

1st Quarter 2022 Industry Review
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Summary

Economic activity in the manufacturing sector grew in the first quarter, with the overall economy achieving a 23rd consecutive month of growth in April. The mobile construction and agriculture machine industries showed solid performance in Q1 2022, but evidence of weakness is beginning to appear. Sales gains were reported for most large machine OEMs, while Parker delivered a 9% increase and Cummins added 5% to year-earlier results. Direct Russian sales restrictions due to sanctions will have a limited affect an all companies, but the collateral damage as commodities increase in price, shipping becomes even more constrained, and uncertainty in the European region grows, is a huge unknown. Of course, logistics, materials cost, semiconductor chip constraints and labor challenges continue to be cited by all companies followed. At the same time, while price increases were able to offset higher manufacturing costs last year, some companies are citing difficulty going forward. All economic indicators remain very bullish and all regions of the globe except China. Used equipment prices remain elevated due to supply constraints, yet in the current period rental houses have decelerated selling in order to to grow fleets. Backlogs have increased once again in most OEM companies.

US GDP decreased 1.4% in the first quarter. Continued re-opening of service industries like travel, lodging, and food service could not offset weakness in auto sales and Covid Omicron disruptions. Total US construction reached an all-time peak in March, the most recent datapoint. Housing starts are softening from high levels and new home sales are beginning to show weakness. Used auto prices are still strong, based on the low supply of new vehicles. Many commodity prices are at or near record levels, from metals to agriculture goods. The surge seen in commodity prices in early March as Russia invaded Ukraine has subsided. Gains in oil continue to support activation of older wells, driving demand for equipment in the oil patch.

OEMs increased prices on new equipment throughout 2021 and have confirmed the plan to continue to raise prices in 2022. Last year large OEMs were able to more than offset production cost increases with price actions. In the current quarter, some OEMs are seeing costs exceed price increases, pressuring margins. This seems to be more in construction, and less so in mining and agriculture. Suppliers to the large OEMs have reported generally no significant issues with passing price increases on to the OEM in the past, but should expect some pushback going forward. Sooner, rather than later, is the time to increase prices if that's what is needed for your business.

Overview

According to the Institute for Supply Management, the April Manufacturing PMI registered 55.4, a decrease of 1.7 from the March reading. This figure indicates expansion in the overall economy for the 23rd month in a row after pandemic influenced contractions in April and May 2020. However, this is the lowest reading since July 2020 (53.9), indicating a slow down. The New Orders Index registered 53.5, down 0.3. The Production Index reading of 53.6 is a 0.9 decrease compared to March's figure of 54.5. The Prices Index registered 84.6, down 2.5 points. The Backlog of Orders Index registered 56, 4 points lower than the March reading of 60. The Employment Index figure of 50.9 is 5.4 lower than the 56.3 recorded in March. The Supplier Deliveries Index registered 67.2, an increase of 1.8 compared to the March figure of 65.4. The Inventories Index registered 51.6, 3.9 points lower than the March reading of 55.5.

As the PMI report showed, economic activity continued to expand in Q1 2022. However, gross domestic product (GDP), the sum of all goods and services produced in the economy, decreased at an annual rate of 1.4% in the first quarter of 2022, following an increase of 6.9% (revised) in the fourth quarter. The deceleration in real GDP in the first quarter was led by Covid disruptions related to the Omicron variant, as well as decreases in motor vehicle sales and other retail trade.

US construction spending remained robust in Q1. Overall spending in March reached an all time high of \$1.730T (seasonally adjusted annual rate), though was fairly flat throughout the quarter. Good weather across the nation, higher raw material costs, higher commodity prices and spring time start-ups pushed the gains. The gains are expected to continue as infrastructure spending ramps up.

The US Census Bureau reports that housing starts in the US unexpectedly edged 0.3% higher to a seasonally adjusted annualized rate of 1.793 million in March of 2022, the highest since June of 2006. However, mortgage rates continue to soar, material costs remain elevated and supply constraints persist which is weighing on house prices and reducing affordability. New home sales in the United States dropped 8.6% from a month earlier to a seasonally adjusted annual rate of 763,000 in March of 2022. Meanwhile, the median sales price of new houses sold last month was \$436,700, much higher than \$359,600 a year earlier, while the average sales price was \$523,900, up from \$414,700.

United States agriculture tractor sales showed continued strength and turned in a solid quarter. Results from the large agriculture machine companies presented later in this report will demonstrate that. Leadership remained shifted from small tractors to large tractors. YTD thru Mar., large tractors sales were down slightly (-0.7%) but small tractors were down 8%. Combines, after a strong 2021, are starting the year weak and are down 19% YTD vs. 2021.

Monthly US auto sales have continued to suffer thru component shortages. April sales were down 17% vs. year-ago, at 14.7M annual units. This is well below the forecast from last quarter to reach 16.0M units in 2022. Continued pressure on supply of components is hurting availability. Rising prices and interest rates will also hinder growth in auto sales.

Most commodities and metals spiked in early March as Russia invaded Ukraine. Prices have come back slightly, but global turmoil is causing some price elevation and associated inflation. Gold prices moved up slightly in a tight range in Q1, similar to the last 18 months. Gold traded recently at \$1879/troy ounce. Other metals reached multi-year highs in the quarter. Copper traded above \$4.90/lb during the quarter before settling to \$4.25 recently, down slightly from Q4 closing price of \$4.49. Aluminum recently traded at \$1.42/lb, flat with last quarter, after reaching \$1.92 on March 4. Lead traded as high as \$1.23/lb but was \$1.13 recently, up from \$1.00/lb at the end of last year. Metals will continue to rise in price as soaring energy costs drive up the cost of metal production. US coal production was 1% lower in Q4 2021 compared to Q3 2021, but +9.4% compared to Q4 2020. US coal exports increased 4.5% quarter-over-quarter while US coal consumption dropped 32% in Q4 vs. Q3.

U.S. oil rigs rose to 557 most recently, their highest since spring 2020, while gas rigs were at 146, up from 115 last quarter and 88 one year ago. U.S. crude futures were recently trading above \$110 a barrel. As oil has been increasing in price, producers have been bringing more assets on line and driving the need for construction equipment. Rental houses report large gains in fleet in the field in Texas and Alberta, Canada.

OEMs

The mobile equipment industry continues to grow despite on-going supply chain and labor challenges. The war in Ukraine has had minimal impact on manufacturing, but commodity price increases have certainly impacted manufacturing costs. At the same time, commodity price increases will drive demand for parts and machines. Due in large part to a surge in government stimulus in China in mid-2020, and in small part to a resurgence in Covid protocols in some Chinese cities, demand in China remained negative for the third quarter in a row. Forecasts for 2022 call for a down year in Chinese machine demand. South America continued a strong recovery, and is poised to remain strong with metals and grains at high prices. In the first quarter the industry enjoyed sales gains across the board in access equipment, construction, mining, agriculture and power systems. Even aerospace markets showed signs of recovery. However, margins have been coming under pressure and incremental margins are deteriorating as inflation drives costs higher and companies are experiencing manufacturing inefficiencies due to high demand and parts shortages. Backlogs continue to increase across most industries. Strength in farm commodities and technology upgrades are expected to support growth in the agriculture machinery

businesses. Mining is coming off of a very strong year, and forecasts are mixed. This quarter's heat map reflects the reports of calendar year Q1 and is shown on page 5.

KOMTRAX data reviewed for this report show improving machine utilization in all regions, except China. This trend was also reported by Hitachi. The data comparing North America, China, Japan and Europe machine usage are presented on page 6.

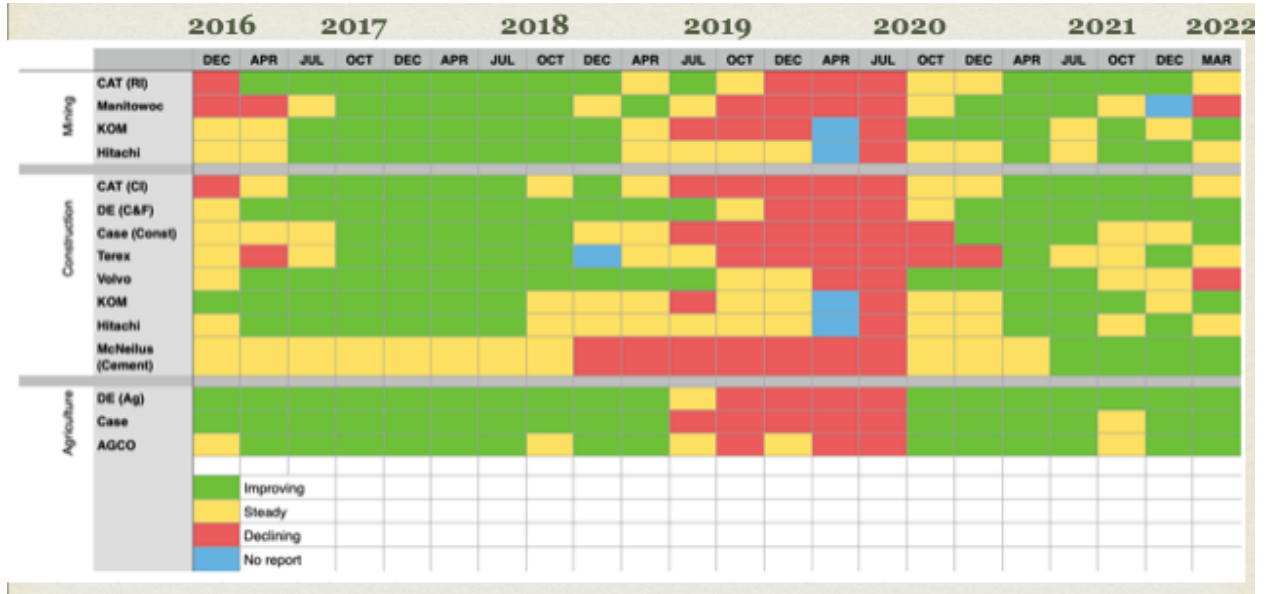
The American Rental Association (ARA) has increased their forecast for the current year for rental business in the US to grow 10.2% to \$52.7B, up slightly from last quarter. Despite supply chain driven delays in fleet deliveries, the ARA has also forecast a 36.7% increase in investment in inventory to reach \$14.4B in 2022. This exceeds the previous annual high of nearly \$13B spent in 2019.

OEM Spotlight

JLG reported sales in the quarter up 19.6% to \$883M. The business is continuing to recover as capital preservation at rental houses is ending and replacements are being purchased. Gains in oil production and construction are also supporting the results. Backlog in Access increased in the quarter by 161% vs. year-ago, and is at \$4.0B — a record for JLG. Orders are being taken for delivery into mid-2023. Despite JLG locking in meaningful portions of steel and aluminum purchases, margins dropped 0.8% in the current quarter due to manufacturing costs. Some machines are being sold with surcharges to help offset material cost increases.

Oshkosh CEO John Pfeifer said, "I am proud of the efforts of Oshkosh team members who worked hard and demonstrated great resolve to overcome very challenging conditions in our first quarter. Commodity prices showed steady improvement in the first half of the quarter, but significantly reversed course following the Russian invasion of Ukraine as steel and aluminum costs as well as freight costs increased rapidly. Additionally, we continued to experience supply chain disruptions and elevated workforce turnover that remain macro issues affecting many industries. Despite these headwinds, in response to the further cost inflation we are facing, we implemented additional surcharges in our Access Equipment and Commercial segments as well as pricing actions in the Fire & Emergency segment. Looking ahead, we are encouraged by the extremely strong demand and high order rates across our business segments, as evidenced by an all-time record Oshkosh backlog of over \$12 billion at quarter end."

Heat Map for the Current Period



KOMTRAX data (as of 3/2022)

hours		[A]20/04-21/03	[B]21/04-22/03	[A] vs.[B]		[A]20/04-21/03	[B]21/04-22/03	[A] vs.[B]	
Japan	Apr	50.9	48.8	-4.1%	Europe	Apr	66.3	79.1	19.4%
	May	46.9	44.0	-6.0%		May	70.9	74.8	5.4%
	Jun	51.7	51.7	0.1%		Jun	77.0	81.9	6.4%
	Ju I	49.8	51.7	3.8%		Ju I	80.4	77.3	-3.9%
	Aug	50.2	45.8	-8.8%		Aug	70.5	72.6	2.9%
	Sep	51.4	50.7	-1.4%		Sep	82.4	82.5	0.1%
	Oct	54.7	51.7	-5.6%		Oct	80.7	79.2	-1.8%
	Nov	51.4	50.9	-0.8%		Nov	80.1	79.0	-1.3%
	Dec	57.3	53.7	-6.3%		Dec	59.2	59.1	-0.2%
	Jan	59.3	58.8	-0.8%		Jan	59.7	63.9	7.0%
	Feb	57.2	57.5	0.5%		Feb	64.8	68.6	5.8%
	Mar	55.1	53.5	-2.8%		Mar	87.0	84.8	-2.5%
North America	Apr	61.3	68.8	12.2%	China	Apr	144.0	123.2	-14.4%
	May	62.1	64.9	4.6%		May	147.2	125.5	-14.7%
	Jun	71.4	73.0	2.3%		Jun	126.4	109.5	-13.3%
	Ju I	71.8	69.9	-2.7%		Ju I	126.1	105.8	-16.1%
	Aug	71.2	74.2	4.2%		Aug	130.1	106.0	-18.5%
	Sep	68.9	70.1	1.8%		Sep	124.6	101.8	-18.3%
	Oct	72.2	69.6	-3.6%		Oct	137.3	109.4	-20.3%
	Nov	64.3	69.7	8.3%		Nov	136.3	110.3	-19.0%
	Dec	61.2	62.7	2.4%		Dec	128.5	109.7	-14.7%
	Jan	61.0	65.2	6.9%		Jan	109.7	70.4	-35.9%
	Feb	55.0	62.1	13.0%		Feb	43.9	46.8	6.7%
	Mar	68.7	73.8	7.4%		Mar	121.9	101.2	-16.9%

