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3Q 2022 Results and Trends: The TiO_2 Industry

TiPMC Consulting

Consultants to the Financial, Chemical and Minerals Industries

The TiO_2 Industry:
3Q Results and Trends

TiPMC has reviewed the financial results of 3Q22 and the results are signaling a pivot point in the industry. All Multi-National producers (MNPs) have been impacted by European and Asian demand, particularly China, having turned south very quickly. There are numerous indicators that the beginning of a large destock is being witnessed, as underlying demand dropped precipitously in these regions, though North America and South America continued to see favorable demand.

> *All Multi-National producers have been impacted by European and Asian demand, particularly China, having turned south very quickly.*

Chinese exports continue to be a threat to the MNPs. As domestic demand declines below seasonal levels, Chinese producers are offering lower prices to gain share in the export markets. Data suggests Chinese exports have declined sequentially in September. Chinese net exports increased by nearly 50Kt compared to 3Q21, while MNP sales dropped over 150kt.

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The industry is entering a difficult period. The level of uncertainty is extremely high. The concerns with the housing market in North America continue to grow. Some hope was kindled by signs of slowing inflation in the USA. Still, elevated interest rates have weighed heavily on home sales. The US appears headed for a recession. As US housing sales remain low, coatings producers and TiO_2 suppliers are very cautious as to the prospects for 2023. Signs are mixed as to the potential for China to lift its zero-COVID policy. Economic stimulus in China is likely. The current state of the housing industry causes concern that any stimulus may not filter down to TiO_2 consumption.

Most observers believe a large part of the slowness in Europe is destocking on the part of large TiO_2 consumers. Some are expecting an accelerated rebound in demand, particularly in Asia and Europe, and these regions led the destocking. Past destocking periods support this outlook, particularly given the seasonal aspect, as 4Q is always the slowest quarter for underlying demand. Natural gas supplies appear to allow for energy needs through the winter. The volatility of the situation remains a concern.

In reviewing 3Q22 results considering all the challenges, TiPMC has highlighted these key elements:

- MNPs have responded quickly to deteriorating market conditions by cutting back production. The boldness of the production cuts is striking.
- Cost pressure remains high. Reduced sales always carry the burden of fixed cost distribution across fewer tonnes. Feedstock, chlorine, energy, and other variable costs have not allowed

for any relief. Venator announced a targeted USD50M cost reduction initiative, highly focused on SG&A costs

- TiPMC continues to believe MNPs will manage price carefully, in line with their stabilization initiatives. Chemours highlighted the portfolio as being 80% based on AVA contracts. Tronox reiterated their view of a recession scenario, a USD2000/t price decline, as they presented it on Investor Day. TiPMC continues to believe they will reduce production to manage cash and right size inventory levels heading into the downturn. Venator and Kronos have severely curtailed production at European facilities, while all European operations appear to be significantly impacted.
- Prices appear to have held for all producers, in terms of local currency. The strong dollar weighs heavily on everyone's revenues from the quarter.
- Large Chinese producers are reporting higher production rates in October. Attempts at price increases through October and early November have not been successful. The latest price increases of USD100/t, led by LB Group, are promising to be more successful.

The hope is that China and its sphere of influence in Asia will recover prior to Western Europe. Robert Fry Economics is forecasting deepening recessions in Germany, Italy, and the UK, as well as negative growth in the USA. TIPMC believes the quick actions to reduce inventories will help soften the impact of the North American and Western Europe recessions. Strong balance sheets will be coveted by all TiO2 companies.

Macro-economic Trends Impact Results

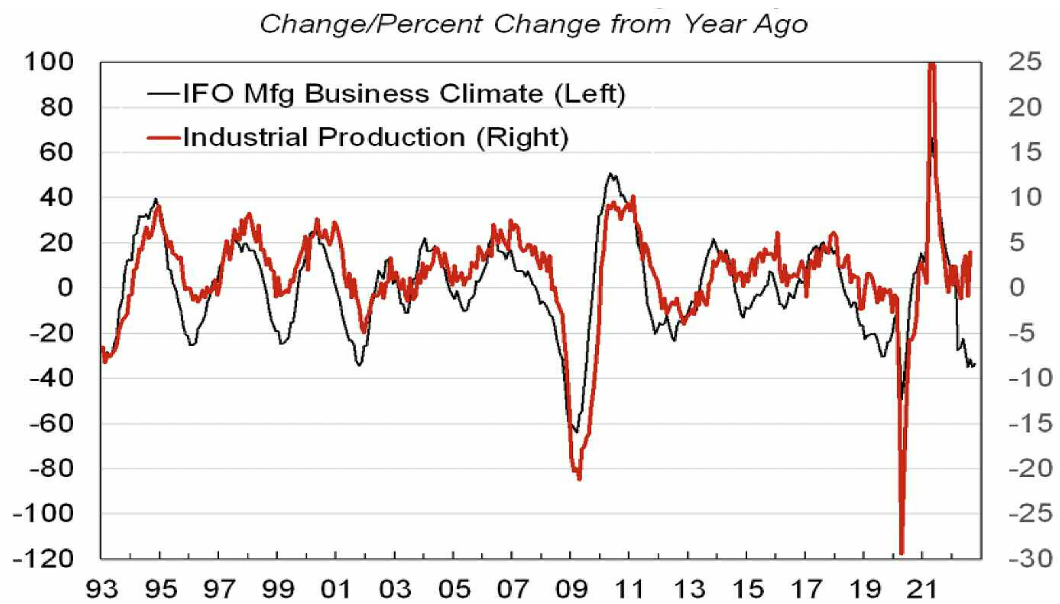
Several macro-economic elements coincide with comments from MNPs, particularly related to Asia and Europe. Several leading indicators foresee a tougher road in 2023 for North America.

In Europe, the current state of industrial production correlates with the state of the TiO_2 industry. Robert Fry notes:

- The 12-month change in the German IFO manufacturing business climate index has historically led year-over-year growth in EU manufacturing production by three months and is reported in a timelier manner.
- The IFO index plummeted in March in response to Russia's invasion of Ukraine. It had another big decline in September. In recent months, its 12-month change has been at its lowest level since May 2020. The index suggests that year-over-year growth in industrial production will turn negative in coming months.

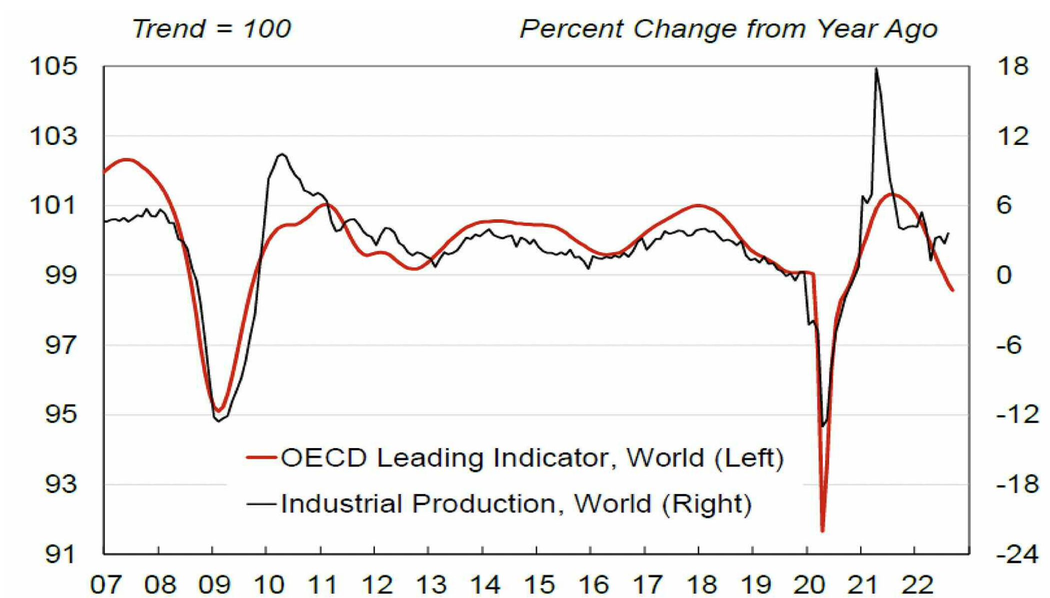
In terms of Global Industrial Production, Fry reviews the Organization of Economic Cooperation and Development (OCED), and its leading indicators for OCED members. Fry notes, these indicators are highly correlated with year-over-year growth in global industrial production.

Industrial Production, Manufacturing: European Union



Source: Robert Fry Economics LLC / Eurostat IFO Institute

OECD Leading Indicator & Global Industrial Production



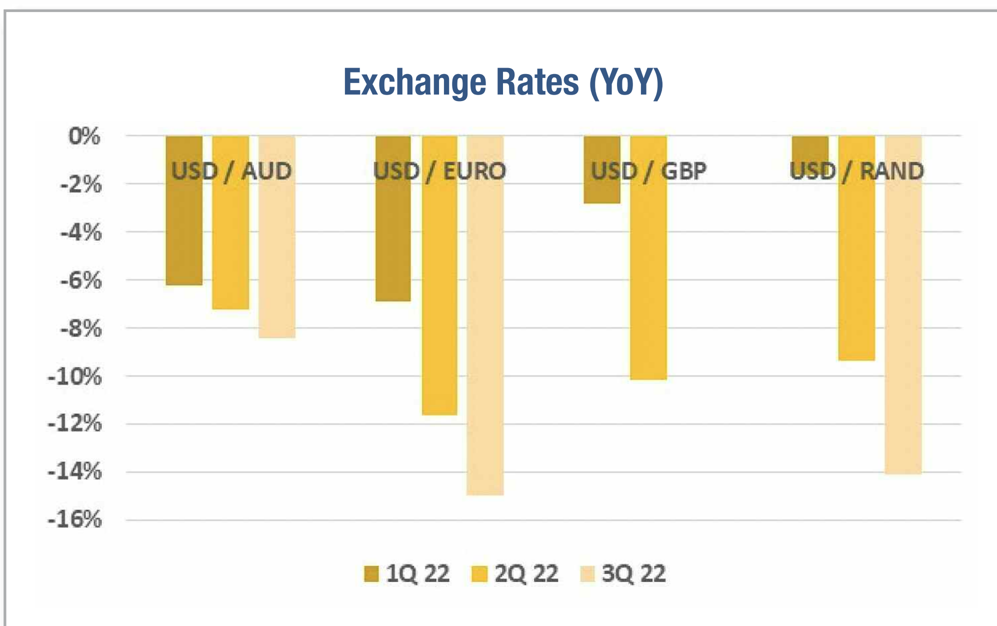
Source: Organization for Economic Cooperation & Development, Central Planning Bureau (Netherlands / Robert Fry Economics LLC

There may be some brighter signs in Asia, particularly China. Fry Notes:

- Value Added of Industry, China's official measure of industrial production, was up 6.3% year-over-year in September. That's the highest year-over-year growth rate since January/February but comes off a weak prior-year comparison.
- My preferred measure of growth in industrial production, the median year-over-year growth rate of 100 industrial products, rose to 5.8% in September, but it had been negative in the prior six months.

The strong dollar has substantially impacted 3Q22 results. Traditionally, TiO_2 companies have struggled with the strong dollar, as North American producers sell products in Europe in foreign currencies, while costs and corporate reporting are both in US Dollars. Sales in Asia are generally in US Dollars. TiO_2 products sold from their Australian operations benefitted the most, as most of the production is sold in Asia.

Product produced in the UK and Europe receive the same benefit if sold outside the continent of Europe. For sales within the continent, costs are reduced in USD, as are sales. This presents a net negative. The worst scenario is producing in the USA and selling in Europe.



Source: https://www.federalreserve.gov

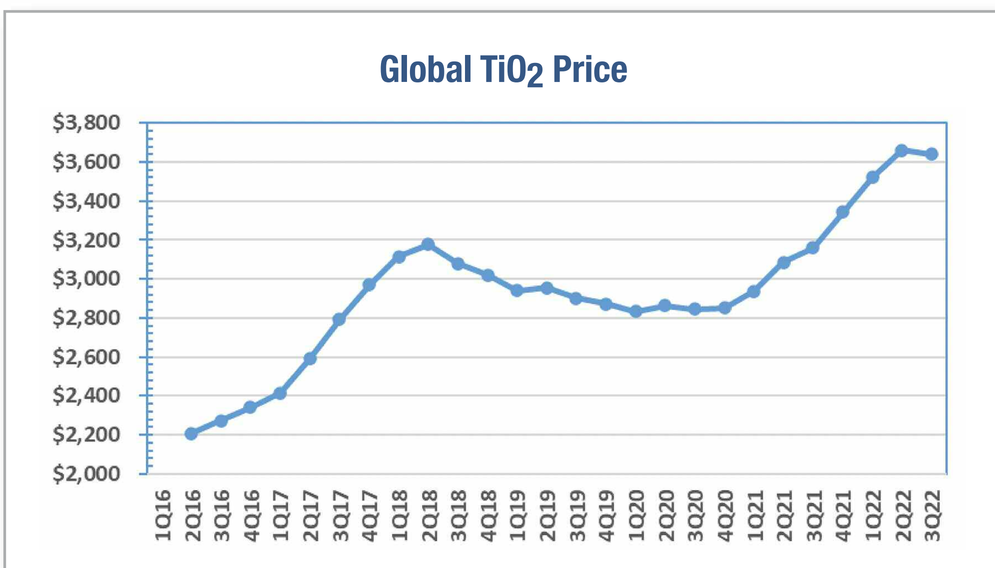
Prices Remain Steady but are Impacted by Exchange Rate: Revenues Shift by Regions

Prices in local currency was flat to slightly up, as noted by all reporting companies. All companies were impacted by exchange rates, mainly in Europe. TiPMC believes the accelerated actions to cut production were aimed at maintaining price through 3Q22 and into 4Q22.

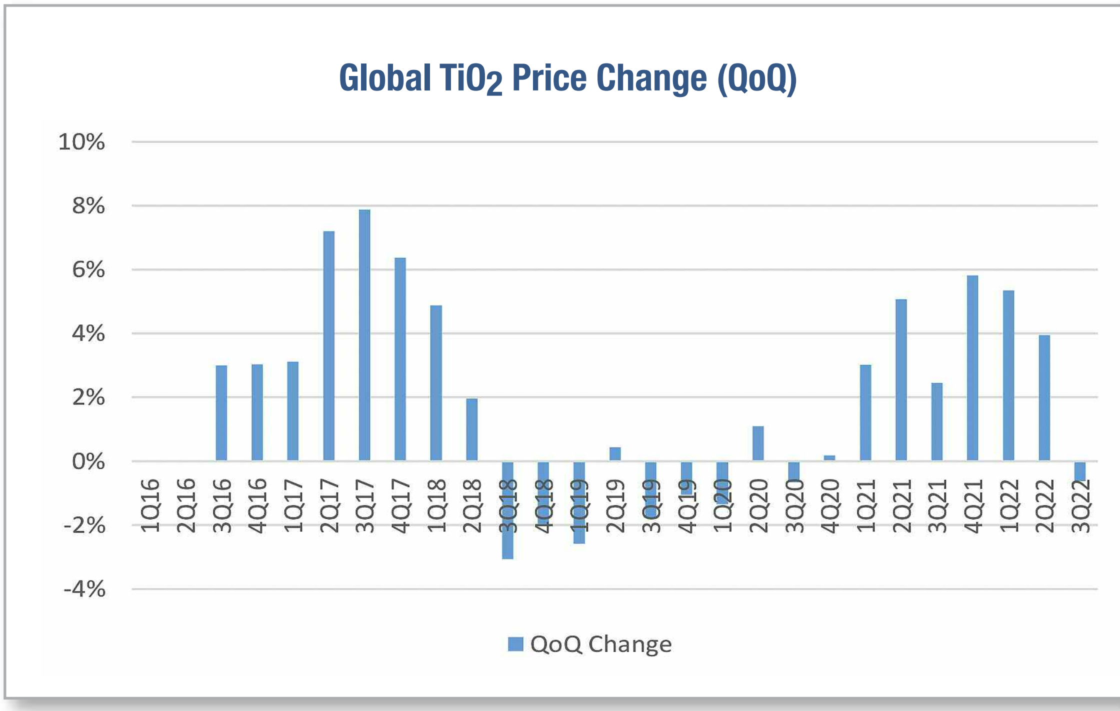
> *TiPMC has prepared its best estimate for price and volume change for each competitor, based on public information and its own analysis.*

As noted by nearly every producer, costs continue to substantially impact margins. Many comments indicated product produced in Europe, particularly on sulfate lines, were challenged to produce positive margins in the second half of 2022.

With lower demand impacting the ability to pass along costs, selling at negative to low margins led to the decision to forego sales of these products, and substantially reduce production to control inventory and reduce working capital. TIPMC has prepared its best estimate for price and volume change for each competitor, based on public information and its own analysis.



Source: Company 10Qs / TiPMC Estimates



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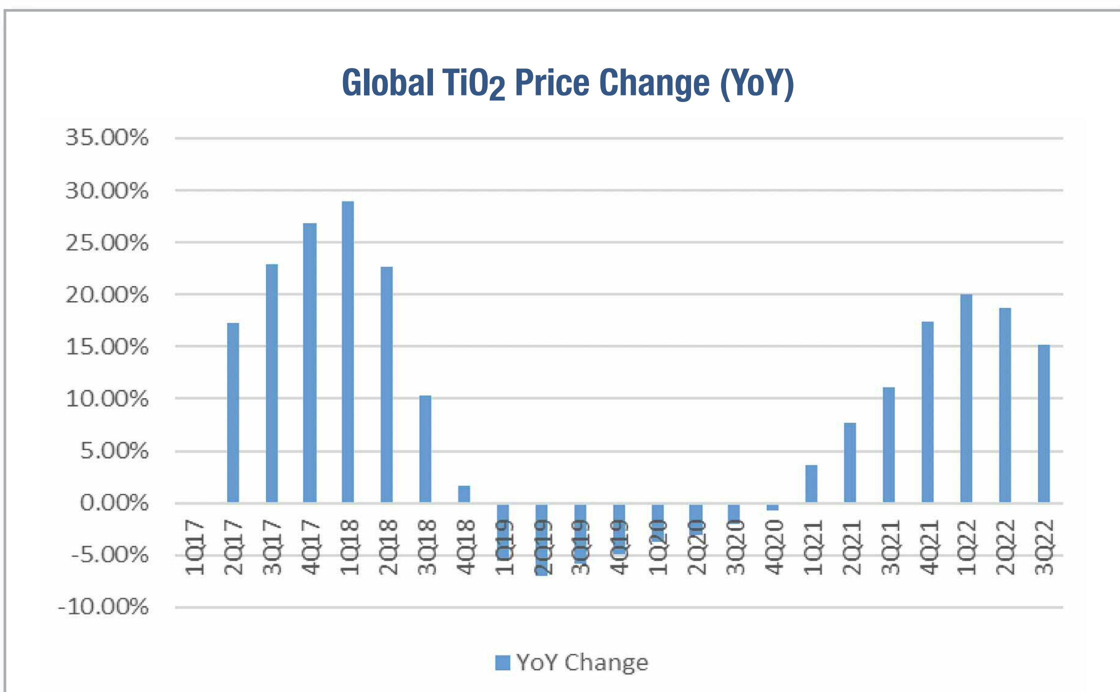

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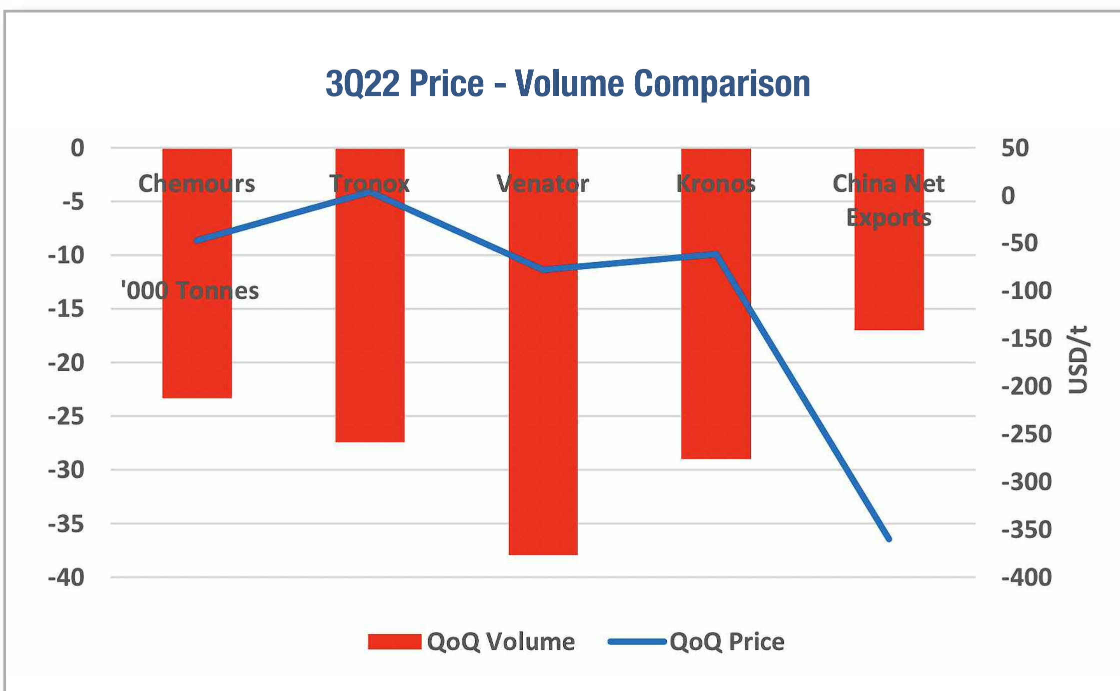
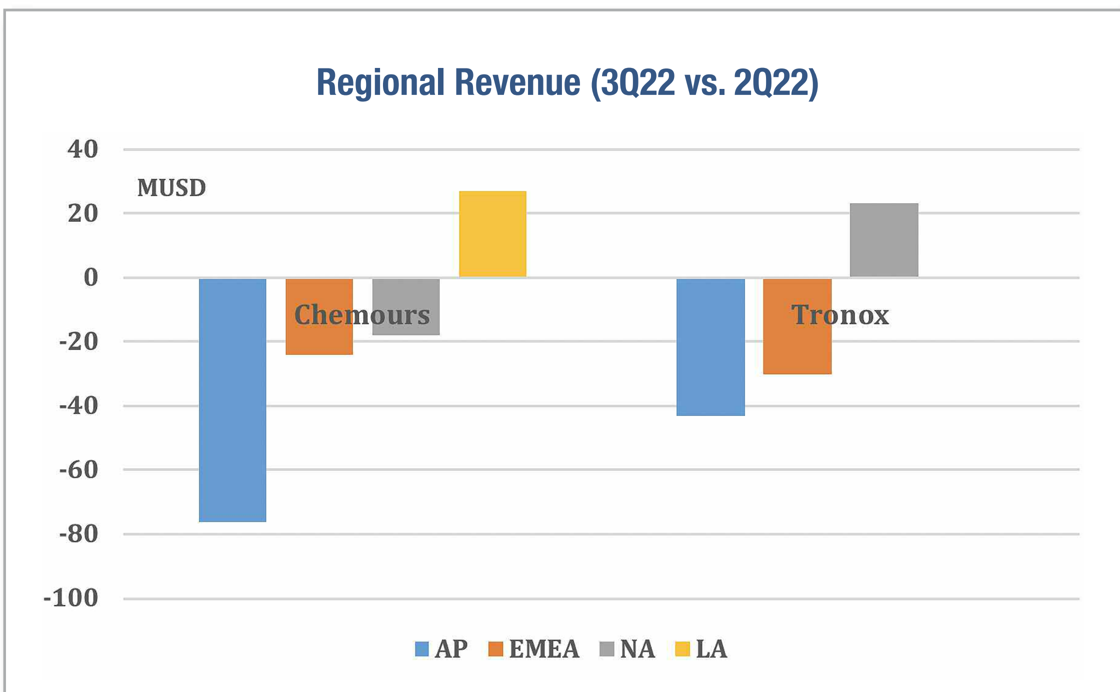


Source: Company 10Qs / TiPMC Estimates

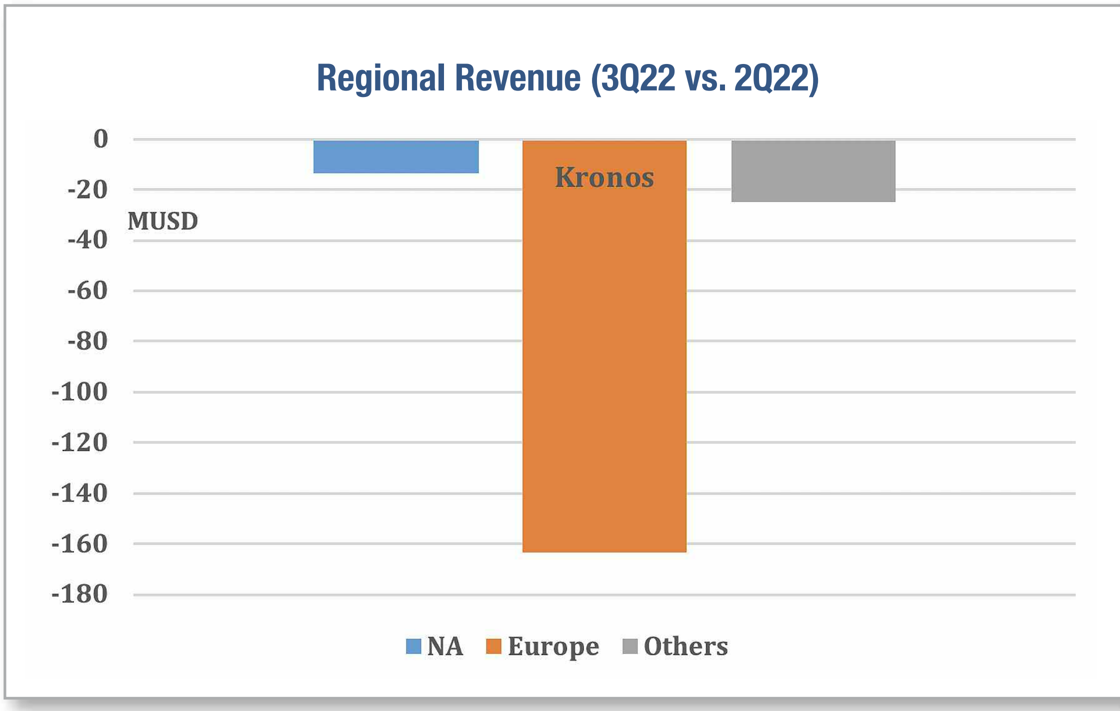
Analysis of regional revenue indicates the impact of lower volumes in Asia were strongly felt in 3Q22. The slower Asian market was noticeable in both the Chemours and Tronox results. The sequential drop in Asia was most noticeable for both companies. Chemours revenue dropped noticeably sharper in Asia than EMEA. Tronox results are complicated by the strong influence of Zircon in both EMEA and Asia.

The discussion around markets in the Americas maintaining strength is also noted in all company results. Tronox and Venator were able to expand revenue in North America. Chemours grew in Latin America, while Tronox remained flat. This is consistent with the commentary of both companies and coating producers, as the Americas remained strong despite slowing market in Asia and Europe. Chemours lost revenue in North America when compared to the previous quarter. TiPMC believes this is in line with portal prices being decreased quickly, and more revenue generated from AVA contracts.

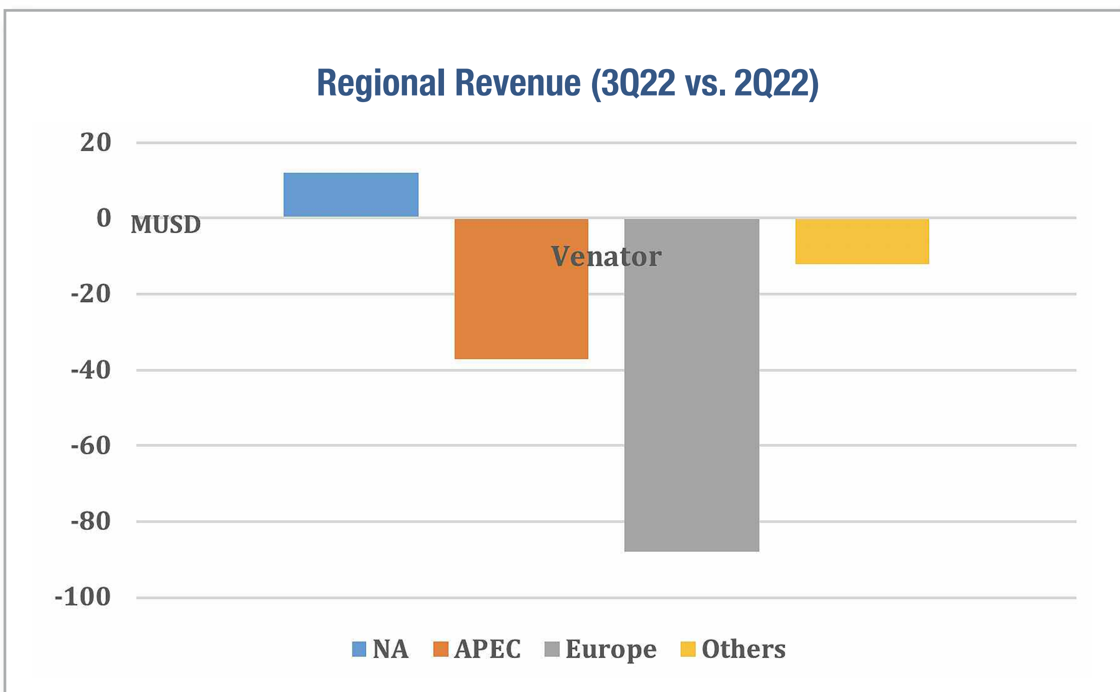
Kronos and Venator saw a significant drop in Europe in line with the manufacturing footprint and regional sales profile. The smaller export business to regions outside of North American and Europe is in line with the reports of weakening markets in the Middle East and Asia. For Kronos, the drop in revenue from outside North America and Europe is about 25%, while Venator's APEC sales where nearly a 40% decrease.



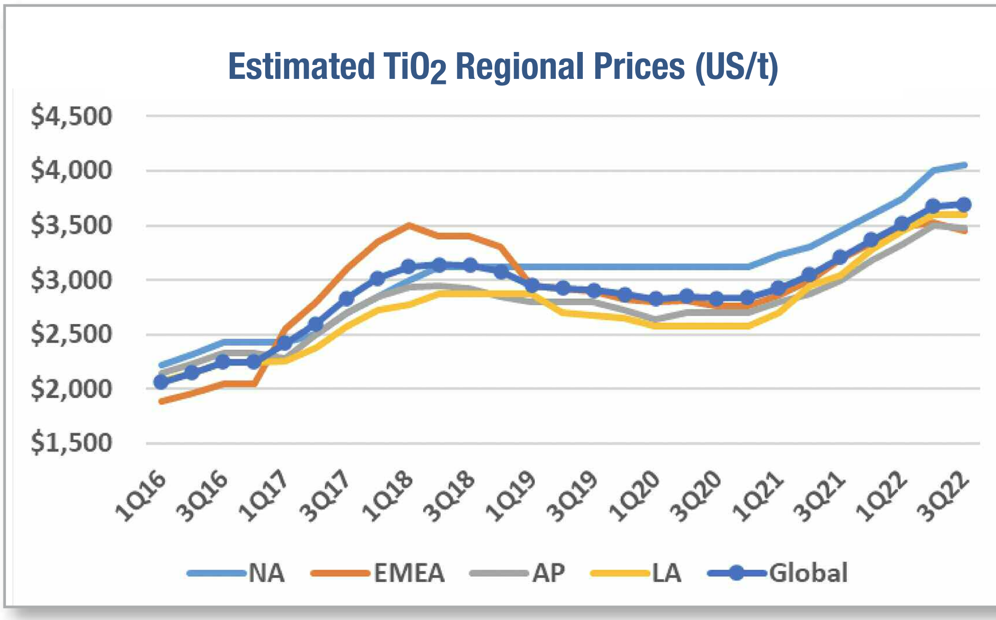
Source: Company 10Qs / TiPMC Estimates



Source: Company 10Qs / TiPMC Estimates



Source: Company 10Qs / TiPMC Estimates



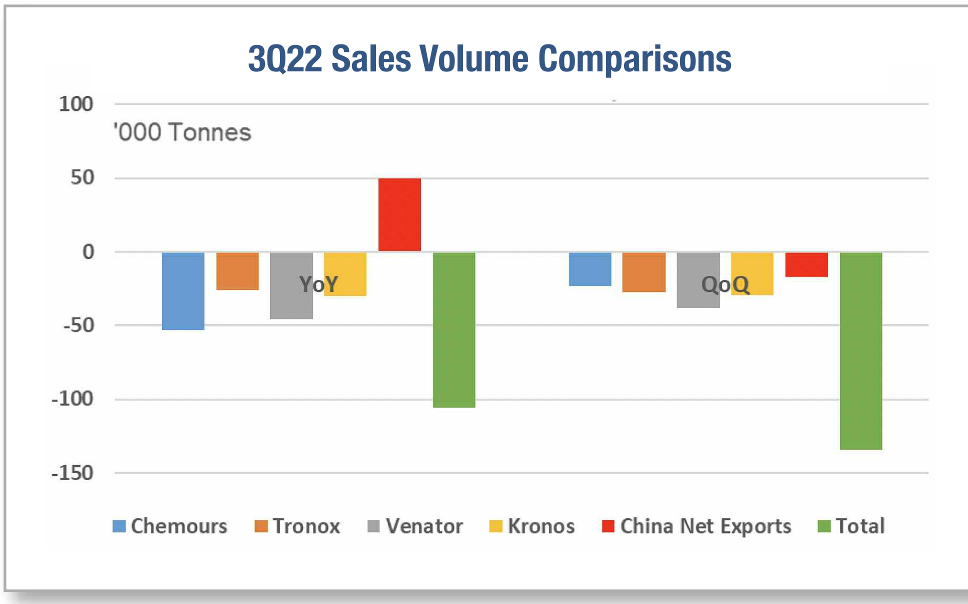
Source: Company 10Qs and TiPMC Estimates / Global Trade Tracker

3Q Volumes Sequentially Drop on Lower Demand in Europe and Asia

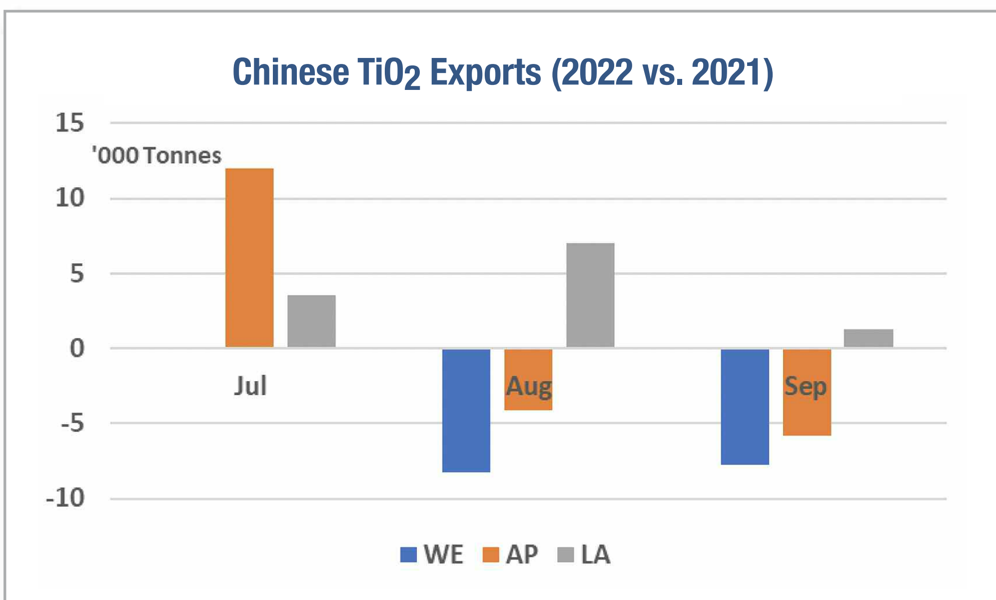
TiPMC estimates a drop of sales outside China of about 11% in the third quarter of 2022 as compared to the previous quarter. TiPMC calculates the sales figures based on its calculation of sales of all 4 MNPs, net exports (exports – imports) from China, and its estimate of sales from Ineos' Ashtabula plant.

Source: Company Global Trade Tracker / TiPMC Estimates

The reported revenue drop across key regions speaks to the impact of lost volumes across EMEA and AP. The sequential gain in net exports from China was much more muted. As was described in the October *Ti-Observer™ Insights*, Chinese exports to Europe weakened in July, and slipped throughout the quarter, seeing significant drops in Western Europe and Asia as the quarter progressed. As Western Europe weakened, exports to other regions increased. By September, exports to all regions were near or below 2021 comparisons.

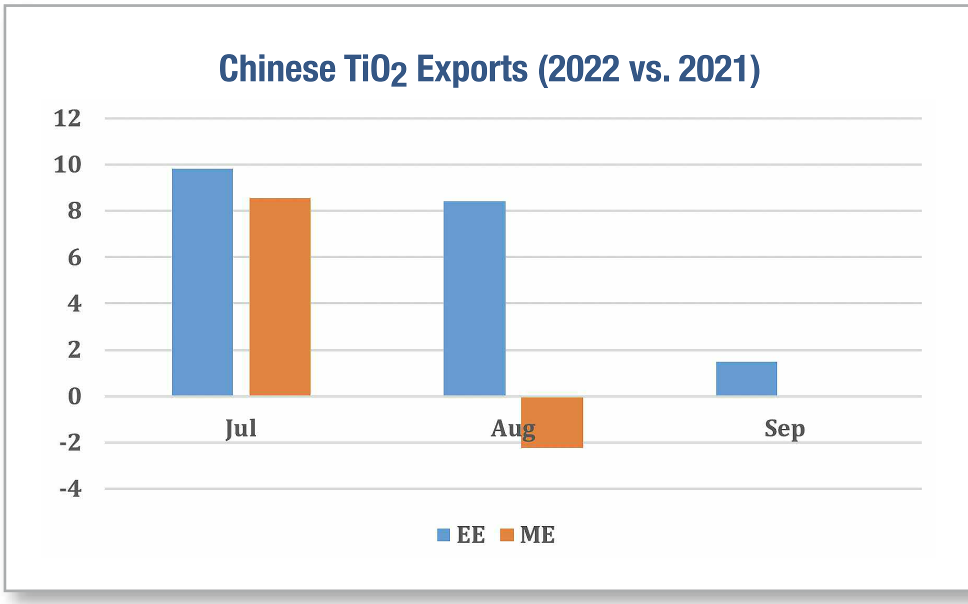


Source: Company 10Qs and TiPMC Estimates

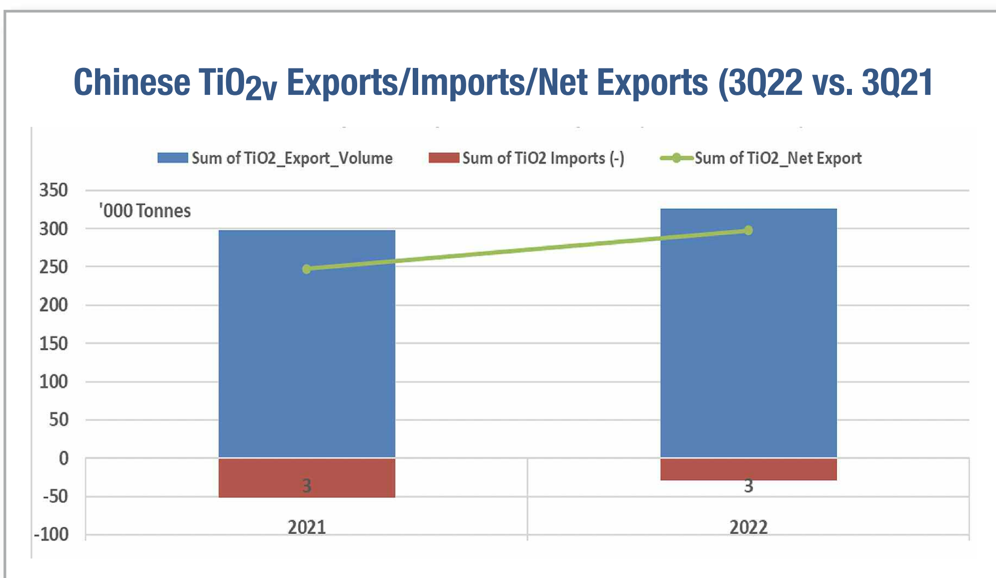


Source: Global Trade Tracker / TiPMC Estimates

Imports into China had an unusually major impact on “net” exports. Compared to 3Q21, Chinese imports were down 23kt, or 45%. This accounted for nearly 50% of the change in net exports. Roughly half of the increase in net exports was increased Chinese exports, while half of the “net” increase was a decrease in imports. As the Chemours is generally a large importer into China, this coincides with their reported revenue decrease in AP.



Source: Global Trade Tracker / TiPMC Estimates

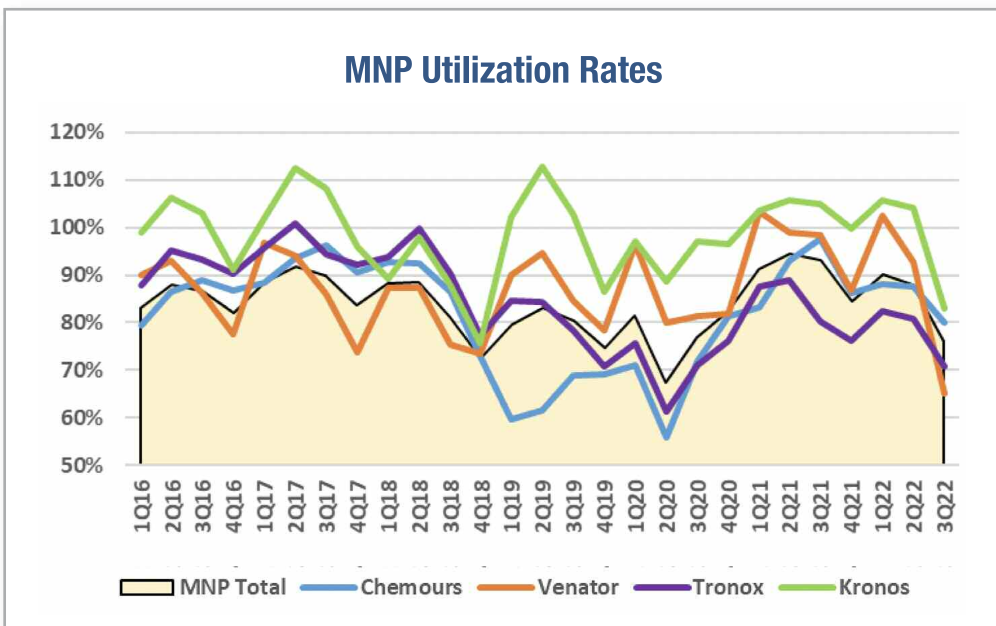


Source: Global Trade Tracker / TiPMC Estimates

MNP Utilization Rates and Finished Product Inventory Reflect the Downturn in Demand

TiPMC estimates utilization rates to drop significantly among MNPs. The calculation is based on TIPMC's estimate of sales relative to the capacity of each company. The data indicates the need to idle lines and plants within each company to prevent significant inventory build. The drop of over 10 basis points from 2Q22 to 3Q22 is huge.

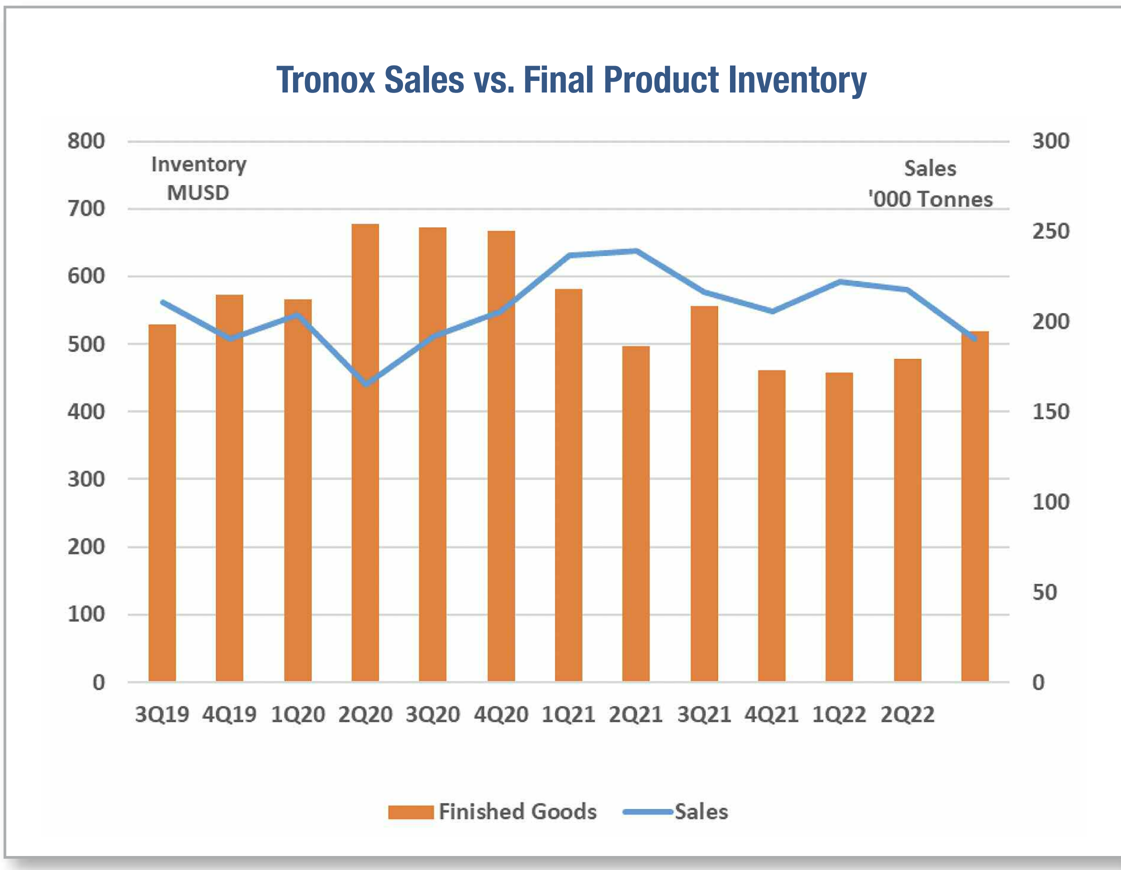
4Q22 utilization rates will be significantly lower. Some observers believe 4Q22 sales may not be as dismal as first thought. There is optimism particularly around reduced lockdowns in China, resulting in increased economic activity. Many observers believe the Chinese central government will focus on greater economic recovery, stimulating demand throughout Asia. There is some evidence that orders have picked up in November. The bigger question is if this is truly higher demand or share shift between MNPs. TiPMC believes the reality to be somewhere in the middle.



Source: Company 10Qs / TiPMC Estimates

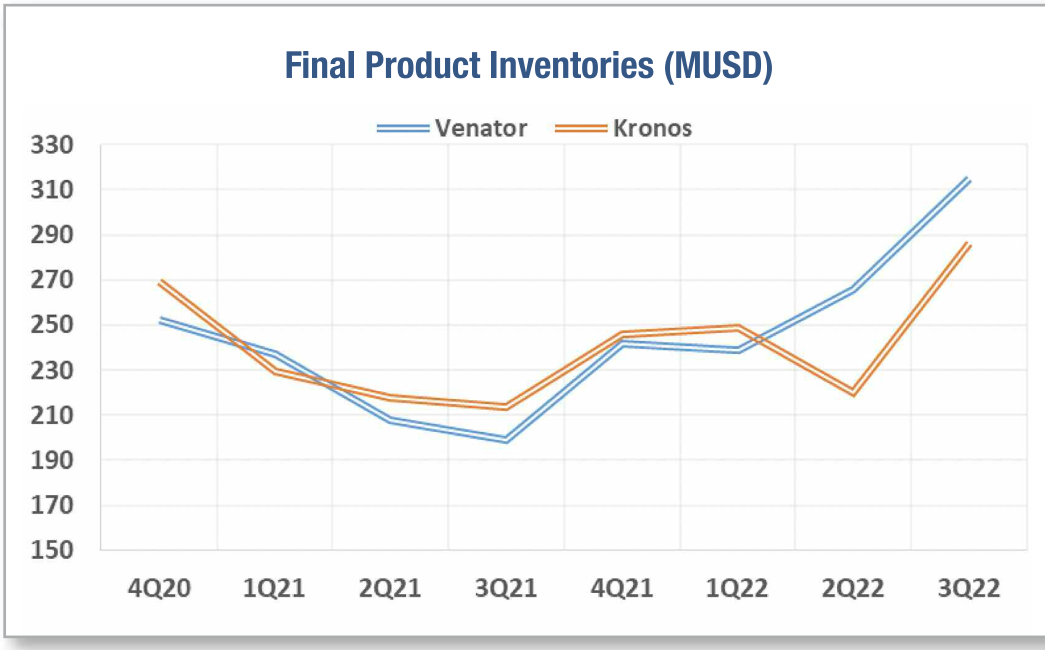
Inventory movements within each company suggest the need to take quick action to avoid overstocking. Almost within weeks, companies proceeded from struggling to meet orders to idling operations. The increase in inventory levels is to be expected, as the situation changed in dramatic fashion.

Comparing to 2Q21, all producers were again lower in volume except for Chinese net exports. Similar to the sequential comparison, the change in overall price is extremely different. The impact of inflation is noticeable. Even with a reported 70% of their portfolio on AVA contracts, Chemours ranks near the price increase. Chinese producers, despite a miserable domestic market, still have instituted price increases as compared to 2Q21.



Source: Company 10Qs / TiPMC Estimates

The swiftness of the change in the situation in Europe becomes very apparent with inventory at European producers, Venator and Kronos. It also suggests why swift action as required on the part of both producers to dramatically reduce production in Europe. With cash a concern, inventories will be managed extremely carefully to minimize 4Q levels while maintaining high customer service levels.



Source: Company 10Qs

MNP Financial Performance and the Impact of Continually Increasing Costs

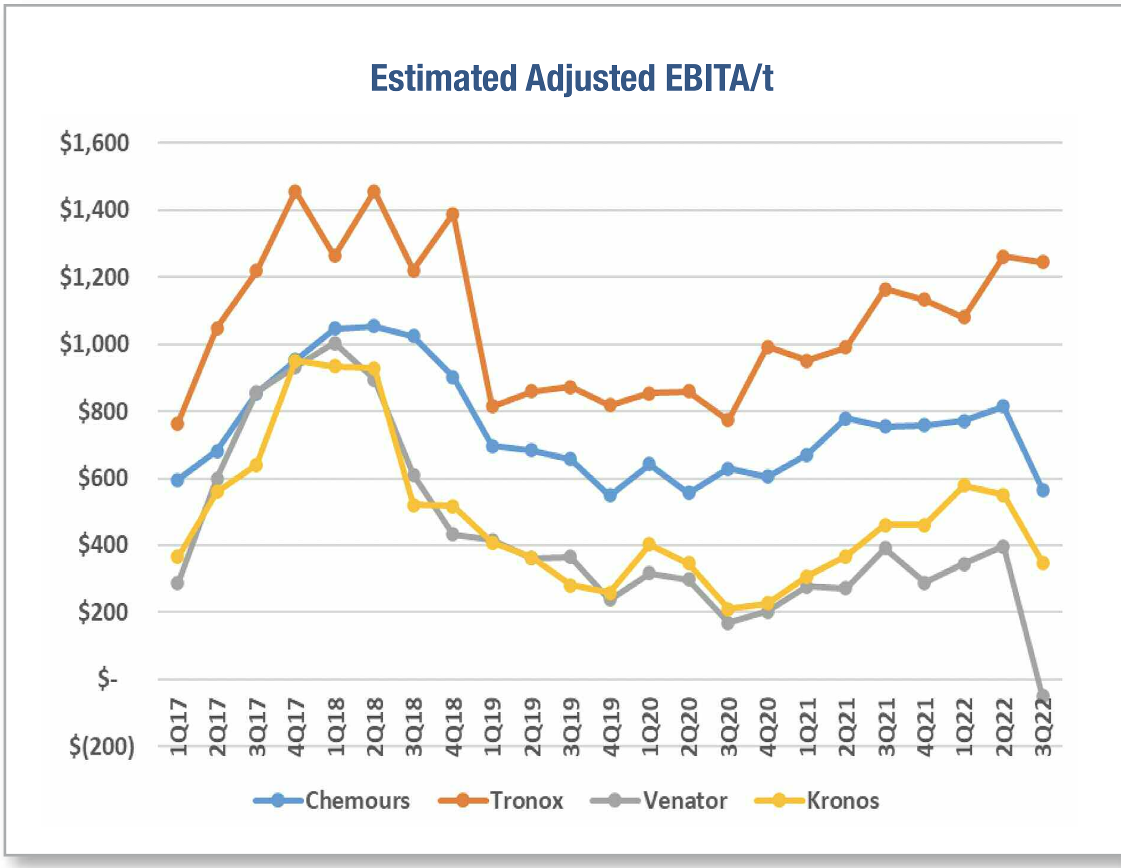
The reduced volumes significantly impacted EBITA for each company. The sharp downturn among all producers is highly unusual. All indications are that the 4Q22 will see a sharper rate of decline. With little cost relief in 4Q22, the focus turns to cash and price preservation.

The EBITA/t analysis indicates the value of back-integration, particularly as Zircon and feedstock markets remain strong. TiPMC fully expects 4Q22 to be the low point in terms of sales volumes, as the unique circumstances in Europe and Asia do not appear sustainable. Zircon and other products were a significant contributor to EBITA and were magnified in terms of EBITA/t as a result of reduced pigment sales volume.

Costs are not decreasing as fast as TiO2 sales volumes. Adding to higher input costs are the impact of fixed costs distributed across less tonnes. TiPMC estimates cost based on earnings and pricing estimates. TiPMC considers any products sold outside of TiO2 as a credit to costs.

The impact of cost inflation over the past year is clearly seen from the YoY comparisons. Tronox has benefitted from a strong credit from Zircon and pig iron as well as back-integration of 85% of their feedstocks. All producers are taking rapid action to manage costs. 4Q22 promises to be very painful, given the reduced sales and the need to work down high-cost inventory.

TIPMC estimates to costs per tonne sold, based on its estimate of TiO2 price and earnings.



Source: Company 10Qs / TiPMC Estimates

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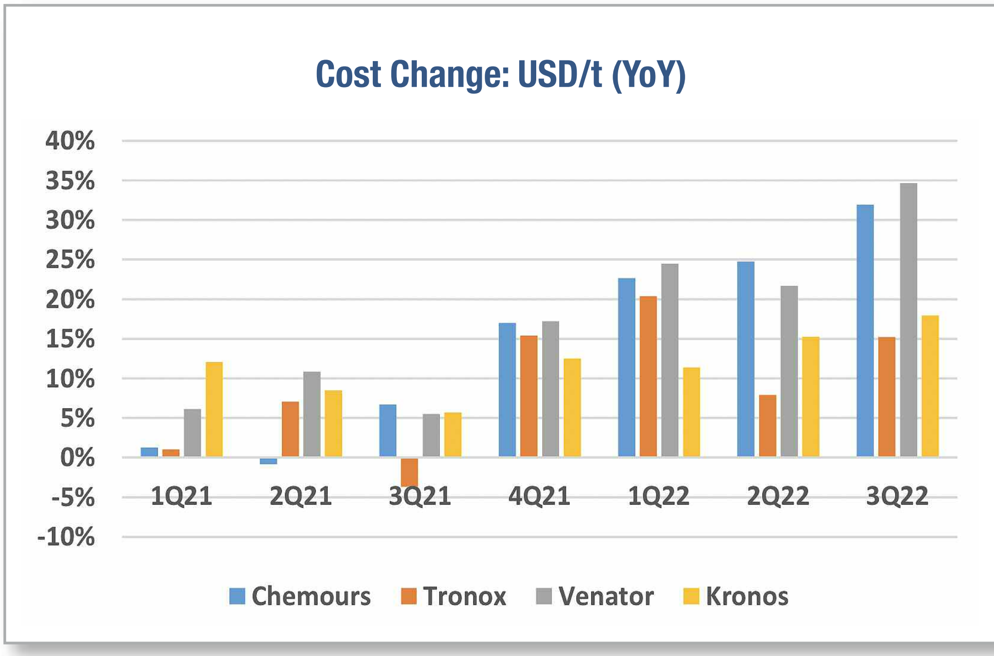

Source: Company 10Qs / TiPMC Estimates

Concluding Thoughts

The speed of the change in fortunes for MNPs in the TIO_2 industry is nothing short of amazing. Worth noting is the speed of each producer in adjusting to the new reality, including idling facilities and adjusting capital spending and cash outlay.

TiPMC see several takeaways from the 3Q22 results.

1. Cash is king. Focus turns from growth, building inventory to meet orders, and restocking raw materials to reducing all spending, including capital spending, and closely managing working capital.

2. Europe and Asia are most of the concern. No MNP can escape the impact from these two regions. The Americas remain a bright spot for now. All indications point to the US housing market slowing considerably, resulting in slowing TiO_2 sales.

3. European market is down or facing some severe curtailment during 4Q22. Government supported furlough programs will enable German plants to remain down, as most costs are not shouldered by the company. Although destocking is likely to be completed through 4Q22, a rebound seeing Europe operating near full capacity as was the case in early 2022 is extremely unlikely. Most speculate several lines or entire plans may remain down for an extended period, with the reopening of many plants and plants in question.

4. The differentiated market is allowed prices to hold during 3Q22. Although there are signs that some competitors may selectively use price to gain share among MNPS, there is no indication that anyone is looking to compete with Chinese imports.
5. Cost inflation remains a concern. European energy, feedstock, and North American chlorine are all increasing input costs for TiO_2 producers. Feedstock producers are holding price gains tightly, positioned well to hold most of the gains through 2023.
6. Utilization rates remain high and would be higher if producers could utilize their assets more fully. This hurt short results in 2Q but will decrease the overstock likelihood as total demand reduces to underlying demand.

TiPMC believes that industry balance sheets allow most of the participants to weather the storm, focusing on cash flow and cost reduction vs. price reductions to gain share. These producers will position themselves for a rapid return to volume gain at higher price levels, vs. following the normal commodity cycle. The timing is obviously in question.

TiPMC agrees with producer comments that Europe and Asia will improve, particularly as the northern hemisphere enters its coatings season. The impact of the current US housing market and impending recession weigh on all participants.

Sharp downturns tend to lead to sharp upturns, as stocks are driven to minimum levels, demand returns, and orders increase to meet demand and ensure stocks are in place to support increased demand. There are signs we may see this pattern evolve in 2023, primarily in Asia.

Feedstock producer results were much more encouraging. To the degree these results are more indicative of prior results or future expectations remains in question.