

A glowing blue microchip is centered on a circuit board. The chip has a grid of small squares on its surface and is surrounded by intricate circuitry. The entire scene is bathed in a blue light, giving it a futuristic and technological appearance.

TPC Semiconductor Market Survey

September 12, 2019

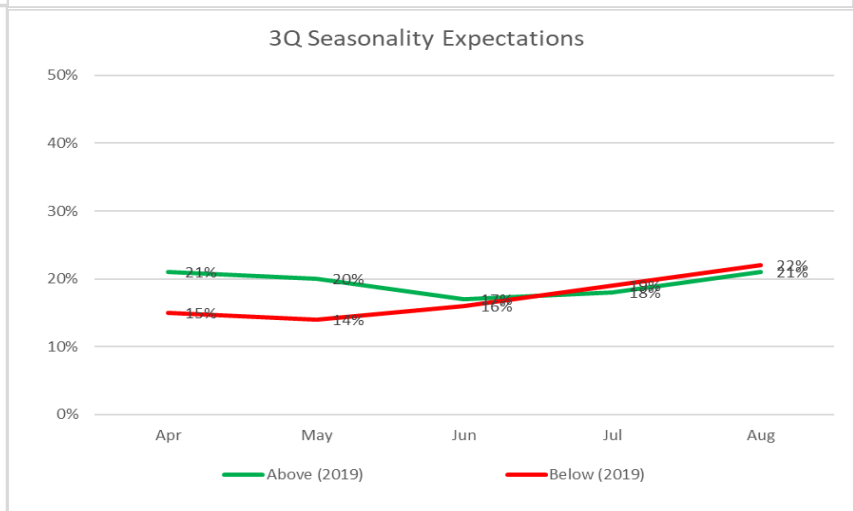
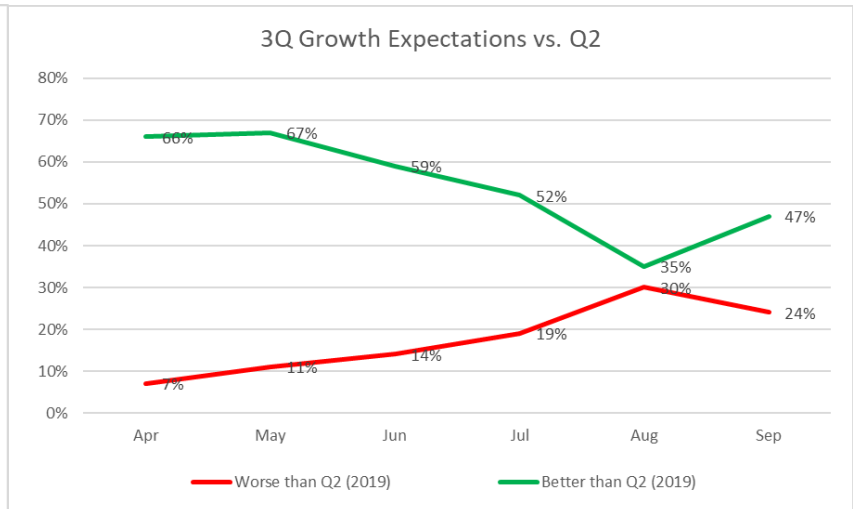
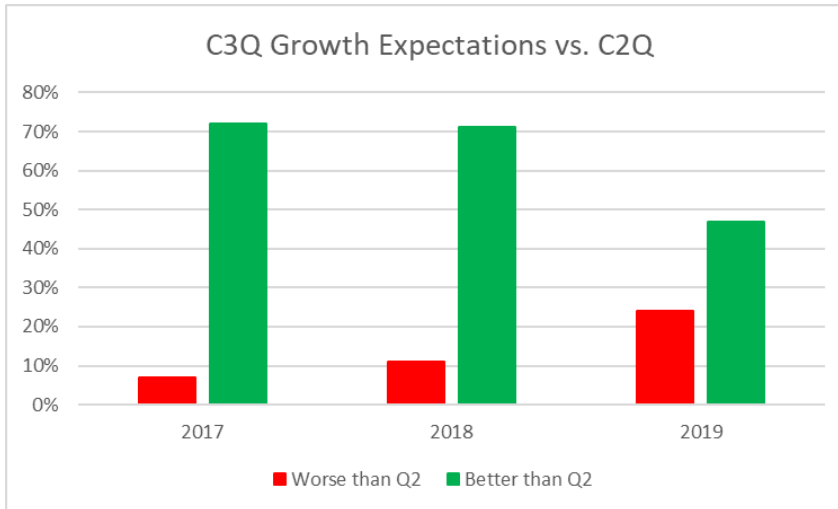
TPC September 2019 Survey Summary

Survey Date: September 7-9 Respondents: ~11,800 Location: Worldwide (~80% Asia) Who: Active Electronics Industry Professionals Response Composition (multiple choices): Industrial 41%, Auto 18%, Comm 22%, Computing 26%, Mobile 35%, Data Ctr 23%, Other 7%

- Our September 2019 Semi industry survey of over 25k electronic industry professionals showed an uptick in the outlook for C3Q19 while C4Q19 stayed generally the same.
- Our C4Q19 survey data shows generally in line q/q demand growth expectations compared to the previous 2 years; however, bookings expectations are slightly improved vs. 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.
- The q/q demand outlook for C3Q19 improved while C4Q19's outlook stayed generally the same as last month. Both quarters are viewed as sub seasonal vs. last year.
 - For C3Q, 24% expect weaker q/q growth vs 30% previously while 47% see better growth.
 - 22% see C3Q as sub seasonal vs. 21% seeing it above seasonal. This remains weaker than the previous 2 years data.
 - Our C4Q data shows 58% expecting down q/q growth vs. 63% previously, but only 15% see it as better than seasonal while 18% see it below seasonal.
- Cancellation expectations (slide 6) which is an indicator that has been negative over the past couple of months is showing some improvement vs. our previous survey.
- Inventories (slide 7) for C3Q appear to be getting slightly worse, yet C4Q's outlook appears to be improving.
- Slide 9, which shows a more granular view of inventory by key components, shows inventory and availability continuing to be higher than average except for NAND which showed availability significantly decreasing. This is likely due to production cuts coupled with increased demand from the Hyperscale companies.
- Pricing continues to erode into C3Q evidenced by our data on slide 9 where a third of the respondents see C3Q pricing decreasing by >2% q/q and getting worse in C4Q.

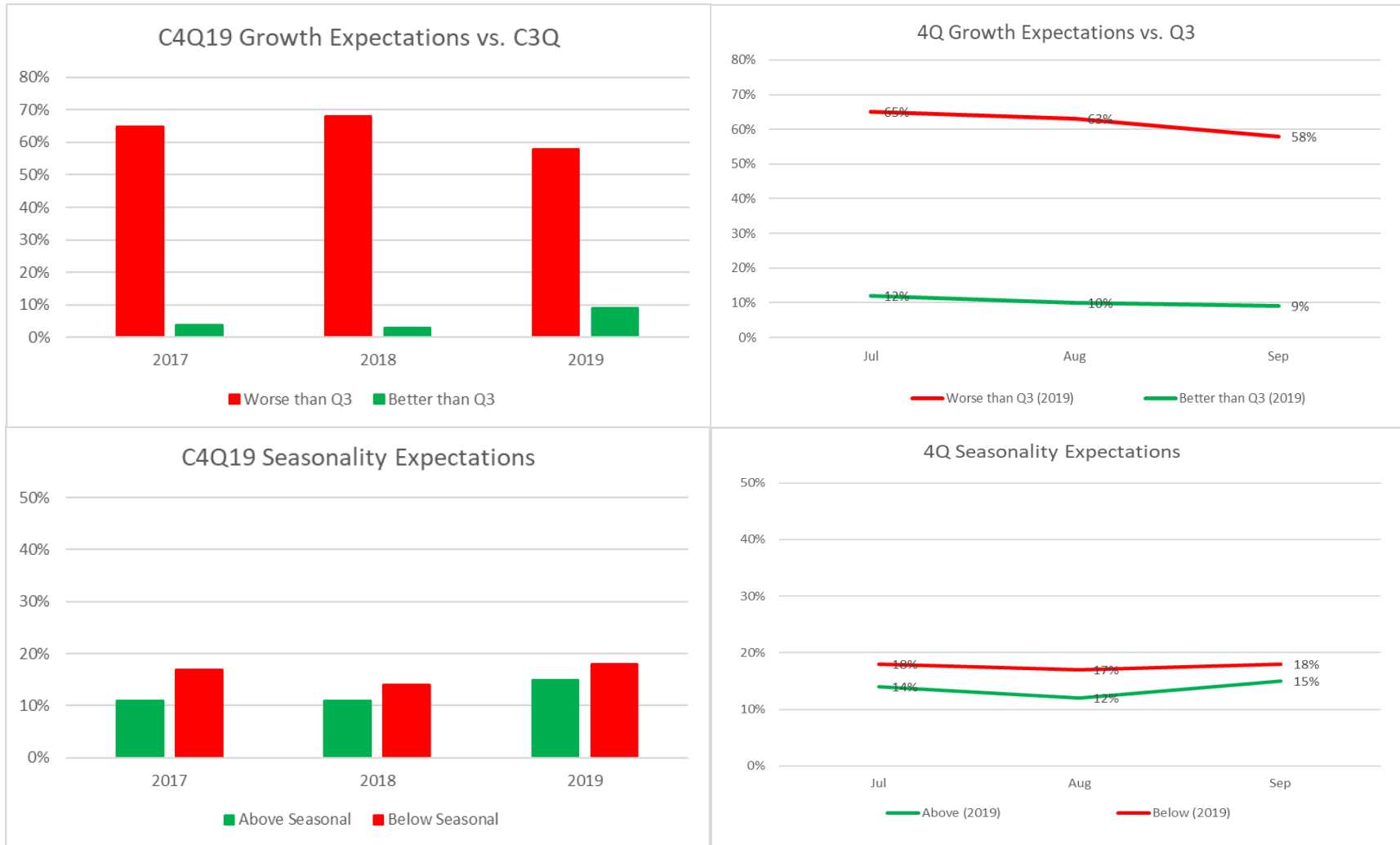
C3Q19 Growth & Seasonality Outlook

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



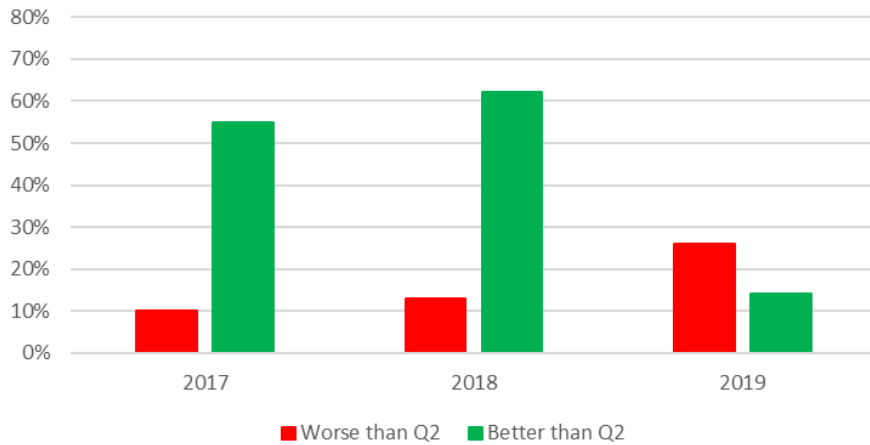
C4Q19 Growth & Seasonality Outlook

Both C4Q19's demand growth outlook and seasonality outlook is weaker than the previous 2 years

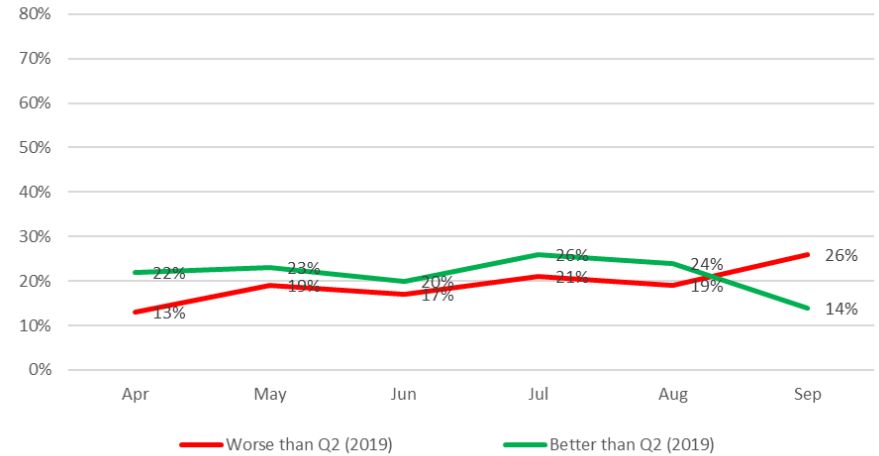


Q/Q Bookings Growth Expectations

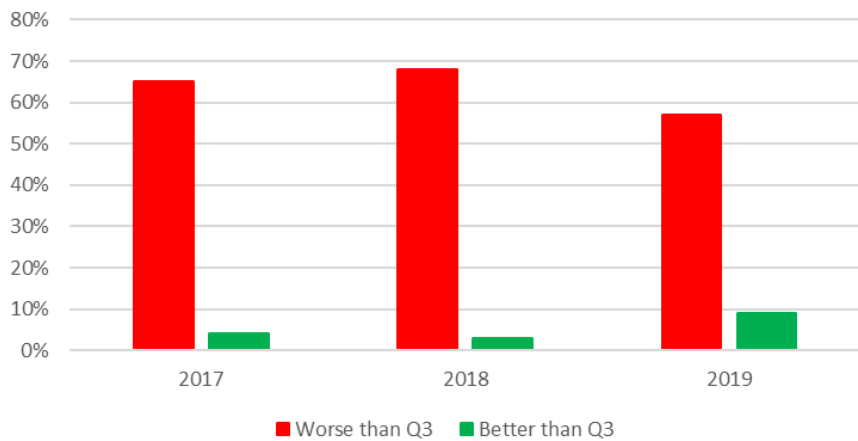
C3Q Bookings Expectations



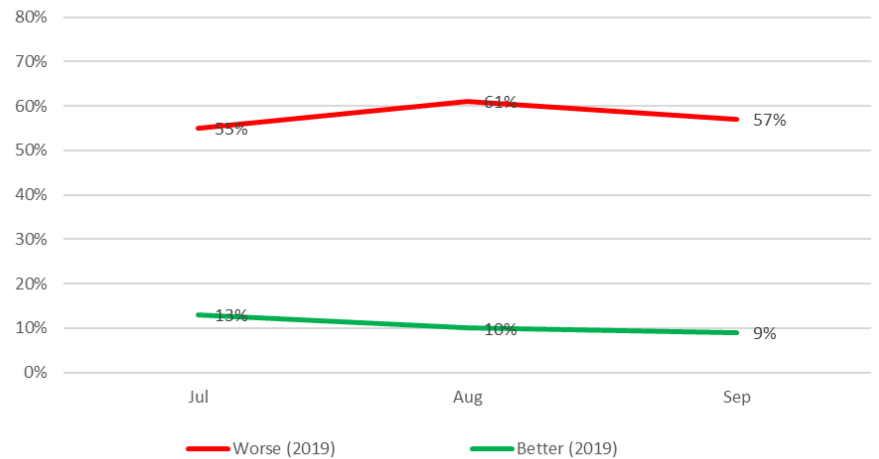
3Q Bookings Expectations



C4Q Bookings Expectations

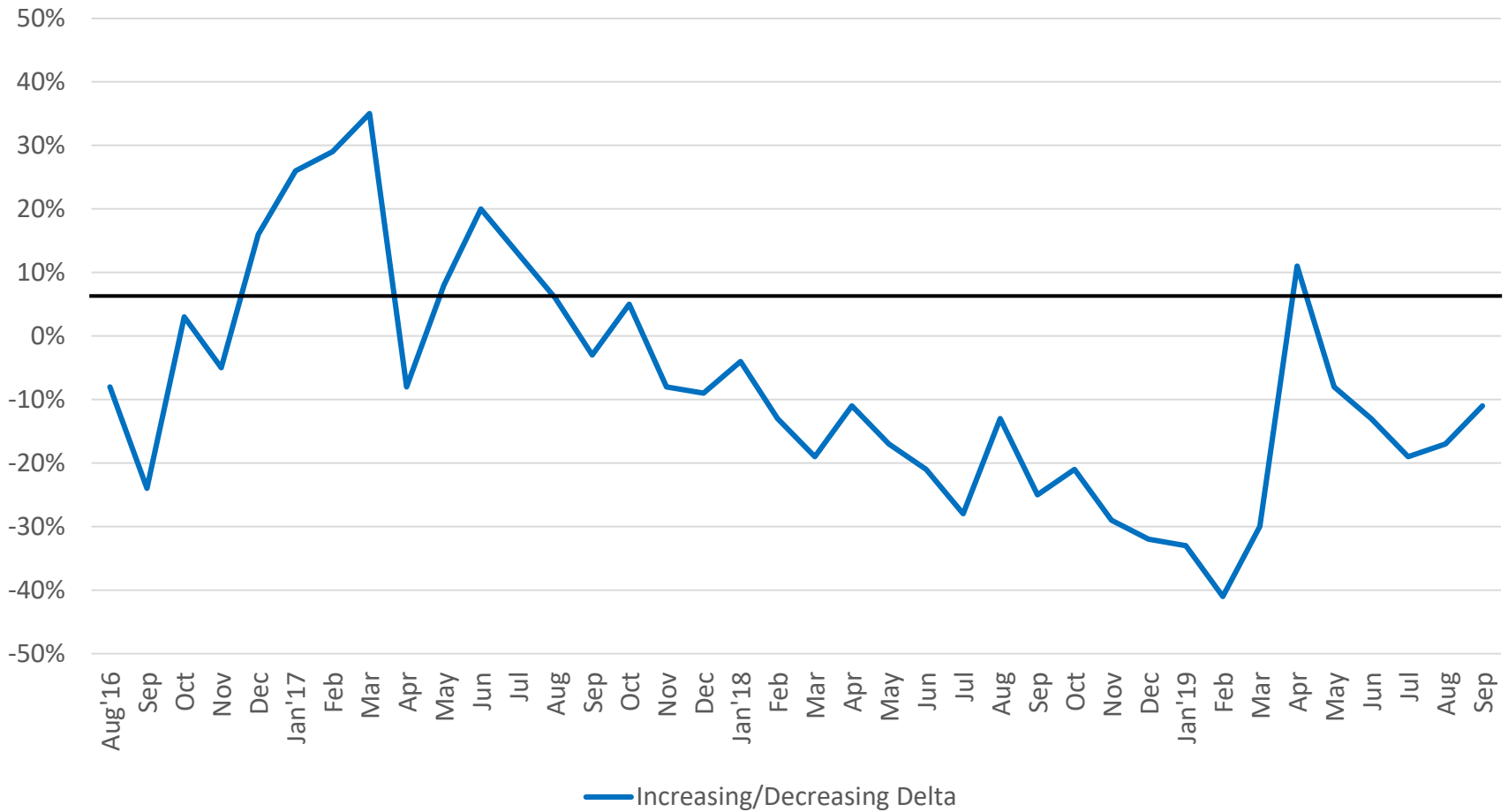


4Q Bookings Expectations



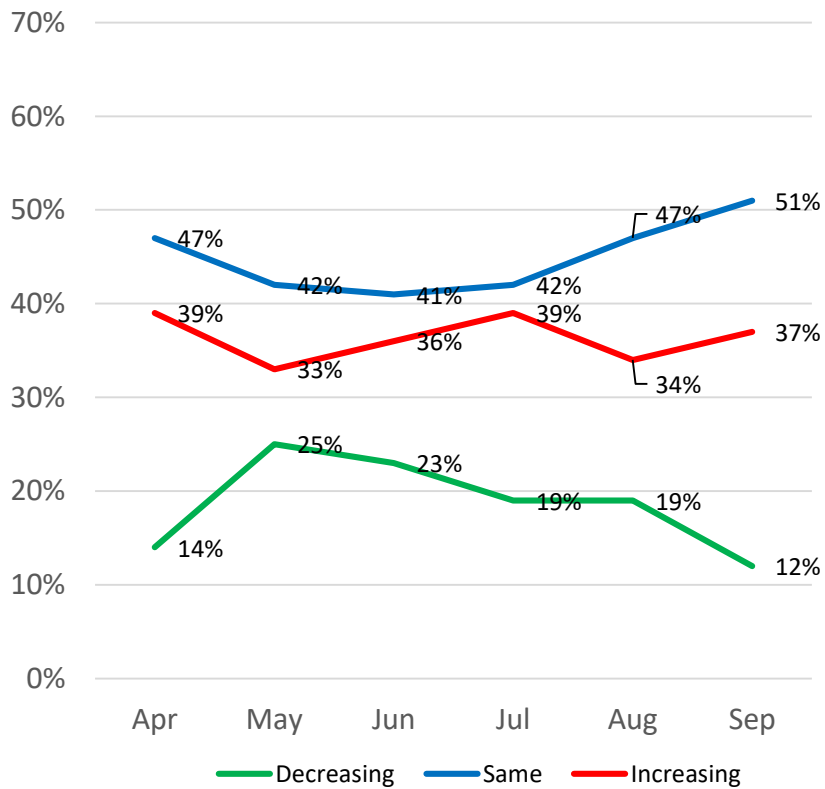
Backlog Order Cancellations vs. 30 Days Ago

(Delta between Increasing and Decreasing Cancellations)

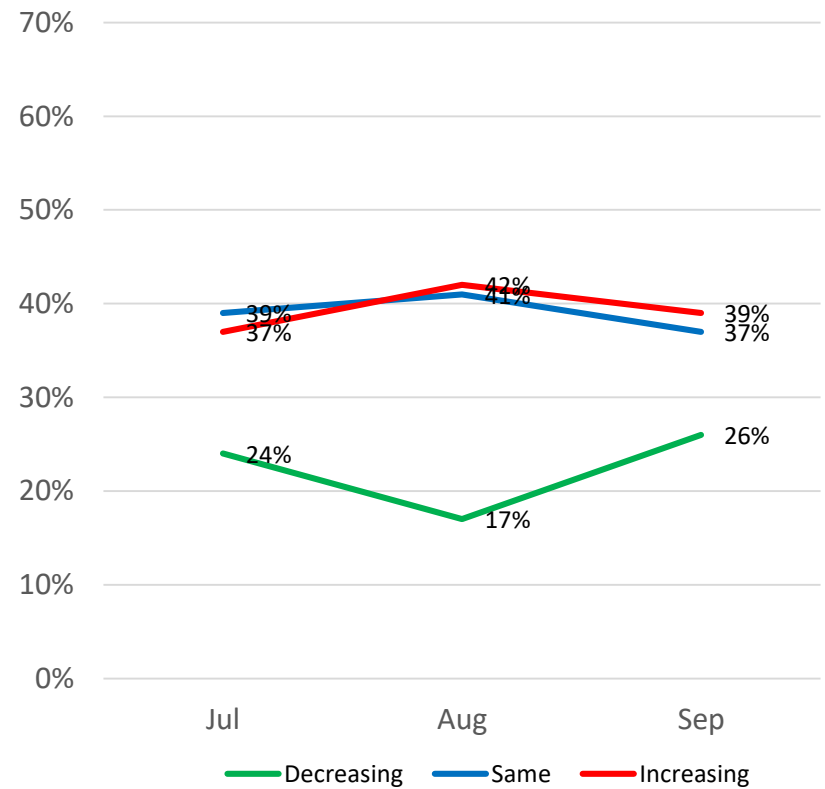


Q/Q Inventory Growth

C3Q19 Inventories vs. C2Q19

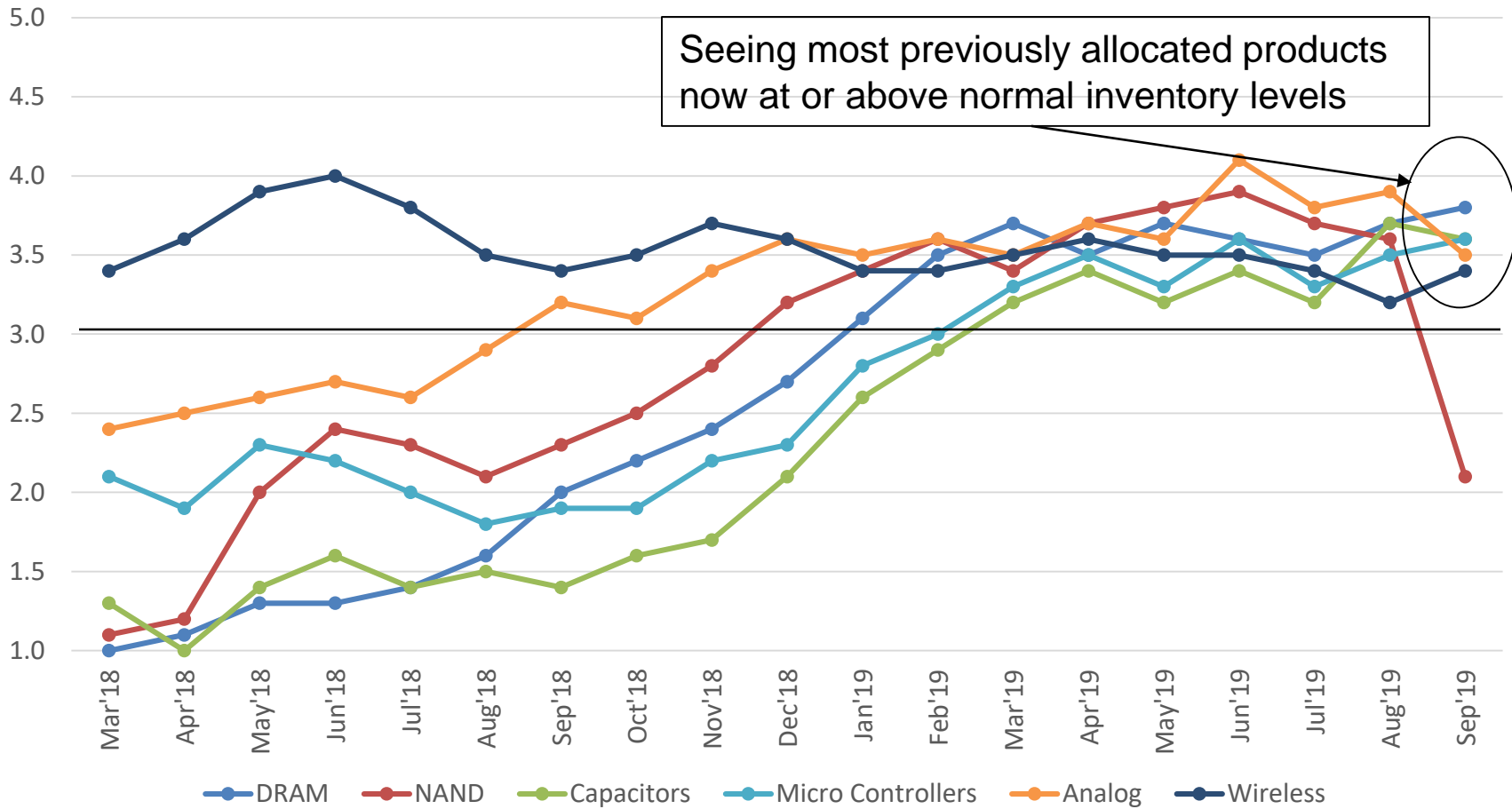


C4Q19 Inventories vs. C3Q19



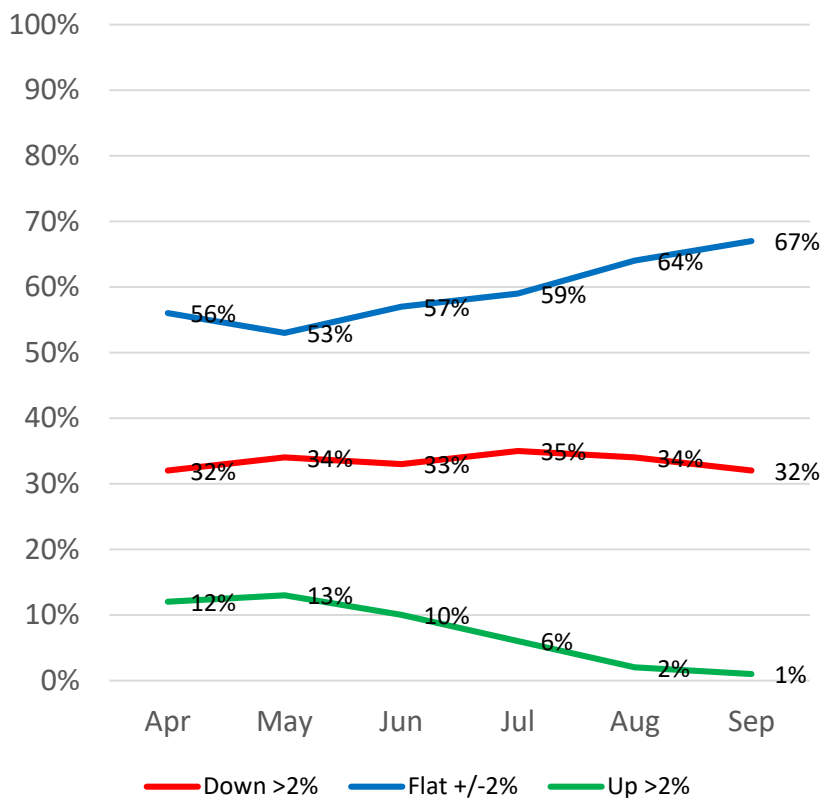
Inventory Status

(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?)

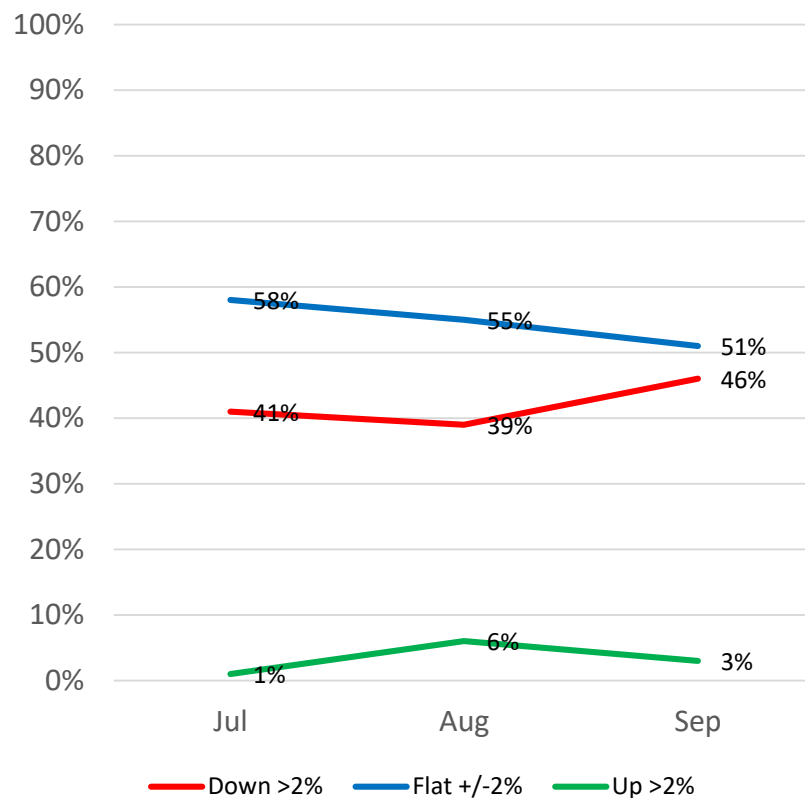


Q/Q Pricing Trends

C3Q19 Pricing vs. C2Q19

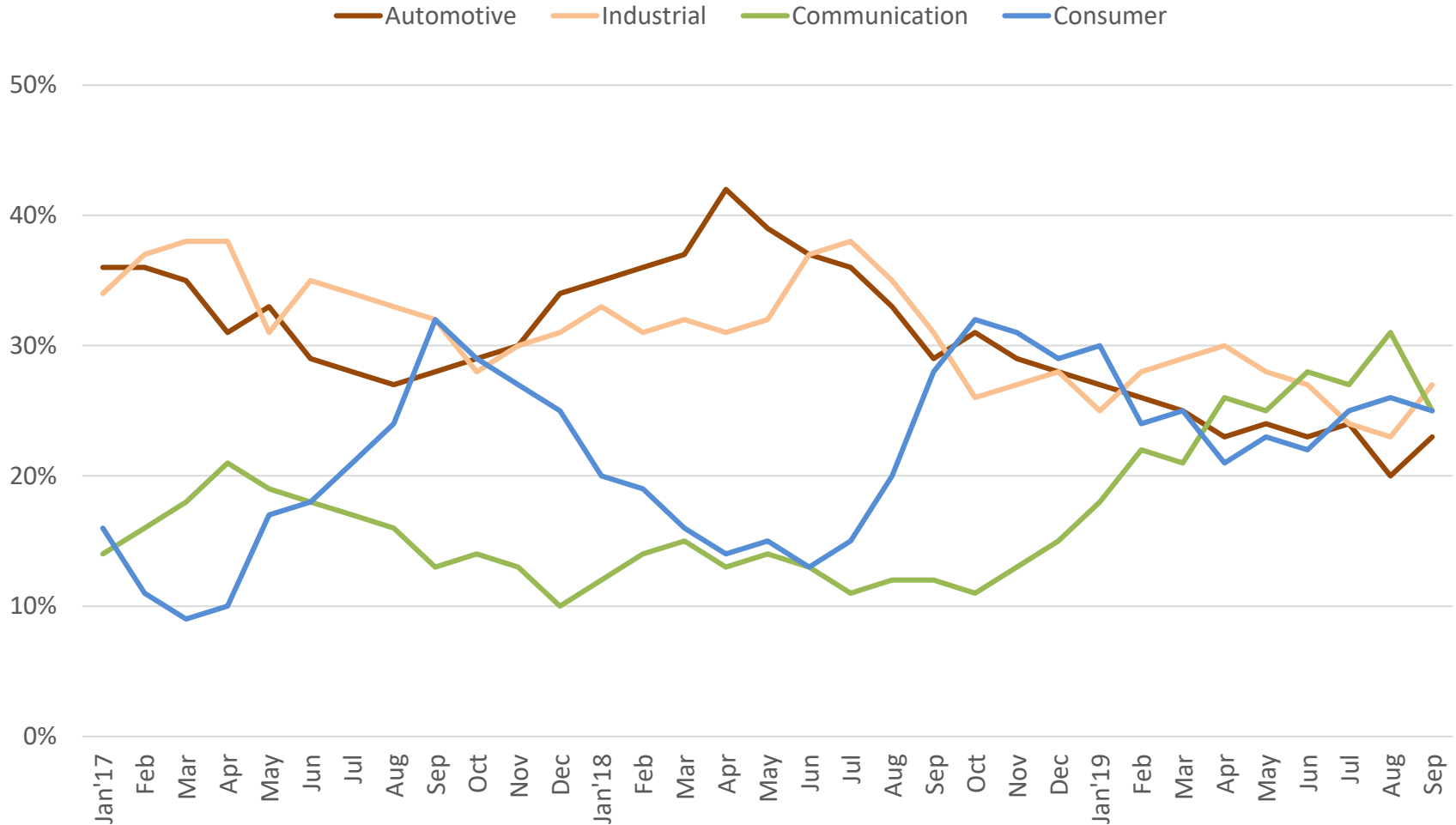


C4Q19 Pricing vs. C3Q19



Vertical Outlook

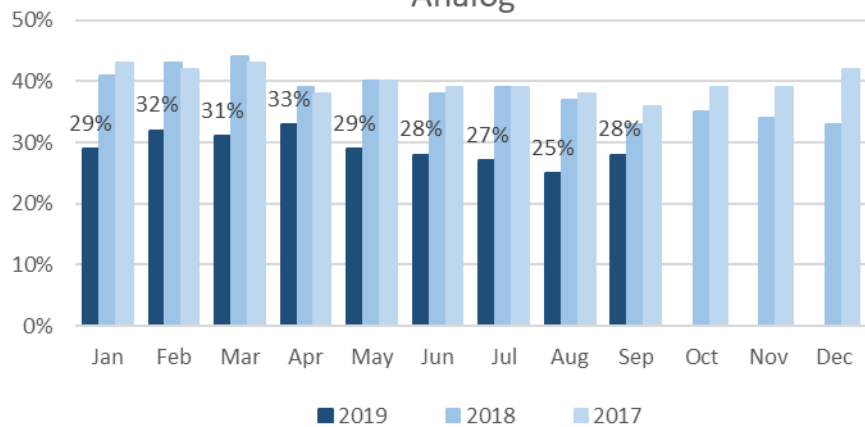
The outlook for Communications continues to be above previous years while Auto, Industrial, and Consumer are weaker than the previous 2 years



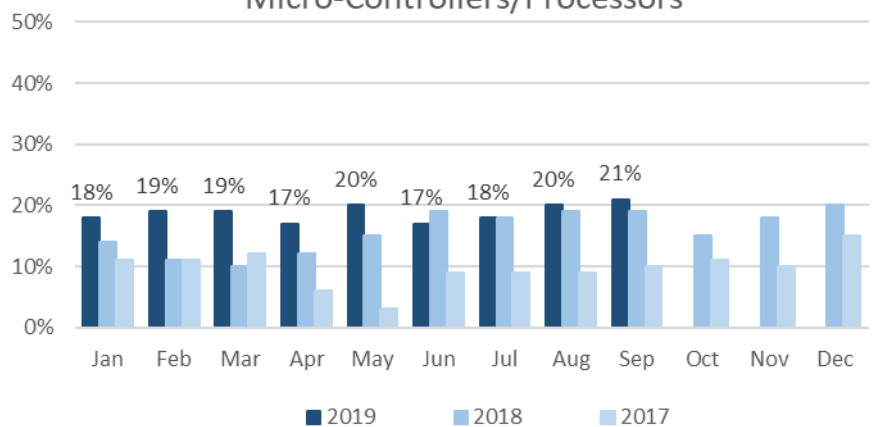
Technology Outlook

(y/y comparison)

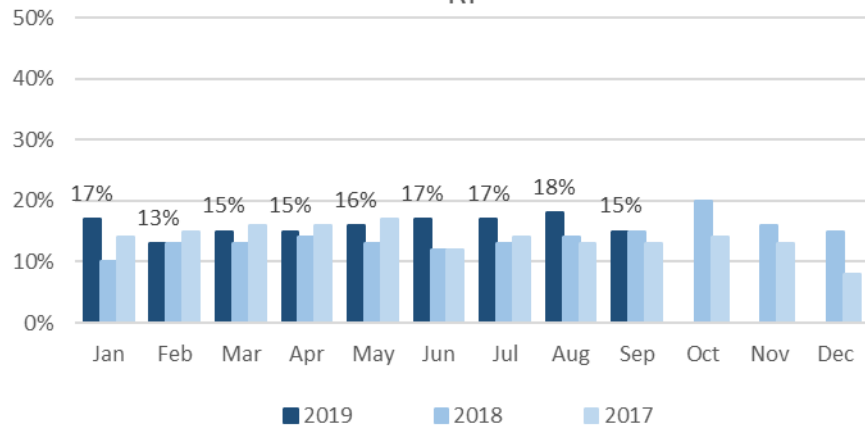
Analog



Micro-Controllers/Processors



RF



FPGA

