



# Purchases Report

December 2018

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### ***Important notes:***

*As of November 2016, unless explicitly specified otherwise, RTA uses 3-month moving average for reporting on inventory (including historical data), hence, affecting calculated values of purchases and Inventory-to-Sales Ratio. In this way, any exaggerations that might be manifest in monthly purchases data, due to regular inventory counts by members, are not emphasized.*

*Highlighted areas in the graphs represent time of recessions.*

*Explanation how to read box plots and histograms can be found in the Appendix section.*

### **Copyright: Railway Tie Association, 2018.**

*Disclaimer: The data and report presented herein are based solely on RTA member monthly reports on production and inventory. Occasionally, members send corrections to previously submitted data. If and when these corrections are received they are incorporated at that time. Users of this report should note while all care is taken to accurately compile the data submitted by member companies, that no warranty is made as to the accuracy of any RTA member reports.*

## Highlights

In 2018, tie production was weaker in every quarter and every month compared to historical norms. Purchases, on the other hand, were strong in the first two quarters and declined in fourth quarter. Similar observation holds for monthly statistics. Inventory was still in declining trend. Though the Inventory-to-Sales ratio improved marginally it was still very close to extremely low levels as of December.

## Long-Term Trends

In December, production came down at a 15.7% annual rate.

Purchases fell at a 9.5% annual rate.

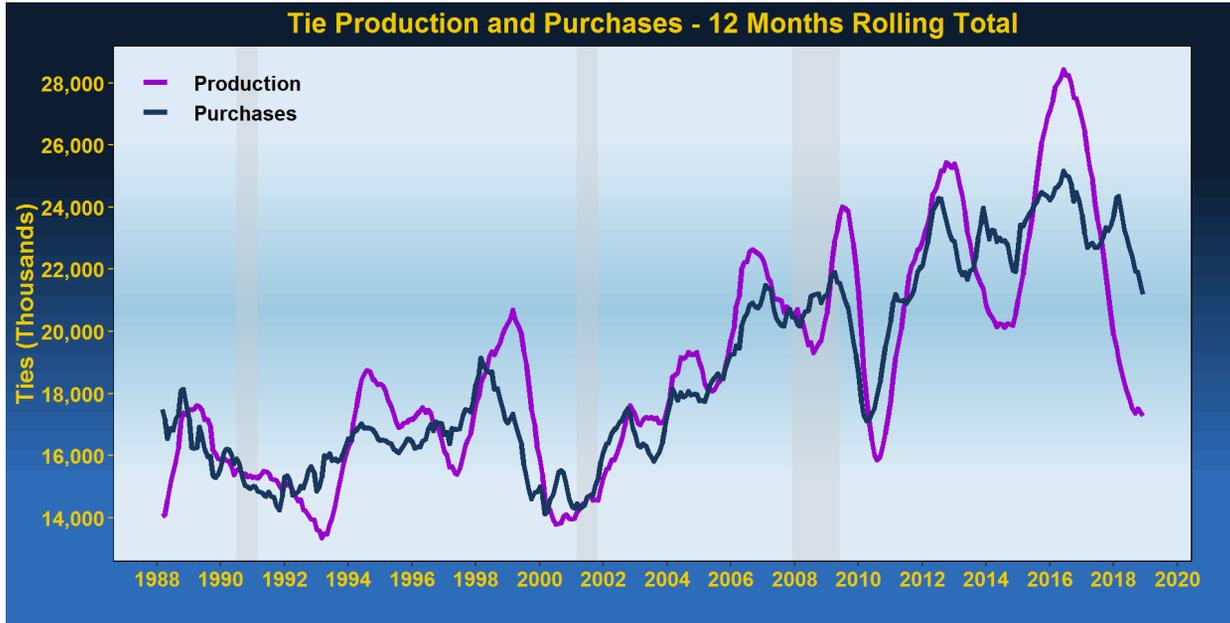
Inventory's 12 month moving average (12MMA) dwindled by 23.1% from year ago levels.

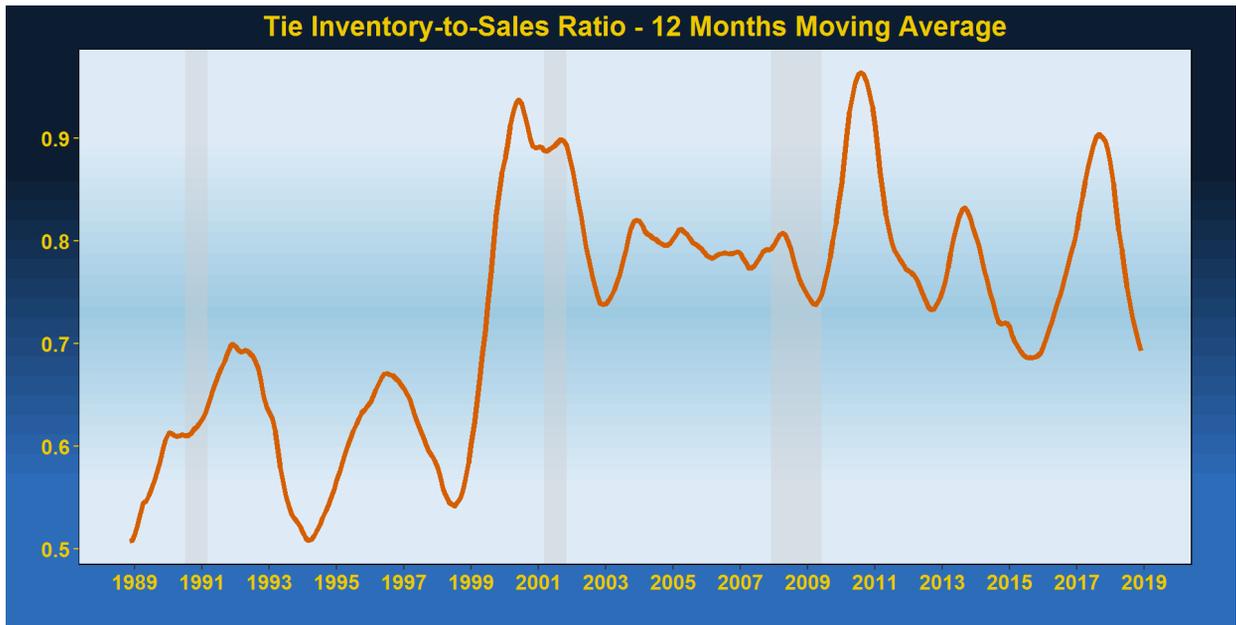
Inventory-to-Sales Ratio's 12MMA came down from 0.89 to 0.69.

### Table of Annual Observations

Production and Purchases are 12 months rolling totals, Inventory and ISR are 12MMA

Date	Production	Purchases	Inventory	ISR
December 2017	20,502	23,412	20,201	0.89
December 2018	17,286	21,184	15,534	0.69





## Analysis of Quarterly Data

Production in Q4 dropped by 12.6% from last quarter and dropped by 2% from year ago.

For the same intervals, purchases decreased by 26.4% and came down by 15% respectively.

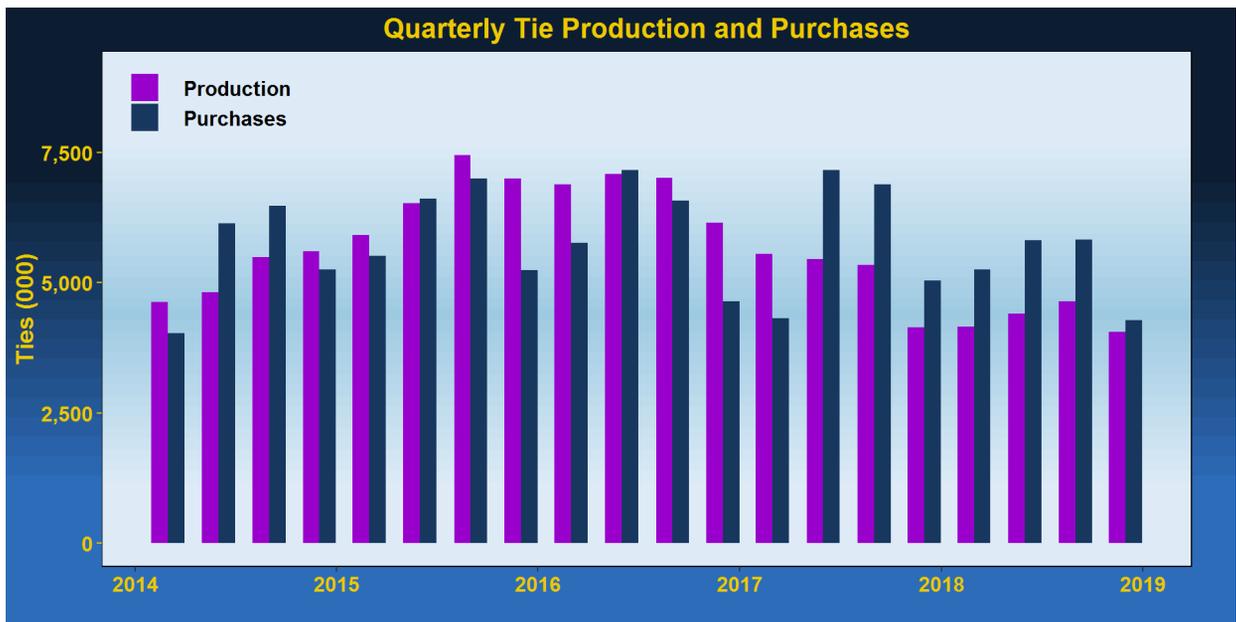
Inventory's 3MMA declined by 1.5% from last quarter and declined by 21.3% from year ago levels.

From November to December, the 3MMA of Inventory-to-Sales Ratio remained flat at 0.67. Year ago, the ratio was 0.8.

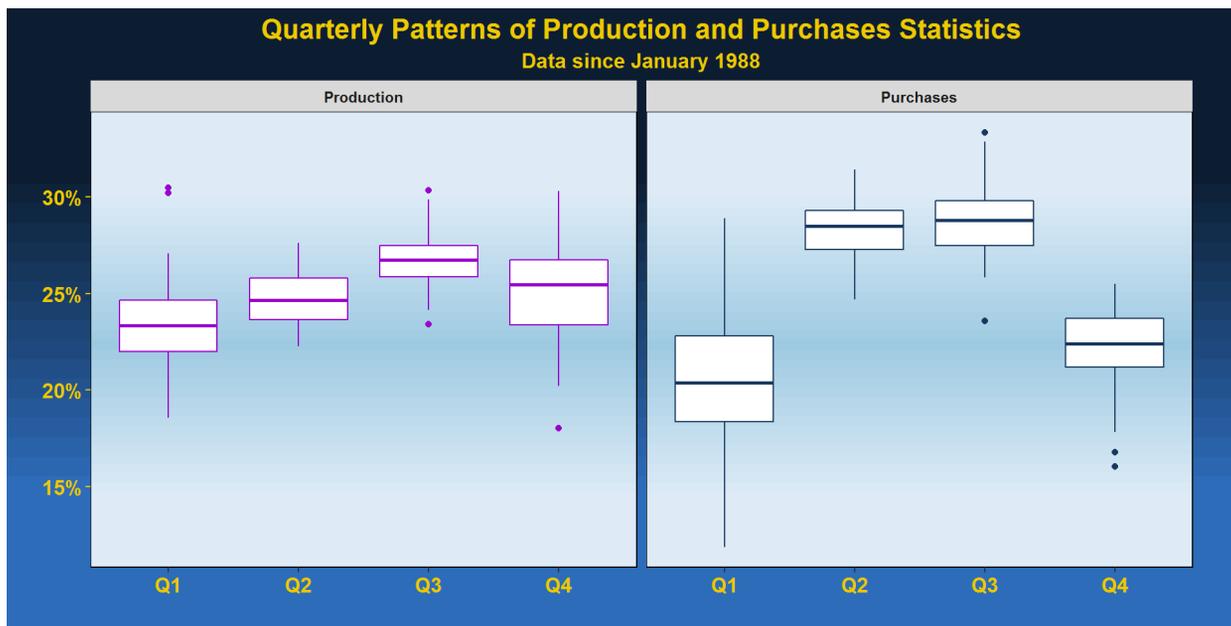
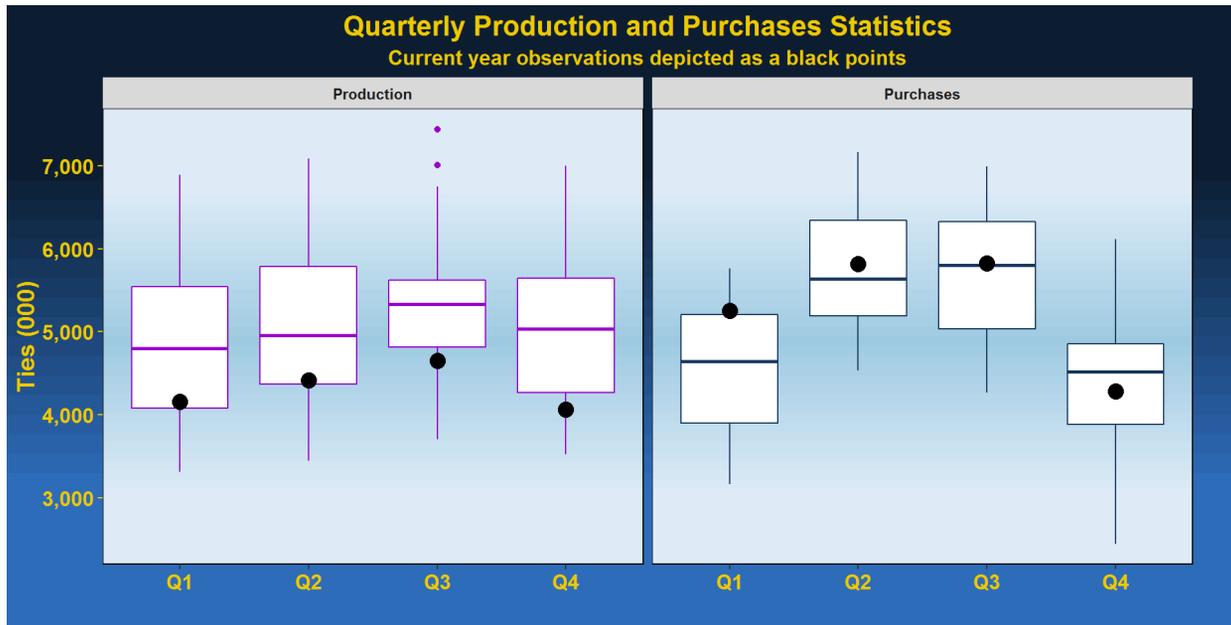
### **Table of Quarterly Observations**

*Production and Purchases Quarterly Sum, Inventory and ISR - 3MMA*

Date	Production	Purchases	Inventory	ISR
December 2017	4,145	5,043	18,328	0.80
September 2018	4,649	5,824	14,651	0.67
December 2018	4,063	4,285	14,429	0.67



Quarterly pattern of production and purchases uses data from January 2000. The top graph shows data analysis within each quarter. It shows the median, upper quartile and lower quartile boundary (more detailed explanation is available in the Appendix section). It also displays what the production and purchases were in each quarter of reporting year represented by black points in relation to quarterly statistical values. The second graph shows the contribution of each quarter to the total annual production and purchases.



## Analysis of Monthly Data

Production dropped by 12.2% from last month and fell by 10.3% from year ago.

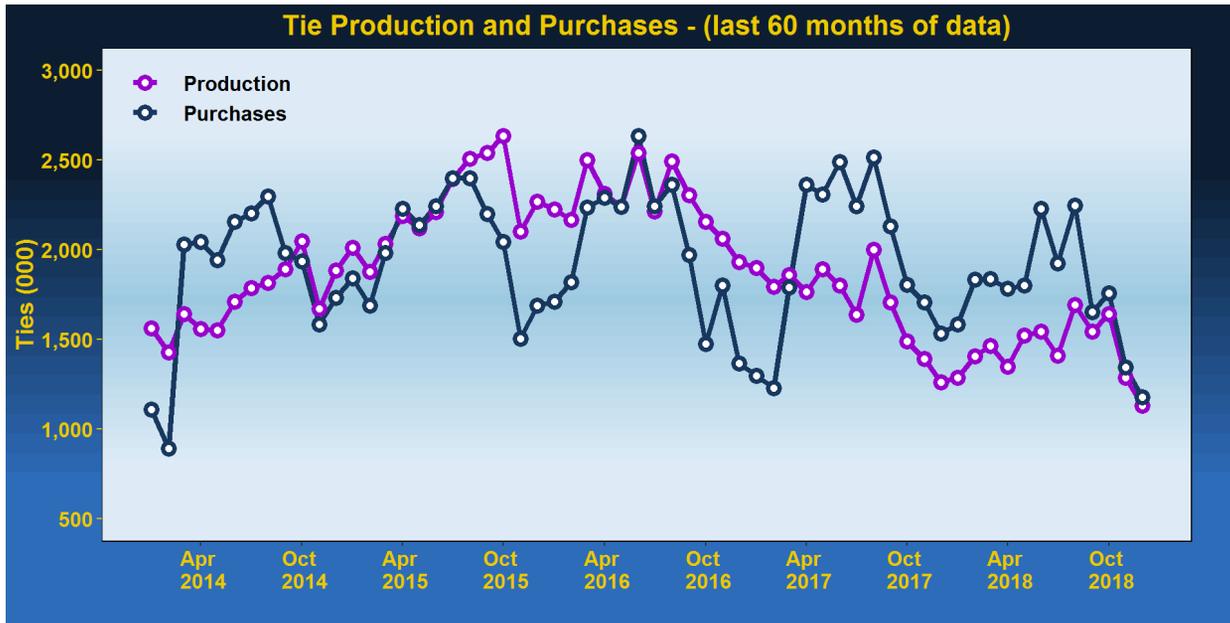
For the same time intervals, purchases dwindled by 12.3% and declined by 23.1% respectively.

Inventory dwindled by 0.3% and came down by 21.3% from year ago levels.

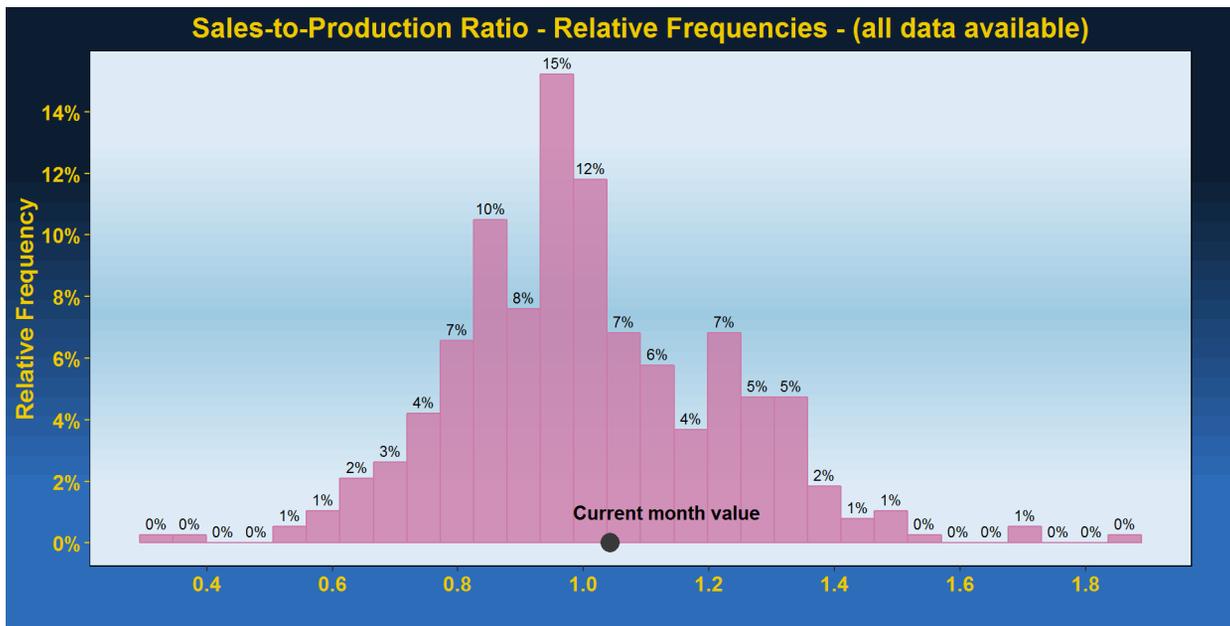
From month ago, the Inventory-to-Sales Ratio expanded from 0.67 to 0.68 and from year ago, the ratio came down from 0.78.

**Table of Monthly Observations**

Date	Production	Purchases	Inventory	ISR
December 2017	1,262	1,533	18,328	0.78
November 2018	1,289	1,346	14,477	0.67
December 2018	1,131	1,180	14,429	0.68

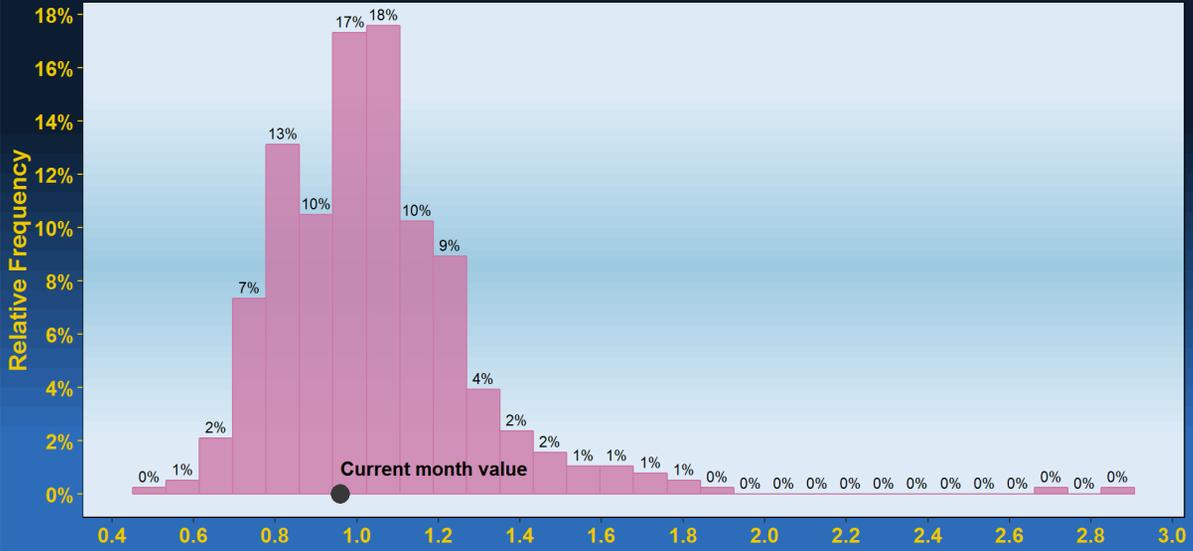


Sales-to-Production Ratio shows the replenishment/diminishment of inventory. Ratio above one signals diminishment and ratio below one replenishment of inventory stock.



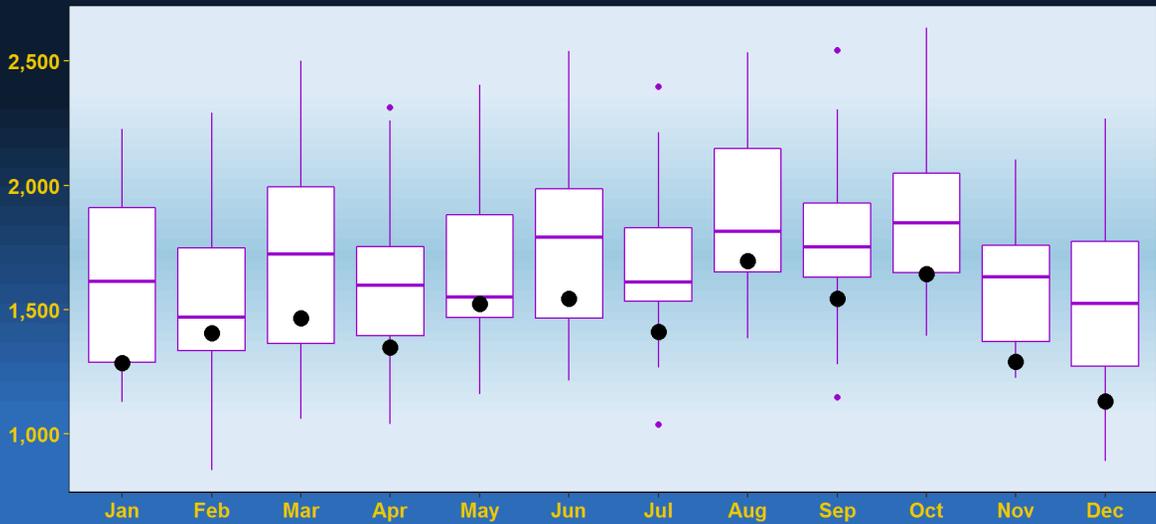
The following graph tells the same story as the graph above, just the ratio is reversed - Production-to-Sales Ratio.

### Production-to-Sales Ratio - Relative Frequencies - (all data available)



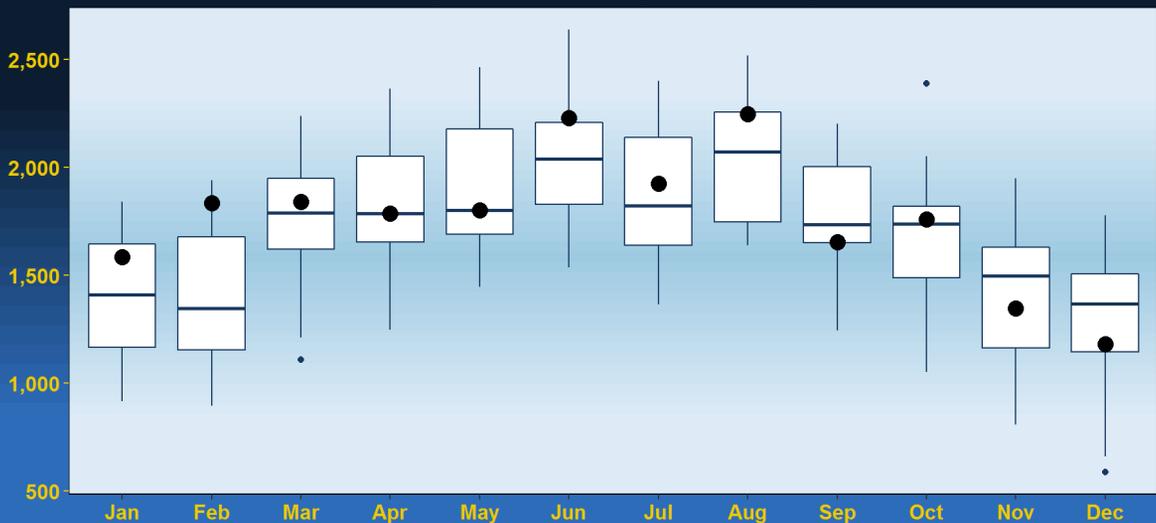
### Monthly Production Statistics - (data since 2000)

Current year observations depicted as a black points



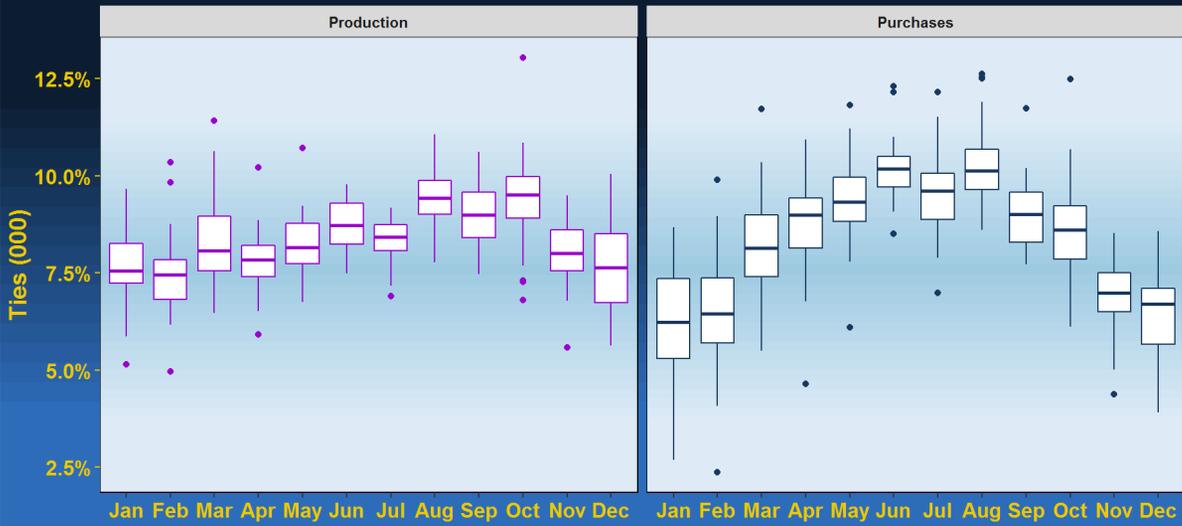
### Monthly Purchases Statistics - (data since 2000)

Current year observations depicted as a black points

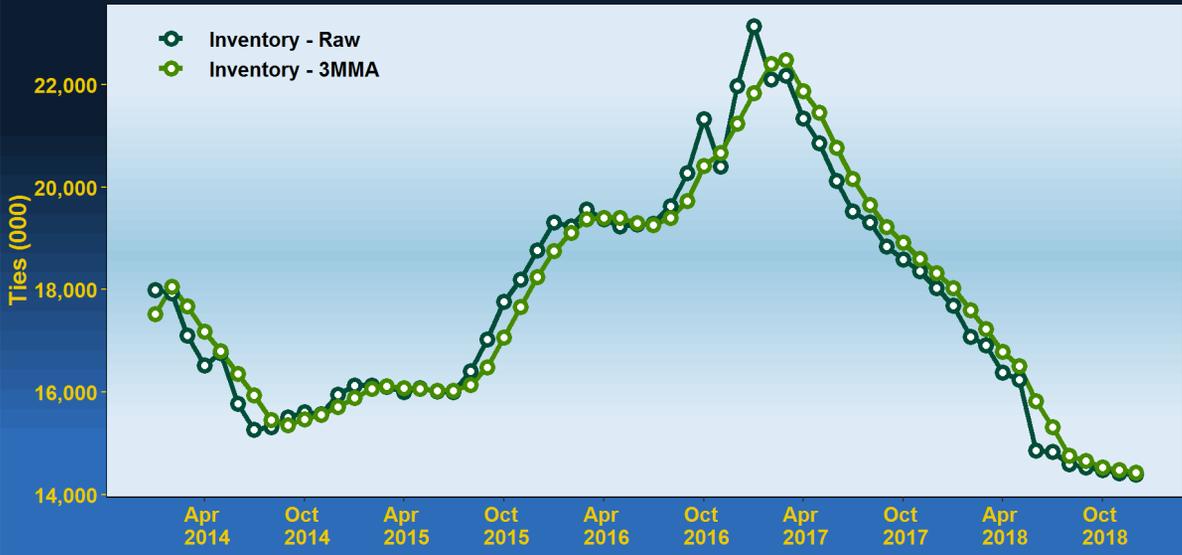


### Monthly Pattern of Production and Purchases Statistics - Percent of Annual Total

Data since January 1988

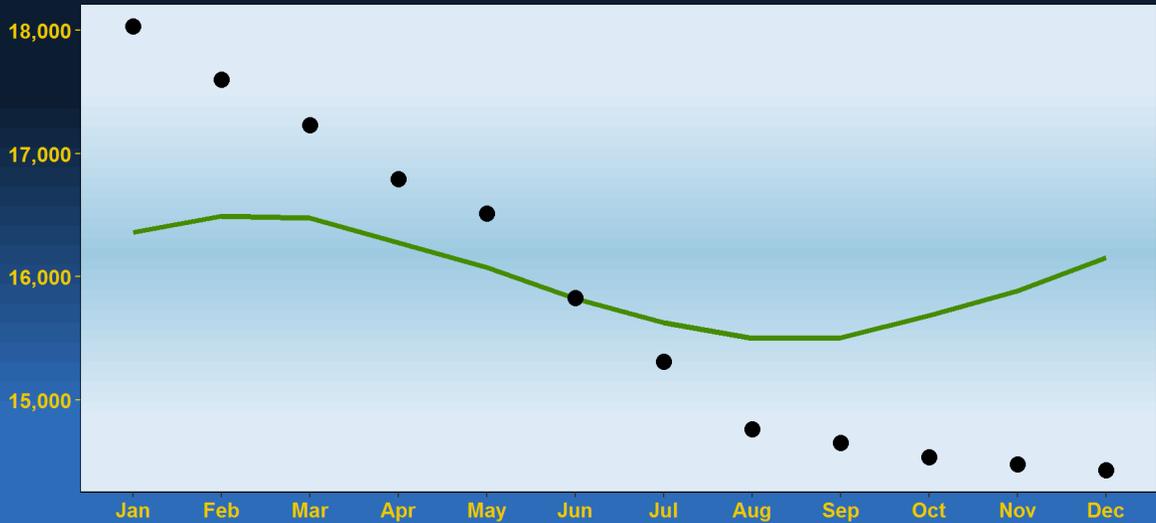


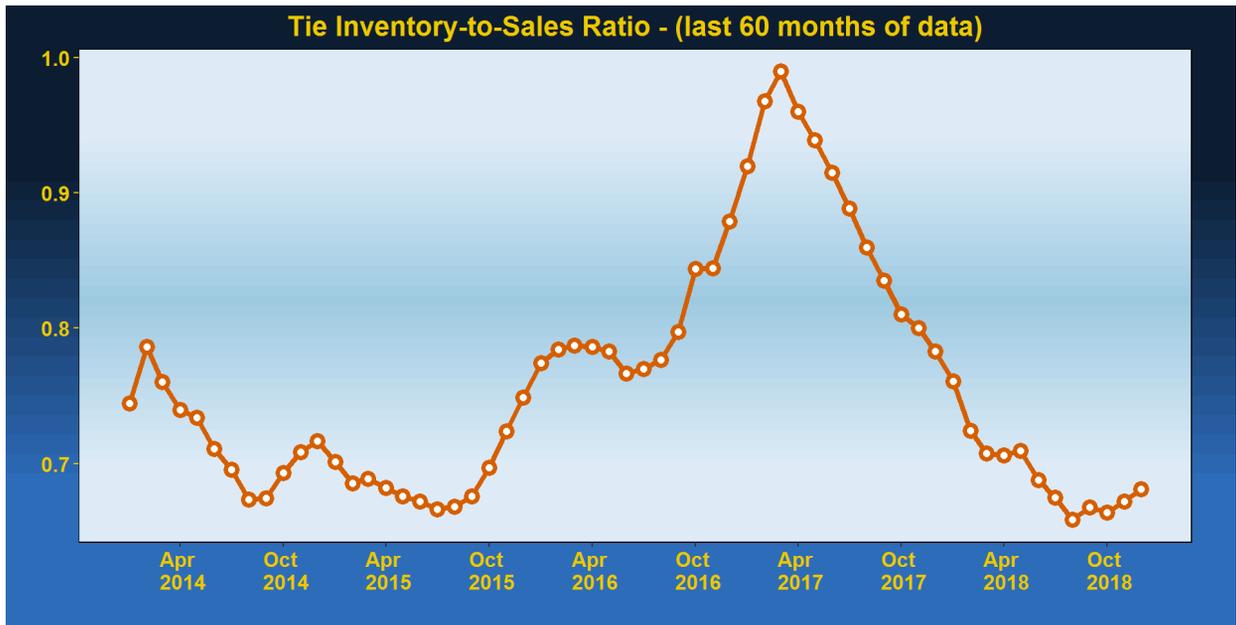
### Tie Inventory - Raw Monthly and 3MMA Data - (last 60 months of data)



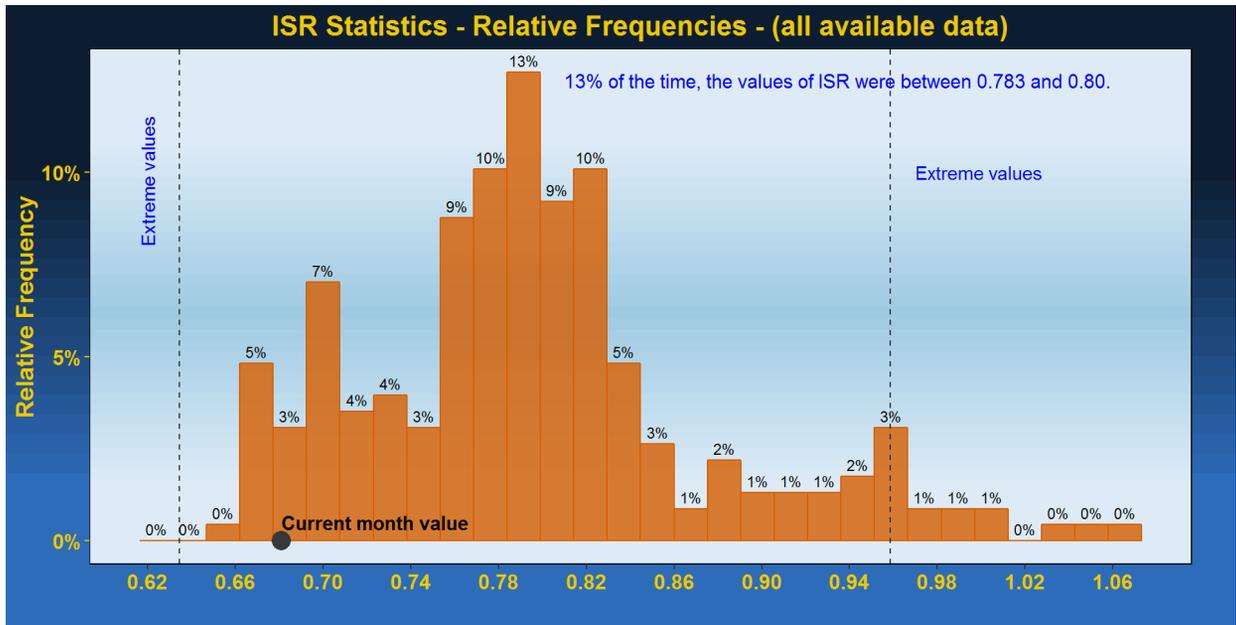
### Monthly Patterns of Inventory - (data since 2000)

Monthly average depicted with solid green line, current year observations depicted as a black points



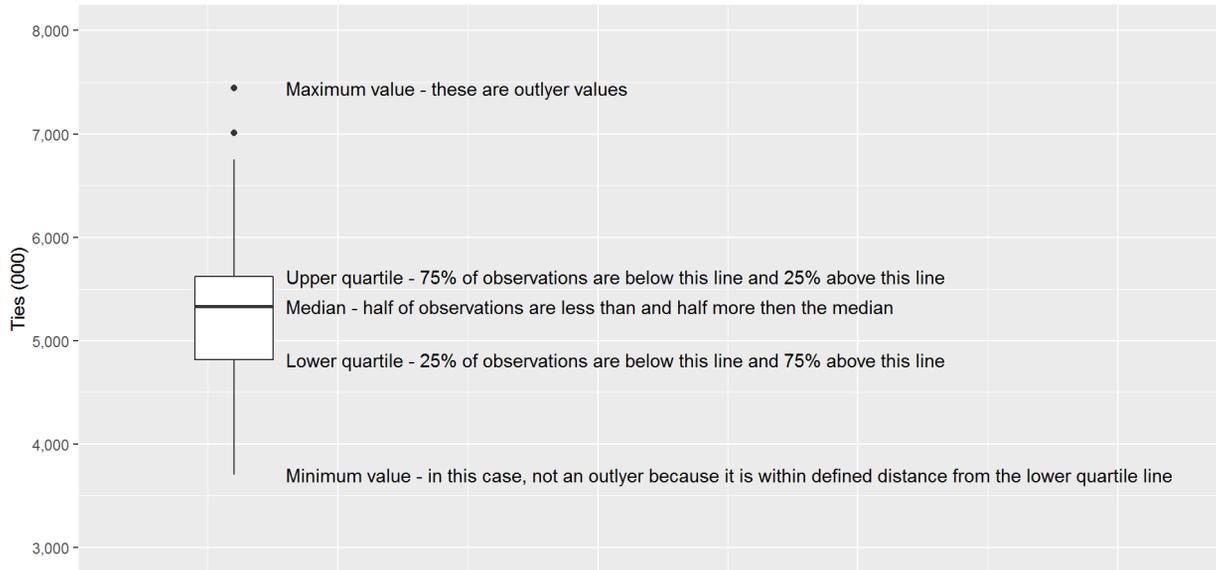


Inventory-to-Sales Ratio (ISR) histogram of relative frequencies shows the monthly ISR data distribution and the black point represents the value for current reporting month.



# Appendix

## Box Plot Explained



## Histogram of Relative Frequencies Explained

