CHEMICALS M&A

Investment Banking Review of 2021

Outlook for 2022

In this review of the Chemical industry, Natrium Capital looks forward into 2022 as well as reviewing the trends from 2021. Forecasters are expecting increased output as industrial activity and trade rebound around the world as economies reopen. The realities of a post-pandemic world will, however, dominate 2022 producing volatile conditions amongst long-term recovering trends.

The outlook for 2022 is positive with the Chemical industry set to benefit from an improving economic backdrop leading to a benign environment for Mergers and Acquisitions (M&A).

Demand for quality assets remains high and will encourage a review of opportunities to restructure portfolios. Shifting focus towards sustainable, environmentally friendly technologies and growth markets will continue to be attractive. Private Equity firms have plentiful funds and are active in searching for new prospects. With interest rates remaining relatively low and plentiful supply of capital, transaction multiples are at high levels with average disclosed deal multiples in the Chemicals and Materials sectors at a historically high level of 14x. In 2022, we expect to see continuing high levels of take-over activity, corporate sales and carve-outs leading to many investment opportunities for companies looking to expand by acquisition.

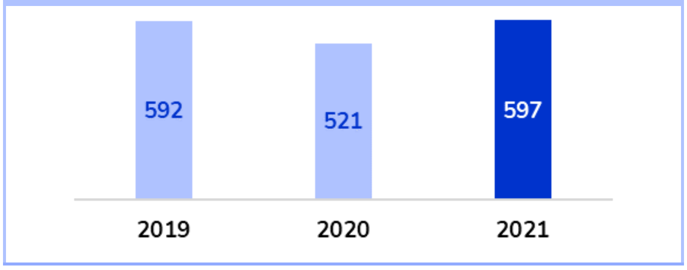
INTRODUCTION

2021 was always going to be full of challenges. Following on from the mass disruption and uncertainty triggered by the COVID-19 outbreak in 2020, it was more of the same at the turn of the year with a new wave of infections surging through the population, leading to further restrictions, and delaying any return to normality. Many industries adapted quickly to the return of lockdowns and travel restrictions. Others were fraught with supply chain disruptions, increasing costs of raw materials and surging utilities prices. As the year progressed, vaccine rollouts enabled restrictions to be lifted, allowing many to return to their working and social habits, and encouraging a remarkably quick recovery of the labour market.

CHEMICAL M&A

Transaction activity bounced back in 2021 to the levels recorded prior to the pandemic with 597 transactions announced during the year (see Figure 1), up 15% from 2020. The year got off to a fast start with International Flavors & Fragrances Inc. (IFF) completing the $26.2bn acquisition of DuPont's

Figure 1. *Total Volume of Chemicals and Materials Transactions*



Source: *Mergermarket, Global Chemicals and Materials Deals*

SELECTED GLOBAL CHEMICALS M&A ANNOUNCED 2021

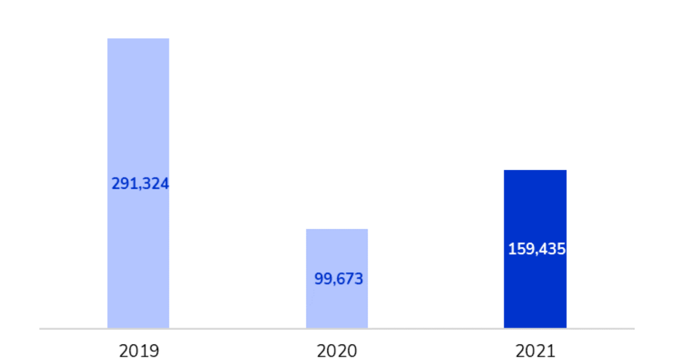
Date	Target	Buyer	Seller	EV ($M)	EV/Sales	EV/EBITDA
08-Feb	Lonza Specialty Ingredients	Cinven Partners LLP; Bain Capital, LP.; PSP Investment Board	Lonza Group Limited	4,668	2.5	13.0x
14-Feb	Emerald Performance Materials, LLC	Lanxess AG	American Securities LLC	1,075	2.5	11.9x
26-Apr	W. R. Grace & Co.	Standard Industries Inc.	-	6,323	3.7	28.6x
11-May	Ferro Corporation	Prince International Corporation	-	2,068	2.2	19.7x
30-Jun	Exxon Mobil Corporation (Santoprene TPV elastomers business)	Celanese Corporation	Exxon Mobil Corporation	1,150	-	-
01-Jul	Atotech Limited	MKS Instruments, Inc.	The Carlyle Group	6,589	5.3	18.9x
06-Jul	Solenis LLC	Platinum Equity, LLC	Clayton, Dubilier & Rice, LLC; BASF SE	5,250	-	-
12-Jul	Allnex GmbH	PTT Global Chemical Pcl	Advent International Corporation	4,747	2.2	12.7x
17-Aug	CeramTec GmbH	Canada Pension Plan Investment Board	BC Partners LLP; Ontario Teachers' Pension Plan; PSP Investment Board	4,463	6.9	19.9x
23-Aug	IFF Microbial Control business unit	Lanxess AG	International Flavors & Fragrances Inc.	1,300	2.9	13.0x
20-Oct	Cromology SAS	DuluxGroup Limited; Nippon Paint Co Ltd	Wendel SA	1,341	1.8	18.0x
02-Nov	Rogers Corporation	DuPont de Nemours, Inc.	-	5,082	6.3	28.6x
11-Nov	MBCC Group	Sika AG	Lone Star Funds	5,977	-	-
24-Nov	Hexion Inc. (Epoxy-based coatings and composite businesses)	Westlake Chemical Corp	Hexion Inc.	1,200	-	-
			Average		3.3	16.8x
			Median		2.5	13.0x

Nutrition & Biosciences business in February. The easing of social distancing restrictions has enabled some crucial steps to be held face-to-face, but most transaction work is still being managed virtually.

The chemicals M&A market has seen steady activity throughout the year with strategic and financial buyers looking to put their capital to good use. Portfolio restructuring has led to many carve-outs and sale of non-core assets, providing opportunities for investors. Interest rates have remained low, providing a ready supply of cheap finance. Several large transactions have been announced during the year such as Standard Industries Inc.'s acquisition of W. R. Grace & Co. for approx. $7bn and Bain Capital, Cinven Partners and Public Sector Pension Investment Board's purchase of Lonza Specialty Ingredients (LSI), from Lonza Group Limited, for an enterprise value of CHF4.2bn.

Aggregate disclosed transaction values are up by 60% from 2020 in the Chemicals and Materials sector to $159bn (see Figure 2), but were still only 55% of the total transaction value disclosed in 2019.

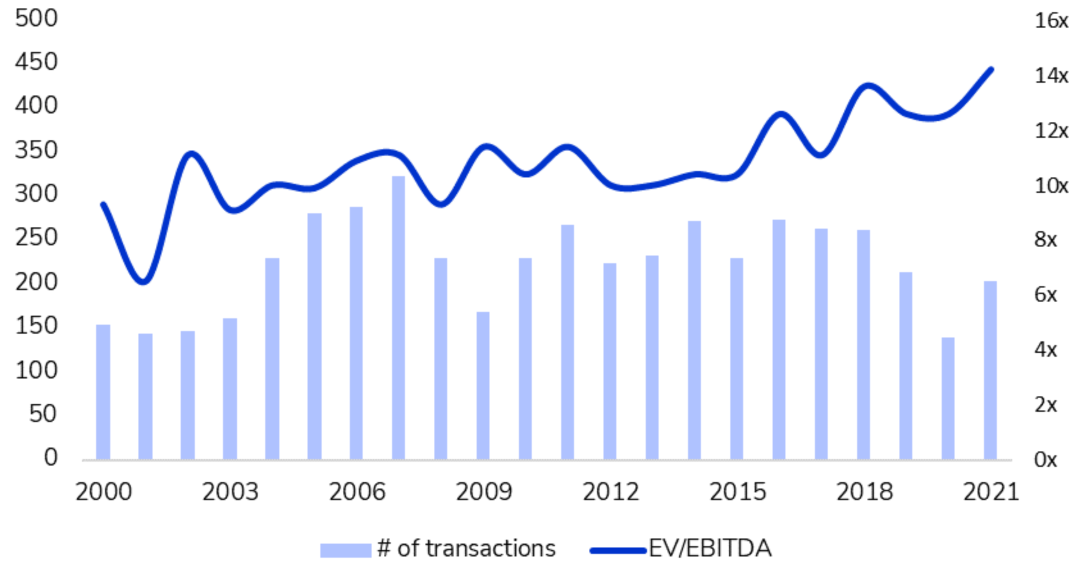
***Figure 2.** Aggregate Disclosed Transaction Value ($m) -Chemicals and Materials*



Source: *Mergermarket, Global Chemicals and Materials Deals*

Aside from an increase in the volume of transactions being announced in the year, transaction multiples have also significantly risen in some sectors. The

Figure 3. *Global Chemicals M&A Activity*



Source: *Mergermarket & Natrium Capital, Chemicals and Materials by announcement date, excluding China. Value only includes transactions with disclosed financials*

average EBITDA multiple for disclosed transactions in the Chemicals and Materials sector (Source: Natrium Capital) is 14x, and has been a continuation of a recent trend (see Figure 3). Many corporates have emerged from the worst of the pandemic relatively unscathed and with healthy level of capital to put towards optimising their growth strategy. Private Equity firms are also extremely active in the current market, looking to catch-up from a quieter 2020 in terms of acquisitions. Pairing this with the availability of cheap financing, heavy competition for key assets was seen and has resulted in upward pressure on valuations.

The Chemical Distributors sector in particular has seen a rapid surge in multiples with the top companies trading at well over 20x EBITDA. Activity in this sector during 2021 include the Initial Public Offering (IPO) of Azelis (EQT) in September and the sale of Caldic (Goldman Sachs) to GTM Holdings S.A. (Advent International) announced in November.

With valuations currently soaring many sellers will be seeing this as an optimal time to cash-in on their investment. As an influx of sellers rush to market this may introduce some downward pressure on valuations in near-to-mid term future.

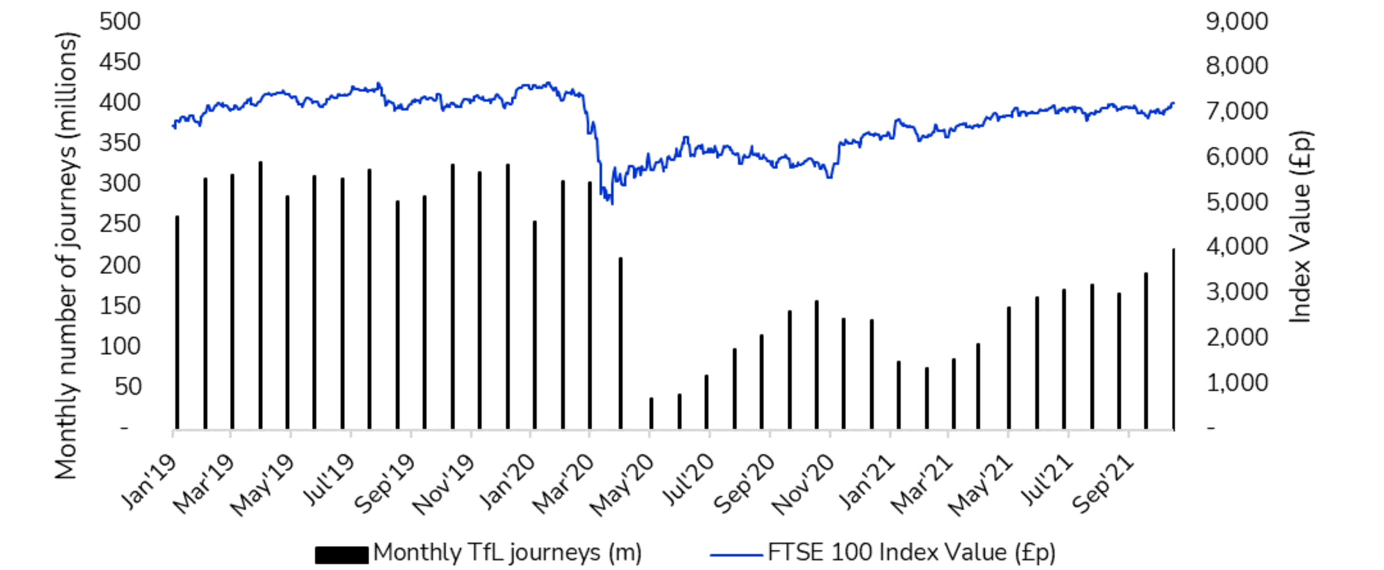
Another sector with intense recent focus is the development of Electric Vehicles. Many governments are now introducing mandates to phase out combustion engine vehicles, for example, the UK government has announced that no new vehicles can be registered after 2030 and the EU has made a similar proposal for an effective ban on new vehicles from 2035. The ever-increasing investor focus on Environmental, Social & Governance (ESG) initiatives is likely to accelerate any switch towards vehicles powered by renewable energy. Indicative of investor focus on these issues, Tesla now boasts the most valuable automotive brand in 2021. However, Electric Vehicles are only as green as the electricity that powers them, so significant hurdles in terms of the electricity source and necessary infrastructure must be cleared before we can eliminate our reliance on fossil fuels.

The development of Battery Materials are one key application of chemistry in Electric Vehicles (*see recent edition of Chemical Reactions on Lithium-ion Batteries)*. Developments towards the end of 2021 have seen a split in opinions as to the outlook for investment in this area. Johnson Matthey announced the intention to exit the space and divest its Battery Materials business by pursuing the sale of individual assets, citing increasing commoditisation of the sector as the reason they do not wish to invest further. Shortly after, BASF announced the intention to invest up to €4.5bn in Battery Materials and Recycling by 2030. Clearly Electric Vehicles will play a big part if we are to reduce global emissions. The only way they would do this is if the technology involved continues to become more affordable.

CORONAVIRUS

Now beyond the two-year anniversary of news of the virus breaking from Wuhan, it is likely wise to assume that it will be a feature in our lives for the long term.

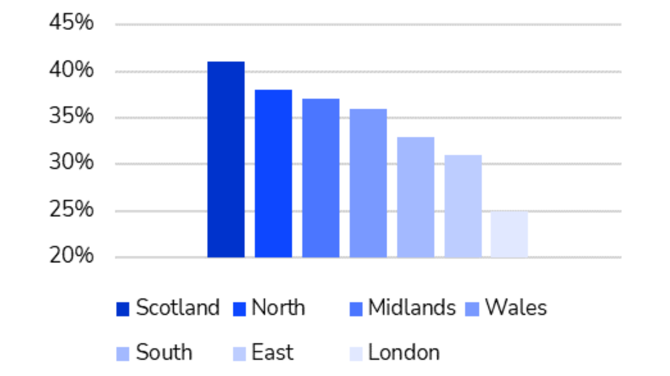
Figure 4. London Transport Usage and FTSE 100 Index



Source: *TFL and CapIQ*

With the vaccine approval and rollout only beginning towards the end of 2020 and a new wave of infections spiking in December, strict stay-at-home mandates were issued in much of Europe. A continuation of homeworking brought in the New Year for the majority, becoming the 'new normal'. The rollout of the vaccine across many nations allowed the gradual reopening of economies, and while physical travel activity remained around 70% of the 2019 level, equity markets saw improvement over the course of the year (see Figure 4 above).

***Figure 5.** Percentage of respondents by region that never want to work from home post-COVID*



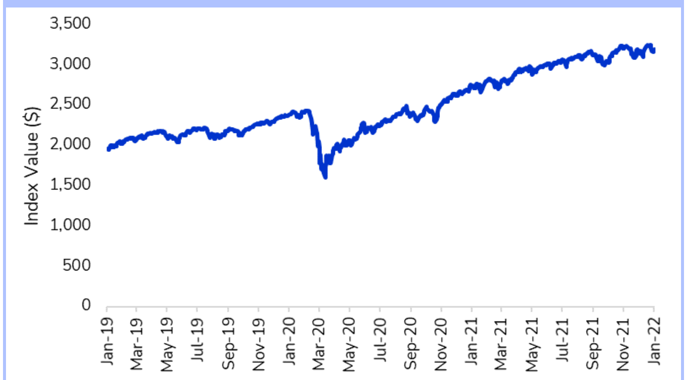
Source: *YouGov for the BBC*

Some suggest that working life may not return to the 'pre-pandemic normal': 79% of UK senior business leaders expect the pandemic to bring a long-term shift in working trends (Source: YouGov survey for the BBC). Furthermore, when half the senior business leaders asked agree homeworking would adversely affect both collaboration and creativity, it is clear that recalibrating a 'new normal' workplace will be a balancing act between the benefits and drawbacks of homeworking. Workplace preferences vary across the UK with London-based workers more inclined to retain the flexible working approach (see Figure 5). Anecdotally, this trend has also been noted in other cities worldwide.

With the increased transmissibility of the Omicron variant, campaigns to hasten the roll-out of booster vaccinations and tackle growing vaccine hesitancy will be priority for Governments as daily hospitalisation figures are watched closely. The balance between these figures may well determine any return of stricter contact restrictions and the virtual environment in which businesses have been operating in.

Though businesses will have to remain vigilant for any further developments regarding the pandemic, there may be cause for optimism as global equity markets have performed well, with the MSCI World Index seeing growth of 56% over pre-pandemic levels (see Figure 6).

***Figure 6.** MSCI World Index*



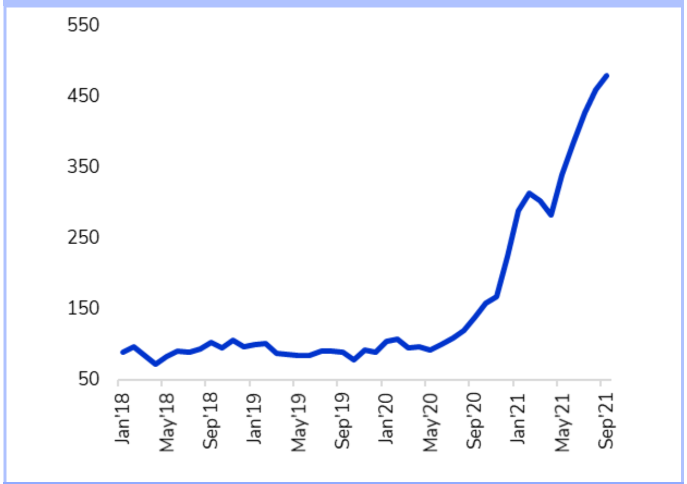
Source: *CapIQ*

SUPPLY CHAIN DISRUPTIONS

Another challenge that has faced the chemical industry during the year is the significant disruptions in the global supply chain.

A variety of reasons caused this. The massive Ever Given cargo vessel became lodged in the Suez Canal for over a week in March, blocking the whole channel and disrupting one of the most important shipping routes for international trade. This led to a massive dislocation in trade, with many containers left in the wrong place or travelling empty. Some ports were forced to suspend receiving new shipments as there was no space to unload. The impact of this has been seen in escalating transportation costs (see Figure 7).

Figure 7. *Shipping: Shanghai Containerised Freight Index (SCFI), Jan'19 = 100*

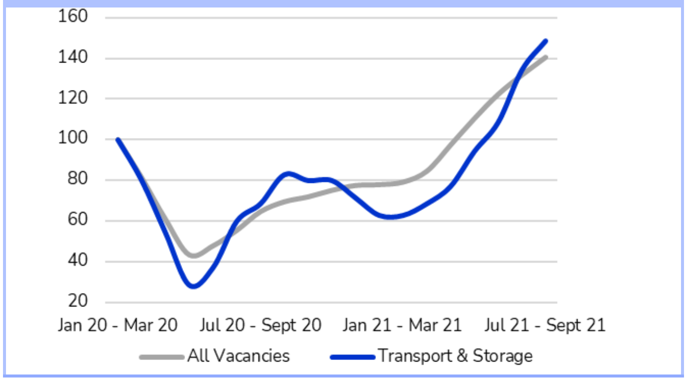


Source: *OECD Economic Outlook, Interim Report Sep'21*

In addition, rebounding demand for specific goods such as semiconductor chips and supply shortages resulting from factory closures during 'lockdowns' around the world, have left global manufacturers struggling to obtain their usual supply of raw materials. There are also indicators of investments being "re-shored" with semiconductor manufacturers announcing US based manufacturing. Many businesses increased their raw materials stockpiles, with implications for working capital needs and future demand when normal conditions resume. An average decline of 20% in car sales this year has been attributed to these supply issues causing large production delays despite strong global demand.

Certain areas of the economy have experienced significant labour shortages during the pandemic, constrained by the numbers being recruited to work in key sectors such as food delivery, as well as the people reporting ill health or isolating. Missed opportunities to train staff also occurred. In particular, demand for HGV drivers has soared as consumption shifted on-line. The shortage of drivers has been particularly acute in the UK as the new immigration rules and trading paperwork dissuaded EU HGV drivers from returning. The number of vacancies in the UK Transport and Storage industries is shown in Figure 8.

Figure 8. *UK Vacancies in the Transport and Storage Industry vs. all Industries. Index, Jan—Mar'20 = 100*



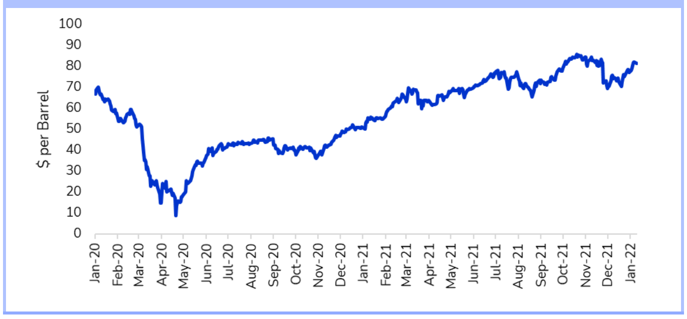
Source: *ONS Vacancies Survey*

UTILITIES COSTS

The wholesale energy market experienced record highs from Q3'21 due to increased demand for natural gas as global economies reopened following the pandemic.

Brent Crude price soared by roughly 70% since the beginning of the year (see Figure 9) but began falling in November due to major oil consuming nations (U.S., India, China, Japan, Republic of Korea and the UK) agreeing to release oil from reserves. The Organization of the Petroleum Exporting Countries (OPEC) announced plans to increase oil output in January 2022 given the uncertainty over the trajectory of the pandemic and its impact on oil demand.

Figure 9. *Europe Brent Spot Price FOB 2020-2021*

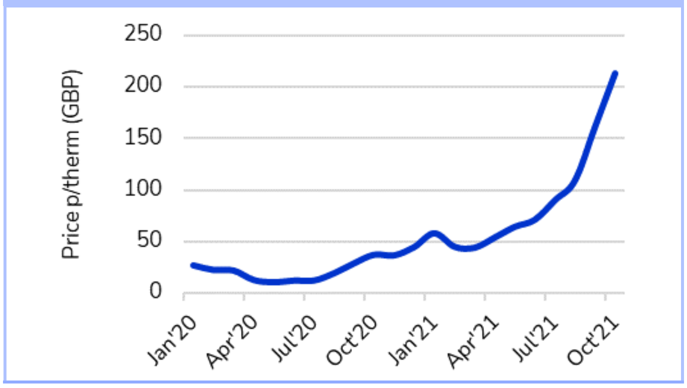


Source: *U.S. Energy Information Administration*

There were low international stockpiles of gas driven by maintenance works occurring at key development sites in the North Sea and Norway; supply constraints in Russia and a halt on new projects supplying liquefied natural gas. In the UK, several nuclear and gas power plants had closed for maintenance leading to a shortage of supplies and there had been a shutdown of a major power plant importing electricity from France. Furthermore, there had been a low supply of energy generation from renewable sources due to less favourable weather conditions such as low wind power, adding pressure on electricity prices.

The global gas shortage was a particularly large problem for the UK as around 40% of electricity is produced from gas-powered plants. Fluctuations in electricity prices were felt by consumers and energy providers nationwide as the UK wholesale electricity price in August 2021 was triple that of the year before. Moreover, wholesale gas prices in October were reported as almost six times that of the year before, with a monthly cost of £213.76 p/therm compared to £38.23 p/therm in 2020 (see Figure 10).

Figure 10. *Gas Wholesale Prices, Monthly Average*

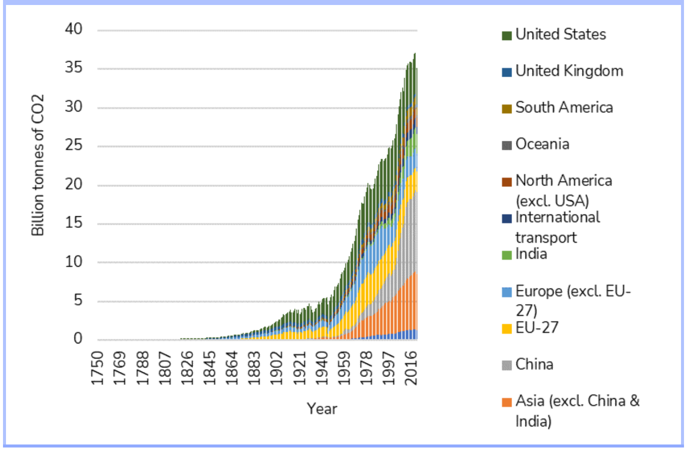


Source: *Ofgem*

COP26

The COP26 summit in Glasgow was highly anticipated and marked the first five-year cycle of 'The Paris Agreement', the first legally binding international treaty on climate change. The Paris Agreement set out a goal to limit the global temperature increase to below 2 degrees compared to pre-industrial times. The signatories of this agreement are expected to submit targets on how they intend to meet the goals set in terms of 'nationally determined contributions' (NDCs) every five years, but there were questions over whether the sum of these NDCs would have the required impact to meet the target. The summit also provided companies with a forum to display their green technologies and initiatives, with ESG becoming an ever-increasing focus for investors.

Figure 11. *Annual Global CO2 Emissions from Fossil Fuels*

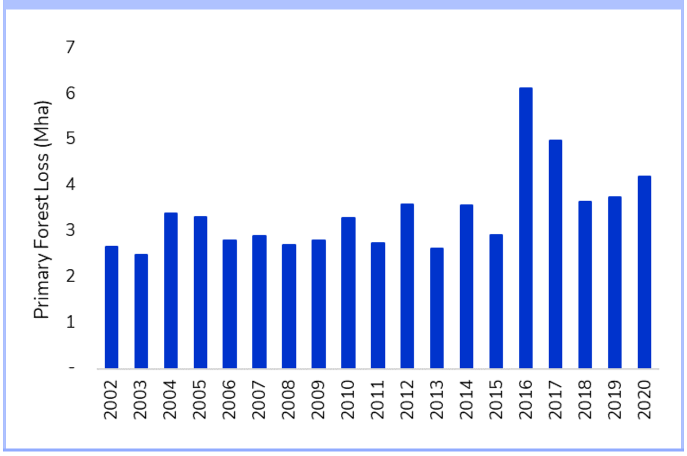


Source: *Global Carbon Project*

A major achievement was the creation of the Glasgow Climate Pact, an agreement committed to by more than 40 countries that involves accelerating efforts towards the phase down of unabated coal power and inefficient fossil fuel subsidies. A significant step in this direction was taken by the US and China, who account for approximately 45% of global carbon emissions, agreeing to boost their cooperation on reducing climate change through initiatives such as a focus on clean energy, tackling deforestation and reducing their methane emissions.

The EU and US led the creation of the Global Methane Pledge, which aims to limit methane emissions by 30% compared with 2020 levels by 2030. Furthermore, 100 leaders from nations representing over 85% of the world's rainforests agreed to halt and reverse deforestation and land degradation by 2030. This commitment was supported by a pledge of £8.75bn ($12bn) of public finance from 12 countries.

Figure 12. *Global Primary Forest Deforestation*



Source: *Global Forest Watch*

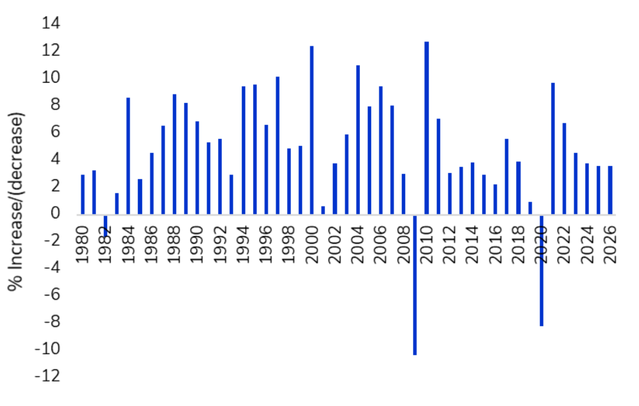
Moreover, finance mechanisms were set up to ensure investments in climate change reduction initiatives could be advanced: As a part of the Glasgow Climate pact, countries agreed to significantly increase support for "developing countries" beyond the $100bn annual target.

There has been recent focus on the decarbonisation of the chemical industry in recent years with investors and shareholders becoming increasingly aware about the importance of ESG, leading to chemical companies focusing on creating a circular economy. Ineos Styrolution along with Recycling Technologies announced plans to invest in a Pilot plant in the UK for the chemical recycling of polystyrene (PS). In November, Evonik announced a strategic partnership with The Vita Group to scale up trials of its chemical recycling process, and Shell also announced in November plans to build a 50,000 mt/yr new pyrolysis oil upgrader unit at its energy and chemicals park in Singapore, as well as a proposed 550,000 mt/yr biofuels facility.

OUTLOOK FOR 2022

The outlook for 2022 is positive with the Chemical industry set to benefit from increased output as industrial activity and trade rebound, leading to a favourable environment for mergers and acquisitions.

Figure 13. *Global Trade Volume of Goods & Services*



Source: *International Monetary Fund*

The realities of a post-pandemic world will dominate 2022. Whereas 2020 saw COVID-19 take hold with the ensuing tragedy of millions of deaths and the consequences of 'lockdowns'; and 2021 was the year of new variants and the start of the vaccine rollout; 2022 will see the world learning to live with the virus and the way policy-makers react will have an impact on forecasts. This will produce volatile conditions amongst long-term recovering trends so setbacks with possible announcements of new variants of the coronavirus will not be surprising.

Overall activity should continue to pick up as the world economies reopen and global real growth of 4.9% is forecast for 2022 after 5.9% in 2021 (source: IMF – see table). Better than average growth is expected in 2022 in the USA and the UK, the latter after suffering the worst recession of the major economies in 2020, exacerbated by the strict 'lockdowns' and trading dislocations as a result of Brexit.

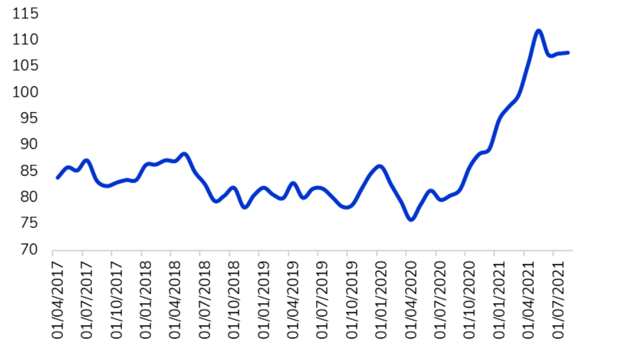
Figure 14. *Latest World Economic Outlook Growth Projections - real GDP, % change*

	2020	2021	2022	2020-2022
World	-3.1	5.9	4.9	7.6%
USA	-3.4	6.0	5.2	7.7%
Canada	-5.3	5.7	4.9	5.0%
Germany	-4.6	3.1	4.6	2.9%
France	-8.0	6.3	3.9	1.6%
Italy	-8.9	5.8	4.2	0.4%
UK	-9.8	6.8	5.0	1.2%
Japan	-4.6	2.4	3.2	0.8%
China	2.3	8.0	5.6	16.7%
India	-7.3	9.5	8.5	10.1%

Source: *IMF, World Economic Outlook, October 2021*

Inflation worries remain and it seems more likely that price rises will be higher than central bankers would prefer. Rapidly rising commodity prices, labour shortages, supply chain disruptions and rising energy prices (as discussed above) have already stoked price rises. Looking forward, sharply rising housing prices and continued food price pressures across the major economies may lead to increasing wage demands and continuing high inflation. There are, however, large uncertainties to expectations as a result of the dislocations in trade caused by the pandemic and some argue that these inflation fears will prove short lived.

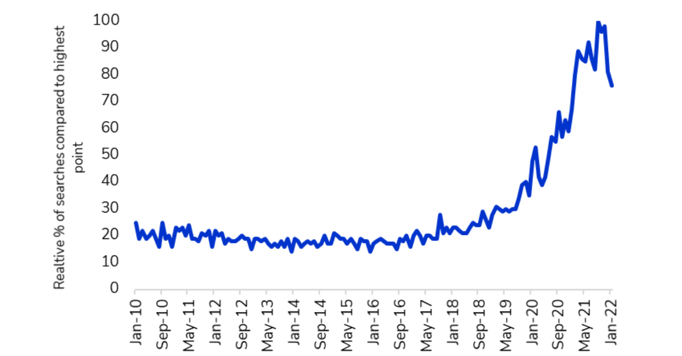
Figure 15. *Global Food Commodity Prices (Index, June 2014 = 100)*



Source: *IMF, World Economic Outlook, October 2021*

Efforts to combat climate change will lead to exciting technological changes as well as more regulation. Environmental, Social and Governance initiatives will force an acceleration of new developments, particularly to stimulate more recycling. There is a consensus that something must be done but the shortage of available capital for exciting but unproven technologies remains a major constraint to progress. The future of working has uncertain consequences for local travel and urban centres and the success of new digital communication methods is likely to restrict the need for business journeys.

Figure 16. *Worldwide Google Searches for "ESG"*



Source: *Google*

Modest interest rate rises are expected in 2022 as Central Bankers attempt to control continuing strong demand trends, but, overall, rates will remain at historically low levels. With the cost of borrowing contained and a good supply of capital, transaction multiples will be sustained around the current levels (average disclosed deal multiples in the Chemicals and Materials sectors are 14x – see page 3). We expect these factors to support a healthy market for transactions in 2022.

We conclude that the indicators are encouraging and chemicals companies will experience good growth, but the risks from inflation and further waves of disruption from COVID-19 remain high.

ABOUT NATRIUM CAPITAL

Natrium Capital Limited is an independent Chemicals M&A boutique set up by Alasdair Nisbet in 2012. Natrium Capital provides high level strategic and M&A advice primarily focused on the chemical, materials, biotechnology and clean technology industries. Headquartered in London, Natrium Capital and team advise on complex global cross-border transactions and have advised on over $100bn transaction value in the sector.

Natrium Capital is authorised and regulated by the Financial Conduct Authority.

SELECT PREVIOUS DEALS OF NATRIUM CAPITAL

Jan 2021

Sale of Amphoteric Surfactants business in N. America & Europe to OpenGate Capital

Deal size not disclosed

Dec 2020

Sale of ICoNiChem to Eti Bakir

Deal size not disclosed

Aug 2019

Acquisition of Solvay's Performance Polyamide Business in Europe by DOMO Chemicals

Deal size €300m

Aug 2019

Acquisition of Covestro's Polyurethane Systems Business by HIG Capital

Deal size not disclosed

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