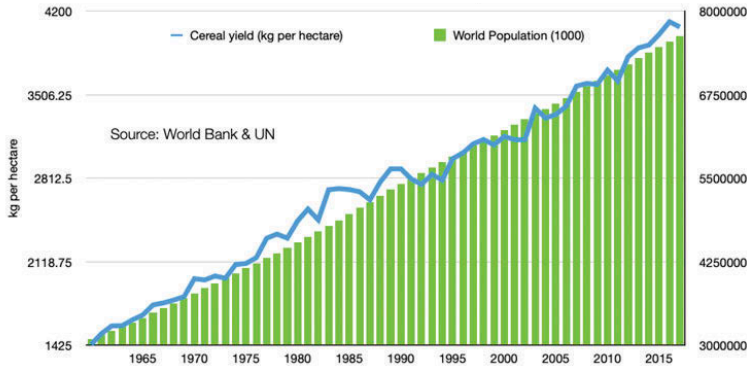
Through yield and acreage increases, the growth in agricultural production continues to match population growth. As Vaclav Smil knew, this correlation contains a causality: the increase in farm yields has permitted the growth in world population. Without these yield increases, billions of people would never have been born.

Chart 1: World Fertiliser Production



Source: IFA www.fertilizer.com

Chart 2: Historic Cereal Yields and World Population



Source: IFA www.fertilizer.com

IT IS TIME TO UNDO THE DAMAGE THAT WE HAVE DONE.

As we embark on the decarbonisation of our food chains, we are lucky that we have significant buffers in our food supply (biofuels, meat and waste) and, second, that technology is on our side.

Currently, roughly 40 per cent of US corn production, 60 per cent of European rapeseed production, and approximately 50 per cent of Brazilian sugarcane now fuels cars rather than humans. Despite the enormous tonnages, biofuels replace only around 2 per cent of the 100 million barrels of oil that the world uses every day. They are an obvious target for anyone worried about possible food shortages.

Not only has agricultural production increased enough to feed the population and fuel our cars, but it has also allowed us to eat more meat. A staggering 98 per cent of the world's soybean production – and 36 per cent of US corn production – is fed to animals to produce meat and dairy.

Animals, particularly cattle, are relatively inefficient in converting grain and beans into meat. It takes, on average, 25 kg of feed for a cow to produce one kilo of edible meat, and it takes 15 kg of feed for a sheep to produce one kg of lamb. The figures for pork and chicken are 6.4 kg and 3.3 kg, respectively.[1]

Increasing agricultural yields have helped to lower food prices relative to income. Consumers in the US spend on average less than 7 per cent of their income on food. [2] In the 1950s, UK consumers spent a third of their income on food. By 1974, it had fallen to 24 per cent and is now less than 10 per cent.[3]

Low food prices have encouraged waste. The FAO estimates that 1.3 billion tonnes of edible food – equivalent to a third of global production – is wasted annually in the world, enough to feed 3 billion people.[4] Many of us in the developed world can afford to pay more for our food. Indeed, once subsidies and externalities are considered, few of us are paying its real cost.[5]

1 https://ourworldindata.org/grapher/feed-required-to-produce-one-kilogram-of-meat-or-dairy-product

2 https://www.weforum.org/agenda/2016/12/this-map-shows-how-much-each-country-spends-on-food/

3 https://www.which.co.uk/news/2019/11/heres-how-our-food-prices-compare-to-30-years-ago-and-you-might-be-surprised/%20-%20Which?

4 https://www.fao.org/food-loss-and-food-waste/flw-data)

5 https://data.oecd.org/agrpolicy/agricultural-support.htm

WHAT ROLE CAN TECHNOLOGY PLAY?

Over the past 75 years, the focus of agricultural technology has been on increasing agricultural yields while at the same time reducing costs. It has been about growing enough calories. We still want to produce enough calories, but we now want to develop the right kind of calories in a way that doesn't harm the environment, repairs the soil, and produces nutrient-dense food.

As Soren Schroeder (the ex-CEO of Bunge) told me, "It is a new revolution: using technology to improve existing production techniques and regenerate soils.

"Up until now, many farmers have not had many other choices than improving yields and lowering costs. There is a way forward now where farmers can get the results they need while consumers get quality food. It is about producing sustainable, nutrient-dense products and connecting the consumer to the farm in a virtual way."

Unfortunately, we will have to do all this in the face of the headwinds of climate change. This past season, floods, frosts, storms, droughts, or unusually high temperatures have affected harvests around the globe. Most people now accept that climate change causes these untypical weather events.

As we embark on the Fourth Agricultural Revolution to decarbonise our food production, we must replant our forests, rewild our pastures, reduce our reliance on fossil fuels for transport and fertilisers, and reduce waste. At the same time, we must feed the world's growing population. It will put enormous pressure on the entire agricultural supply chain.

It is a huge challenge and an enormous opportunity that places agricultural commodity merchants at the centre of the world stage.

Jonathan's latest book, Commodity Crops & The Merchants Who Trade is now available on Amazon.[6]

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6 https://www.amazon.com/Commodity-Crops-Merchants-Trade-Them-ebook/dp/B09NCC4P1V/ref=sr_1_10?keywords=Commodity+Crops&qid1639293049&s=books&sr=1-10

> *"AS SOREN SCHROEDER TOLD ME, "IT IS A NEW REVOLUTION: USING TECHNOLOGY TO IMPROVE EXISTING PRODUCTION TECHNIQUES AND REGENERATE SOILS."*

THE SUGAR CONUNDRUM

It has been a tumultuous time since Russia advanced into the Ukraine on the 24th February after weeks of speculation on Putin's intent. Unsurprisingly, the markets have reacted violently to the conflict with energy prices rocketing.

Crude hit its highest level since 2008 with gas, power and coal reaching all-time highs in price. Concerns over supply shocks of wheat has seen prices jump over 60% with other grains moving higher as well. Sugar has also got caught up in the turmoil, although, initially, prices were slow to react. However, as crude prices pushed through the $100 mark, the funds seem to suddenly realise sugar looked cheap. Initially, covering shorts, they soon started to increase longs as a recognition built that higher crude prices means more expensive gasoline and diesel which could translate into more ethanol demand in Brazil which would mean less sugar production as mills divert more cane to ethanol when the 2022/23 season starts in April.

> *AS CRUDE PRICES PUSHED THROUGH THE $100 MARK, THE FUNDS SEEM TO SUDDENLY REALISE SUGAR LOOKED CHEAP. INITIALLY, COVERING SHORTS, THEY SOON STARTED TO INCREASE LONGS AS A RECOGNITION BUILT THAT HIGHER CRUDE PRICES MEANS MORE EXPENSIVE GASOLINE AND DIESEL WHICH COULD TRANSLATE INTO MORE ETHANOL DEMAND IN BRAZIL...*

> *AS OF THE MIDDLE OF MARCH CRUDE WTI HAD DROPPED OVER 25% FROM THE HIGHS WHICH MAY WELL HAVE PRESIDENT BOLSONARO ON THE PHONE TO PETROBRAS DEMANDING A CUT IN PRICES.*

Currently, the 2021/22 season is half completed with most analysts now expecting a small deficit in production compared with demand. The size of the deficit has been recently reduced by most as Indian production looks set to beat pre-harvest estimates by around 10% with total production, perhaps, reaching a record-breaking 34 million tonnes and propelling India back to the top of the world's largest sugar producer league. This will off-set Thai sugar production which is likely to be slightly less than predicted earlier when the harvest got off to a blistering start. This is all against a back-drop of a substantially reduced Brazil CS production in 2021/22 due to months of drought topped off with a couple of frosty nights last year. Not only has Indian production this season cut the deficit to around one million tonnes but their large stocks have seen six million tonnes of exports plug any supply gaps with more stocks available. This all done with no export subsidies.

The general consensus from analysts prepared to make a long term prediction is a small global surplus is likely in 2022/23 as Brazilian CS production prospects bounced back after months of decent rains replenished soil and cane. Indeed the rains have continued through February and it is still raining in the middle of March. The view is that the cane crop will recover to around 560 million tonnes from just 521 million tonnes in 2021/22. However, predicting the amount of sugar to be produced has been made considerably harder since crude prices have rocketed. The recent increase in Brazilian gasoline and diesel prices by Petrobras has had some analysts cutting up to 2.5 million tonnes off their expected sugar production which could mean the total would be little changed from the 32 million tonnes produced last harvest. Many feel this may be wishful thinking as higher gasoline prices do not guarantee increasing ethanol demand. Of course, this is all based on continuing high crude prices. As of the middle of March crude WTI had dropped over 25% from the highs which may well have President Bolsonaro on the phone to Petrobras demanding a cut in prices.

As mentioned above, grain prices, and especially wheat and corn, have rocketed higher as the Russian invasion started. Both Russia and the Ukraine are huge wheat producers and Ukraine a large corn producer so any disruption to exports and, more importantly, production, will impact on world prices. There has been some chatter about whether other cash crops will be planted instead of beet across the EU this year. While it may have some impact it should be remembered that firstly, farmers will have missed the opportunity to plant winter wheat which is higher yielding than spring sow wheat. Secondly, beet farmers may also have signed supply contracts with processors. Therefore, any significant change in the EU sugar beet planted area might only be seen in 2023.

Currently, the market appears well supplied with 5 million tonnes of shipped India exports against a global production deficit for the season of rather less. Demand is still lacklustre and consumption appears to be struggling to get back to pre-pandemic levels. Looking further forward the crystal ball is clouded by the Russian/Ukraine conflict. While everyone hopes for a swift end to the situation this would seem unlikely. What impact a protracted war will have on sugar is difficult to foresee but we suspect sugar production out of Brazil will be higher than many expect. If this is the case then the 17.80 cents price predicted for the end of the year in a recent Reuters poll may not be too far from the truth.

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13.6%

Wind generation in Germany dropped by 13.6% in 2021 compared with 2020

22.1%

Chinese net steam coal imports fell to 26.7mt over the Jan.-Feb period, down a significant 7.6mt or 22.1% y-o-y.

6.9%

German nuclear generation was still at 61TWh in 2020 and in fact recovered to 65.3TWh in 2021 (up 6.9% y-o-y)

COAL OUTLOOK 2022:

A 2-tier market emerges, as EU energy transition doubts persist

A 2-TIER COAL MARKET, CHINA TO TAKE ADVANTAGE OF CHEAP RUSSIAN COAL

At the time of writing in March 2022, Russian coal exports kept flowing although at below normal levels, despite the series of sanctions on Russian commodities exports announced by some market participants and governments.

We think they will continue to flow, at least to some extent in particular to China. This would indeed kill two birds with one stone:

- China's challenge finding sufficient quantities of affordable coal and energy.
- Securing vital revenue for Russia, whose economy is getting increasingly cut off from the rest of the world.

Perret Associates estimate that Chinese net steam coal imports fell to 26.7mt over the Jan.-Feb period, down a significant 7.6mt or 22.1% y-o-y. This is only 3.4mt higher than December's deliveries alone.

Importing significant quantities of high CV Russian coal would in fact enable China to persist with its ban of Australian coal. As it will be in the driving seat, as the only significant buyer of Russian coal, China could pretty much dictate its price. This would provide a significant advantage to the Chinese economy, which will benefit from much cheaper coal (but also gas and oil) prices than its main competitors in Asia.

Meanwhile, the much higher prices that the rest of the world might have to pay could remain in place for a long period, precisely because Russian coal and gas supply will be gradually excluded.

We envisage that a 2-tier market, with autocracies on the one side and democracies on the other, might be taking shape faster than expected.

Still, there is a limit on how quickly Russia can gear up its exports to China. That said, given the fact that Russia's railways have been notoriously under-performing in the West of the country and things have only got worse since the invasion of Ukraine, a shift in exports to the East might not be such a problem.

Russian steam coal exports to China were already at 45.6mt in 2021 (up from 26.8mt in 2019). There was an announcement a few weeks ago of a plan for Russia to export 100mtpa to China. Given the current conditions, we think this could be achieved within 3 years or so, with flows increasing steadily until then.

Chart 1: Chinese net steam coal imports, mt

Source: Customs, Perret Associates

Chart 2: Chinese steam coal imports from Russia, mt

Source: Customs, Perret Associates

EU'S ENERGY TRANSITION PLAN SHOWS ITS WEAKNESS

Even before the Ukrainian invasion by Russia, Perret Associates were raising their doubts on the feasibility of the EU energy transition, in particular its speed. The recent events since the beginning of 2022 have exposed in our view the weaknesses and inconsistencies of such plans.

Wind generation might already be reaching its limits, with investment in wind and solar generation capacity lagging behind initial plans. .

For instance, in Germany, which has been one of the leading countries in the development of wind power, the commissioning of fresh wind generation capacity has levelled off in recent years. Standing at just 12GW in 2002, it more than doubled to 26.8GW in 2010. It doubled again by 2017 to 56GW. Since then, the growth in capacity has fallen significantly, averaging just 3.3% during 2018-21. The construction of some wind turbines has been postponed due to COVID but this slowdown had already started before the pandemic.

Even more crucially, actual generation from wind and solar has remained below initial forecasts so far. Wind generation in Germany dropped by 13.6% in 2021 compared with 2020, at 114.6TWh, despite a 4.1% (2.5GW) increase in capacity of 2.5GW.

On that note it is worth reiterating that in 2021 the few remaining nuclear plants generated on average 8.05TWh of electricity per GW of installed capacity. The ratio was at 4.95TWh per GW for lignite and 3.2TWh per GW for hard coal. But it was at only 1.8 TWh per GW for wind and 0.9TWh per GW for solar.

In what might be seen as a bold move, Germany intends to shut down precisely the three most efficient electricity sources (nuclear, hard coal and lignite) during the period 2022-30 and replace them with two of the least efficient (wind and solar).

The recent events in Ukraine don't seem to have yet derailed this long-term strategy. The German government has announced it was too late and would not be economically interesting to delay the closure of the last 3.1GW of nuclear capacity scheduled in December 2022.

German nuclear generation was still at 61TWh in 2020 and in fact recovered to 65.3TWh in 2021 (up 6.9% y-o-y) due to the lack of wind generation and the uncompetitiveness of gas. One can only imagine how high European power, coal and gas prices could have gone in October 2021 or in February 2022, had Germany already shut down its entire nuclear fleet.

Regarding hard-coal, there might be some room for manoeuvre. The new German coalition had announced in October 2021 it was bringing forward the closure of all hard coal and presumably lignite to 2030, from the date of 2038 fixed by the previous government. Already before the Ukrainian invasion, Perret Associates thought such plan was not achievable, or that it would come at a cost unbearable for the German economy.

The Ukrainian invasion has forced the German government to backpaddle fast. The last few hard coal power plants in reserve might be called to the rescue in emergency. It looks likely that the few coal power plants that were supposed to be closed in the coming years, might remain in operation for a longer period, given the competitiveness of coal vs. gas in the EU27 zone (despite record high CO2 prices).

The new German coalition government has a very ambitious plan to have 80% of German electricity produced from renewables in 2030. Amongst other things, this implies building 14,000 offshore wind turbines in the North Sea and Baltic Sea, up from just 1,469 operational in 2019. From an environmental perspective, this is already being challenged. Even assuming the project goes ahead, it would be a huge challenge to build so many wind turbines in such a short period of time and in such challenging locations.

The coalition also has ambitious targets for new on-shore wind capacity, which will have to be signed off at the regional level. It remains to be seen how much of this new wind on-shore capacity will be approved, given the number of existing turbines and increasing local opposition, as the philosophy of 'not in my back yard' gains momentum. Projects for new offshore wind turbines off the French, Belgium and Dutch coasts are also meeting strong opposition.

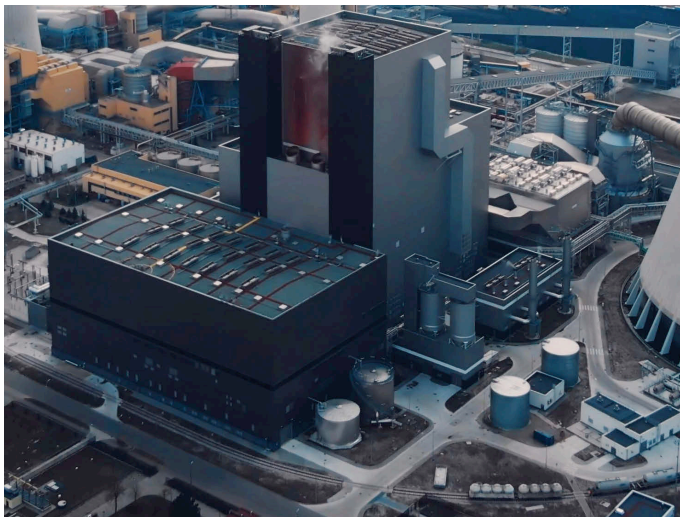
At the beginning of the 21st century, wind generation in its modern form was presented as one of the cornerstones of the development of clean energies worldwide. The fact that after only 20 years it is already facing challenges is a serious warning signal.

In fact, once they reach a certain size, all energy sources face their own difficulties. Solar generation has escaped this problem so far, as at the global level it remains low, if not negligible. However, this industry will surely also face its own challenges (such as the recycling of batteries) once it reaches a certain size.

REST OF THE WORLD WATCHING EUROPE WITH DOUBTS

Most countries outside the EU, which have started their own journeys towards decarbonisation, have probably been watching the recent market developments within the EU with a great deal of doubt and anxiety. Indeed, the very ambitious targets set by the EU for a very rapid energy transition have backfired badly.

The EU has lost significant chunks of its heavy industry since 2000, due to spiralling electricity costs, with steel and cement producers, for instance, migrating to Eastern Europe and Asia. The prompt quarter German electricity contract reached a new record at €550/MWh in March 2022 and prices are set to remain at historically high levels for the foreseeable future.



Governments have had to step in to cap the maximum price increase utilities could pass on to end users. Ultimately, though, end users will face rising electricity and gas bills and experience directly the real cost of this very rapid transition to green energy. In fact, some pockets of "electricity poverty" are already emerging in the EU, as low-income households struggle to pay their energy bills.

The fact that at the recent COP 26 in Glasgow most of the ambitious targets were already watered down, in some cases significantly, reflects the increasing scepticism of developing countries. After all, if the EU is already struggling, how could they manage, given their own additional challenges?

Just to put things into perspective, the market price for EU CO2 certificates peaked at €90/t in December 2021. This equates to a cost of €33.7/MWh for a 50% efficient gas power plant and €68/MWh for a 45% efficient coal power plants. Such levels exceed the cost of electricity generation on its own in most developing countries.

Emerging economies are not ready yet to trade short-term economic growth (10-30 years) for potential long-term progress against climate change. Instead, the message being sent by China and India, amongst others, is that they will achieve an energy transition, but at their own pace.

Meanwhile it doesn't mean that no investment in renewables will be made, quite the opposite. In fact for the first time in 2021, Indian combined solar, wind and other renewables (162.5TWh) exceeded hydro generation (150TWh). We estimate that a similar scenario could develop in China by 2025.

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OH NO^3 - WILL HIGH FERTILISER COSTS ABATE?

The UK fertiliser market is a relatively mysterious affair, with typically little interest from those uninvolved. So much so that in September 2021 main stream media branded some fertiliser manufacturers as CO2 suppliers, a by-product of fertiliser production.

The UK fertiliser market is a relatively mysterious affair, with typically little interest from those uninvolved. So much so that in September 2021 main stream media branded some fertiliser manufacturers as CO2 suppliers, a by-product of fertiliser production. For those within the agricultural industry, however, conversations about nitrogen fertilisers have become a painful affair over the last 7 months. Ammonium Nitrate (NH4 NO3), the UK agriculture's most widely used fertiliser, is produced through the Haber-Bosch process which utilises natural gas as a feedstock to produce ammonia, which is manufactured into nitrogen fertilisers. This is an energy intensive process.

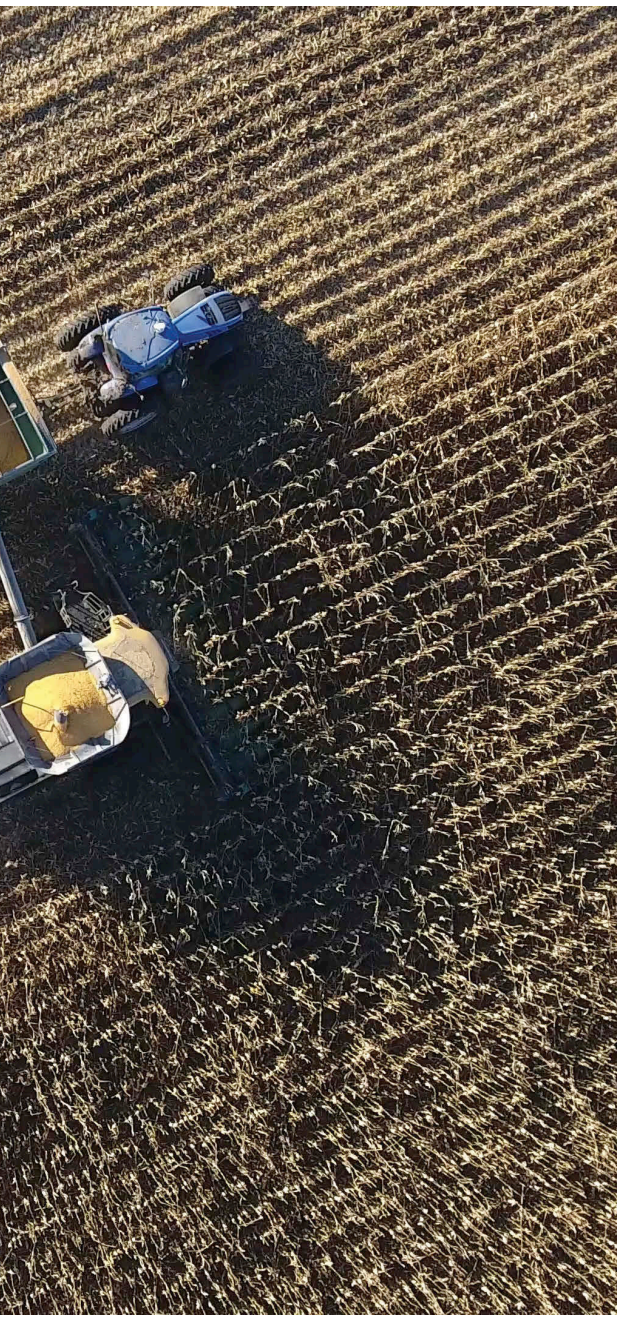
> *"AMMONIUM NITRATE (NH4 NO3), THE UK AGRICULTURE'S MOST WIDELY USED FERTILISER, IS PRODUCED THROUGH THE HABER-BOSCH PROCESS WHICH UTILISES NATURAL GAS AS A FEEDSTOCK TO PRODUCE AMMONIA, WHICH IS MANUFACTURED INTO NITROGEN FERTILISERS."*

SEASONAL MARKET TRENDS UPTURNED.

Increasingly warmer weather that can ease natural gas prices typically coincides with the end of the spring fertiliser application season and key growing stages of crops in the UK. By summer, applications for cereal crops are completed. This allows for what had been marketed in UK agriculture as a 'New Season Reset' where fertiliser manufacturers that need to produce 365 days a year 24/7 (or face high restart costs for plants) can build sales books for next year's crop requirements. The UK natural gas cost increased 317% between April 2021 and September 2021[1]. European Gas maintained higher prices through this period as well, and demand for forward sales were muted from the farm gate. By August, (the height of harvest in most of Europe) farmers' attention was on harvesting old crop, as opposed to contemplating purchasing next year's crops nitrogen requirements which were being marketed above 5 year norms. By September, following 4 weeks of subdued sales through harvest and scheduled maintenance of fertiliser production facilities, key nitrogen fertiliser manufacturers across the continent began curtailing production beyond their scheduled maintenance due to unprecedented costs that continued to unfold.

1 Natural Gas Futures Historical Prices - Investing.com UK

> *"THE UK NATURAL GAS COST INCREASED 317% BETWEEN APRIL 2021 AND SEPTEMBER 2021. EUROPEAN GAS MAINTAINED HIGHER PRICES THROUGH THIS PERIOD AS WELL, AND DEMAND FOR FORWARD SALES WERE MUTED FROM THE FARM GATE."*



FERTILISER – TO FOOD – TO FORK.

The agricultural industry in the UK is under the most sweeping set of changes since the 1950s with the introduction of the Environmental Land Management Scheme (ELMS). Estimates currently stand at a 10% reduction of nitrogen fertiliser use in the UK because of ELMS[2] . Consultations and policy are occurring on farm and at industry level. One such consultation is the DEFRA Urea Enquiry[3] which has been at the forefront of UK fertiliser industry's minds. One of the enquiry's proposals was to ban the use of urea due to the ammonia emissions it can emit if applied incorrectly. Nitrate leaching from Ammonium Nitrate (AN) is also becoming a more prominent issue surrounding the impact of artificial fertiliser on the environment. The production curtailment across Europe highlighted the significance of AN fertiliser in crop production but has also embedded the importance of other nitrogen products including Liquid Urea-Ammonium Nitrate (UAN) and granular urea as options to both the UK and European farmer. Multiple sources of nitrogen in the market offers choice to the farmer to optimise best practice, reducing environmental impact and increasing farm profitability. The curtailment of production also highlighted the importance of the fertiliser industry in downstream food production as CO2, a by-product, is used in meat processing, food packaging and carbonating drinks.

Across Europe attempts began to be made to aid the agriculture industry. For example, the Polish government removed VAT on fertilisers to help mitigate these higher prices for farmers. Other governments were more direct and agreed deals to restart plants to avoid immediate crises. The potential knock-on impact on the quality/quantity of crop production from the increased cost of fertiliser, however, has remained ignored. During the same period, UK farmers have also been facing continued reductions in their Basic Payment Scheme (BPS) which ELMS is to replace. Prices of nitrogen fertiliser reached a level where continued production was viable and the damage to the market during Q3/4 of 2021 was an estimated 12mln t of lost supply across Europe. Currently production remains curtailed and continues to support maintained higher pricing for Ammonium Nitrate based products across Europe whilst natural gas continues to remain above historical norms.

The implication of these events across Europe is that we have seen the highest fertiliser prices, above and beyond the previous high set in 2008[4] . Supply within the region continues to be curtailed and imported products from other regions are becoming more attractive as supply of granular urea becomes more readily available. Volatility is anticipated throughout the coming months as trade flows continue to alter. The world's largest buyer, India, is reducing its expenditure for fertilisers[5] whilst the world's largest manufacturer, China, is planning on lifting export restrictions in June 2022[6] . This spring, concerns over crop quality due to unattractive risk-reward are circulating. Whilst the current crop price is viable for some to absorb the higher costs incurred, the aftermath of price surges are yet to be seen. Europe could continue to face unprecedented fertiliser costs. If cereal prices don't maintain their current historically high prices, the fall-out could be catastrophic. As the Polish proverb goes... 'If the farmer is poor then so is the whole country'.

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2 Industry Estimates

3 Solid Urea Fertilisers Consultation Document_Nov 2020.pdf (defra.gov.uk)

4 Anderson Centre Historical Data

5 Fertiliser subsidy for 2022-23 is less than expected, says ICRA - The Economic Times (indiatimes.com)

6 Soaring fertilizer prices add to inflationary pressures and food security concerns (worldbank.org)

'SAFE ASSETS': TIME FOR A RETHINK?

'Unprecedented' would appear to be the watchword of this third decade of the 21st Century, just as much as 'disruption' has been for the century to date.

The relevance of Albert Hirschmann's ideas to a world that is still reeling from the Covid-19 pandemic which is transitioning to an endemic, and is now confronted with the horror of war in the Ukraine, and the effective isolation of Russia from much of the global economy, should be obvious. To recap: 'Hirschman's 'Hiding Hand' argues that creativity is the key problem-solving tool when we face unexpected situations; and that it is only via the experience of impotence when faced with the unexpected that we develop the innovative knowledge to solve problems, and that 'rational choice' often stifles innovation and creativity. 'Possibilism' is an approach to escaping 'straitjacketing concepts' such as perceived "absolute obstacles, imaginary dilemmas and one-way sequences", with Hirschman noting that such "obstacles" can often turn out to be an asset or, at the very least, a spur for change. Hirschman also argued that such "inverted sequences" should not be seen as having primacy over 'orderly sequences', but rather as a means to 'increase the number of ways in which the occurrence of change can be visualized'. Both of these now seem to be appropriate as prisms through which to view the current set of dilemmas facing policymakers and markets."

> *"HIRSCHMAN'S 'HIDING HAND' ARGUES THAT CREATIVITY IS THE KEY PROBLEM-SOLVING TOOL WHEN WE FACE UNEXPECTED SITUATIONS; AND THAT IT IS ONLY VIA THE EXPERIENCE OF IMPOTENCE WHEN FACED WITH THE UNEXPECTED THAT WE DEVELOP THE INNOVATIVE KNOWLEDGE TO SOLVE PROBLEMS, AND THAT 'RATIONAL CHOICE' OFTEN STIFLES INNOVATION AND CREATIVITY."*

If there were any residual hope of returning to the very far from ideal way that the world economy operated prior to the pandemic outbreak in Q1 2020, that hope should now have been completely expunged. As previously noted, financial markets' reaction function has been so dulled by a decade of central bank 'largesse to excess', as well as conditioned (as per Pavlov) to respond in ways, which may well prove to be a case of 'being hoist by one's own petard'. But we are now being confronted with the reality of having to reconsider the concept of 'safe assets'. If everything can be weaponized, as would appear now to be the case: e.g. food, energy and raw materials supplies; and sanctions and asset seizures are not just reserved for the worst form of criminals (be that rogue states, terrorists or murderers; people, drug or weapons traffickers), then there is in principle no such thing as a 'safe asset', and the underlying idea of free capital flows (which has long been an illusion) are exposed as a myth on which the world can no longer dine out.

As with so much of the fall-out from the pandemic and other recent events, this is not so much a 'turning point' for the global economy, but rather more a 'fast tracking' of nascent if not already extant trends. While some may disagree with this, the 2017 moves by Saudi Crown Prince Mohammed bin Salman which forced the country's richest people to hand over some of their personal fortunes to the state as part of an "anticorruption campaign" can be construed as an earlier example of asset seizure. Naturally it was perceived to be a one-off event in a country whose political and economic 'modus operandi' is clearly different to those in Europe and North America, just as prior examples of asset seizure in emerging economies in Africa, Asia and Latin America were also seen as relatively unique events in unstable environments, which would not happen, or at least would be highly unlikely to happen in the western world. For clarity's sake, this is not to say that the ethical and moral rationale that underpinned the political decision to impose these measures on Russia are wrong, but rather to make the point that if such 'unprecedented' measures can be undertaken, then any definition of 'risk free' or 'safe' assets has to take this into account.

Seen from the perspective of financial sector regulations that cover KYC (Know Your Client) in respect of sources of wealth, above all in regards to sanctions protection, money laundering, fraud and financing of terrorism and illicit drugs trade, one might argue that this is already very much in the mainstream. However the point is that all of this behoves risk, legal and compliance departments to be even more meticulous in conducting checks on all transactions, per se slowing up the process. In some cases, this may result in freezing assets temporarily, while due diligence checks are carried out, or in other cases seeing approval for a transaction, or for the financing thereof, blocked, because the 'paper trail' is potentially too long, either in time or cost terms, or both. To be sure there will also be always be institutions who will see an opportunity to take this business from a more risk averse competitor, but in doing so demanding higher premiums for such a transaction, in order to account for the extra time, cost and risks.

> *"AS WITH SO MUCH OF THE FALL-OUT FROM THE PANDEMIC AND OTHER RECENT EVENTS, THIS IS NOT SO MUCH A 'TURNING POINT' FOR THE GLOBAL ECONOMY..."*

But that pool of available financing and transaction facilitation will inevitably be smaller, and will typically tend to result in credit availability for smaller intermediaries becoming scarce. The latter aspect then reduces the underlying pool of transaction financing liquidity in markets, and will also tend to reduce the pool of available credit for trade finance, above and beyond any consideration of VaR (Value at risk), and in turn this tends to disproportionately 'penalise' food and resources producers in emerging and developing economies. It is in other words a variation on the counterparty risk phenomenon seen during the Global Financial Crisis which, as is well documented, shrunk the pool of offshore US dollars, most of which is generated by trade. As importantly, it comes at a point when central banks are looking to raise interest rates and reduce excess liquidity, in sharp contrast to both the Global Financial Crisis and the onset of the pandemic.

However, this current variation of counterparty risk has two other potentially significant components. Firstly the sanctions on Russia will inevitably result in a fragmentation and fracturing of the global trade payments system, as alternatives are sought out, above all to pay for food and energy resources, and in many cases likely settled in the local currencies of the two countries involved, thus reducing demand for USD for this specific purpose. It would be worse than simplistic to suggest that the likes of China and India, who account for 35% of the world's population, should become largely self-sufficient in food produce, leaving aside the thornier issue of hydrocarbon energy supplies. It also implies that there will likely be greater accumulation of FX reserves not denominated in USD or EUR, which for many Asian central bank FX reserve managers will probably come as some relief, given that many have fretted for years about the high proportion of reserves held in USD. It might also encourage some countries to examine the viability of holding crypto assets, as an alternative payment methodology, even if this opens up a whole new set of other considerations related to cybersecurity, as well as volatility and price discovery.

> *"THE SANCTIONS ON RUSSIA WILL INEVITABLY RESULT IN A FRAGMENTATION AND FRACTURING OF THE GLOBAL TRADE PAYMENTS SYSTEM, AS ALTERNATIVES ARE SOUGHT OUT, ABOVE ALL TO PAY FOR FOOD AND ENERGY RESOURCES..."*

That said, this may prove to be a case of 'out of the frying pan and into the fire', given that other currencies may prove to be a good deal more volatile, as well as being less liquid. Some countries may even question the need to hold as much in the way of FX reserves, both given the precedent set by the seizure of Russian central bank assets, and indeed the fact that locking away some trade surplus cash in FX reserves deprives some countries of much needed capital that could (and I stress could) be deployed to improve local economy infrastructure, amongst other things. Admittedly for some countries, FX reserves are a way of keeping their currencies competitive in trade terms, or even artificially weak. But in turn, this would leave many questions about how all the mountain of debt denominated in USD (including but far from limited to US Treasuries) would be either be repaid or refinanced, given that the vast majority of foreign currency and corporate debt is USD denominated.

Secondly in terms of counterparty risk, it also leaves some questions about secured lending and collateral, and perhaps ultimately leverage. For many wealthy individuals and families, purchasing foreign property abroad is a means to access lending in a given country, as well as diversifying in risk terms. If fear of asset seizure becomes a more significant consideration, then the risks are two-fold, firstly demand for foreign property will likely be somewhat impaired, and secondly banks and other lenders may well look at applying larger precautionary 'haircuts' to potential secured lending, both due to seizure risk, but above all as borrowers may consider simply 'walking away' from the liabilities secured on such assets.

In conclusion, it should be stressed that many of these risks have been ever present, and have been an increasing consideration for many investors and lenders over the past decade. To a certain extent they have been largely trampled all over by central banks' financial repression, and the need to try and generate better real returns, by adopting a higher risk profile in portfolios. But with capital mobility likely to be an increasing concern for many, the need to protect capital access may become as significant a concern as both capital returns and protection.

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SUGAR IS FOOD AND ENERGY

We ended 21 in a positive note for Sugar with decent prices for producers and an expectation of greater trade-flow for 22.

The World Sugar Trade flow shrunk in 21 by an estimated 5,5 mln m/t to around 57 mln m/t. The drop in the flow of Raw sugars was around 3,6 mln m/t and for Refined/White sugars 2 mln m/t. Although the flow shrunk, India managed to export 2 mln m/t more than the year before. India proximity to Refineries (Raw sugar importers) and Refined/White importers helped a great deal given higher freight rates and container availability.

The Sugar S&D for April21/March22 was estimated to be 2 mln m/t. We estimated sugar production at 181,4 mln m/t vs. demand at 183,4 mln m/t basis R.V. (Raw Value = bringing everything to raw sugar basis). When we looked forward to 22/23 sugar year, we expected a small surplus, all going well and assuming that Sugar prices remained better than Ethanol in Brazil.

So, has anything changed? Well, there is a say that large crops get larger and India is certainly proving the point. The estimated acreage was around 5,5 mln hectares and may still be the case, but the Agri yields, given some better varieties, is leading to a larger crop, perhaps around 33,5 mln m/t. Total sugar production as of the 15th of March was already 2,4 mln m/t larger than last year, when the total production was 30,6 mln m/t.

> *"THE CURRENT ETHANOL DOMESTIC MARKET IN THE CENTRE-SOUTH IS EQUIVALENT TO AROUND USCTS/LB 18.80 BASIS 96 POL FOR HYDROUS ETHANOL, SIMILAR TO WHERE SUGAR IS TRADING"*

The larger Indian Sugar production with higher Sugar prices is leading to higher exports, perhaps over 8 mln m/t for Oct 21 to Sept 22, which may bring some concerns to the Indian government, as the next crop is not certain yet (acreage, weather/yields). The carry over for end of Oct 22 may be down to 7,3 mln m/t, around 3 months of domestic demand.

When we look at Brazil, the crop which just finished proved to be disappointing (low rainfall and frost) around 32 mln m/t. Brazil like many other Sugar exporting Nations had reduced exports and therefore the carry over into the coming crop year will be OK, just OK! So, what will the next crop be? Well, the rainfall and high prices will lead to a larger cane crop, estimated at 565/570 mln m/t (up from 521 mln m/t) which would lead to a larger sugar production.

As we stand, the current Ethanol domestic market in the Centre-South is equivalent to around UScts/lb 18.80 basis 96 pol for Hydrous ethanol, similar to where Sugar is trading. The question is what will happen to Crude prices going forward.

We have seen Crude prices shooting up from $90's to as much as $139 per barrel, on the Ukrainian invasion. We are now trading at $106 (after dropping to $ 96/97 on the 16/17th of March). There is a line of thought that believes Crude will stay strong and trading into $ 120/130 and therefore Gasoline prices in Brazil will rise further and Brazil will produce more ethanol than last year.

One point to take into consideration is that Brazil may produce 112 mln m/t of Corn about 25 mln m/t higher than 21 and therefore Corn Ethanol production could rise toward 4 billion litters, about 1 billion litters higher than 21.

Thailand is also having a greater cane crop, estimated at 90/92 mln m/t higher than 67 mln m/t produced last year. Higher Cane is leading to higher sugar production. Estimated exportable sugars could be as high as 7,5 mln m/t about 2,5 mln m/t higher than previous year.

When we look at Europe Sugar production, it improved to around 17,6 mln m/t including the UK, but remains lower than consumption. Exports and Imports were also lower and the carry over less than 2 months of domestic demand. With spot prices in excess of 600 euros per m/t, one would expect a return to larger acreage. Well, that's when the exceptions to the rule start.

The EU like the CIS, which grow Beet and have to rotate 25/30% of the land (planting something else than Beet) may find farmers "excited" to plant Wheat or Corn or some other form of Grain, giving the strong prices in the international market. The energy, transportation and fertilizer prices are much higher and herbicides/pesticides more prohibit in some Nations. The total EU and likely CIS Beet area may shrink rather than increase.

As we go forward, is likely we will have a bit more sugar, but due to more from cane rather than beet and depending on the weather for India, Thailand and Brazil but also the Brazil Sugar Mix (Crude -> Gasoline -> Real = Ethanol).

Sugar consumption may increase somewhat, despite higher inflation across the World (lower nett income), but will be production that may signal what prices may do. At this stage we see 2 to 4 mln m/t surplus for 22/23, all going well.

"THE ENERGY, TRANSPORTATION AND FERTILIZER PRICES ARE MUCH HIGHER AND HERBICIDES/ PESTICIDES MORE PROHIBIT IN SOME NATIONS. THE TOTAL EU AND LIKELY CIS BEET AREA MAY SHRINK RATHER THAN INCREASE."

So, based on the Sugar S&D and the fact producers are well priced for 2022, the pressure on prices is limited. What may send prices moving away from the current trading range 18/21 cts will be how "investors" see Sugar, in relation to the Energy sector (Crude/Corn/Cane/Beet) as well vs. other Agri Commodities.

We have seen Investors (Funds, Specs, Index) placing capital into sugar, but also taking out. Sometimes the "story" is better elsewhere, but overall, they are yet to go short and in the past few weeks they came back on the buying side.

As consumers are "chasing" the market, pricing/ buying in to weakness and Producers are relatively well priced for 2022, pressure on prices may only be stronger in case investors sell. May they decide to increase their longs, is likely that higher prices are possible. We assume the buying or selling decisions will depend on crop failures and Crude prices

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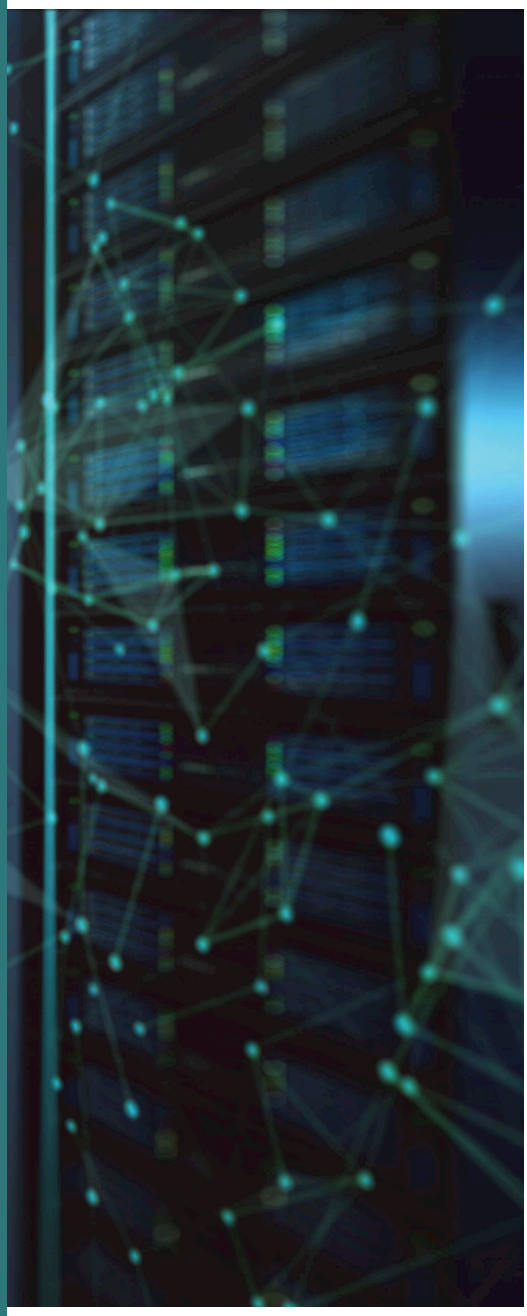


TRADING IN THE CLOUDS...

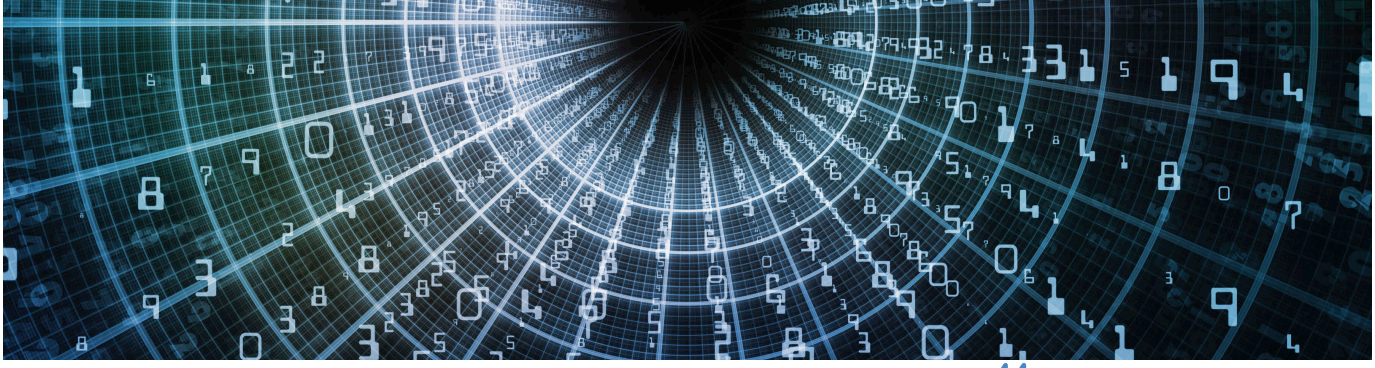
Is the Silver Lining in the Clouds...there?

A little while ago, two similar announcements took place, one from NASDAQ and one from the CME, that may have long lasting implications for anyone trading...well... anything! I'd like to discuss these announcements...and what they may mean.

NASDAQ announced that it planned to move away from having its own servers and on-premise systems and towards a cloud-based solution provided by Amazon Web Services, a Cloud based service. Meanwhile the CME plans to move core trading systems to Alphabet's, Google Cloud system. This could make what has amounted to hundreds of millions of dollars of spending by HFT's and others...redundant!

Up until now, sophisticated customers of these exchanges have sought to co-locate their own equipment as close as possible to the servers of the exchanges so as to minimise the response time and latency that are at the core business model of HFT's. This idea and process is now being turned on its head as Cloud computing relies on rented access to shared computing infrastructure that is, most importantly, likely to be at multiple locations. This will have an impact on the datacentres where current co-location is taking place, such as LD4 & 5, NY4 & 5 plus others.

> *"CO-LOCATION...IS BEING TURNED ON ITS HEAD!"*



There are a number of questions such a move will elicit. Firstly, why do it? Well, there seems to be two reasons as to why and another reason as to why now. The first reason as to why, are the potential cost savings to the exchanges. By not hosting and paying for your own banks of servers (and the time and cost in waiting to have them installed) but instead using a trusted partner firm that solely specialises in that field of business, has its pecuniary and time related advantages. A second reason as to why, is there are additional efficiency improvement benefits from centralised tools, especially disaster recovery and overall improved calculation efficiency. Then there's the reason as to...why now? Well, that is one of timing, specifically, what has been happening in the greater world outside the server vaults. The Pandemic and the risks that have been exposed from working from home, both for individuals and those working at the dedicated IT departments and datacentres, has shown a weakness and exposure to the way exchanges have in the past (and I suppose still do) work. The Pandemic was not the sole reason why this move has started and gained momentum...but it has been and still is, a major factor in the decision to move this way.

The next and possibly the major question, or series of questions, will revolve around...what will get in the way of the adoption of this new environment? You see, it is all good making these announcements...but how will it be seen through? This revolves around a series of points that will need to be addressed by the exchanges and equally importantly, by their sophisticated customers. Some of the more important ones are, in no specific order...addressing the culture at the exchanges and firms, the legacy systems, recruiting and bringing in specialised IT professionals and expertise, the uncertainty of the benefits of Cloud computing despite the perceived cost savings, the social impact plus the safety, security and speed of this new environment. To address some of these points raised, I will lay out the perception some have of the Cloud. I have heard the Cloud referred to as a big Black Hole, where data goes in and nobody really knows where it goes, if it is safe and can it be properly retrieved and manipulated. This, I suspect is a somewhat outdated perception as adoption in the wholesale markets has been conservative compared to some areas in financial services, such as retail banking where it has been more fully embraced. Additionally, the question of speed, in the past, has been a major one. Yet the speed of calculation has become so much better with Cloud computing, than compared to on-premise systems that may not be up to date or at an optimum efficiency. However, speed of calculation is one thing, speed of access will be a bigger issue...and one the HFT's and others will need to address. This is probably the biggest question that will need to be answered. How will HFT's survive and flourish in this new proposed environment.

This leads me to the final point I wish to discuss – the timing of this whole operation. To take as an example, the CME & Alphabet's Google Cloud have signed a 10-year agreement to move from their current system to the new Cloud based one. This means that we will be well into the 2030's before this will all, hopefully, be finished... or at least...completed (there's a subtle difference between those two words). This seems like an inordinate length of time, as we may see many who start the project no longer be there towards its completion. However, I would argue that you may well need that 10-year timescale, to move such a huge undertaking plus time for existing stakeholders along with newly trained specialists, to deploy in this brave new environment. Additionally, this may well bring in new market participants, those not wrapped around earlier legacy systems or without behind the times thinking, who may indeed replace existing stakeholders. Thus, the trading world may look very different in 10 years, compared to what we now have.

> *"THIS COULD MAKE THE SPENDING OF HUNDREDS OF MILLIONS OF DOLLARS... REDUNDANT!"*

One thing looks certain. The Cloud is becoming the single biggest enabler of modernisation and automation in the world today...everywhere! The evolution of the Cloud and its effects on trading may become the biggest risk to those not adapting or evolving. It is worth remembering, the Cloud will not pause – for them to catch up.

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WHAT DOES IT TAKE TO BE A TRADER?

While researching my latest book, I asked some of the world's leading agricultural commodity traders what qualities they looked for in a trader.

Alex Sanfeliu, the head of trading at Cargill, told me that he looked "more and more for traders with a mathematical background" and that compared to the past, he now looks for traders "in tune and familiar with new technologies."

"That is what has changed," he added, "but most of the characteristics we look for in a trader have not changed. We seek people with strong values and a developed sense of ethics, analytical, resilient, competitive, curious, fast learners, and who enjoy working under pressure. I emphasise the word 'enjoy'. We don't look for people who can work under pressure; we look for people who enjoy working under pressure and have a risk appetite."

Todd Thul, the Head of Grains at Cargill, said he was "always looking for someone cool under pressure." He explained that "the moment when everybody else is panicking is usually when an opportunity presents itself. That's a complex characteristic to identify when you're interviewing somebody, but it is something that I'm always looking for."

Todd also stressed the importance of balance. When he was interviewing, he said he looked for "someone with an appetite and understanding for risk, balanced with the ability to manage that risk."

Dave Behrends, the head of trading at Sucafina, agreed on the importance of balance. "I would look for someone who is not convinced that their view is always right and may even be a bit paranoid about what they might be missing," he explained. "Yet at the same time, someone with confidence, whose views will not wobble with every small market move and with the conviction to stay with the trade if the data supports it. It is a tricky mix to find – the magic mix of humility and confidence."

Devashish Chaubey, Head of Rice at Olam, said that he looked "first for the desire and enthusiasm to work in our businesses, geographies, and products," but that, second, he looked "for a strong sense of ethics."

> *"WE SEEK PEOPLE WITH STRONG VALUES AND A DEVELOPED SENSE OF ETHICS, ANALYTICAL, RESILIENT, COMPETITIVE, CURIOUS, FAST LEARNERS, AND WHO ENJOY WORKING UNDER PRESSURE."*

"We work in complex geographies'" he explained. "We make it clear to recruits that we operate ethically. Even though it may make it difficult for them to do business in some geographies, they must accept it and find ways to do business ethically."

Feliks Khamaev from ADM stressed the competitive nature of the business and the importance of interpersonal relationships. "A young person needs to be hungry to advance and grow–to explore new markets and not be afraid to generate and express new ideas," he told me. "It is not enough to read the market correctly; a trader must have the initiative to create new ideas and put them into practice."

"Trading is about interpersonal relations," he added. "To achieve recognition, you must build your brand in the eyes of your colleagues, your reports, your management, and your clients."

Several interviewees stressed the importance of teamwork. Alex Sanifiu told me that he would not hire anyone who was not a team player. "Connectivity and working in teams are at the heart of our culture," he explained.

Todd Thul added that the best teams are diverse ones. "It makes business sense for Cargill to value and seek out diversity," he told me. "We want the best teams – and the best teams are diverse."

"If you visit our trading floor here in Geneva," he continued, "you'll see people from all over the globe, and this is what we want. We seek out different perspectives – different ways of looking at things. We need people to challenge assumptions and avoid groupthink. A trading team must value any opinion and include it in their analysis to be successful. The key to any successful trader is to embrace and include all opinions."

"And the last thing is leadership," Todd added. "I believe that no matter what your role is, leadership is a high-value characteristic: how you manage yourself, how you interact with people, how you handle adversity. These are all relevant attributes for somebody running a commercial business, such as a trading desk."

It is clear what trading companies look for in recruits, but what do candidates look for in their future employers?

Devashish Chaubey told me when he interviews candidates, they all ask him what Olam does for the global good. "Young people today are purposeful in what they want to achieve during their lives," he explained. "They want to work for a company that shares their values and where they can make a difference." What else should a candidate look for in a potential employer? Jean-Luc Bohbot, the sugar head at Wilmar, told me that a young person thinking of becoming an agricultural commodity trader should look for "a company used to taking on recruits - a company which has a whole training process in place."

Perhaps more importantly, he added that they should "look for a group with the resources and the focus to profit from the decarbonisation of the economy. The energy revolution requires huge capital and a global footprint."

"Commodities will be full of opportunities for young talented people," he continued. "The sector is a fascinating mix between the 'traditional economy' - still at the junction of cultures and continents - and the 'new economy'

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MARC OSTWALD
Global Strategist & Chief Economist

As our Global Strategist & Chief Economist, Marc spends his time analysing and forecasting the impact of macro / microeconomic trends and examining (and where necessary challenging) market psychology. The processes of globalization, the ensuing credit crisis and the changed dynamics of global growth have served to accelerate a process of researching and investigating new and developing markets and economies.

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Marc Ostwald's Investing Channel Broadcasts
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EDDIE TOFPIK
Head of Technical Analysis & Senior Markets Analyst

At ADMISI, Eddie produces & publishes Eddie's Crayon's, a series of weekly, daily and special event Technical Analysis Reviews on FX, Stock Index Futures and Commodity Futures. He is a regular commentator on ADMISI's YouTube Channel plus others such as the Investing Channel and at online events such as Commodity Trading Week Online and Energy Trading Week Online. He has additionally spoken at many international conferences and seminars. Eddie is a Director of the Society of Technical Analysts, the oldest and largest Society promoting Technical Analysis, it's education and accreditation and a member of ACI-UK Financial markets Association.

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Eddie Tofpik's Investing Channel Broadcasts
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S&P GLOBAL COMMODITY INSIGHTS GENEVA SUGAR CONFERENCE

26/04/22 | 12.40PM - 1.10PM BST

PRESENTATION:

ADMISI Chief Economist Marc Ostwald will be taking part in a keynote Macroeconomic Outlook presentation: Impact on sugar markets

CLICK HERE TO VIEW THE EVENT WEBSITE

COMMODITY TRADING WEEK

26/04/22 & 27/04/22

PRESENTATION:

ADMISI Head Of Technical Analysis Eddie Tofpik will be taking part in a number of panel sessions and presentations.

CLICK HERE TO VIEW THE EVENT WEBSITE

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TESTIMONIALS

BLONDE MONEY

HELEN THOMAS, CEO

The Ghost in the Machine is one of the few pieces I read cover-to-cover because I always learn something new. It's concise and thought-provoking: two qualities never more in demand than in our current world. bringing more disruption than 2020'?

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2021 EDITIONS
THE GHOST IN THE MACHINE

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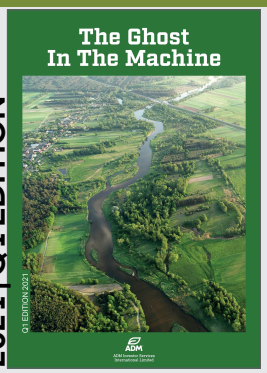
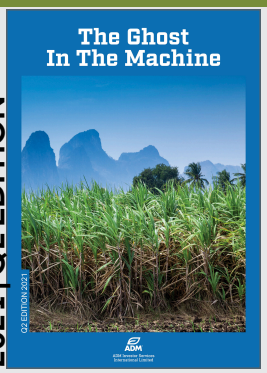


2021 | Q2 EDITION



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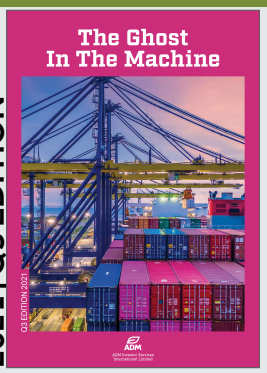

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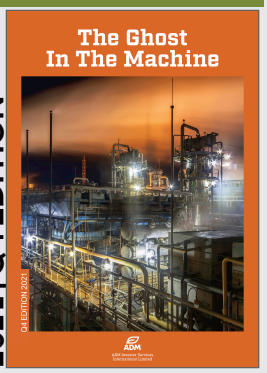

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ADM Investor Services
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Q1 EDITION 2022

The Ghost In The Machine

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