



TPC Semiconductor Market Survey

June 19, 2019

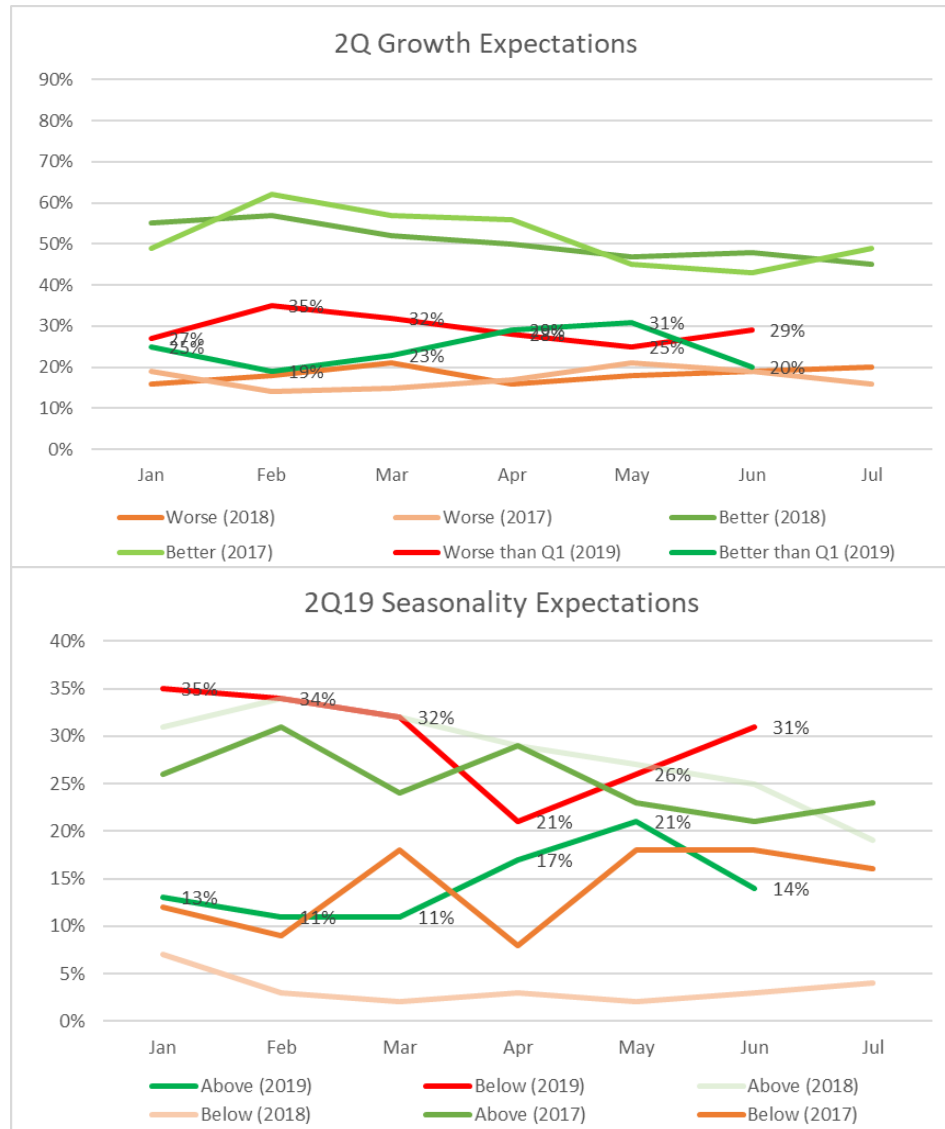
TPC June 2019 Survey Summary

*Survey Date: April 6-9 Respondents: ~11,400 Location: Worldwide (~80% Asia) Who: Active Electronics Industry Professionals
Response Composition (multiple choices): Industrial 43%, Auto 19%, Comm 14%, Computing 24%, Mobile 31%, Data Ctr 13%, Other 7%*

- Our June 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. Regarding Mexico, this is significantly incremental as C3Q19 demand was growing mid-single digits q/q 30 days ago, yet is now flat q/q.
- 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, 29% expect weaker q/q growth.
 - 31% see C2Q as sub seasonal vs. only 14% seeing it above seasonal. This remains weaker than the previous 2 years data.
 - Our C3Q data shows 59% expecting growth vs. 67% previously C2Q, but only 17% see it as better than seasonal. Both are less than the prior 2 years results.
 - C2Q19's booking expectations decreased slightly with 39% expecting bookings to increase q/q vs. 42% in last month's survey. C3Q results show only 20% expecting bookings to increase vs. 22% previously.
- 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 be negative in June.
- Inventories (slide 7) are ratcheting back up in C2Q vs. last month's data and the outlook for C3Q inventories is also increasing.
- Slide 8, which shows a more granular view of inventory by key components, shows inventory and availability continuing to improve and inventories growing on most products. Of note is Analog and NAND which showed significant increases in June's survey. This also mirrors our individual checks.
- 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. 28% in C2Q.

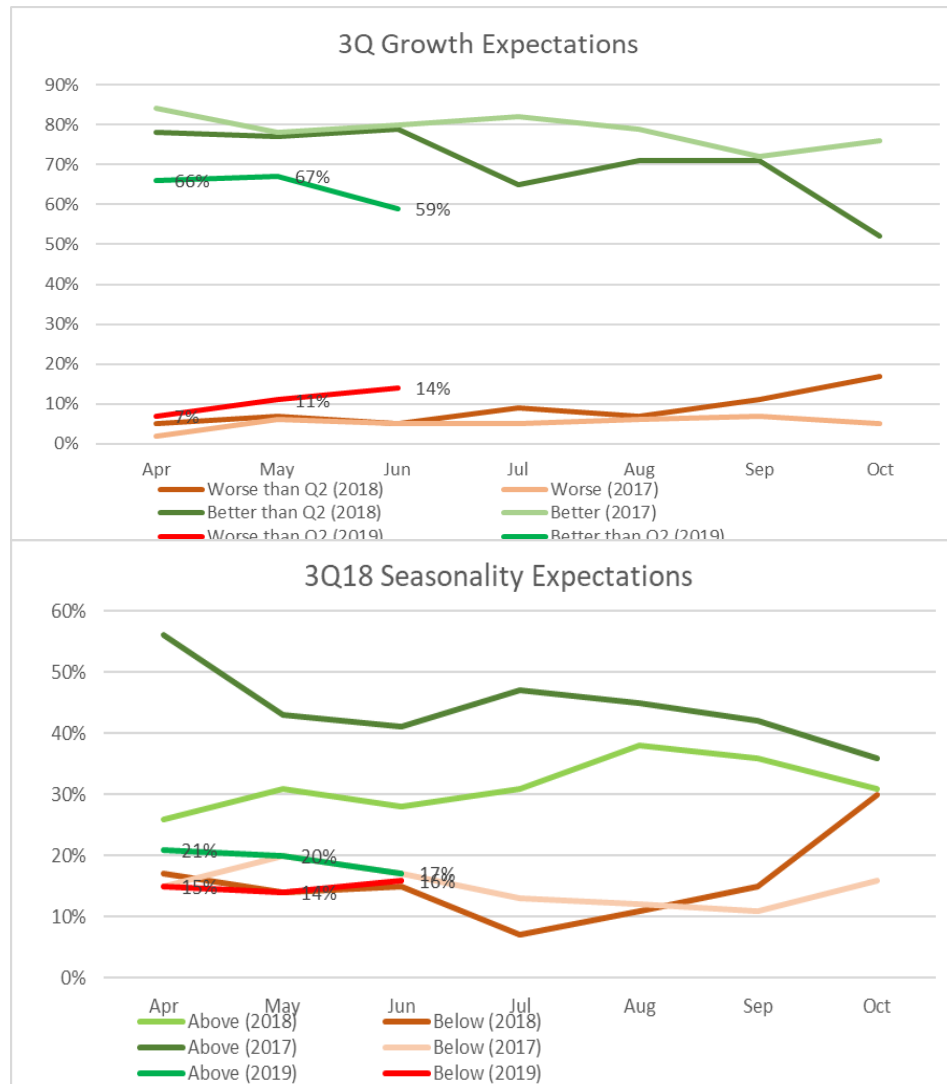
C2Q19 Growth & Seasonality Outlook

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

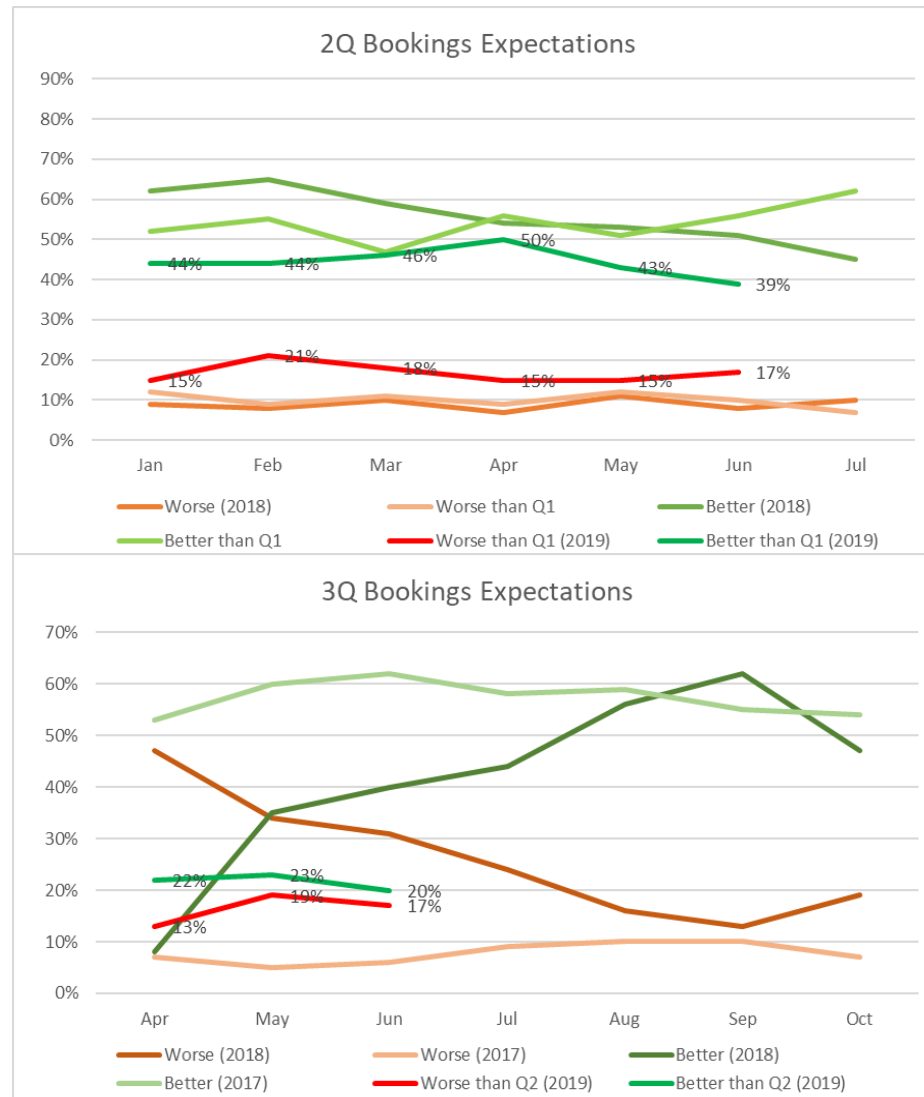


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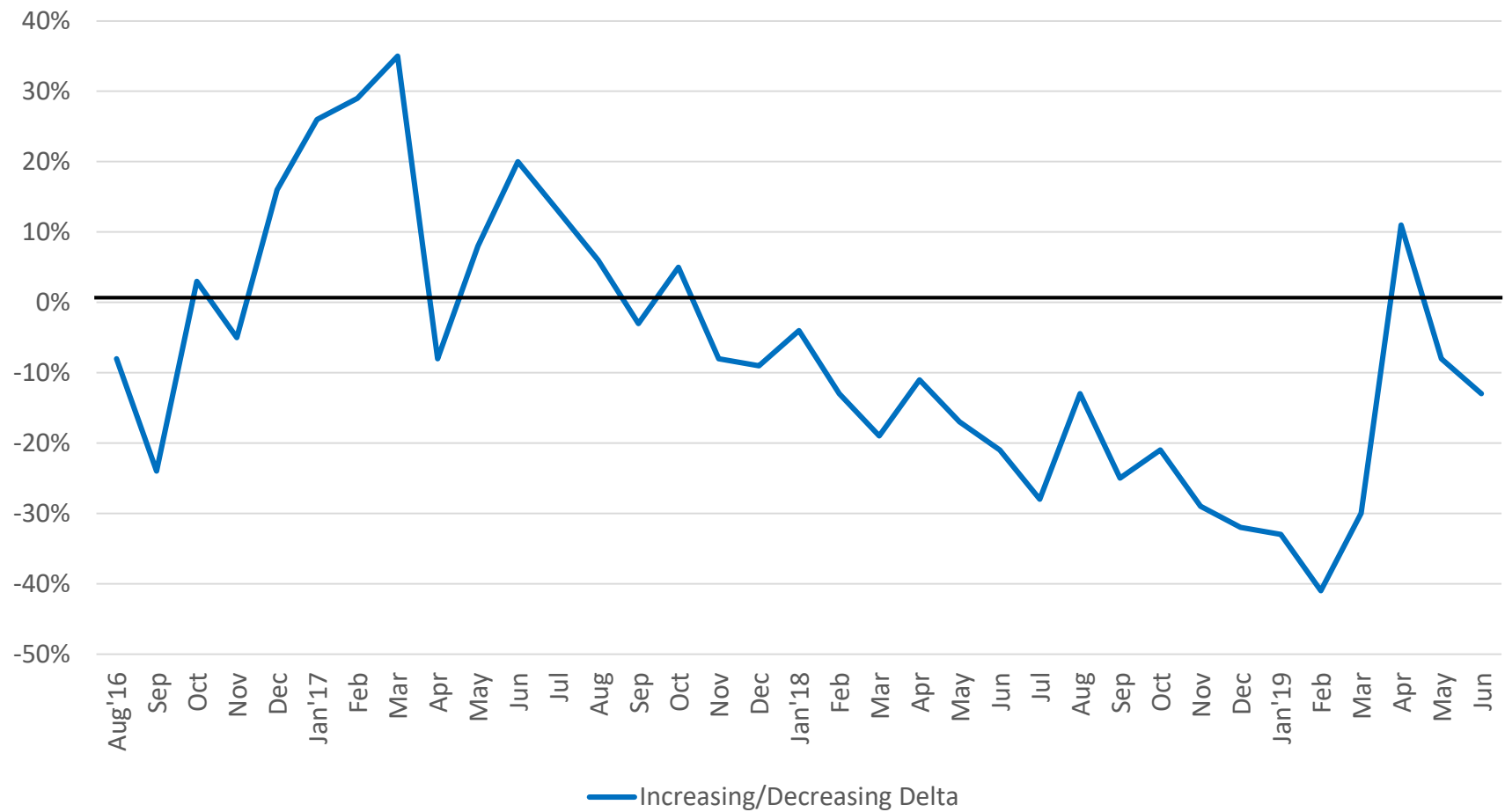


Q/Q Bookings Growth Expectations



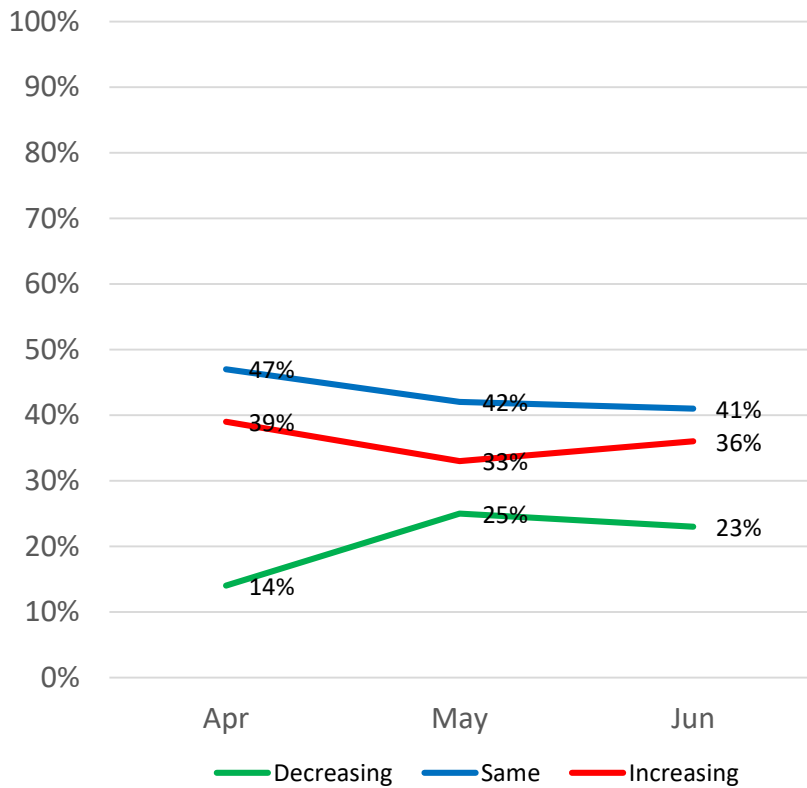
Backlog Order Cancellations vs. 30 Days Ago

(Delta between Increasing and Decreasing Cancellations)

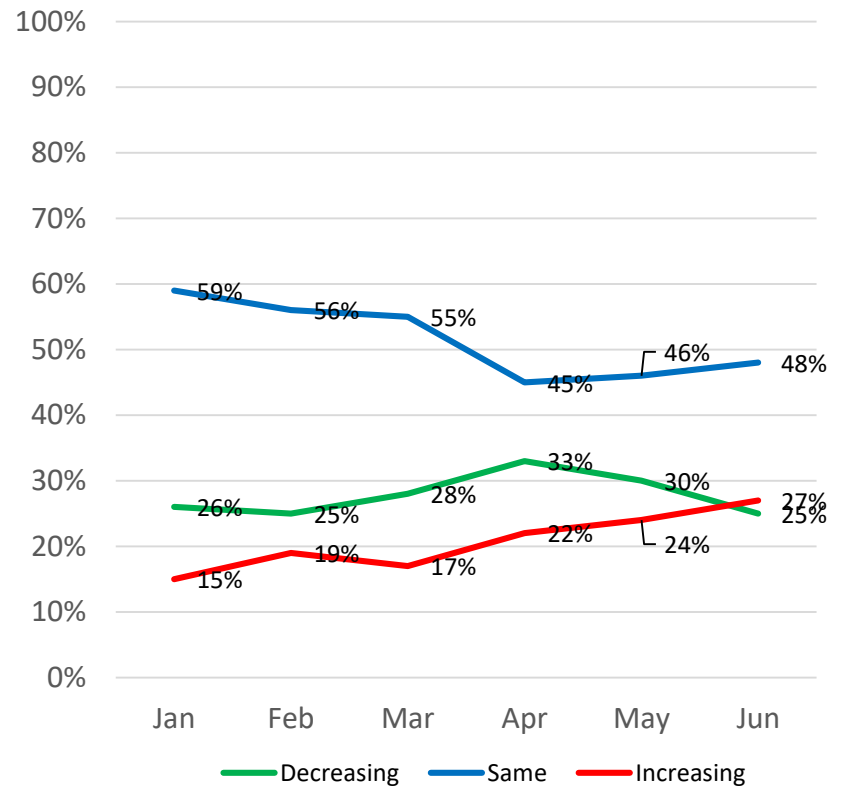


Q/Q Inventory Growth

C3Q19 Inventories vs. C2Q19

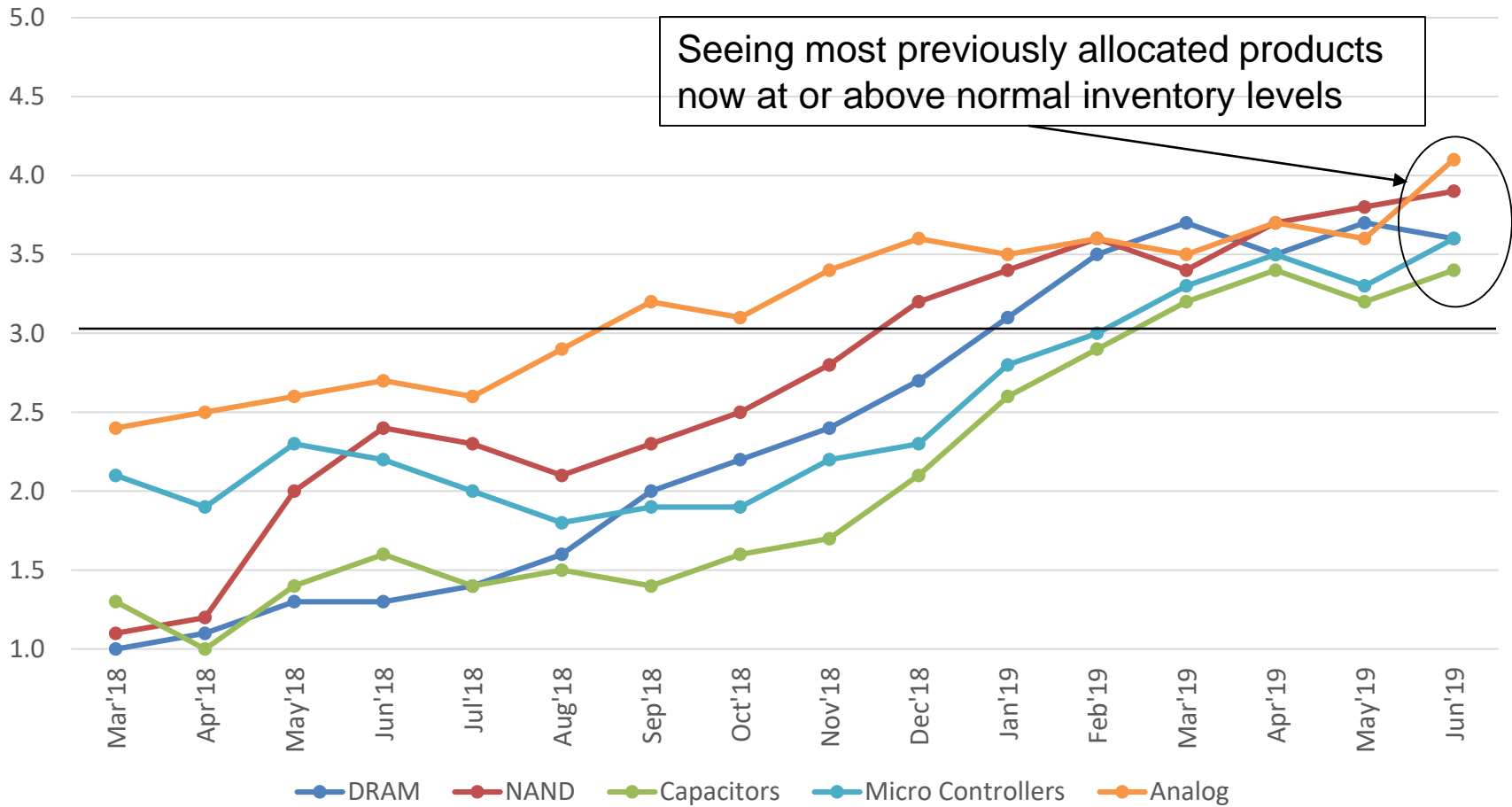


C2Q19 Inventories vs. C1Q19



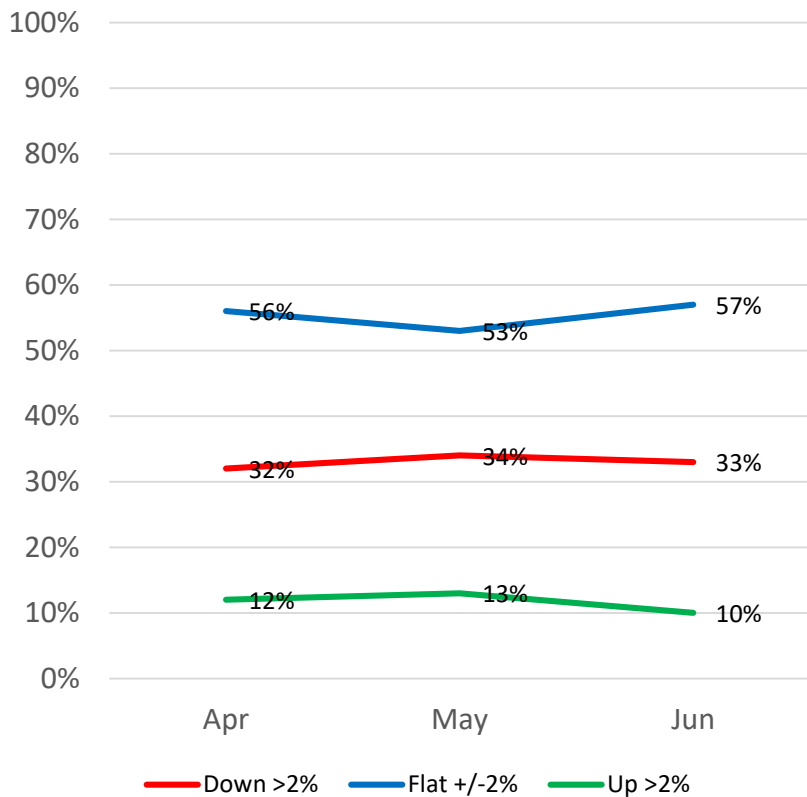
Inventory Status

(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?)

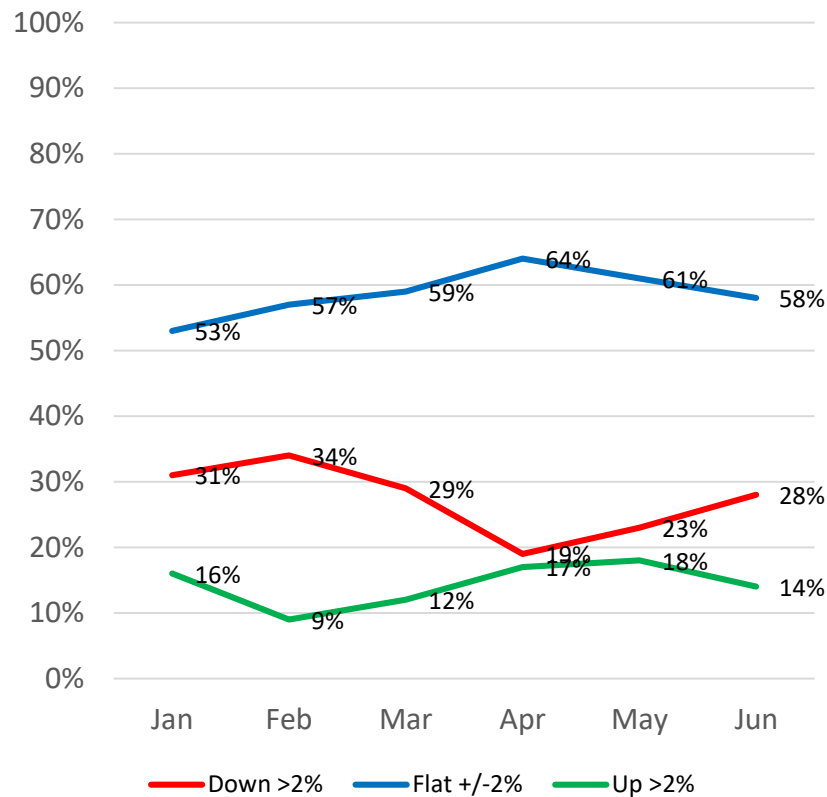


Q/Q Pricing Trends

C3Q19 Pricing vs. C2Q19

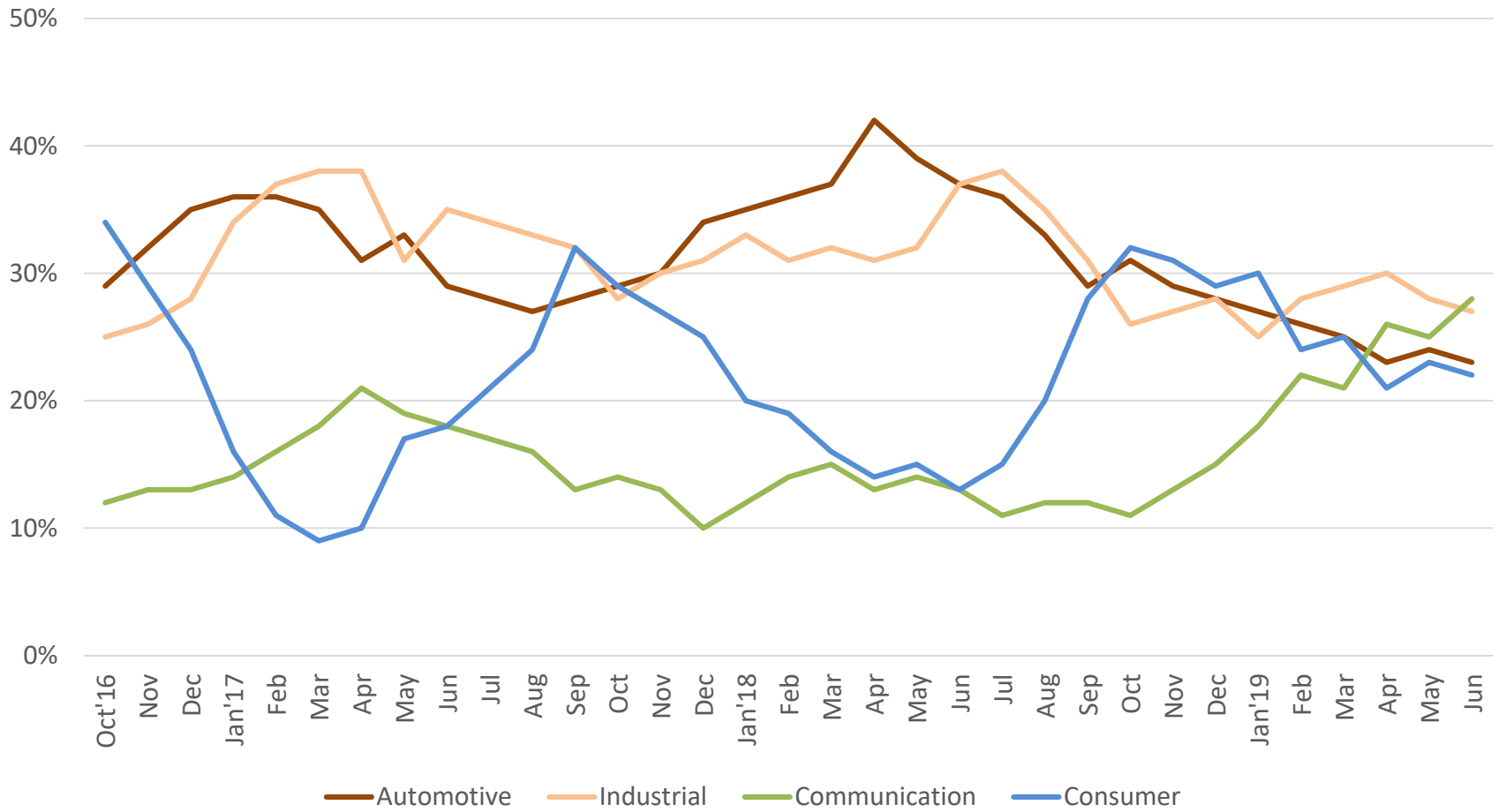


C2Q19 Pricing vs. C1Q19



Vertical Outlook

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



Technology Outlook

(y/y comparison)

