

## November Sales Up +8.7% Industry Backlog at Record Level!

### Regional Performance:

Worldwide year-to-date sales increased +24.3%.

At +31.1% YTD, ROW is showing the highest sales growth.

Europe has the highest YTD growth in bookings at +42.7% in November.

### Industry Outlook:

Industry sales totaled \$70,982 million through November. If we continue to grow at these historical averages, sales will be \$77,154 million for the year, up +23.0%. The forecast for 2022 is \$82,145 million, up +5.5% over 2021.

### Industry Backlog:

November backlog increased to \$20,467 million equaling 13.8 weeks.

### 2021 Currency Impact:

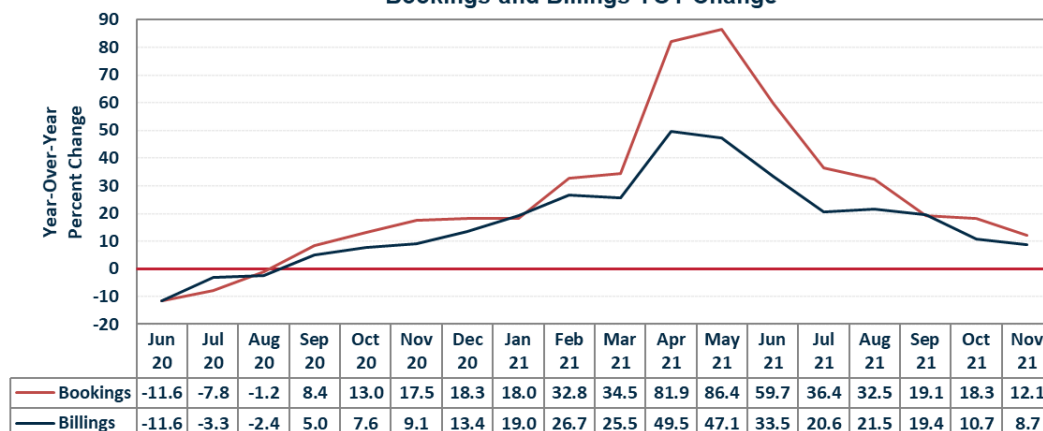
The industry grew at +24.4% YTD in November in local currencies versus +24.3% in USD. The currency changes all net out to almost zero.

### Merger and Acquisition Services Buy & Sell-Side

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November bookings were up +12.1% and sales were up +8.7% YOY. Year-to-date sales are up +24.3%. Orders have achieved 14 consecutive months of double-digit increases and sales have achieved 15 consecutive months of growth.

Bookings and Billings YOY Change



The book-to-bill ratio in November was 1.12 as orders and billings continue normalizing with harder comparisons. YTD, the book-to-bill ratio is 1.14.

Connector Industry Book-to-Bill

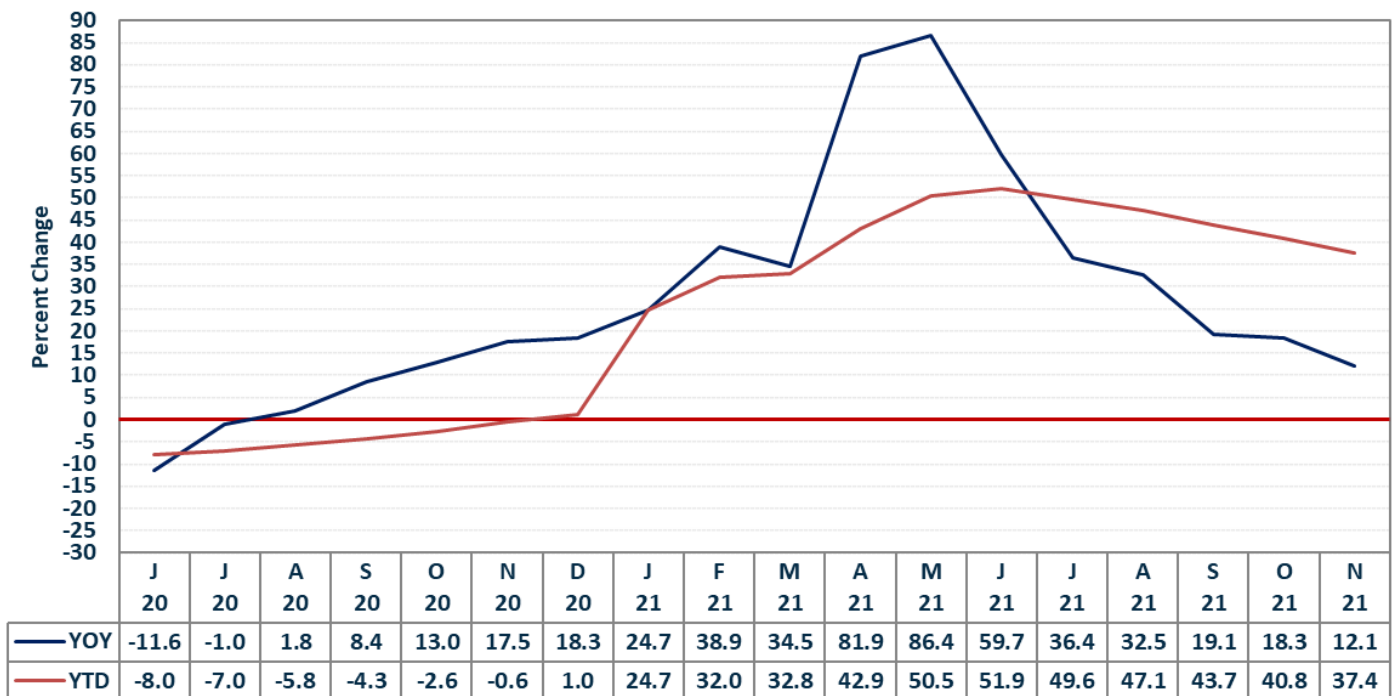


## Booking Highlights and Conclusions

### Sequential, Year-Over-Year, and Year-To-Date Bookings Percentage Change – 2019/2020/2021

Month	Sequential			Year-Over-Year			Year-To-Date		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Jan	1.0%	0.2%	2.3%	-3.7%	3.9%	24.7%	-3.7%	3.9%	24.7%
Feb	7.7%	5.5%	17.7%	-6.2%	1.8%	38.9%	-5.0%	2.8%	32.0%
Mar	-4.5%	-1.4%	-3.5%	-6.8%	5.0%	34.5%	-5.6%	3.5%	32.8%
Apr	-2.2%	-27.2%	3.2%	-8.8%	-21.8%	81.9%	-6.4%	-2.7%	42.9%
May	6.9%	2.9%	5.1%	-7.0%	-24.8%	86.4%	-6.5%	-7.3%	50.5%
Jun	-8.9%	7.0%	-8.3%	-8.3%	-11.6%	59.7%	-6.9%	-8.0%	51.9%
Jul	2.8%	15.2%	-1.9%	-8.4%	-1.0%	36.4%	-6.9%	-7.0%	49.6%
Aug	7.8%	10.7%	6.6%	-5.2%	1.8%	32.5%	-6.6%	-5.8%	47.1%
Sep	-7.1%	-0.9%	-11.9%	-4.3%	8.4%	19.1%	-6.4%	-4.3%	43.7%
Oct	0.6%	4.7%	3.6%	-6.6%	13.0%	18.3%	-6.4%	-2.6%	40.8%
Nov	10.8%	15.2%	9.6%	-1.9%	17.5%	12.1%	-6.0%	-0.6%	37.4%
Dec	-7.8%	-7.2%		4.6%	18.3%		-5.2%	1.0%	

### Bookings - YOY and YTD



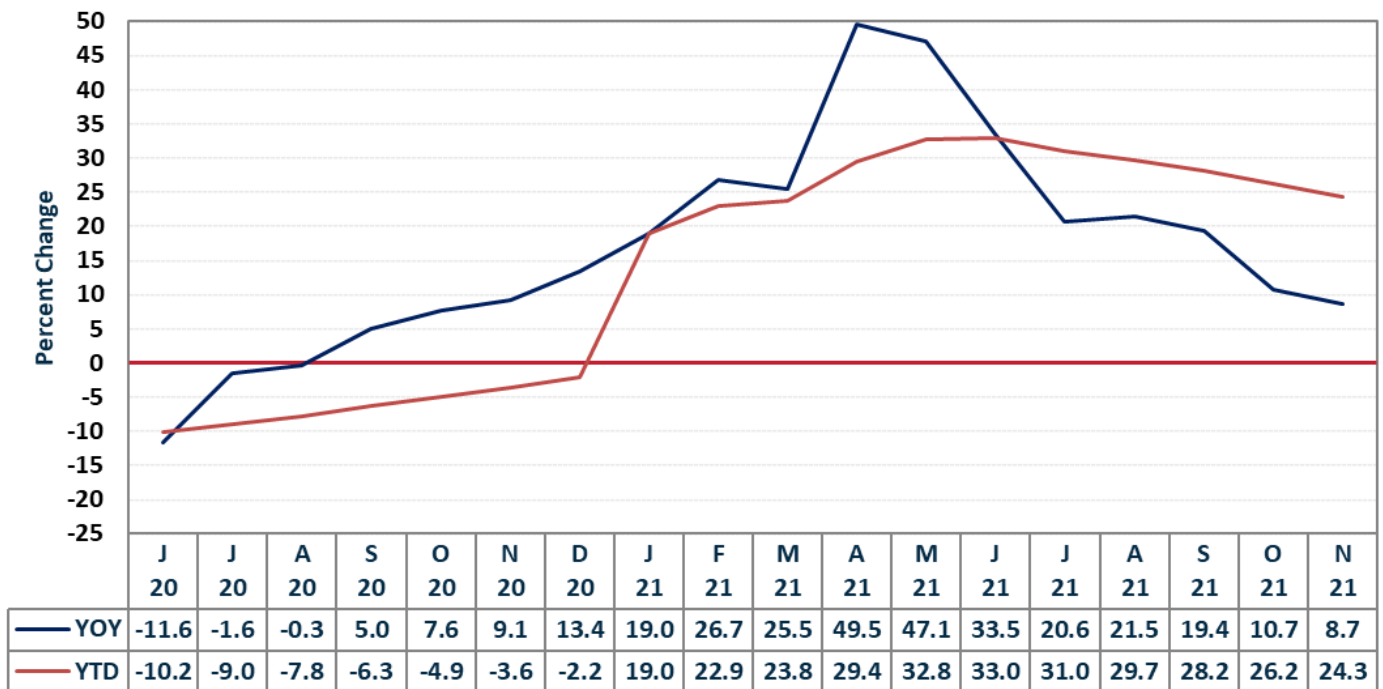
- November bookings rose +12.1% YOY and +37.4% YTD.
- Orders increased +9.6% sequentially.
- The book-to-bill ratio for November was 1.12 and 1.14 YTD.

## Billing Highlights and Conclusions

### Sequential, Year-Over-Year, and Year-To-Date Billings Percentage Change – 2019/2020/2021

Month	Sequential			Year-Over-Year			Year-To-Date		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Jan	0.3%	-2.8%	-1.6%	-1.0%	-3.1%	19.0%	-1.0%	-3.1%	19.0%
Feb	6.8%	5.5%	12.6%	-2.5%	-4.3%	26.7%	-1.8%	-3.7%	22.9%
Mar	-3.2%	-0.9%	-1.1%	-2.4%	-2.0%	25.5%	-2.0%	-3.1%	23.8%
Apr	-3.7%	-21.2%	-1.2%	-5.4%	-19.9%	49.5%	-2.8%	-7.2%	29.4%
May	9.0%	8.8%	7.0%	-4.3%	-20.0%	47.1%	-3.1%	-9.9%	32.8%
Jun	-4.2%	5.8%	-3.8%	-4.2%	-11.6%	33.5%	-3.3%	-10.2%	33.0%
Jul	-2.0%	9.0%	-2.0%	-3.1%	-1.6%	20.6%	-3.3%	-9.0%	31.0%
Aug	7.0%	9.0%	8.7%	-4.9%	-0.3%	21.5%	-3.5%	-7.8%	29.7%
Sep	-2.9%	1.7%	-2.3%	-3.7%	5.0%	19.4%	-3.4%	-6.3%	28.2%
Oct	-4.1%	-1.0%	-7.3%	-6.9%	7.6%	10.7%	-3.7%	-4.9%	26.2%
Nov	9.8%	11.4%	9.8%	-3.4%	9.1%	8.7%	-3.7%	-3.6%	24.3%
Dec	-11.2%	-7.7%		-0.1%	13.4%		-3.8%	-2.2%	

### Billings - YOY and YTD

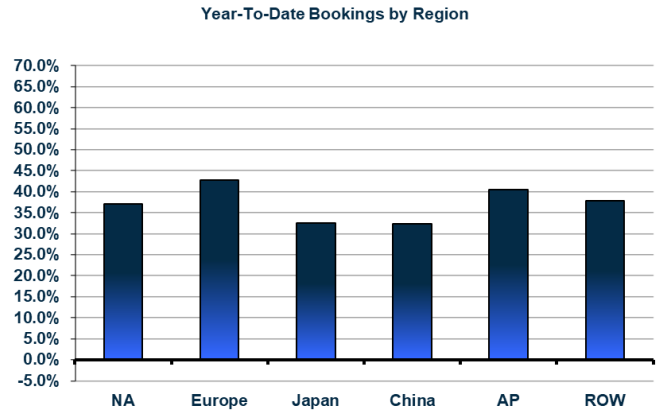


- November billings grew +8.7% YOY, making this the 15th consecutive month of increases.
- Billings are up +24.3% for the year.
- Sequentially billings increased +9.8%.

## Regional Performance: BOOKINGS

### November 2021 Bookings

Region	Sequential	YOY	YTD
NA	3.8%	24.2%	37.1%
Europe	18.0%	2.1%	42.7%
Japan	10.4%	13.3%	32.5%
China	10.2%	7.5%	32.3%
AP	4.9%	28.7%	40.5%
ROW	1.8%	-4.3%	37.8%
Total	9.6%	12.1%	37.4%

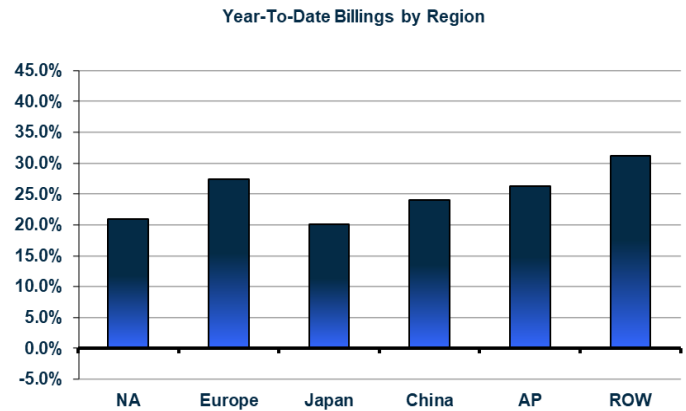


- November bookings increased +12.1% YOY and increased +37.4% YTD.
- Year-over-year, all regions experienced growth except ROW.
- Year-over-year comparisons through September had been relatively easy because COVID-19 was still impacting orders at that time last year. Bookings rate of growth has slowed in the fourth quarter.

## Regional Performance: BILLINGS

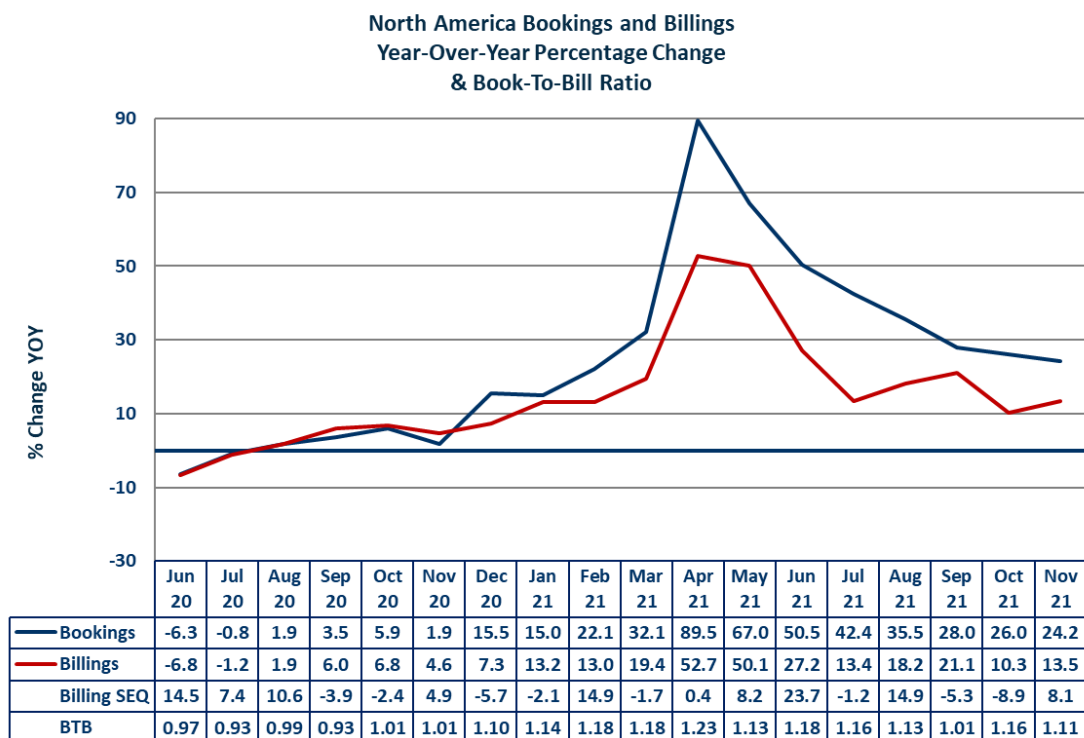
### November 2021 Billings

Region	Sequential	YOY	YTD
NA	8.1%	13.5%	21.0%
Europe	12.9%	1.6%	27.3%
Japan	9.8%	10.4%	20.0%
China	11.6%	9.7%	23.9%
AP	4.6%	12.6%	26.2%
ROW	2.0%	11.1%	31.1%
Total	9.8%	8.7%	24.3%



- November connector sales growth was +8.7% YOY and +24.3% YTD.
- Year-over-year, all regions experienced growth.
- Sequentially, sales increased in all regions.
- The fourth quarter is facing the challenge of harder comparisons as the connector industry rebounded strongly in the fourth quarter of 2020.

**North America:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill (BTB) ratio is also displayed.



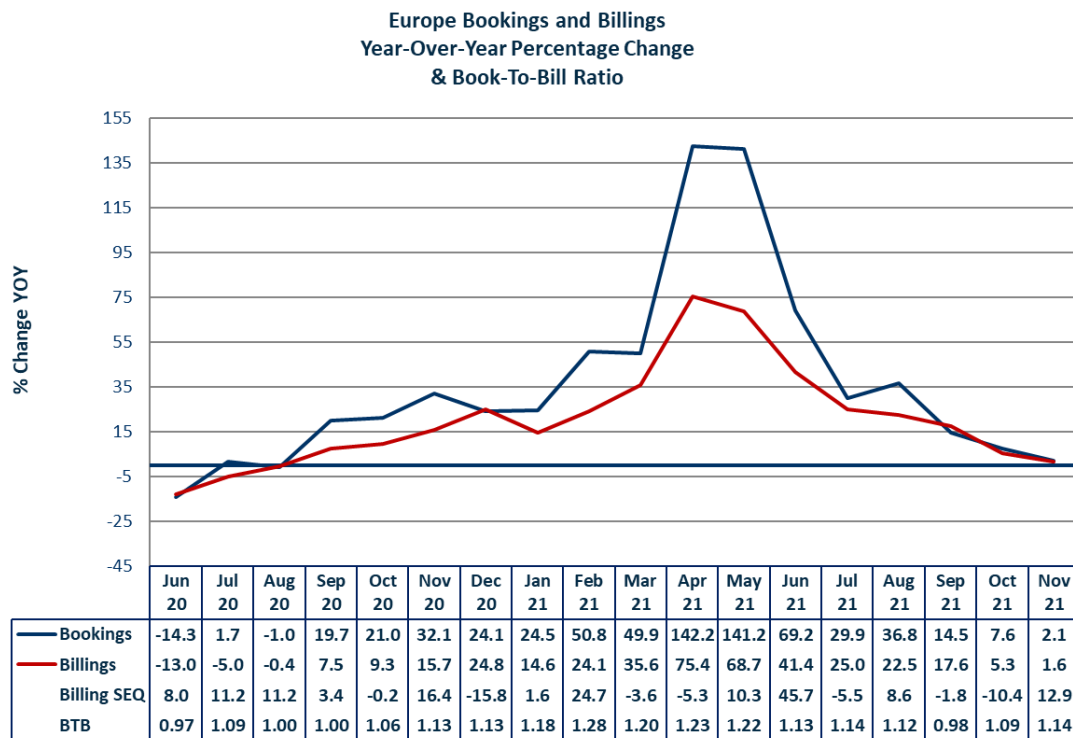
## North America Performance

- Sales grew +13.5% and orders were up +24.2% YOY in November. North American billings were up sequentially +8.1%. The book-to-bill remained strong at 1.11.
- US inflation hit a four-decade high in November at 6.8%, driven by strong consumer demand and COVID-19 supply constraints.
- US automotive sales in October decreased 0.7% from October and were down 14.8% YOY.
- The manufacturing PMI was 61.1 in November.

## Conclusions

The US economy slowed in Q3. Higher prices, supply chain issues, and resurging COVID-19 are a few of the headwinds. The production of new vehicles slowed due to the lack of semiconductors. The ports on the West Coast (and East Coast and Gulf) are still backed up. These issues will negatively impact the connector industry in Q4.

**Europe:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.



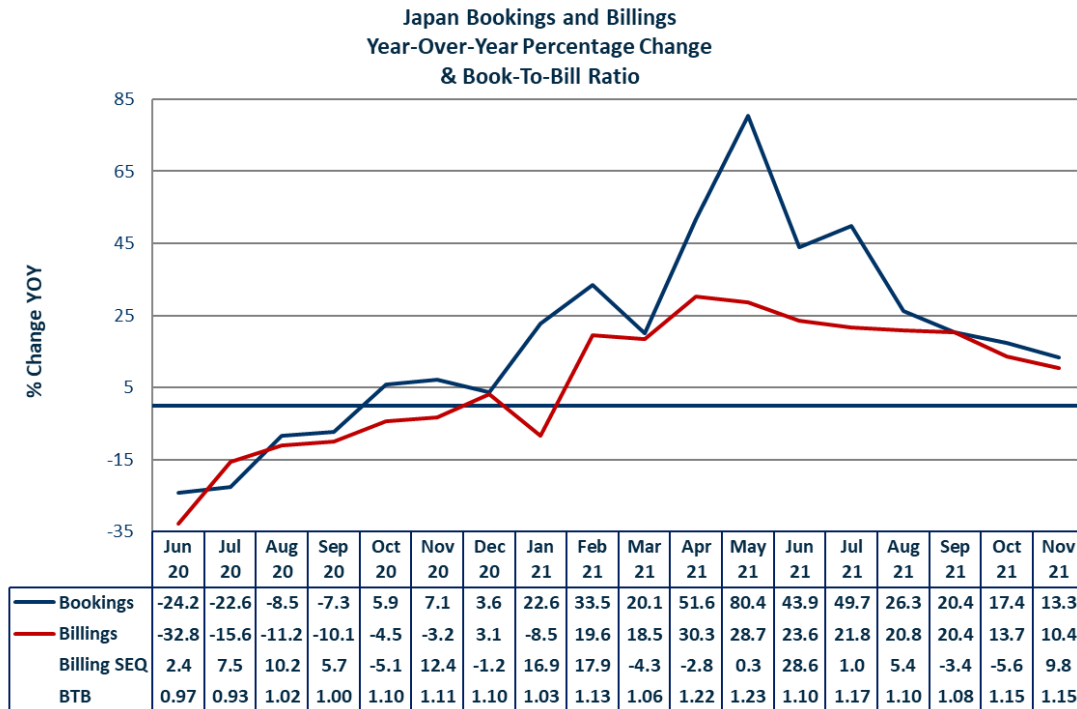
## Europe Performance

- YOY billings grew +1.6% and orders were up +2.1%. The book-to-bill ratio was 1.14. Sequentially, sales were up +12.9%.
- Year-over-year, Euro area new car registrations were down 30.7% due to the semiconductor shortages.
- The manufacturing PMI was 58.3 in November.

## Conclusions

European new car registrations were down significantly again in November as a result of the semiconductor shortages. Automotive is the largest connector market in Europe. The connector industry appears to be performing better than the overall economies, but the ongoing shortages will likely mute results in Q4.

**Japan:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.



## Japan Performance

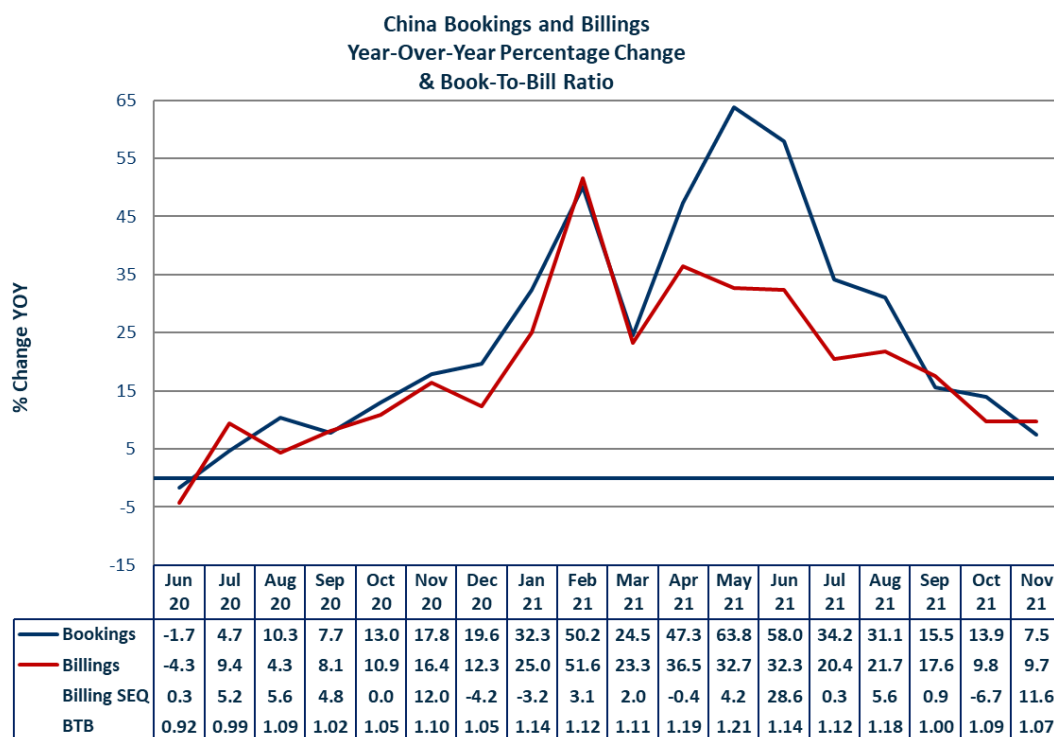
- Bookings were up +13.3% in November. Sales increased +10.4%. Sequentially, sales increased +9.8%. Japan's book-to-bill ratio was 1.15.
- The November manufacturing PMI increased to 54.5 (revised) from 53.2 in October.

## Conclusions

The ongoing weakness of Japan's economy will weigh down their connector industry results. The lack of semiconductors is holding back growth in their automotive industry sales. Their booking and sales performance, in the last 11 months, primarily reflects easy comparisons to the poor results in 2020.



**China:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.



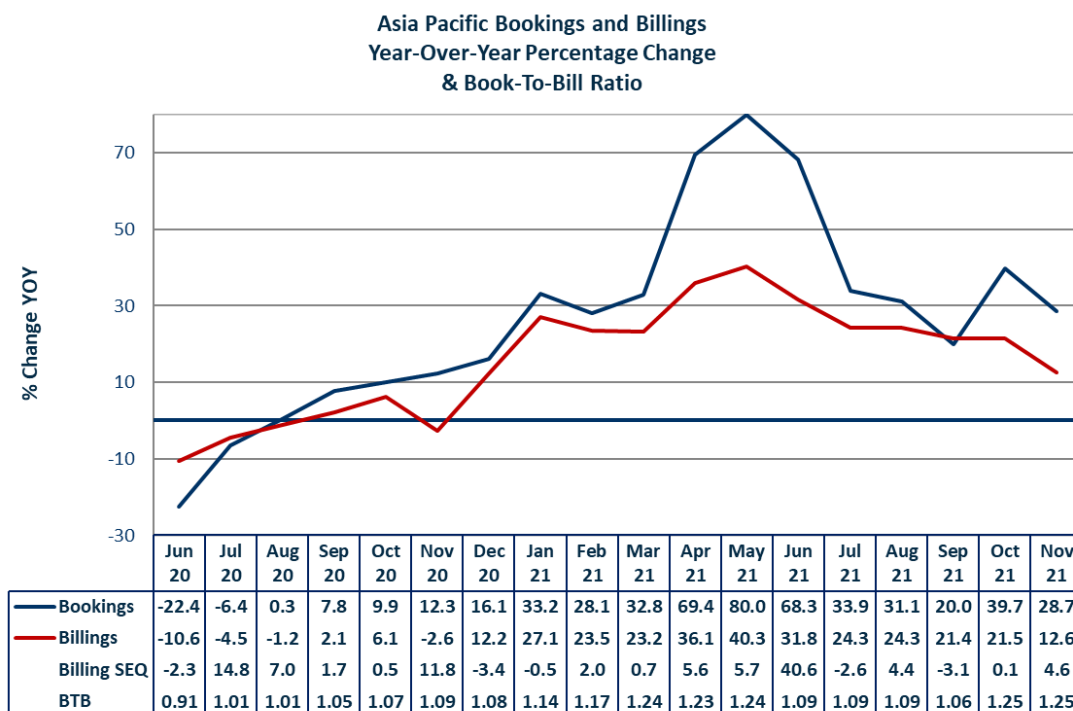
## China Performance

- Sales and orders, year-over-year, increased +9.7% and +7.5%, respectively. The BTB was 1.07. Sequentially, sales increased +11.6%.
- 3Q21 GDP grew 4.9% YOY, slowing sharply from 2Q21, and 0.2% sequentially. Power shortages, supply chain bottlenecks, the property bubble, and COVID-19 are the main causes of the slowing.
- China's auto sales were down 9.1% YOY in November for the seventh consecutive month of declines.

## Conclusions

China's output is slowing. Their economy, though still growing YOY, is slowing on a quarter-to-quarter basis. For most of last year, China has posted double-digit year-over-year growth in both connectors sales and orders. This growth has allowed China to continue to take connector market share from other regions of the world. Sales and now bookings, however, broke into the single-digit category for the first time since September 2020.

**Asia Pacific:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.



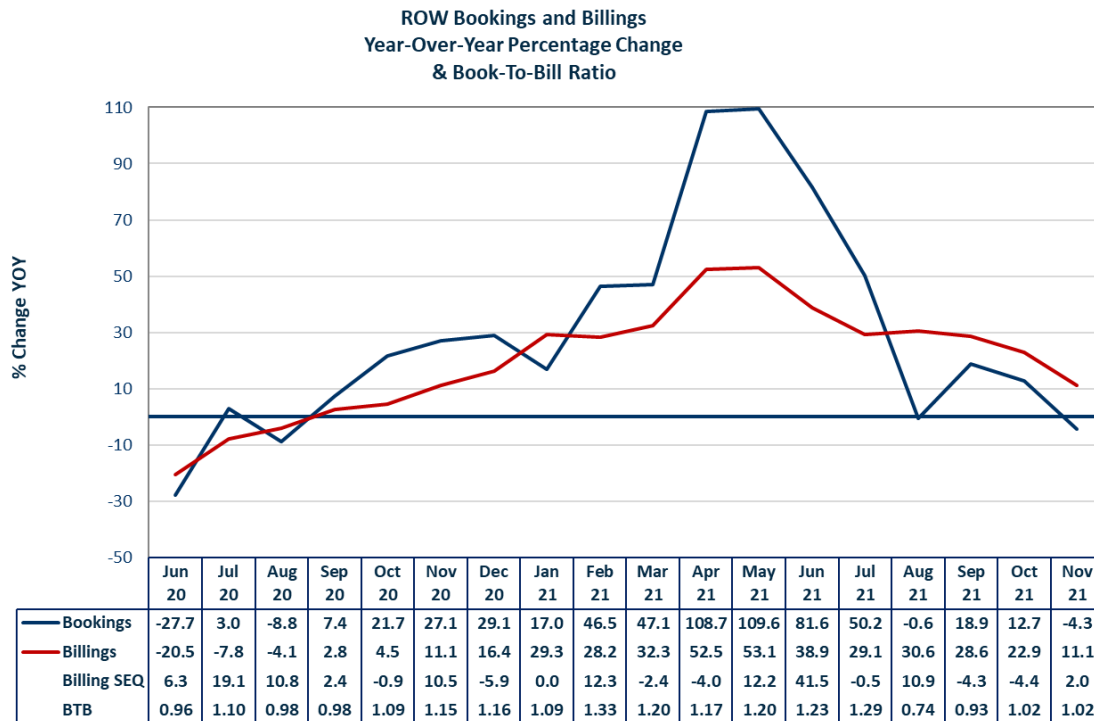
## Asia Pacific Performance

- Orders were up +28.7% in November and sales rose +12.6% YOY. The book-to-bill ratio was 1.25. Sequentially, sales increased +4.6%.

## Conclusions

In spite of a recent surge in COVID-19 cases, industrial production and exports in India continue to increase. South Korea's GDP continues to grow sequentially. Their connector sales also have a positive outlook with a strong economy.

**Rest of World:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.



## Rest of World Performance

- Orders decreased -4.3% and sales increased +11.1% YOY in November. Sequentially, sales in the region increased +2.0%. The book-to-bill ratio was 1.02.

## Conclusions

Both Brazil and Russia continue to have growth in their connector industries, which are outperforming their national economies. Both countries will achieve connector industry growth in 2021.

Since October of 2020, the ROW region has had double-digit growth in connector industry bookings except in two months (August and November). Sales have been in double-digit growth since November 2020.

## **Industry Outlook – 2021**

November world connector sales were \$6,678 million, up +8.7% over last November. This ended 11 consecutive months of double-digit sales growth, which started in December 2020.

Through November, world connector sales are \$70,982 million, up +24.3%. Historically, November YTD sales account for 92% of full year sales. Assuming the thirteen-year historical average of 92%, 2021 sales will be \$77,154 million, up +23.0% over 2020 sales of \$62,727 million.

YTD November Sales	\$70,982
Historical % of Sales*	92.0%
2021 Sales Forecast	\$77,154
2020 Actual Sales	\$62,727
Sales Increase	\$14,427
% Change	23.0%

\$ Millions

\* Historical sales average from 2008 - 2020

During this business cycle, we have had 15 consecutive months of sales growth, with 10 of the months achieving double-digit growth. This incredible business success tripled the industry order backlog (see page 14).

Note, historical sales should be up +23.0% for the full year 2021. Our last forecast projected sales up slightly higher at +24.1%.

### **2020 and 2021F by Region With Percent Change**

Region	2020	2021F	Percent Change
North America	\$13,491.5	\$16,265.0	20.6%
Europe	\$12,837.5	\$16,568.4	29.1%
Japan	\$4,430.9	\$5,242.7	18.3%
China	\$20,184.3	\$24,905.3	23.4%
Asia-Pacific	\$9,045.0	\$11,285.4	24.8%
ROW	\$2,737.5	\$3,564.8	30.2%
<b>Total World</b>	<b>\$62,726.7</b>	<b>\$77,831.6</b>	<b>24.1%</b>

\$ Millions

## **Industry Outlook – 2022**

We are projecting modest growth of +5.5% in 2022. World GDPs are slowing, inflation is very high, and the world's banks will begin to raise interest rates and slow the global economies.

### **2021F and 2022F by Region With Percent Change**

<b>Region</b>	<b>2021F</b>	<b>2022F</b>	<b>Percent Change</b>
North America	\$16,265.0	\$17,268.7	6.2%
Europe	\$16,568.4	\$17,273.5	4.3%
Japan	\$5,242.7	\$5,401.9	3.0%
China	\$24,905.3	\$26,634.3	6.9%
Asia-Pacific	\$11,285.4	\$11,846.7	5.0%
ROW	\$3,564.8	\$3,719.7	4.3%
<b>Total World</b>	<b>\$77,831.6</b>	<b>\$82,144.8</b>	<b>5.5%</b>

**\$ Millions**

## **Connector Industry Backlog Increases Continue**

Since January 2020, the backlog has increased from \$8,021 million to \$20,467 million. That is an increase of \$12,446 million or +155%. This very healthy backlog ensures that we will continue to achieve monthly sales growth in the first quarter of 2022 (barring any supply chain or shipping issues).

	<b>2020</b>	<b>YTD Nov 2021</b>
BtB Ratio	1.04	1.14
Beginning Backlog	\$8,021	\$10,530
Bookings	\$65,236	\$80,919
Billings	\$62,727	\$70,982
Ending Backlog	\$10,530	\$20,467
Backlog in Weeks	8.7	13.8

**\$ Millions**

The book-to-bill ratio has been above 1.0 since July of 2020. The sixteen consecutive months of orders exceeding sales has resulted in the backlog increasing from \$8,021 million, at the beginning of 2020, to \$20,467 million now (8.7 weeks to 13.8 weeks).

We speculate that some of the orders were placed as a hedge against future price increases and product shortages. It will be interesting to watch how the backlog changes in the future. Will orders get shipped, pushed out, or cancelled?

## **2021 YTD Currency Impact on Regional Industry Growth**

The dollar has been weakening against the euro, the yen, and the yuan. The following table measures the impact for November 2020 versus November 2021 and shows results for these three currencies.

### **Local Currency to One USD November 2020 versus November 2021**

<b>Currency</b>	<b>2020</b>	<b>2021</b>	<b>% Change</b>
Euro	0.8497	0.8764	3.1%
Yuan	6.7276	6.3910	-5.0%
Yen	105.2426	114.0245	8.3%

Europe, China, and Japan account for approximately 60% of world connector sales. Currency fluctuation to the US dollar can have a significant impact on our reporting of sales performance in US dollars.

The following table shows November YTD sales performance by region in US dollars and local currencies.

### **Industry Sales Performance November 2021 USD-vs-Local Currencies**

<b>Region</b>	<b>U.S.\$</b>	<b>Local Currency</b>
North America	21.0%	21.0%
Europe	27.3%	31.3%
Japan	20.0%	30.0%
China	23.9%	17.7%
Asia Pacific	26.2%	26.2%
ROW	31.1%	31.1%
<b>World</b>	<b>24.3%</b>	<b>24.4%</b>

World connector sales are 0.1 percentage points higher when stated in local currencies rather than in US dollars, putting industry performance at +24.4% in November (versus +24.3% in US dollars). This is the result of a stronger US dollar, on average, compared to these currencies as the yuan offsets the yen and the euro.

## Significant Events

### **Molex Acquires Keyssa's Contactless Connector Technology**

Molex has acquired core technology and intellectual property (IP) from Keyssa Inc., a pioneer in high-speed contactless connectors. The acquisition of this unique wireless chip-to-chip technology, including over 350 filed patent applications, will accelerate Molex's strategy to further expand and diversify its micro connector portfolio with highly flexible, cable-free connectors for near-field, device-to-device applications.

"Keyssa's wireless chip-to-chip technology complements Molex's developments in mmWave antenna connectivity to meet the growing demands for high data rate transmissions," said Justin Kerr, vice president and general manager, Micro Solutions Business Unit, Molex. "We constantly push the technology envelope for our mobile and consumer device customers, offering greater product design freedom while supporting next-generation wireless connectivity needs."

As mobile and consumer products become smaller, thinner and sleeker, there is a growing need to streamline device-to-device communications. Equally important is simplifying communications within the mobile device, such as enabling increasing data transmission from the display, camera and other key modules. In addition to eliminating the need for physical cables or connectors, the acquired technology also alleviates concerns over pairing and reliability. Design for manufacturability is also enhanced with fully encased, dust- and water-proof packaging with wide alignment tolerances.

The acquired technology operates at data rates up to 6 Gbps on the 60 GHz band with no WiFi or Bluetooth interference. The tiny, low-power, low-latency, solid-state contactless connectors can solve critical data transmission needs with minimal overhead. Molex plans to advance these current capabilities by supporting exponentially higher data rates and full-duplex communications. Additionally, Molex will leverage its longstanding signal integrity expertise and mmWave antenna capabilities to speed the commercialization of new contactless connectors while complementing its existing portfolio of products.

Molex also will take advantage of the Virtual Pipe I/O (VPIO) technology Keyssa developed to resolve protocol inefficiencies. By aggregating low- and high-speed protocols for simultaneous transmission over one or more links, VPIO can help compensate for real-time events that impact link performance integrity. Used in combination, VPIO and contactless connectors can create extensible and efficient I/O that is free from the limitations of mechanical connectors while being capable of adapting and scaling as dictated by application demands.

Molex is ramping a team of more than 25 engineers in the U.S. and India to develop next-generation products based on this technology. Initially, the focus will be on the unique connectivity needs of high-volume mobile applications where contactless connectors offer potential benefits in design for manufacturing, serviceability, reliability, signal aggregation and security. Over time, Molex will apply this technology to address emerging application areas, encompassing smart factories, automotive advanced safety, medical robotics and more.



## **Amphenol Corporation Announced the Acquisition of Halo Technology and Closing of Sale of MTS Test & Simulation Business**

Amphenol Corporation announced that it has acquired Halo Technology Limited for approximately \$715 million. Halo is headquartered in Tustin, California with operations in North America and Europe, and is a leading provider of active and passive fiber optic interconnect components for the communications infrastructure markets with expected 2021 sales of approximately \$250 million. Consistent with the Company's acquisition strategy, Amphenol expects the acquisition to be accretive to earnings per share in the first-year post-closing.

Separately, Amphenol also announced the closing of the sale of the MTS Test & Simulation business to Illinois Tool Works Inc. Since the closing of the MTS Systems Corporation transaction earlier this year, Amphenol has reported the Test & Simulation business as a discontinued operation and therefore the closing of the sale will have no impact on Amphenol's financial results from continuing operations.

## **Hon Hai Reports Highest Monthly Revenue This Year**

Hon Hai Precision Industry Co which assembles Apple Inc's iPads and iPhones, reported that its consolidated revenue in October was the highest in 11 months and had increased 12.86 percent from a month earlier. Revenue was NT\$621.71 billion (US\$22.43 billion), up from NT\$550.89 billion in October, the company said in a statement. Last month's results were in line with market expectations, as the company was gearing up to assemble new iPhone models and other electronics for the year-end shopping season. *TaipeiTimes*

## **PC Shipments in China Set 3Q21 Record by Breaking Through 15 million Units**

PC shipments (desktops and notebooks) in China grew 3% annually and 10% sequentially to reach more than 15 million units in the third quarter of 2021. *DigiTimes*

## **Chip Shortage Sees Smartphone Sales Fall 6.8%**

Global smartphone sales were down 6.8% in the third quarter of the year, but the slump wasn't due to falling demand: blame the chip crisis. It was a positive Q3 for Apple, though, which has moved ahead of Xiaomi to take the second-largest market share behind leader Samsung.

## **Worldwide Smart Home Devices Market Grew 10.3% in Third Quarter 2021**

The worldwide market for smart home devices grew 10.3% year over year in the third quarter of 2021 (3Q21) with more than 221.8 million device shipments, according to the International Data Corporation Worldwide Quarterly Smart Home Device Tracker. Despite persistent supply chain disruptions, unemployment, and an uneven economic recovery, consumer demand remained high for smart home devices like smart TVs, smart speakers, and other devices.

"The smart home market continues to fare better than other consumer goods during the ongoing Covid-19 pandemic, although to varying degrees in different regions," said Adam Wright, senior research analyst, Smart Home and Office Devices. "By and large, consumers have shifted their spending priorities from other areas like vacations and going out to eat to focus on adding more comfort, conveniences, and entertainment at home."

The United States held the largest share of unit shipments in the third quarter and grew 9.5% quarter-over-quarter. China was the second-largest country by shipment volume with 24.7% of shipments but had negative

growth of 5.2% compared to 2Q21. Western Europe and Latin America posted solid sequential growth of 17.9% and 15.0%, respectively.

Video entertainment devices like smart TVs and streaming players maintained the largest volume of shipments in the third quarter, accounting for 35.3% of all shipments. Home monitoring/security devices like smart cameras and smart locks accounted for 20.4% of shipments and grew 13.5%. However, the market's growth continues to be constrained by ongoing concerns about security and privacy, as well as consumers' price sensitivity to upfront and ongoing costs of devices and services. *IDC*

## **Wearables Shipments Grew 9.9% in the Third Quarter of 2021 as Watches Start to Displace Wristbands in the Wrist-worn Device Category**

Global shipments for wearables grew 9.9% during the third quarter of 2021 (3Q21) reaching 138.4 million units, according to new data from the International Data Corporation. Hearables led the growth as the category grew 26.5% compared to last year and accounted for 64.7% of wearable device shipments. Following hearables were wrist-worn wearables, the category most often associated with health and fitness tracking, which captured 34.7% of the market. Although the pandemic has driven interest in health and fitness tracking, wrist-worn wearables such as watches and wristbands faced challenges during the quarter as these devices were not immune to the supply constraints and shifting demand brought about by the pandemic. While the category has recently been led by Xiaomi's low-cost bands, the company was dethroned by Apple and Huawei in 3Q21 as they tied for first place in the wrist-worn segment. *IDC*

## **Strong Memory Demand Fuels Global Chip Revenues**

The global semiconductor industry topped \$150 billion in revenue during the third quarter, fueled by strong memory sales that rose 13.8 percent over the previous quarter. Average selling prices during the third quarter rose nearly 5 percent on a quarterly basis. The supply-demand imbalance helped fuel price increases as pandemic-driven chip shortages drag on. That, along with seasonality and the strong memory revenue propelled quarterly chip revenues to \$153.2 billion. Memory devices, including DRAM, NAND and NOR, accounted for fully 29 percent of global semiconductor revenues between July and September. Also advancing were the display driver and image sensors sectors. Display revenues jumped 13 percent on a quarterly basis while image sensors rose 12 percent over the previous three months.

The industry group SEMI reported the semiconductor equipment sector recorded its fifth consecutive quarterly record for billings, increasing 38 percent on an annual basis to \$26.8 billion in the third quarter. That's an 8-percent increase over the previous quarter, SEMI said. *EETimes*

## **Supply Constraints Will Continue to Challenge the PC and Tablet Markets but PCs Are Forecast to Deliver a Positive Five-Year Growth Rate**

With 2021 nearing a close, global shipments of traditional PCs are forecast to reach 344.7 million units, according to the latest forecast from the International Data. While annual shipments are expected to grow 13.5% during the year, shipments during the holiday quarter are expected to decline 3.4% as supply chain constraints and backups and cost increases around logistics continue to be a burden on getting products into many channels. Tablets face a similar trend with annual shipments in 2021 growing 4.3% while fourth quarter shipments are expected to decline 8.6%.

Following two straight years of strong double-digit growth, the expectation is that the PC market will begin to slow in 2022. However, as we look towards 2025 the latest IDC forecast still shows a five-year compound

annual growth rate (CAGR) of 3.3% with most of that growth coming from the notebook PC segment. Tablets, meanwhile, will continue their decline as the category remains challenged by smartphones and notebook PCs.

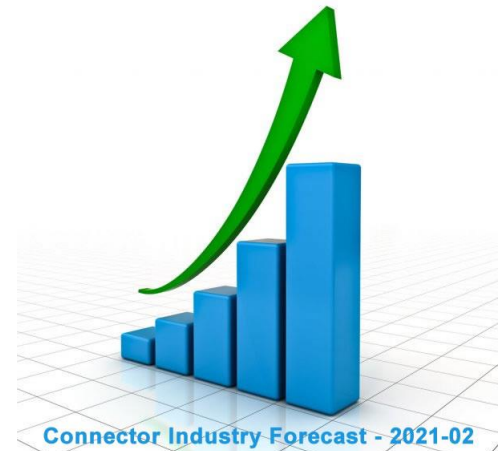
### **Apple's iPhone 13 Production Fell 20% September-October**

Production of Apple Inc's flagship iPhone 13 smartphones fell 20% short of previous plans in September and October. However, after launching the iPhone 13 range and new iPads in September, a major threat looms over Apple as it scrambles to keep up with the global chip shortage and supply chain disruptions. In October, for the first time in more than a decade, iPhone and iPad assembly was halted for several days due to supply chain constraints and restrictions on the use of power in China. Through September and October, the reallocation of the shared components squeezed iPad assembly even more, leading to about 50% less production volume than planned, while the production forecast for older generations of iPhones also dropped around 25%. *Reuters*

# Connector Industry Forecast

Bishop & Associates has just released the **Connector Industry Forecast**. This eight-chapter report provides an in-depth, and detailed forecast of the worldwide connector industry. In addition to the detailed forecasts for each region of the world (North America, Europe, Japan, China, Asia Pacific, and ROW), an industry overview is included which provides current market trends, including connector confidence level, currency fluctuation effects, and industry sales performance, as well as an outlook narrative.

Worldwide and each regional forecast includes:



## Computers & Peripherals

- Mobile Computers
- Desktops
- Servers
- Storage Equipment
- Input/Output Equipment
- Communication LAN Devices
- Other Computer Equipment

## Business/Office Equipment

- Retail/POS Equipment
- Imaging Systems
- Other Business/Office Equipment

## Instrumentation

- Automatic Test Equipment
- Analytical/Scientific Instruments
- Other Instrumentation

## Medical Equipment

- Diagnostic & Imaging Equipment
- Therapeutic Equipment
- Other Medical Equipment

## Industrial

- Factory Automation and Machinery
- Construction and Civil Engineering
- Energy Markets
- Other Industrial Equipment

## Automotive

- Body Wiring & Power Distribution
- Powertrain
- Comfort, Convenience & Entertainment
- Navigation & Instrumentation
- Safety & Security

## Transportation (non-auto)

- Commercial Vehicles
- RVs & Power Sports
- Commercial Air
- Marine
- Rail
- Construction
- Farm & Garden

## Military/Aerospace

## Telecom/Datacom

- Carrier Network
- Enterprise Network
- Wireless Infrastructure
- Subscriber Equipment
- Other Telecommunications

## Consumer

- Personal/Portable Consumer
- Home Video Equipment
- Home Audio Equipment
- Consumer White Goods
- Other Consumer

## Other Equipment

## 2021 – Proving to be a Year Even More Surprising Than 2020!

After what we thought would be one of the most challenging years ever, 2021 is showing to be even more surprising than 2020. Declining a mere -2.2%, 2020 started off with sales anticipated to grow 3.5%. As the pandemic exploded, affecting key economies like China and the US, we revisited our original forecast and sent the forecast spiraling downward \$20 billion, reflecting a decrease of -30.8%.

By third quarter once again things had changed directions and sales moved from declining double-digits to positive year-over-year growth. This would allow 2020 to close with connector sales only declining -2.2%.

As we moved into 2021, we anticipated growth due to easy comparisons to 2020, but no one anticipated 11 straight months of double-digit growth and a year-to-date book-to-bill ratio of 1.14!

### Industry Sales Performance by Region

As the following charts indicate, growth and decline were not equal across all regions in 2020 or will they be in 2021. China, who came out of lockdown the earliest was the only region to see connector sales grow in 2020, increasing 3.6%. North America, who proved to the world that they could rapidly divert manufacturing capacity from one industry to another, saw connector sales drop 2.8%. The greatest decline was seen in Japan, where connector industry sales dropped 9.4% or over \$460 million dollars.

**2019 and 2020 Connector Sales by Region  
With Percent Change**

Region	2019	2020	Percent Change
North America	\$13,887.0	\$13,491.5	-2.8%
Europe	\$13,544.2	\$12,837.5	-5.2%
Japan	\$4,891.4	\$4,430.9	-9.4%
China	\$19,477.4	\$20,184.3	3.6%
Asia-Pacific	\$9,435.4	\$9,045.0	-4.1%
ROW	\$2,933.7	\$2,737.5	-6.7%
<b>Total World</b>	<b>\$64,169.1</b>	<b>\$62,726.7</b>	<b>-2.2%</b>

\$ Millions

Growth in 2021 is also going to vary drastically based on region. Although the ROW region is anticipated to show the greatest year-over-year growth from a percentage standpoint, from a US dollar standpoint, the greatest growth is anticipated to be seen in China, where sales dollars will increase by over \$X.7 billion.

## Connector Industry Forecast

In addition to connector sales results varying by region, sales also varied remarkably by market sector in 2020. As the table below shows, the telecom/datacom market grew 1.5%, spurred by increased Internet activity and the drive towards 5G. In line with this growth, was the very slight decline in computers & peripherals. This market sector, which saw sales decline 7.2% from 2018 to 2019, showed a strong rebound linked directly to telecommuting of both business professionals and students.

The market sector showing the greatest decline was the automotive sector, where sales dropped a steep 7.0%. This was primarily due to auto plants being shuttered and most dealers being forced to close showrooms. In fact, in the US, 2020 was the fourth-largest annual decline in automotive sales since 1980. What is surprising is that the industrial market, tied heavily to automotive production, saw connector sales decline only 2.3% due to the repurposing of many off these factories. Also showing a steep decline was the transportation sector, where sales dropped 3.0%. What is unique about this decline is that not only was it spurred by travel restrictions placed worldwide, but also due to the unique problems facing the commercial aerospace industry in 2019 that rolled over into 2020.

**2019 and 2020 Connector Sales by Market Sector  
With Percent Change**

Equipment Sector	2019	2020	YOY Change
Computers & Peripherals	\$8,380.2	\$8,355.0	-0.3%
Business/Office Equipment	\$754.0	\$724.2	-4.0%
Instrumentation	\$1,836.1	\$1,811.7	-1.3%
Medical	\$1,985.8	\$1,966.6	-1.0%
Industrial	\$7,901.6	\$7,721.8	-2.3%
Automotive	\$15,209.7	\$14,145.8	-7.0%
Transportation	\$4,479.2	\$4,344.6	-3.0%
Military/Aerospace	\$3,796.6	\$3,770.6	-0.7%
Telecom/Datacom	\$14,269.2	\$14,479.4	1.5%
Consumer	\$3,108.8	\$3,038.4	-2.3%
Other Equipment	\$2,447.8	\$2,368.6	-3.2%
<b>Total World</b>	<b>\$64,169.1</b>	<b>\$62,726.7</b>	<b>-2.2%</b>

\$ Millions

### 2021 Outlook

Due to outstanding performance through the first nine months of 2021, Bishop is forecasting 2021 sales to grow by Y.Y% to \$7X,XXX million. We anticipate the greatest percentage increase will occur in ROW, where sales will increase Y.Y%, followed by Europe where sales will increase Y.Y%. In US dollars, the smallest growth will be seen in the Japanese region, where connector sales will increase by \$X11.8 million or Y.Y%. The Japanese region will be followed by ROW, where sales will only grow \$8XX.3 million or Y.Y%.

# Connector Industry Forecast

## 2021F Connector Forecast by Geographic Region With Percent Change

Region	2020	2021F	YOY Change
North America	\$13,491.5	\$XX,XXX.X	X.X%
Europe	\$12,837.5	\$XX,XXX.X	X.X%
Japan	\$4,430.9	\$X,XXX.X	X.X%
China	\$20,184.3	\$XX,XXX.X	X.X%
Asia-Pacific	\$9,045.0	\$X,XXX.X	X.X%
ROW	\$2,737.5	\$X,XXX.X	X.X%
<b>Total World</b>	<b>\$62,726.7</b>	<b>\$7X,XXX.X</b>	<b>X.X%</b>

\$ Millions

### Forecast Assumptions

Forecasting is always difficult. Projecting future business conditions in this environment is almost impossible. The following are the assumptions we are using to develop the connector industry forecast.

- We are in the middle of a global pandemic, with efforts continuing to vaccinate much of the population in hope of achieving herd immunity in key societies.
- Inflation is increasing, as are interest rates, causing consumers to hold off on large purchases such as recreational vehicles, second homes, and personal watercraft.
- World GDPs are slowing, particularly in the two largest economies (China and the US).
- We have a semiconductor shortage that is predicted to last through most of 2022. This has already affected the automotive and consumer electronics/appliances industry extensively.
- We have a global supply chain backlog, with shipping containers gridlocked, a global shortage of truck and crane operators, and rising transportation costs (fuel and maintenance)
- There is a shortage of oil and gas in the US.
- China has launched a supersonic missile and is threatening Taiwan.
- North Korea is once again launching missiles.
- Iran is ramping up its nuclear program.
- Afghanistan is being led by the Taliban, an organization that is notorious for cruelty and aggression.

The following table of contents shows the detail provided in this new report.



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# Connector Industry Forecast

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# Connector Industry Forecast

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  - Home Audio Equipment
  - Consumer White Goods
  - Other Consumer
- Other Equipment

## Chapters 4 Thru 8 Provide the Same Detail Level as Chapter 3

- Chapter 4 – European Connector Forecast
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- Chapter 6 – Chinese Connector Forecast
- Chapter 7 – Asia Pacific Connector Forecast
- Chapter 8 – ROW Connector Forecast

## To Order *Connector Industry Forecast*



Research Report F-2021-02, *Connector Industry Forecast* is available for \$5,135. If you would like additional information about this report, or would like to place an order, please complete the following information, and e-mail, or mail it to Bishop & Associates, Inc. To place your order on our website: <https://store.bishopinc.com/>.

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## What's New ?

Bishop & Associates has recently completed several new research reports about the worldwide connector industry. A table of contents for each report can be found at <https://store.bishopinc.com>.

- ❑ **Report F-2021-02**      **Connector Industry Forecast (November 2021) NEW**
- ❑ **Report P-520-21**      **The World I/O Rectangular Connector Market 2021 (October 2021) NEW**
- ❑ **Report P-430-21**      **World Circular Connector Market 2021 (September 2021) NEW**
- ❑ **Report M-121-21**      **2021 Top 100 Connector Manufacturers (August 2021) NEW**
- ❑ **Report C-122-21**      **2021 Connector Industry Yearbook (July 2021) NEW**
- ❑ **Report M-310-21**      **Instrumentation Market for Connectors (June 2021) NEW**
- ❑ **Report P-799-21**      **World Cable Assembly Market (May 2021) NEW**
- ❑ **Report P-410-21**      **Computer Server Market Trends and Connector Use 2020 – 2030 (May 2021) NEW**
- ❑ **Report M-607-21**      **World Industrial Market for Connectors (April 2021)**
- ❑ **Report M-700-21**      **World Connector Market Handbook (April 2021)**
- ❑ **Report M-510-21**      **World Telecom Connector Market 2020-2025 (January 2021)**
- ❑ **Report M-1601-20**      **Top 50 Medical Interconnect Solutions Companies (December 2020)**
- ❑ **Report P-675-20**      **High-Speed Copper & Fiber Optic Connectors (November 2020)**
- ❑ **Report M-980-20**      **5G Infrastructure – How 5G is Impacting Infrastructure Hardware and Connector Buying Trends (September 2020)**
- ❑ **Report M-1501-20**      **Medical Electronics Market for Interconnect Solutions (July 2020)**
- ❑ **Report P-780-20**      **World RF Coax Connector Market 2020 (June 2020)**

### THE BISHOP REPORT - CONNECTOR INDUSTRY YEARBOOK

An annual corporate subscription to **THE BISHOP REPORT** (12 issues) is available for \$2,950, which includes an unlimited number of subscribers and one PDF version of the *Connector Industry Yearbook* report (normally \$1,500).

*The Bishop Report* subscription includes access, through [Bishopinc.com](https://Bishopinc.com), to prior issues of The Bishop Report, 30-40 yearly News Briefs, Industry Financial Benchmarks, and various connector industry indices.

[Click here](#) to view an expanded report description, and a complete table of contents, for all Bishop & Associates' research reports.

  
*Performance and Forecast of the World Connector Industry*  
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