How Bearing Customers Can Respond to China’s Changing Dynamics

Karan Gupta, Head of Strategy, KG International FZCO

April 2022

Executive Summary

The Bearing Industry is facing unprecedented disruption and suppliers, distributors, and end customers need to prepare for the change

Current Market Dynamics

Difficult Macroeconomic Conditions

- Declining Dollar-Yuan exchange rate
- Increasing global inflation
- Aging and shrinking factory workforce

Increased Price of Raw Materials

Rapidly rising steel prices (72% this year) due to:

- Increasing iron ore prices
- Increasing coal prices
- Fear of further inflation
- Tariffs on steel-related exports

Disruption to Shipping

Surge in shipping expenses (~6x this year) due to:

- Cancelled transportation in 2021 due to COVID
- Port disruption due to COVID outbreaks and congestion
- Reduced ship supply

China's Power Crunch

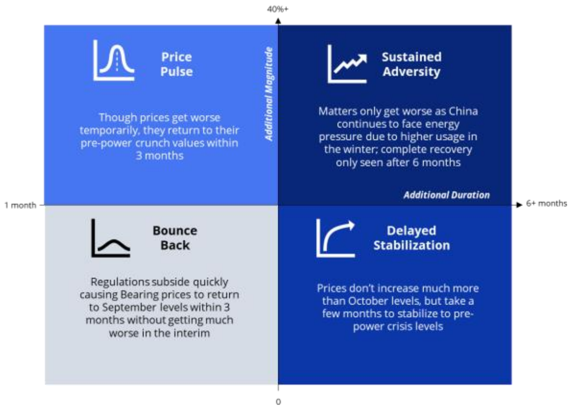
Factories in 20+ provinces have been forced to cut activity time by 20-50% to meet energy reduction targets. The magnitude and duration of the regulation is unknown causing a price surge and increased uncertainty

Response from Bearing Manufacturers

- ~38-61% average **increase in prices** depending on the bearing type
- **Increased time to quote** and introduction of **price expiry**
- **Increase in minimum order quantities,** even for slower moving bearings
- **Longer lead times** by 2-4 months
- **Passing on shipping cost burden** to suppliers and customers
- **Tightened payment terms**

Scenarios for the Future and No Regrets Actions

We have outlined four plausible scenarios for the future, and have extracted few no-regrets actions regardless of which scenario plays out to help customers plan for the future



- ❑ Improve Business Planning
- ❑ Manage Customer and End User Expectations
- ❑ Increased Transparency and Trust
- ❑ Bring a Problem-Solving Attitude to Relationships
- ❑ Increase Collection of, and Reliance on, Data & Analytics
- ❑ Encourage Suppliers to Invest in Procurement Effectiveness

Current Economic Dynamics Impacting Price and Availability

A Changing Economic Climate is Straining Unit Economics…

A variety on macroeconomic trends are impacting the Bearings Industry, and COVID-19 has increased their impact

Unfavorable Exchange Rates in China

USD – Yuan Exchange Rate Trend [1]

The Chinese yuan has strengthened to three-year highs against the U.S. dollar, spurring concerns about the competitiveness of Chinese exports. Over the last year (2 Oct 2020 – 2 Nov 2021), we have seen a strengthening in the Chinese currency **causing buying prices to increase by approximately 10%.**

This trend is expected to continue based on expected increasing demand and value for Renminbi-denominated bonds and overall resilience of the Chinese economy [2,3].

Global Inflation [4]

Global Inflation had a very short-lived dip at the onset of the pandemic and has been increasing at a more rapid rate as the world adjusted to the new normal. According to the IMF, this increase is caused by:

1. A pickup in economic activity or closing output gaps supported by accommodative fiscal and monetary policies, along with the release of pent-up demand and accumulated savings
2. Rapidly rising commodity prices
3. Input shortages and supply chain disruptions

Though rates are expected to hit pre-pandemic levels by middle of 2022, this is still a cause for concern and may lead to short term price increases.

Workforce Issues

China's aging population (5% increase of 65+ population over the last decade)[5] is causing serious concern for bearing factories. There is a smaller youthful population to hire from, and that population is preferring to seek less labor-intensive jobs. This struggle to attain talent is underpinned by an increasing number of retirements from the current factory workforce causing a significant talent strain.

Unless Chinese factories start making significant digital investments, human capital will be the biggest output constraint in the next 5-10 yrs

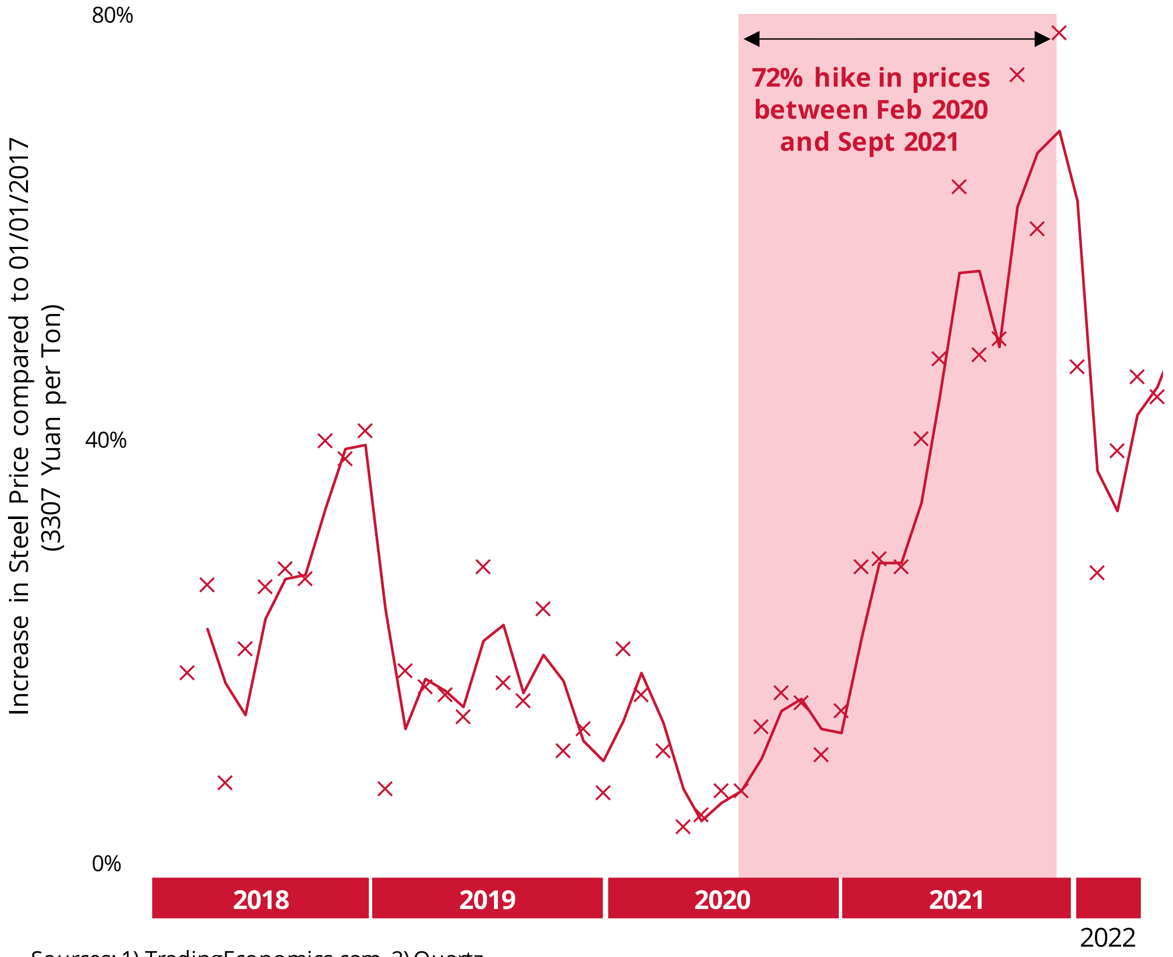
Sources: 1) XE Currency, 2) Allianz GI Global Economic Prospects, 3) Morgan Stanley 2021 Outlook, 4) IMF October 2021 World Economic Outlook, 5) NPR

… Compounded by Adverse Price and Availability of Raw Materials…

Steel price has had a direct impact to bearing manufacturers, but market sentiment indicates that this will start to stabilize

Steel Prices Have Dramatically Increased Since the Onset of the Pandemic though a drastic market correction has begun

Average Steel Prices in Yuan Over Time[1]



Sources: 1) TradingEconomics.com, 2) Quartz

Factors Impacting the Price of Steel

Rising raw material prices

For example, there was a 94% increase in iron ore prices between November 2020 and July 2021[1]. Though this has since shrunk due to reduced demand as a result of China's recent production cut, its impact on prices remains.

Surge in coal prices

by 200% between January 2021 and September 2021[1]. Though coal prices dipped by ~35% in November, they are expected to remain relatively high for the foreseeable future

Fears of increasing inflation

causing producers to preemptively increase prices

Tariffs on steel-related exports from China

For example, beginning Aug. 1, for instance, the tariff on ferrochrome, a stainless steel ingredient, doubled from 20% to 40%.[2]

OUTLOOK

Though prices have reduced, they will likely stabilize at a much higher level than 2020 levels and the overall impact to steel consumers will be long lasting

… and Unprecedented Disruption to Global Shipping

Shipping disruption is seriously impacting price and hindering ability to plan and serve customers on time

Causes of Shipping Disruption

Steady increase in container demand [1]

In the pandemic, there was a drastic purchasing shift from services to goods since ability to deliver services was restricted, this caused significant strain on global shipping operations

Pandemic onset caused transportation cancellation [2]

Thousands of empty containers were left stranded in Europe and the US in the first half of 2020 when shipping lines and air lines cancelled hundreds of trips as coronavirus lockdowns began. This backlog is still causing major port congestion

COVID-19 outbreaks at ports causing delays [1]

Many major ports in China have experienced shutdowns for 1-2 weeks due to COVID outbreaks causing backlogs that are taking months to recover from

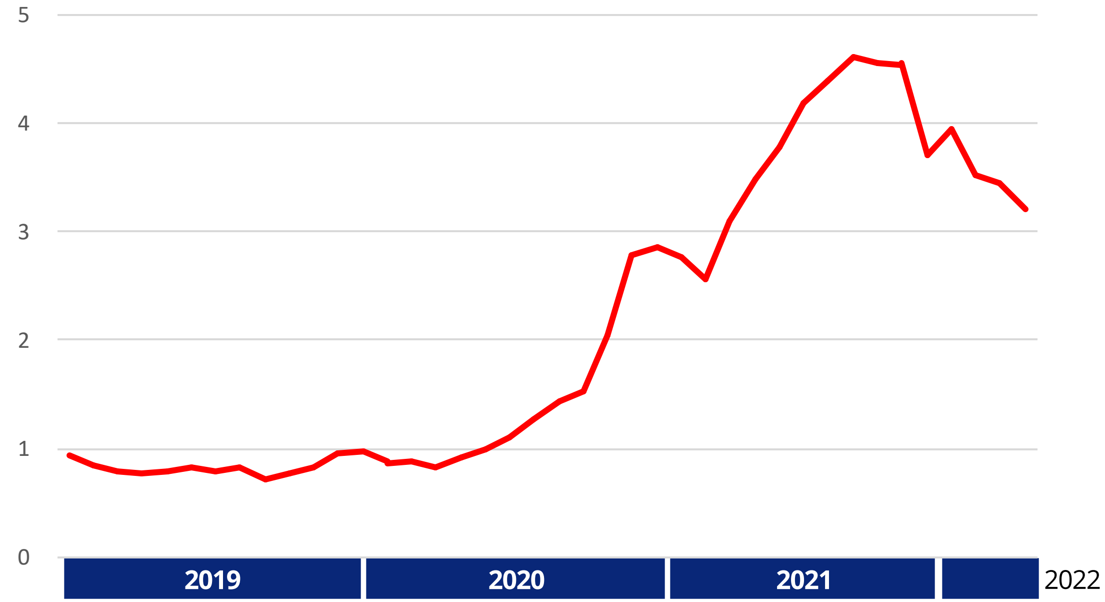
Strained supply [1]

due to COVID-impacted crews, managing a long backlog of deliveries, Suez canal closure, increased time to build new ships (18+ months), and port congestions

Drastic Increase in Shipping Prices

Standard Forty Foot equivalent unit (FEU) **$increased by 6x or more between January 2019 and October 2021**[1]. Even after paying this cost, shippers are unable to meet their required capacity and are not able to rely on prescribed delivery times. Shipping are since slowly starting to stabilize.

Average Shipping Rates from Shanghai to the Mediterranean [3]



OUTLOOK Shipping prices are starting to decrease now that China's shipping demand is decreasing, but it will likely stabilize at a higher level than 2020 for the next year while ports decongest

Sources: 1) McKinsey: What's going on with shipping rates?, 2) CNBC, 3) Shanghai Shipping Exchange

China's Power Crunch – The Latest Shock to the Bearing Industry

China's sudden and drastic response to the power crisis is causing major supply impacts and lots of uncertainty

Causes of the Crisis

Coal Shortage [1]

Coal-based producers account for more than 70% of China's electricity generation. However, China's supply couldn't catch up and import from Australia was limited due to political disputes and sanctions which are unlikely to ease during Biden's administration.

Xi's Carbon Emission Targets [1]

Xi's push to reduce greenhouse gas emissions and go "carbon neutral" by 2060 has capped the growth of coal mining. Furthermore, Xi has implemented regulations for coal mine operations, limiting their ability to increase supplies

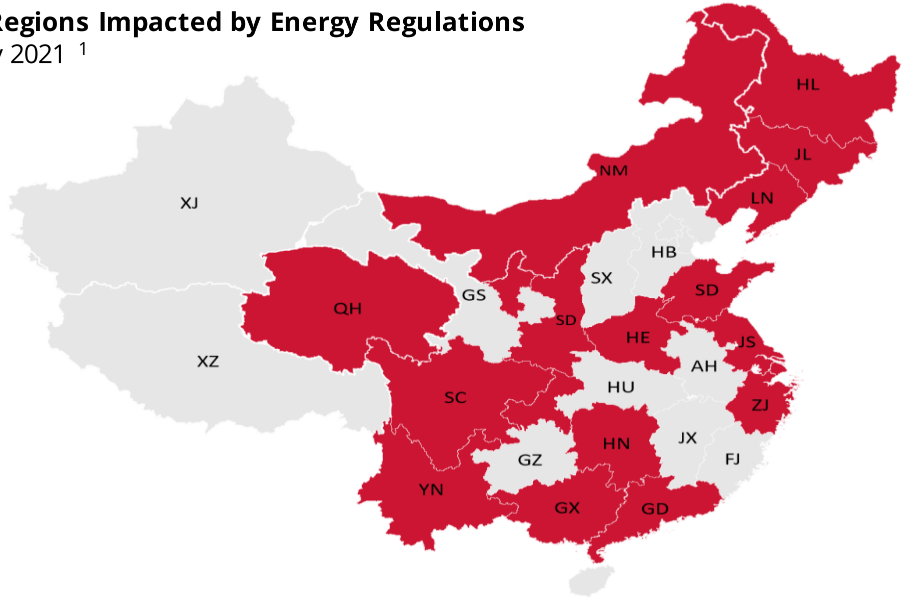
Renewables Not a Viable Option [2]

China tried to shift to renewables, but a serious draught hit the hydropower center of Yunnan province resulting in a 4% decrease in total renewable output each month. Wind power also slowed down in growth from 25.4% in 2020, to 7% in 2021.

Resulting Regulation and Impact

Power cuts and curbs on electricity use have been reported in at least 20 provinces and regions. In China's tech heartland Jiangsu Province, some manufacturers have been told to reduce their energy use for the rest of September by 10% to 30% from usual levels, while some companies received requests to stop using electricity entirely from last Sunday until the end of the month. The magnitude and duration of the rations remains unclear, causing uncertainty

Map of Regions Impacted by Energy Regulations
as of Nov 2021 [1]



RESPONSE
Sudden and Unplanned Power Rationing Across 20+ Provinces; Unpredictable legislation reducing the ability to plan activity time

IMPACT
Majority of Bearing Factories Forced to Cut Activity Time by 20-50%. Though this number is decreasing, it is expected to continue until the end of winter

Sources: 1) Bloomberg, 2) CNBC

How Suppliers / Factories are Responding

Market Observations of How Suppliers/Factories are Responding

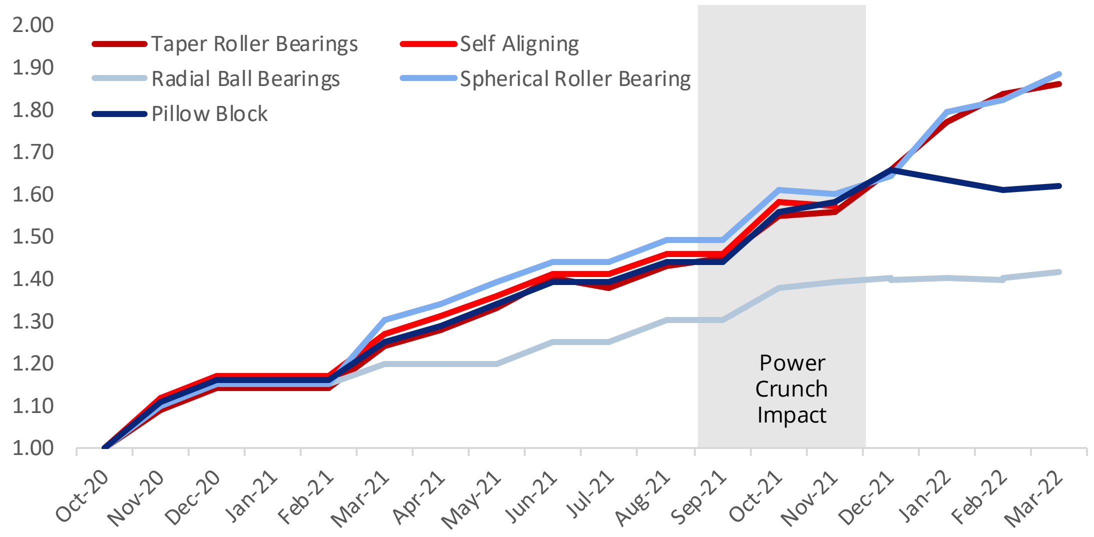
Suppliers are responding in ways that are making it harder to do business

Increase in Prices

Factories are responding to all the market stimuli mentioned in the previous section by increasing prices. Below is a chart detailing the average impact KG has seen across bearing types (including exchange rate, shipping, etc.) We expect that these prices will only increase in the foreseeable future, so have made major bulk orders to ensure that our customer demand is satisfied

Average indexed price increase we have seen over the last year by bearing type

Note: Data is taken from 3500+ line items across 25 factories



Increase in Minimum Order Quantities (MOQs)

Factories are drastically increasing MOQs making it a challenge to stock slower moving or more specialized items. KG is making investments to continue holding a strong stock position, but this has a serious cash flow implications

Changing Shipping Terms

Factories are forcing buyers to totally incur or share shipping costs, a big change from prior commercial arrangements. Since shipping prices are so high, this is causing significant strain to unit economics and profitability.

Increase time to Quote and Introducing Price Expiry

Factories are taking an average of 3-10 days longer to quote. We think this is because: 1) They are continually assessing price increases and ability to produce, 2) they await clarity on power regulations, and/or 3) they are running hidden auction-like processes with buyers and are waiting for the best price they can get. Quoted prices also now have a short expiry to them (2-6 days) making it tough to conduct thorough due diligence.

Longer Lead Times and Shipping Uncertainty

Due to decreased activity hours and labor constraints, factories are quoting much longer delivery times (anywhere from 2–4 months longer than 2019 orders) making it tough to place back-to-back orders and increasing the importance of stocking. This issue is exacerbated by uncertain shipping delays which make serving customers on time much more challenging

Tightened Payment Terms

Factories are extra focused on cash flow and are not accepting reasonable credit options, increasing the financial burden on suppliers and distributors

Sources: KG Procurement Data Analysis

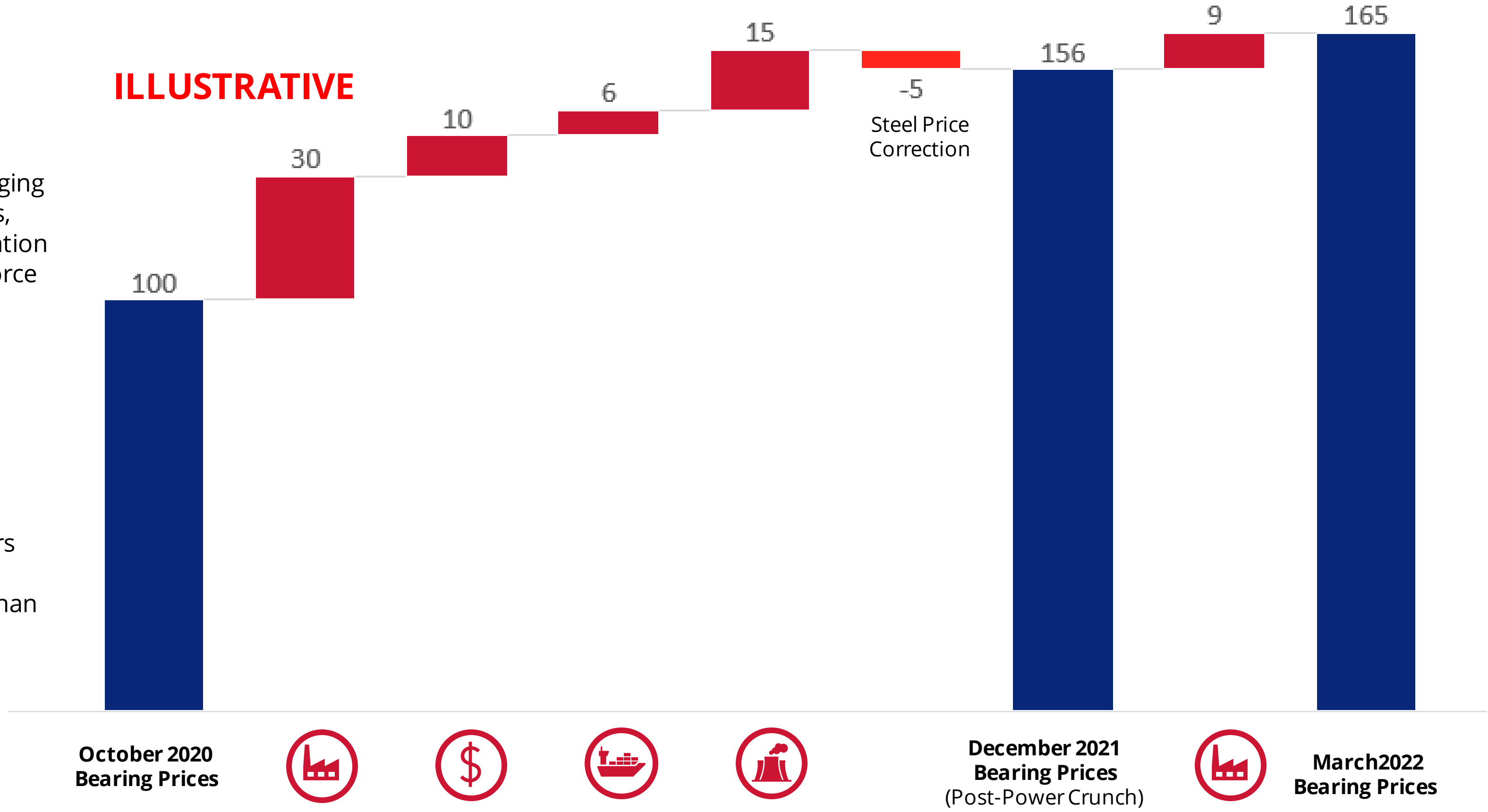
Average Impact on Bearing Unit Economics

We have broken down the aggregated impact on bearing economics which is causing major margin strain on suppliers and distributors

FACTORY PRICE CHANGES
as a result of changing raw material prices, energy prices, inflation scares, and workforce issues

EXCHANGE RATE CORRECTION
since majority of bearing distributors operate through currencies other than the Yuan

Breakdown of net average bearing price increase since October 2020 across all bearing types



SHIPPING COST INCURSION
since rates are drastically increasing and buyers are being forced to take the burden

POWER CRUNCH IMPACT
since factories were forced to drastically reduced output during cyclical shutdowns leading to the Chinese New Year

We have witnessed an average (weighted) price increase of 65% over the 18 months

Sources: KG Procurement Data Analysis

Scenarios for the Future

Scenarios for the Future

Since the current price and regulation volatility makes it tough to predict the future, we have constructed 4 plausible scenarios by which the price and power regulation will increase – KG uses these scenarios to anchor our decision-making

Factors Impacting the Future

Additional Magnitude

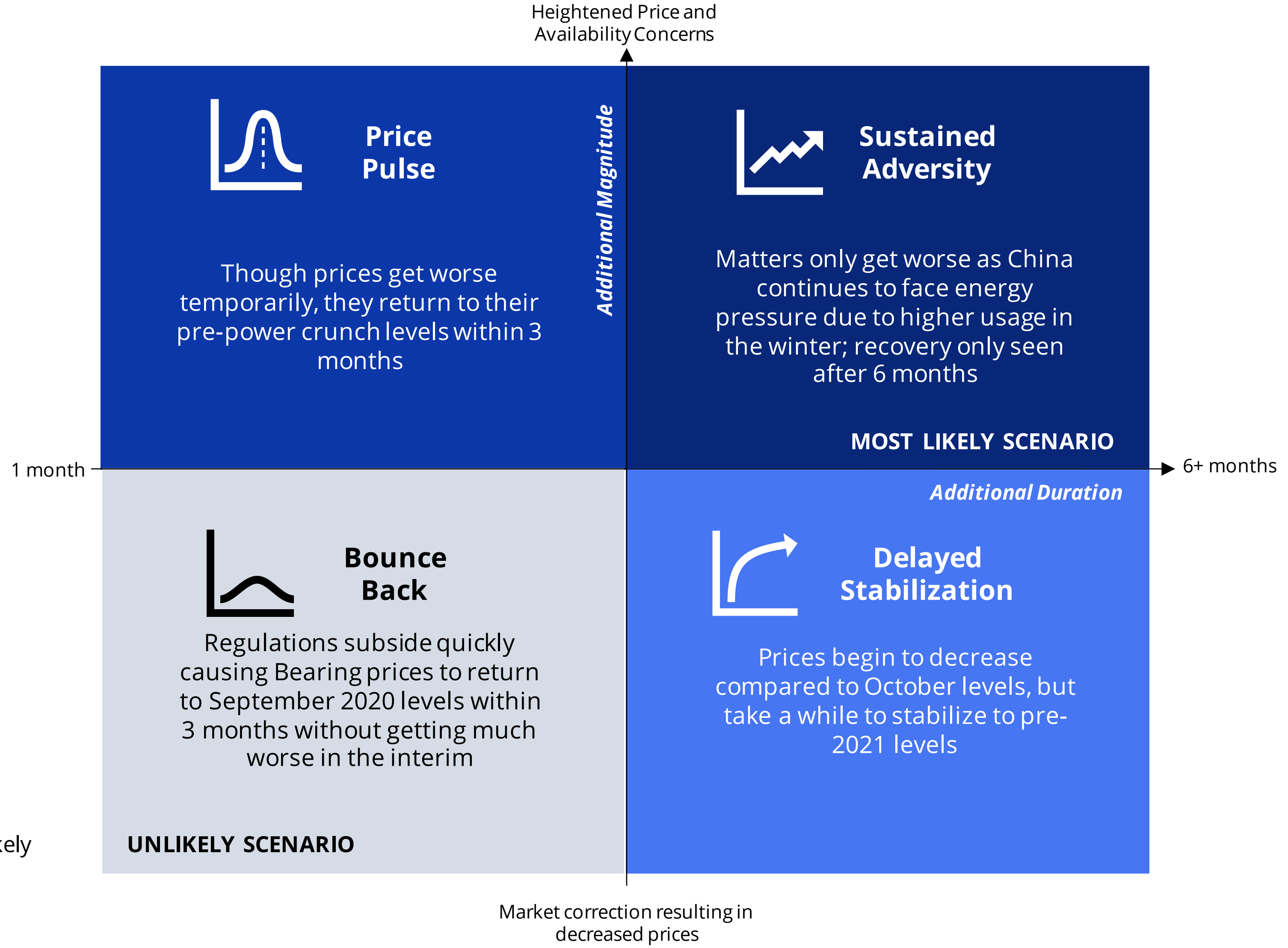
How will prices and delivery uncertainty increase as a result of the current prevailing industrial and environmental factors?

Additional Duration

For how much longer will we experience inflated prices and uncertain delivery/availability?

KG's Perspective on the Likelihood of the Four Scenarios:

Based on our current market knowledge and perspectives of various industry leaders, we have assigned the following probabilities to each of the scenarios. We will present all four scenarios so that our customers can apply their own judgement and respond accordingly



Key Characteristics and Responses to Each Scenario

We have outlined potential responses to each plausible scenario to mitigate risk and better serve customers

Increasing net impact and scenario likelihood

	Bounce Back	Delayed Stabilization	Price Pulse	Sustained Adversity
Characteristics	▪ Prices begin to decrease to pre-2021 levels within 1-2 months ▪ Sudden increase in clarity from the Chinese government around ending of restrictions in 1-2 months ▪ Sudden and short dip in bearing demand globally as price volatility begins to subside ▪ Decreased panic and uncertainty	▪ Though prices don't increase from October levels, there is no sign of short term recovery (1-2 months) ▪ Factories continue struggling to meet demand and consistently delay orders ▪ Little to no clarity on regulations ▪ Sustained overall panic and uncertainty impacting China's GDP growth	▪ Sizeable hike in prices vs today's levels which don't return to September levels for 2-3 months ▪ Factories find creative solutions to meeting demand in the short term ▪ Chinese government lays out clear plans for the restrictions ending in 3-5 months ▪ Moderate overall panic and uncertainty in the short term	▪ China's winter makes it tough for energy consumption to be reduced significantly and factories have to adjust to new regulations that are long-lasting ▪ Workforce issues ensue ▪ Prices continue to remain high and take a long time to stabilize (6+ months) ▪ Steel and shipping disruption ensues for 6+ months
Responses	✓ Wait out the storm by only stocking what you need in the next 1-3 months ✓ Communicate with customers to delay demand planning until prices stabilize	✓ Assume selling prices will eventually return to September levels and stock accordingly ✓ Communicate with customers to extend their planning so that suppliers/distributors have enough time to find the best sources	✓ Stock for the medium term and place bigger bets only after stock is depleted and prices are stabilized ✓ Communicate with customers to delay demand planning until prices stabilize	✓ Increase stock ASAP for 8+ months to avoid purchasing too much at heightened increases ✓ Communicate with customers to delay demand planning until prices stabilize

No Regret Actions

There are few no regret actions that suppliers and distributors can take to help drive a broader understanding and mitigate risk

Improve Business Planning

Spend more time accurately predicting demand and helping your customers with more accurate order planning.

Manage Customer and End User Expectations

Improve quality and frequency of customer communications to ensure that they are always aware of the market situation and what to expect regarding prices and delivery

Increased Transparency and Trust

COVID has taught us that trust and honesty are the cornerstone of business amidst uncertainty. Improving trust and transparency between customer and suppliers can result in stronger relationships and more fruitful business

Bring a Problem-Solving Attitude to Relationships

Bring a positive attitude to meetings to solve problems together and look for win-wins vs. spending time on blame/complaints which tends to be unproductive and diminish relationships

Increase Collection of, and Reliance on, Data & Analytics

In today's business environment, the more we can rely on data and analytics, the better our risk management and performance. There are many pre-existing SaaS solutions that companies can leverage to drive efficiency and effectiveness

Encourage Suppliers to Invest in Procurement Effectiveness

It is important to work with suppliers who are effective in their procurement in terms of order quantities and factory diligence. For example, KG orders from 25+ factories annually to source the best quality and conducts quality checks for an additional 20+.

Author & Acknowledgements

Karan Gupta
Head of Strategy

karangupta@kginternational.com

Karan leads KG International's growth strategy in terms of partnerships, market/product expansion and penetration, operating efficiencies, and customer experience. Karan is a seasoned strategist having worked with Deloitte Consulting in the US for a variety of Fortune 500 clients in many industries. He worked across a range of strategic issues such as corporate / business unit strategy, M&A, operating model transformation, offering innovation, new product launches, etc. around the world.

Karan obtained degrees in Mechanical Engineering and Applied Mathematics from the University of California, Riverside where he focused his research on Fault Modeling of Bearings and Induction Motors.

ACKNOWLEDGEMENTS

We would like to express our immense gratitude to the following team members for their contribution to this article:

- **Rohit Gupta**, *CEO*
- **Mazhar Hussein**, *Head of Procurement*
- **Ashish Jain**, *Purchasing Manager*
- **Reema D'Souza**, *Strategy Analyst*
- **Vihan Thakkar**, *Strategy Analyst*

ABOUT KG INTERNATIONAL

KG International is a leading global private Bearing brand and is a key distributor for leading automotive and industrial brands spanning many products, such as:

- *Bearings & Housings*
- *Filters*
- *Linear Motion Products*
- *Gearboxes & Motors*
- *Grease & Lubricant*
- *Commercial Vehicle Spare Parts*

KG started its journey 53+ years ago and is a pioneer for transforming Dubai into the Global Bearing Hub it is today. Through our journey, we have developed markets for a variety of global brands and have learned a myriad of lessons along the way to better serve our customers and suppliers. Today, we have 80+ team members around the world, we operate out of a 250,000+ sqft facility in Dubai which holds 24m+ items, and we serve customers across 14+ industries in 45+ countries.

Please find more information through our various customer channels, or email us directly for any further questions – links below:

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