

Issue No. 331 2nd Quarter 2020 June 2020

Connector Industry Sales and Orders Grew Sequentially in May

Regional Performance:

Sequentially, all regions grew in May, with Europe up +16.4% and ROW up +15.4%. This is a strong indicator that April will likely be the worst month in the COVID-19 crisis period. Bookings sequentially indicate weakness in Japan and China, with a month-over-month decrease of -15.3% and -4.6%, respectively.

Currency Impact:

Strength in the US dollar continues to put downward pressure on the euro, down -2.9%, and the yuan, down -3.7%. In local currencies, the connector industry declined -11.7% versus -13.0%, expressed in US dollars.

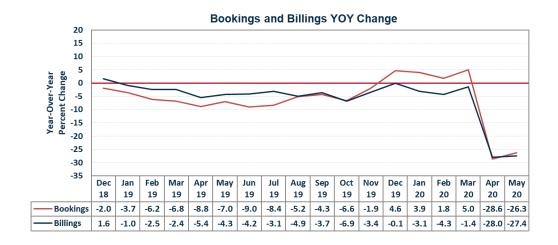
How's Business? OEM:

The largest OEM purchasers of electronic connectors significant underwent а downturn in the first quarter of Sectors negatively impacted by the COVID crisis included Transportation. Industrial, and Medical, each down double digits compared to a year ago. The least impacted markets were Semiconductors (+15.4%),Instrumentation (+3.85), and Mil/Aero (+0.0%).

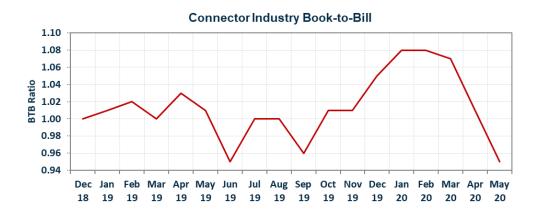
Merger and Acquisition Services Buy & Sell-Side

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May 2020 **billings** continued to fall, declining -27.4%. Sequential May orders and sales both grew +3.1% and +9.8%, respectively, as world economies started to come back online. May 2020 **bookings** slumped -26.3% over the same month in the prior year, due to constrained demand by a shackled economy. In the first five months of 2020, bookings dropped -9.9% and billings declined -13.0%. In the upcoming months, Bishop will emphasize sequential sales and booking fluctuations. It is a better guide to the connector market's recovery post-COVID-19 lockdown.



In May, the book-to-bill ratio further weakened to 0.95.



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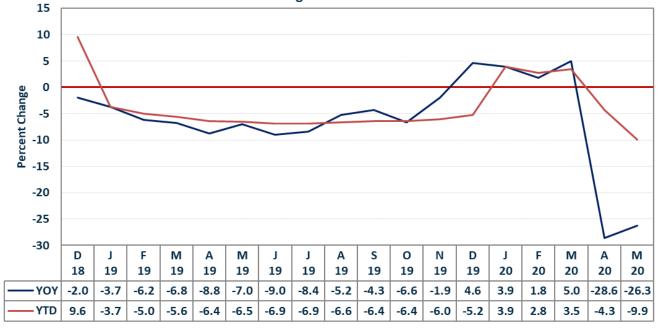


Booking Highlights and Conclusions

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

	Sequential		١	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%	-33.4%	17.7%	-8.8%	-28.6%	17.1%	-6.4%	-4.3%
May	4.9%	6.9%	3.1%	15.7%	-7.0%	-26.3%	16.8%	-6.5%	-9.9%
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



- May 2020 bookings fell -26.3% year-over-year (YOY).
- Orders contracted -9.9% year-to-date (YTD).
- Sequentially, orders climbed +3.1% over the prior month.
- The book-to-bill ratio for May was 0.95.

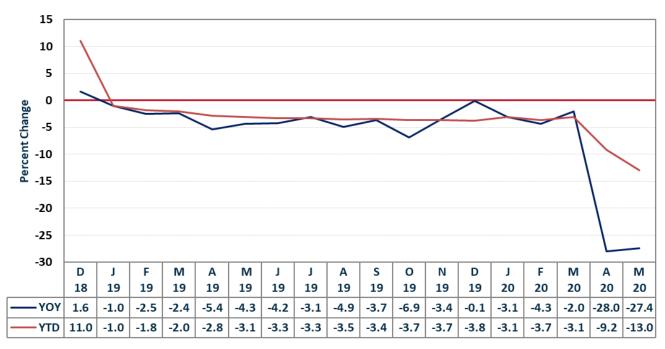


Billing Highlights and Conclusions

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

Sequential		١	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%	-29.2%	15.7%	-5.4%	-28.0%	15.7%	-2.8%	-9.2%
May	7.8%	9.0%	9.8%	13.2%	-4.3%	-27.4%	15.1%	-3.1%	-13.0%
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 fell -27.4% in May 2020 (YOY).
- Year-to-date sales fell -13.0%.
- Sequential billings grew +9.8%.
- YOY and YTD sales have now declined for 17 consecutive months.

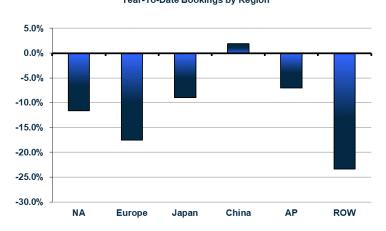


Regional Performance

May 2020 Bookings

Year-To-Date Bookings by Region

Region	Sequential	YOY	YTD
NA	13.2%	-27.3%	-11.6%
Europe	11.4%	-39.0%	-17.5%
Japan	-15.3%	-35.2%	-9.0%
China	-4.6%	-5.9%	1.9%
AP	0.0%	-23.2%	-7.0%
ROW	19.2%	-51.3%	-23.3%
Total	3.1%	-26.3%	-9.9%

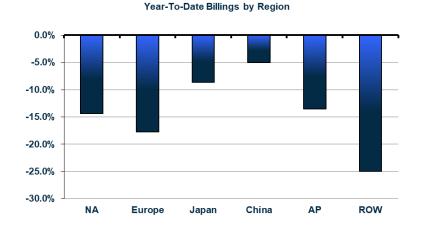


May bookings contracted -26.3% YOY and -9.9% YTD. Orders declined sharply in Europe, down -39.0%. ROW saw the greatest YOY decline of all the regions for a second month, down -51.3%. May experienced sequential growth in North America (+13.2%), Europe (+11.4%), and ROW (+19.2%). May sequential bookings declined in Japan (-15.3%) and China (-4.6%). The total world orders grew sequentially by 3.1%.

May 2020 Billings

nay 2020 Binings

Region	Sequential	YOY	YTD
NA	11.3%	-32.1%	-14.3%
Europe	16.4%	-37.5%	-17.8%
Japan	1.8%	-22.8%	-8.6%
China	8.0%	-7.8%	-5.0%
AP	3.3%	-27.3%	-13.5%
ROW	15.4%	-47.7%	-25.0%
Total	9.8%	-27.4%	-13.0%

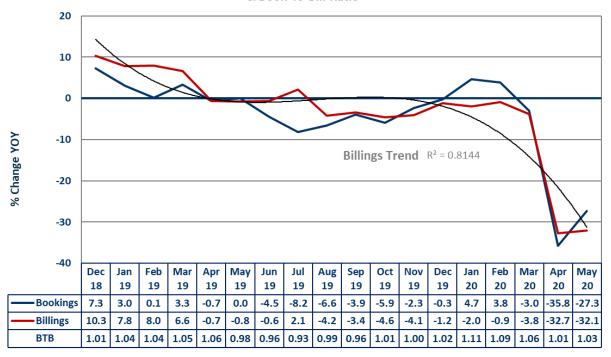


Worldwide, connector sales increased sequentially +9.8%, with all regions exhibiting positive month-overmonth sales growth. April, when much of the world was locked down to halt the spread of the coronavirus, appears to have been the bottom for the connector industry. Year-over-year billings declined -27.4%. The steepest declines once again this month were in Europe, down -37.5%, and ROW, down -47.7%. Bishop anticipates that last month will be the industry's worst month on record this year and that the industry will continue to see conditions incrementally improve over the succeeding months.



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.





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

North America Performance

- Sales for the month dropped -32.1%. Orders declined -27.3% in May. The region registered a book-to-bill of 1.03 for the month. Sequentially, North America's sales increased +11.3%.
- Industrial production fell 15.3% year-over-year in May 2020. April was revised higher at 16.2%. Sequentially, industrial production increased +1.4%.
- Unemployment in the US declined to 14.3% in May. The number of unemployed fell by 2.1 million to 21.0 million. Unemployment in Canada in May 2020 rose to 13.7% but below market expectations of 15.0%.
- Retail sales in the United States decreased 6.1% in May. Sequentially, retail sales climbed 17.7%.
- In May 2020, new US auto sales declined 32% year-over-year but were up 50% compared to the prior month.
- Prices for US imports increased 1.0% in May YOY, after declining 2.6% in April and 2.4% in March.

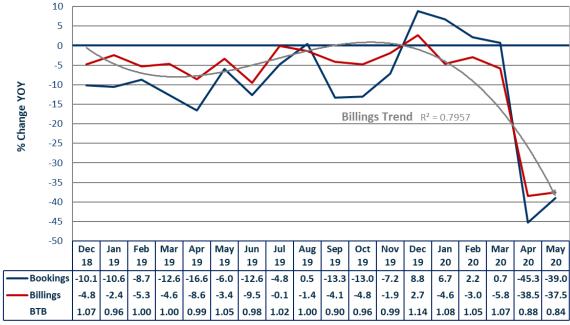
Conclusions

The United States has seen a recent uptick in COVID-19 cases, with California, Texas, and Arizona seeing their highest increases since the crisis began. The consumer economic data has yet to capture this latest trend. Several complications are clouding overall economic conditions in the US, including the uncertainty of a CARES Act extension, PPP loan drop-offs, and potential for future corporate insolvencies.



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.





Note: Billing Trend R² = Goodness of Fit of data to the trend line, 1.0 is a perfect fit.

Europe Performance

- YOY billings declined -37.5%, while orders dropped -39.0% and the book-to-bill ratio was 0.84. Sequentially, sales increased +16.4%, the largest billings increase month-over-month across all regions.
- Industrial production contracted 28.0% YOY in April and down 17.1 month-over-month.
- Retail sales in April fell 19.6% YOY, due largely to strict lockdown measures in the region.
- Euro Area car registrations contracted year-on-year 52.3% in May, after a decline of 76.3% in April 2020.
- Business confidence fell to -2.43 points in May, slightly worse than the -1.99 recorded the prior month. The IHS Markit Eurozone Manufacturing PMI rose to 46.9 in June 2020. Although this indicates continued output contraction, it is the third straight month-over-month increase.
- Consumer confidence in the Eurozone rose to 39.5 in May, from 33.4 in the prior month.

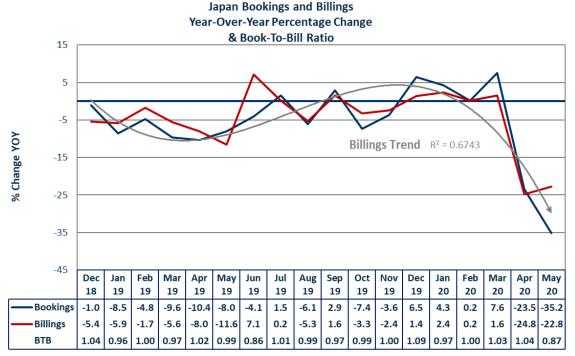
Conclusions

Overall, COVID-19 cases in Europe are trending downward. But Germany, Europe's largest economy, is seeing an alarming increase in cases in the state of North-Rhine Westphalia. In late June, the state announced a seven-day lockdown impacting 360,000 people. France, the United Kingdom, and Spain, Europe's three next-largest economies after Germany, are seeing double-digit percentage declines in the average number of daily cases and deaths when measured against daily averages of two weeks ago*. Italy, rounding out the top five, is reporting no additional cases*. The overall picture in Europe is improving, and this will have a positive impact on connector industry sales going into the third quarter of 2020.

**as of June 24, 2020



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.



Note: Billing Trend R² = Goodness of Fit of data to the trend line, 1.0 is a perfect fit.

Japan Performance

- Japan's book-to-bill ratio fell to 0.87 in May. Bookings and billings both declined in May, -35.2% and -22.8%, respectively. On a sequential basis, Japan's sales rose slightly, up +1.8%.
- Industrial output fell 15.0% YOY and 9.8% on a month-over-month basis in April.
- Retail sales fell 13.7% YOY and 9.6% sequentially in April 2020.
- The unemployment rate edged up to 2.6% in April 2020, compared to 2.5% in the prior month.
- Exports continued to fall in May, down 28.3% YOY. It was the 18th straight month of decline in exports. Transportation shipments plunged 60.3% after falling 45.5% in April. Exports to the US declined 50.6% and 1.9% to China.
- The manufacturing PMI fell to 37.8 in June vs. 38.4 in the previous month, the steepest pace of contraction in the manufacturing sector since April 2009.
- Consumer confidence declined to 21.6 in April, which is the lowest level since the series began in 1982.

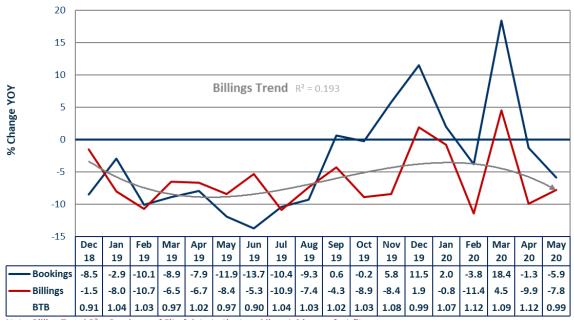
Conclusions

Japan, one of the COVID-19 containment success stories, is seeing a small increase in the absolute daily numbers. In May, Japan announced that the country entered a recession. The recession started in Q4 2020, before the COVID crisis. The world's third-largest economy, some analysts predict, may see a 20% or larger contraction in GDP. The economic data highlighted above point to continued pain for Japan's economy and the connector industry's near-term growth prospects in the region.



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.





Note: Billing Trend R² = Goodness of Fit of data to the trend line, 1.0 is a perfect fit.

China Performance

- Sales YOY dropped -7.8% and orders dropped -5.9%. The BTB was 0.99. On a sequential basis, sales grew +8.0%.
- Industrial production rose 4.4% YOY in May, missing market consensus of 5%. Automotive production grew 12.2%, electrical machinery climbed 6.8% YOY in May.
- Retail sales contracted 2.8% YOY in May. This is the fifth consecutive month of decline. Retail sales increased 0.79% in May 2020 versus the prior month.
- China's auto sales in May grew 14.5% YOY. April's 4.4% YOY increase ended the 21-month sales decline streak.
- Exports decreased 3.3% YOY in May. Imports declined 16.7% compared to a year earlier. China's trade surplus with the United States widened by \$27.9 billion.

Conclusions

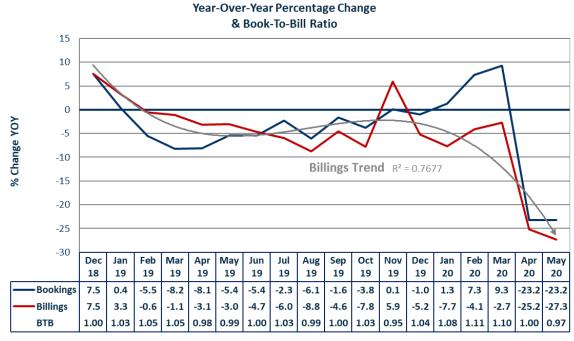
China is experiencing an increase in the number of COVID-19 infections. This is primarily related to an outbreak in a wholesale food market in Beijing. China is taking a measured approach in its containment by targeting lockdowns in areas within the vicinity of the source. Chinese consumer patterns are impacted by these increased counts, as demonstrated in the -40% decline in traffic patterns collected via phone data.* In the first week of June, US-China freight rates increased +17% YOY – a positive sign for connectors.

*mid-June 2020 vs avg. 2019



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 Bookings and Billings



Note: Billing Trend R² = Goodness of Fit of data to the trend line, 1.0 is a perfect fit.

Asia Pacific Performance

- Orders and sales fell sharply in May, -23.2% and -27.3%, respectively. The book-to-bill ratio dropped to 0.97. Sequentially, sales grew in May by +3.3%.
- India's March industrial production plummeted a revised 18.3%, compared to a 16.7 percent fall initially reported. It is the steepest decline on record. Manufacturing production slumped 22.6% YOY in March. IHS Markit Manufacturing PMI increased to 30.8 in May, from a record low of 27.4 in April. India's trade deficit narrowed to \$3.15 billion in May from \$15.36 billion in April. May exports plunged 31.5%, with electronic goods down 45.4%. India's unemployment rate remained at 23.5% in May; in February 2020, the umployment rate stood at 8.7%.
- Exports in South Korea tumbled 22.7% in May from a year earlier. Sales for automobiles dropped 54.1%, wireless communication devices declined 22.2%, and home appliances fell 37.0%. Sales for semiconductors, ships, computers, and bio-health products rose year-over-year in May. The manufacturing PMI fell to 41.3 in May from 41.3 in April.

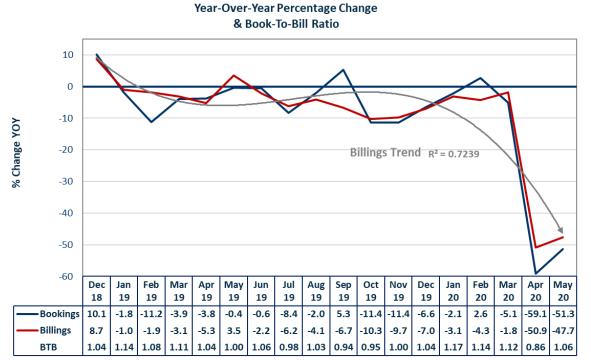
Conclusions

India's rate of increase in the number of COVID-19 infections is seeing a significant upswing as the economy begins to reopen. Although the country instituted an early lockdown, compared to two weeks ago, the average increase in daily deaths is up 97.9%.* By another metric, however, India currently only has 34 cases per 100,000. This compares to the world total of 122 per 100,000, and the United States' 719 per 100,000.* India acted swiftly to contain the spread by instituting the strict lockdown on March 24, which lasted until May 31. India has a very young population, with 50% below the age of 25. It is unlikely that the COVID crisis will have a lasting impact on India's economy, and its economy is likely to be among the fastest growing in the world on a relative basis.



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.

ROW Bookings and Billings



Note: Billing Trend R² = Goodness of Fit of data to the trend line, 1.0 is a perfect fit.

Rest of World Performance

- Bookings declined -51.3% and billings fell -47.7% YOY in May. ROW was the worst performing region in May. Sequentially, sales in the region grew +15.4%, the second-best month-over-month sales performance in May 2020.
- Russia's industrial production dropped 9.6% YOY in May. Exports increased 5.3% YOY in March, following modest declines in February. Russia's trade surplus narrowed to \$6.24 billion in April, from \$14.61 billion in the same period in 2019. The inflation rate increased to 3.0% in May YOY (Bank of Russia inflation target is 4.0%). The unemployment rate rose to 6.1% in May 2020 from 5.8% the previous month.
- Brazil's industrial production slumped 27.2% YOY in April (automotive: -92.1%, machinery & equipment: -41.3%, electric machines, devices, and materials: -43.6%, computer equipment and optical: -43.8%, and transportation equipment: -81.0%). Retail sales decreased 16.8% in April. The inflation rate continued to fall to 2.16% from 2.52% in April. The manufacturing PMI ticked up in May to 38.3 from an all-time low in the previous month of 36.0.

Conclusions

Brazil has 122 cases per 100,000. Cases are increasing at a rate of 30.0% when measured against average daily cases two weeks ago.* A positive economic indicator not captured above is that commodity prices are rising, with copper up over 20% since the March 23, 2020, lows, and oil is up nearly 70% since the April 20, 2020, low. The two largest countries in this region are most sensitive to the recent volatility of the commodities market. As demand for these commodities continues to rise, conditions in the ROW connector market will see significant improvement.

*as of June 23, 2020



Currency Impact on Regional Industry Growth

The euro and the Chinese yuan continued to decline in value against the US dollar. The Japanese yen rose 2.0% in May. The following table measures the impact for May 2019 versus May 2020 and shows the YTD results for these three currencies.

Local Currency to One USD YTD May 2019 versus May 2020

Currency	2019	2020	% Change
Euro	0.884287	0.9106	-2.9%
Yuan	6.7622	7.0224	-3.7%
Yen	110.4282	108.2767	2.0%

Europe, China, and Japan account for 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 May YTD 2020 USD-vs-Local Currencies

Region	U.S.\$	Local Currency
North America	-14.3%	-14.3%
Europe	-17.8%	-15.4%
Japan	-8.6%	-10.5%
China	-5.0%	-1.5%
Asia Pacific	-13.5%	-13.5%
ROW	-25.0%	-25.0%
World	-13.0%	-11.7%

The Japanese yen strengthened during the first four months of the year, impacting sales in this region negatively. Connector sales are 1.3 percentage points higher when stated in local currencies rather than in US dollars, putting industry performance at -11.7% YTD in May (versus -13.0% 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 May YTD 2019 versus 2020

Currency	2019	2020	% Change
Swiss Franc	1.0018	0.9685	3.4%
S. K. Won	1139.5632	1205.1859	-5.4%
Russian Ruble	65.5475	69.6124	-5.8%
Taiwan Dollar	30.9099	30.0638	2.8%
Indian Rupee	70.1486	73.9033	-5.1%
Singapore Dollar	1.3588	1.3985	-2.8%



How's Business? OEM

Bishop & Associates tracks sales and profits of 13 market sectors and more than 120 companies. The objectives are to determine how selected electronic markets have performed, identify sales and profit trends for forecasting purposes, and monitor company performance within market sectors.

The following tables provide the 2018/2019 percent change in revenues, and the first quarter 2020 versus the first quarter 2020 sales and percent change in sales by market sector.

Market Sector	2018/2019	First Quarter	First Quarter	Percent
Market Sector	% Change	2019	2020	Change
Telecom/Datacom	-2.9%	\$90,160.0	\$84,295.3	-6.5%
Automotive	-1.8%	\$394,276.9	\$356,184.9	-9.7%
Industrial	-7.3%	\$94,559.4	\$81,890.4	-13.4%
Mil/Aero	10.2%	\$79,639.5	\$79,651.3	0.0%
Computers	0.0%	\$88,743.3	\$82,780.4	-6.7%
Peripherals	-11.2%	\$16,667.8	\$16,620.4	-0.3%
Consumer	1.0%	\$84,475.1	\$78,244.4	-7.4%
Transportation	-4.0%	\$82,010.1	\$67,015.8	-18.3%
Medical	-0.2%	\$25,641.5	\$22,818.4	-11.0%
Instrumentation	4.9%	\$10,778.2	\$11,187.9	3.8%
Semiconductors	-16.3%	\$61,426.5	\$70,878.5	15.4%
CEMs	3.0%	\$17,903.3	\$16,502.3	-7.8%
Distribution	-4.6%	\$15,482.5	\$15,044.5	-2.8%

\$ Millions

Ten of the 13 market sectors Bishop tracks had year-over-year sales declines during the first quarter of 2020. This quarter reflects the impact that the coronavirus lockdowns had on these industries throughout the first three months of the year. Transportation experienced the steepest decline in sales, contracting 18.3%. Industrial fell 13.4%, followed by Medical, down 11.0%, on year-over-year basis in the first quarter of 2020.

Instrumentation and Semiconductor were the only two sectors to see sales grow in 1Q20, up 3.8% and 15.4%, respectively.

The aggregate decline for all reported industries was 7.4%.

As a note: This database is not static. Companies are acquired or go into bankruptcy; thus, their financial data is no longer available, and they are removed from the database. These types of activities occur frequently, and because of this, as well as additions we have made to the database, it is not possible to directly compare current numbers to numbers referenced in past Bishop "How's Business? OEMs" reports. These analyses are meant to be used as a relative measure of market sector performance. If you have any questions about this database or specific market sectors, please feel free to contact us.

Also, when revenue increases or decreases more than 30% and net income more than 200% for a company, an explanatory footnote is provided.

The following pages display each market sector in detail, including the companies selected for each sector.



Telecom/Datacom Equipment Sector

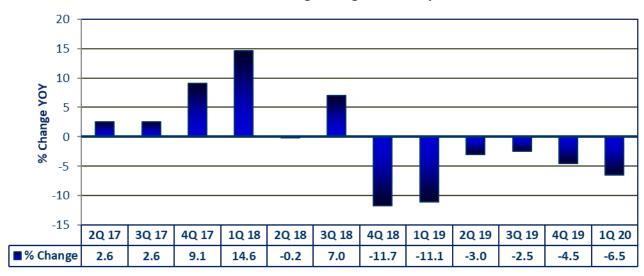
The telecom/datacom equipment sector recorded a sales decline of 2.9% in 2019. Sales the first three months of 2020 versus the first three months of 2019 were down 6.5% year-over-year. Net income as a percent of sales totaled 13.6% for the period, down 4.1% year-over-year.

Telecom/Datacom Equipment Sector - Sales and Net Income

Company	2018/2019 % Change	First Quarter 2019	First Quarter 2020	
Cisco Systems	1.4%	\$12,958.0	\$11,982.0	-7.5%
Motorola Solutions Inc	7.4%	\$1,657.0	\$1,655.0	-0.1%
Nokia	-2.3%	\$5,715.9	\$5,421.2	-5.2%
Apple (iPhone)	-6.6%	\$31,051.0	\$28,962.0	-6.7%
Samsung	0.1%	\$24,172.0	\$21,834.8	-9.7%
Qualcomm	-8.2%	\$4,982.0	\$5,216.0	4.7%
Ericsson	-1.0%	\$5,333.1	\$5,148.1	-3.5%
Juniper Networks	-4.4%	\$1,001.7	\$998.0	-0.4%
ZTE Corporation	3.0%	\$3,289.3	\$3,078.2	-6.4%
Total Sales	-2.9%	\$90,160.0	\$84,295.3	-6.5%
Total Net Income		\$11,987.8	\$11,494.2	-4.1%

^{\$} Millions

Telecom/Datacom
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales declined -33.8%. Year-over-year, sales decreased 6.5% in the first quarter.



Automotive Equipment Sector

The automotive equipment sector recorded a sales decrease of 1.8% in 2019. Sales for the first three months of 2020 versus the first three months of 2019 were down 9.7% year-over-year. Net income as a percent of sales totaled -2.1% for the period, down -152.2% year-over-year.

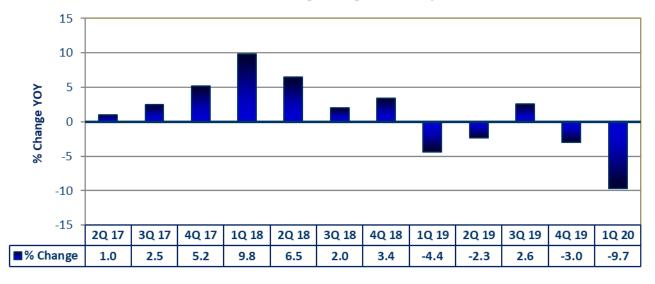
Automotive Equipment Sector - Sales and Net Income

Company	2018/2019	First Quarter	First Quarter	Percent	
Company	% Change	2019	2020	Change	
Borg Warner Auto	-3.4%	\$2,566.0	\$2,279.0	-11.2%	
Daimler	0.2%	\$27,333.2	\$25,590.0	-6.4%	
Ford Motor Co.	-2.8%	\$40,342.0	\$34,320.0	-14.9%	
General Motors	-6.7%	\$34,878.0	\$32,709.0	-6.2%	
Lear Corp.	-6.3%	\$5,160.1	\$4,458.0	-13.6%	
Honda	-0.9%	\$36,771.4	\$31,740.4	-13.7%	
Toyota	2.4%	\$70,381.2	\$65,167.0	-7.4%	
Volkswagon	1.1%	\$68,167.7	\$60,735.9	-10.9%	
Kia Motors	0.8%	\$11,058.9	\$12,231.3	10.6%	
Nissan	-12.0%	\$27,206.0	\$21,767.9	-20.0%	
Fiat	-8.6%	\$27,808.0	\$22,689.7	-18.4%	
BMW AG	1.0%	\$25,514.6	\$25,651.8	0.5%	
Tesla Auto	14.5%	\$4,541.5	\$5,985.0	31.8%	
Continental AG	-5.4%	\$12,548.3	\$10,860.0	-13.5%	
Total Sales	-1.8%	\$394,276.9	\$356,184.9	-9.7%	
Total Net Income		\$14,164.3	(\$7,394.5)	-152.2%	

\$ Millions

Nissan's net sales for the quarter declined \$6.2 billion, the worst in 20 years, due to both the COVID crisis and large restructuring to cut costs. Ford took a \$1.1 billion restructuring charge in the quarter, bringing net sales to a \$1.9 billion.

Automotive
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 2Q19) sales decreased 12.3%. Year-over-year, sales declined 9.7% in the first quarter.



Industrial Equipment Sector

The industrial equipment sector recorded a sales decrease of 7.3% in 2019. Sales for the first three months of 2020 versus the first three months of 2019 were down 13.4% year-over-year. Net income as a percent of sales totaled 2.1% for the period. The drastic decline in net income for the quarter was due to the precipitous decline in demand for oil.

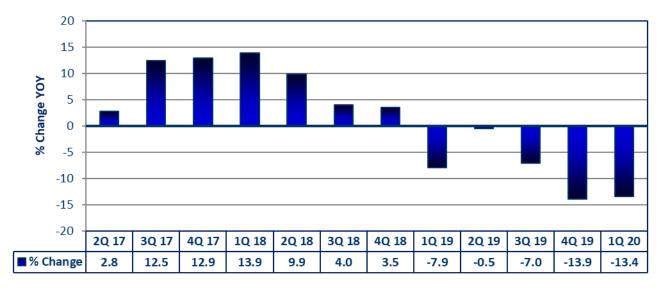
Industrial Equipment Sector - Sales and Net Income

Company	2018/2019 % Change	First Quarter 2019	First Quarter 2020	
Baker Hughes	4.2%	\$5,615.0	\$5,425.0	-3.4%
Caterpillar	-1.7%	\$13,466.0	\$10,630.0	-21.1%
Deere & Co.	1.2%	\$11,349.0	\$9,281.0	-18.2%
FMC Corp.	-2.5%	\$1,192.0	\$1,250.0	4.9%
General Electric	-16.9%	\$27,286.0	\$21,066.0	-22.8%
Parker Hannifin	-2.2%	\$3,688.0	\$3,702.0	0.4%
Schlumberger	0.3%	\$7,879.0	\$7,455.0	-5.4%
ABB	-6.2%	\$6,847.0	\$6,322.6	-7.7%
Siemens	-9.0%	\$16,180.9	\$15,693.1	-3.0%
Danaher	1.8%	\$1,056.5	\$1,065.7	0.9%
Total Sales	-7.3%	\$94,559.4	\$81,890.4	-13.4%
Total Net Income		\$8,068.9	(\$7,537.6)	-193.4%

^{\$} Millions

Baker Hughes and Schlumberger's \$23.3 billion goodwill impairment caused the net income decline for Q120. Net income grew 95% without the weight of these adjustments.

Industrial
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales decreased 10.8%. Year-over-year, sales decreased 13.4% in the first quarter.



Military/Aerospace Equipment Sector

The military/aerospace equipment sector recorded a sales increase of 10.2% in 2019. Sales for the first three months of 2020 versus the first three months of 2019 were flat year-over-year. Net income as a percent of sales totaled 6.0% for the period, down 33.8% year-over-year.

Mil/Aero Equipment Sector - Sales and Net Income

Company	2018/2019 % Change	First Quarter 2019	First Quarter 2020	Percent Change
Boeing (Mil/Aero)	2.3%	\$6,611.0	\$6,042.0	-8.6%
Airbus (Mil/Aero)	36.2%	\$3,403.2	\$3,654.9	7.4%
General Dynamics	8.7%	\$9,261.0	\$8,749.0	-5.5%
Honeywell	-12.2%	\$8,884.0	\$8,463.0	-4.7%
Lockheed Martin	11.3%	\$14,336.0	\$15,651.0	9.2%
Northrop Grumman	12.4%	\$8,189.0	\$8,620.0	5.3%
Textron	-2.4%	\$3,109.0	\$2,777.0	-10.7%
Raytheon Technologies Corp.	15.9%	\$18,365.0	\$18,210.0	-0.8%
L3Harris Technologies	11.7%	\$4,386.0	\$4,626.0	5.5%
Finmeccanica	32.3%	\$3,095.3	\$2,858.4	-7.7%
Total Sales	10.2%	\$79,639.5	\$79,651.3	0.0%
Total Net Income		\$7,250.8	\$4,800.9	-33.8%

^{\$} Millions

Military/Aerospace
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales decreased 15.3%. Year-over-year, sales were flat in the first quarter.



Computer Equipment Sector

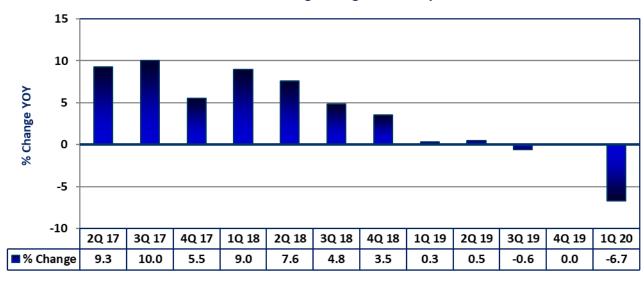
The computer equipment sector recorded no growth in 2019. Sales for the first three months of 2020 versus the first three months of 2019 declined 6.7% year-over-year. Net income as a percent of sales totaled 3.9% for the period, down 41.3% year-over-year.

Computer Equipment Sector - Sales and Net Income

Company	2018/2019	First Quarter	First Quarter	
	% Change	2019	2020	Change
Apple (Computers)	1.8%	\$10,385.0	\$9,719.0	-6.4%
Dell Technologies	1.7%	\$21,908.0	\$21,801.0	-0.5%
Hewlett-Packard	0.0%	\$14,036.0	\$12,407.0	-11.6%
Hewlett Packard Enterprise	-6.6%	\$7,104.0	\$5,961.0	-16.1%
IBM	-3.1%	\$18,182.0	\$17,571.0	-3.4%
NCR	8.0%	\$1,536.0	\$1,503.0	-2.1%
ASUS	-3.4%	\$2,787.4	\$2,350.7	-15.7%
Unisys	4.4%	\$695.8	\$515.4	-25.9%
Lenovo	3.8%	\$11,710.0	\$10,577.8	-9.7%
Advantech	7.6%	\$399.0	\$374.5	-6.2%
Total Sales	0.0%	\$88,743.3	\$82,780.4	-6.7%
Total Net Income		\$5,479.2	\$3,217.5	-41.3%

\$ Millions

Computer
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales decreased 17.8%. Year-over-year sales declined 6.7% in the first quarter.



Peripheral Equipment Sector

The peripheral equipment sector recorded a sales decrease of 11.2% in 2019. Sales for the first three months of 2020 versus the first three months of 2019 declined 0.3% year-over-year. Net income as a percent of sales totaled 4.5% for the period, up 912.0% year-over-year.

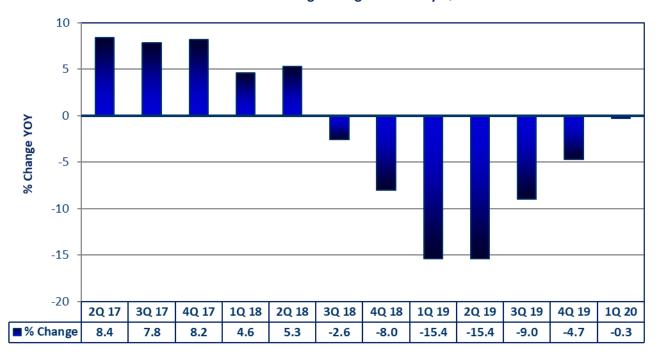
Peripheral Equipment Sector - Sales and Net Income

Company	2018/2019 %Change	First Quarter 2019	First Quarter 2020	Percent Change
Western Digital	-19.6%	\$3,674.0	\$4,175.0	13.6%
Xerox	-7.0%	\$2,206.0	\$1,860.0	-15.7%
Seagate	-12.2%	\$2,313.0	\$2,718.0	17.5%
Logitech	3.8%	\$624.3	\$686.8	10.0%
Canon	-8.5%	\$7,850.5	\$7,180.6	-8.5%
Total Sales	-11.2%	\$16,667.8	\$16,620.4	-0.3%
Total Net Income		\$73.4	\$743.2	912.0%

\$ Millions

Western Digital suffered a significant loss in 1Q19 and reported a \$581 million loss in net income. In 1Q20, the company returned to profit.

Peripheral
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales decreased 12.7%. Year-over-year, sales declined 0.3% in the first quarter.



Consumer Equipment Sector

The consumer equipment sector recorded a sales increase of 1.0% in 2019. Sales for the first three months of 2020 versus the first three months of 2019 months decreased 7.4% year-over-year. Net income as a percent of sales totaled 4.4% for the period, down 10.2% year-over-year.

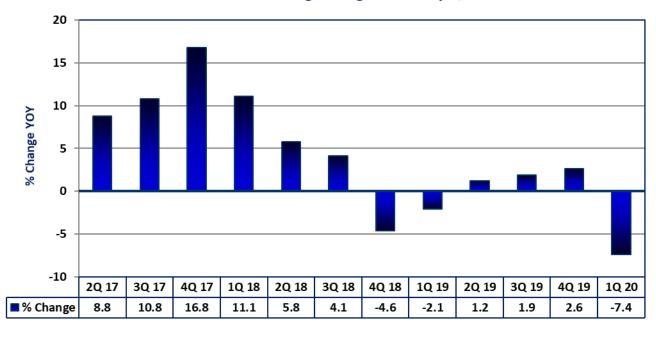
Consumer Equipment Sector - Sales and Net Income

Company	2018/2019 %Change	First Quarter 2019	First Quarter 2020	Percent Change
Eastman Kodak	-3.4%	\$291.0	\$267.0	-8.2%
Panasonic	-3.4%	\$18,842.0	\$15,924.7	-15.5%
Whirlpool Corp	-2.9%	\$4,761.0	\$4,325.0	-9.2%
Sony	2.5%	\$19,320.5	\$16,051.1	-16.9%
Philips	1.5%	\$4,715.1	\$4,579.4	-2.9%
Samsung	-1.9%	\$16,316.0	\$15,823.0	-3.0%
Nintendo	3.5%	\$1,845.9	\$2,623.7	42.1%
Apple	41.4%	\$5,129.0	\$6,284.0	22.5%
LG	-4.5%	\$13,254.5	\$12,366.4	-6.7%
Total Sales	1.0%	\$84,475.1	\$78,244.4	-7.4%
Total Net Income		\$3,796.6	\$3,409.3	-10.2%

\$ Millions

Nintendo's 1Q20 sales growth is attributed to continued demand for the Switch game console.

Consumer
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales decreased 23.0%. Year-over-year, sales declined 7.4% in the first quarter.



Transportation Equipment Sector

The transportation equipment sector recorded a sales decrease of 4.0% in 2019. Sales for the first three months of 2020 versus the first three months of 2019 were down 18.3% year-over-year. Net income as a percent of sales totaled 0.0% for the period, down 99.8% year-over-year.

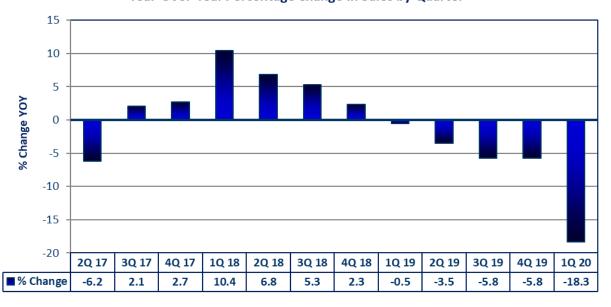
Transportation Equipment Sector - Sales and Net Income

Company	2018/2019	First Quarter	First Quarter	Percent
Company	% Change	2019	2020	Change
Boeing (Commercial)	-46.2%	\$11,822.0	\$6,205.0	-47.5%
Airbus (Commercial)	8.4%	\$11,014.8	\$8,350.2	-24.2%
Bombardier	5.4%	\$3,516.0	\$3,703.1	5.3%
Cummins Engine	-0.8%	\$6,004.0	\$5,011.0	-16.5%
Harley-Davidson	-6.2%	\$1,384.4	\$1,298.0	-6.2%
PACCAR	9.0%	\$6,487.6	\$5,162.0	-20.4%
Trinity Industries	-4.3%	\$604.8	\$615.2	1.7%
Wabash Nat'l. Corp.	2.3%	\$533.2	\$387.1	-27.4%
Wabtec	87.9%	\$1,593.6	\$1,930.0	21.1%
Agco Corp.	-3.3%	\$1,995.8	\$1,928.0	-3.4%
Volvo	1.4%	\$11,690.9	\$9,463.2	-19.1%
Hyundai Heavy Ind.	9.7%	\$2,904.6	\$3,411.9	17.5%
Daimler (Truck/Bus)	-6.1%	\$11,556.7	\$9,646.4	-16.5%
Isuzu Motors Ltd.	-3.5%	\$5,024.8	\$5,155.4	2.6%
CRRC	17.9%	\$5,877.0	\$4,749.3	-19.2%
Total Sales	-4.0%	\$82,010.1	\$67,015.8	-18.3%
Total Net Income		\$5,941.9	\$10.5	-99.8%

\$ Millions

Boeing's decline in revenue is due to the 737 Max grounding and delivery delays.

Transportation
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales decreased 32.2%. Year-over-year, sales declined 18.3% in the first quarter.



Medical Equipment Sector

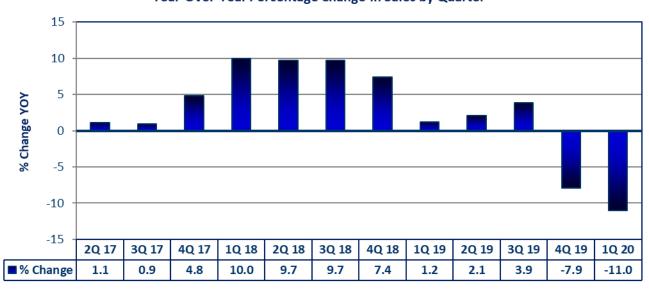
The medical equipment sector recorded a sales decrease of 0.2% in 2019. Sales for the first three months of 2020 versus the first three months of 2019 were down 11.0% year-over-year. Net income as a percent of sales totaled 8.1% for the period, down 30.8% year-over-year.

Medical Equipment Sector - Sales and Net Income

Company	2018/2019	First Quarter	First Quarter	Percent
Company	% Change	2019	2020	Change
Becton Dickinson	1.7%	\$4,195.0	\$4,253.0	1.4%
Boston Scientific	9.3%	\$2,493.0	\$2,543.0	2.0%
Medtronic	1.7%	\$8,146.0	\$5,998.0	-26.4%
Owens & Minor	-3.1%	\$2,461.4	\$2,123.0	-13.7%
Quest Diagnostics	2.6%	\$1,891.0	\$1,822.0	-3.6%
Baxter	2.1%	\$2,632.0	\$2,802.0	6.5%
Danaher	-13.2%	\$3,823.1	\$3,277.4	-14.3%
Total Sales	-0.2%	\$25,641.5	\$22,818.4	-11.0%
Total Net Income		\$2,657.2	\$1,838.8	-30.8%

\$ Millions

Medical
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales decreased 3.7%. Year-over-year, sales declined 11.0% in the first quarter.



Instrumentation Equipment Sector

The instrumentation equipment sector recorded a sales increase of 4.9% in 2019. Sales for the first three months 2020 versus the first three months 2019 were up 3.8% year-over-year. Net income as a percent of sales totaled 11.1% for the period, down 11.4% year-over-year.

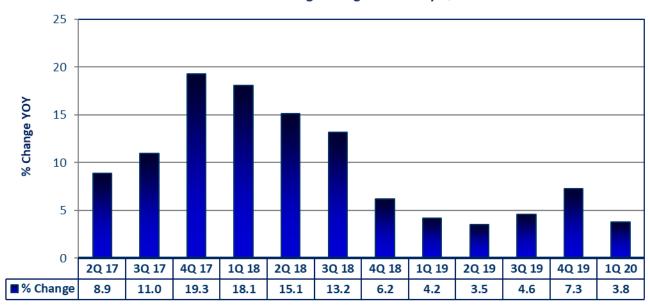
Instrumentation Equipment Sector - Sales and Net Income

Company	2018/2019	First Quarter	First Quarter	Percent
Company	% Change	2019	2020	Change
ThermoFisher Scient.	4.9%	\$6,125.0	\$6,230.0	1.7%
Mettler Toledo	2.5%	\$679.5	\$649.2	-4.5%
PerkinElmer	3.8%	\$648.7	\$652.4	0.6%
Teradyne	9.2%	\$494.1	\$704.4	42.6%
Agilent Technologies	5.0%	\$1,238.0	\$1,238.0	0.0%
Fortive	5.4%	\$1,592.9	\$1,714.0	7.6%
Total Sales	4.9%	\$10,778.2	\$11,187.9	3.8%
Total Net Income		\$1,397.8	\$1,239.0	-11.4%

\$ Millions

Teradyne revenues increased significantly due to demand for test equipment serving the semiconductor industry.

Instrumentation
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales decreased 10.4%. Year-over-year sales increased 3.8% in the first quarter.



Semiconductor Equipment Sector

The semiconductor equipment sector recorded a sales decrease of 16.3% 2019. Sales for the first three months of 2020 versus the first three months of 2019 were up 15.4% year-over-year. Net income as a percent of sales totaled 23.3% for the period, up 13.3% year-over-year.

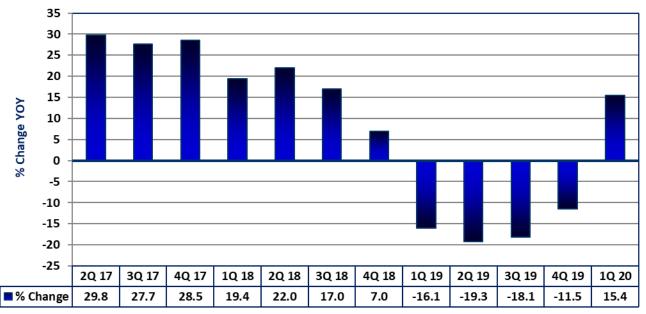
Semiconductor Equipment Sector - Sales and Net Income

Company	2018/2019	First Quarter	First Quarter	Percent
Company	% Change	2019	2020	Change
AMD	4.0%	\$1,272.0	\$1,786.0	40.4%
Analog Devices	-7.6%	\$1,526.6	\$1,303.6	-14.6%
Intel	1.6%	\$16,061.0	\$19,828.0	23.5%
Micron Tech.	-34.5%	\$5,835.0	\$4,797.0	-17.8%
Texas Instruments	-8.9%	\$3,594.0	\$3,329.0	-7.4%
Xilinx	12.8%	\$828.4	\$756.2	-8.7%
Taiwan Semi	1.2%	\$7,096.0	\$11,497.4	62.0%
Infineon Tech.	-3.3%	\$2,252.5	\$2,191.0	-2.7%
Microchip Tech	5.1%	\$1,329.8	\$1,326.4	-0.3%
Samsung	-31.8%	\$12,861.1	\$15,016.9	16.8%
ON Semi	-6.1%	\$1,386.6	\$1,277.9	-7.8%
Hynix	-37.1%	\$6,018.9	\$6,128.5	1.8%
Renesas	-4.6%	\$1,364.6	\$1,640.6	20.2%
Total Sales	-16.3%	\$61,426.5	\$70,878.5	15.4%
Total Net Income		\$14,600.4	\$16,549.2	13.3%

\$ Millions

AMD's revenue increase was driven by higher sales in the computing and graphics segment. Taiwan Semiconductor's revenue grew due to the increase in HPC-related demand and the continued ramp up of 5G smartphones.

Semiconductor
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales increased 1.2%. Year-over-year sales increased 15.4% in the first quarter.



Contract Electronic Manufacturers (CEM) Sector

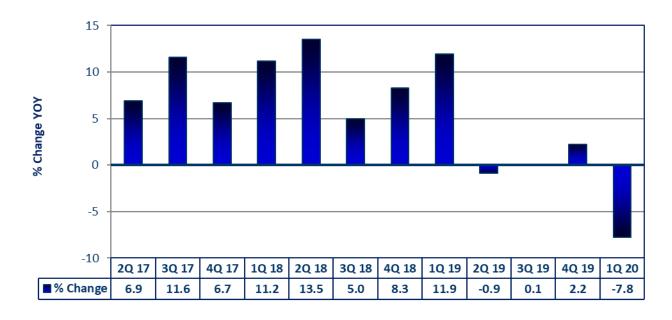
The CEM sector recorded a sales increase of 3.0% in 2019. Sales for the first three months of 2020 versus the first three months of 2019 decreased 7.8% year-over-year. Net income as a percent of sales totaled 0.4% for the period, down 72.6% year-over-year.

CEM Equipment Sector - Sales and Net Income

Company	2018/2019	First Quarter	First Quarter	
	% Change	2019	2020	Change
Benchmark Elec.	-11.6%	\$602.8	\$515.0	-14.6%
Celestica	-10.5%	\$1,433.1	\$1,323.1	-7.7%
Flex	-2.5%	\$6,131.1	\$5,484.0	-10.6%
Jabil Circuit, Inc.	13.0%	\$6,135.6	\$6,336.0	3.3%
Plexus Corp.	9.8%	\$789.1	\$767.0	-2.8%
Sanmina	4.4%	\$2,126.6	\$1,591.0	-25.2%
Venture Corp	2.9%	\$685.0	\$486.2	-29.0%
Total Sales	3.0%	\$17,903.3	\$16,502.3	-7.8%
Total Net Income		\$216.4	\$59.4	-72.6%

\$ Millions

CEM
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales decreased 14.8%. Year-over-year sales declined 7.8% in the first quarter.



Electronic Distribution Sector

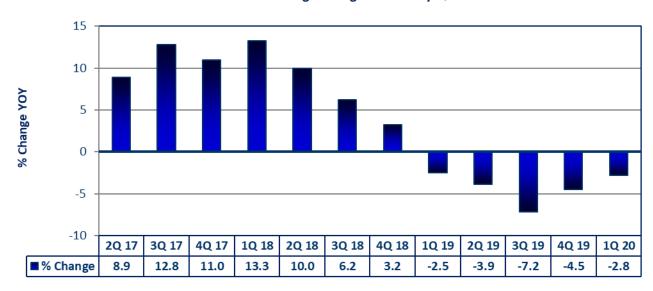
The electronic distribution sector recorded a sales decrease of 4.6% in 2019. Sales for the first three months of 2020 versus the first three months of 2019 decreased 2.8% year-over-year. Net income as a percent of sales totaled -0.2% for the period, down 108.1% year-over-year.

Electronic Distribution Equipment Sector - Sales and Net Income

Company	2018/2019	First Quarter	First Quarter	Percent
	% Change	2019	2020	Change
Arrow Electronics	-2.6%	\$7,156.0	\$6,381.0	-10.8%
Avnet	-7.2%	\$4,698.8	\$4,310.0	-8.3%
WPG Holdings	-5.0%	\$3,627.7	\$4,353.5	20.0%
Total Sales	-4.6%	\$15,482.5	\$15,044.5	-2.8%
Total Net Income		\$293.2	(\$23.9)	-108.1%

^{\$} Millions

Electronic Distribution
Year-Over-Year Percentage Change in Sales by Quarter



Quarter-to-quarter (1Q20 versus 4Q19) sales decreased 8.8%. Year-over-year sales decreased 2.8% in the third quarter.

The **2020 World Cable Assembly Market** report offers an in-depth analysis of this growing and thriving industry. The worldwide cable assembly market is forecast to grow at a compound annual rate of 14.6% from 2020 to 2025. However, the economic damage that will occur from the 2020 COVID-19 pandemic, which is severely rocking the world economy, is unknown. Past and forecasted regional GDP growth and market sector performance were primary drivers for the projections of the industry's contraction and anticipated growth. Worldwide market share in the cable assembly market is beginning



to stabilize, and the shift overseas has slowed. The fastest growing market segment is Telecom/Datacom with a five-year CAGR of 16.4%. This market growth is primarily the result of the need for expanded network infrastructure and conversion to 5G. The automotive market, the largest cable assembly market sector, will also continue to grow after the 2020 downturn, and will spur growth in the industrial sector in 2021. After two decades of strong growth, China's cable assembly industry is now the largest in the world, holding a market share of 28.9% in 2019. Will China's market share continue to grow?

This 17-chapter, 203-page, report provides a detailed analysis, in US dollars, for the years 2019 through 2025, by region, end-use equipment sector, and cable assembly type. Our analysis is provided numerically and graphically, allowing the reader to easily view and understand upcoming trends.

The **2020 World Cable Assembly Market** report includes analyses of important factors impacting the worldwide cable assembly market, as well as the economic trends and technology affecting each market sector within individual regions.

Benefits realized from this report include:

- A better understanding, in US dollars, of the size of the cable assembly market by region, market sector, and product type.
- Insight into five-year growth rates by region, market sector, and product type, allowing the reader to adjust, or realign, current business strategies to maximize future sales potential.
- A greater appreciation for the underlying economic elements that are driving and shaping the various market sectors.

The following tables and graph, with numbers redacted, show the type of analysis included in this report.

World Cable Assembly Market by Region 2019 to 2025

								5 Year
Region	2019	2020	2021	2022	2023	2024	2025	CAGR
North America	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.0%
Europe	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.0%
Japan	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.0%
China	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.0%
Asia Pacific	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.0%
Rest of World	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.0%
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.0%

\$ Millions

World Cable Assembly Market Market Share by Region – 2019 to 2025

								5 Year
Region	2019	2020	2021	2022	2023	2024	2025	CAGR
North America	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Europe	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
China	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Asia Pacific	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rest of World	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

\$ Millions

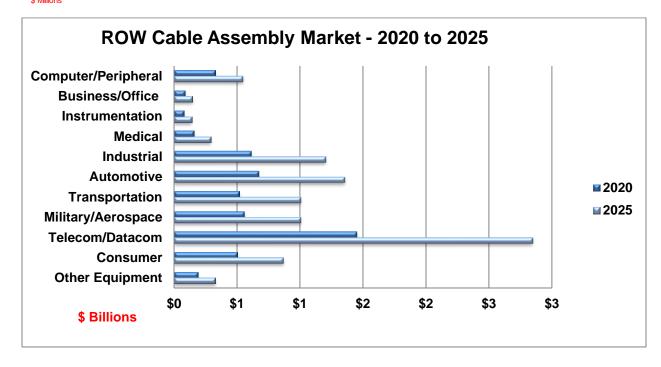
World Cable Assembly Market by Market Sector 2019 to 2025

Total Market								5 Year
Market Sector	2019	2020	2021	2022	2023	2024	2025	CAGR
Computer/Peripheral	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Business/Office Equipt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Instrumentation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Medical	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Industrial	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Automotive	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Transportation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Military/Aerospace	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Telecom/Datacom	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Consumer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Other Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%

\$ Millions

World Cable Assembly Market by Product Type 2020

2020 Total Market Market Sector	PCB	Rect- angular	RF	Circular	Telephone	Fiber Optics	Heavy Duty	Power/Hi Voltage	Appl. Specific	Other	Total
Business/Office Eqpt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Instrumentation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Medical	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Industrial	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Automotive	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transportation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Military/Aerospace	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Telecom/Datacom	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Consumer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



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Regions of the World

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