



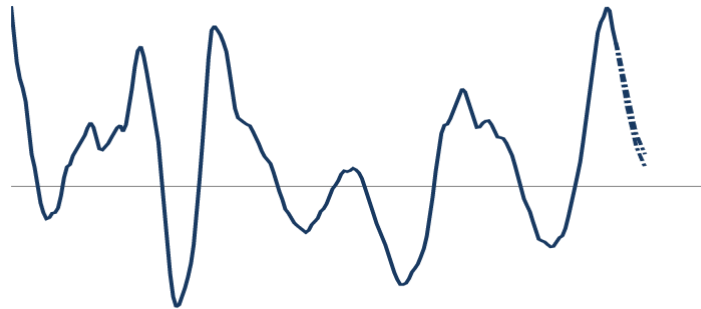
ITR ECONOMICS

First In Forecasts Worldwide

Forecast

===== March 2022 =====

Custom Price Index



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	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22
Lower Forecast Range	65.8	50.5	31.2	15.8	7.7
Annual Growth Rate (%)	67.1	52.0	33.7	18.3	10.2
Upper Forecast Range	68.3	53.5	36.2	20.8	12.7
Actual	69.6				
Lower Forecast Range	693.5	687.8	720.0	765.9	797.4
Quarterly Index (1982 = 100)	702.3	698.3	738.5	785.5	817.8
Upper Forecast Range	711.1	708.7	757.0	805.2	838.3
Actual	727.8				
Quarterly Growth Rate (%)	51.8	9.4	9.9	9.0	12.4
Actual	57.3				

Forecast Revised

Outlook

- Prices will generally rise throughout the remainder of 2022.
- Rise will be most robust during the first half of 2022.
- Expect Prices to stay relatively high until the war ends or buyers become used to the situation.

Results

- The ongoing war in Ukraine is overriding normal economic fundamentals, resulting in upward pressure on Prices.
- As a result, we have prepared a forecast that accounts for the current economic and political climate.

Supporting Evidence

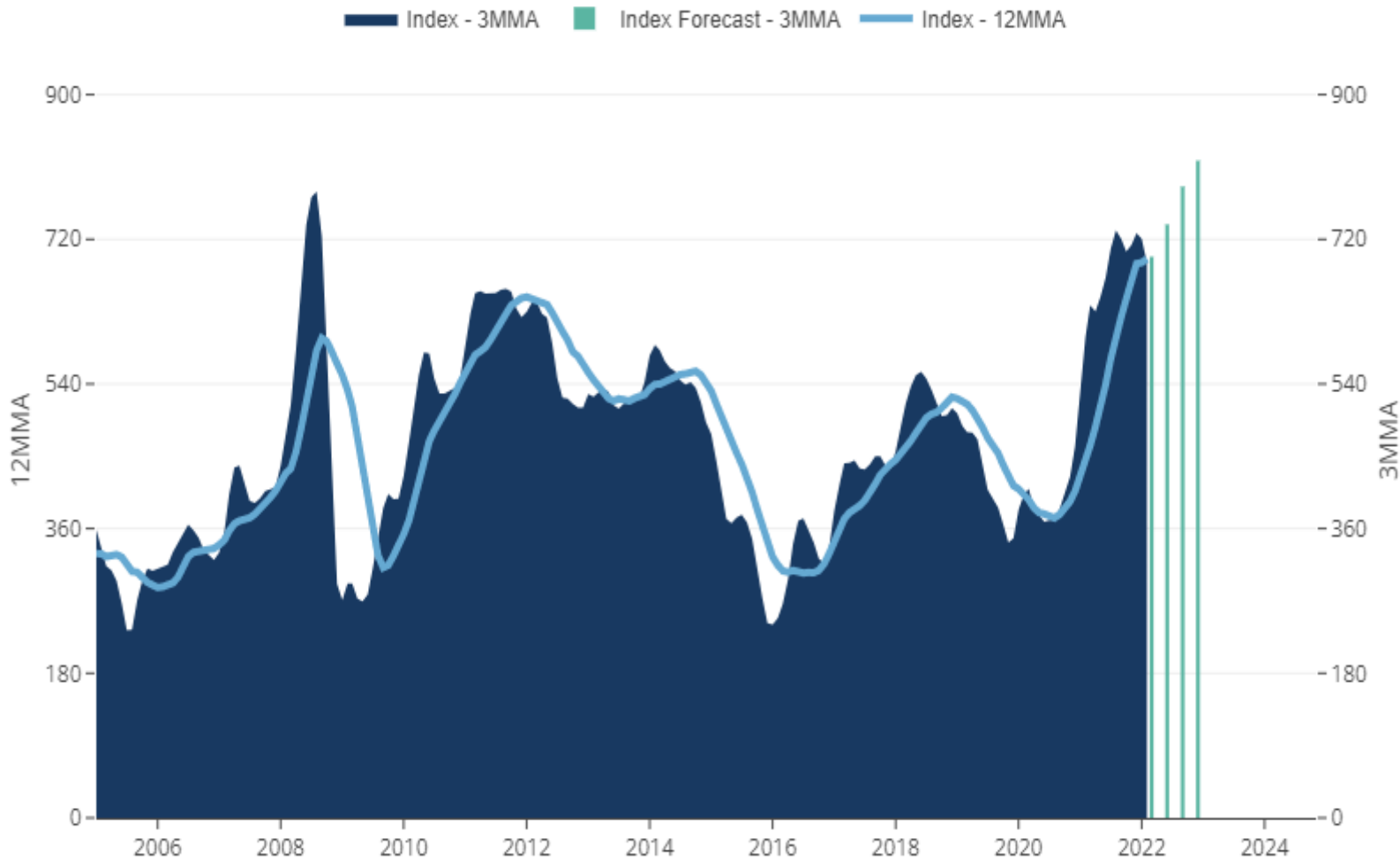
- Prior to February 24, commodity prices were beginning to ease, and we were projecting mild decline for many through the rest of 2022. Then, Russia invaded Ukraine. The war has disrupted economic fundamentals, resulting in elevated pricing for many commodities.

Risks

- The major risks to this forecast hinge on the war. If it ends abruptly, we may lower the forecast to reflect the reemerging supply and demand fundamentals. If the war spreads to other countries or escalates to more destructive weaponry, we may need to upgrade the forecast.

Custom Price Index

Data Trends, 1982 = 100



Quarterly Index (3MMA)

690.4

Annual Index (12MMA)

695.7

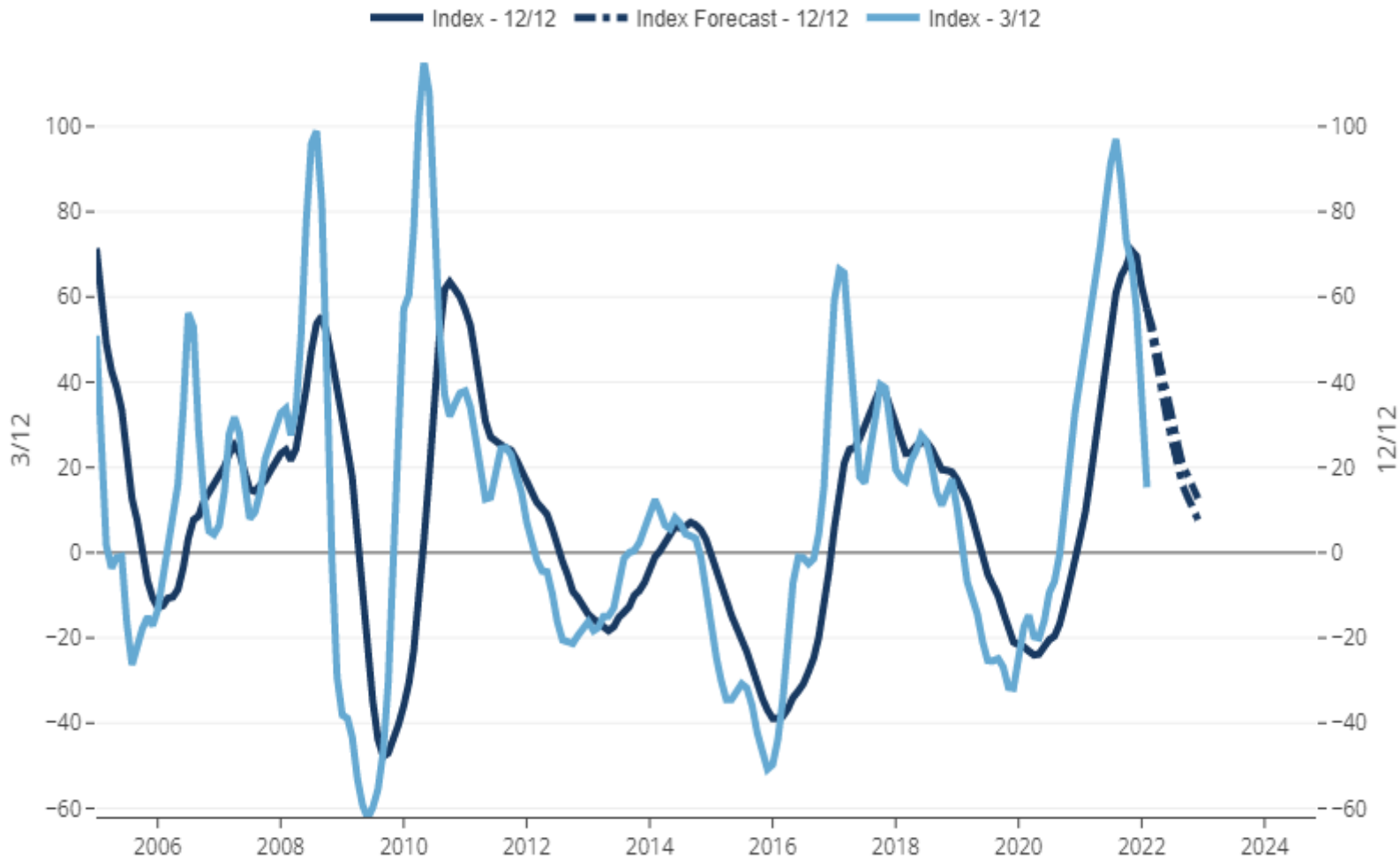
OUTLOOK

Prices will generally rise throughout the remainder of 2022. Expect Prices to stay relatively high until the war ends or buyers become used to the situation.

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Lower Forecast Range	687.8	720.0	765.9	797.4
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Custom Price Index

Rates-of-Change



Current Phase

Phase C
Slowing Growth

Quarterly Growth (3/12)

15.3%

Annual Growth (12/12)

57.1%

NEXT 12/12 LOW

POST-4Q22

	Mar-22	Jun-22	Sep-22	Dec-22
Lower Forecast Range	50.5	31.2	15.8	7.7
Annual Growth Rate (%)	52.0	33.7	18.3	10.2
Upper Forecast Range	53.5	36.2	20.8	12.7

Custom Price Index

*Sample
Company*

	Mar-21		Jun-21		Sep-21		Dec-21
Lower Forecast Range	10.1		37.5		62.1		65.8
Annual Growth Rate (%)	11.6		39.5		64.1		67.1
Upper Forecast Range	13.1		41.5		66.1		68.3
Actual	17.2		42.7		65.0		69.6
Deviation	4.1 above range		1.2 above range		in range		1.3 above range
Lower Forecast Range	543.2	Forecast Revised	626.9	Forecast Revised	695.2	Forecast Revised	693.5
Quarterly Index (1982 = 100)	551.5		639.7		709.4		702.3
Upper Forecast Range	559.7		652.5		723.5		711.1
Actual	638.1		672.2		720.6		727.8
Forecast Accuracy	84.3%		94.9%		98.4%		96.4%
Quarterly Growth Rate (%)	34.6		73.4		84.3		51.8
Actual	55.7		82.3		87.2		57.3

Forecast Revision History:

- December 2021 Report: We raised our Prices forecast to reflect some near-term upward pressure on Prices resulting from a lower supply of materials.
- September 2021 Report: The spread of the SARS-CoV-2 Delta variant and the latest trends in domestic and global leading indicators were suggesting a nearer-term peak for the Prices 3MMA and subsequent decline, as opposed to a flat top in pricing.
- June 2021 Report: The Prices 3MMA came in 13.0% above the median expectation. We revised the forecast accordingly.

Terminology and Methodology

Data Trends

Monthly Moving Total (MMT) vs Monthly Moving Average (MMA)

Totals are used for data that can be added together, such as units sold or dollars spent. Averages are used for data that cannot be compounded, such as index readings, percentages, price levels, and interest rates.

3MMT/A and 12MMT/A

A 3-month or 12-month moving total/average is the total/average of the data for the most recent 3 or 12 months, respectively. The 3MMT/A illustrates the seasonal changes inherent to the data series. The 12MMT/A removes seasonal variation in order to derive the underlying cyclical trend; it is also referred to as the annual total or annual average.

Rates-of-Change

A rate-of-change figure is the ratio comparing a data series during a specified time period to the same period one year prior. Rates-of-change are expressed in terms of the annual percentage change in a 12MMT or 12MMA, 3MMT/A, and actual monthly data.

Rates-of-change reveal whether activity levels are rising or falling compared to the previous year. A rate-of-change trend illustrates and measures cyclical change and trends in the data. ITR Economics' three commonly used rates-of-change are the 12/12, 3/12, and 1/12, which represent the year-over-year percentage change of a 12MMT/A, a 3MMT/A, or a single month of data, respectively.

A rate-of-change above 0 indicates the data is higher than one year prior, while a rate-of-change below 0 indicates the data is below one year earlier.

Business Cycle



Recovery (A)

The 12/12 is rising below 0, and the data trend is either heading toward a low or is in the early stages of recovery. This is the first positive phase of the business cycle.



Accelerating Growth (B)

The 12/12 is rising above 0, and the data trend is accelerating in its ascent and is above the year-ago level. This is the second positive phase of the business cycle.



Slowing Growth (C)

The 12/12 is declining but remains above 0; data trend ascent is slowing or has stopped, but the data trend is still above last year. This is the first negative phase of the business cycle.



Recession (D)

The 12/12 is below 0, the data trend is below the year-ago level, and the rate of decline is increasing. This is the second and final negative phase of the business cycle.

Indicator Definitions

Custom Price Index

Custom Price Index compiled by ITR Economics to reflect Sample Company's input costs. Index, 1982 = 100.

Management Objectives™

Phase A



Recovery

- Scrupulously evaluate the supply chain
- Model positive leadership (culture turns to behavior)
- Start to phase out marginal opportunities (products, processes, people); repair margins
- Perform due diligence on customers and extend credit
- Be on good terms with a banker; you will need the cash more now than in any other phase
- Invest in customer market research; know what they value and market/price accordingly
- Hire key people and implement company-wide training programs ahead of Phase B
- Allocate additional resources to sales and marketing
- Invest in system/process efficiencies
- Make opportunistic capital and business acquisitions; use pessimism to your advantage

Phase B



Accelerating Growth

- Ensure quality control keeps pace with increasing volume
- Invest in workforce development: hiring, training, retention
- Ensure you have the right price escalator; space out price increases
- Maximize your profit margins through differentiation; stand out from the crowd and set yourself apart
- Use improved cash flow to strategically position the business to beat the business cycle
- Expand credit to customers
- Improve corporate governance (rent a CFO; establish a board of advisors or board of directors)
- Communicate competitive advantages; build the brand
- Query users for what they want and what is important to them
- Sell the business in a climate of maximum goodwill

Phase C



Slowing Growth

- Know if your markets are headed for a soft landing or a hard landing
- Cash is king; beware of unwarranted optimism
- Stay on top of aging receivables
- Revisit capital expenditure plans
- Lose the losers: if established business segments are not profitable during this phase, eliminate them
- Use competitive pricing to manage your backlog through the coming slowdown
- Avoid committing yourself to long-term expenses at the top of the price cycle, but lock in revenue
- Go entrepreneurial and/or counter-cyclical
- Evaluate your vendors for financial strength; if needed, look for additional vendors as a safety net
- If the cycle looks recessionary, cross-train key people to prepare for workforce attrition/reduction

Phase D



Recession

- Implement aggressive cost-cutting measures
- Offer alternative products with a lower cost basis
- Perform due diligence on acquisitions while valuations are falling
- Reduce advertising as consumers become more price conscious
- Enter or renegotiate long-term leases
- Negotiate labor contracts
- Consider capital equipment needs for the next cycle
- Tighten credit policies
- Develop programs for advertising, training, and marketing to implement in Phase A
- Lead with optimism, remembering that Phase D is temporary