

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**

**November 8, 2021**

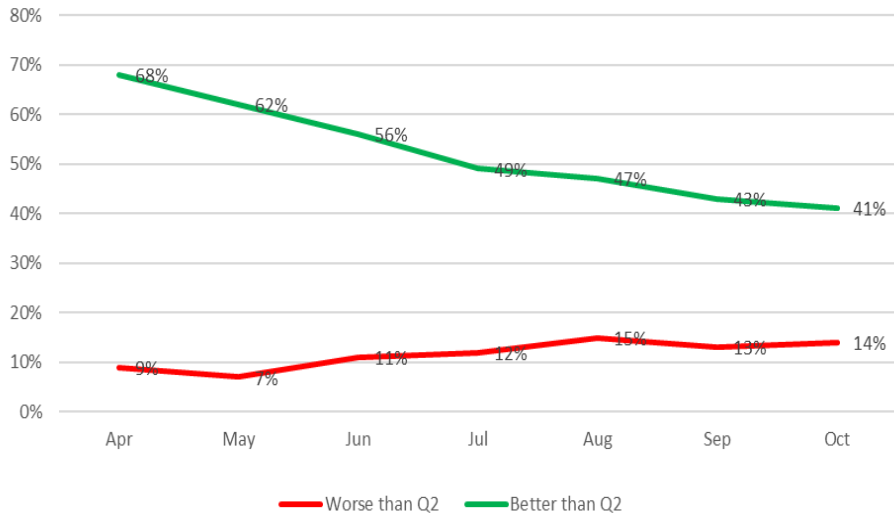
# TPC October 2021 Survey Summary

*Survey Date: 10/31-11/3 Respondents: ~8,000 Location: Worldwide (~80% Asia) Who: Active Electronics Industry Professionals  
Response Composition (multiple choices): Industrial 39%, Auto 20%, Comm 18%, Computing 21%, Mobile 29%, Data Ctr 19%, Other 16%*

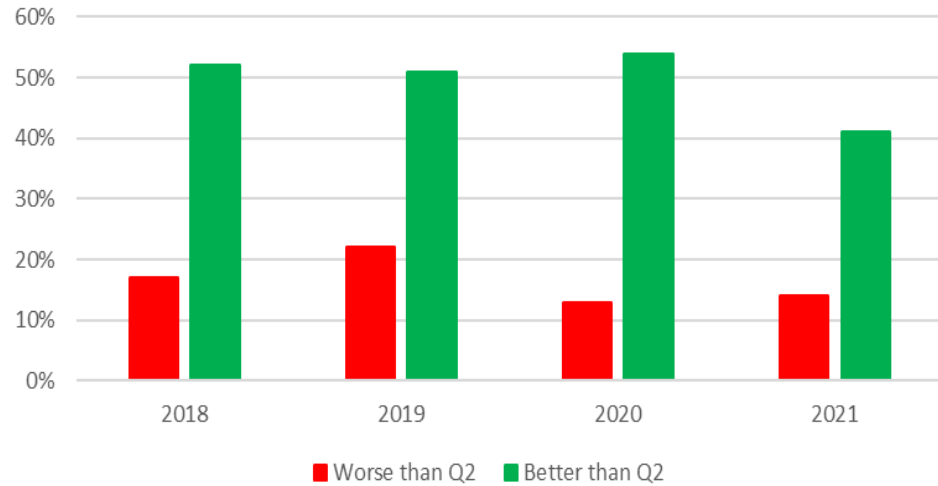
- We recently completed our monthly survey (~9,200 respondents) which saw decreases in both C3Q21 and C4Q21 outlook for growth as well as incremental weakness in seasonality. However, C4Q is still being viewed by respondents as above seasonal vs. the last 4 years.
- Our initial C1Q22 outlook shows a return to more normal pre-COVID expectations, but still slightly better seasonality vs. CY18 & 19. However, the bookings outlook for C1Q22 is markedly weaker vs. CY18 & CY19. This could be a possible harbinger of weaker component demand heading into C2Q22 and 2H22.
- Based on our survey's past 3 months of continued negative growth outlook, as well as seeing a continued increase in inventory imbalance (especially Auto), we believe we are in the beginning stages of an inflection in demand. However, this will likely take a couple of quarters to play out.
- Finally, we see additional price increases coming for CY22 (makes the 3+ increases since the beginning of the year); which we believe will lead to some demand destruction.
- The survey showed C3Q21 weakening vs. last month with 41% expecting q/q growth vs. 43% previously and 14% see it as weaker vs. 13% last month. The C4Q outlook also decreased with only 3% expecting q/q growth vs. 3% previously; while 58% see it as weaker vs. 55% last month.
- Backlog cancellation expectations (slide 7) has now shown increases in cancellations over the past 5 months and is close to a 5 year high.
- Inventories growth (slide 9) has appeared to somewhat stabilize vs. the steady increase for both C3Q and C4Q we have seen over the last 3 months
- Key product availability (slide 8) also continues to improve with DRAM and NAND now at normal or slightly above normal levels while Passives continue to be in an under-supply mode.

# Q/Q Demand Growth Outlook

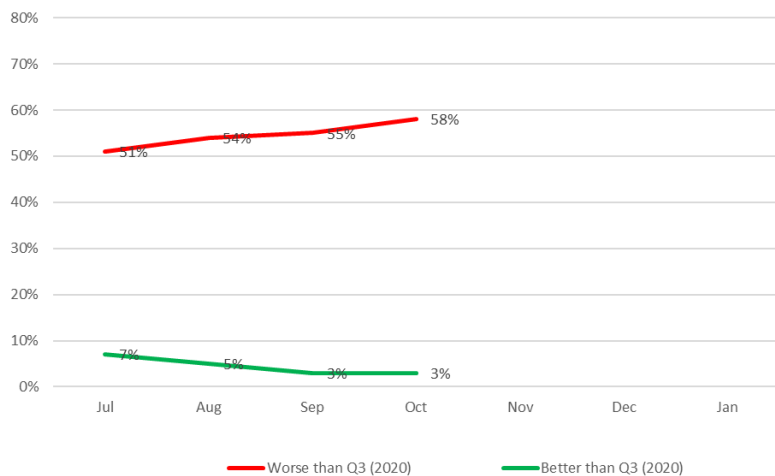
## C3Q21 Growth Expectations



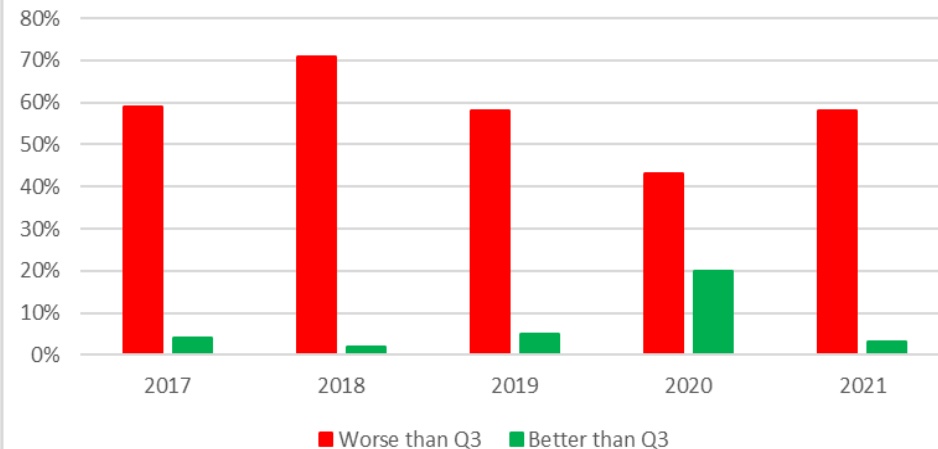
## C3Q Growth Expectations vs. C2Q



## 4Q21 Growth Expectations

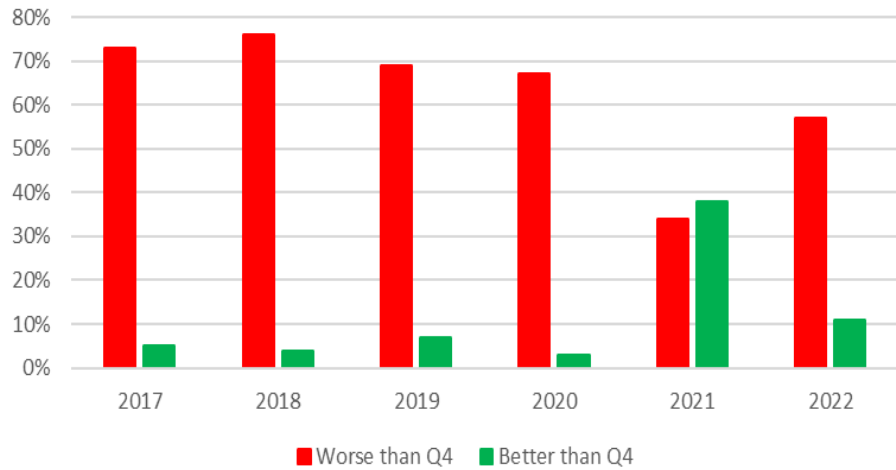


## C4Q Growth Expectations vs. C3Q

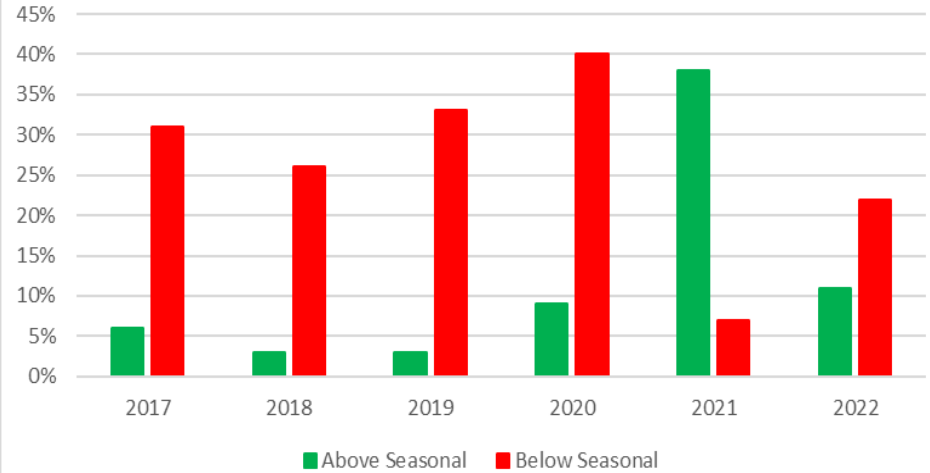


# Q/Q Demand Growth Outlook

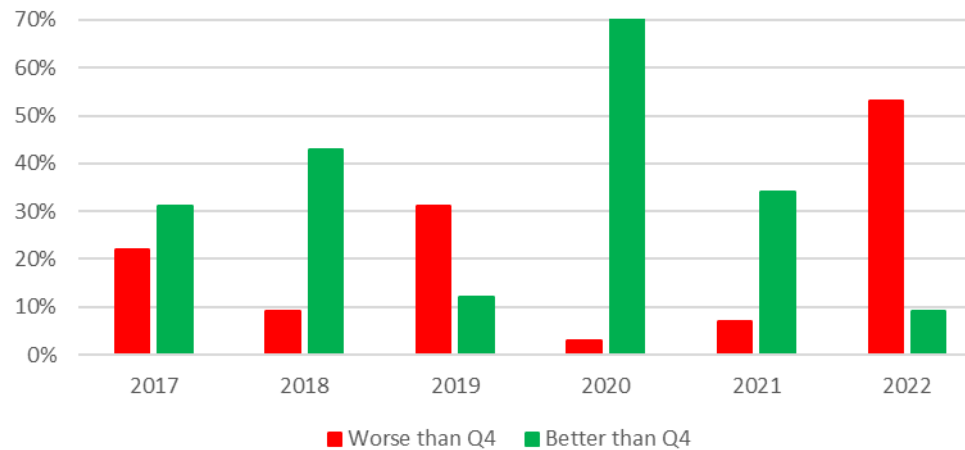
## C1Q Growth Expectations vs. C4Q



## C1Q Seasonality Expectations

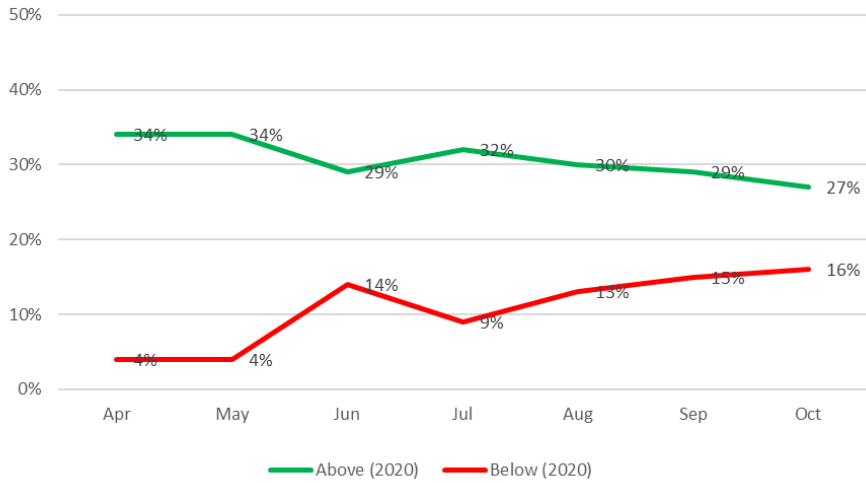


## C1Q Bookings Expectations

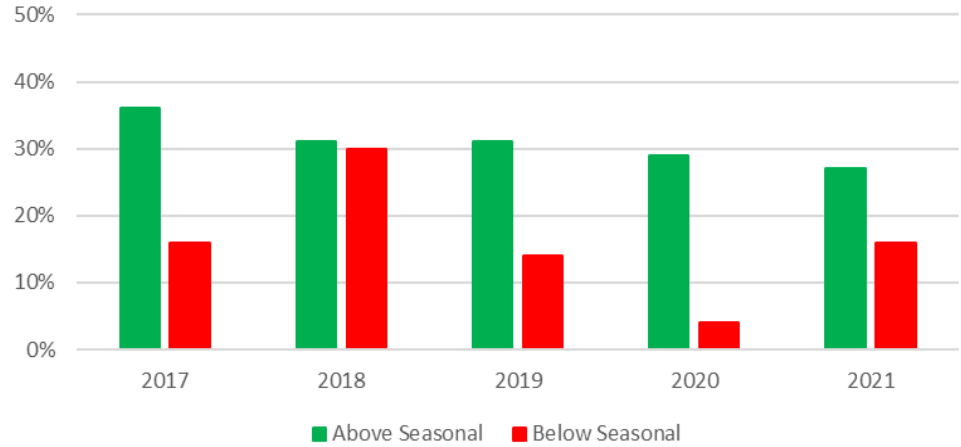


# Q/Q Seasonality Expectations

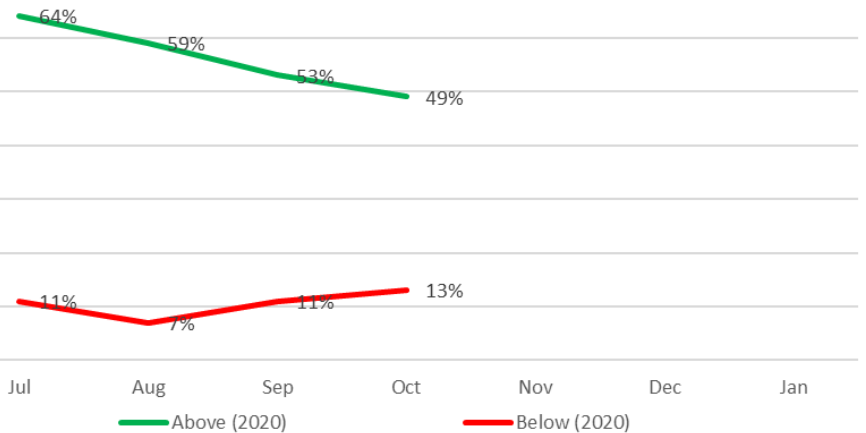
### 3Q21 Seasonality Expectations



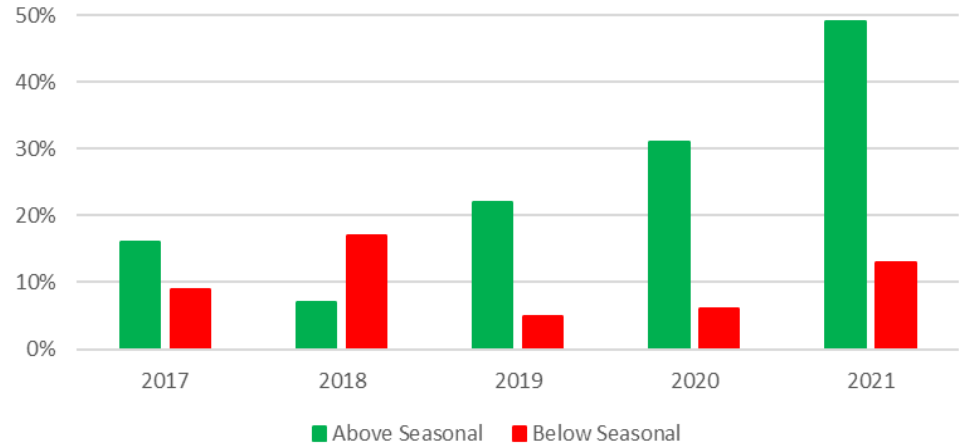
### C3Q Seasonality Expectations



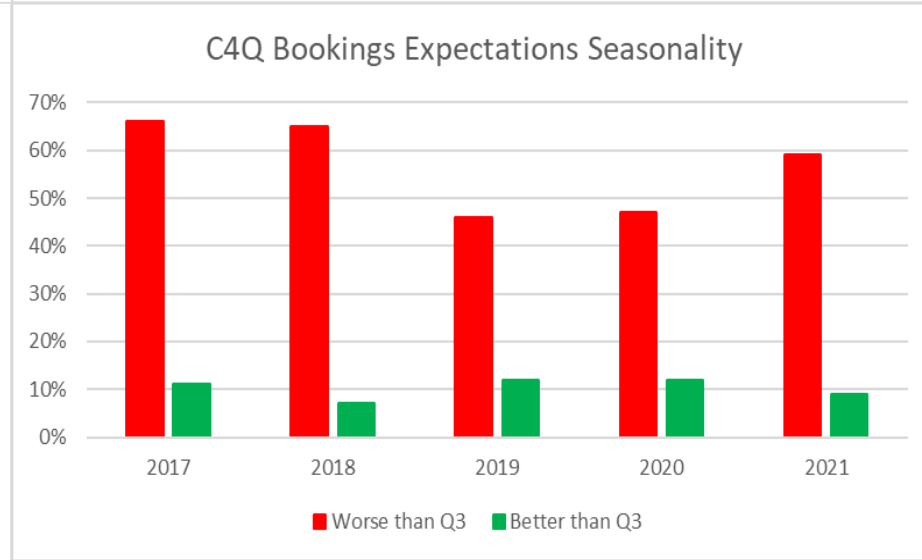
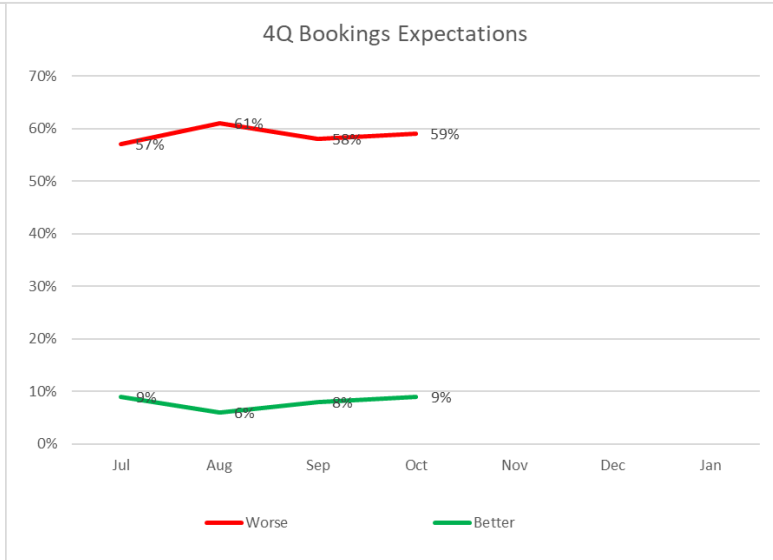
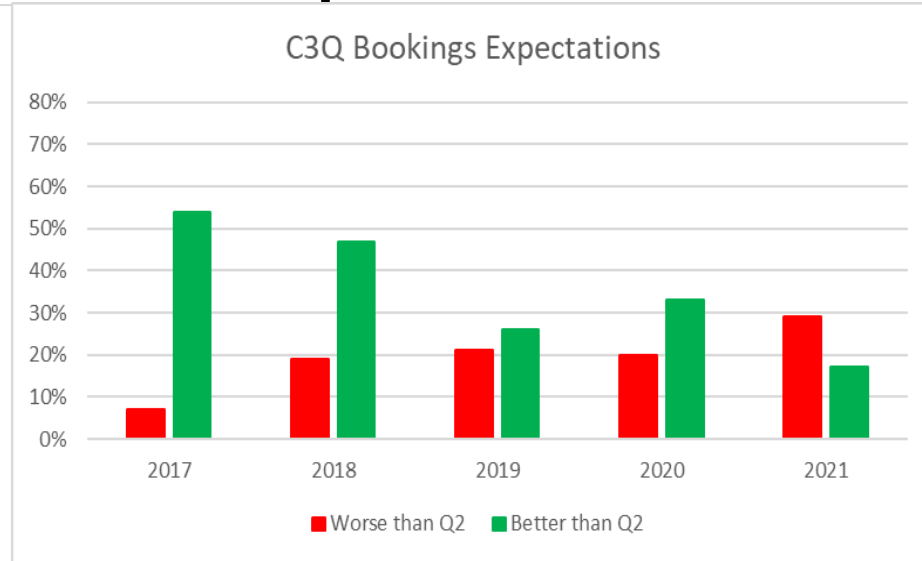
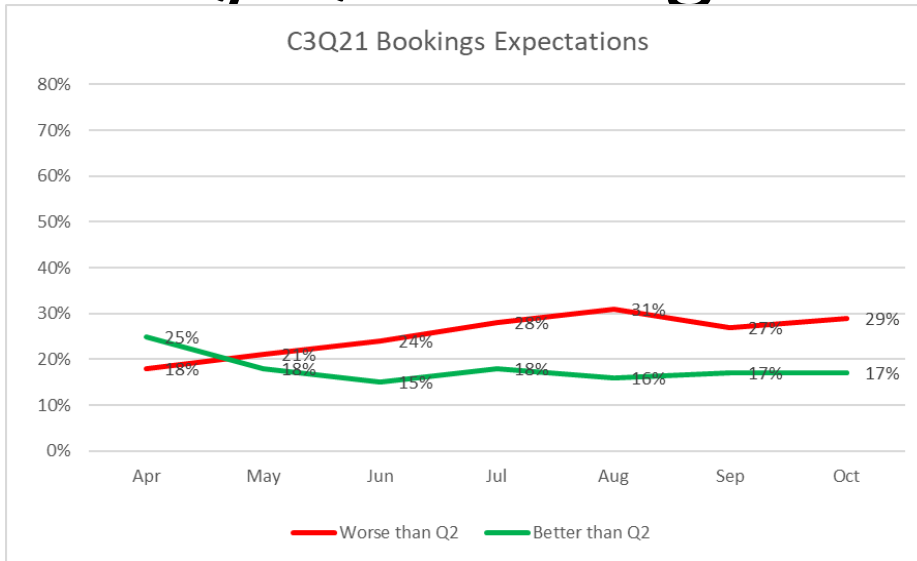
### 4Q21 Seasonality Expectations



### C4Q Seasonality Expectations

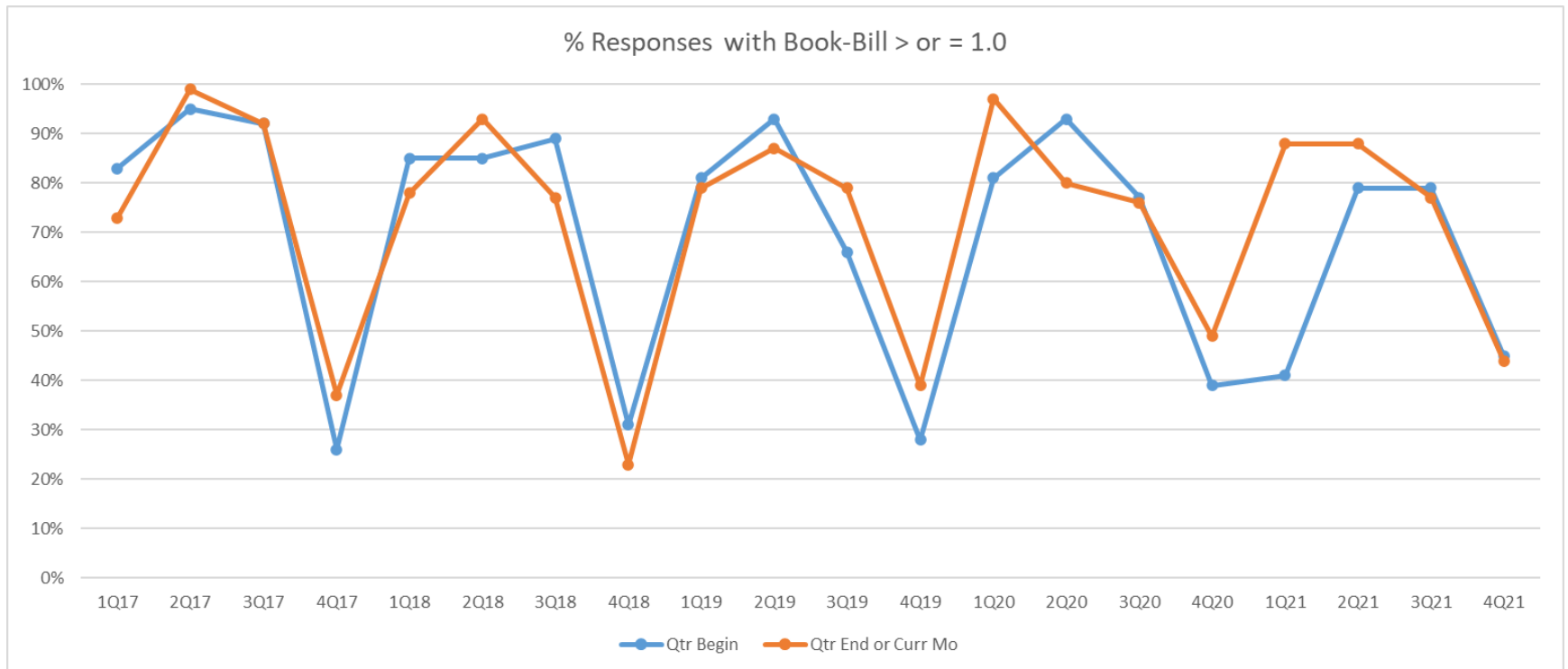


# Q/Q Bookings Growth Expectations



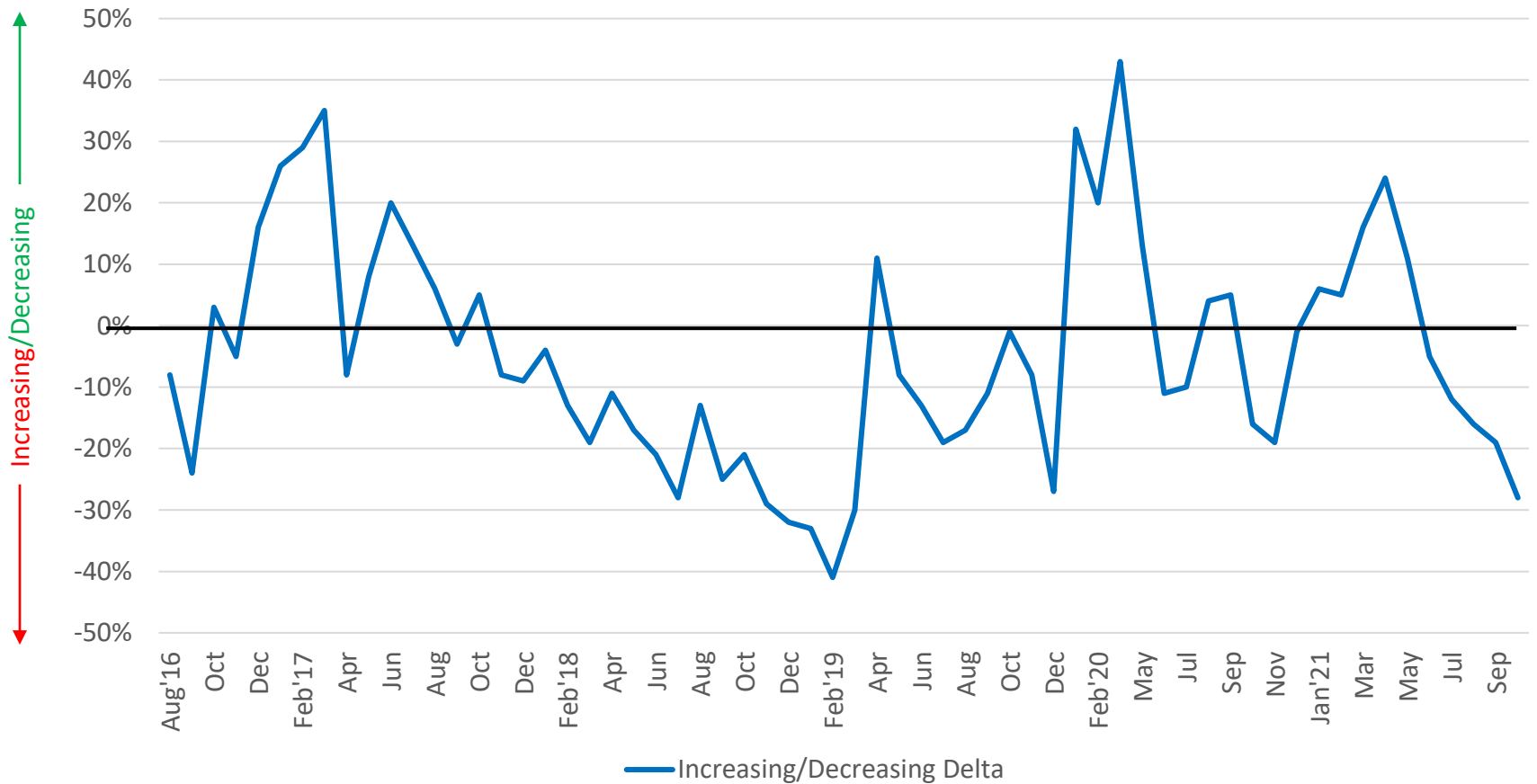
# Book to Bill History & Trends

(Calendar quarters)



# Backlog Order Push Outs/Cancellations vs. 30 Days Ago

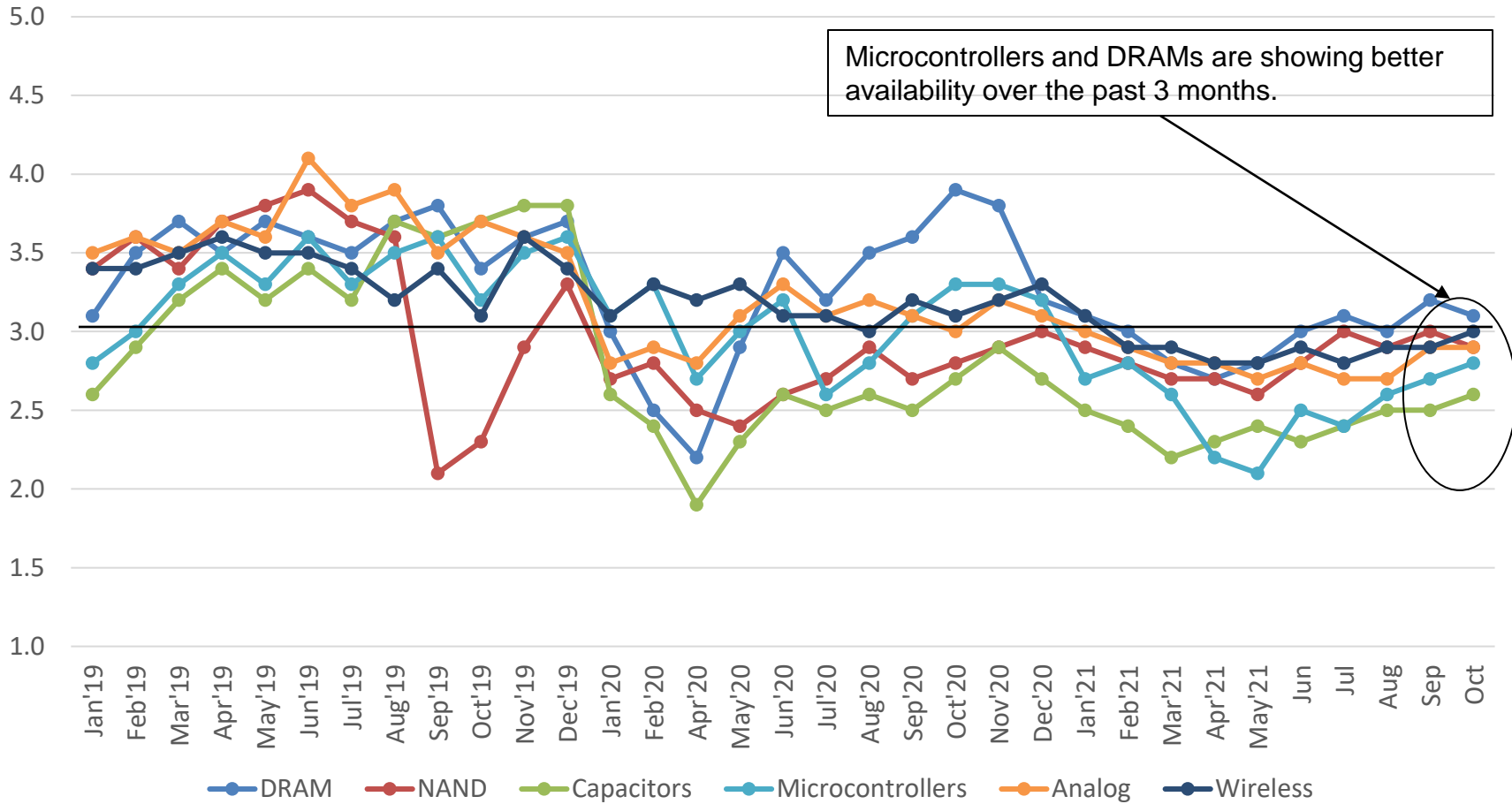
(Delta between increasing and decreasing cancellations – Higher % is more positive)





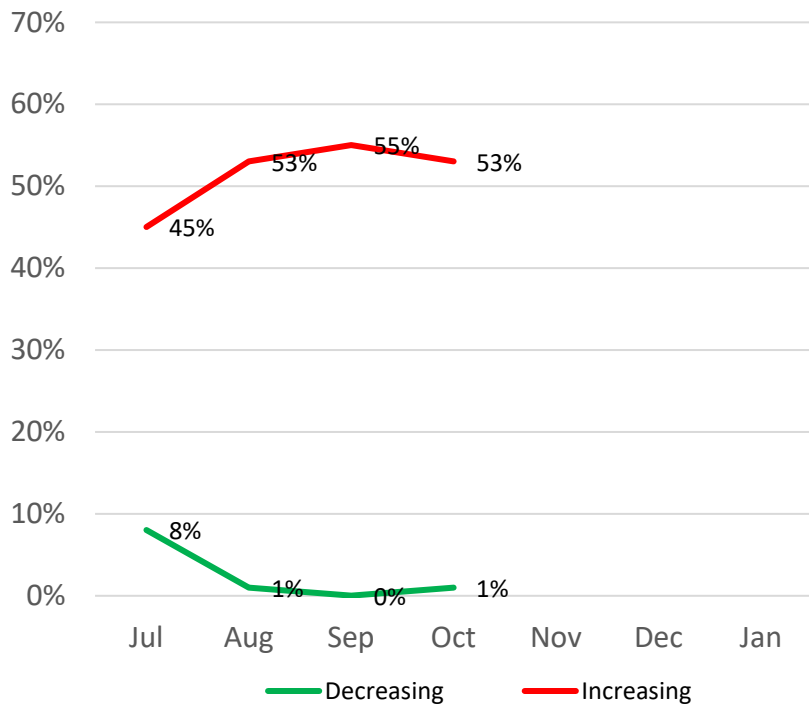
# Inventory Status

(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?)

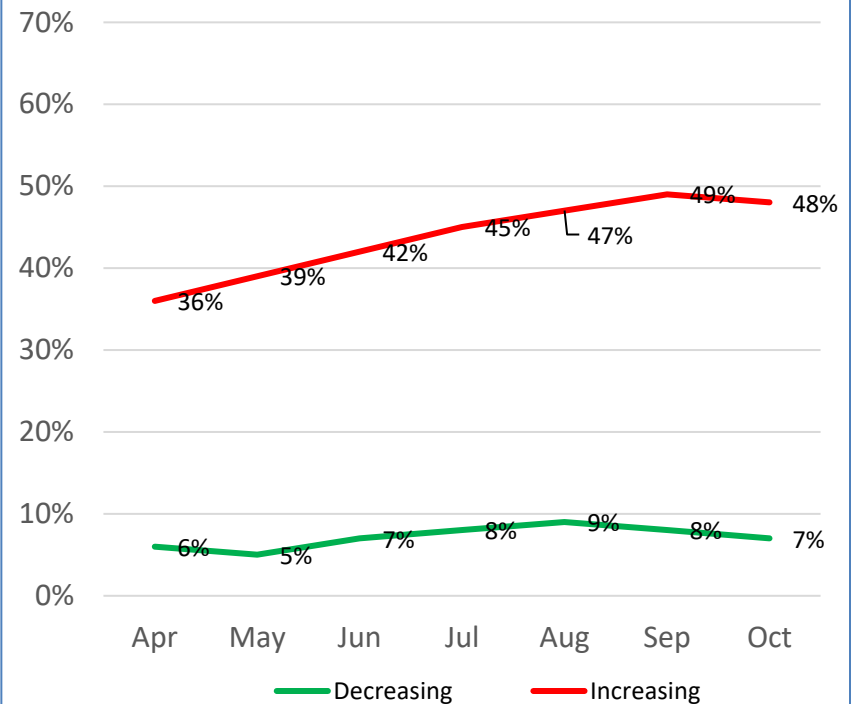


# Q/Q Inventory Growth

## C4Q21 Inventories vs. C3Q21

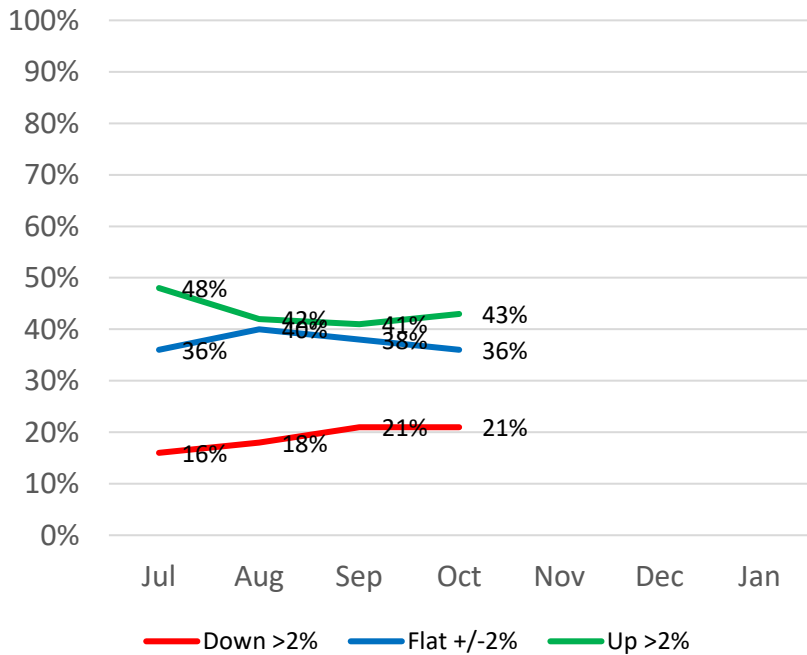


## C3Q21 Inventories vs. C2Q21

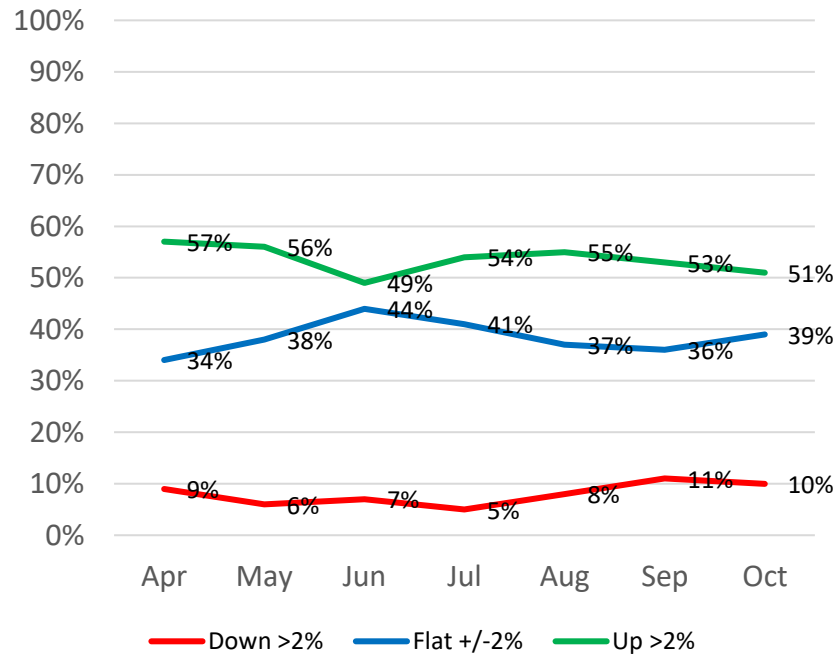


# Q/Q Pricing Trends

## C4Q21 Pricing vs. C3Q21



## C3Q21 Pricing vs. C2Q21



# Vertical Outlook

*The outlook for Communications continues to be above previous years while Auto continues to erode*

