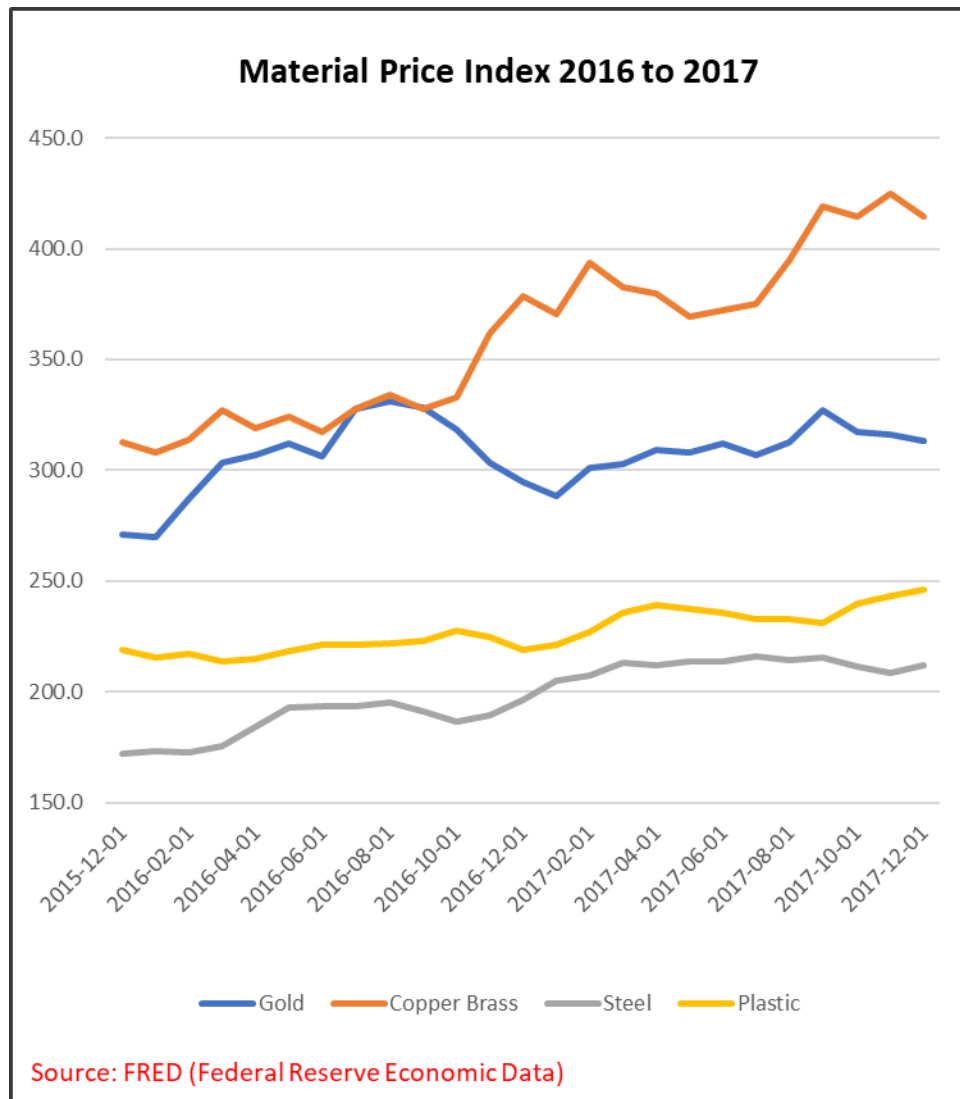


## Material Costs Increase +12% in 2017

Bishop & Associates tracks material costs for gold, copper/brass, steel and thermoplastics used in the manufacturing of connectors. These materials represent 75% of the material cost in a typical connector. Prices on these materials increased in 2017 by 9.9%. When weighed by usage in connectors, connector companies saw an increase in costs of 12.7%

As can be seen in the below graph, these materials were on the rise through-out 2017.



The following table shows the YOY increase for these materials in 2017 over 2016.

### YOY Change by Material

Material	YOY Change
Gold	0.7%
Copper/Brass	18.6%
Steel	13.3%
Thermoplastics	7.0%
<b>Total Change</b>	<b>9.9%</b>

For these important connector materials, the overall cost increase was nearly 10%. When these materials are weighted by their use in connectors, the overall cost increase for the connector manufacturers increased 12.7%.

We calculated that copper and plastics make up approximately 80% of raw material usage in this analysis. It is important to understand that your increase in raw material costs will be different because your usage of these materials will vary from our assumed usage required to make a connector. Regardless, the trend on raw material costs is not positive. Copper was especially expensive in 2017 compared to 2016, increasing 18.6%.

#### ***Bishop Comments***

- A raw material cost increase generally has a negative influence on profitability. However, demand was very strong in 2017 and we suspect that lower unit costs (contribution to fixed costs) probably offset much of the raw material price increases.
- Raw material price increases are generally followed by increases in connector prices. Connector manufacturers should, if they haven't already, begin to think about modest connector price increases to offset rising raw material costs. Because of the strong demand for connectors, which has continued in 2018, we believe the trend is for more, not less, price increases in raw materials.
- Further, economic growth worldwide is on the rise, meaning the global demand for these materials will continue to increase, which is most likely to push raw material prices higher.