Resins: Key Market Drivers and the Outlook for 2021

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Macro overview

A full recovery?

- World real GDP is projected to fall 5.1% in 2020; industrial production by 7.2% — but the worst is over
- This can be clearly seen in commodity markets, which have rallied since April, erasing all of their Q1 plunge. Year-to-date our Material Price Index is now up 7.6%.
- Why the change?
  - 1) Good Chinese demand
  - 2) Supply-side adjustments (oil) or disruptions (copper),
  - 3) Weaker US$,
  - 4) Generous government stimulus
  - 5) Hope for an early vaccine, which seems to have buoyed sentiment
- Plus two additional factors:
  - 6) Pent-up demand, which has been directed toward goods purchases
  - 7) Inventory restocking
- However, exhausted pent-up demand, and end to inventory restocking, waning fiscal and monetary stimulus and rising infection rates that may require re-imposing control measures suggests a bounce and fade profile to the recovery globally – not a “V”
- **Bottom line**: commodity markets will find it difficult to sustain their upward momentum much longer

Real GDP growth in major economies

Real GDP					
Percent change	**2018**	**2019**	**2020**	**2021**	**2022**
World	3.2	2.6	-5.1	4.2	3.9
United States	3.0	2.2	-4.8	3.1	4.1
Canada	2.0	1.7	-7.0	3.7	4.1
Eurozone	1.8	1.3	-8.7	4.3	3.4
United Kingdom	1.3	1.5	-11.9	4.9	3.3
China (mainland)	6.7	6.1	1.5	7.1	5.7
Japan	0.3	0.7	-5.7	2.2	1.3
India*	6.1	4.2	-6.9	6.5	5.1
Brazil	1.3	1.1	-7.0	3.8	2.6
Russia	2.5	1.3	-6.0	3.4	2.5

* Fiscal years starting 1 April
Source: IHS Markit

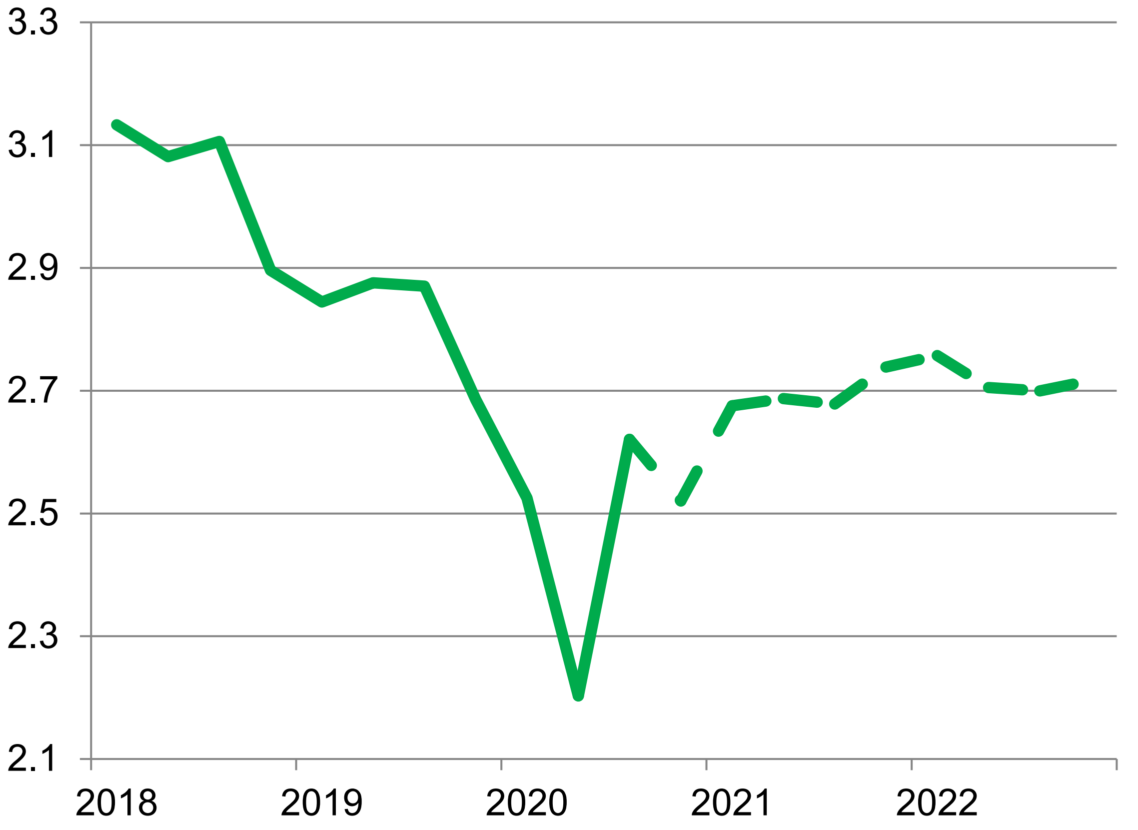
Industrial Production in major economies

Industrial production					
Percent change	**2018**	**2019**	**2020**	**2021**	**2022**
World	**3.2**	**0.9**	**-7.2**	**5.0**	**4.3**
United States	3.9	0.9	-8.6	1.9	5.5
Canada	3.1	-0.8	-9.7	5.2	6.8
Eurozone	0.8	-1.0	-10.8	6.2	3.0
United Kingdom	0.8	-1.3	-10.7	2.6	1.6
China (mainland)	6.2	5.7	1.7	7.3	5.4
Japan	1.0	-2.7	-9.8	7.0	1.4
India	5.2	0.7	-17.2	13.5	6.2
Brazil	0.8	-1.1	-10.7	7.5	3.2
Russia	4.0	2.2	-6.5	2.9	3.1

Source: IHS Markit

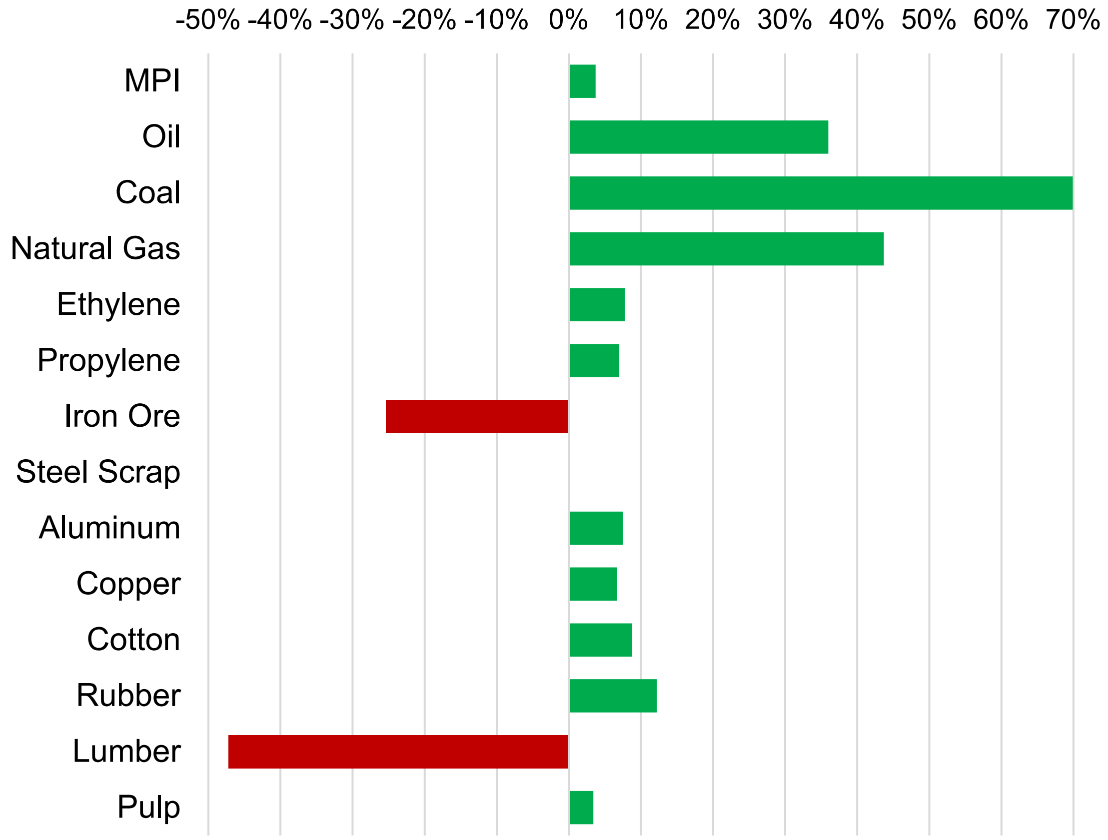
Bottom line: current momentum in commodity markets will not carry across the near-term – but there are important differences across sectors

IHS Material Price Index, 2002w1=1.0



Source: IHS Markit

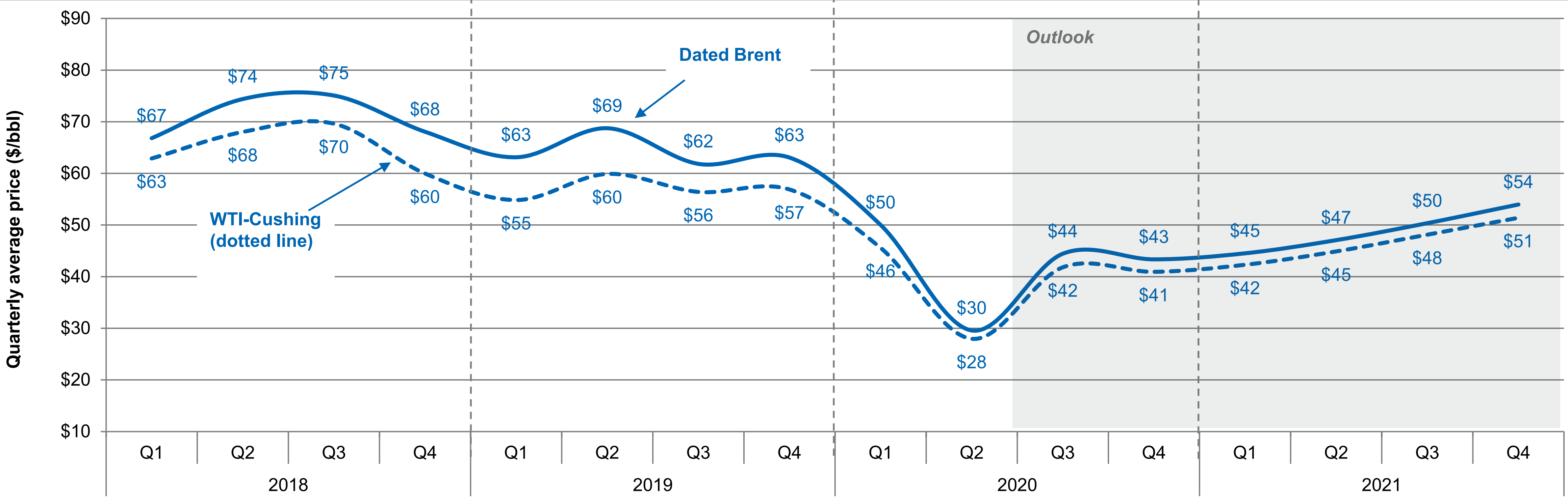
Cumulative change 2020Q3 to 2022Q4



Source: IHS Markit

Gradual demand recovery (base-case scenario): Supply deficits, offset to a degree by rising OPEC+ output, support price rise to $50 and higher in 2021

Dated Brent and WTI-Cushing crude oil price outlook to 2021



Source: IHS Markit, Argus Media Limited (historical)

Chemicals and Resins

Sector overview:
Resilient demand helping boost supplier leverage and pricing levels

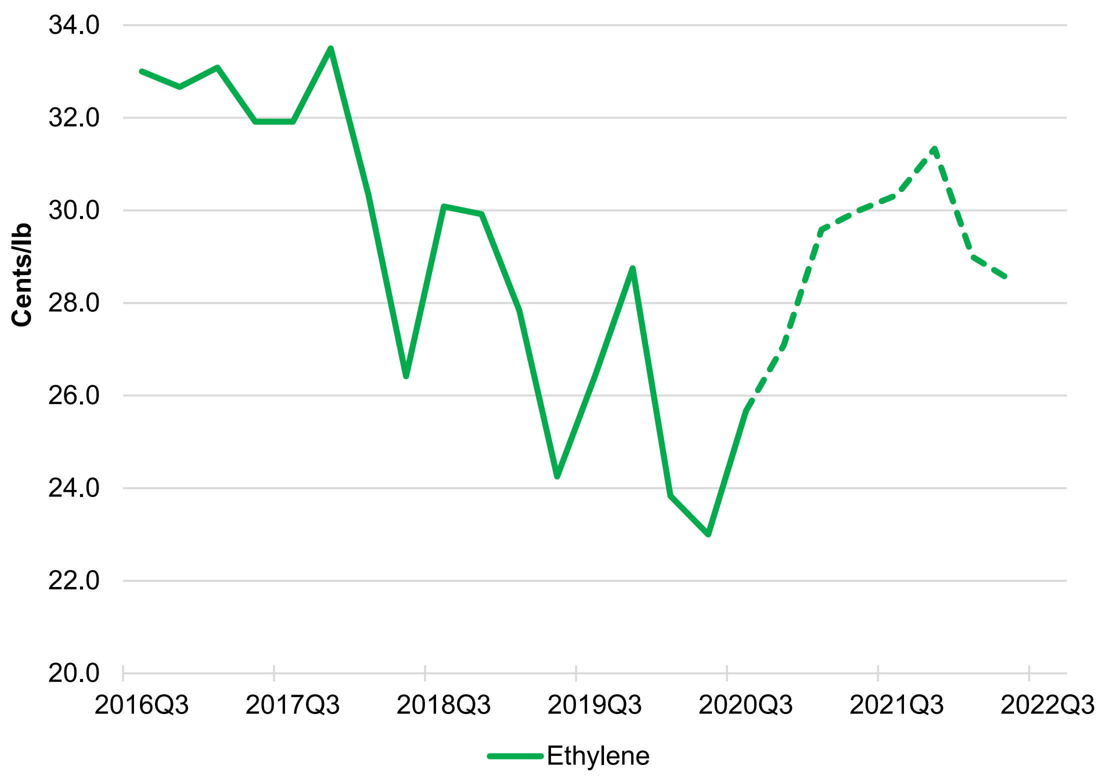
- **Overview:**
  - The global chemicals and resins industry continues to surprise on the upside, with suppliers gaining strong leverage the past three months. Given their wide usage, plastics demand has been holding up relatively well
  - The near-term pricing outlook has been noticeably increased from last forecast, as inventory levels have suddenly become tight for many key chemical and resin markets
  - Both unplanned and planned production shutdowns have contributed to tight inventory levels and rising pricing pressures

- **Bottom line**:
  - Prices are pushing higher, aided in part by improving demand. Through the end of summer, suppliers will have the upper hand in negotiations before leverage swings back more to a neutral position in the fourth quarter. With North American natural gas prices remaining low coupled with extreme uncertainties remaining with overall economic activity, buyers are likely to regain some leverage in the fall

Ethylene: Market to see prices continue to rise into next year

- Contract prices pushed higher for a fourth month in a row in August, with prices now up over 7 cents per pound (cpp) from the April low level of 20.5 cpp. This translates to a 35% increase
- The regional market was already plagued by various production shutdowns before Laura hit. The hurricane has only added further fuel to the hot market, with another rise of 3-4 cpp potentially in store for the month of September
- Given the extent of outages in the chemical industry, near-term pricing will remain susceptible to sudden swings for the foreseeable future
- However, supplier leverage is expected to erode a bit after this month, especially once the downed units more fully come back online

North America, ethylene contract price

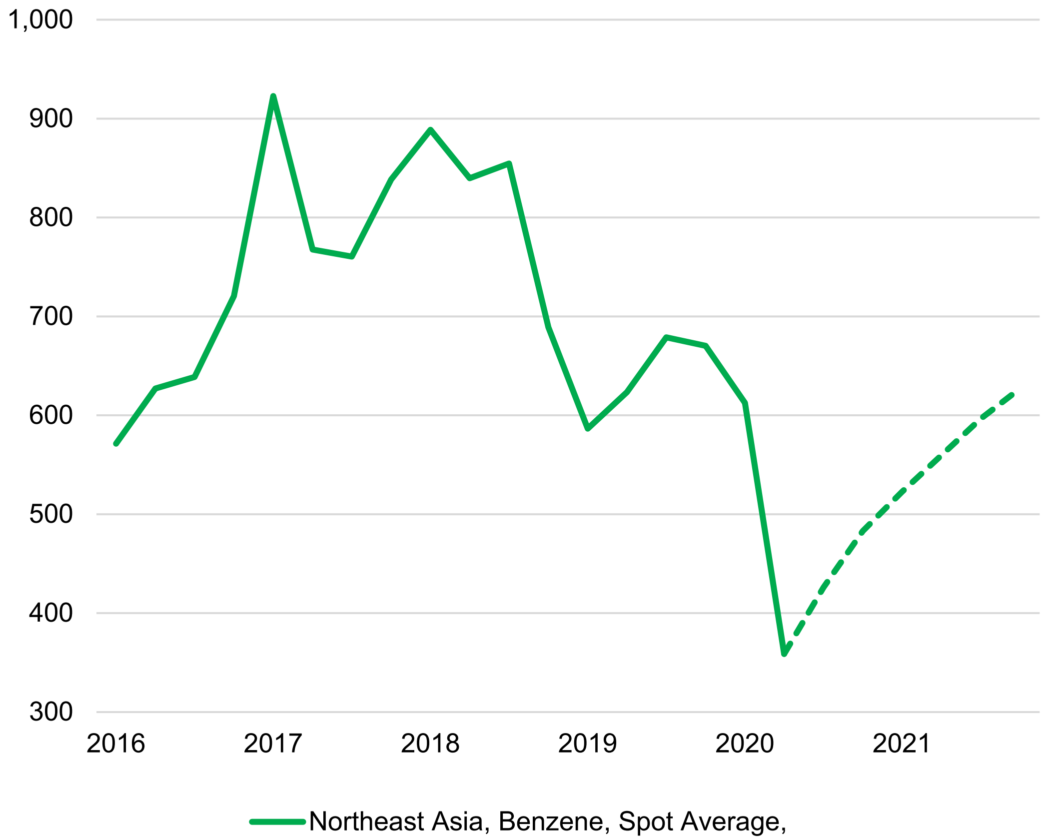


Source: IHS Markit

Benzene: Market facing steady pricing recovery

- The benzene market continued its modest price recovery in August, with the Northeast Asia average price rising by $20 per metric ton over July's level
- The market remains on track to close the year at around $500 per metric ton, up from lows near $300 per metric ton in April
- Higher benzene pricing will have a noticeable impact downstream in the aromatics chain
- A similar pricing trend is playing out in the European and North American markets

Benzene outlook, dollars per metric ton

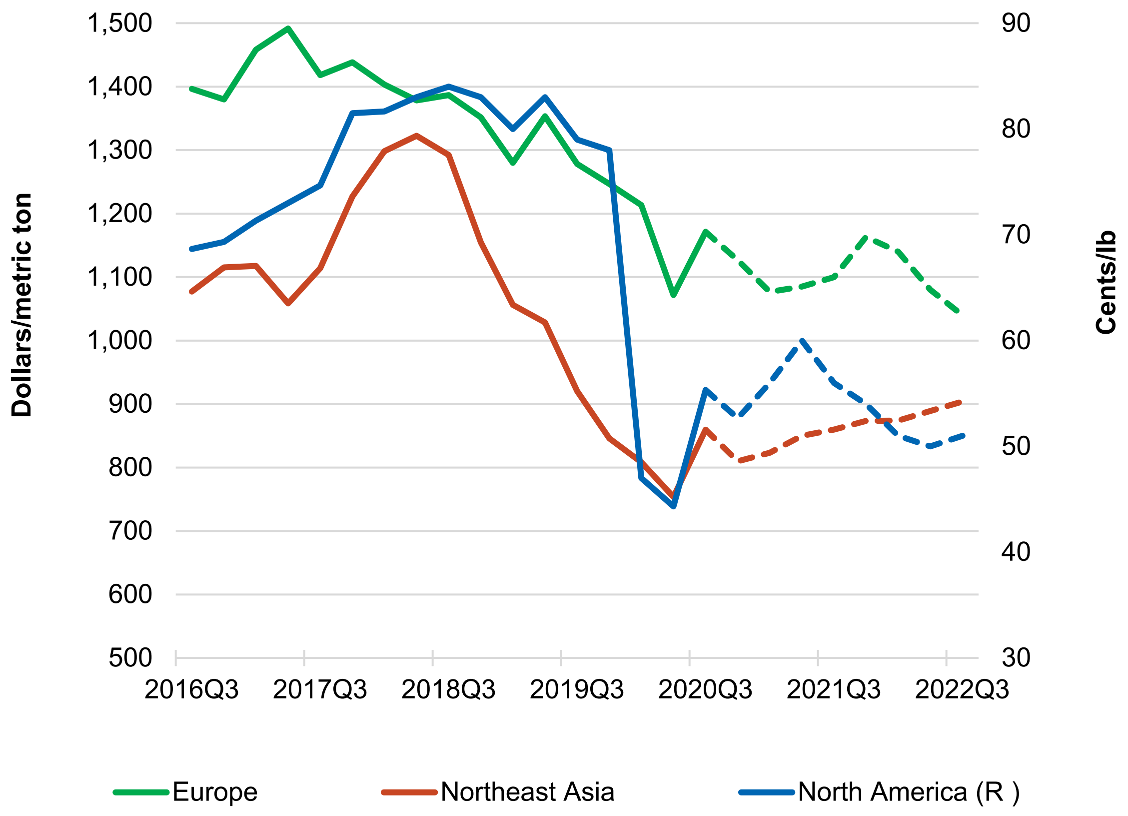


Source: IHS Markit

Polyethylene: Suppliers are pushing aggressively to increase prices further

- The market is in overdrive with suppliers realizing significant price gains the past three months, with further gains possible. Contract prices increased by 4 cpp across the board for June, followed by even bigger gains of 5 cpp in both July and August.
- The price increases have been supported by continued demand strength in both the domestic and export markets as well as low inventory levels
- The market is poised to realize a further 5 cpp increase this month, fueled largely by additional supply tightness caused by Hurricane Laura
- Still, despite the relative demand strength and short-term supply disruptions, base fundamentals point to prices pushing back down moderately in the fourth quarter and into early 2021

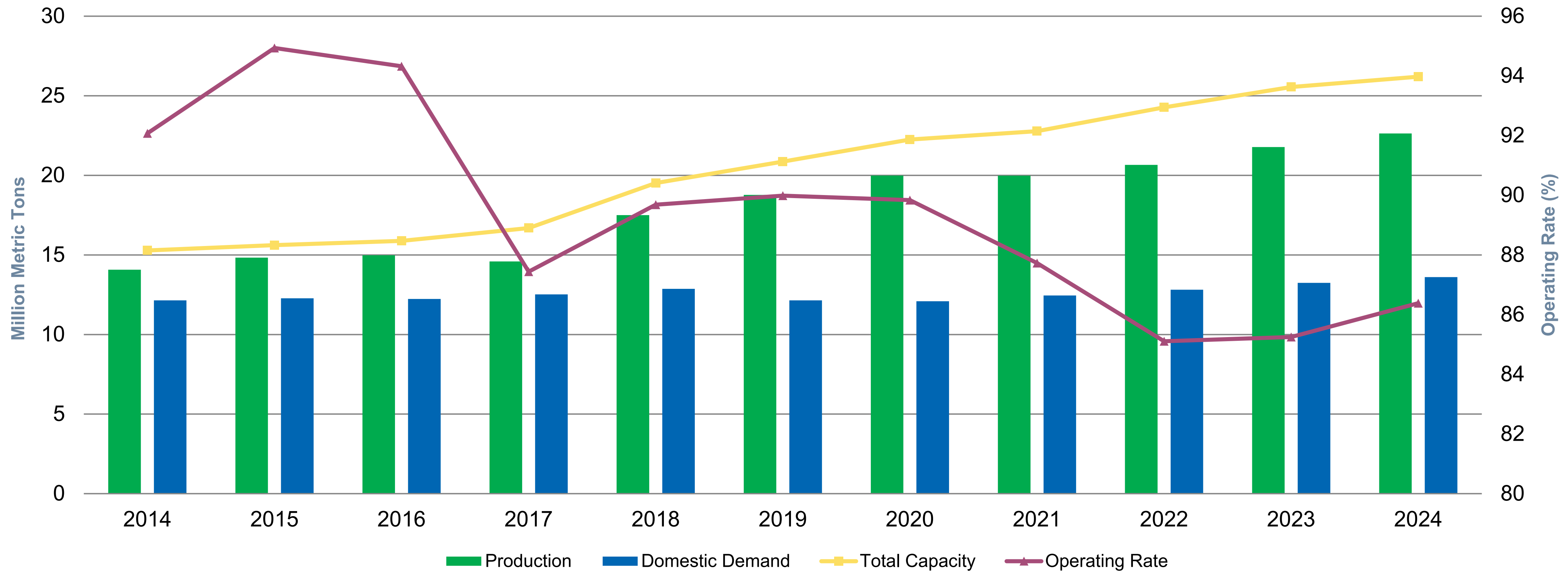
Global high-density polyethylene prices



Source: IHS Markit

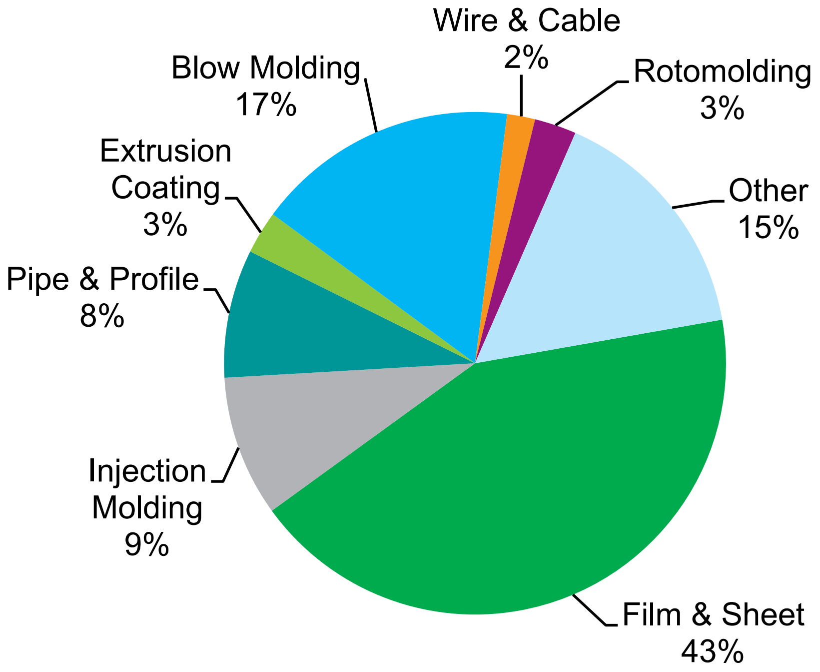
Polyethylene: Market experiencing strong capacity and production growth

United States Polyethylene: Supply and Demand



Polyethylene: North America demand profile and trade

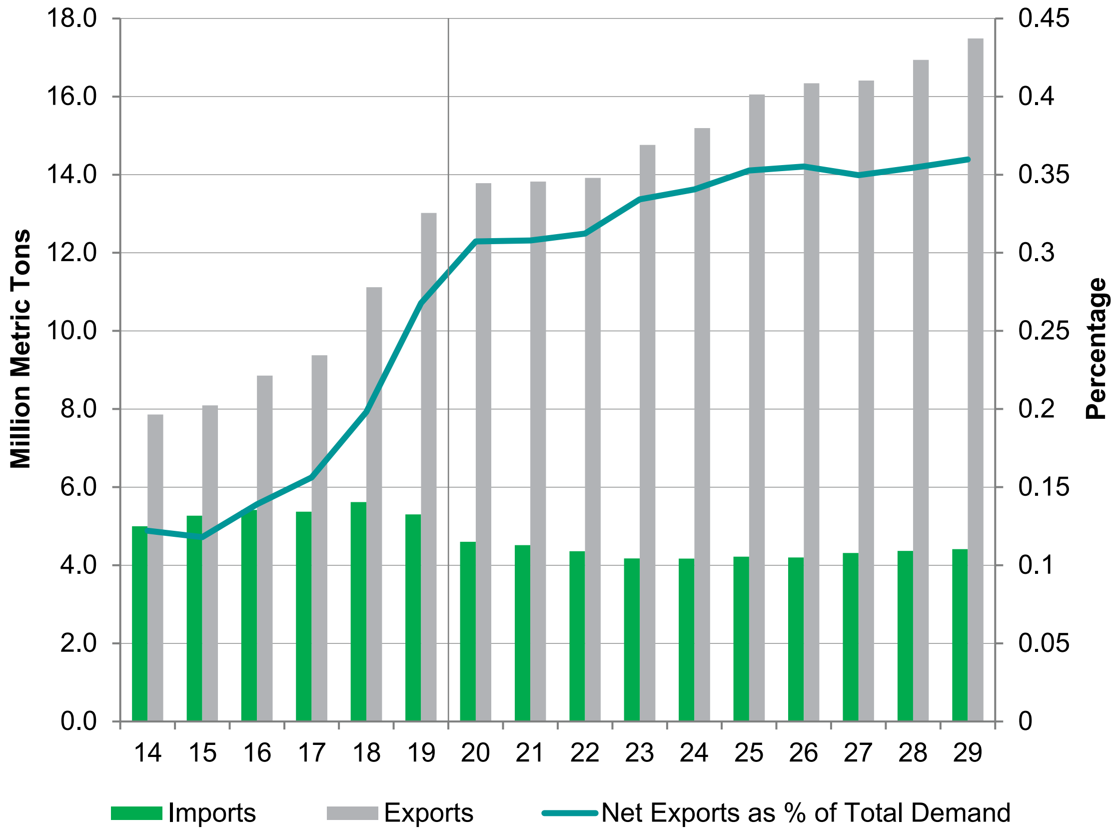
North America: 2019 Total PE Demand by End Use



Domestic Demand = 15.8 Million Metric Tons

Source: IHS Markit

North America: Total PE Net Trade

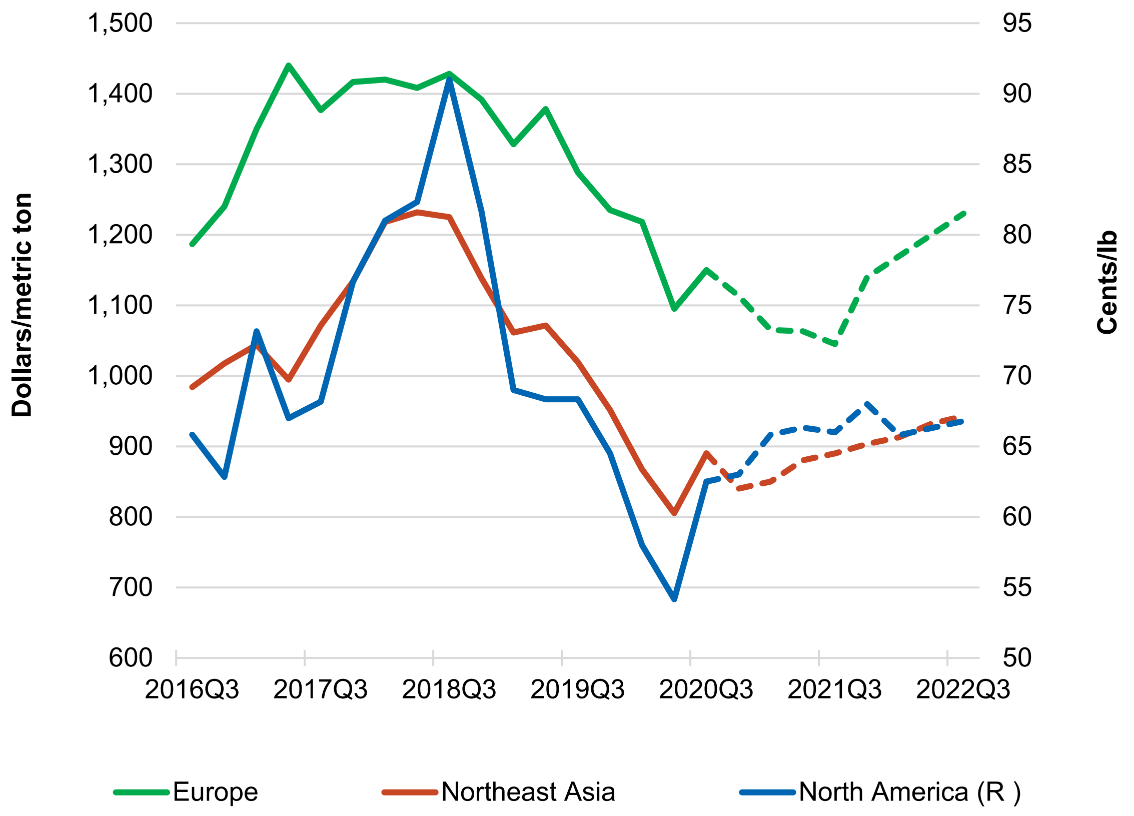


Source: IHS Markit

Polypropylene: Highest pricing pressures being seen in the N. American market. Hurricane Laura adding to supply woes in near-term

- The market has suddenly become very tight, as a jump in summer exports along with a revival of domestic demand have significantly pulled down market inventory
- At the same time, plant operating rates are lingering at low 80% levels, which has limited supply
- Adding to bullish sentiments was a surprise spike in propylene monomer prices in July, increasing costs
- As a result, the July benchmark contract price jumped by 6 cpp and 3.5 cpp in August, with further price gains likely to come
- Still, strong new global capacity growth in the near-term will help dampen pricing pressures, especially in Asia

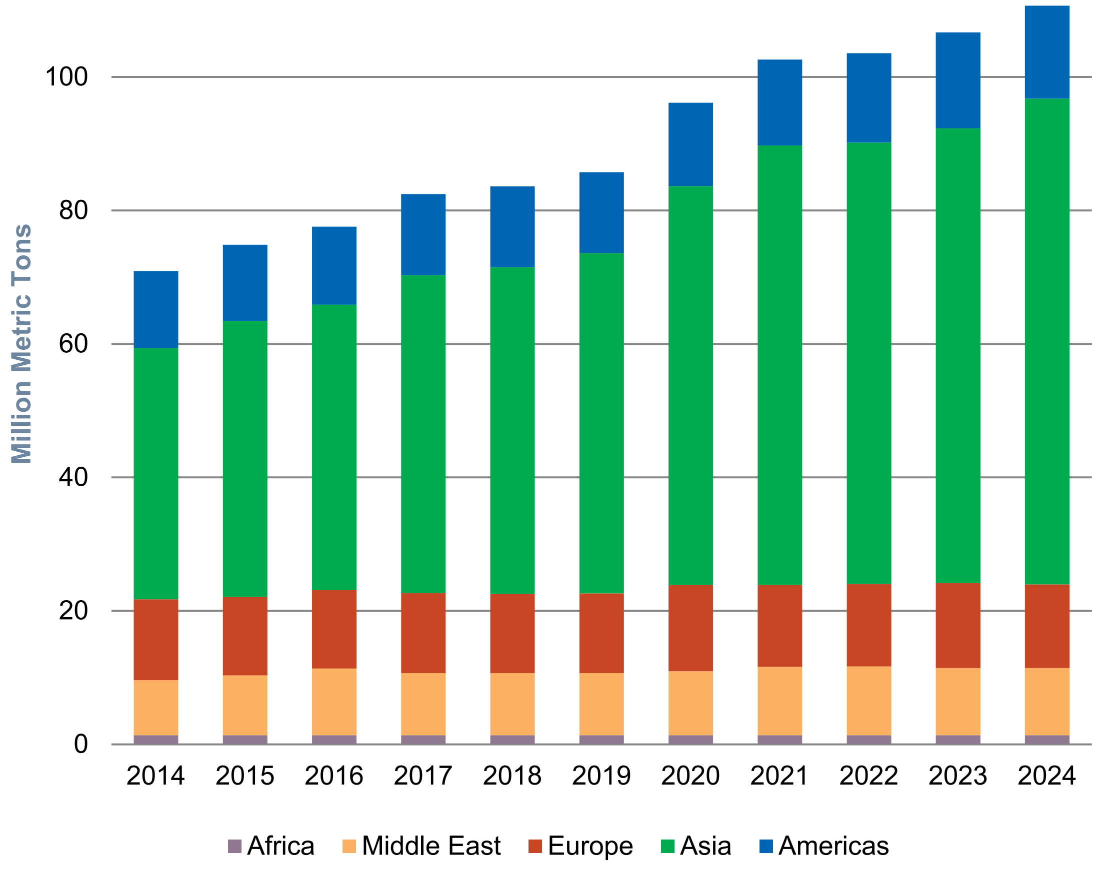
Global Polypropylene prices



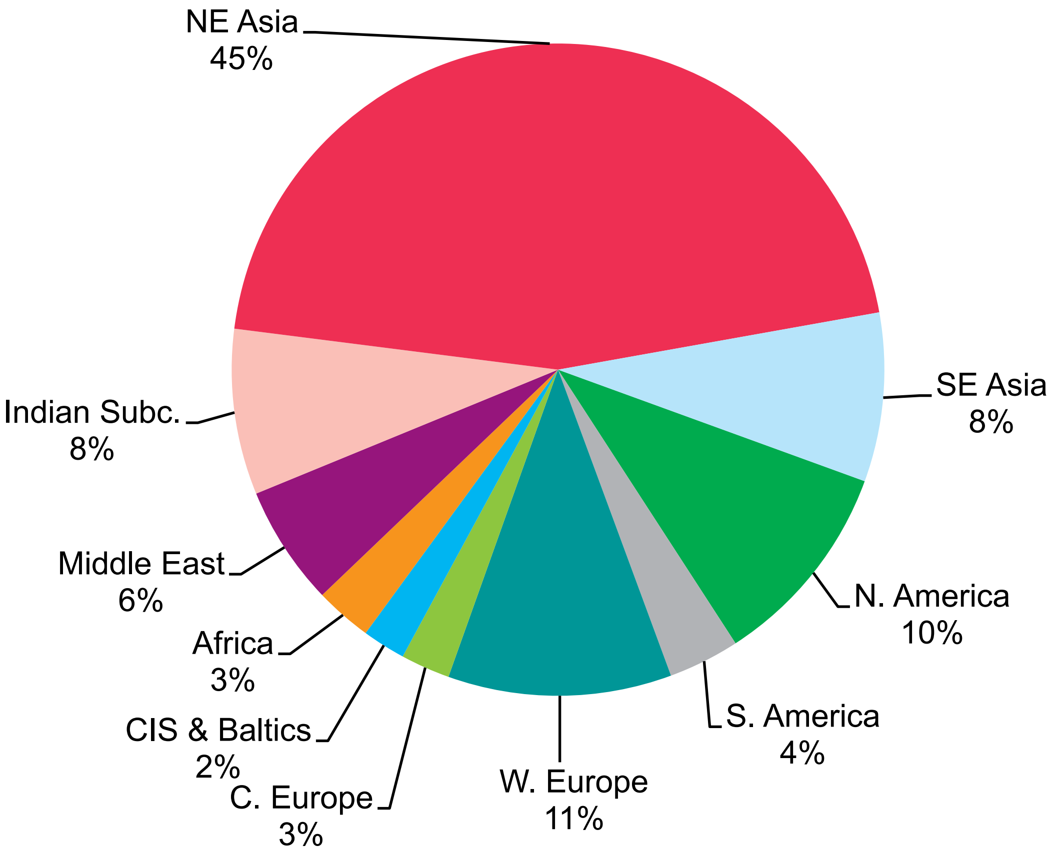
Source: IHS Markit

Polypropylene: Global supply and demand driven by the Asian market

Polypropylene Production Capacity by Geography



World: 2019 Polypropylene Demand By Region



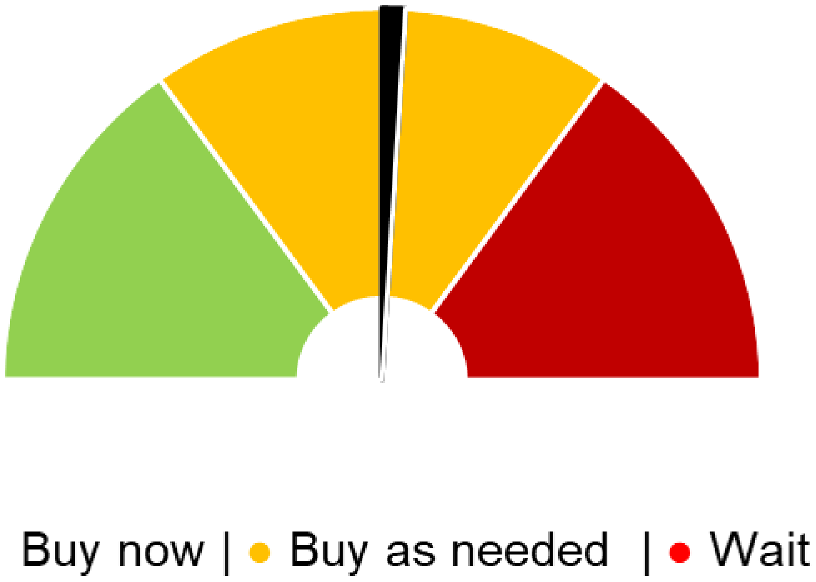
Source: IHS Markit

PVC: Rising feedstock costs impacting the pricing environment

Several producers in the Asia market have scheduled plant maintenances ongoing, which have contributed to near-term supply tightness

	2020Q2	2020Q3	2020Q4	2021Q1
PVC, cts/lb (US)	72.0 ▼	77.0 ▲	76.7 ►	76.1 ►
PVC, $/mt (Asia)	693 ▼	813 ▲	840 ▲	810 ▼

PVC Buying Strategy



Source: IHS Markit

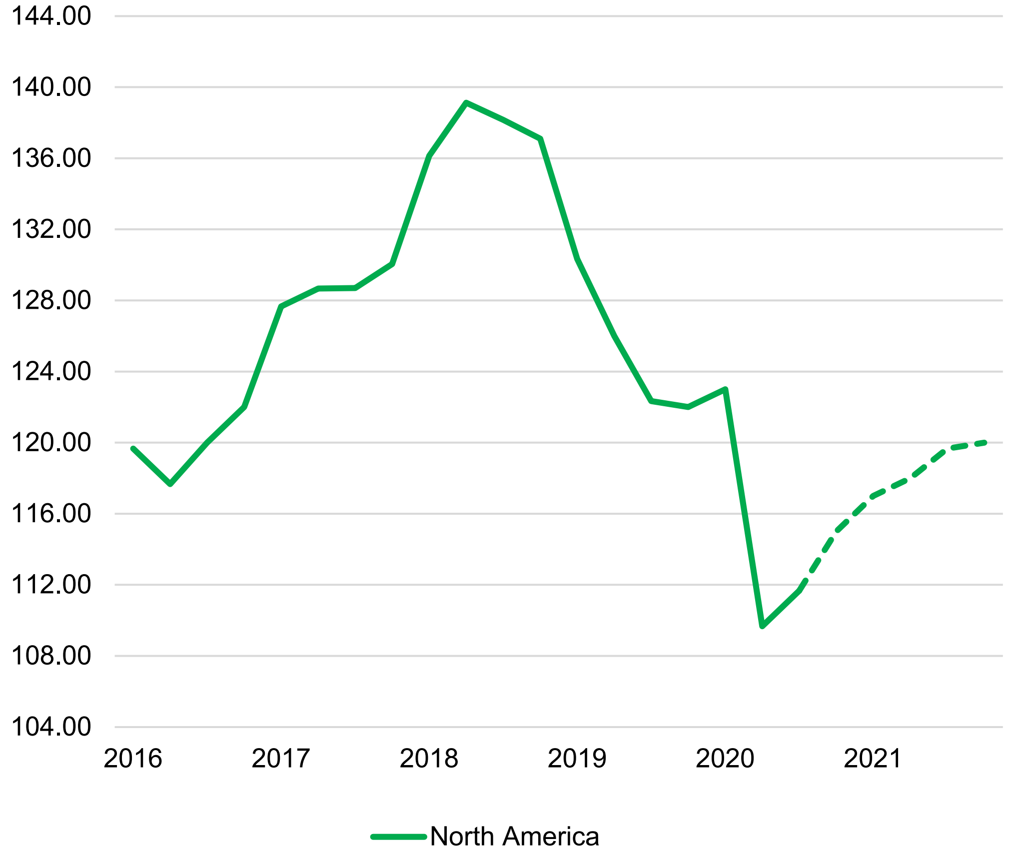
Tighter supply availability, combined with increasing feedstock costs, have resulted in recent upward price pressures

Although demand has received a temporary boost from pent-up buyer activity, post-COVID-19 fundamentals remain weak as construction is expected to struggle, especially in Europe

Bottom Line: Production costs are rising and both planned and unplanned production outages have tightened supply. Still, the shaky PVC demand outlook will prevent any sort of sustained price rally

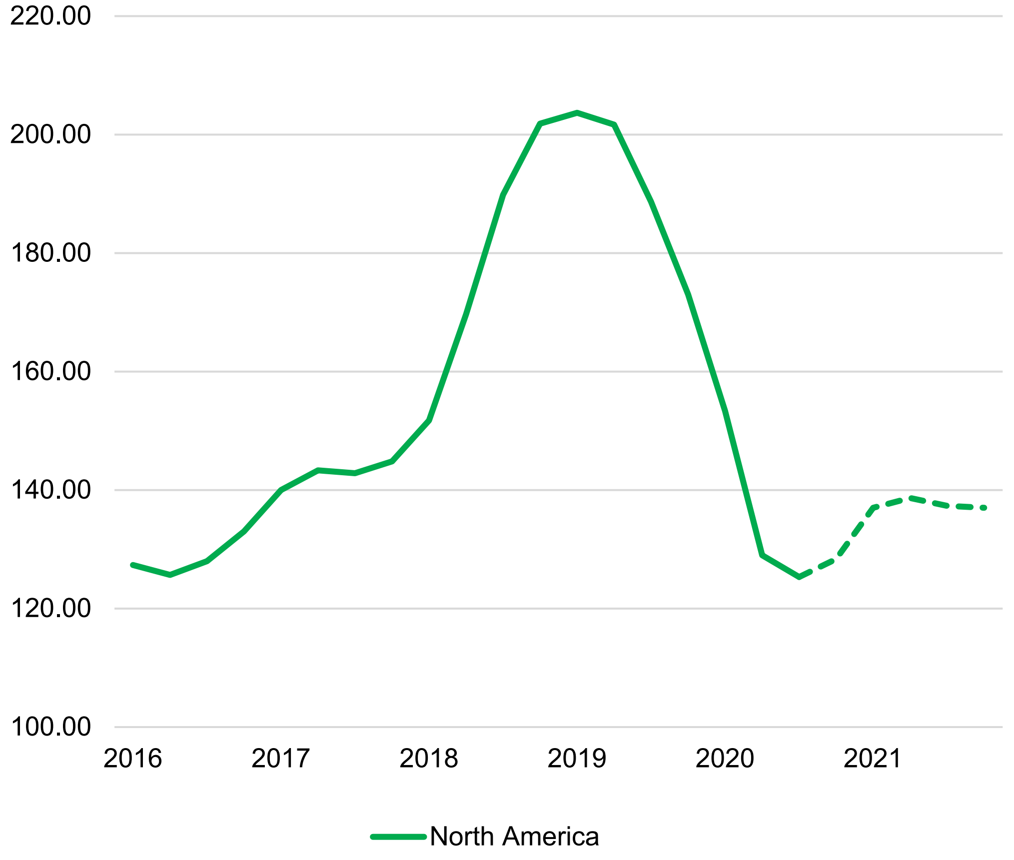
Nylon: Noticeable pricing rebound to occur. Thus, look to take advantage of current pricing as much as possible

Nylon 6 (Engineering Thermoplastic), cents per pound



Source: IHS Markit

Nylon 66 (Engineering Thermoplastic), cents per pound

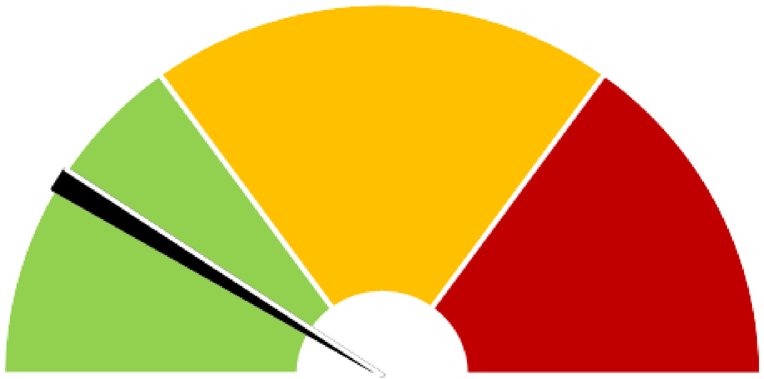


Source: IHS Markit

Polycarbonate: Pricing low point reached in June. Now is the time for buyers to act, as prices will steadily increase going forward

Polycarbonate demand is improving; by our estimates, 3Q20 demand will be 13% higher than 2Q20 demand

Polycarbonate Buying Strategy



Source: IHS Markit

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	2020Q2	2020Q3	2020Q4	2021Q1
PC, cts/lb (US)	126.0 ▼	126.6 ▶	130.0 ▲	132.7 ▲
PC, $/mt (Asia)	1,583 ▼	1,800 ▲	1,813 ▶	1,877 ▲

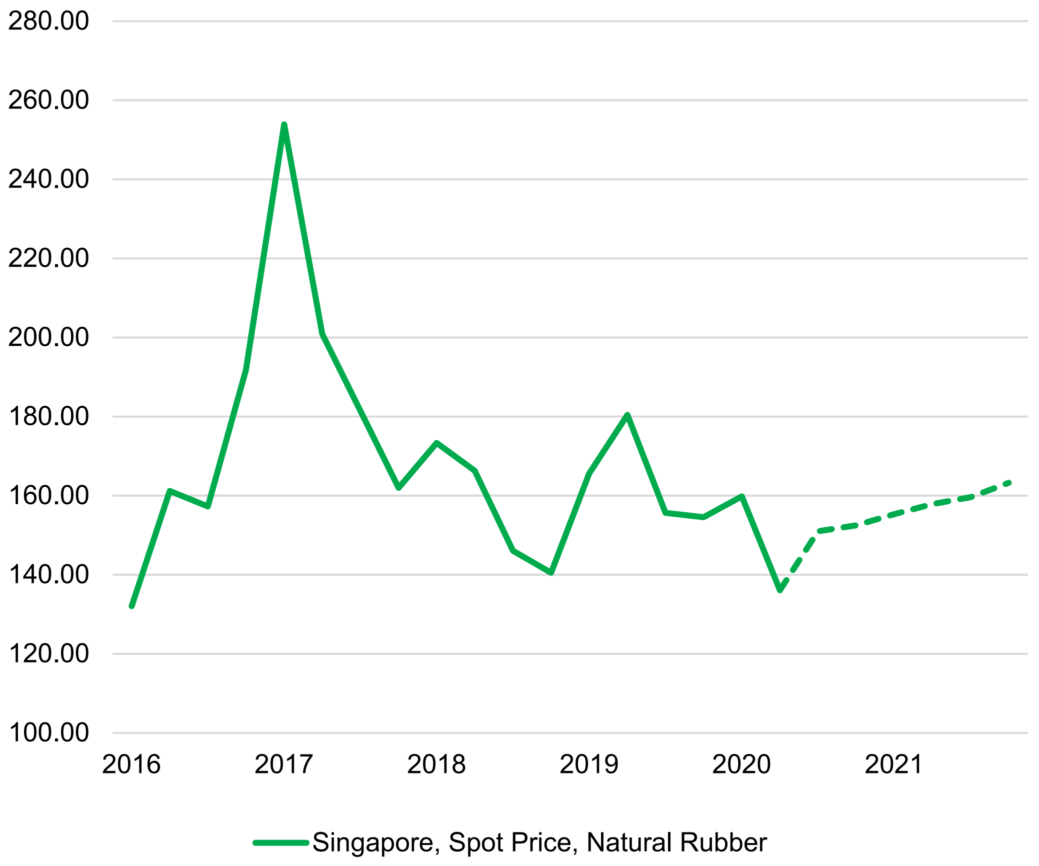
N. American prices increased by 2 cpp to 125 cpp in July. Prices are expected to continue to trend higher going forward

Our outlook has demand recovery powered by the restart of the auto industry and assisted by the sheet goods industry (protective shields at service counters, etc)

Bottom line: Buyer’s have had strong leverage for an extended period of time because of the long period of declining prices; however, the price slide has ended. Still, prices are well below where they were last year

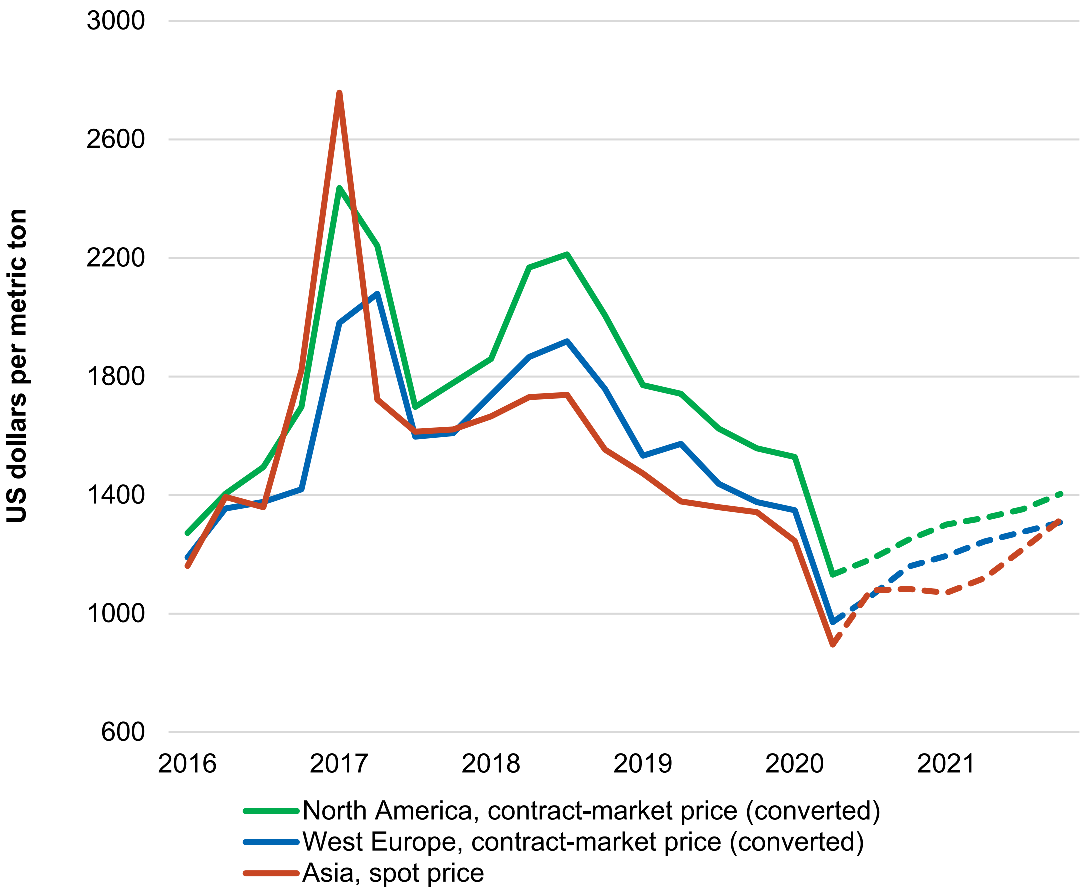
Rubber: Rising feedstock costs and recovering auto sector, especially in Asia, beginning to cause pricing pressures to rise

Natural rubber outlook, cents per kilogram



Source: IHS Markit

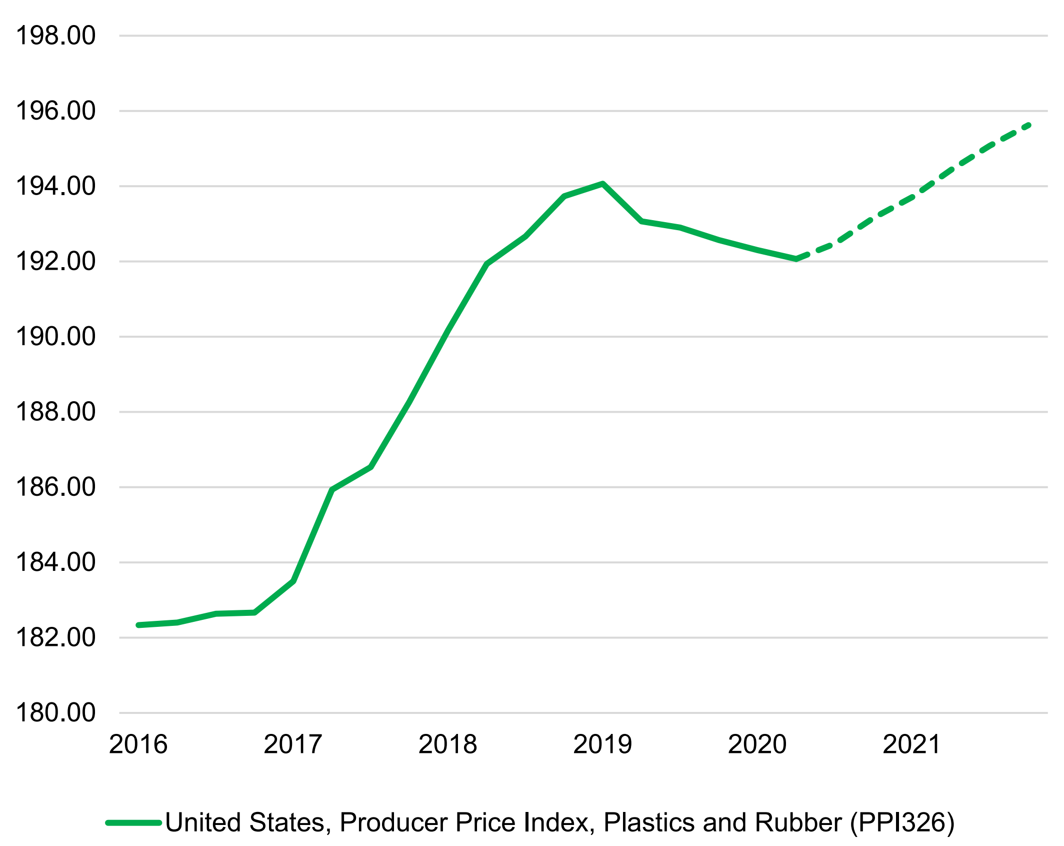
Styrene Butadiene Rubber, dollars per metric ton



Source: IHS Markit

Overall Pricing Summary: Prices for products will now push higher after period of soft pricing; outliers have existed via Covid-19 induced demand

Plastics and Rubber Index: Units: December 1984 = 100



Source: IHS Markit

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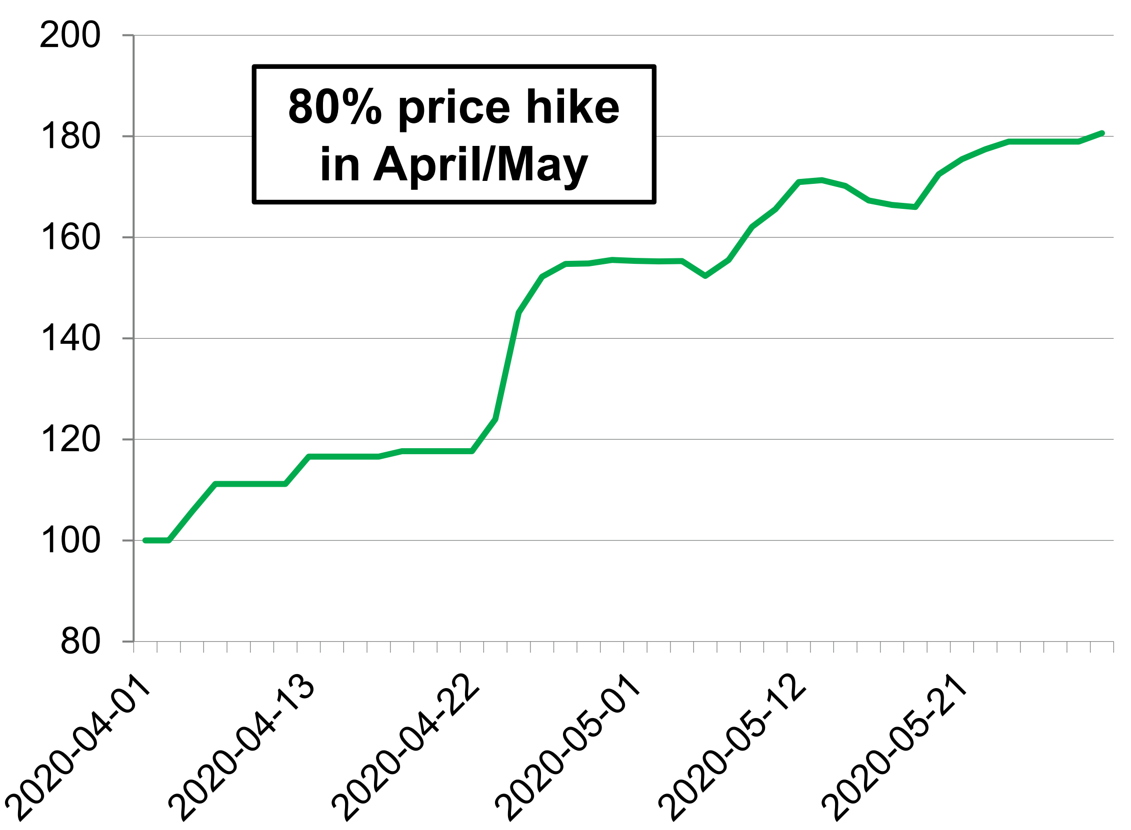
N95 Respirator Price Index: Units: April 1, 2020 = 100



Source: IHS Markit

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Summary and Key Takeaways:

- Base resin prices have increased strongly since late spring:
  - Rising feedstock costs
    - recovering oil market
  - Steady demand
    - Covid-19 induced demand for materials such as film/sheet and personal protective equipment have helped keep resins demand relatively good even with collapsing GDP and strong drop in major sectors such as construction and autos
  - Tight supplies
    - Hurricane Laura has added further supply woes to market already experiencing several temporary planned and unplanned production outages
    - For example, The arrival of Hurricane Laura on August 27th knocked out approximately 17% of US PE production capacity. Four PE producers have declared force majeure as a result of the storm damage
- Still, buyers will regain some leverage later in the year, as the economic recovery remains shaky. In addition, resin markets are adequately supplied on a longer-term fundamental basis because of strong capacity growth, especially in North America and Northeast Asia
- **Bottom Line:** While resin prices will generally be trending up over the next several quarters, buyers will have better leverage and be in a better position to negotiate in late 2020 and early 2021 compared to right now, as short-term supply and inventory levels will be higher going forward

Thank you!

Questions?

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