

How to Manage Commodity Price Volatility with Resilinc CommodityWatch^{AI}

Dec 2nd at 10am PST

Agenda

❑ Perspectives from the CPO's Desk – The Future of Supply Chain Visibility

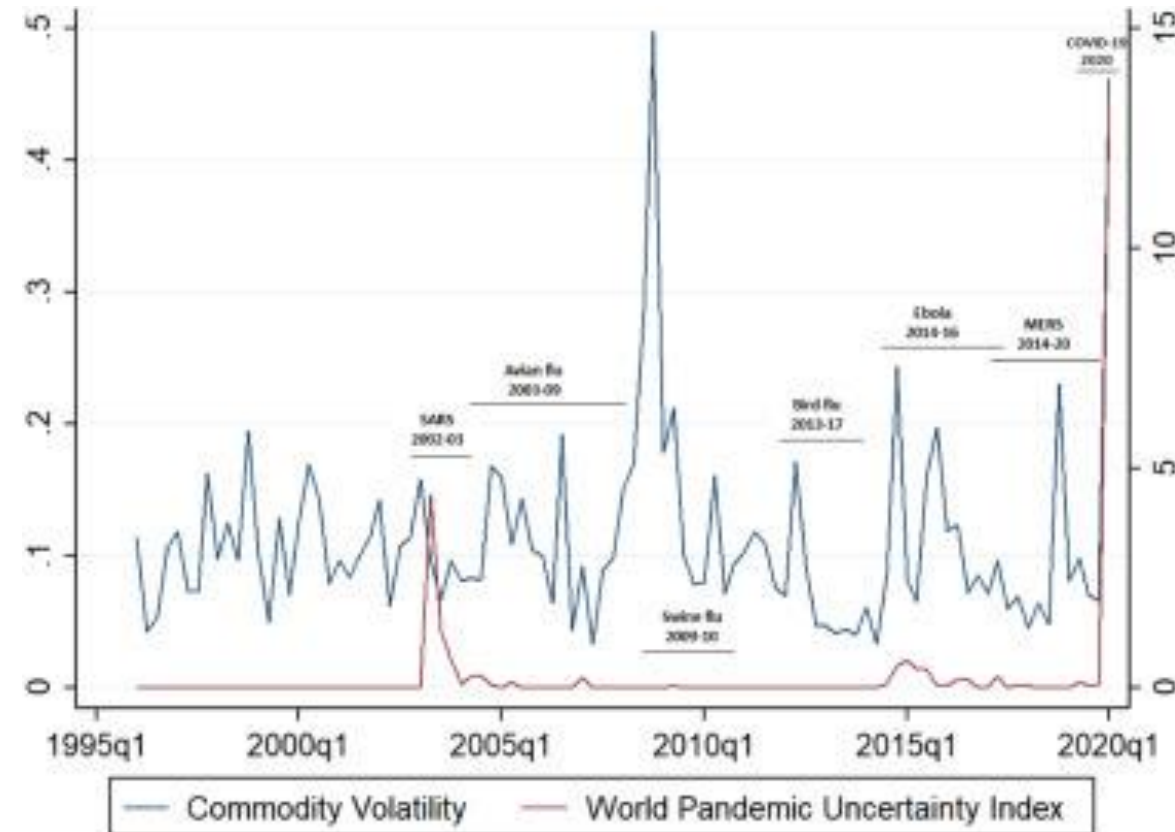
- Live Discussion with Resilinc's Chief Product Officer - Sumit Vakil
- Insights into Changes due to COVID-19
- The Future of CommodityWatch^{AI}

❑ CommodityWatch^{AI} Platform Capabilities

- Live Demo of CommodityWatch^{AI}
- Best Practices & Advice on Using Historical Data to Inform Global Bulk Purchasing Decisions

❑ Currently Monitored Commodities

- Raw Materials
- Rare Earth Minerals
- Magnesium Shortage
- Silicon Shortage



Our Guest Speakers



**Sumit Vakil | Co-Founder & Chief
Product Officer**



**Katie Rodgers | Senior Product
Marketing Manager**

Live Discussion with Sumit Vakil

Our Guest Speakers



**Shahzaib Khan | Senior Director
of Data & Product**



**Katie Rodgers | Senior Product
Marketing Manager**

Predictive Analytics

CommodityWatch^{AI}

What is CommodityWatch^{AI}

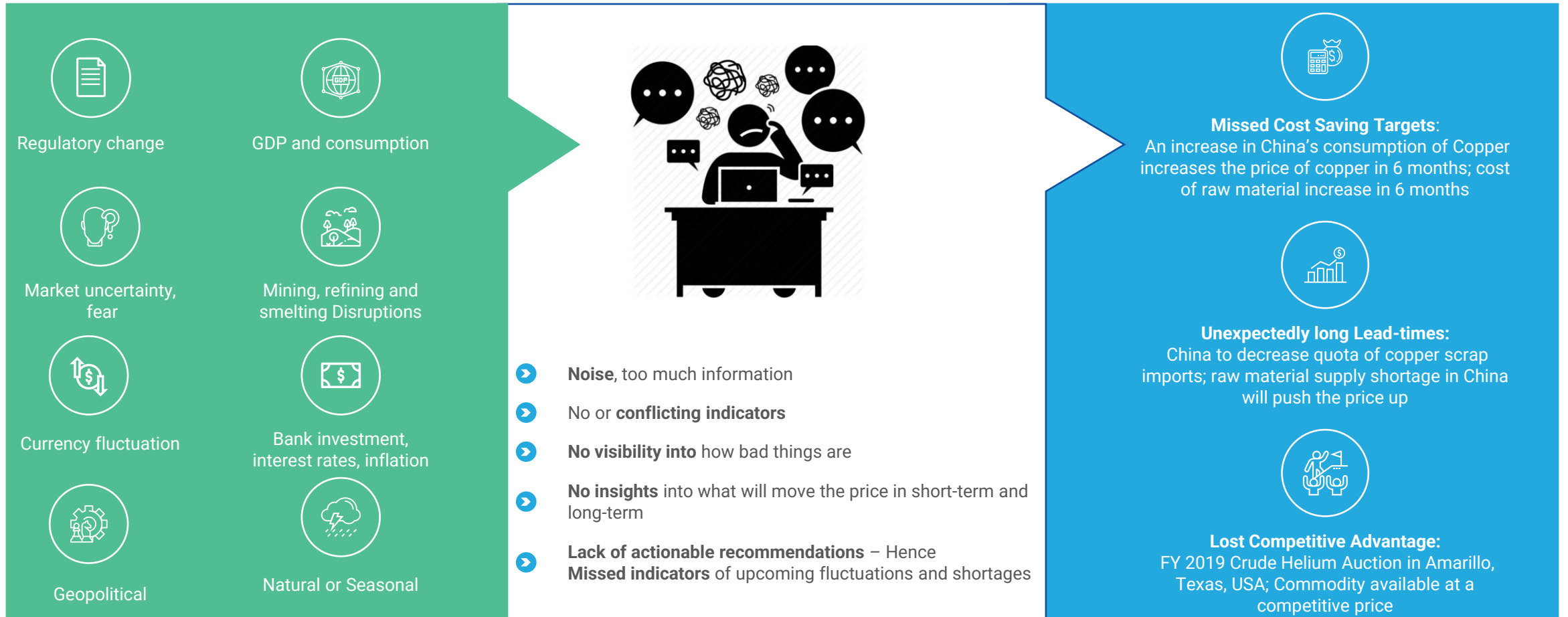
Resilinc predicts fluctuations in commodity prices and supply constraints based on an analyses of 100+ variables that are leading and coincident indicators with strong correlation or causation signaling supply constraints and price fluctuations.

Resilinc has annotated relevant commodity data going back 10+ years and identified the market indicators that predict a change in prices for each commodity.

The CommodityWatch AI is trained to identify patterns and verifications based on analyzing multiple datasets indicating directional movement as much as 90 days, 30 days or 10 days ahead of time.



Problem & Impact statement



Machine Learning Algorithm, self learns and improves Prediction accuracy

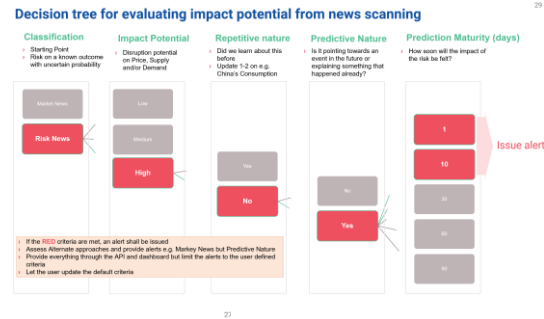
100+ impact variables monitored, assessed, correlated with 10+ years of historical data

Prediction with relevant market intelligence

Automated inferencing and classification

Extracting relevant Intelligence from Unstructured Data

3.5 Million Data Sources In 100+ languages with 5.5 Million intelligence feeds per day



Copper

NEWS = 4 | Risks = 2 | Prediction = Lower Supply Higher Prices

Copper recently, **India buying** **heaps** **Southeast Asia** **light** → Resilinc commentary and analysis: An outage at an India's Birla Copper Smelter forcing an increase in demand from India this week. This situation may lead to tighter supply in Asia and higher prices → Market News (FY)

Tariffs on **crude** **oil** **containers** **Japan to China** **hand filled** with bricks → Copper: 750ms of Copper got stolen in Turkey Copper was heading to a smelter in China → Raw material disruptions for a smelter in China → Market News (FY)

Tariffs **tariffs** **into** **cars** **and** **air** **production** in Central Asia Metals: **Concerns** **next** **month** → Zinc and Lead: **Tariffs** **dam** **leakage** may result in zinc and lead production loss of Central Asia Metal → Supplies of Zinc and Lead can be tighter, minor price impact expected → Market News (FY)

Zinc **owns** **operations** in **Bot** **smelter** **complex** due to **pollution** - **Technical** **reconstruction** of **complex** **announced** → Copper: Villagers are protesting which has forced Zin to cease operations in Bot Smelting Complex due to pollution → This was one of the biggest smelters at one point → Some loss of supply might lead to an impact on prices in China → Market News (FY)

Research group **find** **China** **2020** **refined** **supply** **imports** **forecast** **investment** in **lead** **assets** → Supply of copper for the rest of the world will become tight if China increases its investments in lead assets this year, a key source of copper consumption. The increase in lead asset investments in 2020 from 438.8 billion yuan planned at the start of the year to 460 billion yuan are inclined towards ultra-high-voltage electricity transmission, new energy vehicle charging piles and digital infrastructure projects. → Risk News → Predictive Nature → Maturity 30-days

Food and Metals
China about to **build** **an** **super** **state** **network** of **infrastructure** → **AI** **Minerals** China is planning to build big storage facilities and **buy** **the** **amounts** of **raw** **material** to store. In part of their new post COVID-19 strategy, lessons from COVID related shortages, they start with different kinds of commodities including food and metals. An **increase** in **demand** from China will lead to **supply** **constraints** for the rest of the world. → Risk News → Predictive Nature → Maturity 90-days

Copper Price to increase

- EVA predicts a price increase on part: 'heat resistant wires' due to a surge in copper price derived from higher demand in India and China, and supply constraints which may impact:

2 Tier-1 Suppliers | 8 Sub-tier Suppliers | 5 Products



- Monitoring 30 Critical Categories
- Predicting price changes and supply constraints on 13 key commodities
- 2-3 months early warning
- 100+ influencing variables
 - GDP / Consumption
 - Stockpiling
 - Geopolitical
 - Regulatory and compliance
 - Interest rates/inflation
 - Market uncertainty/fear
 - Raw material / shipping disruptions
 - Currency fluctuations
 - + more

Price and Supply Market Intelligence

CommodityWatch^{AI}



News Type	High*	Medium	Low	
Supply And Demand Balance	6	54	27	87
Price Fluctuation	1	15	28	44
Business News	-	3	29	32
Competitive Advantage	-	3	11	14
Regulatory Change	3	3	4	10
Grand Total	10	78	99	187

* Market News with strong correlation/causal impact to supply constraints and price fluctuations

Demo



Summary – China's Impact on Silicon

Impact of power cuts on Silicon:

- Power cuts in China - price of materials to triple compared to prices 2 months ago
- Yunnan province in China cuts production - resulting in sudden price rises
- Silicon metal prices increase by 300%
- Prices anticipated to stay high for the next 2 quarters

Dry Season Impact on Silicon

- Stockpiling before entering the dry season
- The price increase is a result of the domestic downstream demand in the fourth quarter, the silicone monomer and polysilicon sectors have entered the peak season of consumption, and operating rates of aluminum alloy stood high
- Supply will be down due to a reduction in production towards the end of October in Sichuan
- The large-scale shutdown in Southwest China will be after the full arrival of the dry season at the end of November
- The supply increment of other producing areas including Xinjiang will be very limited during the whole dry season due to the shortage

CommodityWatch^{AI} Alerts on Silicon

Jan 2021	Higher Demand Higher Price Driven by Increase in Demand	Silicon demand continues to increase due to positive economic sentiment
Feb 2021	Lower Supply Higher Price Driven by Raw Material Disruption	Both domestic and global spot supply reported to be increasingly tight in the United States. 7.4% duty on Malaysian Silicon
Feb 2021	Higher Demand Higher Price Driven by Fear and Stockpiling	Expectations of higher post-holiday silicon metal prices driving traders and downstream users to restock in advance
Mar 2021	Lower Supply Higher Price Driven by Shipping / Cargo Disruption	Fear of short supply continues to affect price that has now entered its eighth week. Spot demand remains good despite a slowdown in automaking.
Apr 2021	Lower Demand Lower Price Driven by Lower Consumption	Low-grade silicon metals prices declined amid ample supply and weak demand
May 2021	Lower Demand Lower Price Driven by Lower Demand	Due to the crisis in the automotive sector, end-demand has fallen by at least 10-20%
Jun 2021	Higher Demand Higher Price Driven by Higher Consumption	Polysilicon prices affected by an increase in solar energy demand
Jun 2021	Lower Supply Higher Price Driven by Raw Material Disruption	Polysilicon prices to increase due to the fire event at Hoshine Silicon
Jul 2021	Lower Demand Lower Price Driven by Lower Consumption	Staff shortages in alloys industry to lower US silicon consumption and prices

CommodityWatch^{AI} Alerts on Silicon

Sep 2021



Higher Demand Higher Price
Driven by Market Fear/Shortage

The silicon metal price in the United States rising on increased spot buying amid short supply and signs that consumers were less willing to sell their surplus metal to other consumers below the market rate

Sep 2021



Lower Supply Higher Price
Driven by Supply Decrease/Shortage

European magnesium and silicon prices have reached multi-year highs on tight supply caused by increased Chinese energy costs, output cuts and structural changes in demand

Sep 2021



Lower Supply Higher Price
Driven by Manufacturing Disruption

As energy consumption controls intensify in the major production hub of Yunnan province, Chinese silicon metal prices are expected to rise sharply due to an expected fall in supplies

Oct 2021

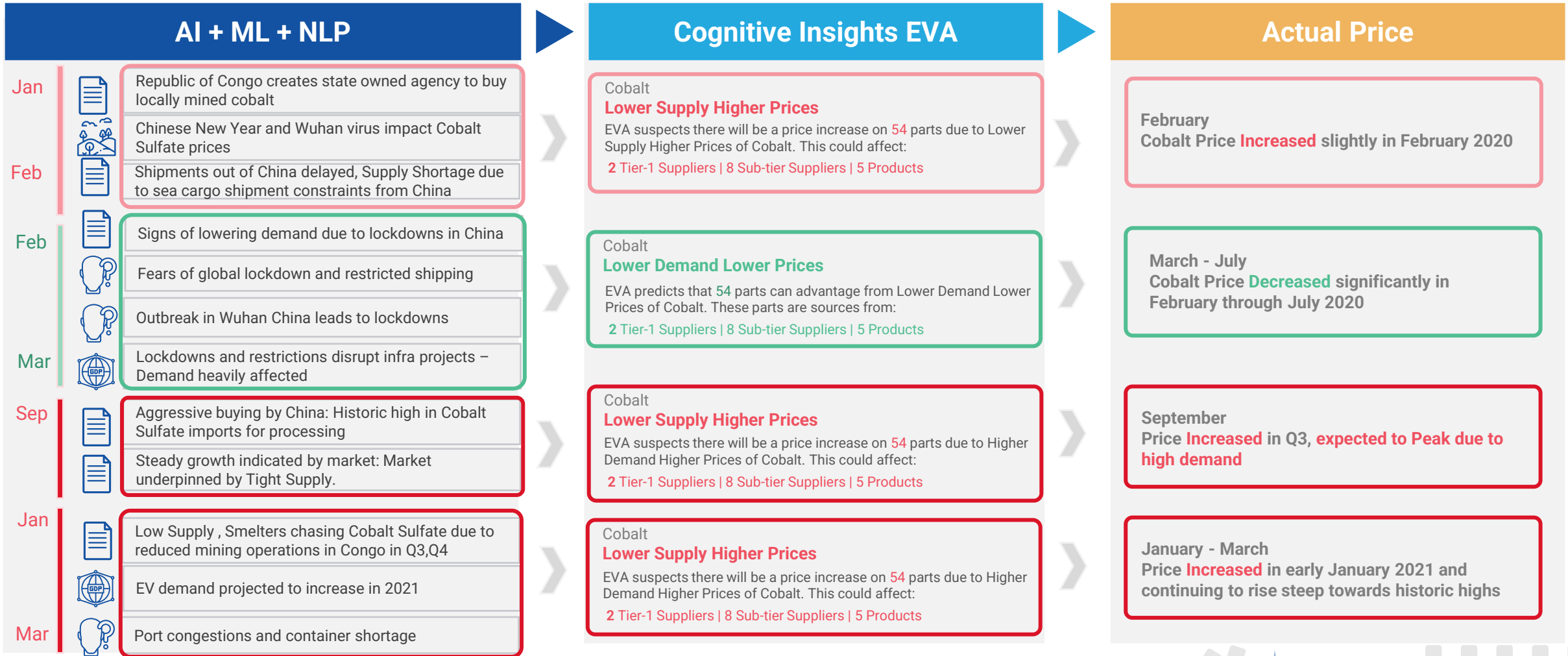


Lower Supply Higher Price
Driven by Manufacturing Disruption

The silicon price set a new all time high in the United States on coming effects of a global shortage. "US silicon supply was already tight before China, the world's biggest supplier, largely stopped exporting the metal during a production crisis"



CommodityWatch Case Study - Cobalt



Thank You

The Resilinc Team