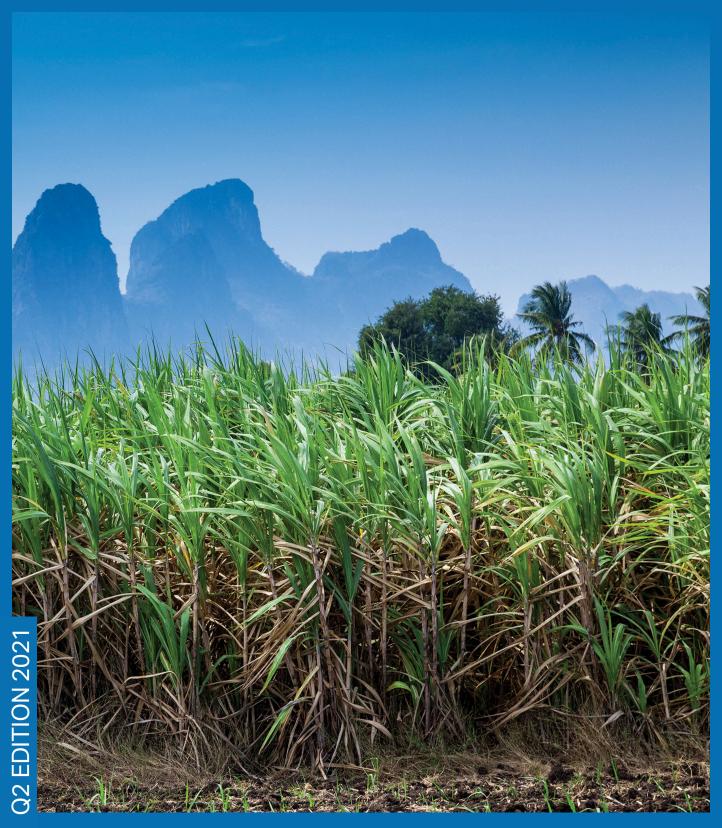
The Ghost In The Machine





EDITORS NOTE

Q2 EDITION



Recovery, Pandemic, Supply Chains, Weather, Sugar, Grains, Super-cycles, ESG, Bitcoin, Football.

Welcome to the June 2021 edition of the Ghost In The Machine, as ever encompassing a broad spectrum of issues from supply chain disruptions, ESG, central bank liquidity to commodity supply and demand outlooks, and the fluid and uneven economic impact of the pandemic.

While China is at the vanguard of regulatory interventions to rein in Bitcoin and crypto trading, ESG considerations are also getting much airtime, though as our article highlights the Social and Governance issues are as significant as often misleading discussions about the Environmental impact. China's voracious appetite for commodities, above all in the past year, is always a key element in terms of S&D prospects, but as Sugar, Grains and oilseeds markets have shown, weather effects remain key and all too often not quite in the way that is assumed, we take a deep dive into current outlooks.

We also look at the lessons from previous commodity supercycles, and what can be learnt. For many the assumption is that central banks tapering QE programmes will likely have a major impact on risk assets, and rate hikes even more, but perspective is needed.

Supply chain disruptions and bottlenecks were always a likely phenomenon as the global economy gets on an uneven road to recovery. However there is little discussion about their pre-pandemic antecedents, what role these will have in determining how long it will take to resolve them, and little consideration about the longer-term fall-out in terms of changing demand, productive capacity or the impact of climate change initiatives.

The attempt to form a break away European football Super League (ESL) crashed on the rocks of public outrage, but the legal ramifications are a good deal more profound, and will likely rear their head again in the not too distant future, as we discuss.



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THE GHOST IN THE MACHINE

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THE ESG OF BITCOIN! WHO DOES WHAT & WHERE...AND THE ENVIRONMENTAL, SOCIAL & GOVERNANCE COSTS INVOLVED.

Bitcoin mining...the hydro-electric, coal and ESG costs.

The following piece is I suppose, a follow on to my article back in March, 'ESG...another buzzword to try and remember...!'. You see, I have been an advocate of Bitcoin ever since I started issuing Technical Analysis market commentaries on it, back in September 2015. Then it was trading around USD 350 per Coin. I have written articles and spoken about it many times, how I liked it as a concept, ...being a version of 21st Century Gold, etc...! I still find it and blockchain's elegant solution to many problems, attractive. However, this article is not about the beauty of Satoshi Nakamoto's idea. Rather, it is about the real-world cost of mining Bitcoin...and other Coins...and how a good idea has met up with the reality of real world environmental, legal and social costs.

In part, this was prompted by the excellent piece Chris Clothier, Fund Manager at CG Asset Management wrote back in April...and part by the story I heard some while ago, about a town in China that believed it saw economic growth prompted by strong electricity demand from a relatively small (I seem to remember), nearby, hydro-electric dam. In this story, the demand, some three quarters of the power output from the dam, was being channelled into a new industrial area near the town. However, the town's officials saw relatively few local people working there. Indeed, they saw very few people seemingly working there at all. Their investigations were prompted because the town was having rolling power blackouts, or outages, due to the demand from this industrial area. When investigated, they found a huge warehouse had been converted into a server farm designed to mine for Bitcoin...and

demand from the air conditioning and cooling units used to cool the servers...were the main cause of the electricity demand that was now starving their town of electricity....and in the eyes of the officials, not producing viable products they could use, or could sell. I recall in this story, they cut off the electricity more or less, immediately. You'll have to forgive my lack of detail on this...but it was some two or three years ago...maybe more, that I heard of this story

So...let's now take a look at what the costs of mining Bitcoin really are. It is estimated that electricity consumption for Bitcoin mining alone, so no other Coins, is about 116.38 TWh per year. To give you an idea of scale, that is somewhere between the whole of the Netherlands...and the UAE in size1. This data is inexact, as it is at least a year and a half old and as we all know. Bitcoin has undergone some big movements in the meantime. Mining is done close to cheap sources of electricity because of the computer power necessary...and the related cooling costs. Now, please don't think of the main mining activities being small little operations, they are not! They are done in huge 'pools' that combine to reduce costs of production. Before I go into these pools, let's look at the main cost – electricity! One of the cheapest sources of electricity in the world is in China. It is there that we find 65% of all mining operations taking place². The cost of electricity is cheap there compared to other countries, something like USD 0.08 per KWh, based on 2011 number, compared to the USA's cost of USD 0.12 per KWh, the UK's USD 0.20 per KWh or Germany's USD 0.35 per KWh³. The main reason for the low cost, has been the extensive growth of hydro-electric dams, many originally built to help the aluminium smelting industry plus the alternate cheap, though polluting coal fired power stations, that have in a number of cases been state subsidised. In 2006, China produced 79% of its electricity by coal, compared to 16% by hydro-electric. It is estimated that in 2030, those numbers will be coal 75% and hydro-electric 13%⁴.

¹ US EIA data 2019.

University of Cambridge, Centre for Alternative Finance.

³ IEA, EIA, National Electricity Boards, OANDA & Shrinkthat footprint.com

EIA, International Energy Outlook 2009.



I WANTED TO BRING TO YOUR ATTENTION, SOME OF THE 'HIDDEN' COSTS OF BITCOIN MINING

So you can see on the face of it, the environmental impact is significant, taking these percentages on board. Yet there have been some reasons why Bitcoin mining has benefitted from being close to hydro-electric sources. You see, in the rainy seasons in China, predominantly in Spring and Summer, there is an excess of hydro-electric generated electricity. For example, in the Garze prefecture in Sichuan, hydro-electric power plants generated 41.5 billion KWh in 2017, of which 16.3 billion KWh went to waste, effectively too much for the grid⁵. That would have been fine to use for Bitcoin mining...but there is pressure now to rein in the use of hydro-electricity for Bitcoin mining and so the alternative is back to using coal powered electricity. This was highlighted by a coal mine flooding in Xinjiang during the weekend of the 17th – 18th of April this year. This flooding led to a blackout that halted up to a third of Bitcoin's global computing usage and brings me nicely as to who are the miners, who are the 'pools'?

Well, the mining pools are collaborations between individual miners and major mining companies. They combine their 'Hashrate', the computational power needed to mine and process transactions for a blockchain, to get a better chance of finding a block. Four of the top five pools are in China and many miners outside of China are lured to join these pools because of the steady, yet small, earnings from a pool, compared to the high rewards and low odds of solo mining/small pools. Number one, is F2Pool (aka DiscusFish). They have mined 18% of all blocks in the last year and control 18 EH/s (1 EH/s or 1 Exahashes per second is a quintillion hashes per second). The second largest is Poolin, with 13% of all blocks in the last year and controlling about 10 EH/s. Huobi Pool is third with 9% of all blocks and 11.5%. Another large Chinese mining pool is AntPool. They've mined 8% with a hashrate of 10.9 EH/s. However, there is speculation that they may be much larger as they may control other mining pool such as Via BTC, BTCcom, GBMiners, CANOE and maybe others⁶. It is worth noting the following. The supply of Bitcoin is finite. There are supposed to be 21 million Bitcoins in total. About 89% have been mined, leaving only about 2.27 million still left...though this could theoretically, take up to 2140 to mine.

5 Coindesk, 28 April 2020.

6 Jordan Tuwiner, founder But Bitcoin Worldwide, May 2021.

However, the cost of mining well before then may be prohibitive due to splitting. When that happens, the servers employed in mining, would only be able to earn transaction fees for putting together transactions, an amount that's a lot less than the reward for mining. This is unless things change. I would just like you to think that over, along with all its ESG implications. OK...so back in January, Chris Clothier laid out his opinion in a special report as to why investors should beware of Bitcoin. I'll concentrate on the three key ESG elements of his paper. He started with the Environmental implications and stated that Bitcoin was '... nothing short of an environmental disaster. No investor who upholds ESG principles should own it under any circumstances.' He was not pulling punches as he laid out other reasons why...but I'll concentrate on the ESG implications in this short piece. Thus he continued '...it is estimated to consume as much electricity as Chile and have a carbon footprint equal to the entire population of New Zealand.'. In a second point, he wrote about the Social impacts, thus 'Turning to social issues, the primary use of case of Bitcoin outside of speculation, iss for settling illegal transactions: drugs, money laundering, child pornography, terrorism, extortion and assassination.' In a third and final point, he wrote about Governance, the G in ESG, 'Governance is also problematic, the decentralised nature of Bitcoin has certain attractions, but equally that lack of accountability presents problems especially when coupled with the risk of a malign actor taking control, of the network...Trading volumes of Bitcoin remain small relative to its market cap and market makers are not subject to the same scrutiny as in traditional markets."7. These are some of the highlights from a paper that reads for 12 pages...but I think you get the message.

In response to this, Brushify.io's CEO Joe Garth argued that '...the sustainability argument is incredibly short-sighted. Bitcoin uses a fraction of the energy that the conventional banking system requires. Go to New York and look at the skyscrapers lit up like Christmas Trees, filled with computers. Think about the employees of those banks and all the energy they're using pushing numbers around spreadsheets manually. The transportation of those employees, the food for those employees...the costs of traditional banking go on and on.'. He added that 'Banking has millions of workers that are no longer needed...'

They continued to respond to each other...but that conversation is not the subject of my piece. I wanted to bring to your attention what are some of the 'hidden', for want of a better word, costs of Bitcoin and cryptocurrency mining and who actually are the miners plus an insight into their world...and how they do it.

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We need to talk about Bitcoin, Chris Clothier, CGAM January 2021.

⁸ Bitcoin v ESG: Fund Manager Chris Clothier warns against BTC, Rick Steves, FinanceFeeds, 28 April2021.



ALL EYES ON BRAZIL?

As we reach the middle of 2021 the pandemic continues to rage across the many regions of the globe and is still bringing misery and tragedy to millions of people. The light at the end of the tunnel has been a long time coming as new variants of the virus appear and the vaccination programme has stuttered in many regions. Nevertheless, the world has slowly untethered from the restrictions and with that has come economic revival and growth.



Demand for commodities, in general, has dramatically increased, resulting in rocketing prices and the continuing talk of a commodity super-cycle developing. The scourge of inflation has reared its head fuelling things further. Sugar has been caught up in all the excitement underpinned by bullish fundamental sentiment. At the beginning of the year prices had reached nearly 16 cents as the funds bought, it remained dry in Brazil and the Indian government had not announced their export policy for the season.

Fast forward nearly six months and prices have improved further. Indeed, back in February, prices hit their highest level in nearly 4 years reaching just shy of 19 cents. Since then the market has fallen back to below 15 cents before rallying twice to over 18 cents. A combination of fund buying, a continuing drought in Brazil's CS and general uncertainty has seen the market remain volatile.

A lack of producer selling has also exaggerated the rallies after Brazilian mills priced much of their exports for 2021 when the BRL was weak and prices pushed above 13 cents.

The Indian government eventually announced their export policy some four months after the beginning of the season. This prompted many to assume that they would never be able to fulfil the target of six million tonnes of exports. However, their export campaign has been remarkably successful with this export target probably hit by now. Exporters have been aided by low exports from Thailand after a disastrous season when production barely reached 7.5 million tonnes which was nearly half the amount produced just two seasons earlier. India has managed to plug the supply gaps in a season that has seen a small deficit in global production. Total Indian sugar production this season has reached just under 31 million tonnes and the prospects for next season is just as good if not better

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especially as the country looks likely to receive three consecutive years of good monsoon rains. Efforts to increase ethanol production are being cranked up by the government but it is hard to see any impact on sugar production for next season. Undoubtably, the government are likely to have to subsidise exports again but they are unlikely to be as generous as in the past. India has been particularly hard hit by Covid over the past few months and, consequently, consumption has been hit. Therefore, their huge stocks have not diminished despite the exports and are likely to end at a similar level this season as last.

Brazil regained its position as the world's largest sugar producer last harvest with their CS region producing a massive and record 38 million tonnes. This was due to ideal crushing weather and a high sugar/ethanol split due to a, pandemic inspired, collapse in ethanol prices. Unfortunately, the weather has remained dry over much of southern Brazil and has impacted on the cane. How much is still to be established, but most analysts suggest 35 million tonnes at best, with some much more pessimistic. Cane does have a remarkable ability to recover with rain, but the sporadic rains received recently have not been sufficient to spark any significant revival as yet. So far, the harvest has seen better than expected production, but there is a nagging fear that yields will soon start to fall, and as seasoned traders know

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when production starts to fall it rarely recovers. Therefore, all eyes will remain on Brazil and the twice monthly Unica harvest updates.

Elsewhere, things are rosier for 2021/22. Thailand is expected to see an improvement in their cane crop resulting in, perhaps, around 10 million tonnes of sugar. EU production is expected to improve from last season's poor output despite the continuing issues with the banning of Neonicotinoid pesticides and early damage to the emerging beet plants in France and, to a lesser extent Germany due to a late hard frost. Prospects for slightly higher production in US and Russia while most other producers see similar figures to this season.

Most analysts are, currently, suggesting that the global S&D will move from a small deficit this season to a small surplus next season of perhaps around 2 million tonnes. Needless to say, if the situation in Brazil deteriorates further then this surplus could quickly disappear. However, as has been the case during the current season, India exporters will be ready to plug any supply gaps. Therefore, the size and scope of any export subsidy will be important, pricewise, later this year.

Global consumption has taken a hit over the past 15 months due to the pandemic and resulting lock-downs. Many were confident consumption would soon recover once the vaccine rollout allowed

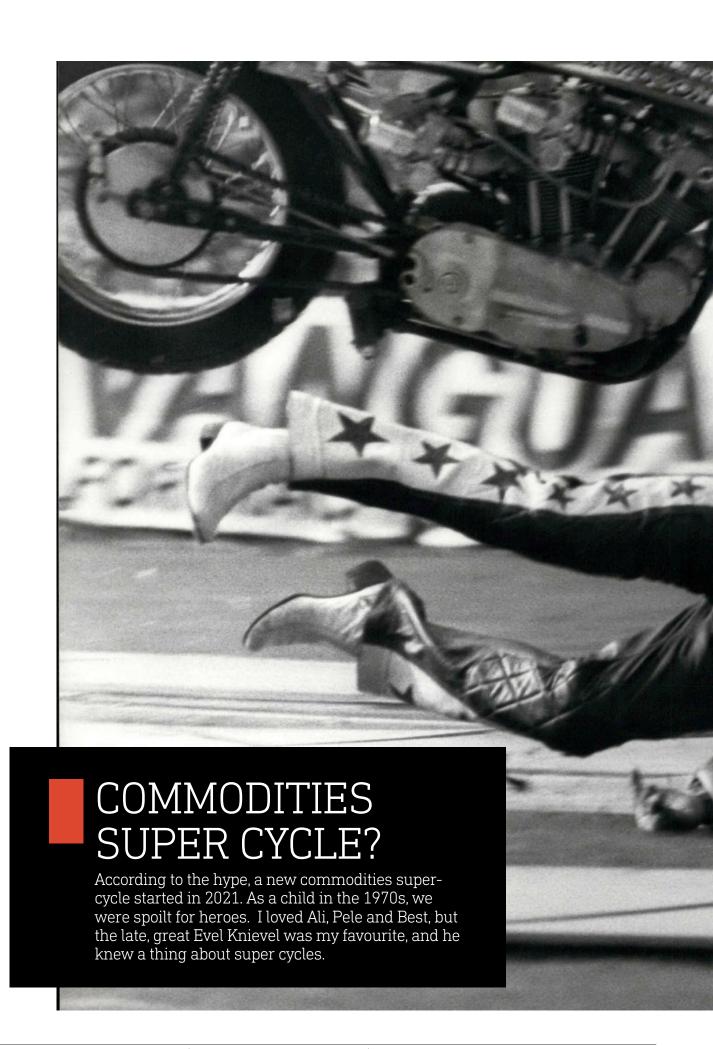
some sort of normality. However, restrictions remain in many areas with new lock-downs in some countries replacing the lifting in others. The ISO recently cut their global latest consumption estimate for the current season by 1.4 million tonnes from earlier estimate due to an upsurge of the virus in Brazil and India. Nonetheless, it would seem inconceivable consumption will not improve over the coming year but probably only to the levels seen pre-pandemic.

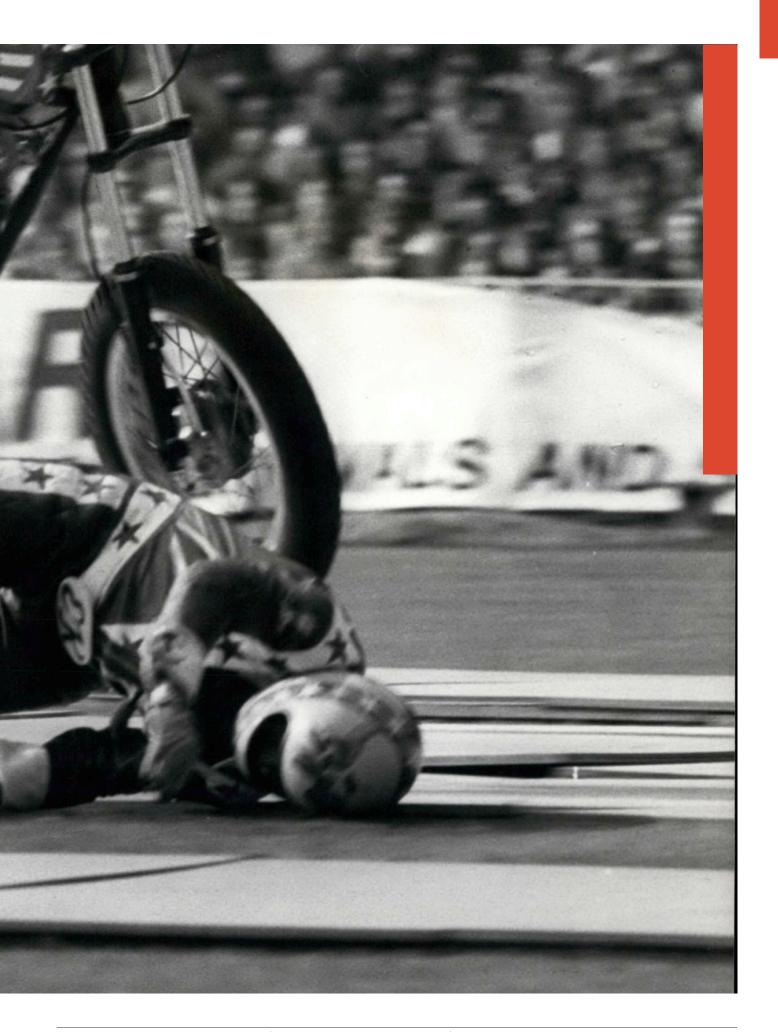
The excitement of a super commodity cycle developing has abated somewhat from a few months ago. Nevertheless, agricultural commodity prices remain strong, underpinned by bullish fundamental weather issues and robust demand from the likes of China. Add concerns over rising inflation and the funds remain steadfast long. They will also be aware that food prices are at their highest for more than 10 years according to the United Nations food agency although, some would contend the funds have been instrumental in the increases. They are sitting on very healthy profits but are unlikely to relinquish their positions for the time being, unless the pandemic takes an unexpected turn for the worst.

Sugar will continue to be influenced by the wider economic picture but, ultimately, it will be Brazil's sugar production that has the greatest say in price direction over the coming months and, perhaps, for the 2022/23 season as well.

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SUPER CYCLE, CIRCA 1975

Evel would jump on bikes you would now think twice about riding to the shops, whilst wearing less protection than many London commuters.

Anyone who saw his attempt to jump a Harley Davidson over 13 buses at Wembley Stadium won't forget that super cycles always look impressive on the way up, but don't always finish as hoped.

SUPER CYCLE, CIRCA 2021

Coming back to 2021, the Commodities Super Cycle was wheeled out just as the world promised to emerge from last year's COVID lockdown.

At first glance, the bullish commodity arguments looked reasonable:

- Equities had performed well from Q2 2020, so profit takers may need a new focus for their cash, especially if the Biden administration was less friendly to US corporates?
- Interest rates remained near zero or negative, with significant liquidity available
- The promised shift to e-vehicles would require a massive build-up of the electrical grid, with long term demand for copper, cobalt, lithium, nickel and aluminium

Car stories have been used to spark previous investor interest in commodities:

- Palladium: Auto catalyst demand and fears of restricted Russian supply were behind the palladium rally of 1997-2001, with Ford unlucky to buy at the top.
- Cobalt: Battery demand for electric vehicles and cobalt production concentrated in DRC saw cobalt prices rise from sub \$30k in 2016 to almost \$100k by 2018, in time for the DRC elections.

Chart 1: LME 3m Copper US\$/Mt



Source: ADMIS / Reuters / LME

SRB HAS BEEN CLAMPING DOWN ON COMMODITY PRICE SPECULATION AND HOARDING IN RECENT MONTHS

It's not only raw materials which are recycled, with the "commodities as a hedge against inflation" and "portfolio diversifier" arguments wheeled out this year, having been well used in the mid-1990s and from 2003 through 2007 to attract new investor interest. Remember (or forget) that during both those earlier periods, we saw no traditional US inflation (wage and manufacturing inflation drivers had been exported to China) and commodities gave no diversification benefit when financial markets collapsed in 2001 and 2008? Perhaps third time lucky?

TIMING IS KEY

Some observers of the 2021 Super Cycle may think that the better time to buy metals was in Q2 2020, after the COVID induced global economic slowdown saw metals prices plummet.

LME Cu fell from \$6300/Mt to sub \$4400/mt by March 2020, attracting bargain hunters into the market. As with many price spikes, there's often more believers in copper at \$10k than at \$5k (bitcoin buyers take note).

China's State Reserve Bureau are believed to have a history of taking large positions in physical copper at low prices, which they tend to liquidate at higher prices, having previously bought significant tonnage in 2008/2009 around \$3000/Mt.

The SRB may also have been copper buyers at the 2020 price lows, but the **SRB** has been clamping down on commodity price speculation and hoarding in recent months, also suggesting their strategic reserves could be sold to stop prices overheating.



SUPER CYCLE 2005 - LIU QIBING

A lot has changed for Chinese copper trading since 2005, when Liu Qibing of China's SRCSR got caught out by rising copper prices. Back then, Liu Qibing was very influential in the copper pre-market, setting the price mood before the US market opened. With copper prices reaching the previous highs of \$3000/Mt, the market consensus was that copper wouldn't hold above \$3500/Mt and certainly not exceed \$4000/Mt.

In addition to regular short positions, Liu Qibing traded structured products to exploit his market view, buying well below market with punitive conditions at \$3k and \$4k, and selling well above market with punitive conditions at \$3k and \$4k. If copper had remained in the \$3k-\$4k range, the strategy would have paid off nicely.

In the event, speculative buyers pushed copper prices above \$4k where Liu Qibing's structured short positions doubled and his structured long positions knocked out, and the rest is history.

China has grown significantly since 2005, owning three of the world's four key copper trading venues (SHFE, INE and LME) and their manufacturing base consuming about half the world's physical copper.

Unlike 2005, when speculative traders ran the SRCSR out of its copper short positions, don't underestimate China's ability to influence commodity prices now, given their statements about overpriced markets.

SUPER CYCLE OR SPONGE OF EXCESS LIQUIDITY?

Aside from gold and silver, most commodities weren't seen as an asset class by mainstream investors until about 20 years ago.

The first investor wave into LME metals was 1994-1997, after Alan Greenspan recommended commodities as a hedge against inflation. LME metals sold off in 1996, led down by copper and the Hamanaka scandal, and this sell-off was followed by a short lived rally in 1999, with "Y2K" arguments suggesting that computers switching from year 1999 to 2000 would cause global logistics problems, promising to be bullish for commodities.

With Greenspan warning of irrational exuberance in the equity market and dot.com faltering in late 2000, he cut rates repeatedly in 2001 to successfully avert a "1989 Japan style" meltdown in the US equity markets.

Officially, US Fed policy uses rates to control inflation and unemployment, but it appears that rate cuts were used to protect US equities once equities became the mainstream vehicle for personal pension wealth in the mid- 1990s. (The Fed also cut rates in 2019, after Trump's China trade wars caused an alarming slide in US equities).

Whilst low rates have prevented significant equity losses, they may have helped cause other problems. The aggressive rate cuts in 2001 and 2002 together with weak equity performance encouraged inventive ways to find yield. Some banks used Collateralised Debt Obligations (CDOs) to improve investor yield, spreading risk across a large number of borrowers, with risk modelling approved by the ratings agencies. In reality a lot were poor credit risks (e.g. self -certified mortgages on low starter rates, which defaulted once the starter period ended), and the resulting housing boom-bust helped triggered the financial crisis of 2008.

ARE THE CURRENT COMMODITY AND BITCOIN RALLIES MERELY TEMPORARY SYMPTOMS OF EXCESS LIQUIDITY?

Against a backdrop of weak US equities and debt markets, and China transforming into a global economic power, commodity investment really took off in 2003. Investors bought metals first, then oil, and also bought into the risk diversification and inflation hedge arguments. When the markets collapsed in 2008, all asset classes suffered and a commodities position gave no meaningful diversification benefit.

Governments and Central Banks fixed the global financial crisis of 2008 using liquidity and low rates, in Quantitative Easing (QE) programs launched in 2009 which ran for almost a decade

Unlike mainstream equities and debt, the cyclical nature of commodity prices doesn't lend itself to long term "buy and hold" strategies adopted during 2003-2007. Investors have learnt to pick their opportunities, and tend to target commodities in years when equities and bonds look overdone.

In the last few years, commodities have also been compared to other "alternative investments". In 2020, Bitcoin was being touted as the "new gold", a viable long term store of wealth and a viable medium of exchange. The extreme volatility of the past few months damaged Bitcoin's credibility as a replacement for gold, and El Salvador's recent adoption of Bitcoin as legal tender may not be the best endorsement when seen alongside their chequered history of money laundering legislation.

Evel cleared the buses at Wembley in 1975 but landed badly, breaking his pelvis but still managing to walk out of the stadium.

Over the past 20 years, financial markets have become used to very low interest rates and access to a lot of cheap liquidity. Is 2021 the start of a commodities super cycle, circa 2003-2007, or are the current commodity and bitcoin rallies merely temporary symptoms of excess liquidity?

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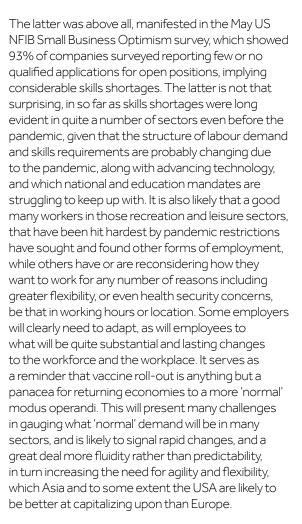


THE SUPPLY CHAIN DISRUPTION CONUNDRUM

There is little doubt that 'supply chain disruption' is one of the most topical issues of the moment as the world looks to a recovery from the pandemic. The bigger question is how much of this disruption is purely the result of what was always going to be an uneven recovery globally, and how much is due to rather more profound structural issues, which will take a lot more time, effort and above all investment to address.

For many, supply chain disruption primarily implies delayed delivery of raw materials or intermediate goods and parts due to logistical and transport issues or production issues, which will very likely prove to be temporary. The latter are clearly playing a part, but the current phenomenon involves a much broader spectrum of issues, which include concentration risk, perhaps most notably in the output of semiconductors, and above all being felt in the auto industry; production displacement as a consequence of the pandemic, and latterly in labour shortages as economies re-open, despite still high levels of unemployment.

SUPPLY CHAIN DISRUPTION PRIMARILY IMPLIES
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In terms of physical goods and raw materials, there are a number of themes that are emerging, many of which were nascent pre-pandemic, and others symptomatic of a world, which has been too complacent about supply chain security and concentration risk, just as it was about health and cyber security. This short article does not pretend in any way to be comprehensive, but rather to highlight some examples and underline that many are structural, rather than cyclical or transient. The semiconductor shortage is impacting a broad swathe of industries, and is both a function of production concentration risk, as well as a desire to

IT IS ALSO LIKELY THAT A GOOD MANY WORKERS IN THOSE RECREATION AND LEISURE SECTORS, THAT HAVE BEEN HIT HARDEST BY PANDEMIC RESTRICTIONS HAVE SOUGHT AND FOUND OTHER FORMS OF EMPLOYMENT.

become less dependent on output from China, in no small part due to US sanctions on companies like Huawei. It has to be said that both the US and Europe have been naïve in assuming that it was merely a question of looking elsewhere, without formulating and implementing plans to re-shore some of this. A look at ASEAN China trade also reveals that China has been quick to respond by increasing its FDI in ASEAN countries to boost capacity in a wide range of industries, with its share of FDI (in ASEAN) rising from ca. 10.0% in 2016 to some 40% in 2020 This serves two purposes, firstly to draw ASEAN more closely into its economic orbit, secondly to circumvent sanctions and anti-China sentiment, as well as reducing production (above all labour) costs in some cases. It also serves as a reminder that that the sort of linear, goal oriented thinking that all too often neglects a lateral and critical thinking perspective on systemic issues. It is, as has already been seen, a recipe for systemic bottlenecks; it is equally a product of modern era politics, where policies are formulated for short-term political gain and gratification, with almost no consideration of how a country's needs and development are best served in the longer run.

There are other issues, for example it could end up resulting in a build-up of excess capacity, and by extension inventories, which could in turn be the seedbed for the sort of boom bust cycle that has not been seen in manufacturing for many a decade, as globalization and 'just in time' production and delivery along with globalization had largely obviated, even eliminated such vulnerabilities. As much as the pandemic has resulted in hoarding (short-term phenomenon) and will continue to encourage establishing alternative supply chains, some of which will be redundant, this comes with a cost in terms of corporate capital allocation. To be sure, a super low interest rate environment and in some cases fiscal subsidies can offset this cost base increase, but could present risks going forward, when rates rise or subsidies are withdrawn. Many will argue that increased use of automated technology will provide a further offset, but this in turn comes at the price of creating less employment, which as the recovery from the pandemic gains traction will be a key consideration, as governments unwind employment support schemes, and companies re-assess demand profiles and revenue prospects,

and restructure their businesses to address the large volume of debt which has been accumulated. To assume that the number of winners from this process will be balanced out against those that need to consolidate or downsize is both rather too wholesale, and fails to consider how uneven the processes and outcomes will be, particularly as governments will doubtless fail to comprehend, let alone anticipate the consequences of their actions, which will be a complex challenge even if they did.

Transport and logistics, above all anything related to shipping, has been problematic throughout the pandemic, for a broad array of reasons. The industry has always had to deal with often sharp fluctuations in global trade, but the impact of the pandemic was eminently unprecedented in scale, above all the need to deal with production displacement, along with rapid and geographically very uneven swings in demand, which are set to continue for a protracted period, and the consequence that above all, ships and containers are all too often in the wrong place to meet these demand fluctuations. Increasing capacity is neither simple in the face of such violent swings in demand, nor practical for an industry that still has the memory of a 'big bust' post GFC, is also still dealing with IMO2020 requirements, and faces considerable uncertainty about how it will be required to meet climate change goals. It will also be wary of bulking up capacity to meet spikes in demand that will inevitably prove largely transitory, and then be left holding the proverbial baby once growth patterns stabilize, this was above all visible in recent US logistics managers' surveys. It can then evaluate it and respond to what emerges, and meanwhile it will welcome the opportunity to profit from what will likely be a period of better margins (as will many other sectors). Given that retail, wholesale and producer inventories remain at very low levels, and that these will take time (certainly into Q1 2022), logistics and transport demand should remain robust. The risk of substantial 'pass through' of rising raw materials and transport costs to consumer goods prices looks to be increasingly high, and it may well take time to dissipate, above all where the scope to absorb input cost increases has been severely impaired by the pandemic.

The final point relates to the oil sector, and again to the apparent primacy of linear, goal oriented thinking, and a considerable absence of systemic and practical considerations. Leaving aside the likelihood that the recovery in global demand will be uneven geographically, above all subject to interruptions due to local spikes in infection rates with associated

activity restrictions, as has been witnessed in South and East Asia recently, the hydrocarbon sector faces the challenge of meeting climate change goals. It has been assumed by many that even if OPEC+ proves to be cautious in restoring output, above all to continue supporting prices, any unexpectedly sharp rise in demand would be met with increased US shale sector output. But with banks and funds under pressure to withdraw funding for the sector, and US banks already reticent to lend due to the high levels of debt in the shale oil sector, and the fact that upstream investment in the oil sector since the 2014/2015 price collapse has been well below longer-term averages, the risk that demand outstrips supply over the longer run is rising.

Indeed, with many western oil majors likely to reduce investment, the risk is that there will be ever greater dependency on investment by NOCs (national oil companies) from OPEC, Russia and China. The pace of reduction in output that would be ideal to accelerate efforts to meet transport and power generation related climate change goals is an ideal goal, which does not take into account the time and investment that will be required to achieve a secure and sustainable level of output from alternative energy sources in practice. There are also the further considerations: a) it remains unclear when the auto sector will be in a position to mass produce affordable non-hydrocarbon powered vehicles; b) demand for petrochemicals and plastics will remain high; and c) most importantly, who will finance energy transition in the developing world, given that many of those economies, even in the relatively well advanced economies of central and eastern Europe. let alone Africa or Central and South America will struggle to overcome their dependency on coal, let alone hydrocarbon and gas? If the transition is not managed practically and co-operatively, the risk of a sustained oil price spike looks to be quite high.

Supply chain disruptions are therefore likely to remain a key consideration for a protracted period, and it should be added that it will take a considerable period of time before some visibility is established on how much productive capacity has been permanently lost. This will also have a considerable bearing on the global recovery, and doubtless lead to further bottlenecks.

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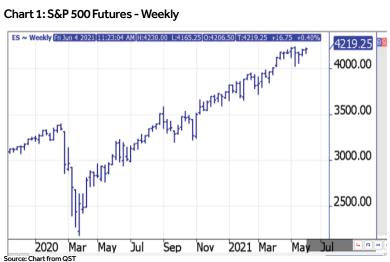


WILL A FEDERAL RESERVE TAPERING DERAIL THE BULL MARKET IN STOCK INDEX **FUTURES?**

The bears on stock index futures have been encouraged by recent comments from Federal Reserve officials that it may be time to start "thinking about thinking about tapering" the Federal Reserve's massive asset-purchase program.

The bears on stock index futures have been encouraged by recent comments from Federal Reserve officials that it may be time to start "thinking about thinking about tapering" the Federal Reserve's massive asset-purchase program. The thought process is that anything that pushes up interest rates, as would be the case in the event of a tapering, is bearish for stock index futures. So far stock index futures have been only temporarily pressured by talk of tapering and probably for good reason.

Chart 1: S&P 500 Futures - Weekly



Federal Reserve Bank of Dallas President Robert Kaplan said it is time for Fed officials to start discussing how to reduce their \$120 billion a month in Treasury and mortgage-bond securities buying. He said, "I think it would be wise sooner rather than later to begin gently taking our foot off the accelerator." In a similar vein, Federal Reserve Bank of Philadelphia leader Patrick Harker said, "We're planning to keep the federal funds rate low, but it may be time to at least think about thinking about tapering our \$120 billion in monthly Treasury bond and mortgagebacked securities purchases."

And Randal Quarles of the Federal Reserve said that if the U.S. economy turns in the strong performance he now expects, the door will soon open to a debate about slowing the pace of the central bank's asset-buying stimulus. Mr. Quarles said, "I am quite optimistic about the path of the economy." He said that he expects inflation to temporarily exceed the Fed's 2.0% target.

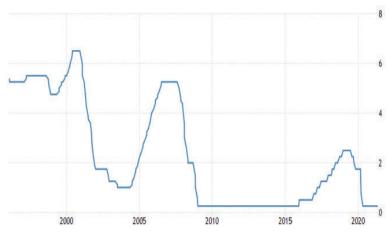
However, there has been one notable dissenter to the Fed's mantra of "thinking about thinking about tapering." Federal Reserve Bank President John Williams said, the U.S. economic recovery still needs to make more progress before the Fed should pare its purchases. "I just don't think the time is now to take any actions." In addition, Williams said the U.S. economy remains some distance from where it needs to be for the Federal Reserve to pull back on its \$120 billion a month in bond buying stimulus. He said the economy has improved and is on a good trajectory, but we're still quite a way off from reaching this substantial further progress before looking to start slowing the pace of asset purchases.



TOO MUCH FOCUS ON TAPERING?

In my opinion there is currently too much focus on when the Federal Reserve will taper its asset purchase program. Whether there is an earlier than expected tapering or a delayed tapering, the fact remains that the fed funds rate is likely to remain at the historical low of zero to 25 basis points for a while. While I believe there will be a tapering at some point, most likely it will take place later rather than sooner.

Chart 2: U.S. Federal Funds Rate



Source: ©RateSource: Tradingeconomics.com, Federal Reserve

BULLISH INTEREST RATE INFLUENCE TENDS TO DOMINATE ALL OTHERS

There is one fundamental that has dominated all the way up from when this historic bull market first began in March of 2009, and it remains with us today. This fundamental ultimately dominated over a multitude of temporary bearish influences that have sprung up in the past decade, including political turmoil, banking crises, crude oil price shocks and severe weather related economic downturns. That dominant fundamental that eclipses all others in the long run is the interest rate influence. As interest rates in the U.S. and globally remain near historic lows, stock index futures have been underpinned by cash inflows that in the past, distant past might be more appropriate to say, would have moved into credit markets.

EVEN WHEN THE FEDERAL
RESERVE DOES TAPER ITS
ASSET-PURCHASE PLAN,
MY VIEW REMAINS THAT AN
EARLIER OR LATER TAPERING,
WOULD ONLY REPRESENT
A PARTIAL WITHDRAWAL OF
ACCOMMODATION

GLOBAL INTEREST RATES REMAIN A MAJOR TAILWIND

There is still plenty of accommodation in the international banking systems, as well, despite some central banks actually announcing a tapering schedule in addition to talk of withdrawing other forms of accommodation. In spite of some central banks tilting toward a less accommodative tone, there is still plenty of stimulus remaining. Keep in mind that some countries in Europe and in Japan continue to have negative interest rates. Money tends to flow to where it is treated the best, and currently that asset-class is equities.

Even when the Federal Reserve does taper its asset-purchase plan, my view remains that an earlier or later tapering, would only represent a partial withdrawal of accommodation. A Federal Reserve tapering will not derail the bull market in stock index futures. The global reflation scenario will still largely be on track and will remain the ongoing dominant fundamental that supports futures in the long-term. Higher prices are likely for U.S. stock index futures.

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SUGAR IS SPARKLING AMONGST AGRI COMMODITIES

The Commodity boom we are experiencing today, triggered by risk diversification and weaker Dollar is being supported by fundamentals to a certain degree, like the weather and still strong demand.

Sugar has been one of the main beneficiaries of the investment flow and the lack of producer selling for 2021 (plenty done from mid-2020) is allowing prices to stay strong. Consumers have been absorbing any major sell offs as they get on with their demand requirements and pricing.

BRAZIL SUGAR STOCKS FOR END OF APRIL 21 WERE ESTIMATED AROUND 3 MLN M/T VS. 4,3 MLN M/T BY END OF APRIL 20

SO, HOW IS THE SUGAR S&D LOOKING AHEAD?

We had some crop disappointments in 20/21 in Thailand, Europe, CIS this was alongside others that didn't change much including Australia, Central America etc... The highlights in terms of higher crops were Brazil and India in 20/21.

Consumption saw a number of disruptions due to lockdowns and economic downturns, as well as a shift from industrial demand to retail, and although expected by many, the overall world sugar consumption wasn't destroyed with the lockdowns.

We estimate that sugar consumption dropped 0,79% during April/March 20/21 and may drop 0,13% during Oct/Sept 20/21. Given the production for these periods, we estimate a 1 mln m/t surplus during April/March 20/21 and 3,2 mln m/t deficit during Oct/Sept 20/21.

When we look ahead, based on our expectations for acreage and weather (which are both still very volatile) we expect less than 1 mln m/t surplus during April/March 21/22 and 500k m/t surplus Oct/Sept 21/22, with both periods having a potential downside!

The Brazilian cane crop which started slower and has downside due to the prolonged reduced rainfall during November 20 to May 21, will as usual be impacted by the Real and Gasoline prices, affecting Miller's decision on the Sugar Mix. Current cane crop estimates range from a pessimistic scenario 530 mln m/t with most optimistic at 570 mln m/t. In terms of sugar production, depending on ATR and sugar Mix, estimates range from 31 to 36 mln m/t vs. 38,4 mln m/t.

Brazil sugar stocks for end of April 21 were estimated around 3 mln m/t vs. 4,3 mln m/t by end of April 20. Given the lower carry in stocks and expected lower sugar production, Brazil would have 3,4/8,4 mln m/t lower exportable capacity. Brazil exported 32,1 mln m/t during April/March 20/21 vs. 18,9 mln m/t during April/March 19/20.

THE
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WHICH
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AND HAS
DOWNSIDE
DUE TO THE
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REDUCED
RAINFALL
DURING
NOVEMBER 20
TO MAY 21.

Global Sugar Trade reached 61,6 mln m/t in 2020 up from 52,1 mln m/t in 2019. Total Global Raw Sugars trade was around 39 mln m/t an increase of 8,4 mln m/t vs. previous year and Brazil share was 26,7 mln m/t.

Total Global White Sugars Trade was around 22 mln m/t, marginally better than 21,3 mln m/t in 2019 and 21,7 mln m/t average for the past 8 years. White sugar imports fluctuated during the year and from origins but overall, the yearly volume hasn't changed much. Brazil exported 3,9 mln m/t vs. 1,9 mln m/t the year before.

It's likely the World sugar flow may drop from 61,6 mln m/t given that some countries re-built some stocks. We currently estimate 57/58 mln m/t so a possible drop of 3,6/4,6 mln m/t overall.

We estimate that some producing nations like USA, Mexico and Central America may have similar crops, at the best, with some downside depending on the weather. Acreage hasn't increased.

Europe may struggle to improve from the past crop as acreage is expected to be down and the weather would have to be very good for agri yields and sugar content to bring the extra production. The CIS is expected to improve vs. last year, weather permitting as acreage in Russia is expected to rise by 15%.

Asian crops from India to Thailand will depend on weather and acreage to show some improvements vs. last year. It's too early to be sure on India given the covid situation which may affect some re-planting/acreage although we don't expect any major impact. The cane yields will depend on the monsoon but so far, all signs are of plenty rain on the way. Thailand is expected to increase acreage and the weather so far is OK. We could see Thailand bouncing back to 80/100 mln m/t of cane vs. 66,8 mln m/t last crop. Australia is expected to have a similar crop and rainfall is OK.

INVESTMENT FLOW

The latest CFTC report (as of the 1st of June 2021) showed inflow of Funds into Agri Commodities again. Overall, the net change by Funds/Specs was an increase of 89,272 lots to their net longs. Index Funds reduced their net longs by 13,977 lots for the 3rd week in a row. On a net basis, the Commodity bubble is still large at 2,495k lots about 2% higher than the peak in 2008 and 15% larger than the peak in 2016.

Having said that, the "bubble" has been 12% larger and deflated by 414k lots since the beginning of the year. The investment flow into Commodities picked up speed from Aug 2020, when funds covered shorts and started going long. The highest net long, for all Agri Commodities overall, was around mid Feb 2021.

The main pillars of the Commodity inflow of investments remains Corn and current net positions represent 55% of the world trade. In Sugar they are over 37%, followed by Cotton and Coffee at 30% and Soybeans at 20% of the world trade.

The average net position of all Investors vs. the Open Interest is around 28% (Sugar 37%) vs. 12% this time last year. In Sugar nr 11, Fund's account for 15%, Specs 5% and Index Funds 17% of the Open Interest.

So, it seems, until we see the US, Brazil, Argentina, CIS etc... Agri crops safe on the ground, growing and eventually being harvested, the upside risk for prices remains. Sugar is no exception and all eyes are on Brazil's weather, harvest, sugar mix, the Real/US\$, physical off take etc......

SUGAR IN BRAZIL VS. THE ENERGY SECTOR

Gasoline prices in Brazil remain strong but overall demandfor fuels remains weaker vs. normal levels although better than last year. Gasoline prices in early June are on average 30% higher than in October 20 and Ethanol prices are stronger i.e., 43% higher in June vs. October 20.

The weight of the new crop is not yet "damaging" Ethanol domestic prices which are trading at 76% higher YoY in Reais and 70% higher in US\$. Hydrous Ethanol prices are on average at 86% of the value of Gasoline, so no wonder consumers are really upset with higher fuel prices as there is nothing cheap!

Hydrous Ethanol is trading at the equivalent of UScts/lb 18,32 tell quell or Ucts/lb 17,58 basis 96 pol. So officially Hydrous reached Sugar prices (Sugar nr 11 closed at 17,76 on the 8th of June). Looking forward, the BMF (local commodity Exchange) is trading at the equivalent of low to mid 17's which can be used as a guidance.

PRODUCERS AND CONSUMERS PRICING FOR 2021

We estimate producers sold 16,5 mln m/t at an average of UScts/lb 15,75 since the beginning of Oct 2020. For the same period, we estimate consumers bought 17,4 mln m/t at an average of UScts/lb 15,92. Overall it seems producers are a little bit behind consumers but they started the year well priced for 2021 and consumers were not.

It's very likely most producer selling is for positions from the end of 2021 into 2022 and consumers are still pricing nearby positions. We estimate that producers have less than 15% to price for 2021, and consumers have at least 25% to price for 2021.

Alberto Peixoto

E: albertopeixoto@apcommodities.london T: +44(0) 7570 714 981 THE WEIGHT
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ESL...WHAT WERE YOU THINKING! SOME OF THE LEGAL ISSUES... AND MORE...

The breakaway competition left open questions... on rival competitions.

There are a few things in the UK, that really cause a sharp intake of breath...a shake of the head...and an argument from generally phlegmatic people. Things such as should the milk go into the cup before or after you pour the tea? Should you put the clotted cream on first on a scone or should you instead put the jam on first? On Sunday 18th of April this year, a new subject was added that united a country in a way not seen since...well...l don't know when. It brought together the great and the good, working people and the heir to the Crown, right and left-wing politicians and all in between and raised the level of vitriolic language and anger throughout the country, not seen since Brexit...all seemingly in one voice of condemnation. I am of course referring to the then proposed creation of the European Super League (ESL) by twelve football clubs, six English Premier League clubs, three Spanish La Liga clubs and three Italian Serie A clubs. As a quick note to our American readers, football here refers to what you would call soccer...but the rest of the world calls...football!

I will in this instance, just be looking at the legal implications that may have been brought up by the six English clubs of Arsenal, Chelsea, Liverpool, Manchester City, Manchester United and Tottenham Hotspur.

Now there are three levels of regulations that affect football. Football specific regulations, domestic laws and international laws. ESL stated that legal action had been undertaken to halt UEFA, the European football governing body and FIFA, the international football governing body, from preventing the ESL competition taking place. In England, this could have been an injunction against the FA, the English football governing body, from taking any measures against the English clubs, until the dispute had been resolved.









THIS CHALLENGES
FOOTBALL SPECIFIC
REGULATIONS...AS
WELL AS DOMESTIC &
INTERNATIONAL LAW.

However, the ESL had actually violated UEFA statutes, specifically Article 49³ which states that, 'International matches, competitions or tournaments which are not organised by UEFA but played on UEFA's territory shall require the prior approval of FIFA and/or UEFA and/or the relevant Member Associations in accordance with FIFA Regulations Governing International Matches and any additional implementing rules adopted by the UEFA Executive Committee.'¹ In short, the clubs involved who started the ESL had to ask UEFA for permission...which they didn't do!

Another significant piece is that a number of individual club executives of the ESL had access to confidential commercial information involving UEFA such as strategy and revenues. UEFA could therefore have cause to pursue a breach of confidentiality, as the information could have been used by those individuals involved in setting up the ESL to gain an unfair advantage.

The next piece is wider ranging as it covers competition laws not just in England...but within the EU. Any proposed measures UEFA and FIFA made against ESL, would have entered this territory. EU courts have been consistent in having sport and sporting activities beingsubject to competition laws, with no exceptions. However, no infringement would be found if a sport association's restrictive practises and/or conduct have a legitimate objective and are inherent and proportionate to the objective². These actions also impinge upon a possible breach of Article 101 of the Treaty on the Functioning of the European Union ('TFEU'). This involves whether measures by UEFA and/or FIFA would constitute an agreement between an association of undertakings, having the object of effect preventing, restricting, or distorting competition³. However, the ESL may in turn impinge upon Article 165 of the TFEU, where the EU shall be '...developing the European dimension in Sport, by promoting fairness and openness in sporting competitions...' plus the European Commission White Paper on Sport where there is a need to '...preserve a competitive balance between clubs taking part in the same competition...a pyramid structure of competitions from grassroots to elite level and organising solidarity mechanisms between the different levels and operators...'. It is at this point I would now bring in the famous Bosman ruling of 1995⁴ and the lesser known UEFA Champions League ruling of 2003⁵ in dealing with the equality between clubs. However, EU courts have held that sporting bodies have the power to 'authorise' alternative events if such power is subject to restrictions, obligations and review⁶. UEFA is the sole

- 1 https://www.uefa.com/MultimediaFiles/Download/uefaorg/General/pdf
- 2 Case T-313/02 Meca-Medina. Such legitimate objectives include the protection of athlete's health, functioning event calendars, uniform rules or the sport, and integrity.
- 3 Examples, International Skating Union, EU General Court (2020); Deutsche Ringer-Liga v. Deutsche Ringer-Bund & United World Wrestling, Nuremberg Court of Appeal (2021); Federation Equestre International v. Belgian Competition Au thority, Brussels Court of Appeals (2016).
- 4 Case C-415/93 Bosman (1995) '...In view of the considerable social importance of sporting activities and in particular football in the Community, the aims of maintaining a balance between clubs by preserving a certain degree of equality and uncertainty as to results...must be accepted as legitimate.'
- 5 Case COM/C.2-37.398 UEFA Champions League (2003) 'Commission understands that it is desirable to maintain a certain balance among the football clubs in a league because it creates better and more exciting football matches...Commission recognises that a cross-subsidisation of funds from richer to poorer clubs may help achieve this.'
- 6 Case C-49/07 MOTOE (2008).





organiser of the European Champions League and Europa League, two European club competitions. The ESL would have been a challenge to these and it raises the tough question of permission under competition laws of a breakaway league.

Then there is the issue of players taking part in non-authorised events. The most recent EU case law on this is the International Skating Union banning athletes taking part in none ISU events. The EU General Court in 2020 found this to be a breach of Article 1010 TFEU...although an appeal is underway.

That deals with the EU aspect! It is however, possible that any dispute with the ESL could have gone on to the Court of Arbitration for Sport ('CAS') in Lausanne, Switzerland. UEFA & FIFA laws allow this...and it probably would have been the most likely route for many disputes.

I'd next like to look at employment laws. A possible ban on players in the ESL from playing in European and international competitions organised by UEFA and FIFA, could be seen as a '…restraint of trade…' in England and as the players for the clubs…indeed many of the coaching staff as well…would be penalised for actions which their clubs seem unlikely to have informed them about. It could be seen as a likely cause for breach of contract between the players and the English clubs of the ESL. The EPL handbook contains a standard clause in a players contract which includes an obligation for clubs to follow and abide by FA, UEFA & FIFA rules. The only issue, is that players may choose not to undertake such action, as there is a limited number of clubs willing to pay the salaries of top EPL players.

By the 21st of April, all six English clubs had withdrawn from ESL. UEFA has fined all six English clubs involved⁷, being careful as they could be to not to punish the fans, staff or the players of the clubs. Yet that is not all. The clubs who left the ESL may be liable to breach of contract fines of GBP 130 million⁸ due to the ESL. Watch this space!

Though this situation may have been...well...let's say...dealt with for now, it will no doubt surface once again, at some future date. You just know it will...when the sums of money that football generates...are involved.

I am grateful to the law firm CMS in their invaluable help in providing the information used in putting this article together.

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- 7 https://www.bbc.co.uk/sport/football/57031372
- 8 Daily Business, 23rd April 2021 https://archive.is/a1Fe7



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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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The Ghost in the Machine is one of the few pieces I read coverto-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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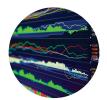
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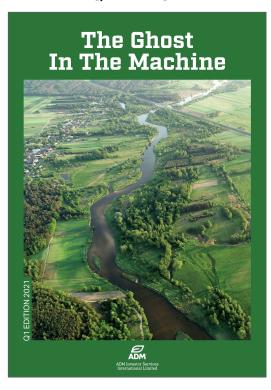
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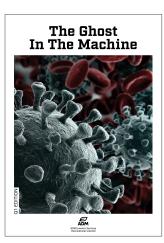
2021 EDITIONS

Q1 EDITION



2020 EDITIONS

Q1 EDITION



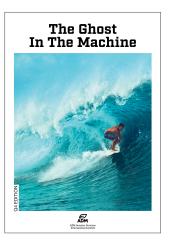
Q2 EDITION



Q3 EDITION



Q4 EDITION







Q2 EDITION 2021

The Ghost In The Machine

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