



TPC Semiconductor Market Survey

August 13, 2019

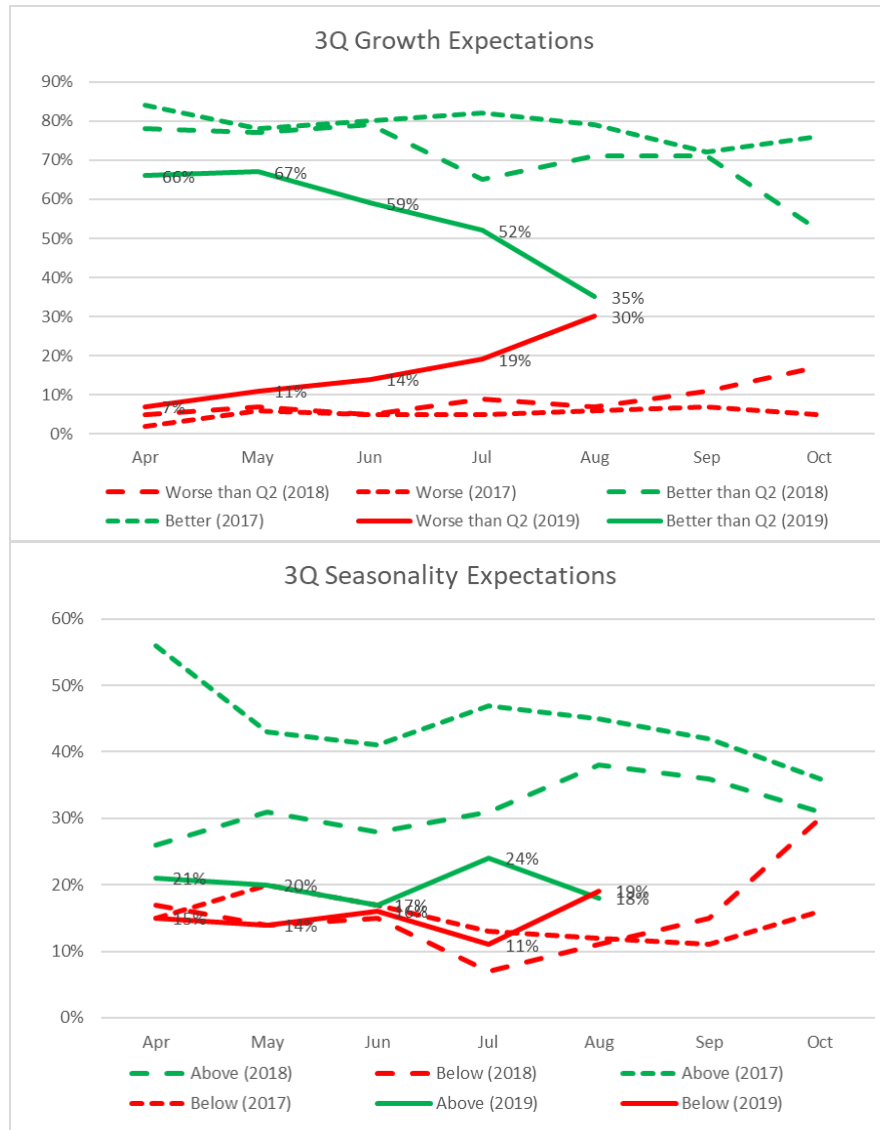
TPC August 2019 Survey Summary

*Survey Date: August 9-12 Respondents: ~9,000 Location: Worldwide (~80% Asia) Who: Active Electronics Industry Professionals
Response Composition (multiple choices): Industrial 37%, Auto 20%, Comm 19%, Computing 23%, Mobile 31%, Data Ctr 21%, Other 8%*

- Our August 2019 Semi industry survey of over 20k electronic industry professionals showed a significant downtick in the outlook for C3Q19.
- Our initial C4Q19 survey data shows generally in line q/q demand growth expectations compared to the previous 2 years, with bookings expectations also generally the same as the previous 2 years.
- Inventories and cancellation trends seem to be moving generally sideways vs. our last survey looking across both C3Q and C4Q responses.
- Based on our survey results and conversations with various supply chains; we believe the industry is seeing another leg down in demand due to increased uncertainty in the 2H Macro outlook and continued trade issues with China.
- The q/q demand outlook for C3Q19 weakened while C4Q19's outlook stayed generally the same as last month. Both quarters are viewed as sub seasonal vs. last year.
 - For C3Q, 30% expect weaker q/q growth vs 19% previously while 35% see better growth.
 - 19% see C3Q as sub seasonal vs. 18% seeing it above seasonal. This remains weaker than the previous 2 years data.
 - Our C4Q data shows 63% expecting down q/q growth vs. 66% previously, but only 14% see it as better than seasonal while 18% see it below seasonal.
- Cancellation expectations (slide 7) which is an indicator that has been negative over the past couple of months is showing some flattening vs. our previous survey.
- Inventories (slide 8) for C3Q appear to be slightly improving, yet C4Q's outlook appears to be getting slightly worse.
- Slide 9, which shows a more granular view of inventory by key components, shows inventory and availability continuing to be higher than average.
- Pricing continues to erode into C3Q evidenced by our data on slide 10 where a third of the respondents see C3Q pricing decreasing by >2% q/q and getting slightly worse in C4Q.

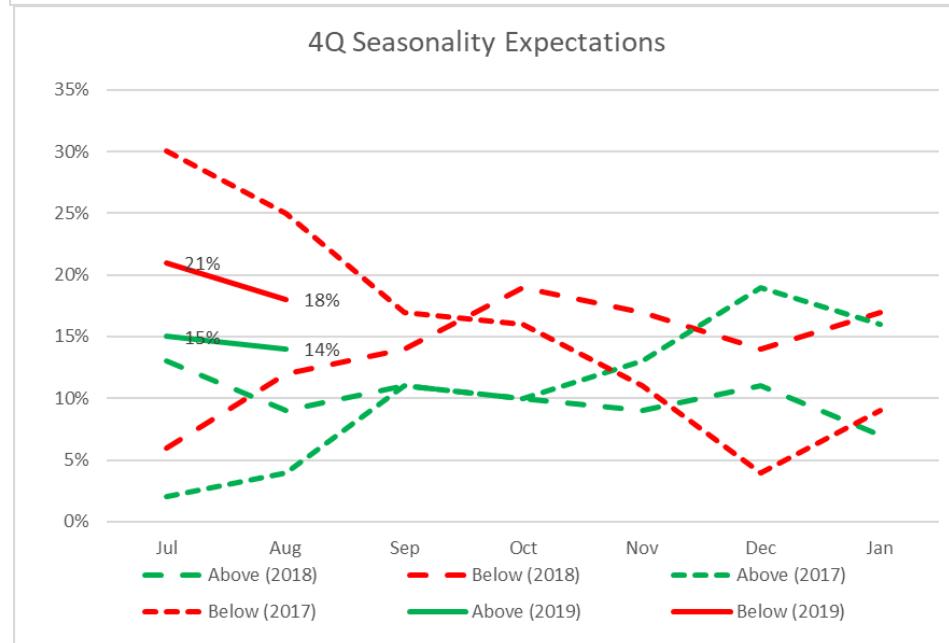
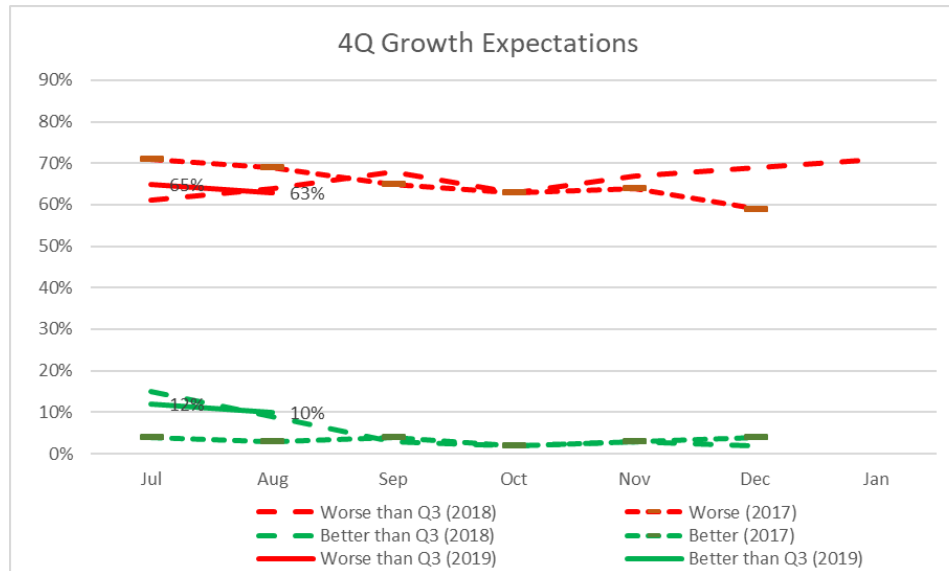
C3Q19 Growth & Seasonality Outlook

Both C3Q19's demand growth outlook and seasonality outlook is weaker than the previous 2 years

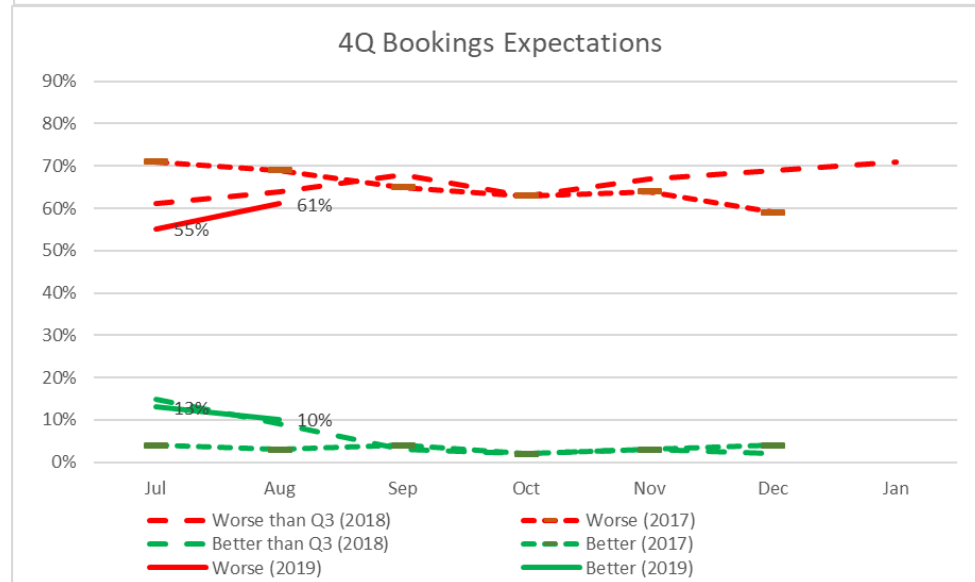
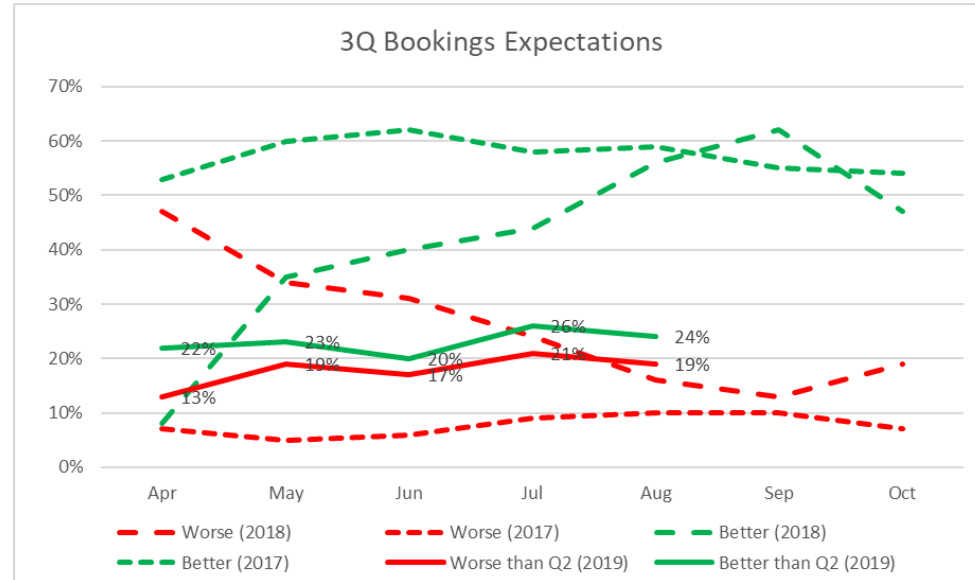


C4Q19 Growth & Seasonality Outlook

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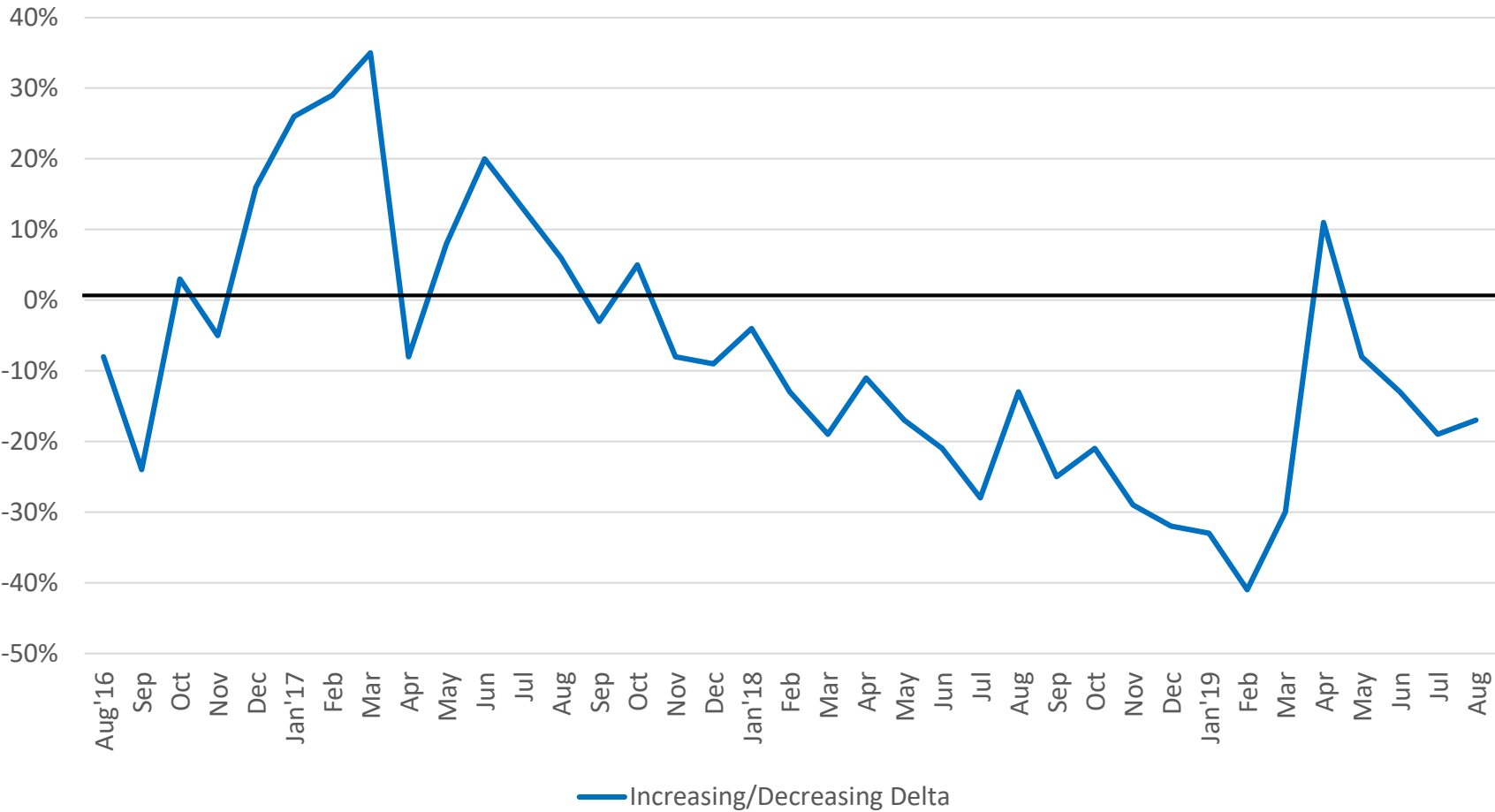


Q/Q Bookings Growth Expectations



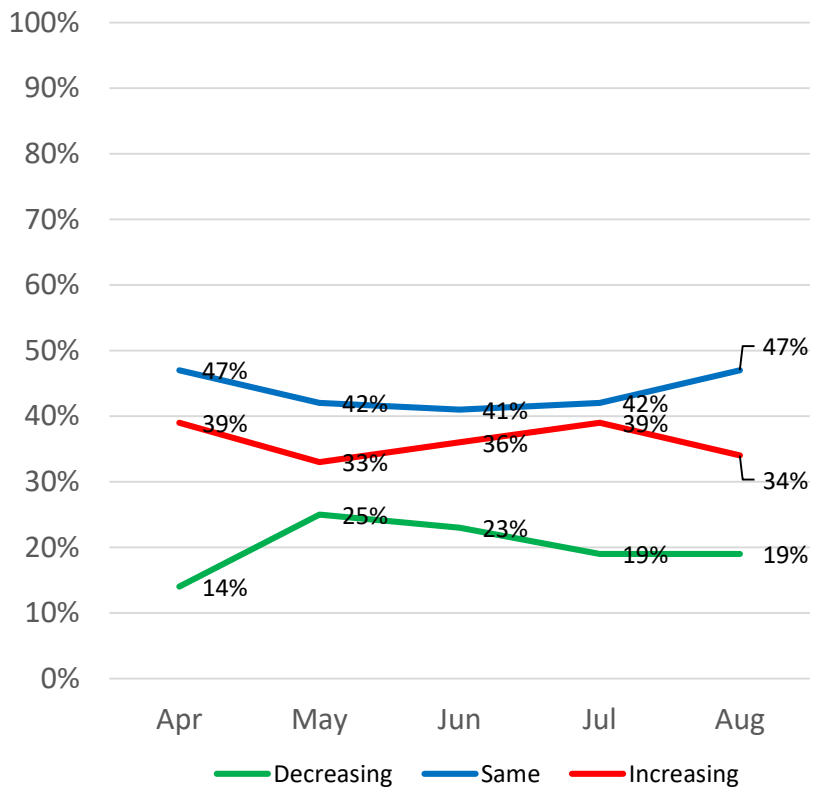
Backlog Order Cancellations vs. 30 Days Ago

(Delta between Increasing and Decreasing Cancellations)

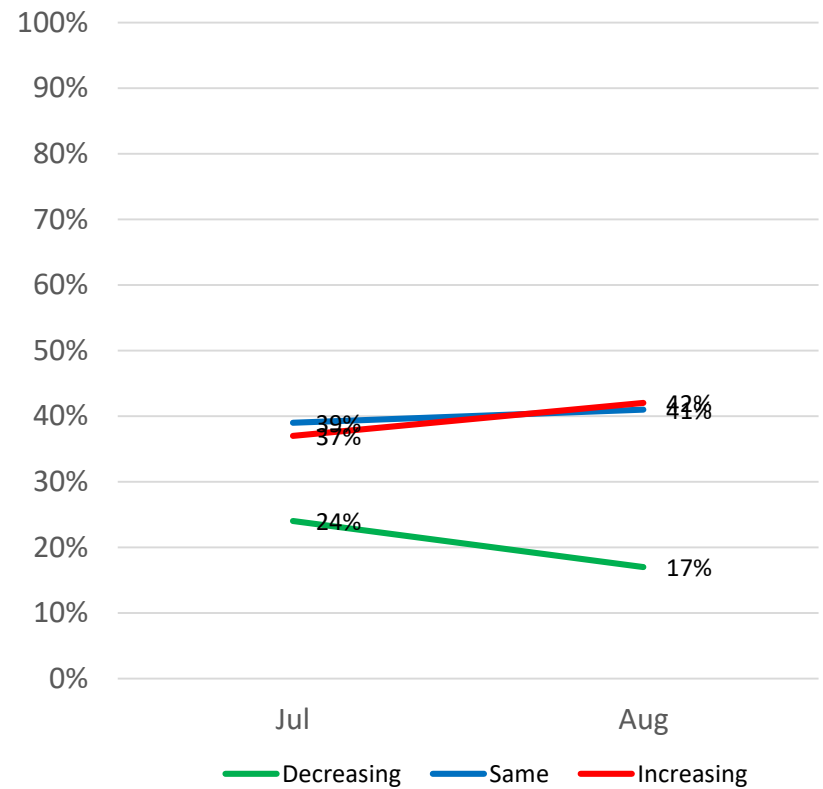


Q/Q Inventory Growth

C3Q19 Inventories vs. C2Q19

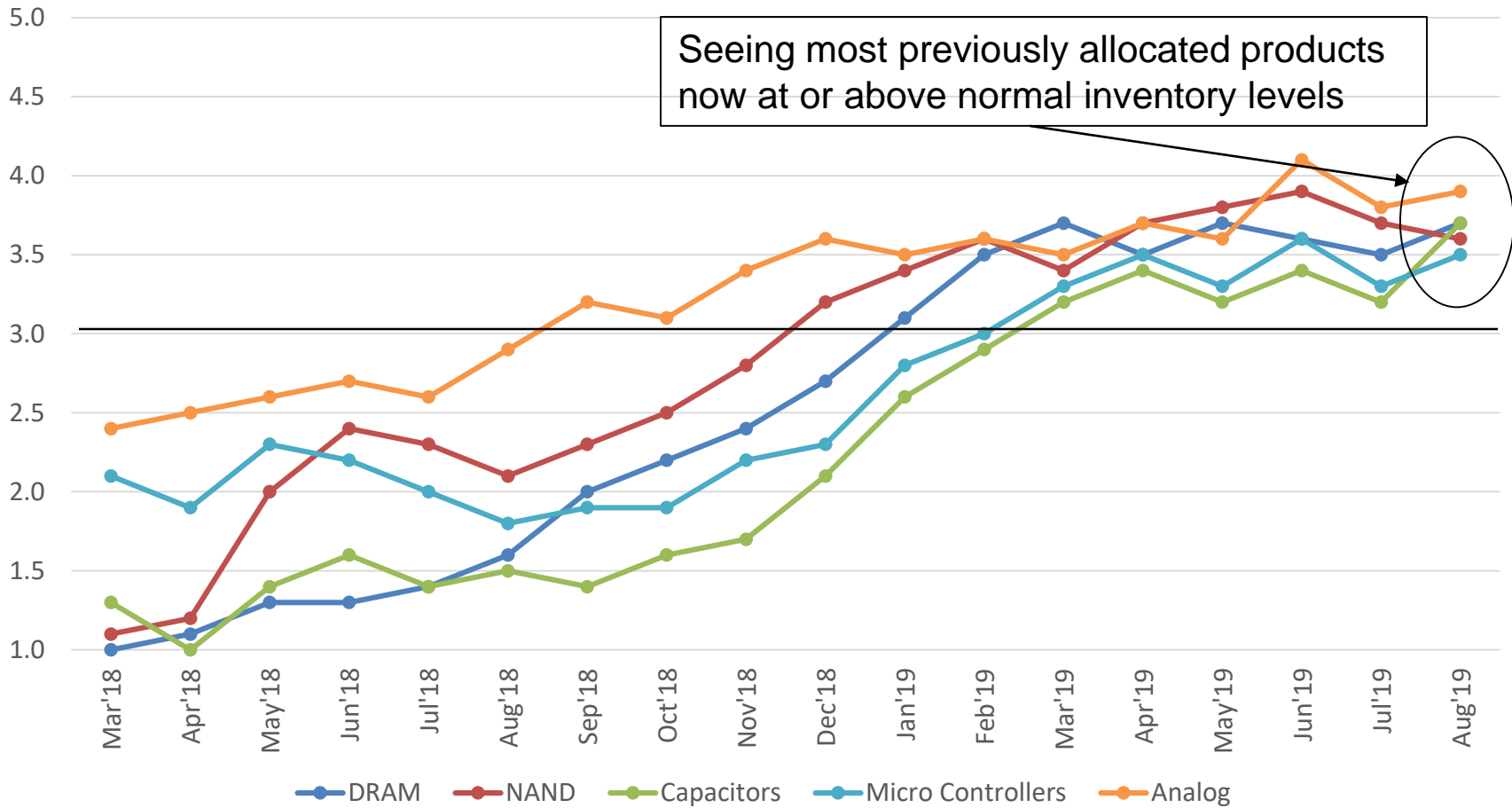


C4Q19 Inventories vs. C3Q19



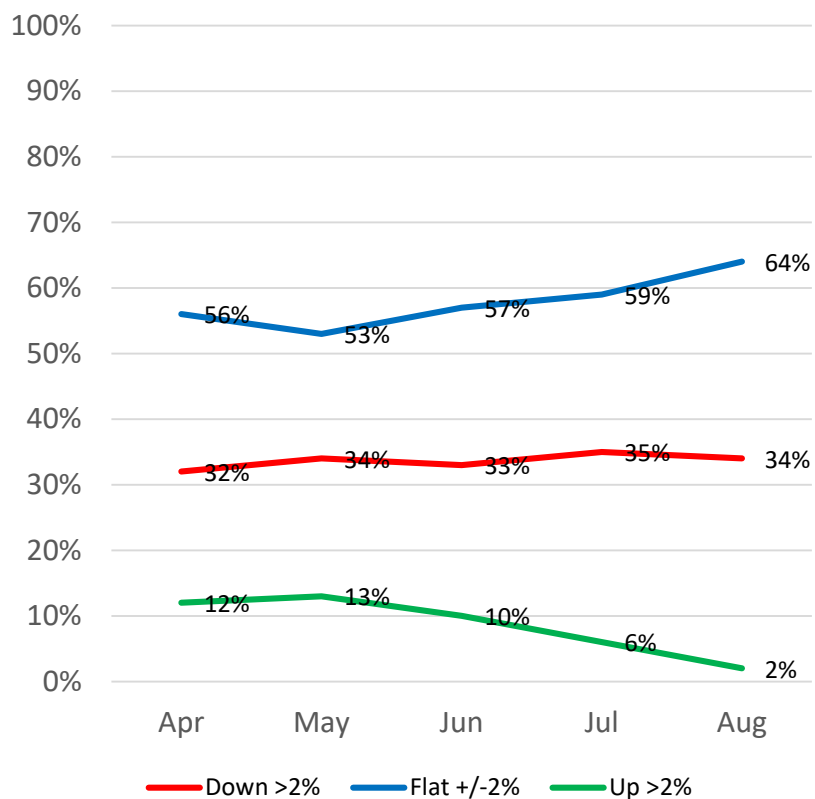
Inventory Status

(Using a scale of 1 to 5 with 1 being extremely low inventory, 3 being the normal amount, and 5 being extremely high; how do you view inventory levels for the following products?)

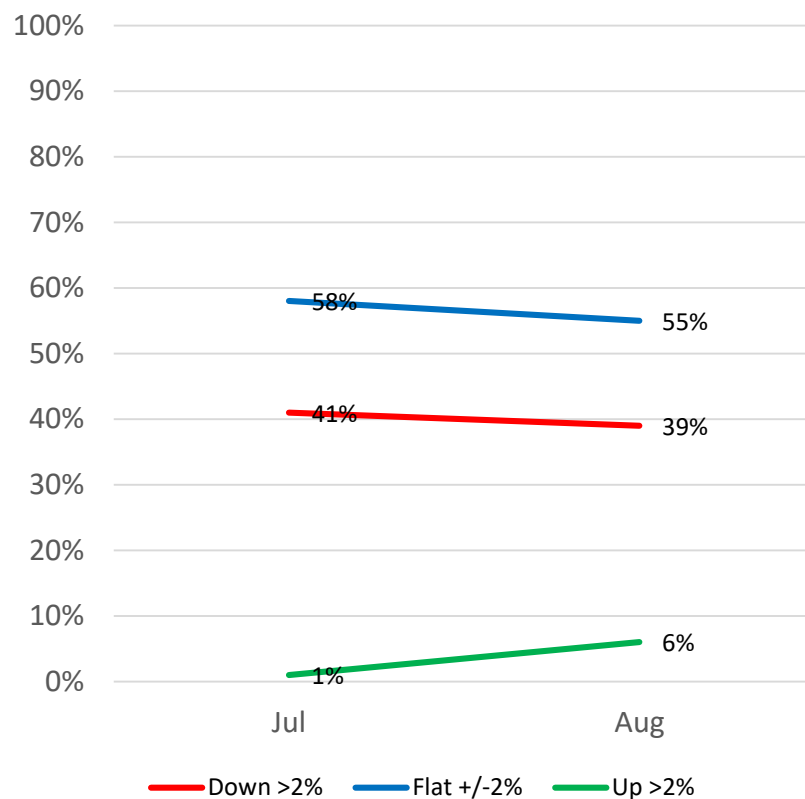


Q/Q Pricing Trends

C3Q19 Pricing vs. C2Q19

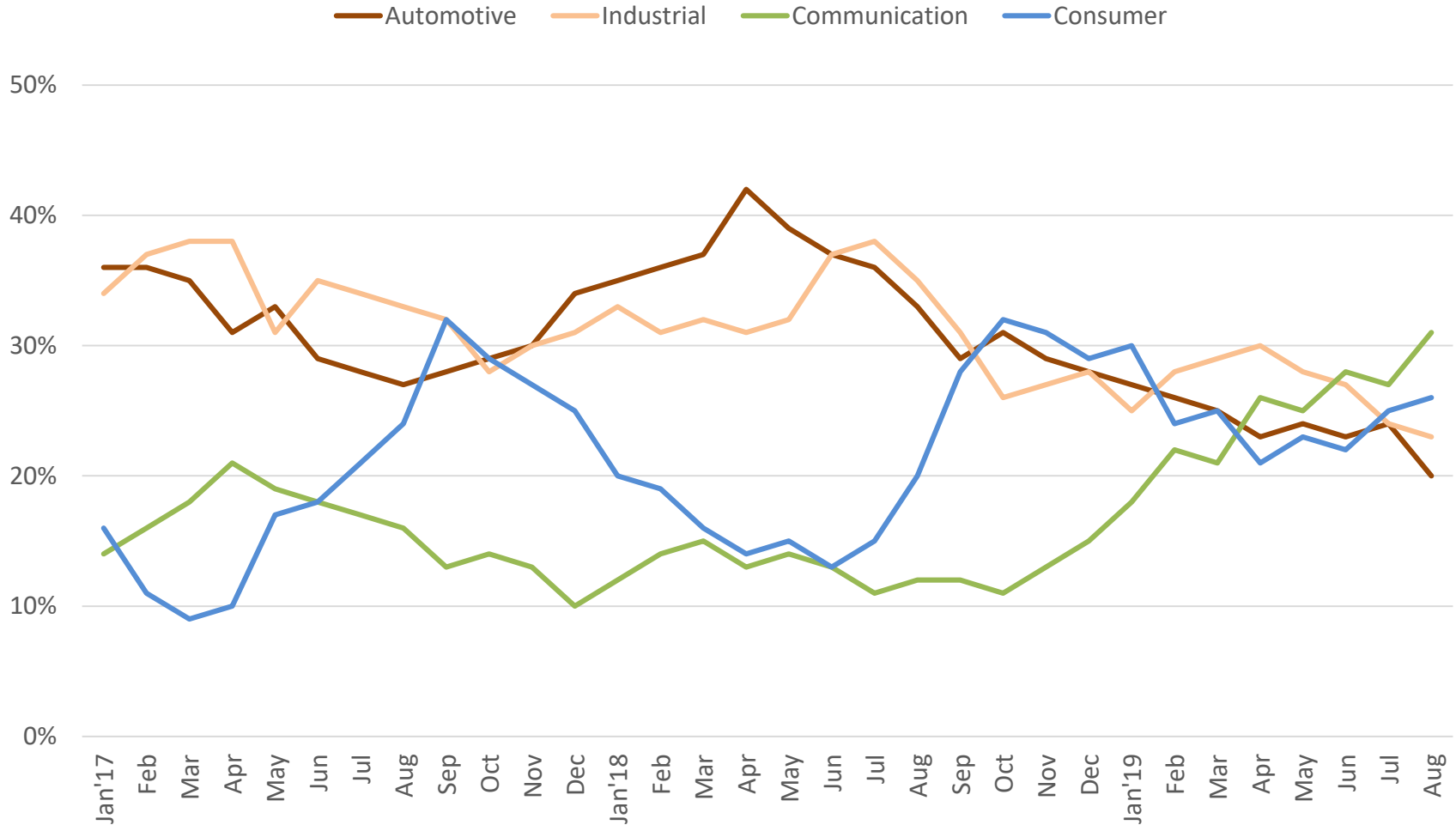


C4Q19 Pricing vs. C3Q19



Vertical Outlook

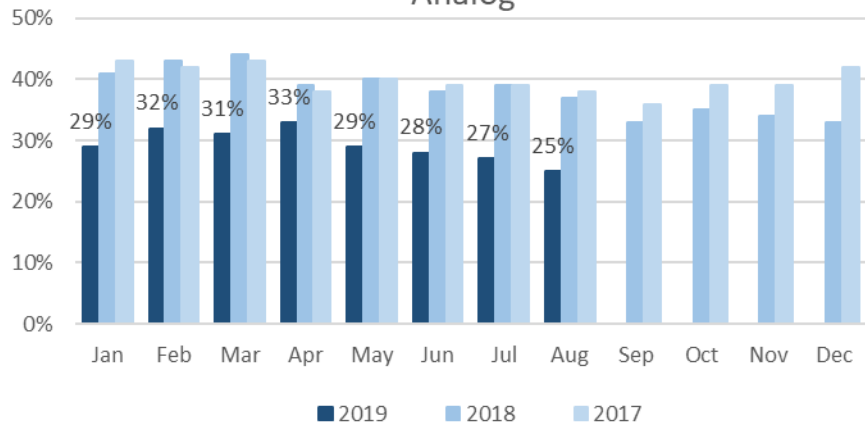
The outlook for Comm and Industrial improves while Auto and Consumer weaken



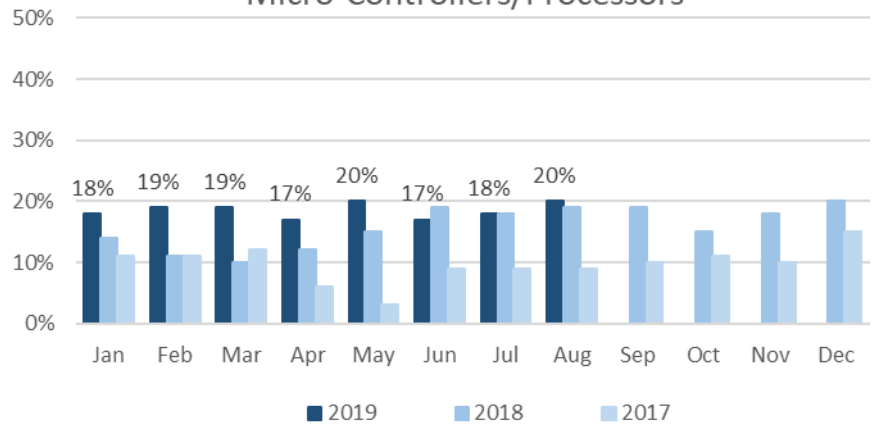
Technology Outlook

(y/y comparison)

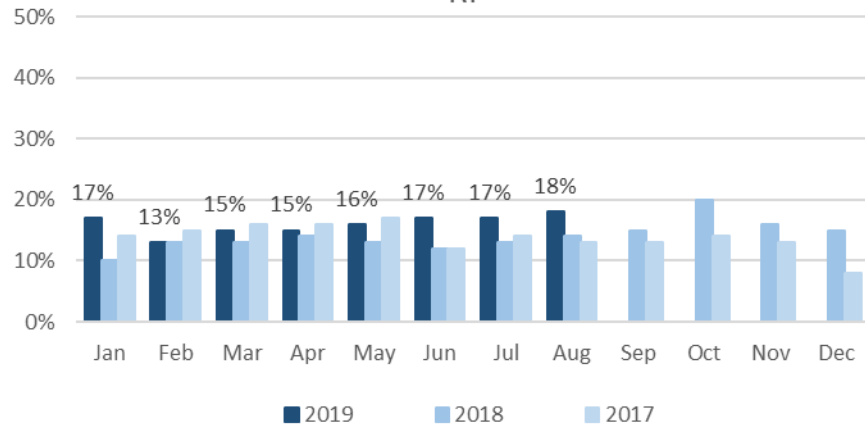
Analog



Micro-Controllers/Processors



RF



FPGA

