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| Name | Final Choice(s) | |
| Matt | 10a | 6 |
| Howie | 10a | 6 |
| Gita | 9c | 8 or 10a |
| Justin | 10a | 5 or 9c |
| Sabrina | 3 or 6 |  |
| Dave | 10a |  |
| Janelle |  |  |

**Themes**

1. Explicitly putting things on the graph instead of having the viewer do mental math is preferred
2. Showing inherently positive/negative values on opposite sides of the axis instead of all absolute values above the axis since in/out is lost when all positive 🡪 mirror across the axis
3. Mirrored axes can be confusing for viewers – show two absolute scales? Show positive?
   1. Could use parentheses (100) or very clear explanation/labeling
4. What’s the goal?
   1. Do I need side-by-side comparisons? Proportional? Change over time? This influences which graph is preferred.
   2. Assumption that the S/D was the important part of the story/graphs were ‘telling a story’
   3. Interactive vs. static may alter preferences or opinions on small details, but not overall opinion
      1. However, could have Graph 6/original be interactive where you can select the legend and it highlights only one at a time if you were interested in trends (instead of flipping to the negative side of the axis)
   4. If goal is understanding WHY there is a change in S/D, you want to know – was it a change in reciepts or a change in outlays?
      1. This might not be easily answered with 10a, but instead with a side-by-side bar chart
5. Color
   1. Different colors for surplus and deficit can be helpful
   2. If S/D is a line around the x-axis, don’t need two different colors
      1. Consider making the line different hues of the receipts/outlays colors
   3. While color can be helpful, it can interfere with comprehension if it feels overwhelming (e.g. Graph 9)
   4. Color change is easier to interpret quickly than a position change (when things aren’t moving)
      1. graph 6, perhaps color the surplus differently than deficit
6. When presented variations on a theme…
   1. People were attracted to 9c for its simplicity in color and immediate differences seen
   2. People were attracted to graphs with line to “tell the story” of S/D while seeing R/O
7. Bullet graphs are difficult to understand quickly
   1. Bullet graphs seem to imply a goal/aspiration/aim, and R/O isn’t about that, so this can be misleading way to use a bullet graph
8. Processing time
   1. People like the graph that they felt they could quickly understand or was telling a story:
      1. usability 🡺 likability: I get it, therefore I like it
   2. Most of the stacked bar options were confusing, slow to process, or potentially misleading in their part-to-whole relationship. Mental math would often be required to understand all the parts.
   3. Looking for trends/general shapes/story to pop out at them
9. Graph 6, aka the original, is conservative, clear to understand, simple. Many had it in the lead for a long time.
10. Most seem attracted or pleased with Graph 9c but ultimately didn’t think it clearly/explicitly showed all 4 elements
    1. If goal is very quickly see the S or D months, this is great
    2. If goal is trends over time, only two colors masks magnitude and trends

**Other or JMB thoughts:**

* Order matters, could influence preferences, especially with the variations on theme
* Bars are preferred for discrete or small #; lines for continuous or large numbers of observations
* Avoid making user go from graph 🡪 legend 🡪 graph 🡪 legend
* Graph 2 (two stacked bars) is always considered too hard to figure out, too much going on, etc.
  + JMB: but perhaps more useful with only one pair of bars, e.g. for cover?
* Stacked or overlaid bars can be confusing because the relationship is not always hierarchical parent/child category – it would flip flop who was larger/smaller over time

**Personal preferences and quirks**

* Hates/loves bars within bars – (not) easy to understand
* Hates/loves sandcharts
* Dislikes/likes complexity
* Comfortable/not used to or uncomfortable with budget/this type of data
* Likes mirrored / Mirrored could need explanation/be confusing for viewers
* “Do S/D as lines and R/O as bars” vs. “Do S/D as bars and R/O as lines”
* “Use absolute value on 10a” vs “Use positive and negative on 10a”