

# CIA Second Quarter Economic Report 2021

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@See\_Chem\_Bus

# Current shape of the industry



**3700** businesses providing over **500k** jobs (155,000 directly, supporting a further 350,000)



Salary over **55%** higher than the average weekly wage



Highly productive sector with **£123k** GVA\* per employee  
↑ 82% higher than manufacturing  
↑ 90% higher than the average worker



Over **20%** of UK R&D spend



Adds more than **£18bn** of value to the UK economy every year from total annual turnover of almost **£56bn**



UK's largest exporter of manufactured goods with annual exports of over **£57bn**



\*Gross Value Added

Figures correct as at February 2021

## Executive summary

I am pleased to present our latest Economic Report, which has been written by Tom Warren, our Head of Economics.

This report has two sections - a CIA analysis of Government data via the Office for National Statistics (ONS), that assesses the UK chemical industry's performance in the first half of 2021 and what challenges lie ahead, followed by the results and further analysis of our own Q2 Business Survey.

The UK chemical industry rose to the challenges posed by Covid-19 in 2020, and in doing so was one of only two manufacturing industries to increase production in that year. This performance continued into 2021 as at the end of May, **chemical production (excluding April 2021 and December 2020) was at its highest level since August 2008**, whilst chemical exports were 17.0% higher than pre-pandemic levels.

Despite this strong performance, the industry is not without its challenges. Rather than delving into the challenges surrounding the net zero transition, UK REACH regulations or logistical issues to trade post the transition period, this report



focuses on what **CIA member companies felt was the biggest current issue faced by the industry - raw material shortages and price hikes.**

Producer Price Inflation (PPI) data displayed that in the 12 months to June 2021, input prices in the production sector grew at over double the pace of output

prices. The same phenomenon was experienced to a lesser degree in the chemical industry.

Turning our attention to data collected in the CIA's Q2 Business Survey, respondents reported their **fourth successive quarter of sales growth in the second quarter of 2021**. All metrics, such as exports, production levels, employee numbers and business investment, were reported to have grown strongly in the second quarter of 2021 and are expected to continue this growth at a slightly slower pace into the third quarter.

Alongside this positive data and aligned with the official ONS data, CIA members are reporting a **sharp rise in raw material prices** which is outpacing the growth in finished goods prices, and in doing so, putting downward pressure on chemical producer's margins.

**Supply chain bottlenecks and raw material shortages** are leading to an increase in member companies time to deliver, whilst 40% of survey respondents are experiencing

labour shortages - both factors that exacerbate the inflation issue.

Please do let us know of any feedback on this paper, which we can then consider as we prepare our Q3 Report.



**Steve Elliott**  
Chief Executive  
Chemical Industries Association

## Entering 2021

The UK's chemical production entered 2021 at elevated levels that historically have never been maintained in the mid-term. This excess production was largely driven by stockpiling of both inputs near production and finished goods near consumers on both sides of the Channel ahead of the end of the transition period between the UK and EU27.

Through January and February 2021, companies began employing these stockpiles and due to this, UK chemical production contracted 3.3% and 2.7% month on month before plateauing in March. Despite the contractions in the first two months of the year, quarter on quarter, chemical production only contracted 0.7% in the first quarter due its aforementioned elevated entry into 2021.

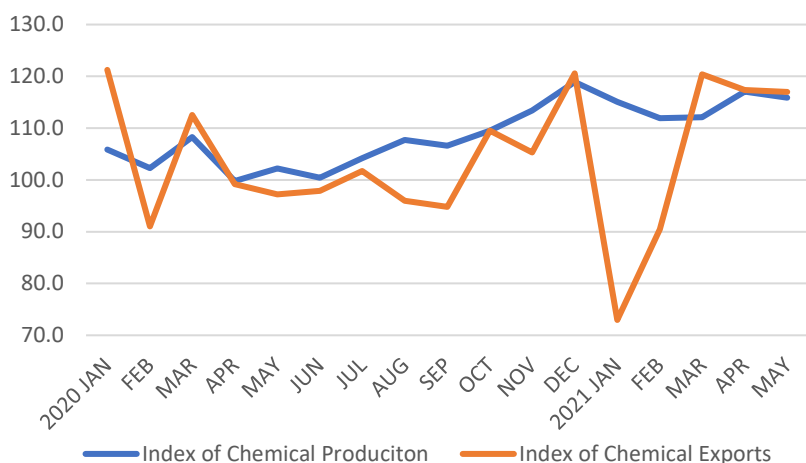
Understandably, chemical trade aligned with production, entering 2021 elevated before falling 39.5% in January as new Covid restrictions exacerbated the end of the transition period between the UK and EU. Chemical trade rebounded throughout February and March and at the end of the first quarter was 20.4% higher than the average monthly trade levels in the final quarter of 2019.

### Moving into the second quarter

Entering the second quarter of 2021, UK chemical production grew 4.4% month on month in April before falling back slightly to 1.0%, in May. Despite this minor contraction, chemical production in May, (excluding April 2021 and December 2020), was at its highest level since August 2008. The **CIA forecasts that quarter on quarter chemical production will grow between 2-4% in the second quarter of 2021**. UK chemical exports followed a slightly different path, despite contracting 0.3% compared to April and

2.8% compared to March, UK chemical exports in May 2021 were still 17.0% higher than the pre-pandemic monthly average in the final quarter of 2019.

**Graph 1 displays the monthly index of chemical production and exports**



Source: CIA analysis of ONS data

### The challenges that lie ahead

The **CIA remains cautiously optimistic for what the future holds**, PMI data displays record demand in multiple areas of the economy, the labour market seems to be embarking on a 'U' shaped recovery as 356,000 people join payroll in June 2021 taking the total number of people on payroll to 0.7% lower than pre-pandemic levels. Consumers are also beginning to exhibit signs that their appetite to spend the savings they built up in 2020 is high, however it is not all smooth sailing.

Despite the UK's successful vaccine rollout, the coronavirus still poses a threat. Double vaccinated people can still contract the virus, this fact coupled with the 'pingdemic' has continued to put stress on workforces due to the cost to operations of staff self-isolation. Moreover, the Delta variant continues to grip the world and fears of a potential future

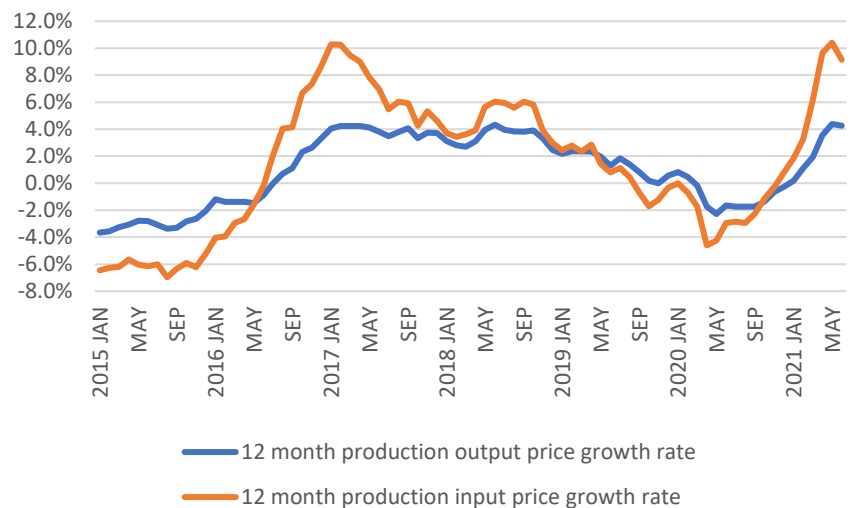
variant that undermines the vaccine's effectiveness continue. However, arguably the most apparent threat to the economy and chemical industry alike is being driven by raw material & labour shortages, freight delays and other force majeure, all of which exacerbate the issue of inflation.

The UK's consumer price index (CPI) inflation reached 2.5% in the 12 months to June 2021, above both economist's consensus forecasts of 2.2% and the Bank of England's target of 2%. The rise in inflation is coming down to two main factors. Firstly, demand can and is outpacing supply which is causing supply chain bottlenecks, reducing raw material and labour supply which in turn increases their cost. Secondly last year's lockdowns caused the average 12-month inflation rate between April and December 2020 to drop to 0.6%, this base effect of a low starting point exaggerates this year's inflation rate. The Bank of England reiterated its belief that this spike in inflation - although set to rise in the coming months - will be temporary. Although the Bank of England to some extent, 'has' to say this, in order to not create a self-fulfilling prophecy, inflation expectations remain anchored as markets are continuing to price debt in line with the temporary inflation narrative. In the Bank's most recent forecasts published alongside the May meeting of the Monetary Policy Committee (MPC), they predicted a CPI peak of 3.0% later this year, however recent speeches by senior Bank officials, notably one of the deputy governors Sir Dave Ramsden, have moved this prediction to 4.0%.

The chemical industry is a foundation production industry and therefore has a closer connection to producer price inflation (PPI) rather than consumer facing CPI. The headline producer price inflation rate portrays the average changes in prices received by domestic producers for

their output. It is also possible to measure the changes in prices of the inputs consumed by producers.

**Graph 2 displays the 12-month growth rates in UK production output and input prices**



Source: CIA analysis of ONS data

**Graph 2** displays the 12-month growth rates in UK production output and input prices from January 2015 to June 2021.

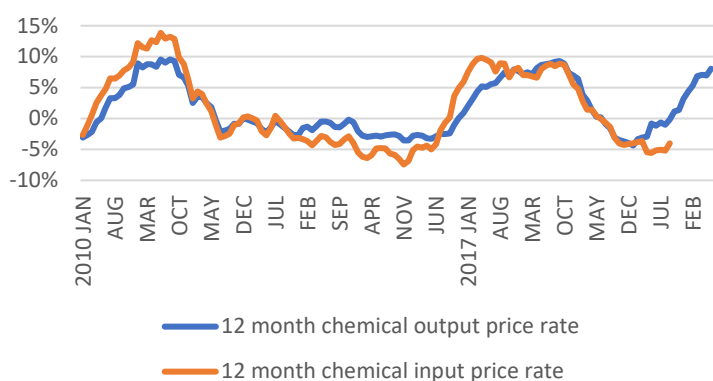
Throughout 2019 and 2020, output and input price changes followed a similar path with the latter being slightly lower. As we enter 2021 the indices began to decouple and in the 12 months to June 2021 output prices from the UK's production sector showed growth of 4.3%, whilst input prices had a growth rate of over double that at 9.1%. The decoupling of these figures puts pressure on producer's margins as at present the cost of their inputs are increasing at over double the pace of their outputs.

The sharp rise in producer input price inflation, partly caused by a low base effect of -3.0% in the 12 months to June 2020, is predominantly caused by raw material shortages and freight delays, which subsequently are leading to a price increase. When assessing these causes in detail the **CIA is optimistic that, in line with CPI, the current large increases being experienced in PPI are temporary**

and should fall back as we move into 2022.

Delving deeper into the ONS' PPI data, it is possible to analyse input and output prices in chemical production.

**Graph 3 displays the 12-month growth rates in UK production output and input prices**



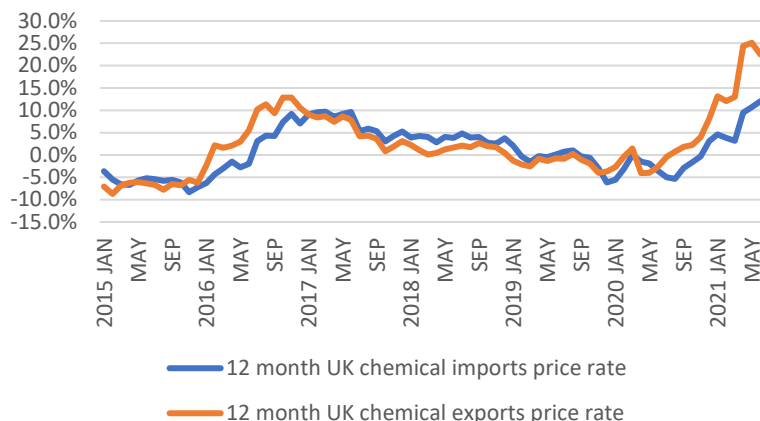
Source: CIA analysis of ONS data

Unfortunately, for reasons that are unclear, the ONS has only published chemical input price rates up until September 2020. The CIA is in contact with the ONS and hopes to be able to provide readers with the full dataset in next quarter's economic report. With that said, the graph shows that chemical input prices tend to be more volatile than output prices, experiencing higher peaks and deeper troughs. In the 12 months to June, chemical output prices rose 8.0%, the **CIA predicts, in line with historical data and PPI input and output price movements, that in the 12 months to June chemical output prices will have risen by around 10.0%.** The phenomenon (not unique to the chemical industry) of input price growth outpacing output price growth, which puts downward pressure on margins, is largely being caused by raw material shortages. The cause of the current raw material shortages differs slightly depending on the material in question. Generally for the chemical industry, shortages are being caused by a perfect storm of demand outpacing supply and the time delay and friction caused by turning supply off and on at a national level, as well as other

force majeure such as the US freeze, Suez Canal blockage, reduced production levels in Asia, lack of lorry drivers and congestion in ports. A number of the exacerbating factors seem to be one off events, so the CIA expects that chemical input price growth should begin to reduce as we enter 2022.

It is also possible to analyse the price changes of chemicals imported into and exported from the UK.

**Graph 4 displays the 12-month growth rates in UK chemical import and export**



Source: CIA analysis of ONS data

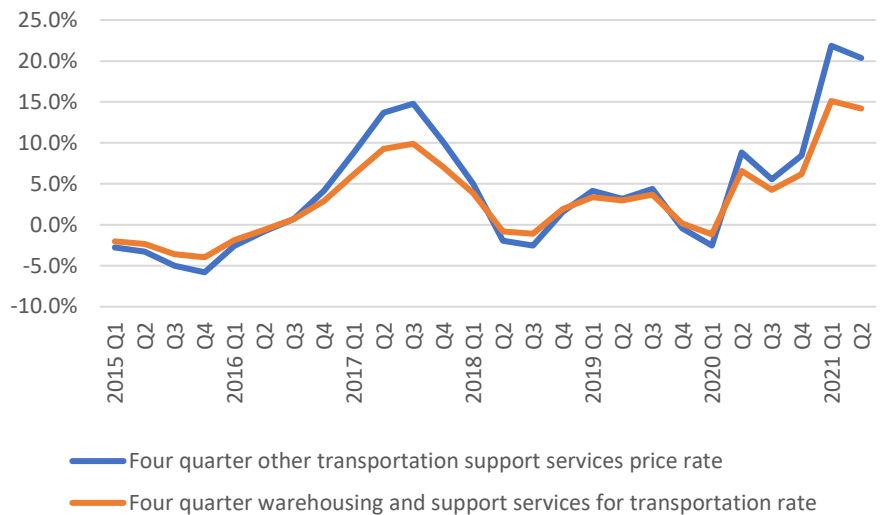
The data displayed on **Graph 4** shows that historically, chemical import and export price growth have been quite closely correlated. However, since the start of 2021, this has not been the case as the rate of growth of UK chemical export prices far exceeded that of chemical imports. In the 12 months to June, the price of chemical imports into the UK rose 12.0% which is just over half of the 22.5% increase in prices witnessed for chemical exports. This divergence is likely

in part to have been driven by the increased cost of trade to the EU (post the transition period) being passed onto the customer. **The divergence is also detrimental to the UK's industry as it reduces the price competitiveness of UK chemical products compared to our international counterparts.** This is of concern to the CIA as the increased costs of trade due to the end of the transition period are widely felt within the industry to be at a 'new normal' and therefore implies a fraction of this spike in export prices will not be temporary. With that said the **CIA does expect chemical export price growth to reduce in the final quarter of 2021.**

Breaking down the 12.0% import price growth figure - (something we cannot do for exports due to data availability) - it can be seen that it was driven by a 14.0% increase in the price of chemicals imported from the EU, whilst chemicals imported from the rest of the world experienced a lesser price growth of 8%. The cost growth of imports from the EU being greater than those from the rest of the world tracks with the CIA's assertion that the increase in export costs is driven in part by exports to the EU post transition period.

The second exacerbator of inflation mentioned above was freight delays and subsequent price increases. The ONS does not collect data on freight delays, however they do track air, road, rail and see freight price changes. At first glance the data is counterintuitive as it shows that there has been no material increase in freight prices in 2020 or 2021. In fact, the data shows a fall in sea freight prices. On closer inspection there have been large increases in the price of the following two transport and storage related services: 'Other Transportation Support Services' and 'Warehousing and Support Services for Transportation'.

**Graph 5 displays the four quarter growth rates in transportation and warehousing services prices**



Source: CIA analysis of ONS data

**Graph 5** shows that in the four quarters to June 2021, the price of other transportation support services and warehousing and support services for transportation grew by 14.2% and 20.4% respectively. The categories contain but are not limited to services such as: Forwarding of freight, Activities of customs agents, Organization of group and individual consignments, Issue and procurement of transport documents and waybills and Logistics activities, i.e. planning, designing and supporting operations of transportation, warehousing and distribution. All such activities have been complicated by Covid and the end of the transition period, which in turn increased their cost and therefore drove up the cost of moving goods.

Focusing on the official ONS data presented above, the CIA remains positive for the future but does not underestimate the challenges and uncertainty that lies ahead. Demand for chemicals is high and exports are strong but at the same time input price growth is outpacing output price growth, which is an unsustainable position to be in and demands either cost cutting or a further increase in finished

good prices. A perfect storm of Covid and Brexit have led to a sharp increase in the cost of trade, which has contributed to chemical export price growth almost doubling that of chemical import price growth. The return of inflation into the economy has the potential to undermine the wider economic recovery before it is complete, which would have severe ramifications for the chemical industry.

One saving grace of all these issues from CIA's standpoint is that they are not unique to the chemical industry. There are crippling raw material shortages in other production industries such as the automotive industry, and numerous economies are grappling with the issue of above target inflation.



## Survey results

### About the survey

At the close of each quarter, we survey member companies of the Association to get on-the-ground data about current trading conditions and views on what lies ahead. The information from this is incredibly useful in our work and we are grateful to all who respond.

Responses to the CIA's Q2 Business Survey were gathered between the 23 June and 7 July. The survey received responses from 39% of the CIA's membership and incorporated the third edition of CIA's Trade Survey that began at the start of the year, with the aim of bettering the CIA's understanding of the new challenges and costs of trading with the EU post transition period.

The survey was split into three sections: **industry performance, trade and topical questions**. The questions in the industry performance section asked whether the 15 variables listed below had increased, decreased or stayed the same in a given period and what member's expectations were for these variables in future. The time periods compared were the second quarter of 2021 compared to the first (Q2 vs Q1), expectations for the variable's levels in the third quarter compared to the second (Q3 vs Q2) and where members expect the variables to be in one year's time (1 year ahead). Members were also asked if the variables were below, above or on expectation compared to what they'd expect in a 'normal' year (vs normal).

Industry performance variables:

1. Total sales
2. Domestic sales
3. Exports
4. EU exports
5. Rest of the world exports
6. New orders
7. Production levels
8. Capacity utilisation
9. Employee numbers

10. R&D spend
11. Business investment
12. Your level of business optimism
13. Time to deliver
14. Raw material (input) prices
15. Finished goods (output) prices

When displaying the industry performance data diffusion indexes are used. These are an easy to interpret statistical tool that can be read in the same way as a PMI, therefore any figure below 50 indicates a contraction, above 50 an expansion while 50 means it remained constant.



## Sales – Domestic vs Exports, EU vs Rest of the World

Table 1

	Q2vsQ1	Q2vsQ3	1yr ahead	vs normal
Total sales	69.7	65.2	76.5	51.5
Domestic sales	63.2	58.8	63.2	51.5
Exports	67.6	61.8	73.5	48.5
EU exports	64.7	57.4	60.3	42.6
Rest of the world exports	71.2	66.2	73.5	52.9

Source: CIA Q2 2021 Business Survey

**Table 1** displays the diffusion indexes for the first five variables for each of the industry performance questions as described in the ‘**About the survey**’ section of this report. Survey respondents reported their fourth successive quarter of sales growth in the second quarter of 2021 following the survey’s record lows in the second quarter of 2020. Breaking down second quarter total sales figures, there was growth in all regions with exports - driven by rest of the world exports rather than EU exports - slightly outperforming the UK market.

Respondents remain optimistic when looking to the third quarter, however there are signs that the recovery may be slowing as all five diffusion indexes for the third quarter are below what was reported in the second. Looking a full year ahead, it is likely the world will be in a more certain place and for this reason respondents are highly optimistic that each of the five variables will be above current levels. It is promising to see that total sales levels are broadly aligned with what members would expect on a ‘normal’ year, a metric that has been underperforming since the second quarter of 2020. Unpacking this figure, domestic sales were aligned with expectation while exports were being dragged down by exports to the EU.

## New Orders, Production Levels and Capacity Utilisation

Table 2

	Q2vsQ1	Q2vsQ3	1yr ahead	vs normal
New orders	73.5	60.3	73.5	50.0
Production levels	61.8	61.8	75.0	45.6
Capacity utilisation	66.2	57.4	73.5	51.5

Source: CIA Q2 2021 Business Survey

**Table 2** displays the diffusion indexes for new orders, production levels and capacity utilisation. Understandably, due to the endogenous nature of sales to new orders, production levels and capacity utilisation the diffusion indexes displayed in table 2 follow the same pattern of strong growth reported in the second quarter, less growth expected in the third and high levels of optimism that it will be better in a year’s time. The most notable figure was that respondents feel that production levels are below where they would be on a ‘normal’ year despite four quarters of growth in the metric and strong ONS data.

## Employee numbers

Table 3

	Q2vsQ1	Q2vsQ3	1yr ahead	vs normal
Employee numbers	66.2	64.7	61.8	51.5
R&D spend	56.1	54.4	60.3	51.5
Business investment	69.1	58.8	69.1	52.9

Source: CIA Q2 2021 Business Survey

**Table 3** displays the diffusion indexes for employee numbers, R&D spend and business investment. These three variables tend to be less volatile due to the limited ability of members to change them quarter on quarter. With that said, this quarter is a slight exception as employee numbers and business investment show strongly positive readings. Nevertheless, the diffusion indexes follow the same pattern witnessed in the prior two tables.

## Optimism

Table 4

	Q2vsQ1	Q2vsQ3	1yr ahead	vs normal
Your level of business optimism	69.1	57.4	69.1	57.6

Source: CIA Q2 2021 Business Survey

The diffusion indexes for optimism follow what is the standard pattern for this quarter's industry performance and expectation. The notable exception is that respondents seem to be more optimistic for the future than they would normally be, which implies that despite the various Covid, inflation and regulatory issues the industry is facing, the high levels of demand place it in a better position than it would normally be.

## Time to Deliver, Raw Material (input) prices, Finished Goods (output) prices

Considering what is going on in the economy and what is being heard from member companies, the CIA thought it wise to gather data on time to deliver, raw material (input) and finished goods (output) prices. This was the first time the CIA gathered such data in the industry performance questions.

**Table 5** displays the diffusion indexes for time to deliver, raw material (input) prices and finished goods (output) prices. The figures show that the vast majority of

respondents experienced an increase in raw material prices in the second quarter of 2021 whilst a clear majority witnessed an increase in both their finished goods prices and time to deliver.

Table 5

	Q2vsQ1	Q2vsQ3	1yr ahead	vs normal
Time to deliver	70.6	60.3	48.5	57.4
Raw material (input) prices	94.1	77.9	69.1	86.8
Finished goods (output) prices	82.4	63.2	69.1	75.0

Source: CIA Q2 2021 Business Survey

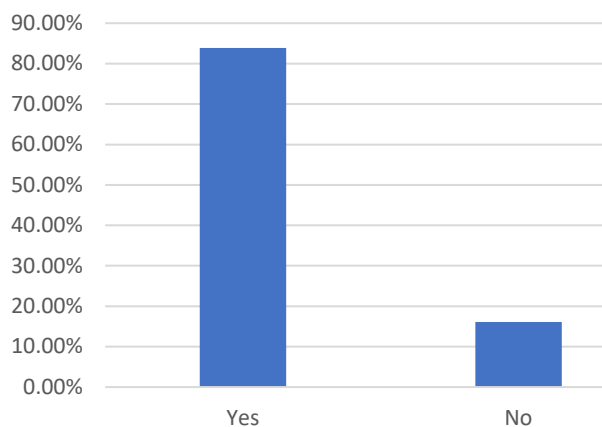
Somewhat worryingly, more respondents reported in the second quarter and expect in the third, that input prices increased than reported that their finished goods value increased. This mismatch of input prices growth outpacing finished goods price growth reported by CIA members supports the official ONS data displayed in the first half of this report. Looking forward

a year, the consensus from respondents is that both raw material and finished goods prices will have increased, whilst there will have been a minor improvement in time to deliver. Compared to expectation, respondents time to deliver is moderately above expectation, whilst finished goods prices and raw material prices are significantly higher than where they would be expected to be on a 'normal' year.

## Trade

When assessing cost increases to trade with the EU post the transition period, 83.9% of respondents agreed that costs had increased. Of those who experienced a cost increase, 76.9% reported it had not reduced since the start of the year. The actual value of the cost increase varied from 0-30% with majority of answers in the 5-10% range and it was felt unanimously that costs were at a 'new normal'.

**Graph 6 - Have EU trade costs increased since the end of the transition period?**



Source: CIA Q2 2021 Business Survey

Understandably, when asked about trade frictions responses followed a similar theme to that of price as inherently trade frictions lead to price increases. Slightly more respondents felt that trade frictions had increased than decreased since the start of the year, with the majority feeling they had stayed the same. The overwhelming majority of respondents felt

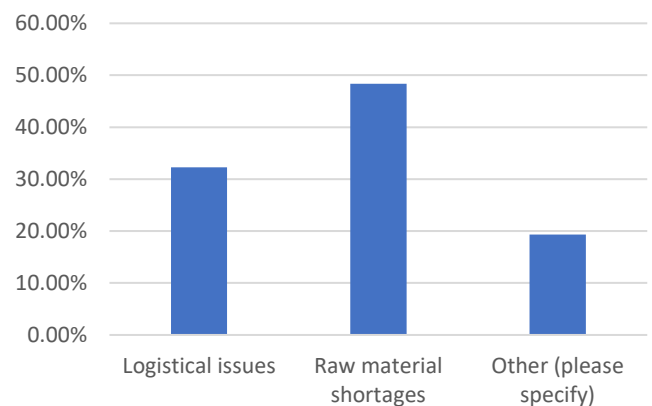
trade frictions were at their 'new normal' level.

Focusing on trade volumes, 77.4% of respondents reported that they have not experienced a permanent loss of trade to the EU following the end of the transition period. Of those companies / sites that did experience a permanent loss of trade, in most cases it was transferred to the EU facilities rather than being completely lost from the company. Although, neutral for the company involved, this is detrimental for the specific UK manufacturing site and UK chemical industry. Unfortunately, a minority of respondents experienced a permanent loss of trade.

## Challenges

It was established in the prior two business surveys that logistical issues to trade with EU post the transition period was the biggest current issue being faced by the industry. However, this is no longer the case, as in the most recent survey only 32.3% of respondents felt that logistical issues were the biggest challenge they face while 48.4% felt it was raw material shortages.

**Graph 7 - In the CIA's prior two business surveys it was agreed that currently the biggest issue faced by members was logistical issues post the transition period. Is this still the case or have raw material shortages become a more pressing issue?**



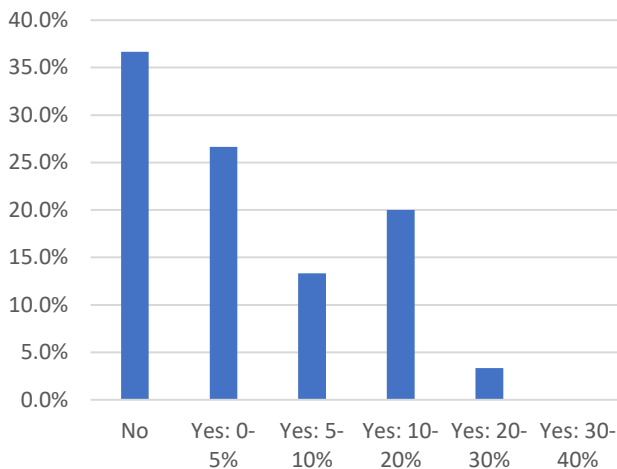
Source: CIA Q2 2021 Business Survey

When asked about the cause of the raw material shortages, most answers boil down to demand outpacing supply and other force majeure including:

- Freight pressures:
  - Lack of drivers
  - Congestion in ports
  - Shortage of containers
  - Suez Canal
- US freeze
- Reduced production levels in Asia
- Low inventories post Covid
- Plant turnarounds
- FMs declared by some major European suppliers

These raw material shortages are straining supply chains, increasing freight times and subsequently increasing many companies time to deliver.

**Graph 8 - Compared to your long-run average, have raw material shortages increased your time to deliver? If yes, by how much?**



Source: CIA Q2 2021 Business Survey

**Graph 8** shows that 63.3% of respondents report that raw material shortages have increased their time to deliver compared to their long-run average. Out of all responses to the question, 27% reported a minor increase of between 0-5% and the second most reported increase of between 10-20% was reported by one fifth of members.

Not only are raw material shortages increasing many companies time to

deliver, they are also putting upward pressure on raw material prices. When attempting to ascertain the value of this increase, respondents reported that in the last three months raw material prices have increased between 0-50% with the majority of answers in the 0-10% range. Comparing current raw material prices to where they were six and 12 months ago, the price increases are largely aligned implying this is an issue that has arisen in the last six months.

There has been a growing labour shortage in the economy in recent months as anecdotally, people went home because of Covid and stayed because of Brexit, whilst domestically there is a mismatch in skills between those sectors making redundancies and those looking to employ. 38.7% of survey respondents reported experiencing labour supply shortages in recent months. The labour supply shortages are being exacerbated by the continued pressure put on workforces by staff self-isolation, even of those who are fully vaccinated.

The final question in the survey related to investment, more specifically what single biggest factor is restricting members from investing in the UK. There was a wide variety of answers, most of which came under the following themes:

- UK's lack of competitiveness: Energy costs, cost of capital, lack of government support compared to other countries.
- Uncertainty in one form or another: UK REACH, future market directions.
- Something is missing: Struggling to find opportunities, expertise or home suppliers.
- Internal reason: Change of ownership, lack of profitability, lack of parent company approval.

However, on a positive note there was also a handful of members who felt there were no restrictions to investment.

In summary, focusing on the CIA survey data presented above the CIA reiterates its cautiously optimistic outlook for the future. Respondents to the survey reported strong growth in all variables in the second quarter of 2021, which is expected to continue albeit at a slower pace into the third. This high demand has driven optimism to higher levels than would be expected on a normal year, however, as was displayed in the ONS data, alongside the high demand comes a disparity in the growth of chemical raw material and finished goods prices that puts downward pressure on margins.

The increased friction and cost of trade experienced by respondents since the end of the transition period with the EU has predominantly remained unchanged since the start of the year and is felt to be at a new normal level. Largely, members have not experienced a permanent loss of trade due to the departure from the EU, however those that have often transferred production to one of their EU sites.

Raw material shortages are felt to be the biggest current issue faced by the industry, with 48.4% of respondents reporting this while 32.3% felt it was logistical issues to trade post the transition period. The cause of these raw material shortages boils down to demand outpacing supply and other force majeure which are having a knock-on effect on companies' time to deliver. Raw materials aren't the only thing in short supply, so too is labour with 38.7% of respondents reporting experiencing labour shortages in recent months.

The CIA is encouraged by this data but does not underestimate the challenges ahead. It's clear the worst of the economic fallout from the pandemic is behind us but there are still sizable challenges being faced and uncertainty for what the future holds.

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