A tough year for European chemicals players has come to an end – We do expect a continuation of the challenges into 2024!

CALL FOR ACTION!

January 2024

ALVAREZ & MARSAL
LEADERSHIP. ACTION. RESULTS.

Table of Content

1	Europe – A tough playground for chemicals manufacturers	p.02
2	Now, fast execution and focus on cash essential	p.13
3	Alvarez & Marsal's capabilities for the chemicals industry	p.16

Source: Alvarez & Marsal

Europe – A tough playground for chemical manufacturers

European chemical manufacturers are facing a prolonged downturn which requires rigorous short-term measures to protect business foundation

Dimensions of the ongoing downturn

NEGATIVE LONG-TERM TREND

- Long-term decline in global market share from 27% to 14% between in 2002 and 2022
- Since 2022, capacity utilization is below historical averages and in critical area below 80%

SEVERE SHORT-TERM DEMAND REDUCTION

- Customers' business confidence has fallen dramatically resulting in demand softness for chemicals
- Neither actual orderbook nor (export) outlook indicate a turnaround – bottoming out at best

COMPETITIVE (ENERGY-) DISADVANTAGES

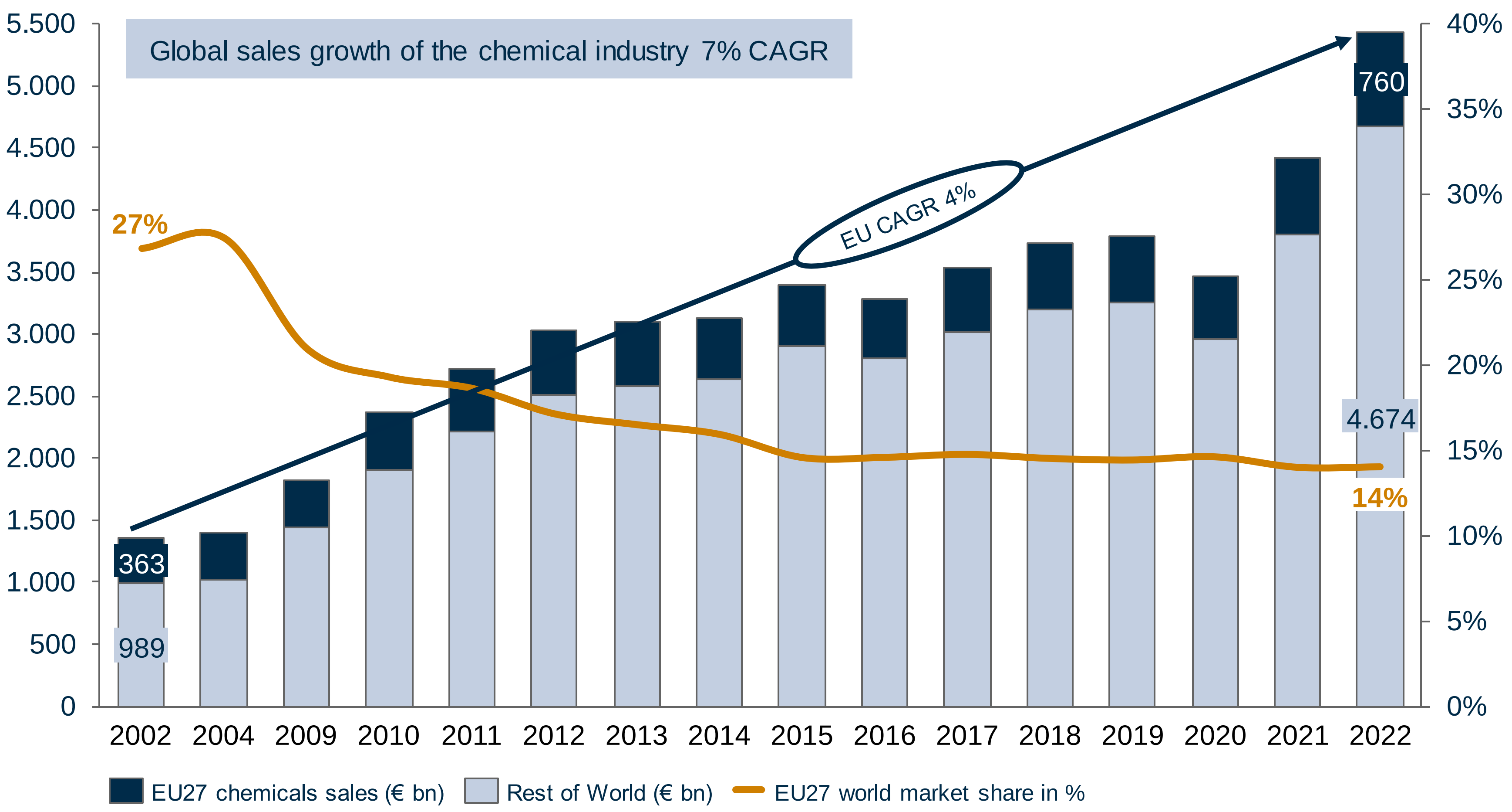
- European manufacturers are disadvantaged due to high energy costs, even at normalized levels
- Sentiments scores across industry participants reflect the decreasing competitiveness, especially outside the EU

We've seen a "summer of profit warnings" and an increasingly negative view on recovery in the coming months

Source: CEFIC; Alvarez & Marsal

In the last decades, European manufacturers experienced a slow though steady growth in sales, but lost share on the global market

Global chemical sales [by year]



Comments

- Globally, the chemical industry grew by 7% p.a. over the past 20 years
- European manufacturers participated disproportionally low by showing 4% p.a. sales growth
- Hence, significant loss in global market share for European players from 27% to only 14% between 2002 and 2022

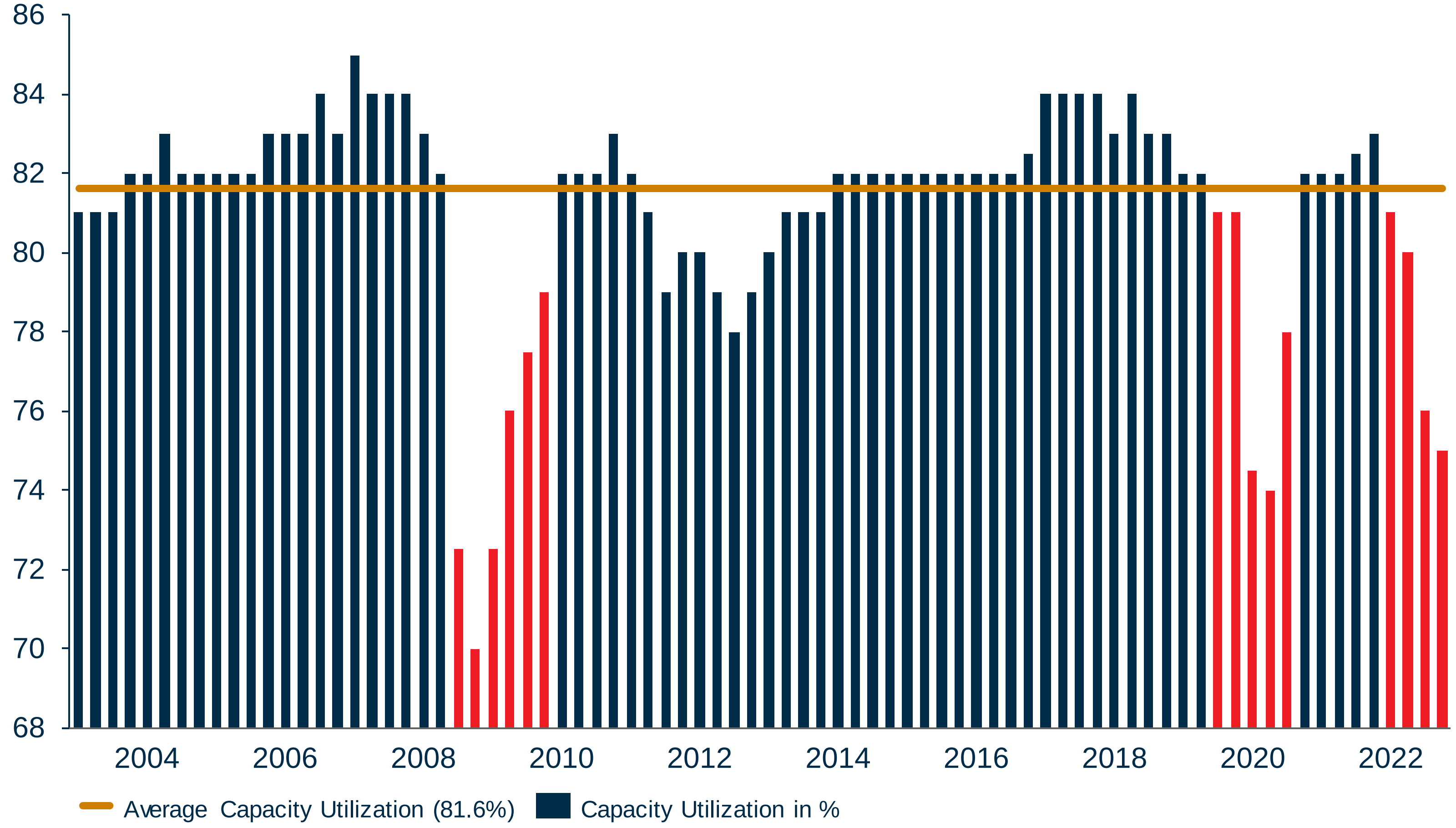
With steadily **decreasing market share**, the **future position of European manufacturers is at risk**

Source: CEFIC; Alvarez & Marsal

ALVAREZ & MARSAL
LEADERSHIP. ACTION. RESULTS.

Since 2022, capacity utilization in Europe is below its long-term average and reaching critical levels below 80%

European chemical capacity utilization rate [by quarter]



Comments

- Utilization in past 20 years only on today's level during financial crisis 2008/09 and Covid shock in 2020
- Immediate crisis effect lasted only 2-3 quarters with fast rebounds ("V-shape" crisis) in both shock moments
- These days, the industry is experiencing a continuous decline since 4 quarters and bottoming out expected as best result

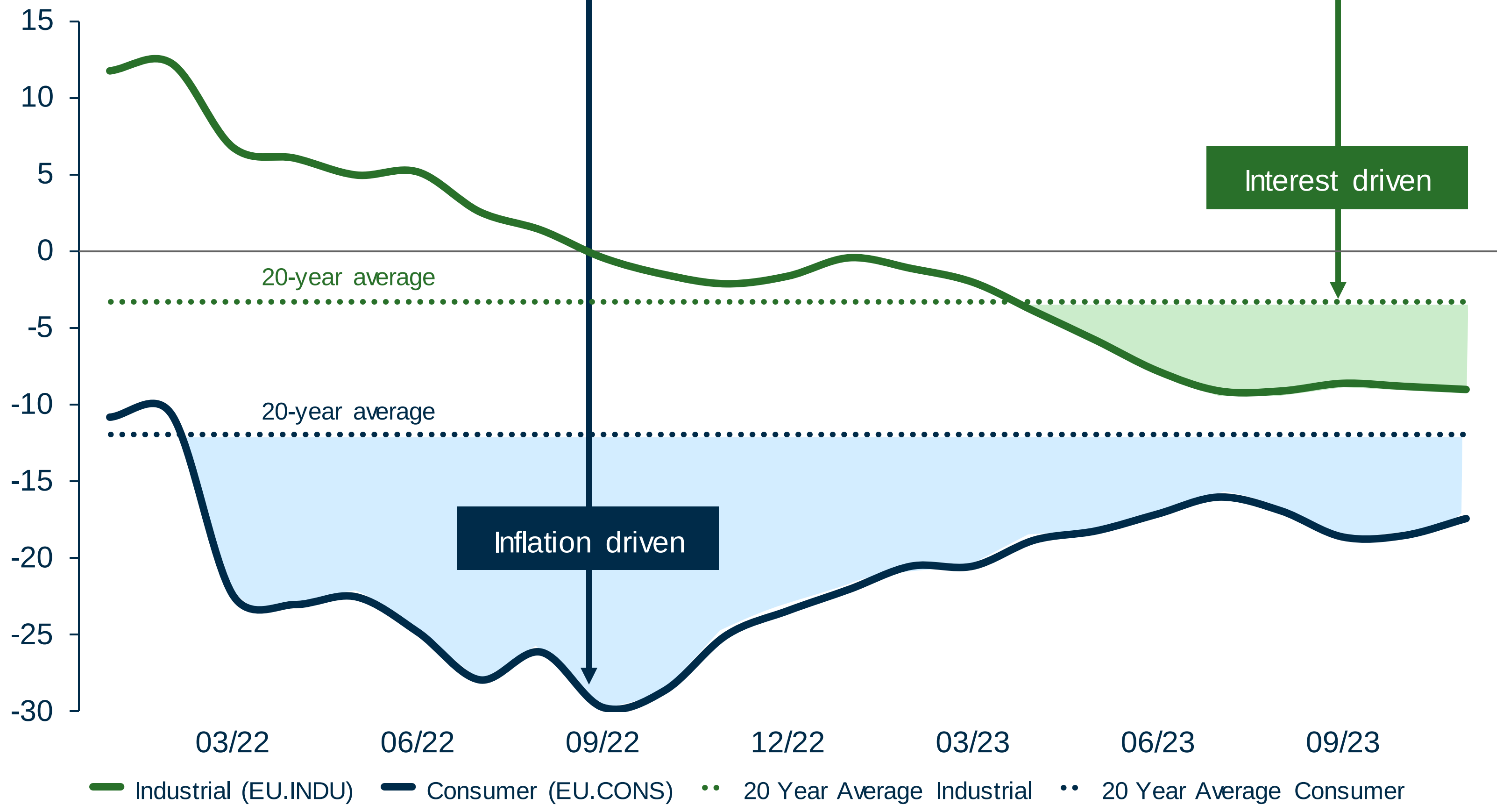
Low-capacity utilization is **burdening profitability and cash generation** in fixed cost-heavy chemical industry

Source: CEFIC; Alvarez & Marsal

Confidence indicators for both consumer and industrials are below their 20ys-avg – Other than consumer confidence, industrial confidence continuously worsening

EU Confidence Indicators, ECB interest rate and EU Inflation [monthly values]

ECB Interest rate in %	0.0	0.0	1.25	2.5	3.5	**4.0**	4.5
EU Inflation in %	7.4	8.6	**9.9**	9.2	6.9	5.5	4.3



Note: Average calculated based on equally weighted monthly values for 2003-2023
Source: European Union Confidence indicators; Alvarez & Marsal

Comments

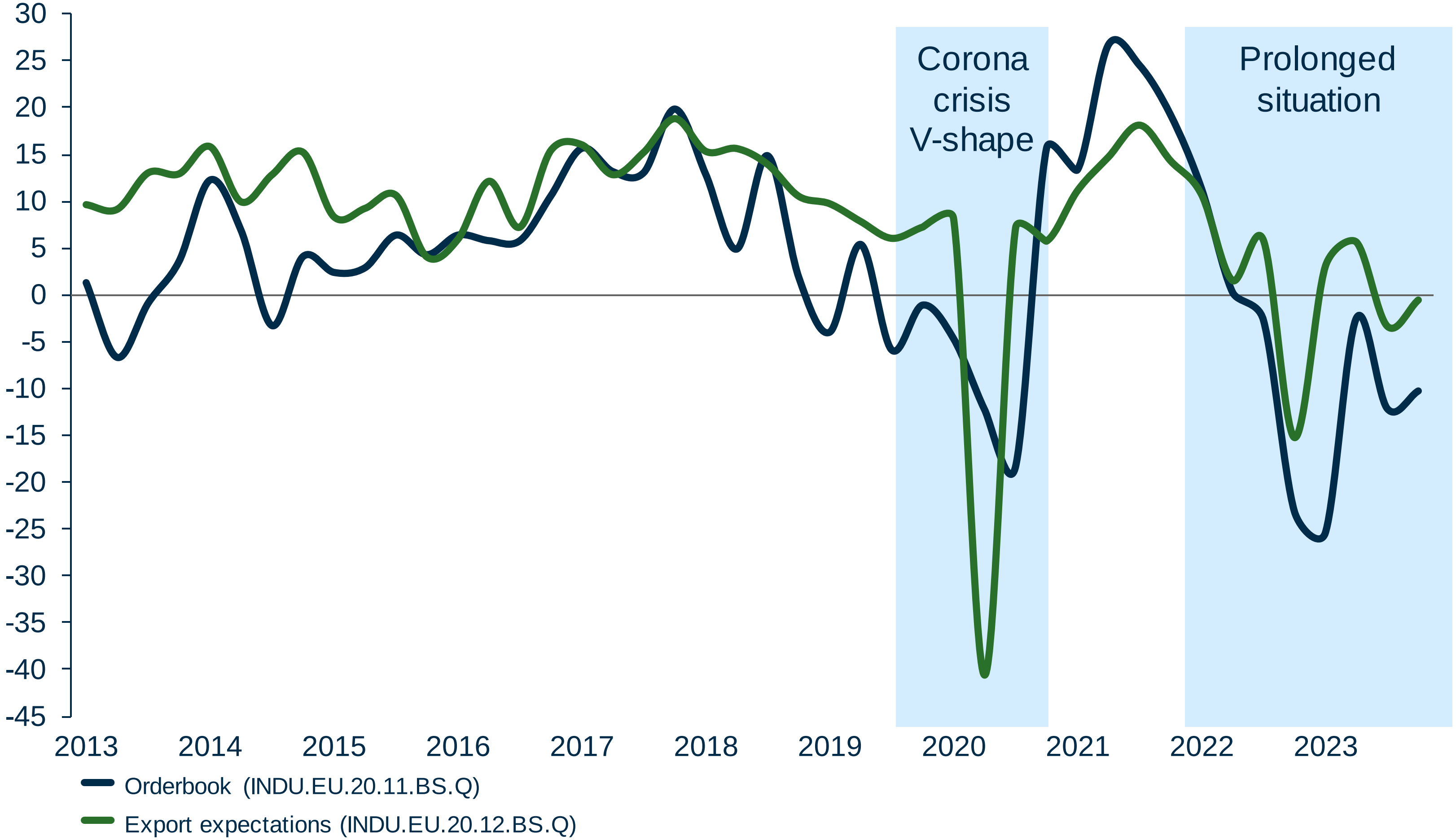
- Consumer confidence was hit early by the rise in inflation and shrinking purchase power – leading to reduced downstream demand across all B2C segments
- As inflation continued to stay high, interest rates followed, and subsequently industrial confidence went down (in particular due to reduced investment activities)

Depressed confidence and **negative outlook** continue to be prevalent, thus demand is at **best stabilizing at lower level**

ALVAREZ & MARSAL
LEADERSHIP. ACTION. RESULTS.

Expectation of prolonged demand depression also confirmed by decreasing actual order book as well as export expectations of the chemical industry

EU chemical Industry indicators for orderbook and exports [by quarter; value based on index]



Comments

- Corona crisis and current downturn reflected by dropping orderbooks and export expectations
- During the Corona crisis, both indicators dramatically reduced in the classic "V-Shape"
- Since 2022, both indicators have fallen again – And continue to stay on weak levels

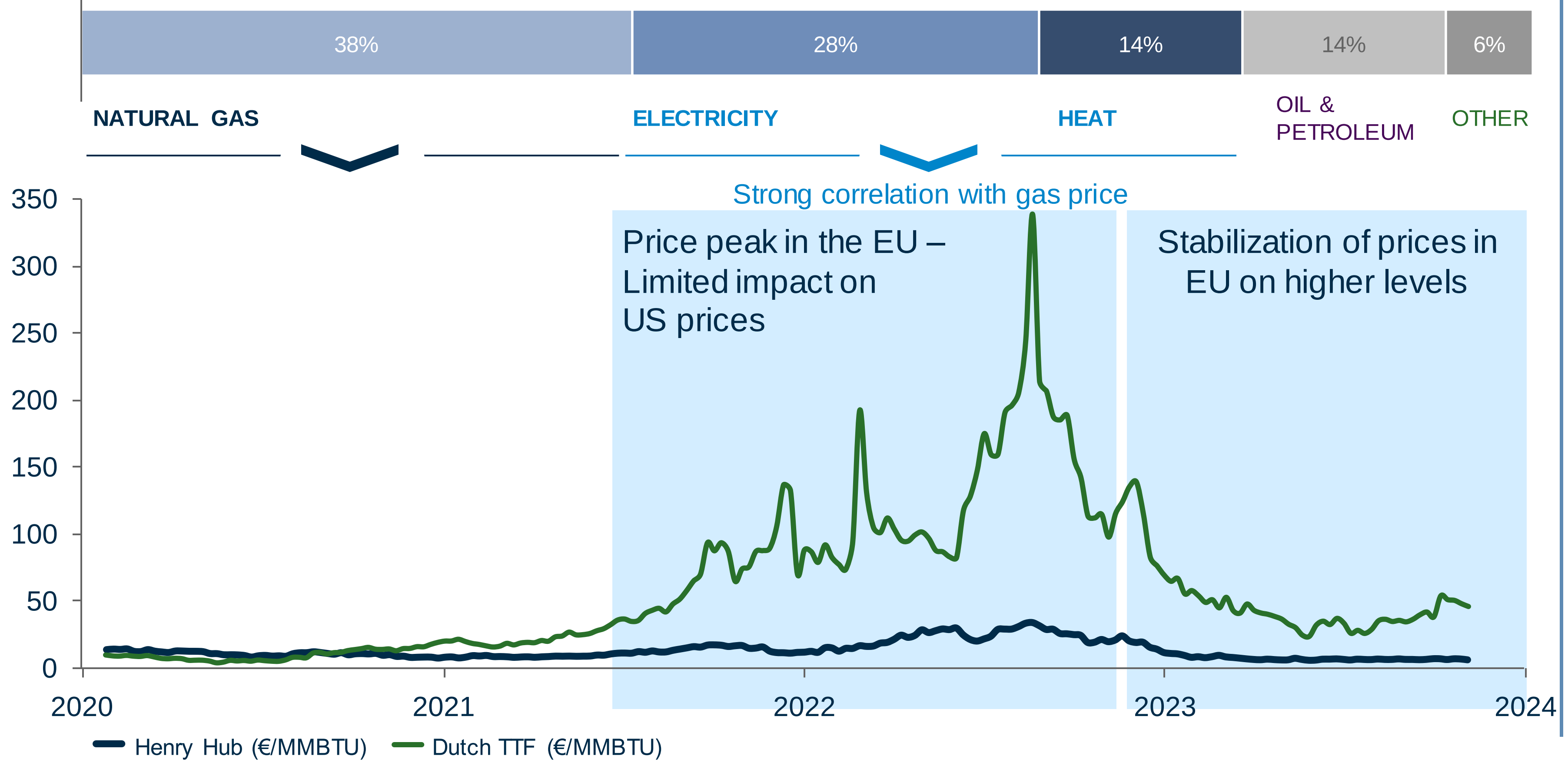
A fundamentally different crisis pattern is shown by the **continuous fall of orderbook** indicators from chemical players – **prolonged situation expected**

Source: European Union Confidence indicators; Alvarez & Marsal

European manufacturers face an increasing competitive disadvantage based on high and fluctuating prices of natural gas (almost 80% of energy costs driven by natural gas)

Energy consumption of European chemical industry

Energy Consumption of EU 27 chemical industry [600 TWh in 2021]



Comments

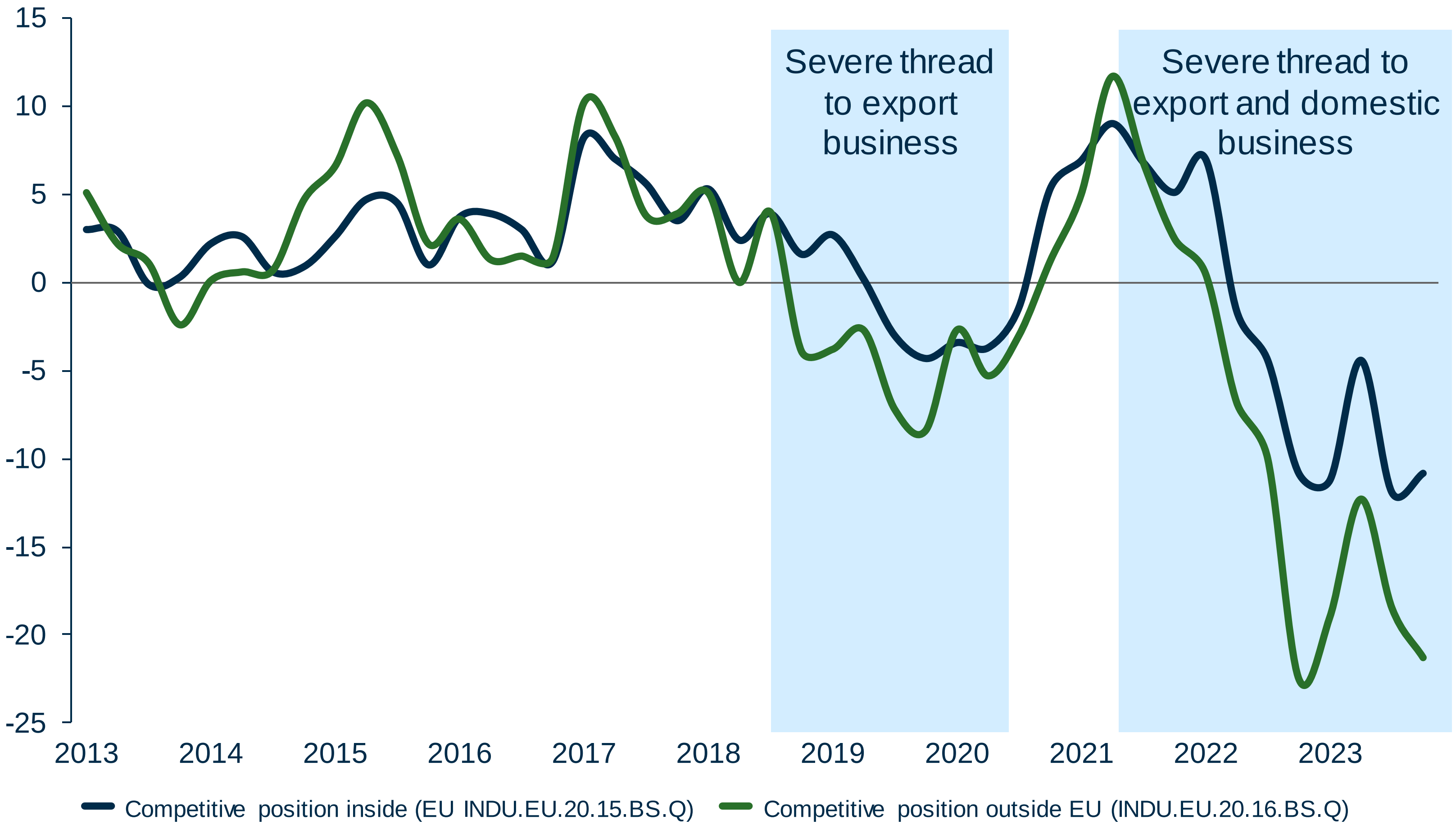
- 80% of energy consumption of chemical industry and its costs linked to natural gas pricing
- With beginning of the Ukraine war, Dutch TTF spiked tremendously – US Henry Hub increased at a much smaller magnitude
- In 2023, European gas price levels stabilized but continued to remain on a higher level compared to the US

High gas prices remain a disadvantage for European manufacturers further **burdening competitiveness on a global level**

Source: CEFIC; Alvarez & Marsal

Intensified structural disadvantages also reflected in the industry's self-perception on its competitive position, especially outside Europe

EU Indicator for competitive position [by quarter; value based on index]



Comments

- In recent years, the competitiveness of chemical manufacturers for export business outside Europe is seen much weaker
- This trend has even intensified in the past 2 years
- However, most concerning is that these days European manufacturers even consider themselves as weak on the domestic European market

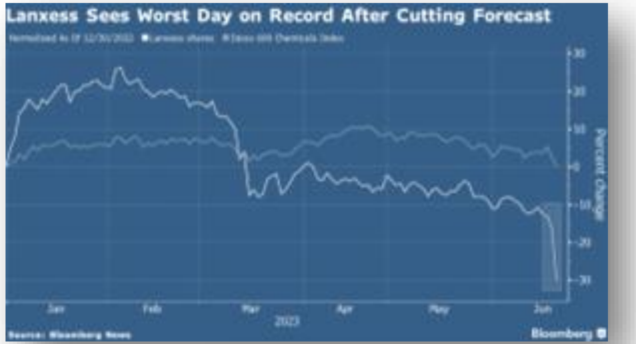
Long-term viability of European assets challenged from both business models – **export and domestic sales**

Source: European Union Confidence indicators; Alvarez & Marsal

We've seen a tough year for European chemicals manufacturers and we expect a continuation of this environment into 2024 calling for rigorous counter measures

Where do we stand and what's ahead?

Poly-crisis of chemical companies



Commodities
BASF cuts 2023 earnings guidance on weak industrial demand

BASF outlines further cost-cutting and 2,600 job losses as it downsizes in Germany

Commodities
Chemicals maker Clariant misses profit estimates as demand slows

Energy crisis prompts further warnings by German chemical groups

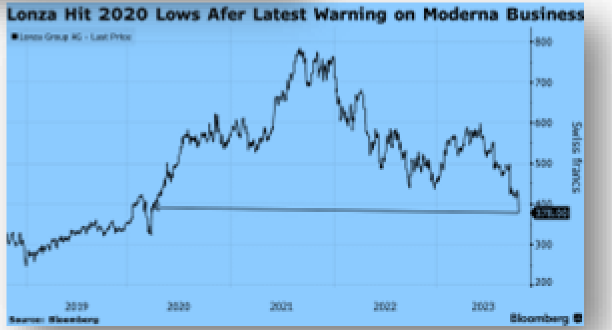
Evonik and Covestro, which together employ more than 50,000 people, have both said profits will fall

Wacker Chemie investors also put profit warning well away

Evonik announces job cuts in pet food unit

Dulux owner Akzo to cut jobs and European production

Rising costs could lead to factory closures, warns boss of paint manufacturer



Review of 2023 and outlook for 2024

Continuous worsening happened!

- 2023 has been **another challenging year** for European chemicals manufacturers
- Many players already launched larger **performance improvement programs in 2022**
- However, worsening of economic outlook in **summer 2023 led to multiple adjustments of earnings expectation**

No improvement yet visible!

- First manufacturers initiate **next level of cost containment measures**
- No indications for upswing in 2024 visible

Rigorous counter measures to be initiated – Fast execution and focus on cash essential!

Source: Press Research; Alvarez & Marsal

Fast execution and focus on cash essential

European chemical manufacturers need to establish short-term cash measures to legitimate long-term strategy execution and the creation of shareholder value

We've seen a "summer of profit warnings" and an increasingly negative perspective on the coming months

How to respond?

CASH IS KING!

- 70 % of German chemical companies are committed to implement efficiency measures
- High degree of planned rigorous restructuring activities manifesting the need to secure cash

FLEXIBILIZATION IN COST STRUCTURE

- Transform the asset base with flexibilization measure along the value chain
- Resolute execution and focus on the essentials will increase the resilience of the cost base

FOOTPRINT OPTIMIZATION AND RESILIENT ASSET NETWORK

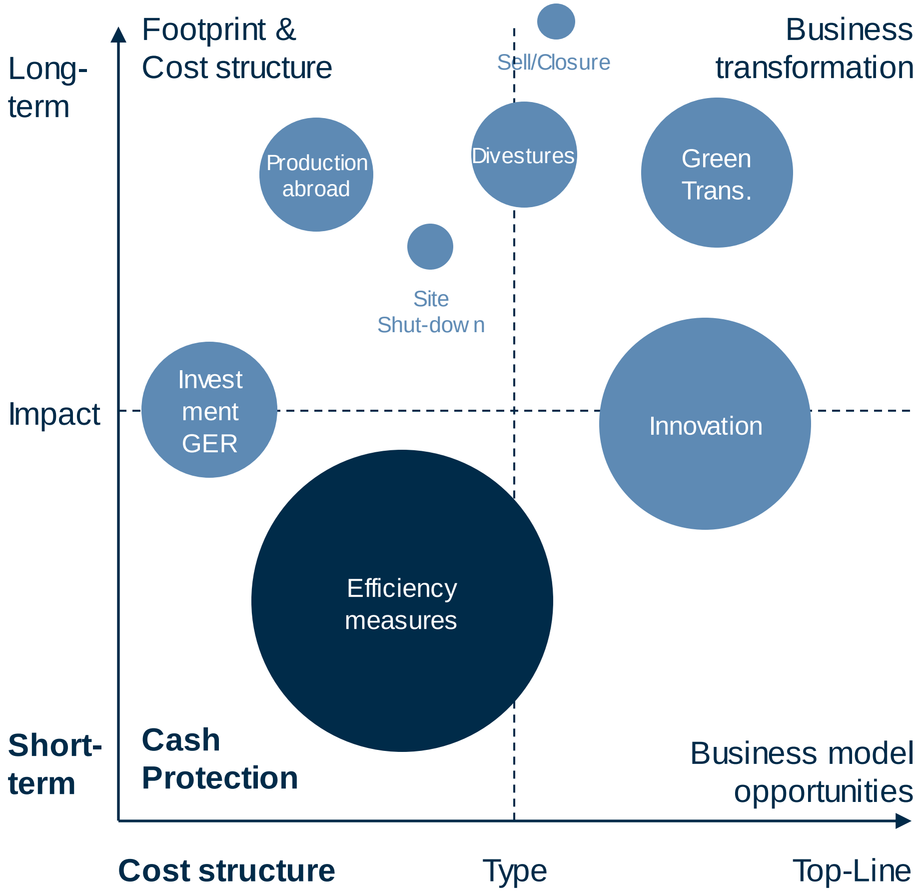
- Long-term business models rely on pruned portfolio & asset network
- Review existing set-up with a focus on exploiting geographical opportunities and minimizing location risks

Source: Alvarez & Marsal

Poly-crisis requires a holistic turnaround program – Currently, chemical players focus on cost elements and an increase in efficiency

Classification of planned measures in the chemical industry – based on VCI survey

Measures of a turnaround of chemical company



Note: The bubble size is indicative of the frequency in the survey
Source: VCI; Alvarez & Marsal

Planned measures of German chemical manufacturers

Verband der Chemischen Industrie e.V.
Wir gestalten Zukunft.
VCI

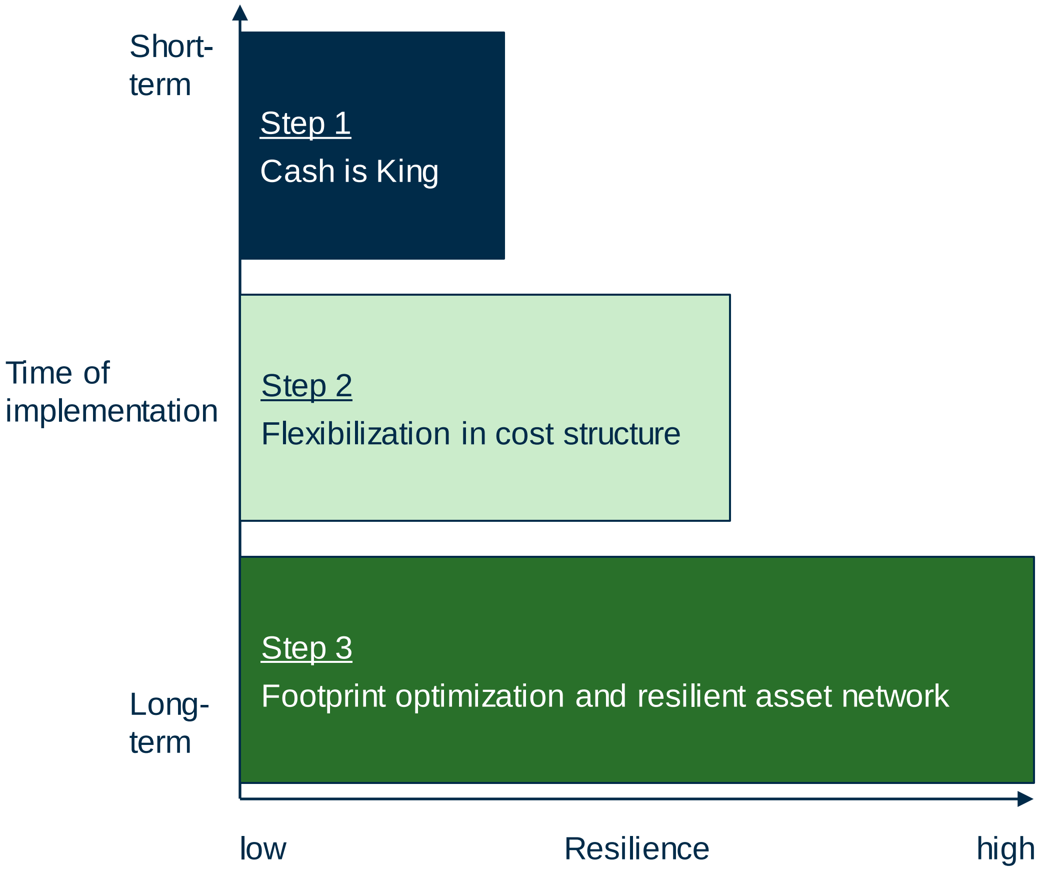
70%	**Increase of efficiency measures**
48%	Intensification of innovation
30%	Acceleration green transformation
27%	Reduction of investments in Germany
25%	Relocation of production abroad
17%	Divesture of businesses
9%	Permanent site shut-down
4%	Sell/Closure of entire business

Rigor of planned measures in the chemical industry is high –
Focus on cost efficiency measures to secure cash

Resilience in cost structure is build up stepwise – Securing cash lays the foundation for a flexibilization in cost structure followed by a long-term footprint optimization

Cost-side optimization in the chemical industry

Three step cost-structure optimization	Exemplary measures



Step 1 Working capital management, reduction of overhead spend, CapEx reviews, temporary shut-downs

Step 2 Flexible batch sizes, variable working shifts, increase energy efficiency, cross-training of shop floor workers

Step 3 Long-term sites shutdowns, optimized sourcing within the asset network, cost advantages by favorable production locations

Efficiency measures are multifold – **Step-by-step approach puts focus on the essential** and allows **rigor in execution**

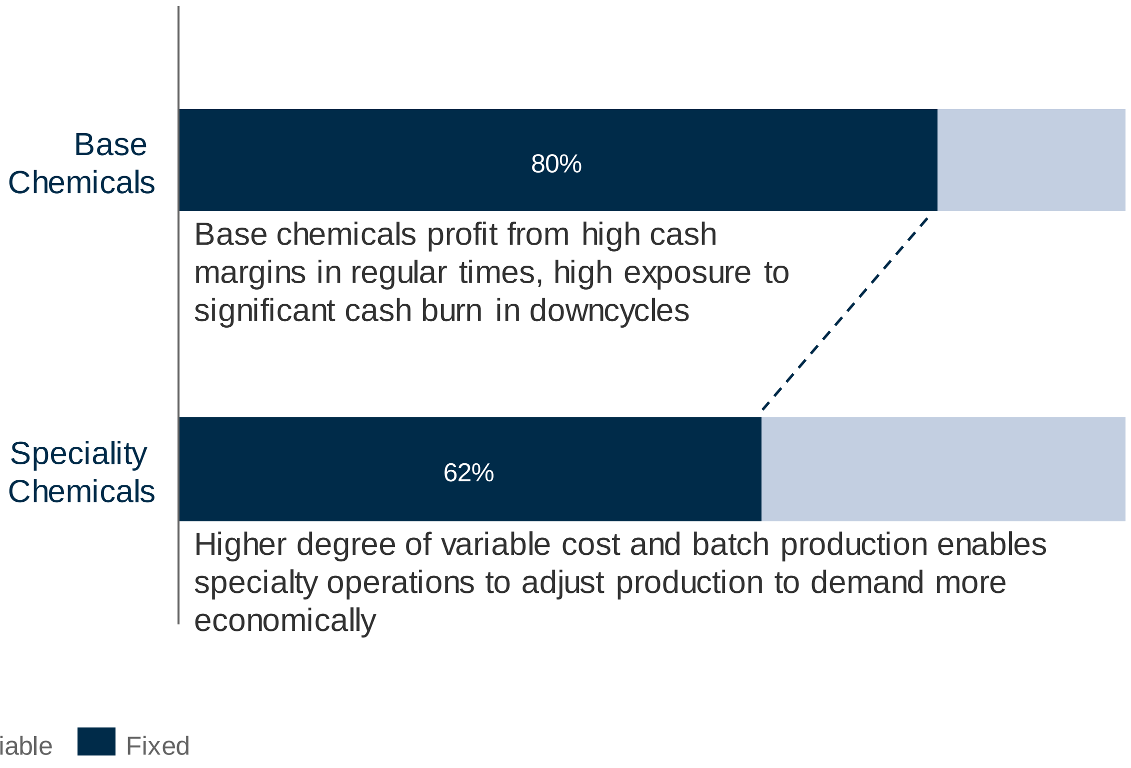
Source: VCI; Alvarez & Marsal

EXAMPLE | A high fixed cost base beneficial in times of high utilization, but causes challenges in a lower demand environment

Fixed cost variabilization

Simplified cost structure comparison

Comparison – High **volume base chemical** operations with **high fixed costs** and **specialty chemicals** with a **lower portion of fixed costs**



Mitigation measures to achieve a variable cost structure

Levers to drive shift from a **fixed to a more variable cost structure** of chemical businesses

- Flexible **workforce management**
- **Outsourcing** of non-core functions (IT & maintenance)
- Variable production process with **modular production units**
- **Energy efficiency** measures
- **Flexible supplier contracts** and inventory management
- Investments in **automation** for quality control and increased process flows
- **Activity based costing** and elimination of non-value adding tasks

Flexibilization in cost structure achievable by **stringent set of measures along operational value chain**

Source: The Chemical Engineer; Alvarez & Marsal

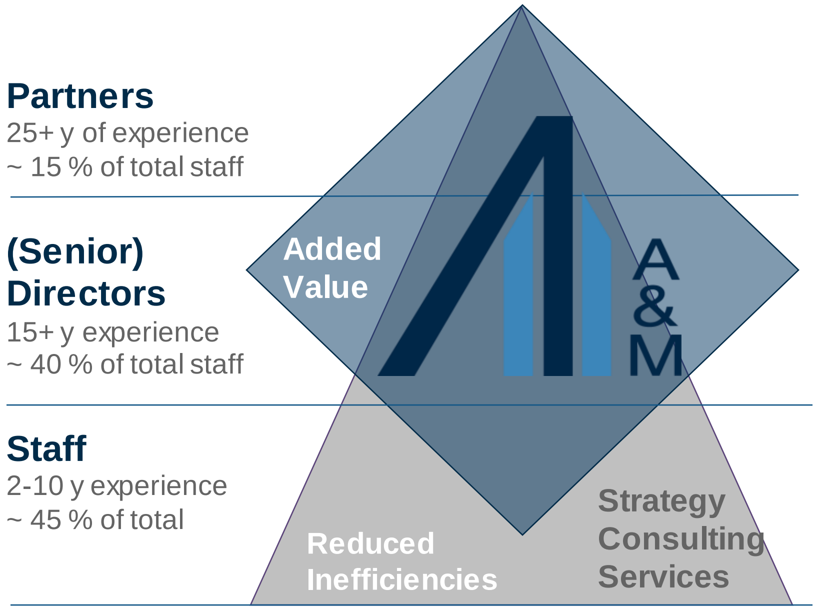
Alvarez & Marsal's capabilities for the chemicals industry

A&M combines key attributes across Leadership, Value Creation and Execution

A&M's difference – what you get

Combined Operator's and Investor's approach

Differentiated Staffing Model



"What I like about A&M and why I keep engaging them is simple: they support me and Bayer to create value much faster than we could on our own. And it's actually nice to work with them given that they are very senior and experienced leaders who blend in seamlessly across the global Bayer matrix. They can successfully orchestrate and navigate our organization with all the benefits of being an outsider. They have a clear operator mindset and ensure that things get done in a pragmatic and efficient way. I can trust them that they transparently share the good, the bad and the ugly while always being solution oriented. To me they are both consultants and advisors, which I really value."

Head of Strategy, BD&L and Board Member, DAX40 company

"We appointed A&M as we wanted a firm that would make us all feel uncomfortable. Many of my board colleagues expected us to appoint 'the other lot', but we thought A&M were going to do the job that we actually needed. And I must say, at times A&M have made us uncomfortable, and we made the right choice."

CEO, FTSE100 company

Source: Alvarez & Marsal

A&M brings relevant experiences in strategic and operational day-to-day areas of the chemical industry

Project experience (selection)

Project experience

Strategy Review
- Strategic planning
- Operational performance reviews
- Footprint right-sizing

Capital Market Readiness
- Day-1 standalone readiness
- Target Operating Model development
- IPO readiness preparations

Exit Readiness
- PE view value assessment
- Identify & execute value levers

Due Diligence
- Operational DD
- Commercial DD
- Financial DD
- IT DD

Optimizing SG&A
- Headcount assessments
- Key activities mapping
- Internal and external benchmarking

Optimizing Maintenance
- Maintenance Excellence
- Performance management improvements

Optimizing Manufacturing
- Yield performance reviews
- Operational maturity reviews
- OEE increase analysis

Optimizing Procurement
- CapEx program restructurings
- Spare parts management
- Reorganization of procurement processes

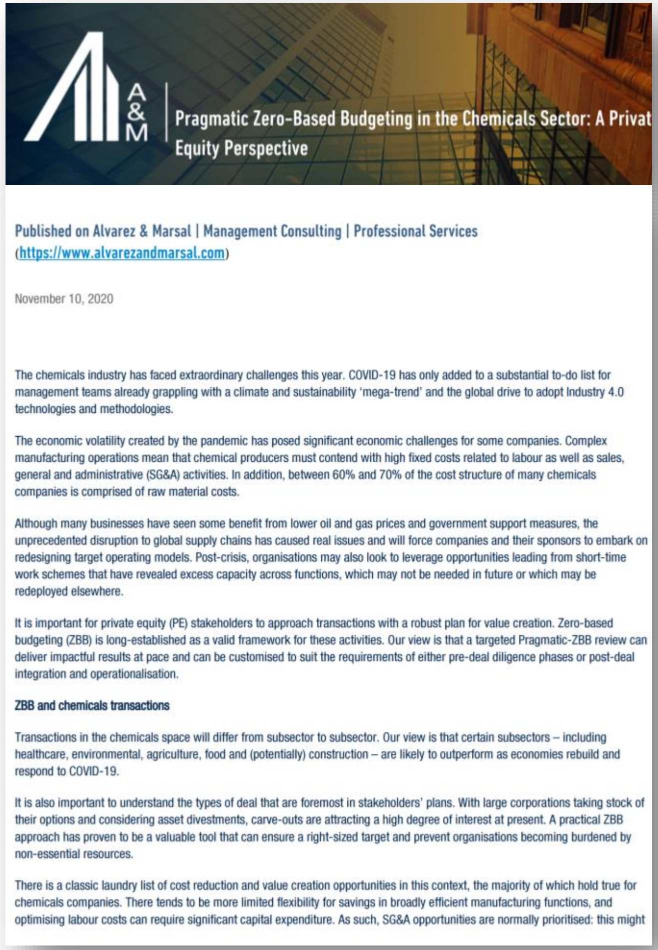
Commercial Excellence
- Sales Force Effectiveness
- Value pricing & data transparency
- Marketing & Sales excellence

Synergies & Value Capturing
- Synergy identification & scenario development
- Building right-sized end-state organizations

Source: Alvarez & Marsal

We take a clear and unbiased view through an investor's lens on the chemical industry and its challenges – Transformational challenges ahead to create Shareholder Value

Thought Leadership


Pragmatic Zero-Based Budgeting in the Chemicals Sector: A Private Equity Perspective

Published on Alvarez & Marsal | Management Consulting | Professional Services (https://www.alvarezandmarsal.com)

November 10, 2020

The chemicals industry has faced extraordinary challenges this year. COVID-19 has only added to a substantial to-do list for management teams already grappling with a climate and sustainability 'mega-trend' and the global drive to adopt Industry 4.0 technologies and methodologies.

The economic volatility created by the pandemic has posed significant economic challenges for some companies. Complex manufacturing operations mean that chemical producers must contend with high fixed costs related to labour as well as sales, general and administrative (SG&A) activities. In addition, between 60% and 70% of the cost structure of many chemicals companies is comprised of raw material costs.

Although many businesses have seen some benefit from lower oil and gas prices and government support measures, the unprecedented disruption to global supply chains has caused real issues and will force companies and their sponsors to embark on redesigning target operating models. Post-crisis, organisations may also look to leverage opportunities leading from short-time work schemes that have revealed excess capacity across functions, which may not be needed in future or which may be redeployed elsewhere.

It is important for private equity (PE) stakeholders to approach transactions with a robust plan for value creation. Zero-based budgeting (ZBB) is long-established as a valid framework for these activities. Our view is that a targeted Pragmatic-ZBB review can deliver impactful results at pace and can be customised to suit the requirements of either pre-deal diligence phases or post-deal integration and operationalisation.

ZBB and chemicals transactions

Transactions in the chemicals space will differ from subsector to subsector. Our view is that certain subsectors – including healthcare, environmental, agriculture, food and (potentially) construction – are likely to outperform as economies rebuild and respond to COVID-19.

It is also important to understand the types of deal that are foremost in stakeholders' plans. With large corporations taking stock of their options and considering asset divestments, carve-outs are attracting a high degree of interest at present. A practical ZBB approach has proven to be a valuable tool that can ensure a right-sized target and prevent organisations becoming burdened by non-essential resources.

There is a classic laundry list of cost reduction and value creation opportunities in this context, the majority of which hold true for chemicals companies. There tends to be more limited flexibility for savings in broadly efficient manufacturing functions, and optimising labour costs can require significant capital expenditure. As such, SG&A opportunities are normally prioritised: this might


PRIVATE EQUITY PERFORMANCE IMPROVEMENT

Dealing With Uncertainty in the Chemicals and Materials Sector

The Chemicals and Materials sector is facing a new set of uncertainties related to impacts from the pandemic, geopolitical turmoil and economic disturbances. Rising prices and disrupted supply chains have also put pressure on companies within the industry.

Much has changed in the past year. The industry has moved from a high growth posture to a potentially cash deficient reality in some parts of the Chemicals industry, and companies that struggle now will have a greater challenge ahead as the economy settles.

Adding to that, the energy crisis in Europe has left local producers uncompetitive, with some having to shut down for the short term and others looking for alternative options.

In this period of uncertainty, companies need to ensure their internal capabilities are nimble enough to meet the challenges.

This paper details some of the current trends in the sector, potential pathways in the near future and what industry leaders can do practically to prepare for even more uncertainty.

The Economic Challenges Facing the Industry

We are looking at a potential abrupt turn in growth and demand, owing to slowing of the economy. The actions that many companies took during this high growth COVID recovery phase will, on one hand, ensure better company performance going forward but will also require companies to change their mindset from a "growth at all costs" to a "cost and cash discipline" focus.

Inflation

Inflation while still strong appears to have fallen in late summer/early fall. A "roll-over hypothesis" appears to be supported by the U.S. Producer Price Index (PPI) for July and August, which was down 0.5 percent after a string of monthly increases that totalled a 5.8 percent rise over the past 12 months.

Inflation has been driven by a combination of supply side constraints in energy and other commodities due to geopolitical events and demand growth due to increases in personal consumption. But before we review the forecasts, let's look at what has happened in commodities that are driving much of the feedstock costs for Chemicals companies.

Commodities and Shipping Since 2018

Commodities are still elevated compared to the end of 2018 and beginning of 2019. Some are as much as 50 percent higher, and natural gas remains a whopping 200-plus percent higher over that time span. Except for natural gas, which has been affected by various issues including a big drop in production in 2020, weather phenomena and the Russia-Ukraine war, particularly in Europe, all other commodities, have been on a downward trajectory since June. Food and building construction-driven commodities although still elevated, are also on a downward trend. Hurricane Ian, however, may cause a temporary upswing in building materials before the downturn resumes.

ALVAREZ & MARSAL
LEADERSHIP. ACTION. RESULTS.

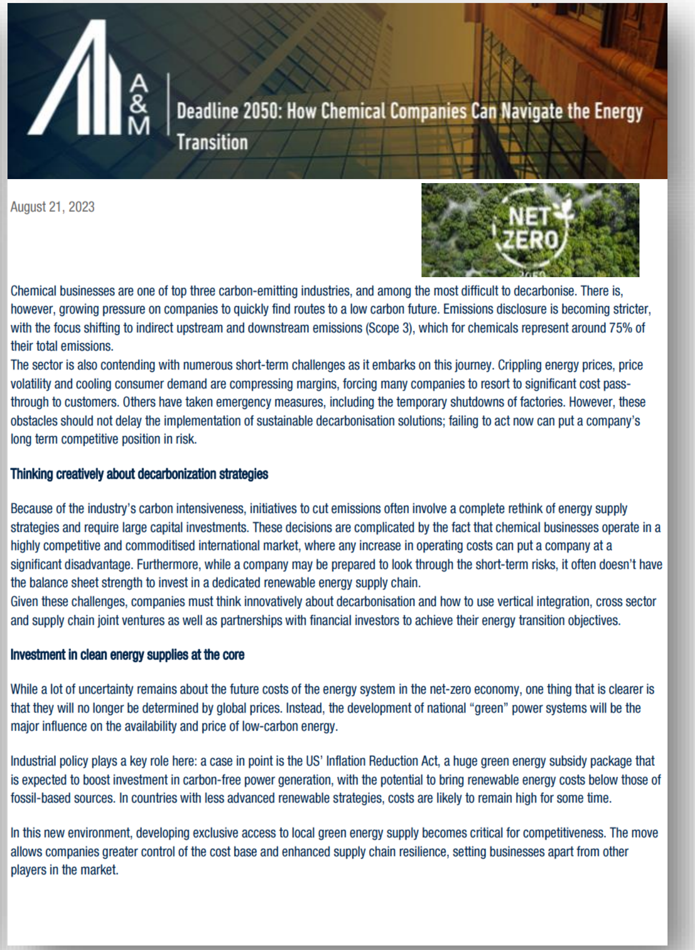

MÄRKTE · UNTERNEHMEN

Die chemische Industrie im Visier

Verhaltensmuster aktivistischer Investoren und ihre Konsequenzen für Unternehmen

Fonds interessieren sich wieder verstärkt für Unternehmensbeteiligungen und bilden eine Gegenpositionen zum Management.

Die Jahre 2023 und 2024 könnten stark von Kampagnen aktivistischer Investoren in der Chemiebranche geprägt sein.


Deadline 2050: How Chemical Companies Can Navigate the Energy Transition

August 21, 2023

Chemical businesses are one of top three carbon-emitting industries, and among the most difficult to decarbonise. There is, however, growing pressure on companies to quickly find routes to a low carbon future. Emissions disclosure is becoming stricter, with the focus shifting to indirect upstream and downstream emissions (Scope 3), which for chemicals represent around 75% of their total emissions.

The sector is also contending with numerous short-term challenges as it embarks on this journey. Crippling energy prices, price volatility and cooling consumer demand are compressing margins, forcing many companies to resort to significant cost pass-through to customers. Others have taken emergency measures, including the temporary shutdowns of factories. However, these obstacles should not delay the implementation of sustainable decarbonisation solutions; failing to act now can put a company's long term competitive position in risk.

Thinking creatively about decarbonization strategies

Because of the industry's carbon intensiveness, initiatives to cut emissions often involve a complete rethink of energy supply strategies and require large capital investments. These decisions are complicated by the fact that chemical businesses operate in a highly competitive and commoditised international market, where any increase in operating costs can put a company at a significant disadvantage. Furthermore, while a company may be prepared to look through the short-term risks, it often doesn't have the balance sheet strength to invest in a dedicated renewable energy supply chain.

Given these challenges, companies must think innovatively about decarbonisation and how to use vertical integration, cross sector and supply chain joint ventures as well as partnerships with financial investors to achieve their energy transition objectives.

Investment in clean energy supplies at the core

While a lot of uncertainty remains about the future costs of the energy system in the net-zero economy, one thing that is clearer is that they will no longer be determined by global prices. Instead, the development of national "green" power systems will be the major influence on the availability and price of low-carbon energy.

Industrial policy plays a key role here: a case in point is the US' Inflation Reduction Act, a huge green energy subsidy package that is expected to boost investment in carbon-free power generation, with the potential to bring renewable energy costs below those of fossil-based sources. In countries with less advanced renewable strategies, costs are likely to remain high for some time.

In this new environment, developing exclusive access to local green energy supply becomes critical for competitiveness. The move allows companies greater control of the cost base and enhanced supply chain resilience, setting businesses apart from other players in the market.

Your contacts

Olivier Duval

Managing Director
Alvarez & Marsal

15 Rue de Laborde
75008 Paris, France
Mobile: +33 67 49 48 884
oduval@alvarezandmarsal.com

AlvarezAndMarsal.com

Michael Timm

Senior Director
Alvarez & Marsal

Fürstenwall 172
40217 Düsseldorf, Germany
Mobile: +49 160 9270 1054
mtimm@alvarezandmarsal.com

AlvarezAndMarsal.com

Source: Alvarez & Marsal

OUR CORE VALUES

OBJECTIVITY

Do your homework before you form conclusions.

INTEGRITY

Never let financial gain compromise integrity.

PERSONAL REWARD

Perform interesting work with interesting people and achieve results that matter.

FUN

Like what you do and with whom you do it.

QUALITY

Always value quality people and quality work.

INCLUSIVE DIVERSITY

Embrace diversity, foster inclusiveness and reward merit.

ALVAREZ & MARSAL

LEADERSHIP. ACTION. RESULTS.℠