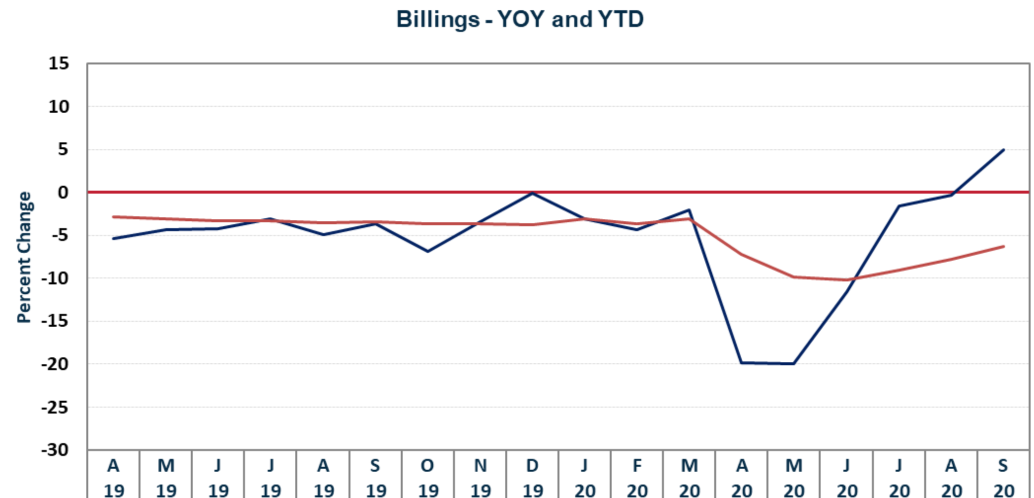
The Bishop Report
Performance and Forecast of the World Connector Industry

Issue No. 335 | 4th Quarter 2020 | October 2020

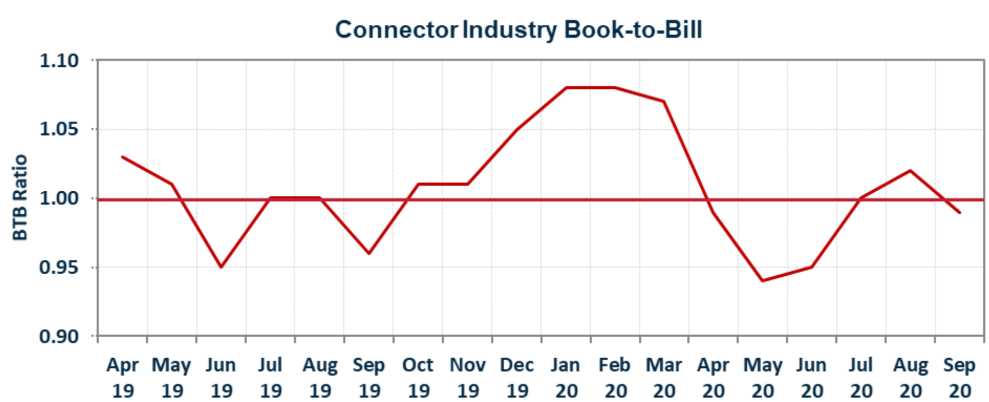
Industry Sales Return to Pre-COVID Levels
First YOY Increase since December 2018

September sales jumped +5.0% year-over-year, the first increase in 21 months! Orders were up +8.4% YOY. The strength of the industry defied previous forecasts. Not since November 2019 has the industry achieved monthly sales this high - four months prior to COVID induced worldwide lockdowns. Third quarter sales grew +1.3% over 3Q19 following a -17.2% decline in the second quarter.



	A 19	M 19	J 19	J 19	A 19	S 19	O 19	N 19	D 19	J 20	F 20	M 20	A 20	M 20	J 20	J 20	A 20	S 20
YOY	-5.4	-4.3	-4.2	-3.1	-4.9	-3.7	-6.9	-3.4	-0.1	-3.1	-4.3	-2.0	-19.9	-20.0	-11.6	-1.6	-0.3	5.0
YTD	-2.8	-3.1	-3.3	-3.3	-3.5	-3.4	-3.7	-3.7	-3.8	-3.1	-3.7	-3.1	-7.2	-9.9	-10.2	-9.0	-7.8	-6.3

The book-to-bill ratio dipped slightly to 0.99 as orders weakened in September.



Regional Performance: Worldwide month-over-month connector sales rose for the fifth consecutive month in September. YOY, sales grew in five of the six regions led by China at +8.1%, followed closely by Europe at +7.5%, and North America at +6.0%.

3Q20 Connector Industry: Third quarter industry sales defied industry expectations, up +1.3%. Bishop's fourth quarter and full year 2020 forecast have been updated.

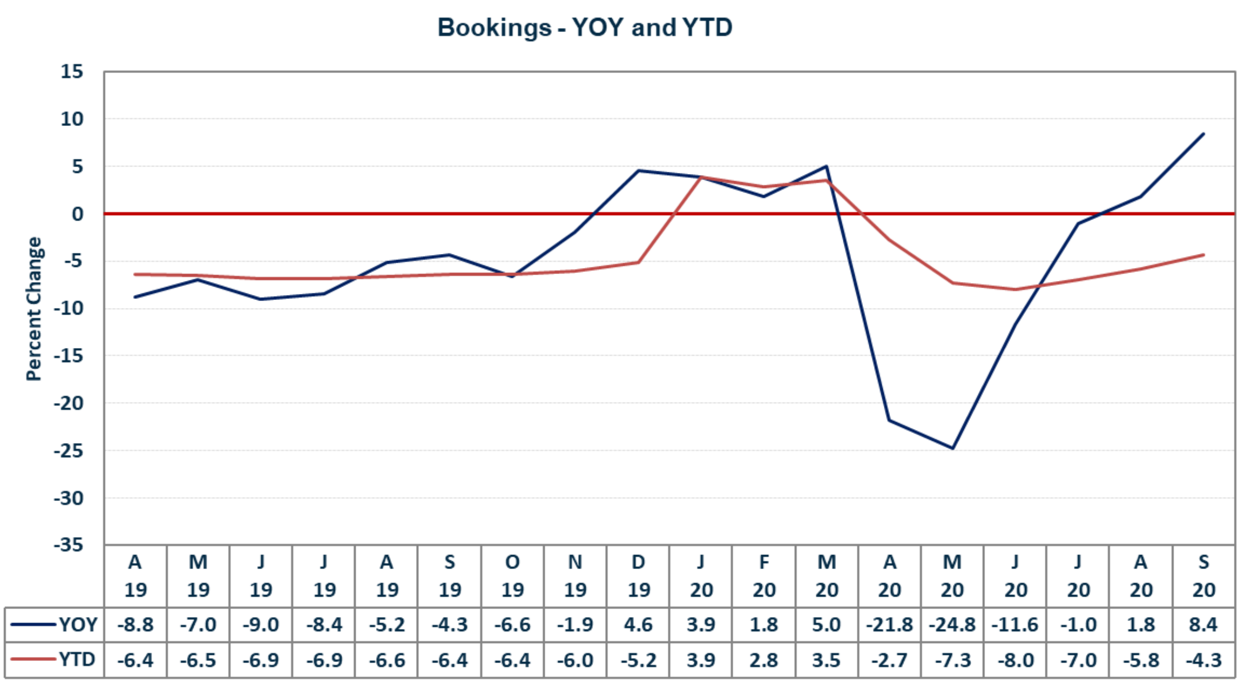
Currency Impact: Year-to-date, the euro and the yuan declined in value against the US dollar. In local currencies, world connector sales were down -5.9% versus -6.3% measured in US dollars, year-to-date.

2019 Top 10 Connector Manufacturers: Bishop identifies the top 10 connector manufacturers by regions, markets, and products. Fifty companies made the list, up one from 2018.

Booking Highlights and Conclusions

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

		Sequential			Year-Over-Year			Year-To-Date	
Month	2018	2019	2020	2018	2019	2020	2018	2019	2020
Jan	2.8%	1.0%	0.2%	15.5%	-3.7%	3.9%	15.5%	-3.7%	3.9%
Feb	10.6%	7.7%	5.5%	17.5%	-6.2%	1.8%	16.5%	-5.0%	2.8%
Mar	-3.8%	-4.5%	-1.4%	17.7%	-6.8%	5.0%	16.9%	-5.6%	3.5%
Apr	-0.2%	-2.2%	-27.2%	17.7%	-8.8%	-21.8%	17.1%	-6.4%	-2.7%
May	4.9%	6.9%	2.9%	15.7%	-7.0%	-24.8%	16.8%	-6.5%	-7.3%
Jun	-7.0%	-8.9%	7.0%	10.6%	-9.0%	-11.6%	15.8%	-6.9%	-8.0%
Jul	-0.1%	2.8%	15.2%	11.8%	-8.4%	-1.0%	15.2%	-6.9%	-7.0%
Aug	6.4%	7.8%	10.7%	7.1%	-5.2%	1.8%	14.1%	-6.6%	-5.8%
Sep	-7.9%	-7.1%	-0.9%	0.7%	-4.3%	8.4%	12.5%	-6.4%	-4.3%
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%	

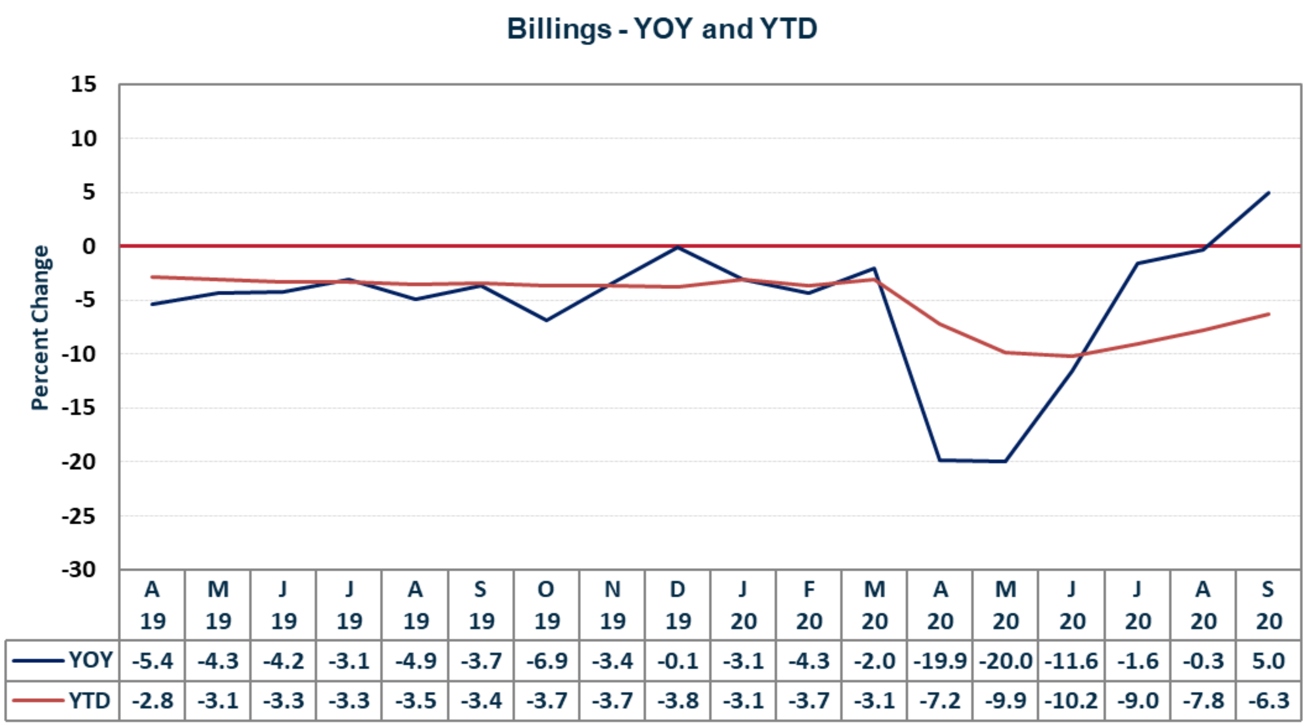


- August bookings rose 8.4% year-over-year (YOY).
- Orders contracted -4.3% year-to-date (YTD).
- Sequentially, orders weaken -0.9% over the prior month.
- The book-to-bill ratio for September slipped to 0.99 from the prior 1.02 in August.
- Year-to-date, the book-to-bill ratio remained firm at 1.02.

Billing Highlights and Conclusions

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

	Sequential			Year-Over-Year			Year-To-Date		
Month	**2018**	**2019**	**2020**	**2018**	**2019**	**2020**	**2018**	**2019**	**2020**
Jan	2.9%	0.3%	-2.8%	17.2%	-1.0%	-3.1%	17.2%	-1.0%	-3.1%
Feb	8.4%	6.8%	5.5%	15.6%	-2.5%	-4.3%	16.2%	-1.8%	-3.7%
Mar	-3.2%	-3.2%	-0.9%	14.8%	-2.4%	-2.0%	15.8%	-2.0%	-3.1%
Apr	-2.3%	-3.7%	-21.2%	15.7%	-5.4%	-19.9%	15.7%	-2.8%	-7.2%
May	7.8%	9.0%	8.8%	13.2%	-4.3%	-20.0%	15.1%	-3.1%	-9.9%
Jun	-4.4%	-4.2%	5.8%	14.9%	-4.2%	-11.6%	15.1%	-3.3%	-10.2%
Jul	-3.1%	-2.0%	9.0%	10.5%	-3.1%	-1.6%	14.4%	-3.3%	-9.0%
Aug	9.0%	7.0%	9.0%	9.4%	-4.9%	-0.3%	13.7%	-3.5%	-7.8%
Sep	-4.1%	-2.9%	1.7%	9.0%	-3.7%	5.0%	13.2%	-3.4%	-6.3%
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%	

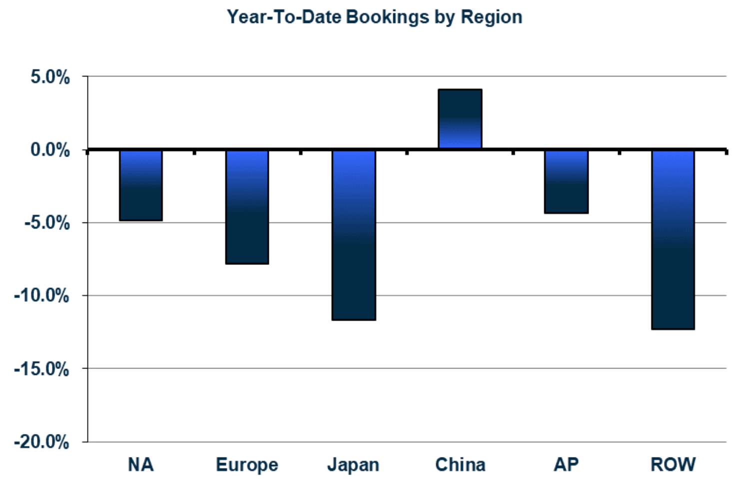


- September billings jumped +5.0% YOY – first increase since December 2018.
- Year-to-date sales were down -6.3%, the 21st time sales have declined.
- Sequentially, billings grew +1.7%.

Regional Performance

September 2020 Bookings

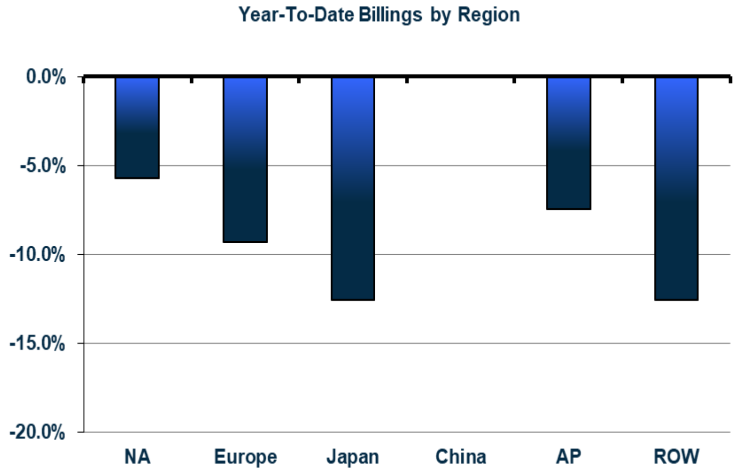
Region	Sequential	YOY	YTD
NA	-9.2%	3.5%	-4.9%
Europe	3.6%	19.7%	-7.8%
Japan	3.5%	-7.3%	-11.7%
China	-1.8%	7.7%	4.1%
AP	6.1%	7.8%	-4.4%
ROW	2.8%	7.4%	-12.3%
Total	-0.9%	8.4%	-4.3%



- September bookings increased +8.4% YOY. September orders dipped -0.9% over the previous month.
- Year-over-year orders increased in all regions except Japan, which declined -7.3%. Year-over-year, orders in Europe were up +19.7%. China, Asia Pacific, and ROW grew over seven percent and North America was up +3.5%.
- Highlights for the month include sequential growth in four of the six regions, with single-digit growth in Asia Pacific (+6.1%), Europe (+3.6%), Japan (+3.5%), and ROW (+2.8%). North America and China contracted month-over-month, down -9.2% and -1.8%, respectively.
- This month reversed the trend of four connective months of connector industry sequential bookings growth with September's -0.9% month-over-month decline
- September orders are only -3.5% off from their pre-COVID levels (February 2020).

September 2020 Billings

Region	Sequential	YOY	YTD
NA	-3.9%	6.0%	-5.7%
Europe	3.4%	7.5%	-9.3%
Japan	5.7%	-10.1%	-12.5%
China	4.8%	8.1%	0.2%
AP	1.7%	2.1%	-7.4%
ROW	2.4%	2.8%	-12.6%
Total	**1.7%**	**5.0%**	**-6.3%**



- Worldwide connector sales increased sequentially +1.7%, with all regions posting positive month-over-month sales growth with the exception of North America, down -3.9% over August.

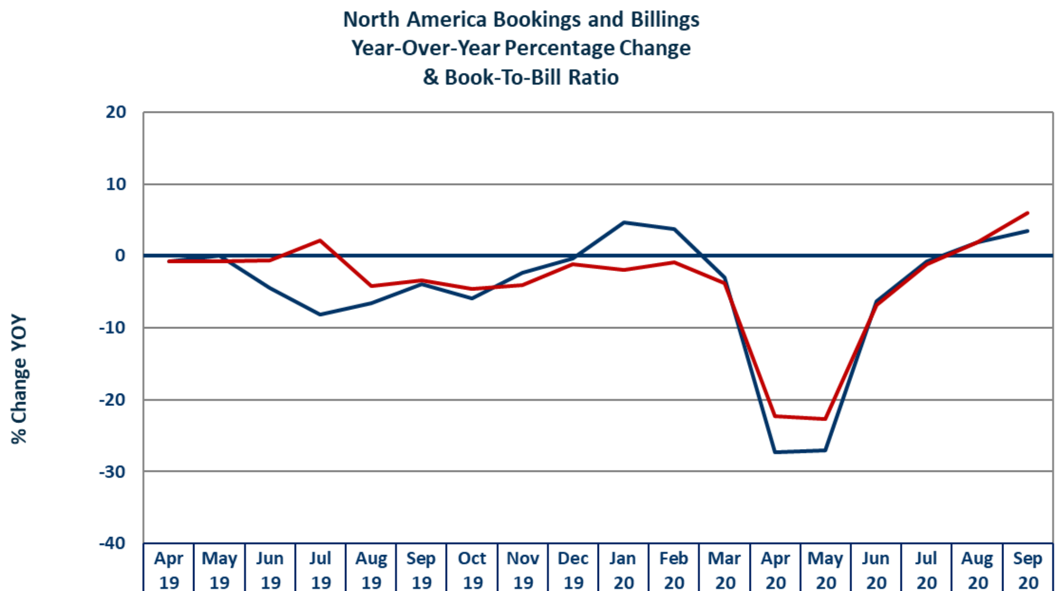
- Japan saw the largest increase in sales month-over-month in August, up +5.7% followed by China, up +4.8%.

- Year-over-year, all regions except Japan (-10.1%) grew with healthy gains in China (+8.1%), Europe (+7.5%), and North American (+6.0%).

- Year-to-date, billings were down -6.3%. Although still in negative territory this is +3.3% higher than August billings. Sales in Japan and ROW were down double-digits, YTD. China, the region with the strongest recovery, was up +0.2% YTD in September.

- **Worldwide connector sales in September were +2.1% above their pre-COVID levels (February 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.



	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20
Bookings YOY	-0.7	0.0	-4.5	-8.2	-6.6	-3.9	-5.9	-2.3	-0.3	4.7	3.8	-3.0	-27.3	-27.0	-6.3	-0.8	1.9	3.5
Billings YOY	-0.7	-0.8	-0.6	2.1	-4.2	-3.4	-4.6	-4.1	-1.2	-2.0	-0.9	-3.8	-22.3	-22.7	-6.8	-1.2	1.9	6.0
Billings SEQ	-4.9	10.4	-5.1	1.3	7.2	-7.7	-3.1	7.1	-8.1	-4.1	13.7	-7.4	-23.2	9.8	14.5	7.4	10.6	-3.9
BTB	1.06	0.98	0.96	0.93	0.99	0.96	1.01	1.00	1.02	1.11	1.09	1.06	0.99	1.01	0.97	0.93	0.99	0.93

North America Performance

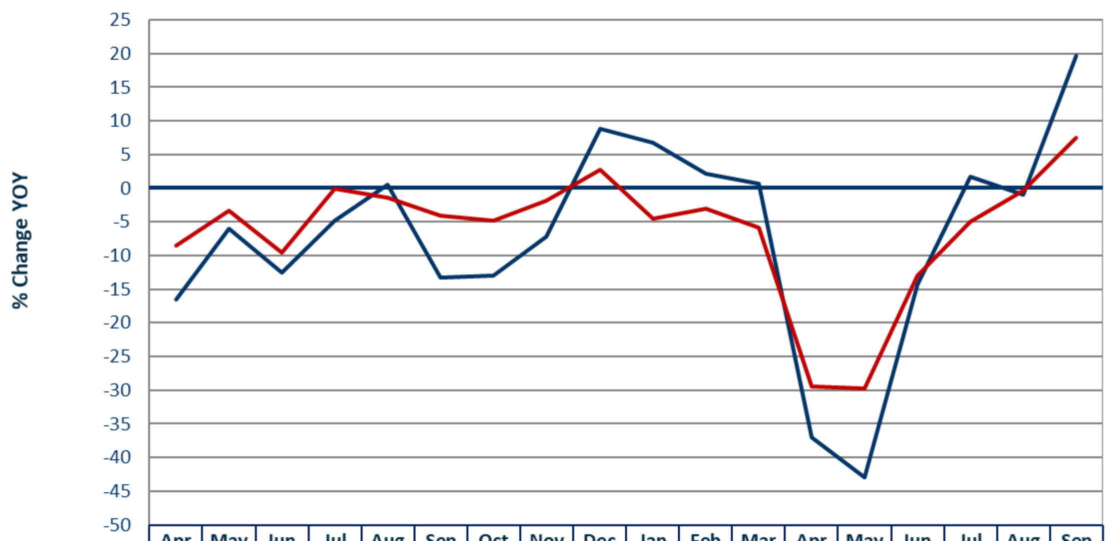
- Sales grew +6.0% and orders were up +3.5% YOY in September. North American billings weakened on a sequential basis, down -3.9%. Book-to-bill slipped to 0.93.
- United States' GDP grew at the fasted rate on record, up 33.1% on an annualized basis. Economic output rose 7.4% compared with the previous quarter (this is the metric used by many of the advanced economies to report GDP in this report). Mexico grew 12% compared to the prior quarter.
- Industrial production fell 7.3% YOY and slipped 0.6% sequentially in September.
- Unemployment in the US fell to 7.9% in September from 8.4% in August. The number of unemployed fell by one million to 12.6 million. The unemployment rate was 6.7% above pre-COVID-19 February 2020 levels.
- Retail sales in the United States increased 5.4% in September YOY. Sequentially, retail sales climbed 1.9%.
- September automotive sales were up 6.8% versus a year ago.
- The two-week average in COVID-19 cases was up 42.0% and deaths increased 5.4%. (World average cases increased 32.4%, deaths increased 25.8%.) Data as of November 3, 2020. Source: https://www.statnews.com/feature/coronavirus/covid-19-tracker/

Conclusions

North American connector sales in September were up +2.0% from their pre-COVID crisis level (February 2020). Bishop forecasts North America's full-year 2020 to be down -5.4%.

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 Bookings and Billings
Year-Over-Year Percentage Change
& Book-To-Bill Ratio



	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20
Bookings YOY	-16.6	-6.0	-12.6	-4.8	0.5	-13.3	-13.0	-7.2	8.8	6.7	2.2	0.7	-37.0	-43.0	-14.3	1.7	-1.0	19.7
Billings YOY	-8.6	-3.4	-9.5	-0.1	-1.4	-4.1	-4.8	-1.9	2.7	-4.6	-3.0	-5.8	-29.5	-29.7	-13.0	-5.0	-0.4	7.5
Billings SEQ	-5.4	14.7	-12.8	1.8	6.0	-4.3	-1.9	9.9	-22.0	13.5	13.9	-11.5	-29.2	14.3	8.0	11.2	11.2	3.4
BTB	0.99	1.05	0.98	1.02	1.00	0.90	0.96	0.99	1.14	1.08	1.05	1.07	0.88	0.85	0.97	1.09	1.00	1.00

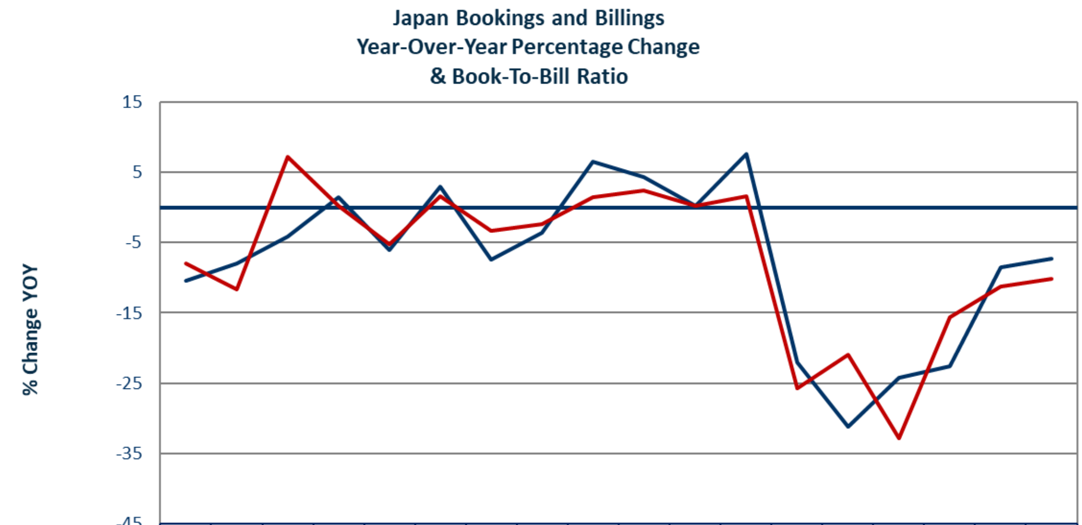
Europe Performance

- YOY billings grew +7.5%, the first positive reading since December 2019. Orders rebounded up +19.7% and the book-to-bill ratio remained steady at 1.00. Sequentially, sales increased +3.4%.
- Euro zone GDP expanded 12.7% in the third quarter. France grew by 18.2% and Germany by 8.2%.
- Retail sales rose 3.7% YOY in August and dipped 4.4% month-over-month.
- Euro area car registrations increased sequentially for the third consecutive month.
- Business confidence rose to -0.74 in October, better than the -1.19 recorded the prior month. The IHS Markit Eurozone Manufacturing PMI increased to 54.8 in October 2020, up from 53.7 in September.
- COVID-19 cases in Germany increased 154.2% and deaths increased 3,606.2% (two-week average change). France: Cases up 74.3% and deaths up 185.3%. United Kingdom: Cases down 18.5 and deaths down 16.0%. Source: https://www.statnews.com/feature/coronavirus/covid-19-tracker/ as of November 3, 2020.

Conclusions

Europe's connector sales in September were down -1.2% from their pre-COVID crisis level (February 2020). Bishop's full-year 2020 forecast is for Europe to be down -8.5%.

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.



	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20
Bookings YOY	-10.4	-8.0	-4.1	1.5	-6.1	2.9	-7.4	-3.6	6.5	4.3	0.2	7.6	-22.0	-31.2	-24.2	-22.6	-8.5	-7.3
Billings YOY	-8.0	-11.6	7.1	0.2	-5.3	1.6	-3.3	-2.4	1.4	2.4	0.2	1.6	-25.7	-21.0	-32.8	-15.6	-11.2	-10.1
Billings SEQ	-2.1	-0.9	20.5	-14.4	4.7	4.4	-10.7	10.8	-7.2	-6.5	12.1	-3.6	-25.7	1.8	2.4	7.5	10.2	5.7
BTB	1.02	0.99	0.86	1.01	0.99	0.97	0.99	1.00	1.09	0.97	1.00	1.03	1.04	0.87	0.97	0.91	1.02	0.99

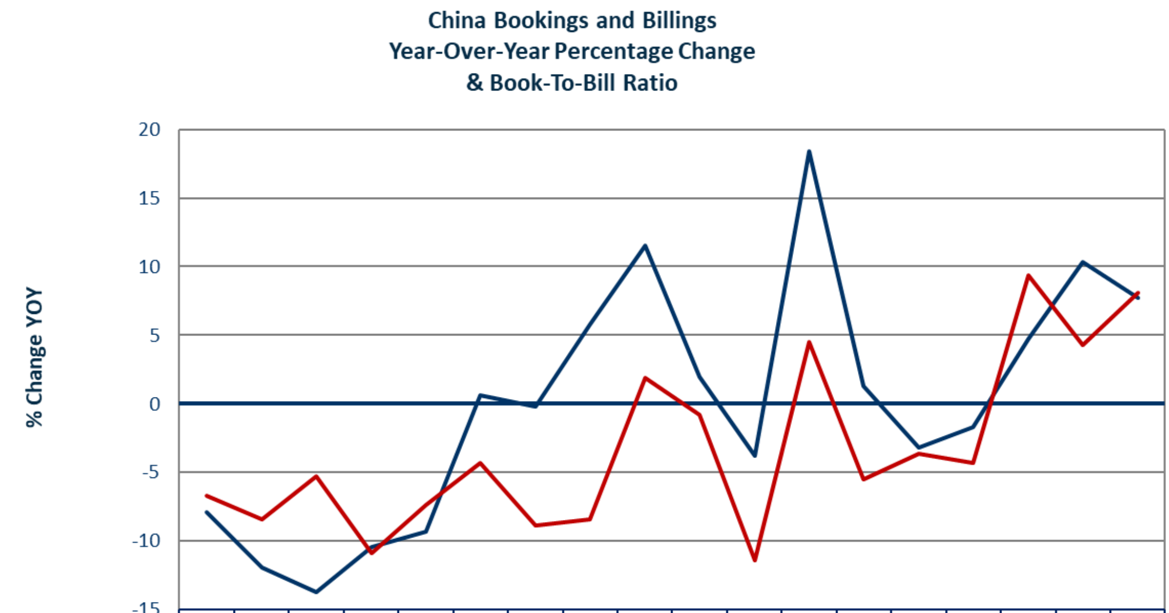
Japan Performance

- Japan's book-to-bill ratio declined to 0.99 in September. Bookings and billings continued their decline in September, declining -7.3% and -10.1%, respectively. Sequentially, Japan's sales rose +5.7%.
- Industrial production increased 4.0% from last month but declined 9.0% year-over-year in August.
- August 2020 retail sales fell 8.7% YOY and sequentially 0.1%.
- The unemployment rate remained at 3.0% in August 2020.
- Exports declined 4.9% YOY in August, the 22nd straight month of decline in exports. Exports to the US rose 0.7%, and sales to China jumped 14.0%. YOY, manufacturing production decreased 13.8% in August.
- Business manufacturing sentiment rose (-27) in August from the eleven-year low in the prior month.
- COVID-19 cases in Japan declined 20.8% and deaths increased 57.1% (two-week average change). Source: https://www.statnews.com/feature/coronavirus/covid-19-tracker/ as of November 3, 2020.

Conclusions

Japan connector sales in September were down -6.6% from their pre-COVID crisis level (February 2020).Japan has performed the worst by this metric. Bishop's full-year 2020 forecast is for Japan to be down -11.5%. Japan has had a difficult year and is the second worst performing region 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.



	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20
Bookings YOY	-7.9	-11.9	-13.7	-10.4	-9.3	0.6	-0.2	5.8	11.5	2.0	-3.8	18.4	1.3	-3.2	-1.7	4.7	10.3	7.7
Billings YOY	-6.7	-8.4	-5.3	-10.9	-7.4	-4.3	-8.9	-8.4	1.9	-0.8	-11.4	4.5	-5.5	-3.6	-4.3	9.4	4.3	8.1
Billings SEQ	-2.9	5.4	1.1	-8.0	10.7	1.2	-2.6	6.8	-0.7	-11.2	-15.0	25.8	-12.2	7.6	0.3	5.2	5.6	4.8
BTB	1.02	0.97	0.90	1.04	1.03	1.02	1.03	1.08	0.99	1.07	1.12	1.09	1.10	0.97	0.92	0.99	1.09	1.02

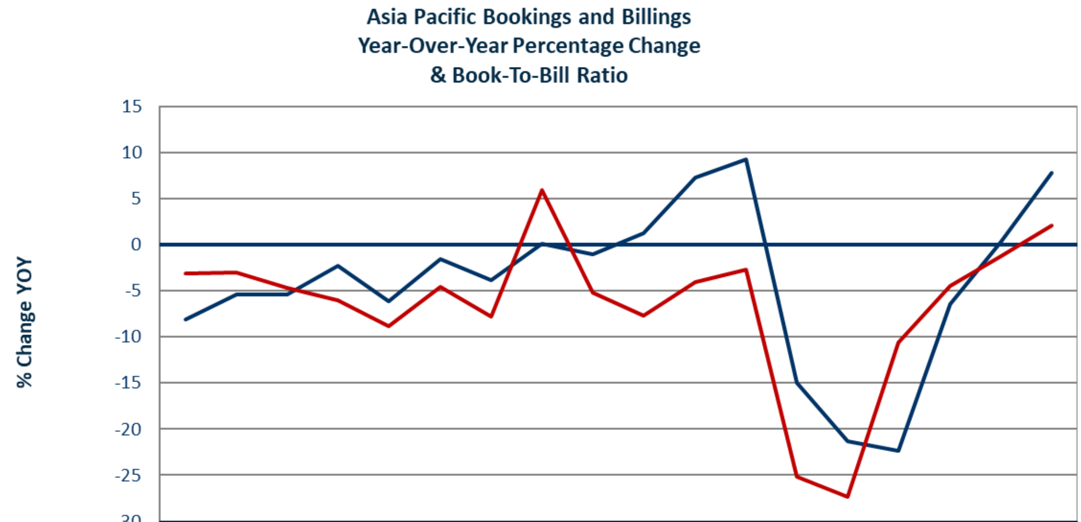
China Performance

- Sales and orders, year-over-year, increased +8.1% and +7.7% respectively. The BTB was 1.02. Sequentially, sales grew +4.8%.
- Industrial production increased 6.9% YOY in September, the highest increase since December 2019. Sale in electrical machinery climbed 15.9% and computer, communications, and electronic equipment rose 8.0% YOY.
- Retail sales grew 3.3% YOY in September and were up 2.25% versus the prior month. China's auto sales in September grew for the sixth successive month, up 12.8% YOY to 2.57 million units.
- Exports rose 9.9% YOY in September. September imports jumped 13.2% YOY to an all-time of USD 202.8 billion. Imports from the US jumped 24.7% YOY.
- In China, the two-week change in COVID-19 cases declined 11.8% with no deaths reported. Source: https://www.statnews.com/feature/coronavirus/covid-19-tracker/ as of September 23, 2020.

Conclusions

China connector sales in September were up +4.7% from their pre-COVID crisis level (November 2019). Bishop expects connector sales in China to grow +1.2% in 2020, making China the most resilient region. China was the first region impacted by the coronavirus pandemic, but the country corrected its course and is on track to be the only region with YOY connector growth.

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.



	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20
Bookings YOY	-8.1	-5.4	-5.4	-2.3	-6.1	-1.6	-3.8	0.1	-1.0	1.3	7.3	9.3	-15.0	-21.3	-22.4	-6.4	0.3	7.8
Billings YOY	-3.1	-3.0	-4.7	-6.0	-8.8	-4.6	-7.8	5.9	-5.2	-7.7	-4.1	-2.7	-25.2	-27.3	-10.6	-4.5	-1.2	2.1
Billings SEQ	-0.3	6.3	-6.3	2.4	3.5	-1.6	-3.3	21.8	-16.2	-8.9	4.6	0.0	-13.7	3.0	-2.3	14.8	7.0	1.7
BTB	0.98	0.99	1.00	1.03	0.99	1.00	1.03	0.95	1.04	1.08	1.11	1.11	0.98	0.96	0.91	1.01	1.01	1.06

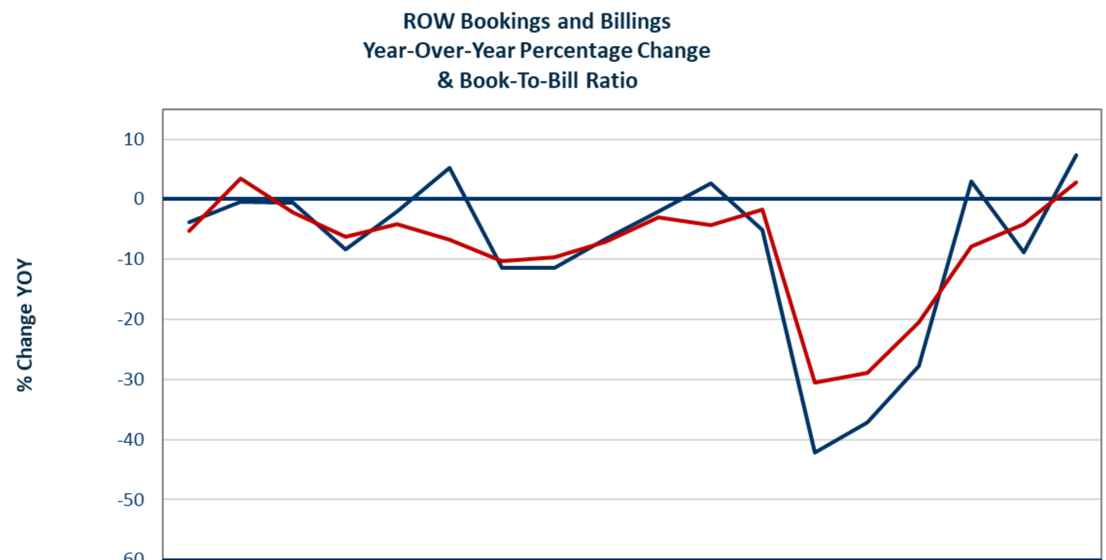
Asia Pacific Performance

- Orders climbed 7.8% in September and sales were up 2.1% YOY. The book-to-bill ratio strengthened to 1.06. Sequentially, sales in September grew a third consecutive month, up +1.7%.
- India: In August, industrial production contracted 8.0% YOY, and on a month-on-month basis, it decreased 1.3%. Manufacturing production in August decreased 8.6% YOY. India's trade deficit narrowed from $6.77 billion in August to $2.72 in September, and exports rose 6.0% highest since February.
- South Korea's 3Q 2020 GDP grew 1.9% over 2Q 2020. Industrial production jumped 8.0% YOY and rose 5.4% over the previous month in September. Exports in South Korea rose 7.7% in September from a year earlier. The manufacturing production increased 8.3% YOY.
- India's two-week change in COVID-19 cases rose 8.8%, while deaths dropped 5.8%.
- South Korea's two-week change in COVID-19 cases fell 22.7%, while deaths rose 100.0%. Source: https://www.statnews.com/feature/coronavirus/covid-19-tracker/ as of November 3, 2020.

Conclusions

Asia Pacific connector sales in September were up +8.5% from their pre-COVID crisis level (February 2020). Bishop forecasts 2020 connector sales in the Asia Pacific region to be down -6.7% YOY.

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.



	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20
Bookings YOY	-3.8	-0.4	-0.6	-8.4	-2.0	5.3	-11.4	-11.4	-6.6	-2.1	2.6	-5.1	-42.1	-37.1	-27.7	3.0	-8.8	7.4
Billings YOY	-5.3	3.5	-2.2	-6.2	-4.1	-6.7	-10.3	-9.7	-7.0	-3.1	-4.3	-1.8	-30.5	-28.9	-20.5	-7.8	-4.1	2.8
Billings SEQ	0.1	8.3	-4.9	2.7	6.5	-4.5	-4.5	6.1	-10.2	-9.6	10.7	-5.5	-25.0	10.9	6.3	19.1	10.8	2.4
BTB	1.04	1.00	1.06	0.98	1.03	0.94	0.95	1.00	1.04	1.17	1.14	1.06	0.86	0.88	0.96	1.10	0.97	1.02

Rest of World Performance

- Orders and sales increased +7.4% and +2.8% YOY in September, respectively. Sequentially, sales in the region grew +2.4%. The book-to-bill ratio rose to 1.02.
- Brazil's industrial production was down 27% YOY in August, while it increased 3.2% over the prior month. Retail sales increased 6.1% in August YOY and increased 3.4% over the previous month. The inflation rate rose to 3.14% in September. The manufacturing PMI inched up in September, increasing to 64.9 from 64.7 the prior month.
- Russia's industrial production dropped 5.0% YOY in September. Exports sunk 32.3% in August. The country's trade surplus fell further to $3.72 billion in August, from $12.35 billion in the same period in 2019. The inflation rate increased to 3.7% YOY in September. (Bank of Russia inflation target is 4.0%). The unemployment rate declined slightly to 6.3% in September from 6.4% the previous month.
- Brazil's two-week change in COVID-19 cases and deaths decreased 3.0% and 18.3%, respectively. Source: https://www.statnews.com/feature/coronavirus/covid-19-tracker/ as of November 3, 2020.
- Russia's two-week change in COVID-19 cases and deaths rose 26.3% and 43.4%, respectively.

Conclusions

Rest of the World connector sales in July were up +12.8% from their pre-COVID crisis level (February 2020). Bishop forecasts 2020 connector sales to decline -11.9%, making this the worst performing region.

3Q20 Connector Industry Results

Industry sales increased +1.3% YOY in 3Q20 to $16,689 million, the largest increase since 3Q18.

The following table shows industry sales by quarter for 2018, 2019, and 2020. Our full year 2020 forecast is $60,954 million, down -5.0% from prior year.

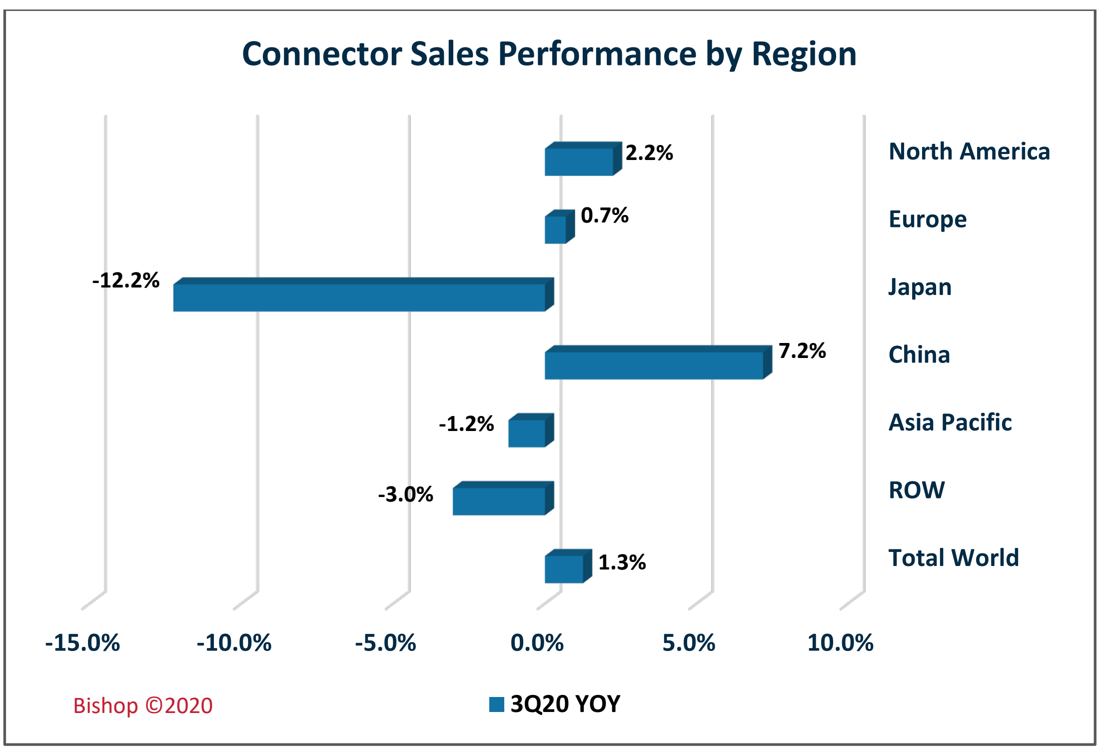
Connector Industry Quarterly Sales Results
2018, 2019, and 2020

Quarter	2018 Actual	2019 Actual	YOY Change	2020 Forecast	YOY Change
1Q	$16,212	$15,890	-2.0%	$15,397	-3.1%
2Q	$16,875	$16,097	-4.6%	$13,333	-17.2%
3Q	$17,150	$16,475	-3.9%	$16,689	1.3%
4Q	$16,473	$15,707	-4.7%	$15,534	-1.1%
Total	$66,710	$64,169	-3.8%	$60,954	-5.0%

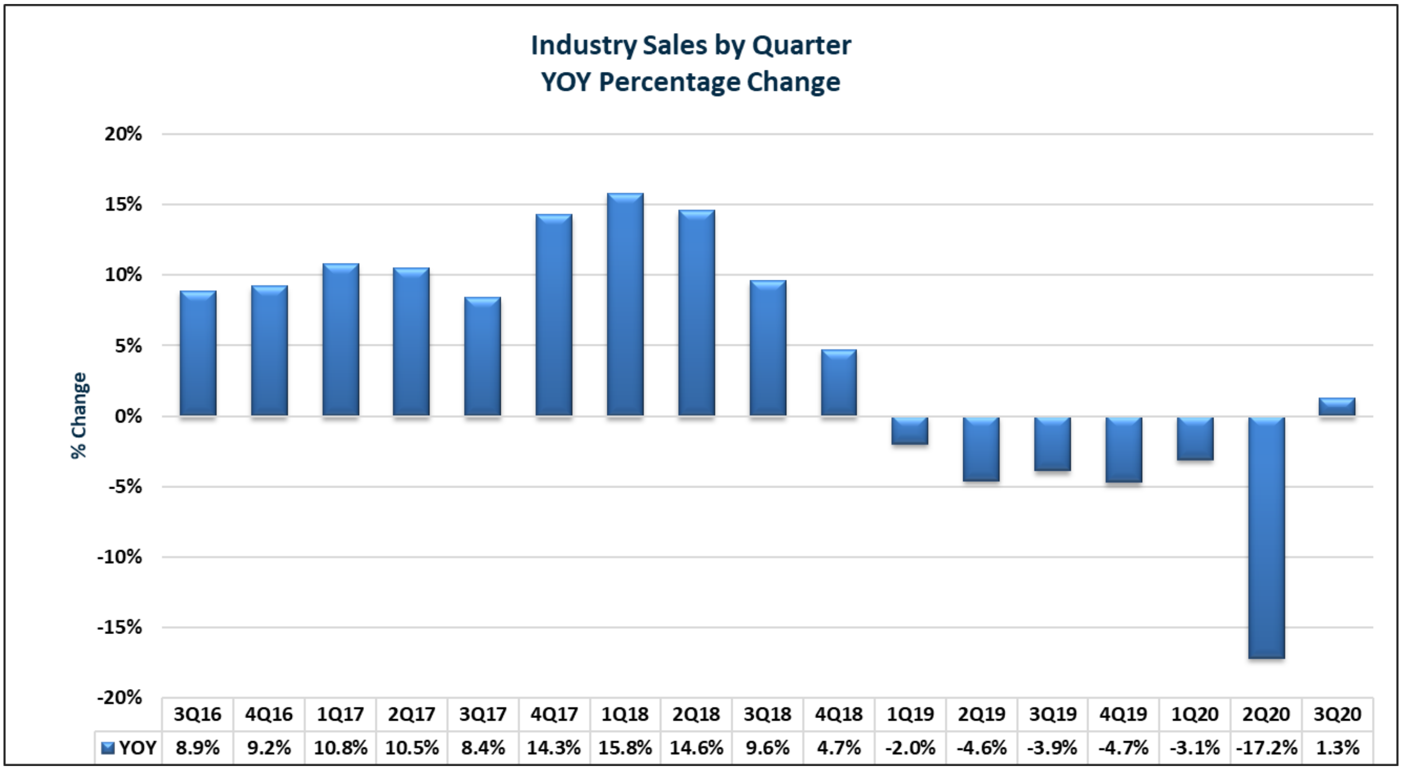
$ Million, Red = Forecast, Bishop ©2020

4Q20 will see modest declines, with the quarter projected to decline -1.1% YOY. Full year 2020 is forecast to be down -5.0%.

Sales contraction by region in the third quarter of 2020 can be seen in the following chart.



Connector industry sales growth can be seen in the following chart by quarter. The industry has reversed the six month declining trend with an increase in 3Q 2020 of +1.3%.



September 2020 YTD Currency Impact on Regional Industry Growth

The euro and the Chinese yuan continued their decline in value against the US dollar. The Japanese yen remained steady, up 1.5% YTD against the US dollar in September. The following table measures the impact for September 2019 versus September 2020 and shows the YTD results for these three currencies.

Local Currency to One USD
YTD September 2019 versus September 2020

Currency	2019	2020	% Change
Euro	0.8893	0.8900	-0.1%
Yuan	6.8616	6.9958	-1.9%
Yen	109.1218	107.4984	1.5%

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 year-to-date sales performance by region in US dollars and local currencies.

Industry Sales Performance
September YTD 2020
USD-vs-Local Currencies

Region	U.S.$	Local Currency
North America	-5.7%	-5.7%
Europe	-9.3%	-9.2%
Japan	-12.5%	-13.9%
China	0.2%	2.2%
Asia Pacific	-7.4%	-7.4%
ROW	-12.6%	-12.6%
World	**-6.3%**	**-5.9%**

Connector sales are 0.4 percentage points higher when stated in local currencies rather than in US dollars, putting industry performance at -5.9% YTD in September (versus -6.3% 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. Korean won. These regions are listed in the following table.

Local Currency to One USD
September YTD 2019 versus September 2020

Currency	2019	2020	% Change
Swiss Franc	0.9949	0.9506	4.7%
S. K. Won	1161.2829	1199.9473	-3.2%
Russian Ruble	65.1005	70.9463	-8.2%
Taiwan Dollar	31.0350	29.7765	4.2%
Indian Rupee	70.1648	74.2812	-5.5%
Singapore Dollar	1.3648	1.3901	-1.8%

Identifying the Top 10 is Harder Than You Think

Design engineers and purchasing personnel want to use the best connector companies for their business requirements. However, identifying the best companies is not an easy task. Answers to the following questions are important:

- Which companies offer the products and services required?
- Which companies offer fast delivery, reasonable prices, and high-quality products?
- Which companies are easy to do business with on a regular basis?
- Which companies can we count on when there is a problem?

The answers to these questions are not easy to uncover. It takes experience. It takes time. Only a track record of quality products and service will identify companies that should become part of your supply chain.

The first step is to identify successful companies. We believe identifying the top 10 companies, using different definitions of what constitutes top 10, is the logical starting point for identifying the best connector suppliers. Specifically, who are the:

- Top 10 in world sales
- Top 10 in each geographic region
- Top 10 by product type manufactured
- Top 10 within each market served

This article will identify the companies in the above four classifications. You may elect to further refine your selection by considering factors such as region. For example, you might look at the largest companies that offer a specific type of connector in North America, Europe, China, Japan, etc. Who are the leading companies in Germany that supply military circular connectors or have heavy-duty power types? This is a more granular approach that serves specific company goals, but first, the designer or buyer should always examine the largest companies. We believe that achieving size suggests a level of quality. After all, customers have rewarded them with their business for a reason.

The remainder of this article identifies the largest companies in total world sales, sales by regions, sales by market sector, and sales by product manufactured.

Information compiled for this article was obtained from Bishop & Associates' 2020 version of the Top 100 Connector Manufacturer's research report. To learn more about companies that ranked among the top 100 connector manufacturer's order your copy today.

Top 10 in World Sales

In the last article, Bishop identified the top 10 largest connector manufacturers by 2019 sales, in comparison to 2018 sales.

Top 10 Ranked
By World Sales

2019 Rank	Manufacturer	2018 Sales	2019 Sales	Percent Change
1	TE Connectivity	$10,304.0	$9,916.0	-3.8%
2	Amphenol	$7,567.5	$7,339.7	-3.0%
3	Molex	$5,093.0	$5,301.0	4.1%
4	Aptiv (FKA Delphi Connection)	$3,511.0	$3,373.2	-3.9%
5	Foxconn (FIT)	$3,195.2	$3,092.3	-3.2%
6	Luxshare Precision	$2,716.9	$2,974.6	9.5%
7	Yazaki	$2,692.0	$2,471.0	-8.2%
8	JAE	$1,947.0	$1,628.0	-16.4%
9	J.S.T.	$1,475.0	$1,350.0	-8.5%
10	Rosenberger	$1,214.1	$1,213.4	-0.1%
	Total Top 10	**$39,715.6**	**$38,659.2**	**-2.7%**
	Total All Other	**$26,994.5**	**$25,509.9**	**-5.5%**
	Total World	**$66,710.1**	**$64,169.1**	**-3.8%**

$ Millions

Top 10 by Geographic Region

Here we identify the 10 largest connector companies by region. In 2019, 25 companies made this list. This is up one company from 2018, when 24 companies made this list.

2019 Top 10 by Geographic Region

2019 Rank	North America	Europe	Japan	China	Asia Pacific	ROW
1	TE Connectivity	TE Connectivity	TE Connectivity	Luxshare	Amphenol	Amphenol
2	Molex	Amphenol	J.S.T.	Foxconn (FIT)	TE Connectivity	TE Connectivity
3	Amphenol	Aptiv	Yazaki	Amphenol	Yazaki	Yazaki
4	Aptiv	Molex	JAE	TE Connectivity	Foxconn (FIT)	Sumitomo
5	Yazaki	Rosenberger	Molex	Molex	Molex	Aptiv
6	Rosenberger	HARTING	Hirose	JONHON	JONHON	Foxconn (FIT)
7	Samtec	Yazaki	Sumitomo	Aptiv	Aptiv	KET
8	Carlisle	Phoenix Contact	AVX/Kyocera	JAE	JAE	Rosenberger
9	Winchester	Samtec	Amphenol	Shenzen Deren	LOTES	Fujikura/DDK
10	J.S.T.	Weidmüller	IRISO	Hirose	Hirose	JAE

Top 10 by Market Sector

The following table identifies the top 10 in the 11 market sectors.

2019 Top 10 Ranked by Market Sector

Rank	Computers and Peripherals	Business Retail Education	Instruments	Medical Equipment	Industrial Equipment	Automotive Equipment
1	Foxconn (FIT)	Molex	Luxshare	TE Connectivity	Amphenol	TE Connectivity
2	Molex	TE Connectivity	Rosenberger	Molex	TE Connectivity	Yazaki
3	Luxshare	J.S.T.	Molex	Amphenol	Molex	Aptiv
4	LOTES	Foxconn (FIT)	TE Connectivity	Luxshare	HARTING	JAE
5	Amphenol	Luxshare	LEMO SA	LEMO SA	Phoenix Contact	Rosenberger
6	Shenzhen Deren	Fujikura/DDK	Foxconn (FIT)	Samtec	J.S.T.	J.S.T.
7	Foxlink	Hirose	Hosiden	ODU	Belden, Inc.	Sumitomo
8	JAE	JAE	Samtec	Fujikura/DDK	Weidmüller	IRISO
9	Corning	Shenzhen Deren	Amphenol	Winchester	Samtec	AVX/Kyocera
10	Samtec	IRISO	Radiall	BizLink	Fujikura/DDK	Amphenol

Rank	Transportation Equipment	Military Electronics	Telecom Datacom Equipment	Consumer Electronics	Other Electronics Equipment
1	Aptiv	Amphenol	Amphenol	Molex	TE Connectivity
2	TE Connectivity	JONHON	Molex	TE Connectivity	Aptiv
3	Amphenol	Glenair	Luxshare	J.S.T.	Sumitomo
4	Molex	Carlisle	JAE	BizLink	Hirose
5	Carlisle	Bel	TE Connectivity	Luxshare	Amphenol
6	Yazaki	Radiall	Rosenberger	CommScope	Foxconn (FIT)
7	Sumitomo	TE Connectivity	CommScope	Lumberg	JAE
8	Korea Electric	Souriau	Hirose	Amphenol	Molex
9	Souriau	Aptiv	Foxconn (FIT)	Hirose	ODU
10	Hirose	ITT	JONHON	Foxconn (FIT)	Korea Electric

When market sector is used as the definition, 39 companies achieve top 10 ranking.

Top 10 by Product Manufactured

The following table identifies the 10 largest manufacturers of the 12 major product categories.

2019 Top 10 Ranked by Product Type

Rank	PCB	I/O Rectangular	IC Sockets	RF	Circular	Telephone/ Telecom
1	TE Connectivity	TE Connectivity	TE Connectivity	Rosenberger	Amphenol	Molex
2	Molex	Luxshare	LOTES	Amphenol	TE Connectivity	Luxshare
3	Amphenol	Foxconn (FIT)	Foxconn (FIT)	TE Connectivity	LEMO SA	Amphenol
4	Foxconn (FIT)	Molex	Molex	Luxshare	Carlisle	TE Connectivity
5	Luxshare	JAE	*Enplas**	HUBER+SUHNER	JONHON	Foxconn (FIT)
6	J.S.T.	Amphenol	Yamaichi	I-PEX	Belden	CommScope
7	Samtec	J.S.T.	Amphenol	Hirose	Souriau	*Telegärtner**
8	Shenzhen Deren	Aptiv	*Sensata**	CommScope	Glenair	Yamaichi
9	JAE	Yazaki	Foxlink	Radiall	Aptiv	Foxlink
10	AVX/Kyocera	Radiall	Shenzhen Deren	JONHON	Molex	Hirose

Rank	Fiber Optic	Terminal Blocks	Heavy Duty	Power/ High Voltage	Application Specific	Other
1	TE Connectivity	Phoenix Contact	HARTING	Amphenol	Aptiv	JAE
2	Foxconn (FIT)	WAGO	Amphenol	Molex	TE Connectivity	Hirose
3	Amphenol	Weidmüller	TE Connectivity	TE Connectivity	Yazaki	TE Connectivity
4	Molex	TE Connectivity	Molex	J.S.T.	Amphenol	Amphenol
5	Corning	Amphenol	JONHON	Yazaki	Molex	Yazaki
6	CommScope	Molex	Souriau	Rosenberger	Sumitomo	Molex
7	JONHON	*Wieland**	J.S.T	Aptiv	BizLink	Winchester
8	Aptiv	AVX/Kyocera	Phoenix Contact	JONHON	KET	Aptiv
9	Rosenberger	*Eaton**	Winchester	Luxshare	Kostal	JONHON
10	HUBER+SUHNER	*Lumberg**	Aptiv	ERNI	Rosenberger	Radiall

**Denotes company appearing in top 100, but not top 50*

When products manufactured are the definition, 44 companies achieved top 10 ranking.

Companies with Top 10 Status

The following table identifies the 50 companies that achieved a top 10 ranking in 2019 using sales by regions, markets, and products as the defining factors. The table also notes the number of top 10 mentions under each of the three definitions. In 2018, 49 companies made this list.

Companies in 2019 with Top 10 Ranking

World Rank	Company Name	Regions	Products	Markets	Total
1	TE Connectivity	6	12	10	28
2	Amphenol	6	12	10	28
3	Molex	5	11	9	25
4	Aptiv (FKA Delphi Connection)	4	7	4	15
5	Foxconn (FIT)	3	5	6	14
6	Luxshare Precision	1	5	6	12
7	Yazaki	5	4	2	11
8	JAE	4	3	5	12
9	J.S.T.	2	4	4	10
10	Rosenberger	3	4	3	10
11	Hirose	3	3	5	11
12	Sumitomo	3	1	3	7
13	JONHON	1	6	2	9
14	HARTING	1	1	1	3
15	Samtec	2	1	4	7
16	Shenzhen Deren Electr. Co., Ltd.	1	2	2	5
17	Phoenix Contact	1	2	1	4
18	Fujikura/DDK Ltd.	1		3	4
19	LOTES Co. Ltd.	1	1	1	3
20	Korea Electric Terminal Co., Ltd.	2	1	2	5
21	BizLink Technology Inc.		1	2	3
22	Carlisle Interconnect	1	1	2	4
23	AVX/Kyocera	1	2	1	4
24	CommScope		3	2	5
25	Radiall		3	2	5
26	Belden, Inc.		1	1	2
27	HUBER+SUHNER		2		2
28	IRISO Electronics	1		2	3
29	Souriau		2	2	4
30	Hosiden			1	1
31	Glenair		1	1	2
32	ITT Interconnect Solutions			1	1
33	LEMO S.A.		1	2	3
34	Kostal Kontakt Systeme GmbH		1		1
35	Winchester Electronics	1	2	1	4
36	Corning Inc.		1	1	2
37	Bel Connectivity			1	1
39	Weidmüller Interface GmbH & Co.	1	1	1	3
40	WAGO		1		1
41	Yamaichi		2		2
42	ODU GmbH & Co. KG			2	2
44	Foxlink		2	1	3
45	I-PEX Co., Ltd.		1		1
46	ERNI Electronics GmbH		1		1
54	Lumberg Connect GmbH		1	1	2
58	Enplas		1		1
59	Telegartner		1		1
65	Weiland		1		1
78	Eaton		1		1
85	Sensata		1		1
	Number of Companies	**25**	**44**	**39**	**50**

We identified 50 companies with a top 10 ranking. We believe this information is very useful to the engineering community in identifying, researching, and selecting the companies with whom to partner. Specific needs or goals will guide your ultimate decision, but a review of the leaders gives you a strong starting point.

The quest for the right supplier for your company is not easy. However, identifying the top companies under various definitions makes a difficult task easier.

Bishop & Associates tracks a wealth of information about the connector industry, including over 750 connector company profiles. The profiles may be sorted by annual sales, region, country, markets served, and products manufactured. Each sort prepares a report that may be downloaded and saved.

The World's Connector Companies site is a valuable tool in your search for connector companies that meet your requirements. Contact Lynda Nolen at lnolen@bishopinc.com for a demonstration of how the site works. The "Go-to-Meeting" conference call requires about 30 minutes — 30 minutes that could save you hours, even days, in your search for that perfect partner.

Top 100 Connector Manufacturers

Bishop & Associates has just released a new ten-chapter research report providing a comprehensive analysis of the world's Top 100 Electronic Connector Manufacturers. This new report furnishes detailed statistics that benchmark the leading connector manufacturers by 2018/2019 total sales, sales by end-use equipment market, sales by product category, and many other key industry measurements. All manufacturers are exhibited by 2019 sales and are ranked by region of the world with percent year-to-year change. This report provides all the key data needed to analyze the sales performance of each of the top 100 worldwide electronic connector suppliers.

The world's top 100 connector manufacturers recorded 2019 shipments of $59.756 billion. This represented 93.1% of the worldwide connector market, up from 92.3% in 2018. The balance of the connector industry had 2019 shipments of $4.413 billion and represented 6.9% of the total market.

Over the last decade, we have identified more than 750 connector manufacturers. Over time, many of these have been acquired by larger companies. In fact, if you were to review the list of top 100 connector companies in 2000 with the list of the top 100 connector companies in 2019, you would see that approximately 40% of the companies listed in 2000 were acquired by other companies. Many connector companies offer highly focused product offerings, or support niche markets or specific regions. We continue to discover additional connector companies, especially in China and other developing countries, as well as non-connector companies who are expanding their current product offering to include interconnect, or who are developing application specific connectors to support their other products.

The following table shows percent of sales for the top 100 connector manufacturers, and all other connector manufacturers by geographic region.

Top 100 by Geographic Region - 2019 Sales

Region	1 - 100 Sales	All Other Sales	Total World
North America	XX.X%	X.X%	XX.X%
Europe	XX.X%	X.X%	XX.X%
Japan	X.X%	X.X%	X.X%
China	XX.X%	X.X%	XX.X%
Asia Pacific	XX.X%	X.X%	XX.X%
ROW	X.X%	X.X%	X.X%
Total World	**93.1%**	**6.9%**	**100.0%**

$ Millions

TOP 100 CONNECTOR MANUFACTURERS

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