



TPC Semiconductor Market Survey

February 25, 2019

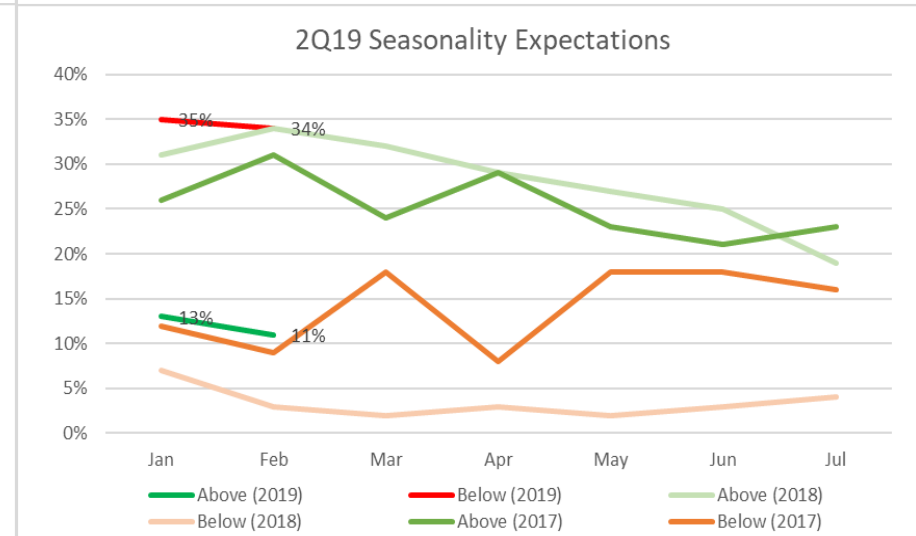
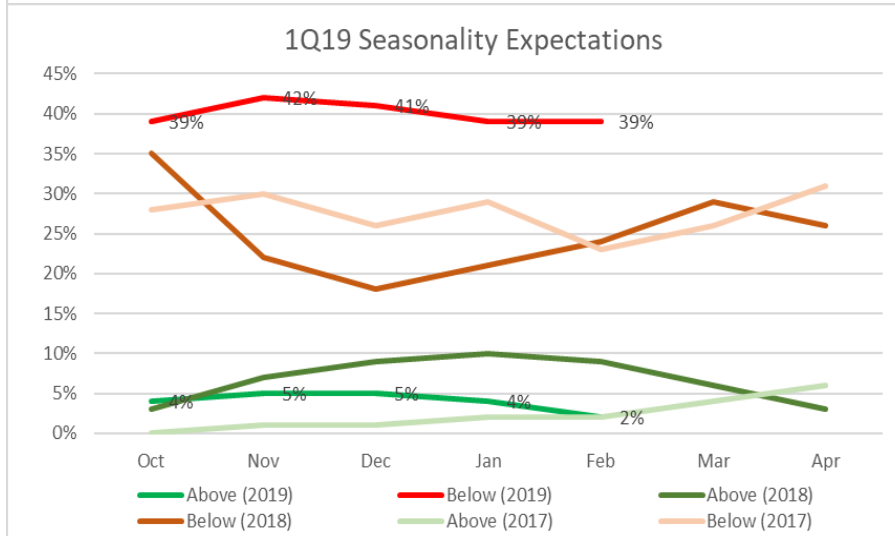
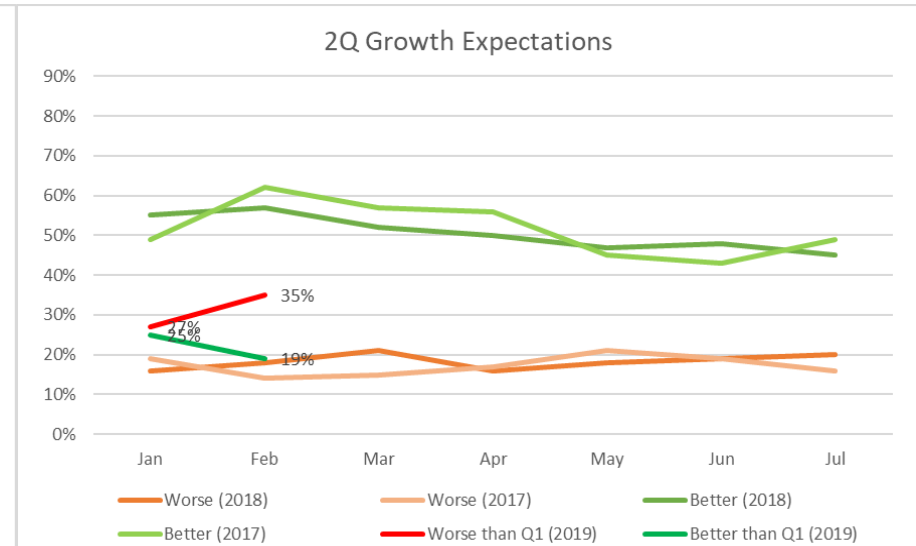
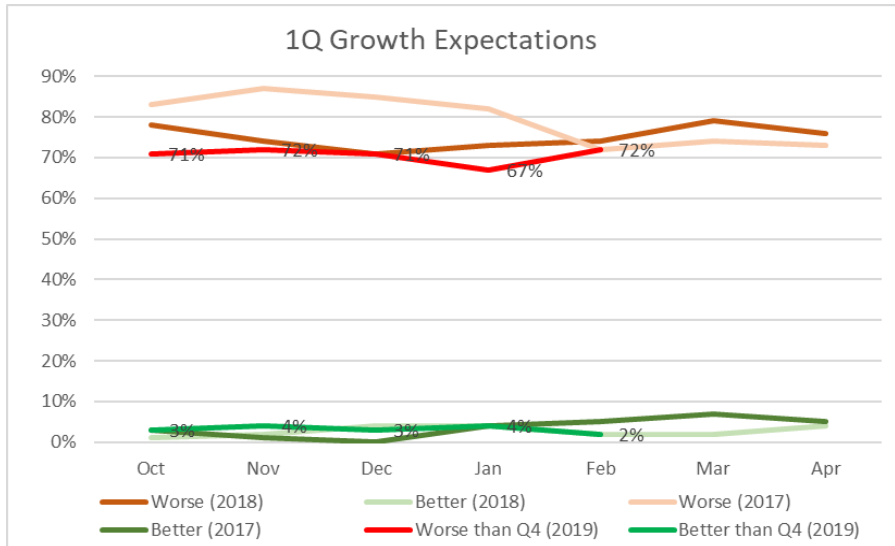
Our latest industry survey suggests we have yet to see a bottom as demand and bookings continue to weaken, as well as inventories continuing to rise

TPC February 2019 Survey Summary

Survey Date: February 11-16 Respondents: ~6,000 Location: Worldwide (~80% Asia) Who: Active Electronics Industry Professionals

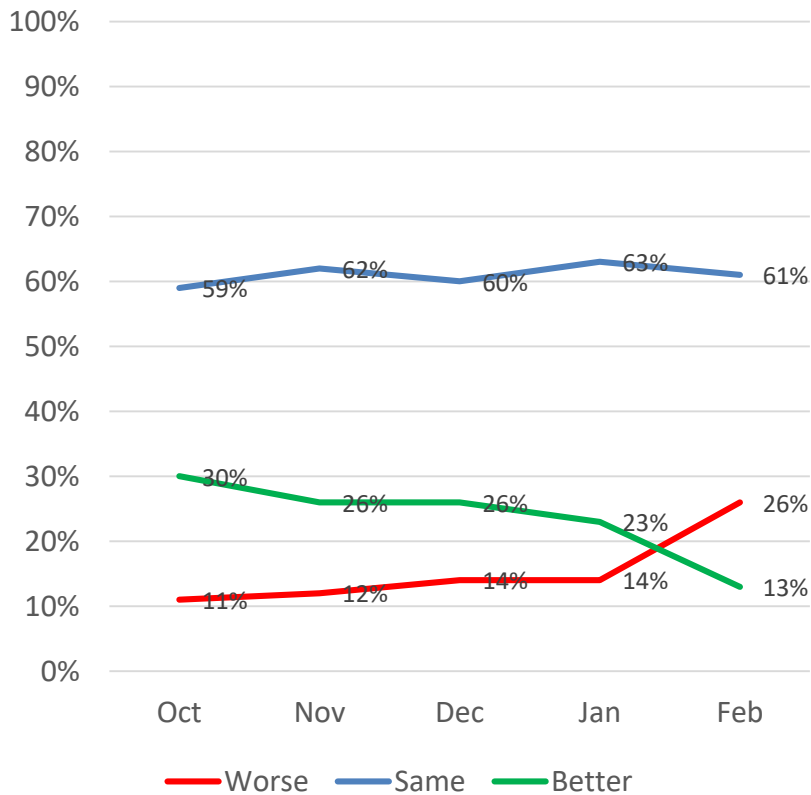
- Our February 2019 Semi industry survey of over 18k electronic industry professionals continued to show weakening across all key metrics for Semiconductor and Passive component demand for both the balance of C1Q and into C2Q. Based on our findings, we believe the industry has yet to see a bottom as demand and bookings continue to weaken, as well as inventories continuing to rise.
- The q/q demand growth for C1Q19 ticked slightly weaker; while C2Q19 demand outlook got significantly weaker.
 - For C1Q, 72% expect weaker q/q growth vs. 67% previously. Only 2% expect better q/q growth.
 - For C2Q, 35% expect weaker q/q growth vs. 22% previously. Only 19% expect better q/q growth.
 - 34% see C2Q as sub seasonal vs. 11% seeing it above seasonal. This is significantly weaker than the previous 2 years data.
- C1Q19's booking expectations also weakened with 21% expecting bookings to decrease q/q vs. 15% in last month's survey. There was also a downtick in C2Q19's bookings expectations with 26% expecting weaker bookings vs. only 14% last month.
- One negative indicator that continues to stand out is cancellation expectations which continue to ratchet up with 45% seeing an increase in cancellations over the last 30 days (vs. 42% last month). This represents a 2-year high. *It is important to note that we saw an inflection downward in our historical data in late CY16 ahead of the demand turnaround in late CY16. We believe until the cancellation activity starts to reverse, we will not be at a bottom.*
- Inventories also continue to increase for C1Q with 41% saying C1Q inventories are increasing while only 8% see inventories decreasing.
- Slide 7, which shows a more granular view of inventory by key components, shows inventory and availability continuing to improve all products. We are seeing most previously allocated products now above normal inventory levels.
- The outlook for weaker pricing in C2Q also continues to get worse with 34% expecting pricing to decline by >2% q/q vs. 31% in last month's survey. 57% expect pricing to generally be flat while only 9% expect it to increase.

Growth & Seasonality Outlook

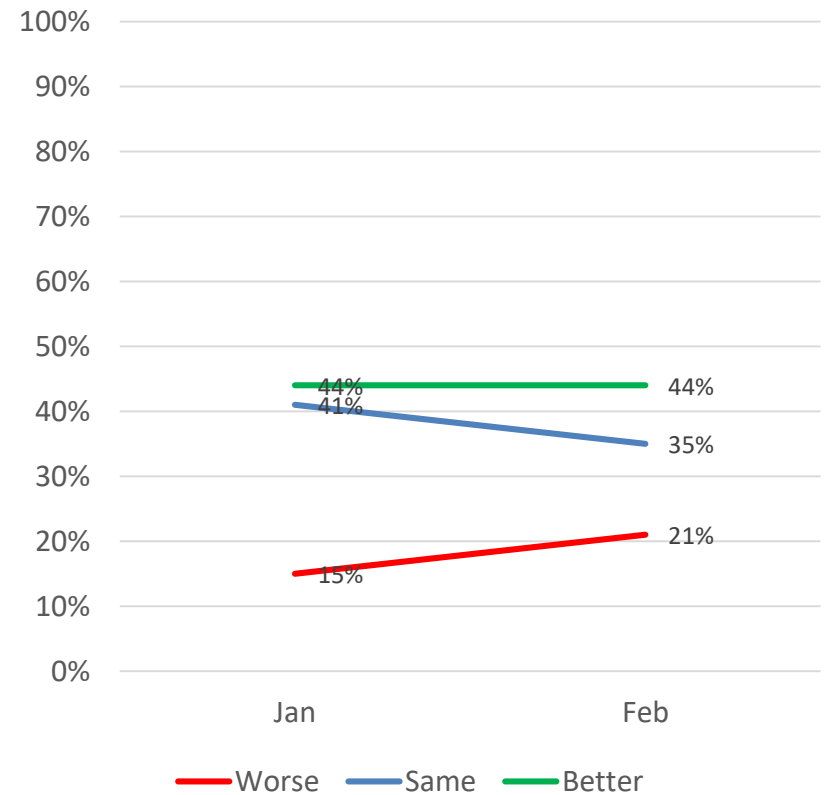


Q/Q Bookings Growth

C1Q19 Bookings vs. C4Q18

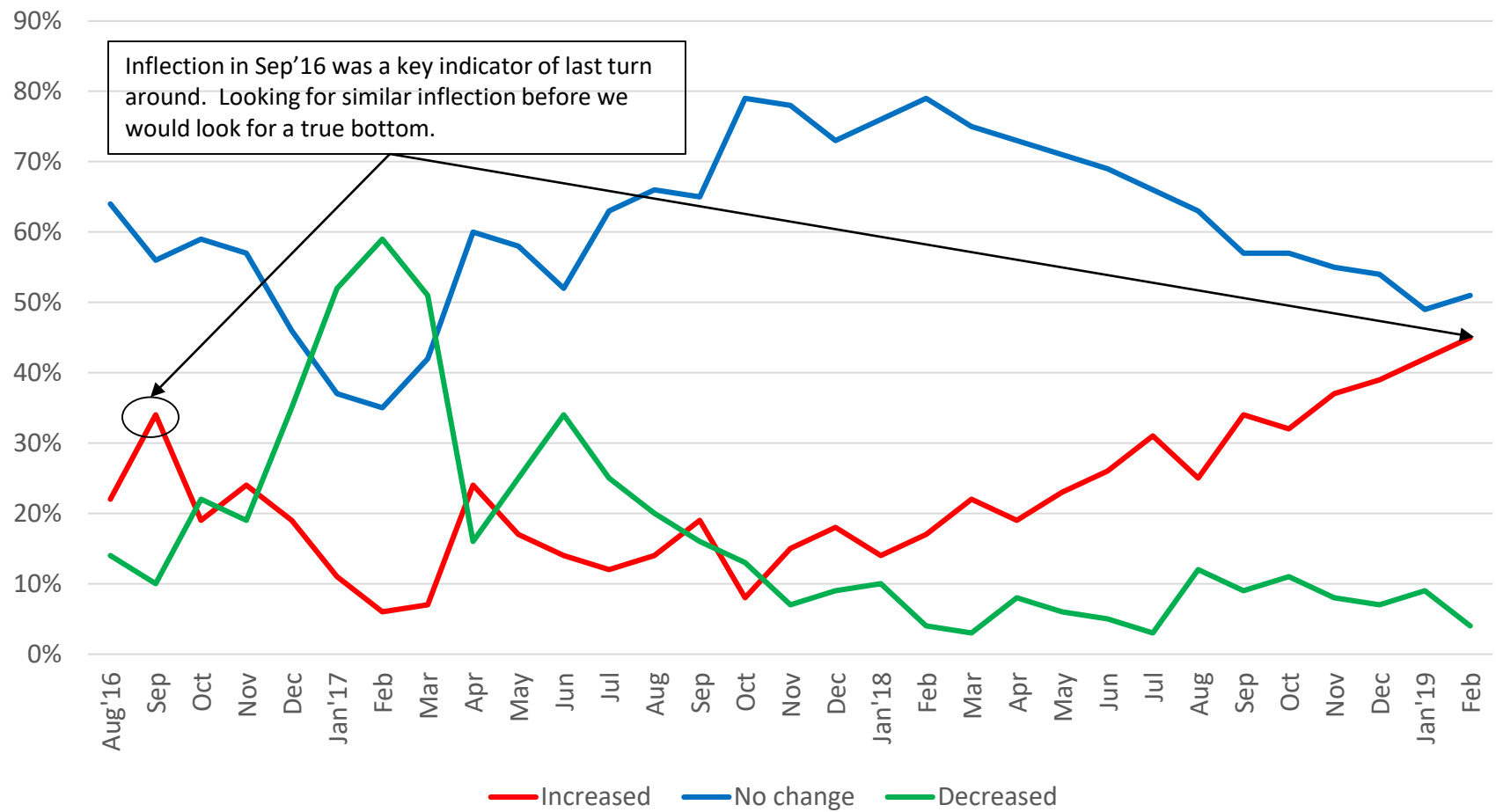


C2Q19 Bookings vs. C1Q19



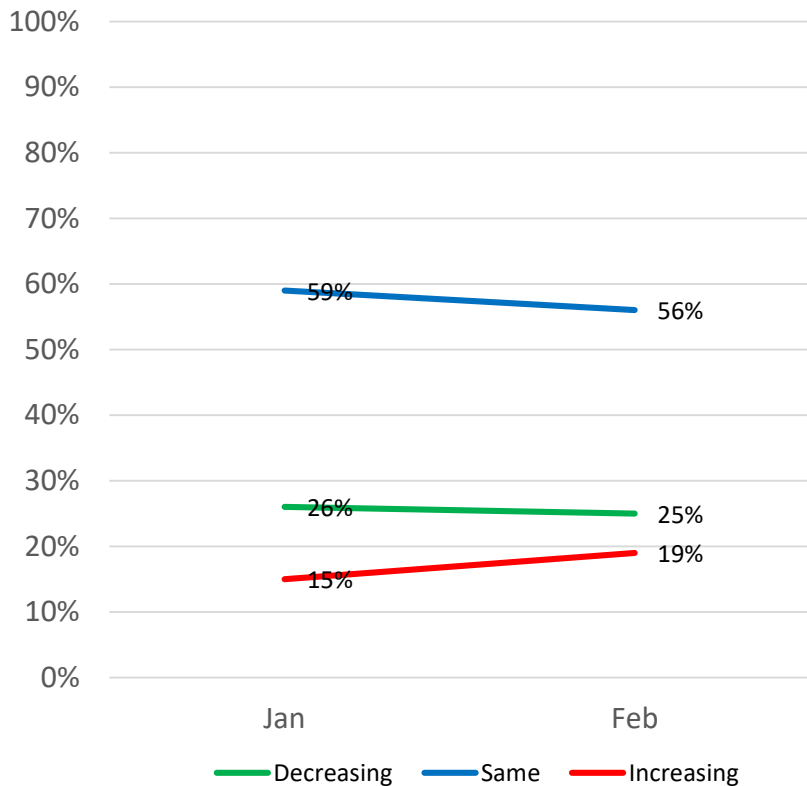
Backlog Order Cancellations vs. 30 Days Ago

Cancellations continue to rise

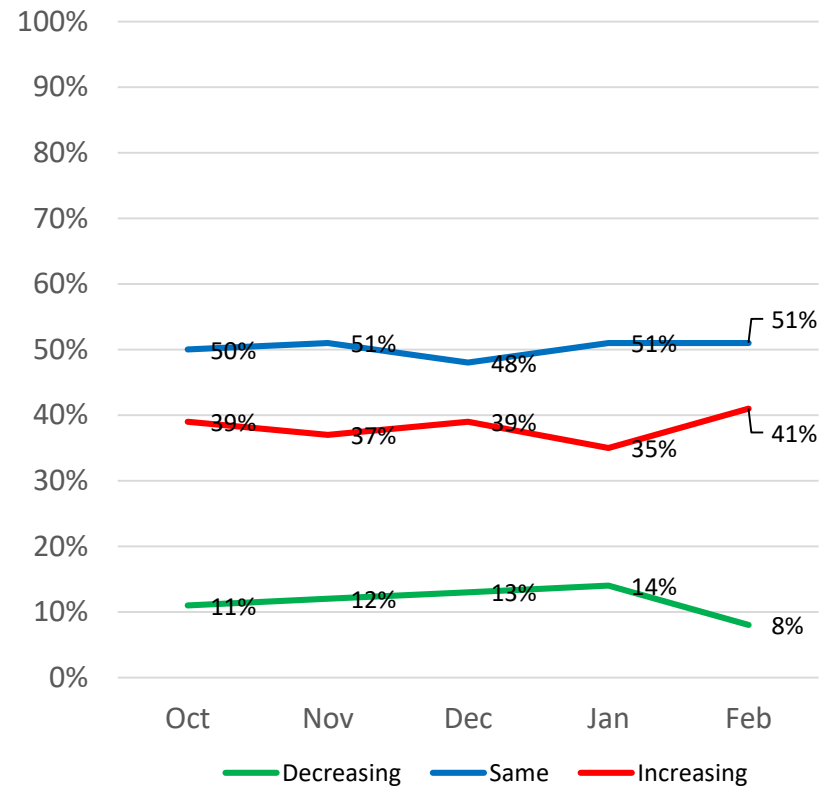


Q/Q Inventory Growth

C2Q19 Inventories vs. C1Q19

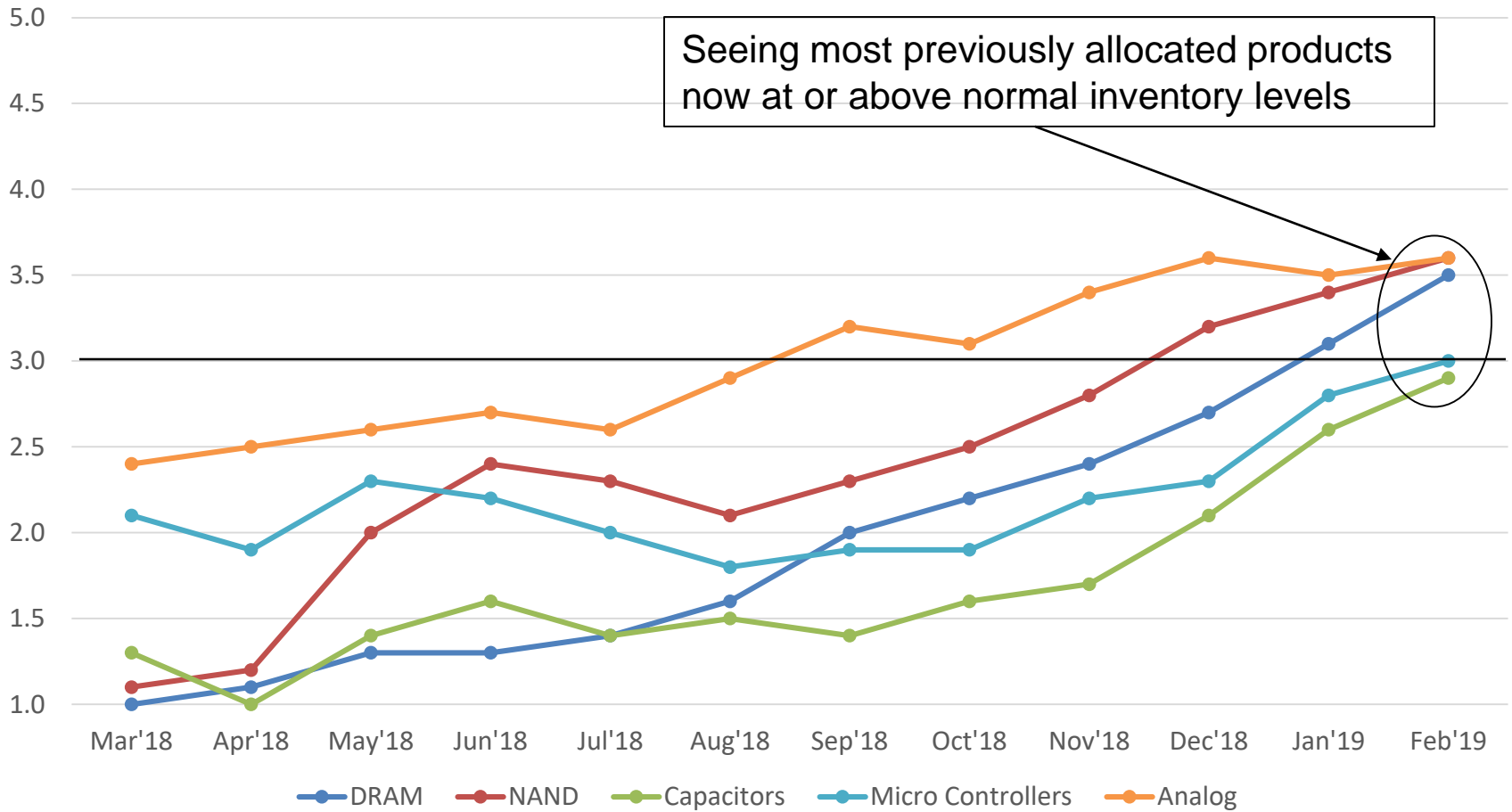


C1Q19 Inventories vs. C4Q18



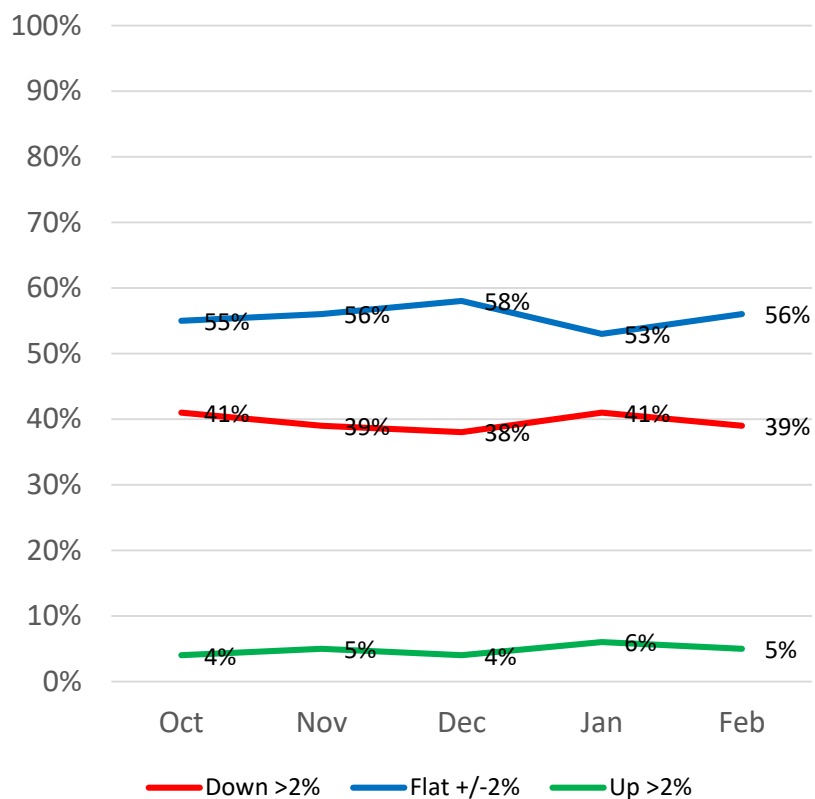
Inventory Status

(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?)

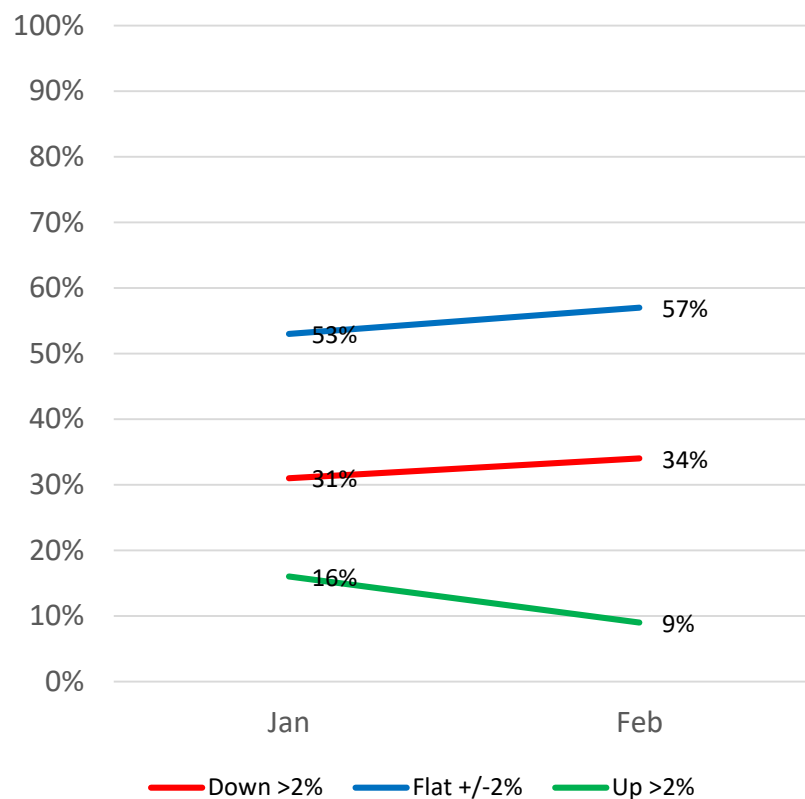


Q/Q Pricing Trends

C1Q19 Pricing vs. C4Q18



C2Q19 Pricing vs. C1Q19



Vertical Outlook

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

