



TPC Semiconductor Market Survey

July 16, 2019

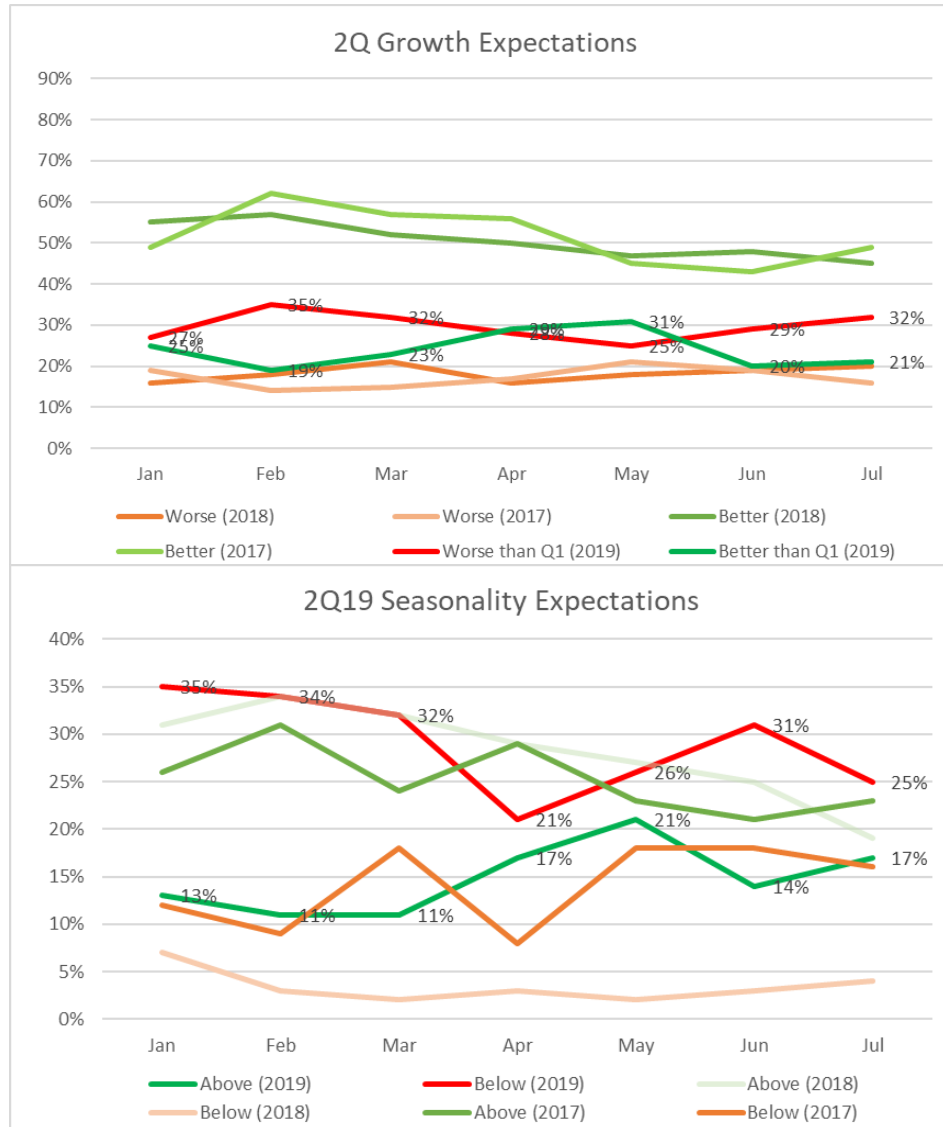
TPC July 2019 Survey Summary

Survey Date: July 12-15 Respondents: ~12,400 Location: Worldwide (~80% Asia) Who: Active Electronics Industry Professionals Response Composition (multiple choices): Industrial 40%, Auto 18%, Comm 16%, Computing 25%, Mobile 33%, Data Ctr 17%, Other 10%

- Our July 2019 Semi industry survey of over 20k electronic industry professionals showed a marked downtick in the outlook leading into C3Q19. We are seeing weakening in demand and bookings; while also seeing increases in inventories and cancellation trends.
- 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 2 largest electronics production areas in the world, China and Mexico, both are seeing inventories increase while demand in 2H has eroded further.
- The q/q demand outlook for C2Q19 and C3Q19 down ticked and both quarters are viewed as sub seasonal vs. the previous 2 years.
 - For C2Q, 32% expect weaker q/q growth vs 29% previously.
 - 25% see C2Q as sub seasonal vs. only 17% seeing it above seasonal. This remains weaker than the previous 2 years data.
 - Our C3Q data shows 52% expecting growth vs. 59% previously C2Q, but only 24% see it as better than seasonal. Both are less than the prior 2 years results.
 - C2Q19's booking expectations decreased with 39% expecting bookings to increase q/q vs. 43% in last month's survey. C3Q results show 26% expecting bookings to increase vs. 20% previously. However, this is much weaker vs. the previous 2 years.
- Cancellation expectations (slide 6) which is an indicator that has been quite negative over the past few months was starting to show a positive shift. However, things reversed slightly in May and has continued to down tick for the last 2 months.
- Inventories (slide 7) are ratcheting back up in C2Q vs. last month's data and the outlook for C3Q inventories appear to be moving sideways.
- Slide 8, 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 9 where a third of the respondents see C3Q pricing decreasing by >2% q/q vs. 27% in C2Q.

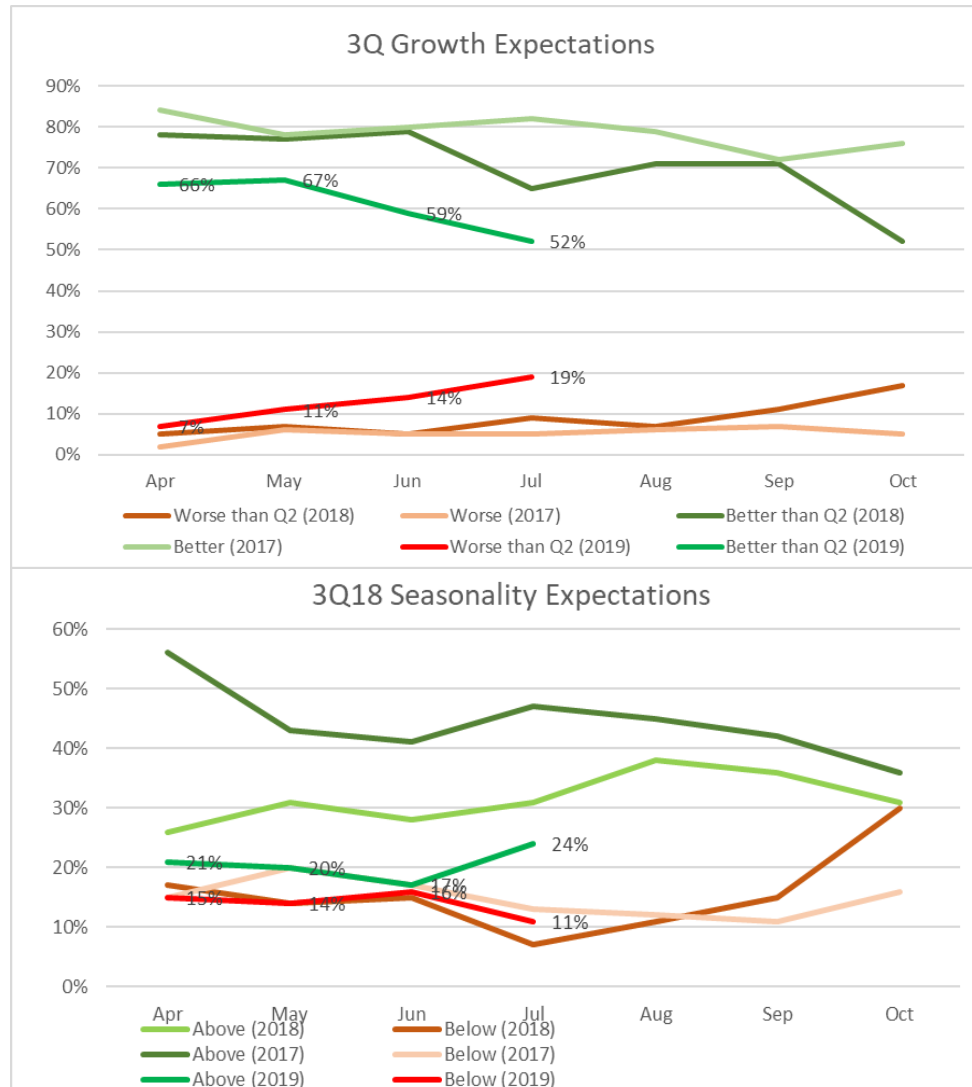
C2Q19 Growth & Seasonality Outlook

Both C2Q19's demand growth outlook and seasonality outlook is significantly weaker than the previous 2 years

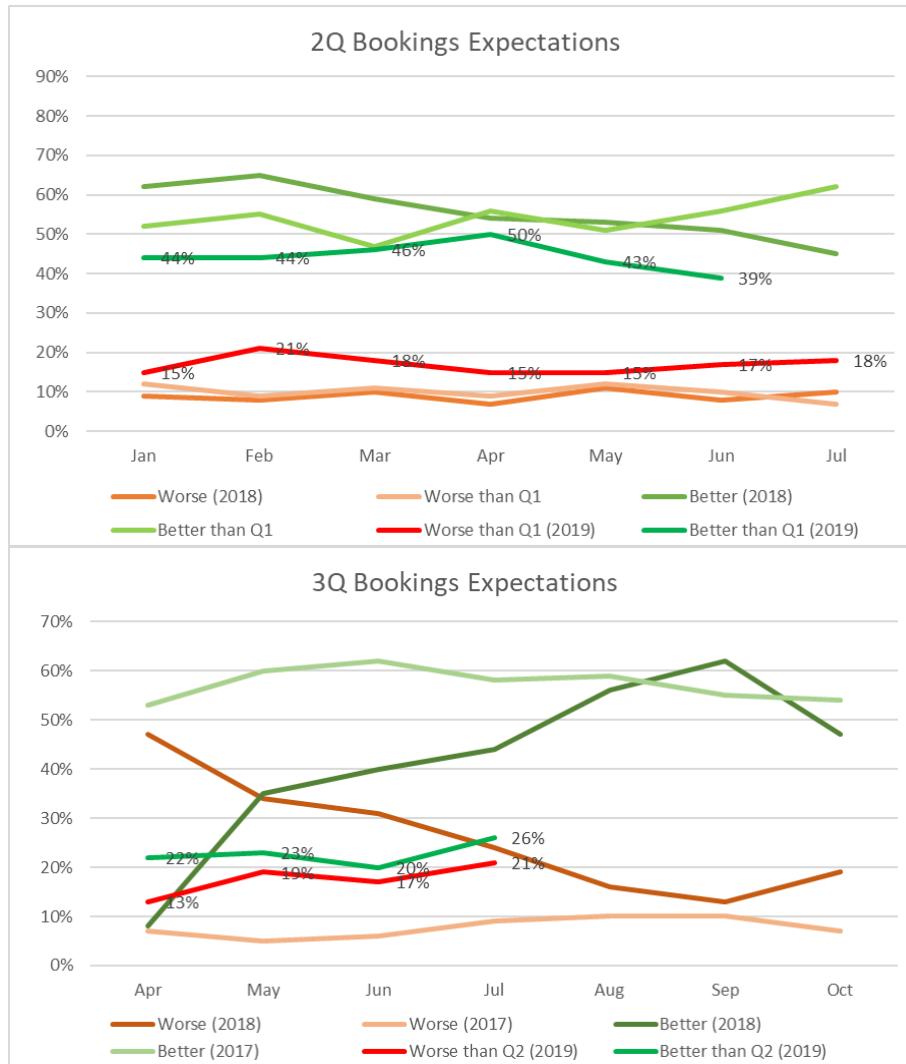


C3Q19 Growth & Seasonality Outlook

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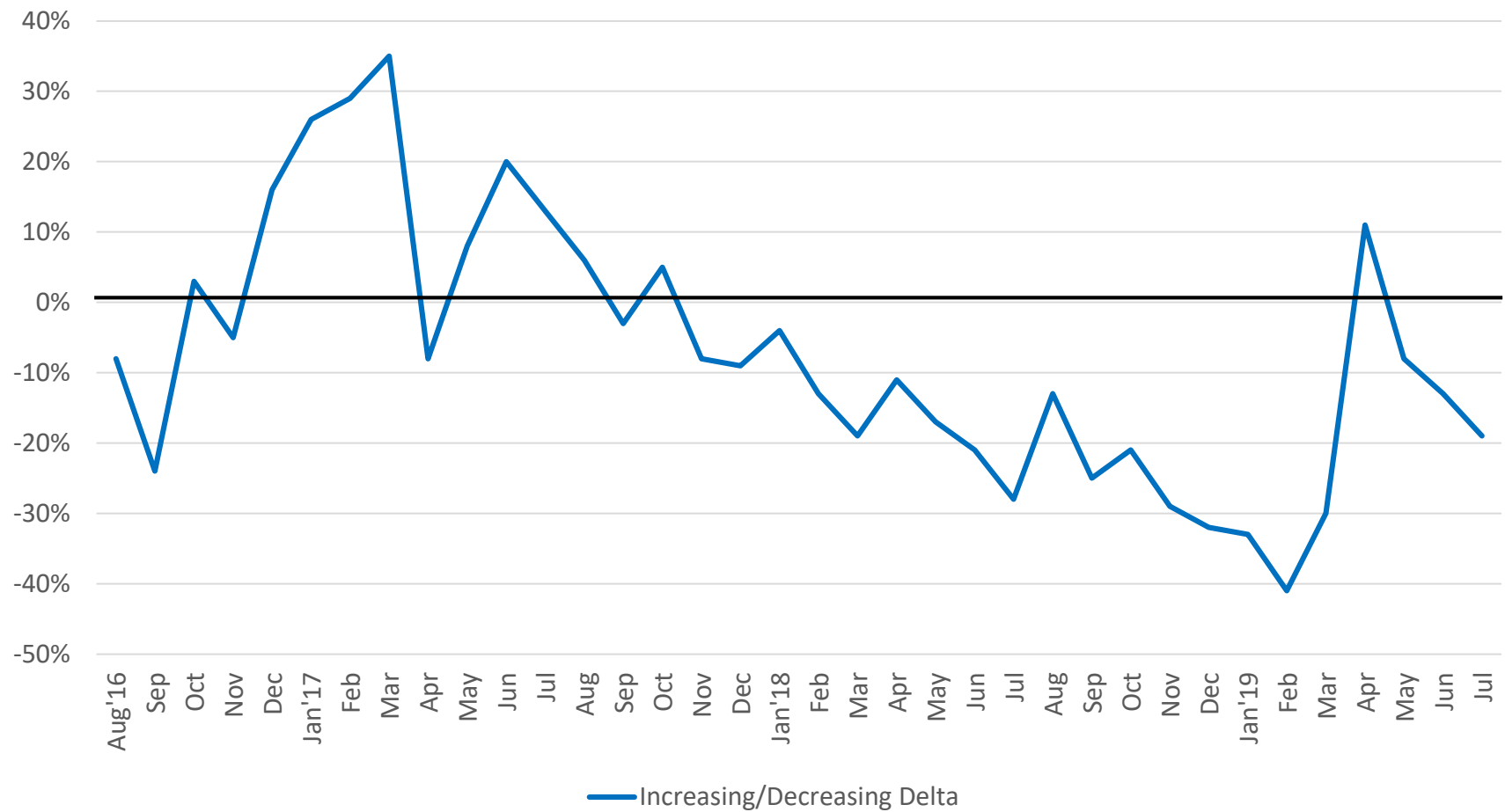


Q/Q Bookings Growth Expectations



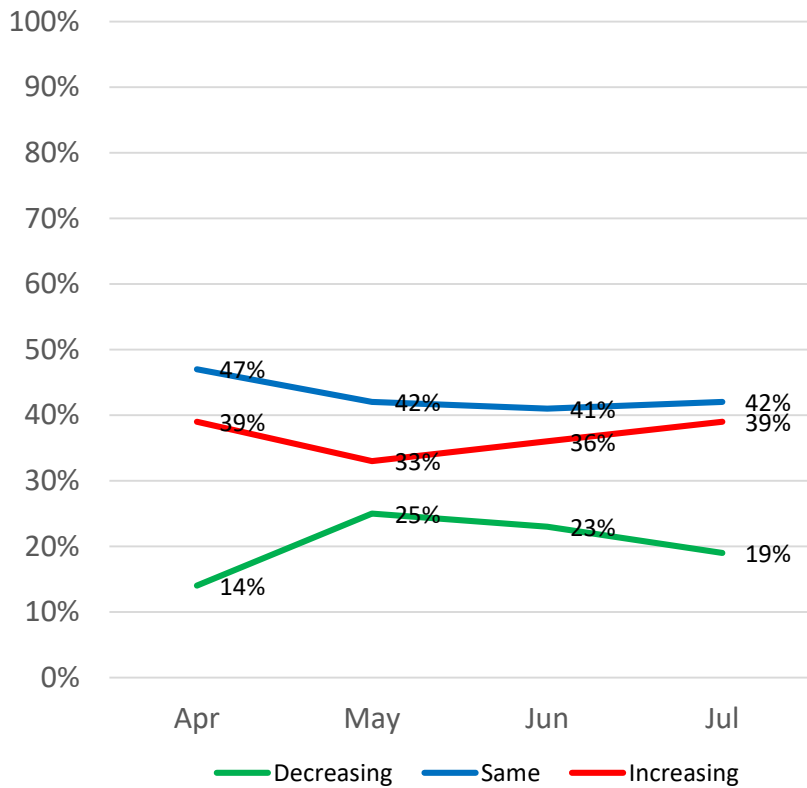
Backlog Order Cancellations vs. 30 Days Ago

(Delta between Increasing and Decreasing Cancellations)

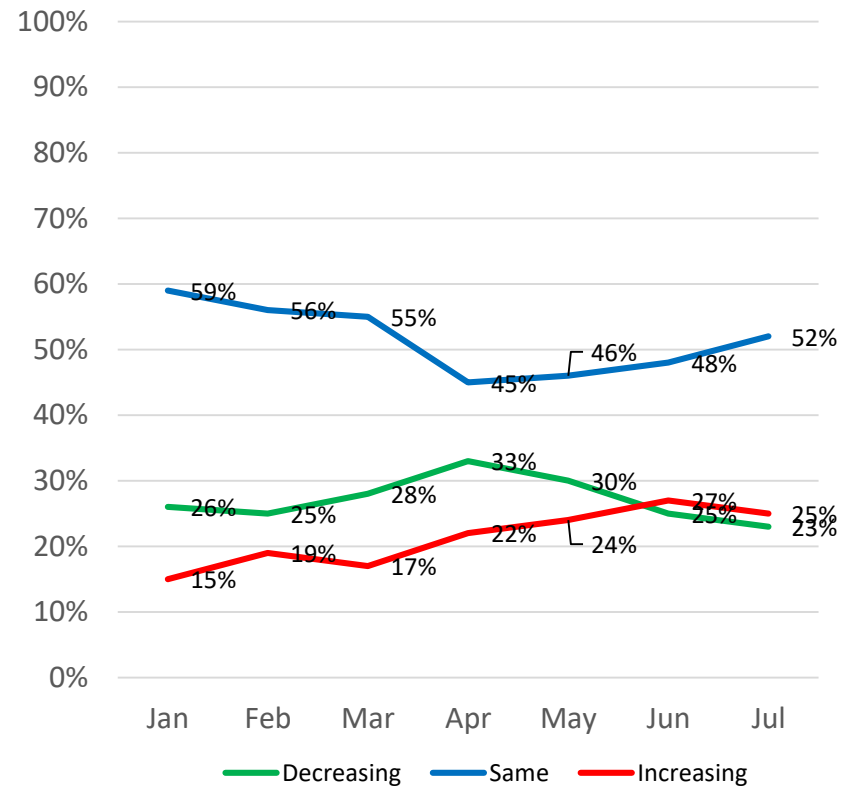


Q/Q Inventory Growth

C3Q19 Inventories vs. C2Q19

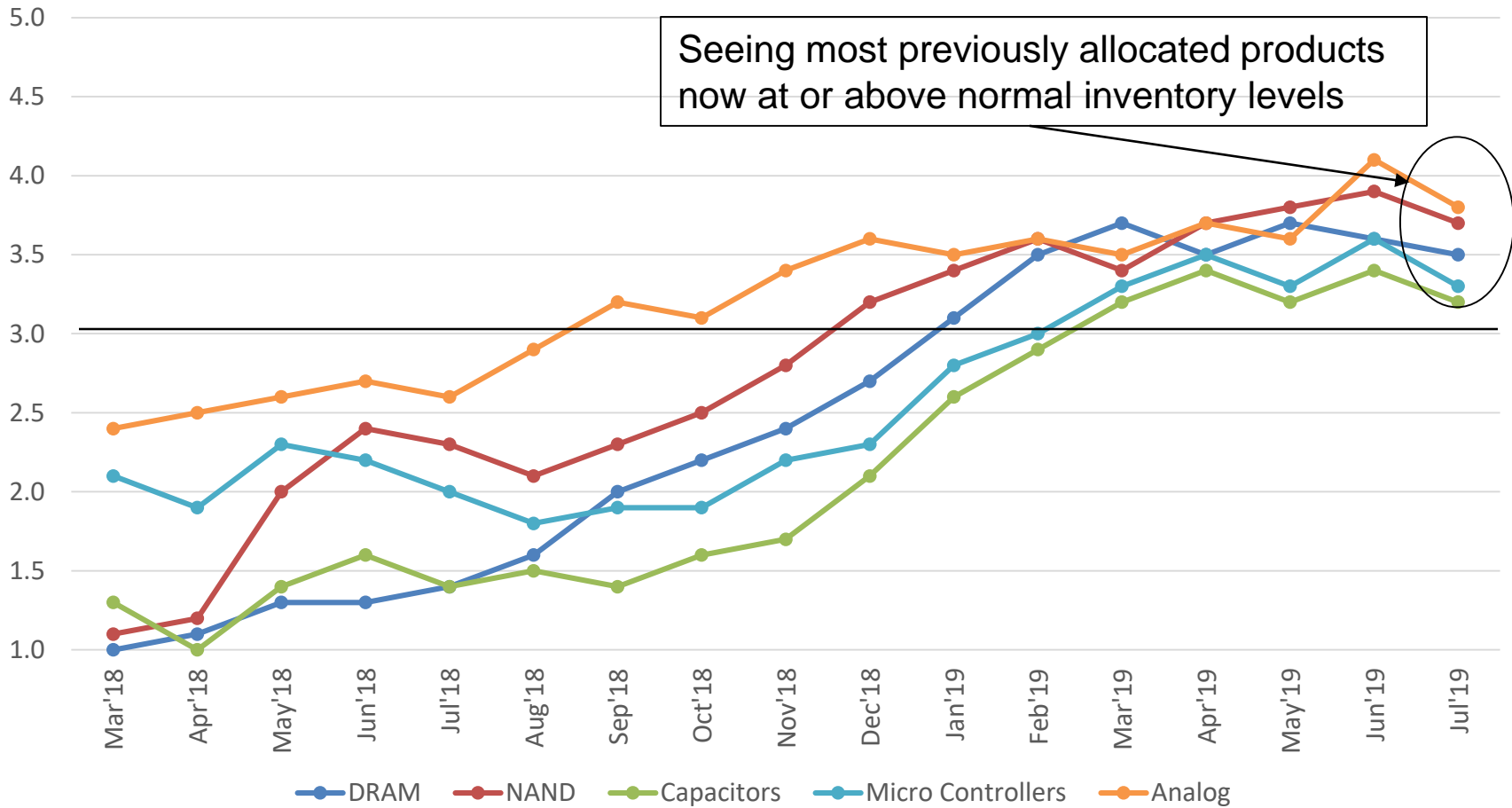


C2Q19 Inventories vs. C1Q19



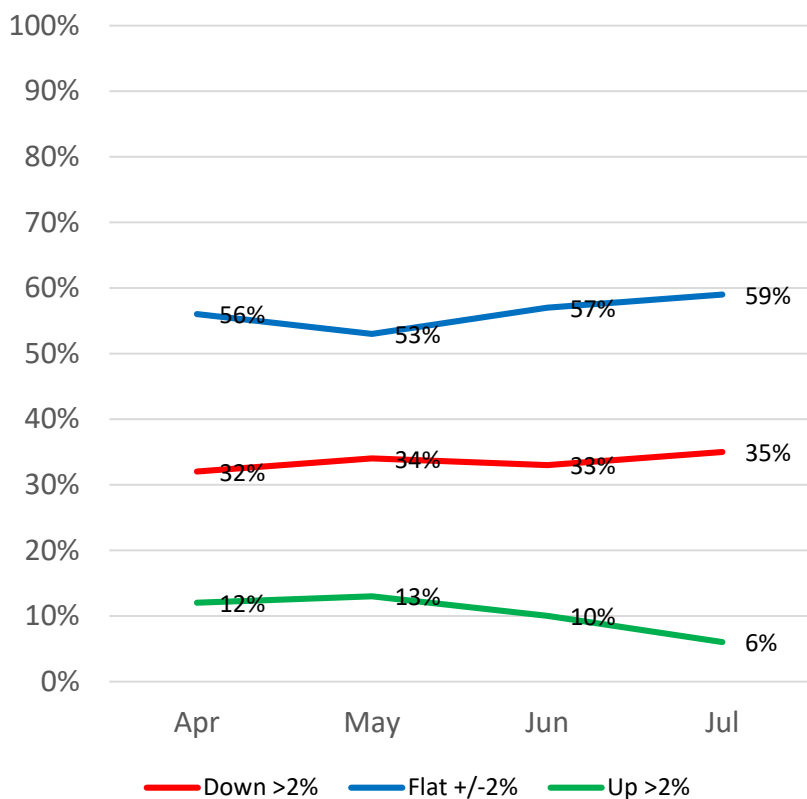
Inventory Status

(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?)

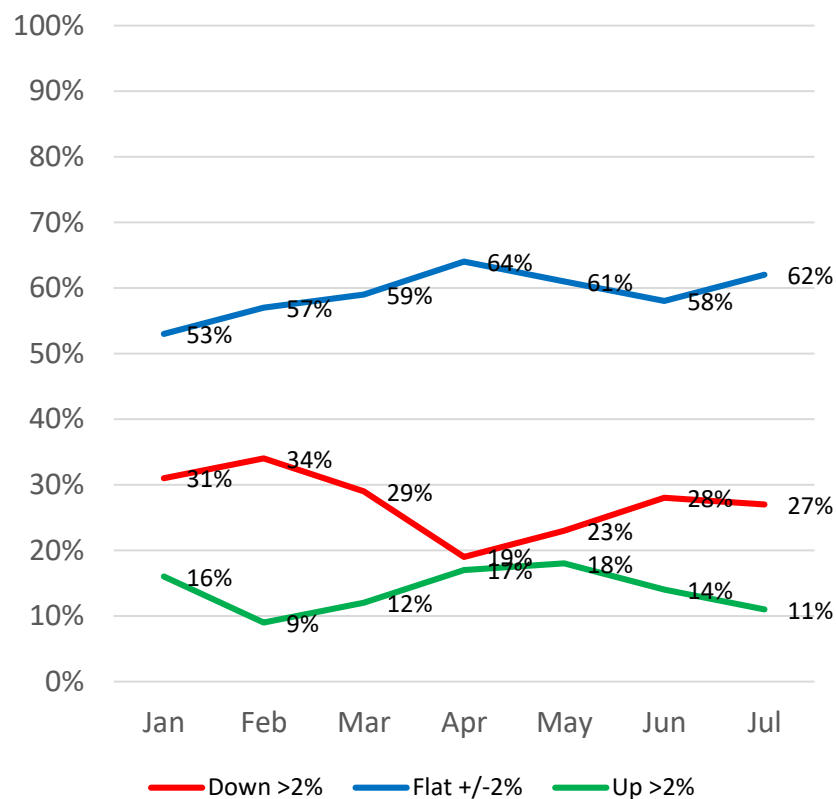


Q/Q Pricing Trends

C3Q19 Pricing vs. C2Q19

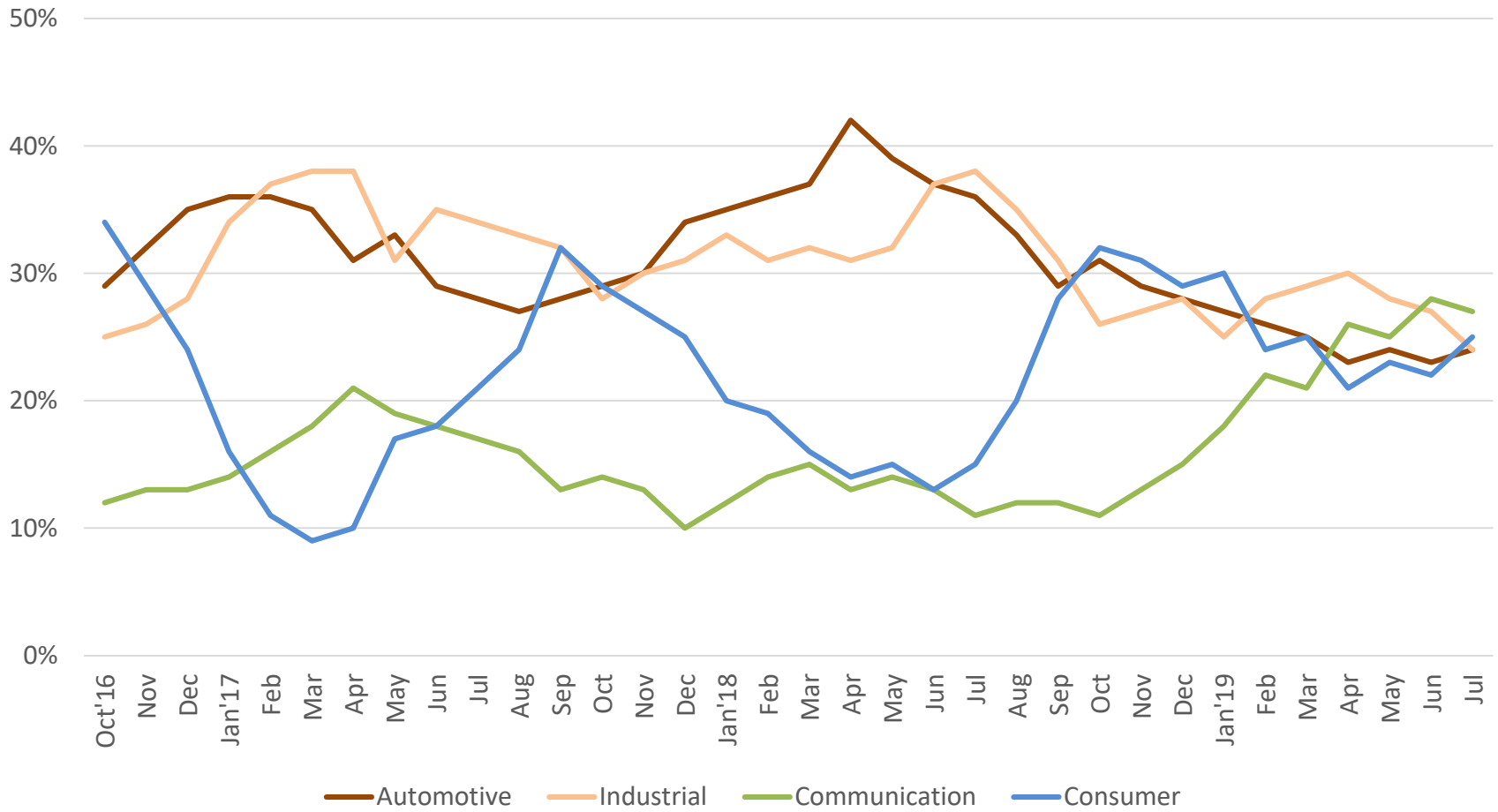


C2Q19 Pricing vs. C1Q19



Vertical Outlook

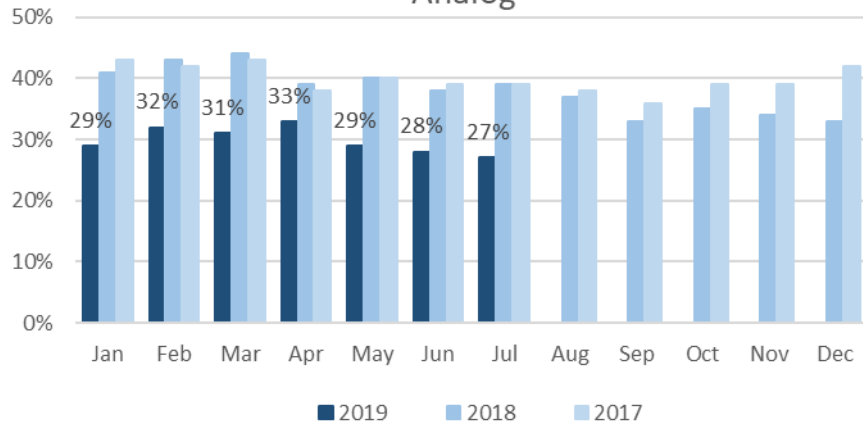
The outlook for Comm and Industrial improves while Auto and Consumer weaken



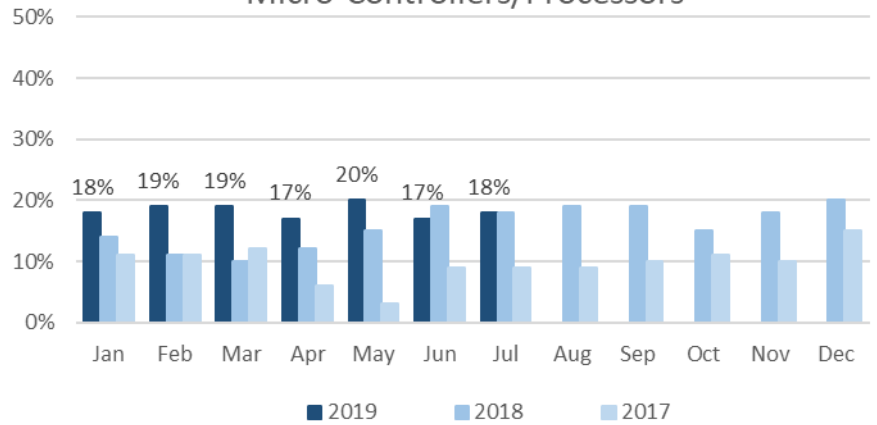
Technology Outlook

(y/y comparison)

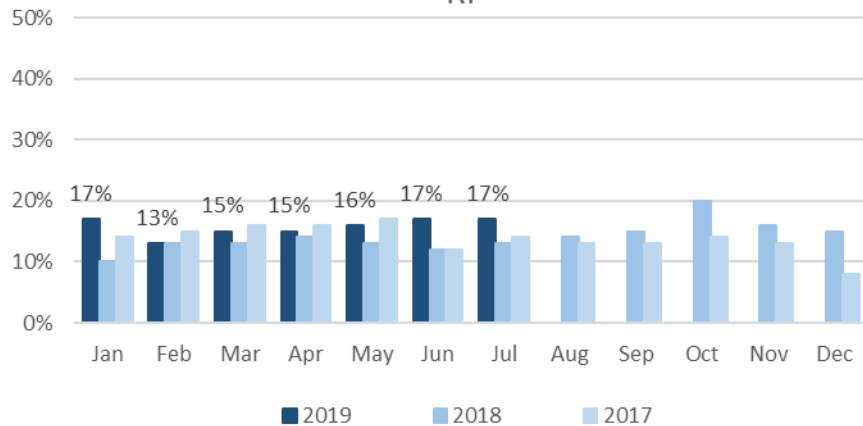
Analog



Micro-Controllers/Processors



RF



FPGA

