

## Orders Up +2.5%, Billings Flat

### See Page 11 for COVID-19 Impact on Connectors

#### Regional Performance:

With three regions growing, YTD sales were positive for the second month in a row.

#### Black Swan Event – Coronavirus:

While black swan events are rare, they seem to be occurring with more regularity in the twenty-first century. Over the last 25 years, we have experienced four: The busting of the dot-com bubble in 1999, the September 11 attacks, the US housing market meltdown and Great Recession in 2008/2009, and today's COVID-19 pandemic. This article looks at the prior three black swans and analyzes their impact on connector sales. With this perspective, we hope to better understand the implications for the industry as we bear witness to this latest black swan.

#### Currency Impact:

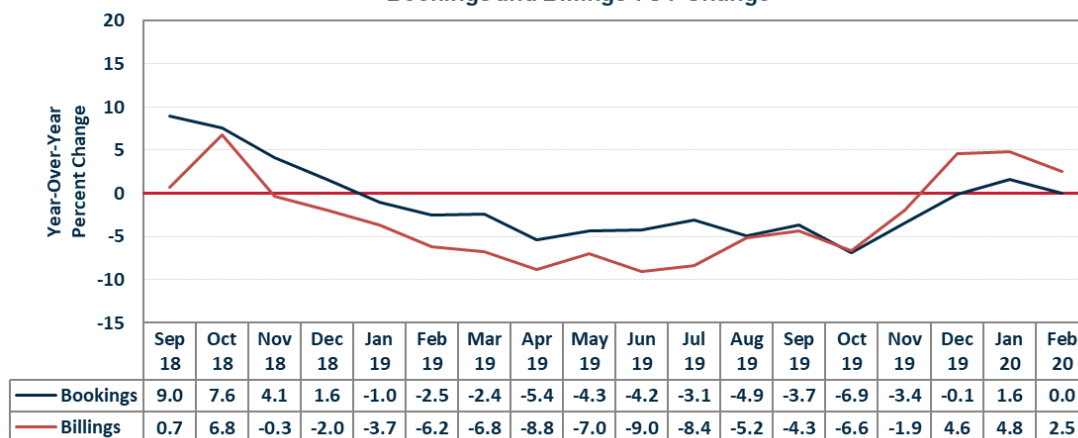
Connector sales grew 2.3% in February when measured in local currencies.

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

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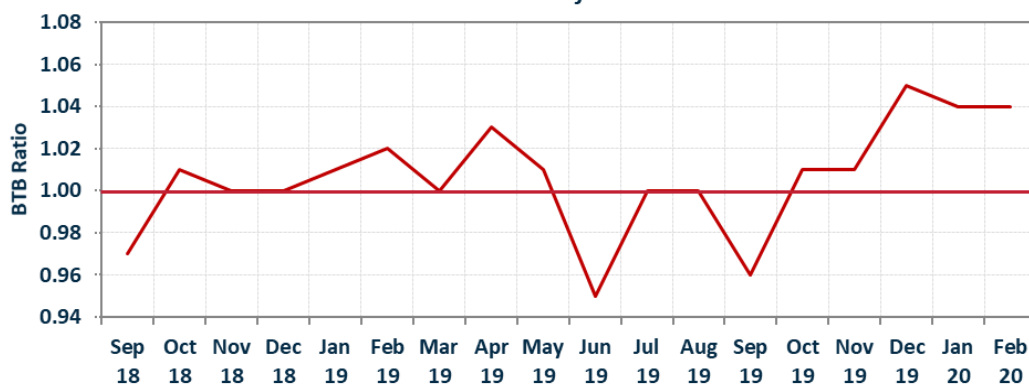
February 2020 **bookings** increased +2.5% over February 2019, the third consecutive increase in orders after 13 months of declines. February 2020 **billings** were unchanged from the previous February 2019, possibly indicating early signs of the pandemic's impact on connector sales.

Bookings and Billings YOY Change



The BTB ratio in February remained at 1.04.

Connector Industry Book-to-Bill

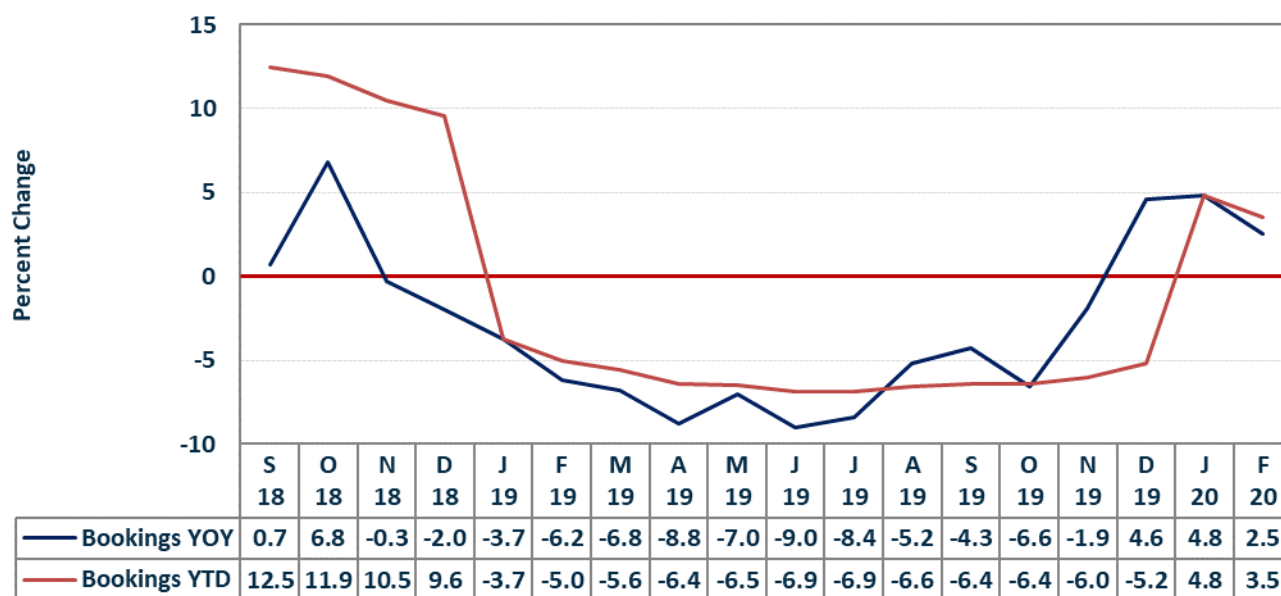


## Booking Highlights and Conclusions

### Sequential, Year-Over-Year and Year-To-Date Bookings Percentage Change – 2018/2019/2020

Month	Sequential			Year-Over-Year			Year-To-Date		
	2018	2019	2020	2018	2019	2020	2018	2019	2020
Jan	2.8%	1.0%	1.1%	15.5%	-3.7%	4.8%	15.5%	-3.7%	4.8%
Feb	10.6%	7.7%	5.4%	17.5%	-6.2%	2.5%	16.5%	-5.0%	3.5%
Mar	-3.8%	-4.5%		17.7%	-6.8%		16.9%	-5.6%	
Apr	-0.2%	-2.2%		17.7%	-8.8%		17.1%	-6.4%	
May	4.9%	6.9%		15.7%	-7.0%		16.8%	-6.5%	
Jun	-7.0%	-8.9%		10.6%	-9.0%		15.8%	-6.9%	
Jul	-0.1%	2.8%		11.8%	-8.4%		15.2%	-6.9%	
Aug	6.4%	7.8%		7.1%	-5.2%		14.1%	-6.6%	
Sep	-7.9%	-7.1%		0.7%	-4.3%		12.5%	-6.4%	
Oct	3.0%	0.6%		6.8%	-6.6%		11.9%	-6.4%	
Nov	5.5%	10.8%		-0.3%	-1.9%		10.5%	-6.0%	
Dec	-13.6%	-7.8%		-2.0%	4.6%		9.6%	-5.2%	

### Bookings - YOY and YTD



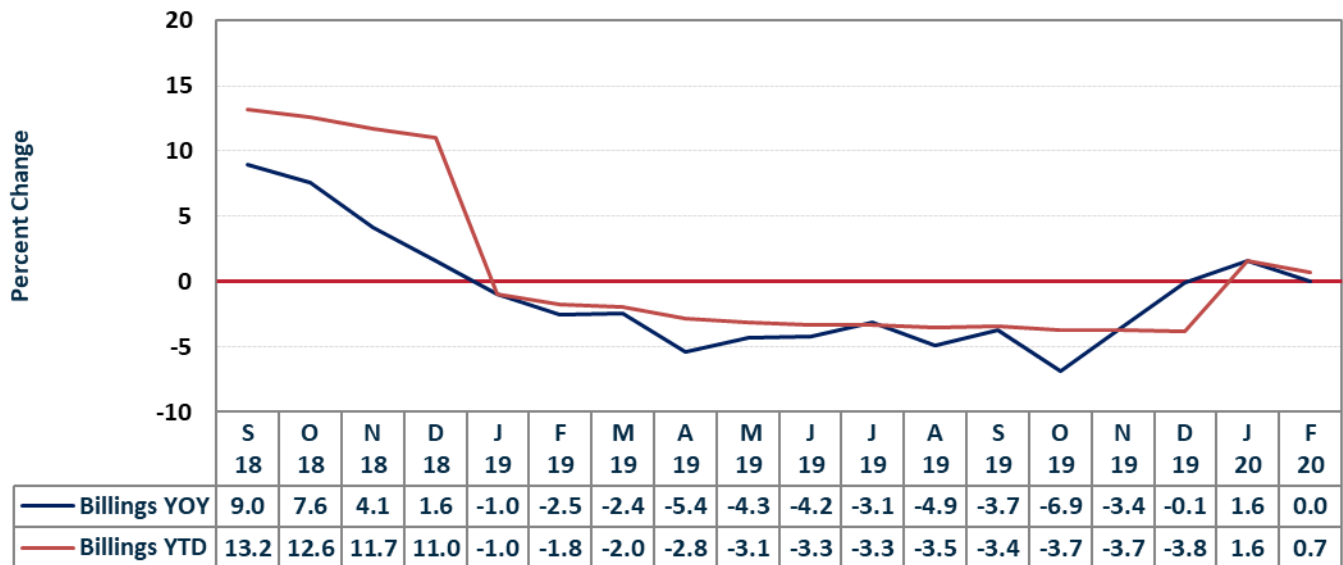
- February 2020 bookings increased +2.5% YOY from February 2019.
- Orders expanded +3.5% YTD.
- Sequentially, orders increased +5.4% over the prior month.
- The book-to-bill ratio for February was 1.04.

## Billing Highlights and Conclusions

### Sequential, Year-Over-Year and Year-To-Date Billings Percentage Change – 2018/2019/2020

Month	Sequential			Year-Over-Year			Year-To-Date		
	2018	2019	2020	2018	2019	2020	2018	2019	2020
Jan	2.9%	0.3%	2.0%	17.2%	-1.0%	1.6%	17.2%	-1.0%	1.6%
Feb	8.4%	6.8%	5.2%	15.6%	-2.5%	0.0%	16.2%	-1.8%	0.7%
Mar	-3.2%	-3.2%		14.8%	-2.4%		15.8%	-2.0%	
Apr	-2.3%	-3.7%		15.7%	-5.4%		15.7%	-2.8%	
May	7.8%	9.0%		13.2%	-4.3%		15.1%	-3.1%	
Jun	-4.4%	-4.2%		14.9%	-4.2%		15.1%	-3.3%	
Jul	-3.1%	-2.0%		10.5%	-3.1%		14.4%	-3.3%	
Aug	9.0%	7.0%		9.4%	-4.9%		13.7%	-3.5%	
Sep	-4.1%	-2.9%		9.0%	-3.7%		13.2%	-3.4%	
Oct	-0.8%	-4.1%		7.6%	-6.9%		12.6%	-3.7%	
Nov	6.7%	9.8%		4.1%	-3.4%		11.7%	-3.7%	
Dec	-14.2%	-11.2%		1.6%	-0.1%		11.0%	-3.8%	

### Billings - YOY and YTD



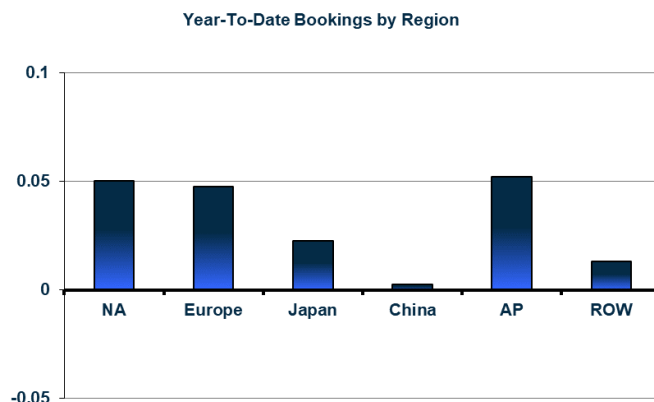
- Billings were flat in February 2020 measured against February 2019.
- Billings YTD were +0.7%.
- Sequential billings rose 5.2% in February 2020.

## Regional Performance

The COVID-19 pandemic has had minimal effect on the connector industry through February. Orders are up +3.5% and sales +0.7% YTD. Industry insiders reported good orders, in the first two weeks in March. This suggests that the first quarter will be reasonably good despite the outbreak.

### February 2020 Bookings

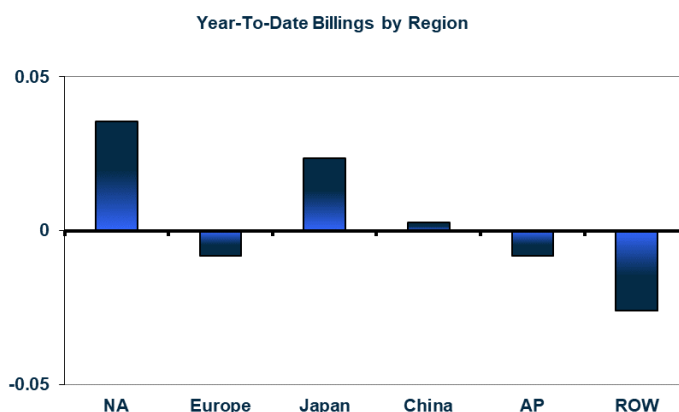
Region	Sequential	YOY	YTD
NA	11.1%	4.6%	5.0%
Europe	11.0%	2.7%	4.8%
Japan	14.6%	0.4%	2.3%
China	-11.1%	-2.7%	0.2%
AP	7.9%	8.1%	5.2%
ROW	7.7%	3.6%	1.3%
<b>Total</b>	<b>5.4%</b>	<b>2.5%</b>	<b>3.5%</b>



Bookings were up +2.5% YOY and +3.5% YTD in February. China is the only region with negatives result in February. China's -11.1% sequential decline is partially due to the Chinese New Year and maybe a harbinger of bookings declines for the next couple of months.

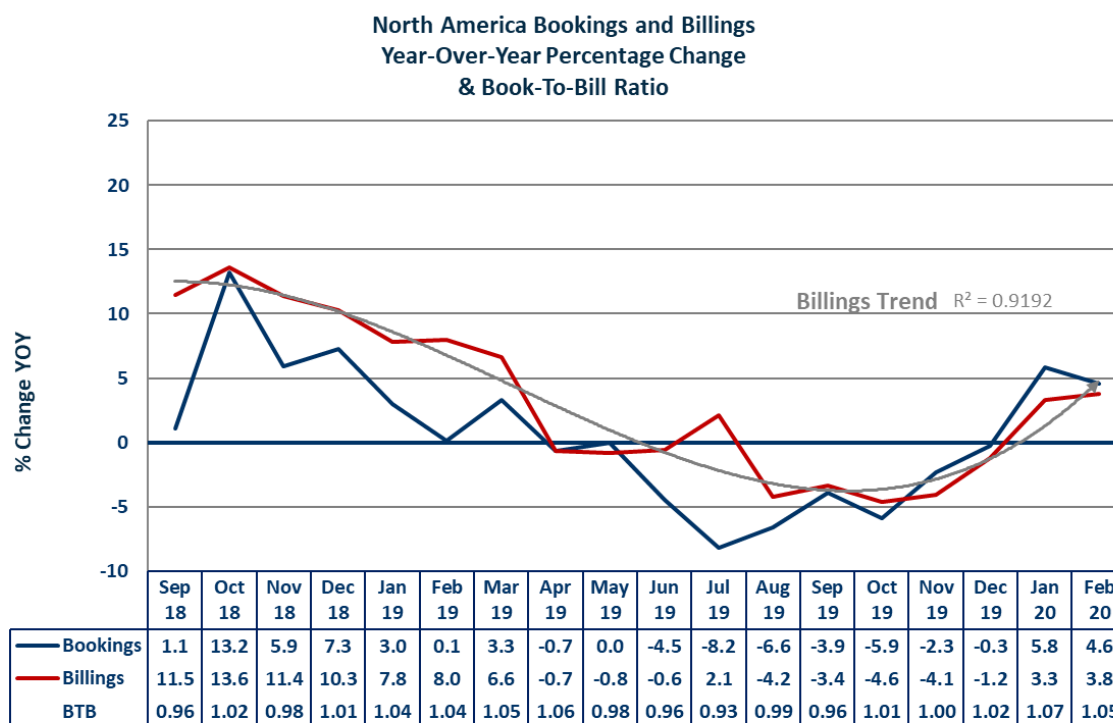
### February 2020 Billings

Region	Sequential	YOY	YTD
NA	13.0%	3.8%	3.5%
Europe	13.4%	-0.2%	-0.8%
Japan	11.9%	1.3%	2.4%
China	-14.1%	-5.0%	0.3%
AP	4.4%	1.0%	-0.8%
ROW	9.9%	-1.9%	-2.6%
<b>Total</b>	<b>5.2%</b>	<b>0.0%</b>	<b>0.7%</b>



Worldwide, connector sales were flat in February. North America, Japan, and Asia Pacific achieved modest growth. Europe, China, and ROW declined slightly. However, as expected, China experienced a significant, sequential sales decline of -14.1%.

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



Note: Billing Trend  $R^2$  = Goodness of Fit of data to the trend line, 1.0 is a perfect fit.

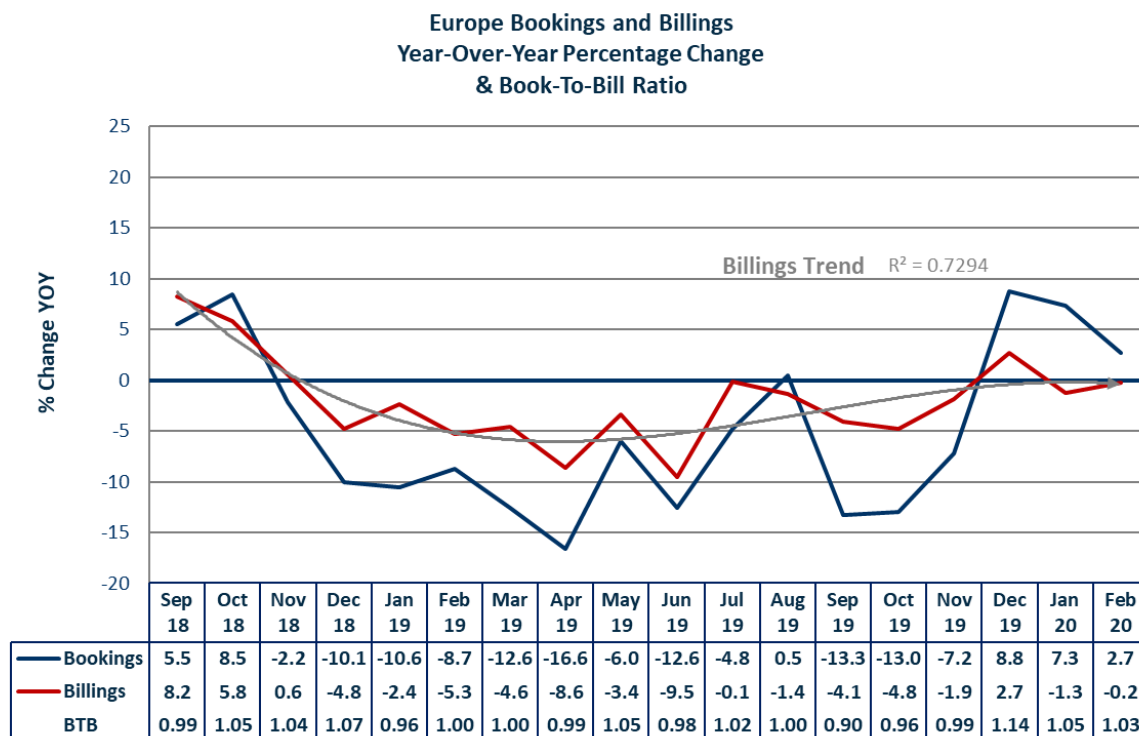
## North America Performance

- YOY billings were up +3.8%, the second month of increases. Orders increased 4.6% in February.
- Industrial production in the US flattened with no year-over-year growth in February.
- US retail sales increased, up 4.4% YOY in February. Sequentially, February retail sales declined 0.5%.
- Unemployment in the US decreased to 3.5% in February, but jobless claims for the week ending March 14, jumped to a two-year high, as employers begin laying off workers amid the COVID-19 pandemic.
- Total US auto sales leaped 8.6% in February 2020 according to MarkLines.
- Consumer confidence fell to 95.6 in March; this is first decline in six months.
- The manufacturing PMI decreased to 50.7 in February from 51.5 in the prior month. This is the slowest factory activity expansion in six months.

## Conclusions

Bookings and billings were in positive territory for the second consecutive month. North America is beginning to feel the impact of COVID-19 especially with the recent increases in jobless claims. The United States is aggressively pursuing numerous fiscal and monetary initiatives to smooth the impending economic downturn. Some financial analysts and economists have predicted the start of a recession ending the longest economic expansion in US history. Goldman Sachs is forecasting next week's jobless claims to exceed two million. Bishop presently predicts connector sales will contract in the low to mid-teen area, for full-year 2020.

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



Note: Billing Trend  $R^2$  = Goodness of Fit of data to the trend line, 1.0 is a perfect fit.

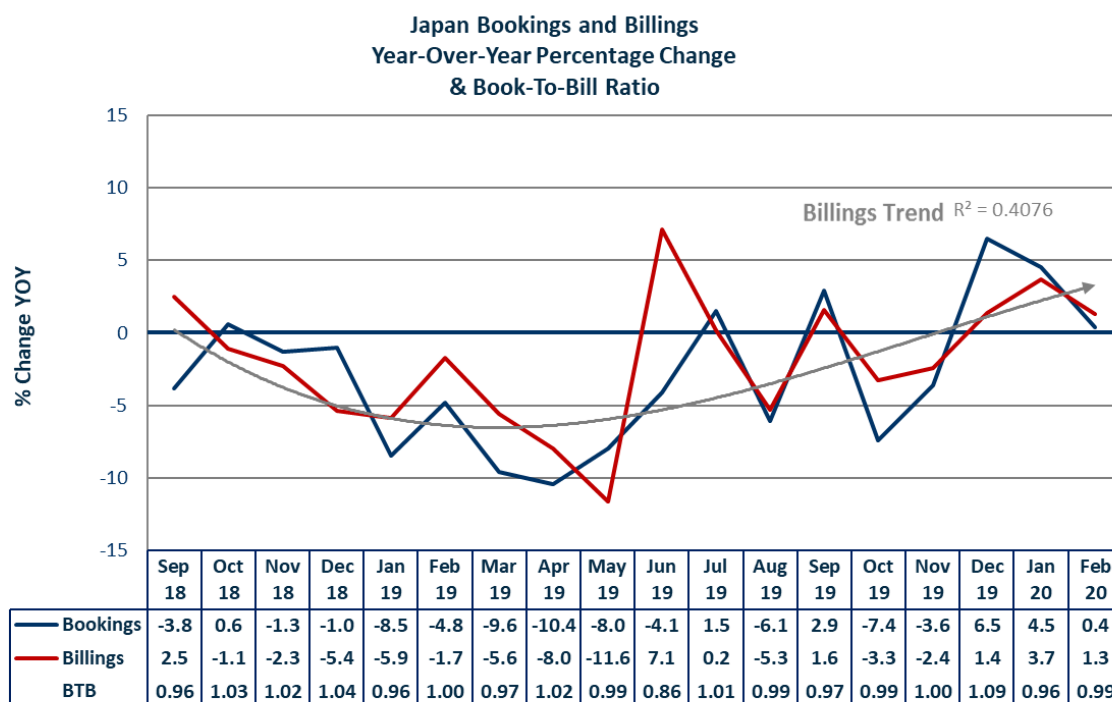
## Europe Performance

- YOY billings declined -0.2%, while orders were up +2.7%, a book-to-bill ratio of 1.03.
- Industrial production contracted 1.9% YOY in January.
- Retail sales in January were up 1.7% YOY and were up slightly 0.6% sequentially.
- Auto sales contracted 7.4% YOY in February.
- Unemployment rate stood at 7.4% in January, the lowest jobless rate since May 2008.
- Business confidence down 0.04 points in February. The manufacturing PMI was revised higher to 49.2 in February. This is the 13<sup>th</sup> month of manufacturing contraction in the Euro area.
- Consumer confidence in the Eurozone rose to -6.6 in February from -8.1 in the prior month. This is the highest level since September last year.

## Conclusions

Europe is currently suffering the worst effects of the COVID-19 outbreak. Italy has the most infected population in the world as it just surpassed the number in China. There is also a concerning number of cases in Spain and Germany. Business shutdowns and travel restrictions will likely push the region into a recession. Industrial heavy weights, Volkswagen AG and Airbus SE, have shuttered assembly plants to reduce the spread of the contagion. Bishop is presently forecasting Europe to be the hardest hit region for full-year 2020 connector industry sales. Full-year sales are projected to decline in the mid to upper-teens.

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



Note: Billing Trend  $R^2 = 0.4076$  = Goodness of Fit of data to the trend line, 1.0 is a perfect fit.

## Japan Performance

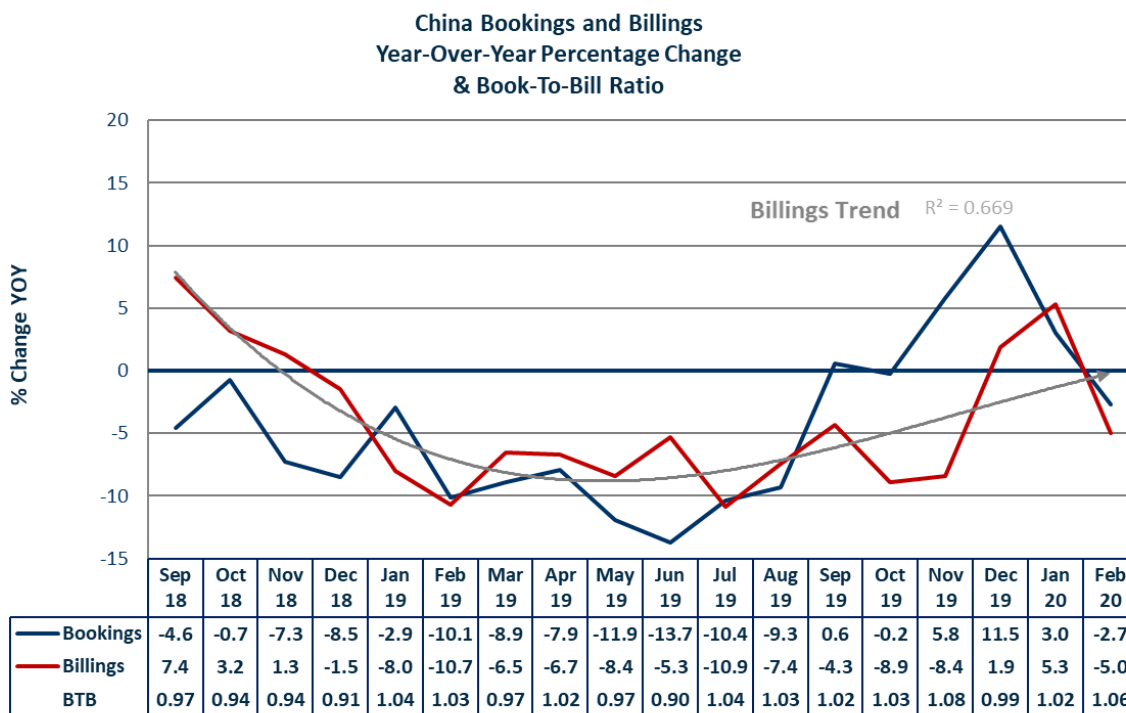
- YOY, orders and sales growth are in their third month of expansion.
- Industrial production decreased 2.3% YOY in January.
- Retail sales decreased 0.4% YOY in January but were up 0.6% sequentially.
- Exports fell 1% in February YOY. This was the 15<sup>th</sup> straight month of decline in exports.
- Business confidence fell to 0, a six-year low, in 4Q19. The manufacturing PMI fell to 47.8 in February, the steepest pace of contraction in the manufacturing sector since May 2016.
- Consumer confidence declined to 38.4 in February.

## Conclusions

Japan's economy was struggling prior to the COVID-19 outbreak. The country's relatively low COVID-19 infection rate is likely due to a culture of respect for authority and personal precautions, such as the wearing of masks and gloves. This may result in modest declines in connector sales for 2020. Japan's connector market is likely to be among the best performing regions in 2020 with mid-single digit declines.



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



Note: Billing Trend  $R^2$  = Goodness of Fit of data to the trend line, 1.0 is a perfect fit.

## China Performance

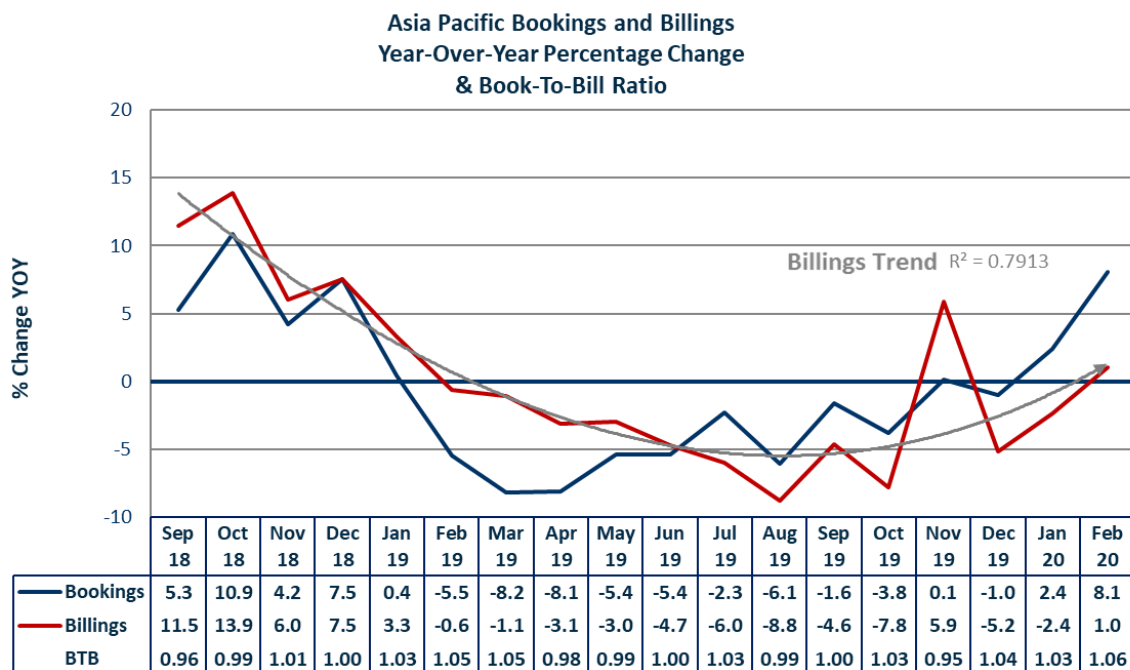
- Sales and orders YOY reversed trends due to virus outbreak, declining -5.0% and -2.7% respectively in February 2020. Sequentially, China's billings plummeted -14.1% and orders dropped -11.1%.
- Industrial production tumbled 13.5% YOY in January and February, the first drop since 1990, as China locked down most of the country to stave off the COVID-19 outbreak.
- Retail sales plunged at 20.5% YOY in February, the worst ever on record.
- China's passenger car sales collapsed 92% in first half of February amid virus outbreak.
- China's exports decreased 17.2% year-on-year in January and February combined.
- Business confidence in China plunged from 50.0 in January to 35.7 in February. Factory activity contracted in February with a record low PMI of 40.3.

## Conclusions

China had taken drastic measures to reduce the rate of infection, not only in Wuhan where the virus originated, but throughout the entire country. Industry leadership informed Bishop that nearly 90% of Chinese connector manufacturers are back to work. Wuhan, still on strict lock-down, has recently reported no new cases. In 14 days, if no new infections are reported, Wuhan will be released from mass quarantine and the concentration of automotive manufacturers located there will begin producing parts. Bishop presently projects that China's connector sales for full-year 2020 will be the second least impacted by the outbreak, with declines in the mid-single digits.



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



Note: Billing Trend  $R^2$  = Goodness of Fit of data to the trend line, 1.0 is a perfect fit.

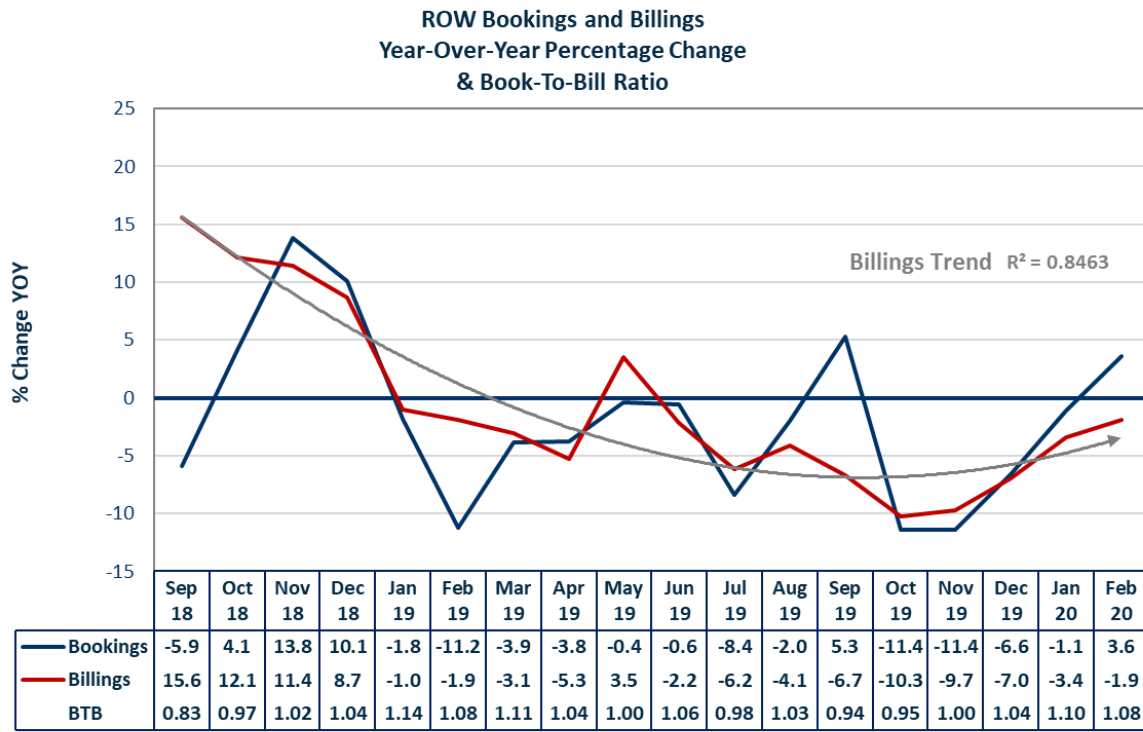
## Asia Pacific Performance

- Orders rose sharply +8.1% and billings grew +1%.
- India's industrial production grew 2% and manufacturing production increased 1.5% YOY in January. The January inflation rate decreased to 6.6%. January exports rose 2.9% YOY.
- South Korea's 4Q19 GDP was adjusted up 0.1% to 1.3%. It was the strongest quarter since 3Q17. South Korea's industrial production in January declined 2.4% YOY. Retail sales were up 1.8% YOY in January, slowing from the 4.5% gain in December. Exports rose 4.5% in February from a year earlier. This was the first increase in exports in 15 months. Semiconductors grew 9.4% YOY. Automotive exports slumped 16.6% due to supply chain disruptions. The manufacturing PMI fell to a fourth month low to 48.7 in February 2020.

## Conclusions

Asia Pacific's economy was starting improve prior to the COVID-19 pandemic. The region, struggling with connector contraction since early 2019, looked hopeful. Both South Korea and India, the largest players in the region, produced positive economic indicators in February. South Korea faced the outbreak aggressively, testing a higher percentage of its citizens than any other country to-date. The number of new infections is on the decline. Bishop forecast's full-year 2020 to drop in the high-single digits to low-teens.

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



Note: Billing Trend  $R^2$  = Goodness of Fit of data to the trend line, 1.0 is a perfect fit.

## Rest of World Performance

- Bookings rose 3.6% YOY. Billings registered a -1.9% YOY decline in February. This was the ninth consecutive negative recording.
- Russia's industrial production slowed to 1.1% YOY in January and plummeted 17.3% from the previous month. Exports dropped 3.0% YOY in December. Russia's trade surplus narrowed to \$15.5 billion in December. The inflation rate decreased to 2.4% in January YOY but inched up 0.4% from December 2019.
- Brazil's industrial production dropped 1.2% YOY in December. Retail sales slowed to 2.6% YOY in December. The inflation rate dipped slightly to 4.2% in January from a seven-month high of 4.3% in the previous month. Consumer confidence was unchanged at 47.3. The manufacturing PMI increased to 51.0 in January from 50.2 in the previous month.

## Conclusions

Russia reported a relatively low number of COVID-19 infections at 199 and zero deaths as of March 20, 2020. Brazil has confirmed only one case. Russia's bigger problem is the dispute they are having with Saudi Arabia over the price of crude oil, which is at an 18 year low (in the mid \$20 level). This will hurt Russia's ability to fund their government. Availability of connector raw materials, such as copper and gold, may become an issue as Peru declares a state of emergency resulting in the closures of Pan American Silver's, Freeport-McMoRan's, and Newmont's mines. Bishop forecast's full-year 2020 to drop into the mid to upper-teens for ROW .

## **Black Swan Event – Coronavirus**

A black swan is defined as an extremely rare, unpredictable, and unexpected occurrence that has significant negative impact on an economy. The COVID-19 pandemic is such a black swan event. There have been three other large viral outbreaks, two of which were also coronaviruses (SARS-CoV and MERS-CoV), in the 21<sup>st</sup> century.

- 1) **SARS-CoV** (Severe Acute Respiratory Syndrome): Between November 2002 and July 2003, this outbreak originated in China with over 8,000 documented cases and 774 deaths in 17 countries. The fatality rate was 9.6%. No cases have been reported since 2004.

SARS had no apparent impact on the connector industry. Industry sales were up +11.4% in 2003.

- 2) **H1N1** (swine flu): The first in the 21<sup>st</sup> century, the H1N1 emerged in the spring of 2009 and lasted until late 2010. This was the second recorded H1N1 strain, the first, appearing in 1918 and lasting through 1920, was referred to as the Spanish flu. The 2009 iteration is believed to have infected 11 to 21% of the global population with between 150,000 and 575,000 fatalities. The death rate was approximately 0.03%.

This pandemic occurred in the aftermath of the financial housing meltdown. For the full year 2009, sales declined -21.8% over the previous year. The decline is mostly attributed to the financial crisis and not the flu outbreak.

- 3) **MERS-CoV** (Middle East Respiratory Syndrome): Saudi Arabia recorded the first case in April 2012. The outbreak spread to 27 other countries according to the World Health Organization. WHO confirmed 2,499 cases and 861 deaths, a fatality rate of about one in three. Approximately, 80% of the cases occurred in Saudi Arabia. Two US citizens, healthcare workers returning from employment in Saudi Arabia, tested positive and both recovered.

MERS had no effect on the connector industry. Connector sales were down -2.7% in 2012 due to other issues.

## **Other Black Swans – Impact on Connectors**

### **2001-2002 Dotcom Bubble and September 11 Attacks**

Connector industry sales declined -18.8% in 2001 and -6.9% in 2002. Prior to the financial crisis, this was the worst downturn in the connector industry, since Bishop started tracking industry performance in 1980. The following table shows the industry's performance by quarter during the 2001-2002 dotcom bubble crisis and September 11 attacks.

#### **2001-2002-2003 Year-over-Year Change in Sales**

Quarter	2001	2002	2003
1st Quarter	4.7%	-27.5%	8.8%
2nd Quarter	-18.0%	-6.5%	7.3%
3rd Quarter	-28.3%	6.3%	8.6%
4th Quarter	-30.9%	6.9%	20.7%
Full Year	-18.8%	-6.9%	11.4%

The downturn was severe (worst ever in the industry's history) and lasted six quarters. Following the downturn, the connector industry demand came back strong, growing +11.4% in 2003.

### **2008-2009: Financial/Housing Crisis and H1N1**

Undoubtably, the H1N1 pandemic had some measurable effect on the global economy. However, it paled in comparison to the financial crisis's devastating impact.

The following table shows the industry sales performance by quarter during 2008-2009.

#### **2008-2009-2010 Year-over-Year Change in Sales**

Quarter	2008	2009	2010
1st Quarter	11.5%	-35.6%	39.1%
2nd Quarter	12.4%	-32.1%	35.5%
3rd Quarter	6.3%	-21.4%	26.3%
4th Quarter	-18.1%	8.4%	15.9%
Full Year	2.7%	-21.8%	28.2%

This downturn lasted only four quarters but produced the two worst quarters in connector industry history (1Q09 = -35.6%; 2Q09= -32.1%).

A big? Will the coronavirus cause 2Q20 to be worse than the industry's historical worst quarterly decline of -35.6% in 1Q09?

## **Industry Outlook**

As noted in this Bishop Report, February orders are up +3.5% and sales are up +0.7% year-to-date. Industry leadership has advised that the first two weeks in March resulted in strong order placement, creating strong order backlog. We believe that it is reasonably safe to forecast a less than disastrous first quarter 2020. In fact, 1Q20 could result in a modest improvement over 1Q19.

Other comments by industry leaders follow:

- Production in China is at 90% capacity.
- There is no supply side problem. Connector inventories are ample. Any future slowdown will be demand related.
- There are no connector pricing issues. Prices are stable.
- Lead times are normal and not expected to increase due to production problems. Should connector demand decline, lead times could shrink.
- Currently, order backlogs are solid, with some, but minimal, double ordering and order pushouts. We will watch order cancellations and advise if we see a trend developing.

## **2Q20 Outlook and Beyond**

No one knows with any certainty what will transpire in 2Q, 3Q, and 4Q.

Clearly, we are in uncharted territory with COVID-19. Basically, the world is on quarantine. Business activity has been drastically reduced and will not likely resume to full capacity until it is evident that the virus has run its course.

It is reasonably safe to assume that this crisis will not end during 2Q20 (April, May, June). As a result, 2Q20 most likely will be dismal. When Bishop market directors was recently polled, asking how connector sales will perform in the second quarter, opinions ranged from -10% to -30%.

Obviously, we have no consensus as to what will happen in the second quarter. However, our expectations are for a significant downturn, possibly greater than -30%.

Assuming the virus ends in the May/June timeframe, we believe connector demand will spring back significantly in the second half. It is likely, that connector demand will be V-shaped. That is, a steep decline in 2Q20 and the first part of 3Q20 with a significant rebound in the fourth quarter. However, it is realistic to expect that full year connector sales will decline. Hopefully, the full year 2020 decline will be of modest proportions.

## Currency Impact on Regional Industry Growth

The Euro and the Yuan continued to decline in value against the US dollar. The Japanese Yen was flat YTD in February. The following table measures the impact for February 2019 versus February 2020 and shows the YTD results for these three currencies.

**Local Currency to One USD  
YTD February 2019 versus February 2020**

Currency	2019	2020	% Change
Euro	0.8783	0.9081	-3.3%
Yuan	6.7686	6.9589	-2.7%
Yen	109.6195	109.5910	0.0%

Europe, China, and Japan account for 60.0% of world connector sales. As a result, currency fluctuation to the US dollar can have a significant impact on our reporting of sales performance in US dollars.

The following table shows year-to-date sales performance by region in US dollars and local currencies.

**Industry Sales Performance  
YTD February 2020  
USD-vs-Local Currencies**

Region	U.S.\$	Local Currency
North America	3.5%	3.5%
Europe	-0.8%	2.5%
Japan	2.4%	2.4%
China	0.3%	3.0%
Asia Pacific	-0.8%	-0.8%
ROW	-2.6%	-2.6%
World	0.7%	2.3%

The high demand for the US dollar is having a negative effect on growth for connector YOY sales in Europe and China when measured in US dollar. Connector sales are 1.6 percentage points higher when stated in local currencies rather than in US dollars, putting industry performance at +2.3% YTD in February (versus +0.7% YTD in US dollars).

In some regions, there is a larger discrepancy in the value of the US dollar to the local currency, e.g. Russia. These regions are listed in the following table.

## **Local Currency to One USD February YTD 2019 versus 2020**

<b>Currency</b>	<b>2019</b>	<b>2020</b>	<b>% Change</b>
Swiss Franc	0.9950	0.9728	2.3%
S. K. Won	1121.4231	1179.4562	-4.9%
Russian Ruble	66.4165	62.9643	5.5%
Taiwan Dollar	30.8070	30.0927	2.4%
Indian Rupee	70.9301	71.4422	-0.7%
Singapore Dollar	1.3559	1.3693	-1.0%



# Non-Automotive Transportation Market for Connectors

Bishop & Associates, Inc. has just released a new 10-chapter, 253-page research report, providing a detailed analysis of the non-automotive transportation market for connectors. This new report explores the various sectors and sub-sectors of this marketplace, as well as the connector types used within these sectors.

Sectors discussed in this report include:

- Commercial Air
- Rail & Rolling Stock
- Commercial Vehicles
- Commercial Marine
- Heavy Equipment
- Recreation & Power Sport Vehicles



Market values and forecasts covering the period 2019 through 2025F are provided, along with five-year CAGR figures by region of the world, sector and sub-sector.

The non-automotive transportation market includes most vehicles and forms of transportation, except for passenger cars and light trucks and vans. Each of these forms of transportation is designed and engineered to best suit the medium in which it operates: rail, road (on-road and off-road), air, or sea. On one hand, the transportation market is a very diverse market segment which includes huge oil tankers, rolling stock and locomotives, heavy trucks, and construction machinery, as well as commercial jets, ATVs and small recreational vehicles, and farm tractors. On the other hand, these very different vehicles have several things in common:

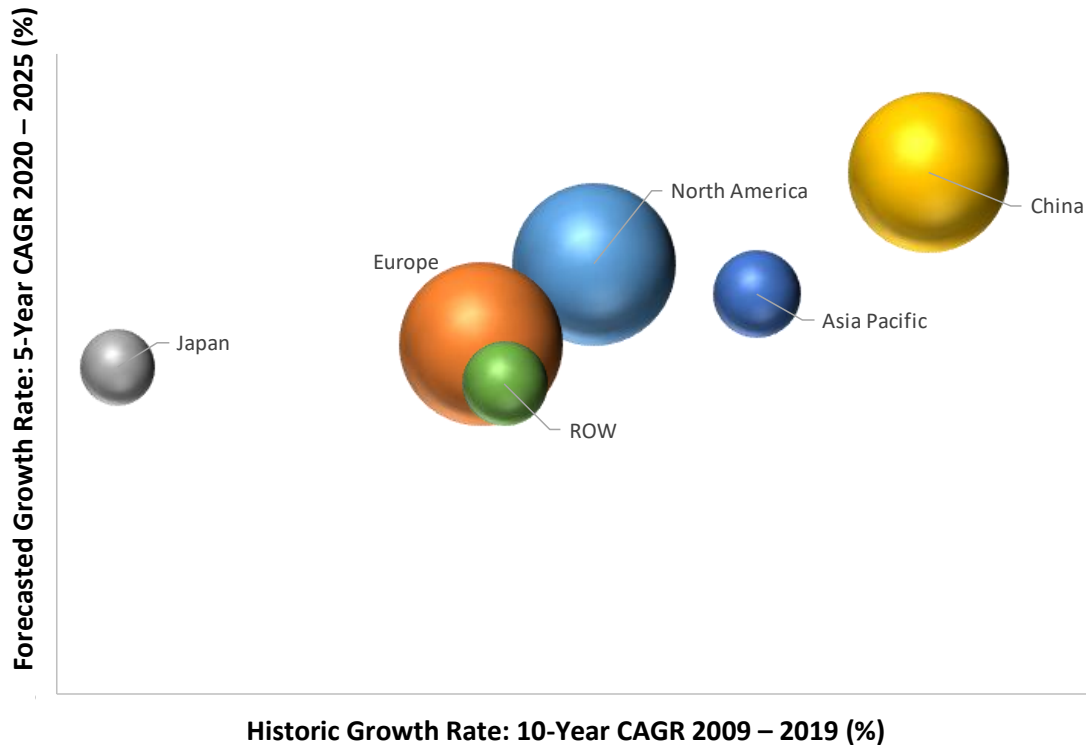
- They are made to carry and/or move either people or payload.
- They have a form of propulsion and are powered by an engine or motor.
- Until recently, nearly all non-auto vehicles used fossil fuels as their main source of power.
- In the past decade, designers of non-auto vehicles have reviewed conventional propulsion systems and have started using cleaner technologies for generating power.

Another aspect that ties all the various forms of transportation together is that data networking (a data bus) has become an essential part of managing and controlling fleet and system operations. This report examines, by transportation mode, the various networking protocols used, and how these networks are altering the transportation sector.

## Trends

In the following graph, the relative size of the connector market within the transportation sector in each region is represented by the size of the bubble. On the x-axis, the average annual compound growth rate (CAGR) of the regional market is plotted over the past 10 years (2009-2019), while on the y-axis, the forecasted five-year CAGR (2020 through 2025) is plotted. This graph shows the Chinese market is poised to outgrow all other regions. As a result, China will become the leading transportation market for connectors in the coming years. North America and Europe are almost equal in size but the North American transportation market for connectors is set to outpace the European market during the forecasted period. Japan, which has experienced several years of declining sales, still lags well behind all other regions.

# Non-Automotive Transportation Market for Connectors



Regulation and standardization are significant factors impacting the transportation industry. Many recent rules and regulations are related to safety and environmental requirements. Most governments, especially those in Europe, Japan, and North America, have set standards for clean air, which impact every vehicle emitting emissions into the atmosphere. China has also started to implement similar requirements. To meet these environmental standards and requirements, engine technology will change, driving early replacement of vehicles or ships with older technology, or non-conforming engines. To meet enhanced safety requirements, increased technology will be implemented, which will also allow operators to detect problems at an early stage. In addition, technology will be added and used to make transportation more efficient. Safety, efficiency, and environmental impact are the three key imperatives driving the transportation industry in the coming years.

Connector consumption in the transportation market sector reached nearly \$4.5 billion in 2019, a decrease of 3.8% over 2018, primarily a result of a slowdown in the world economy. The decline was not the same across all sub-sectors, nor is the \$4.5 billion evenly distributed across all modes of transportation. Several subsectors, such as commercial marine and rail and rolling stock, performed better than others. At the same time, connector consumption within each subsector varies greatly, with commercial vehicles representing the largest portion of connector consumption and RV and power sports representing the smallest portion. Continued adoption of technologies that will allow OEMs to comply with new rules and regulations regarding emissions and safety requirements, as well as a need to meet efficiency demands and provide an enhanced user experience, will guarantee further growth for connector manufacturers in this market.

# Non-Automotive Transportation Market for Connectors

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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 M-4100-20**      **Non-Automotive Transportation Market for Connectors (February 2020) NEW**
- ☐ **Report F-2020-01**      **Connector Industry Forecast (January 2020) NEW**
- ☐ **Report P-606-19**      **Connector Types and Technologies Poised for Growth (October 2019) NEW**
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- ☐ **Report M-970-19**      **World Consumer Market for Connectors - 2019 (June 2019)**
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- ☐ **Report M-607-19**      **World Industrial Market for Connectors 2019 (January 2019)**
- ☐ **Report M-960-18**      **Electronic Industry and Connector Outlook 2018 and Beyond (November 2018)**
- ☐ **Report C-150-18**      **History of M&A in the Connector Industry (*Shrinking Footprints: Connector Industry Consolidation 1954-2018*) (October 2018)**
- ☐ **Report P-770-18**      **Connector Manufacturers Connect to Sensors (July 2018)**

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