Report_Old_Data

Yunyao Zhu

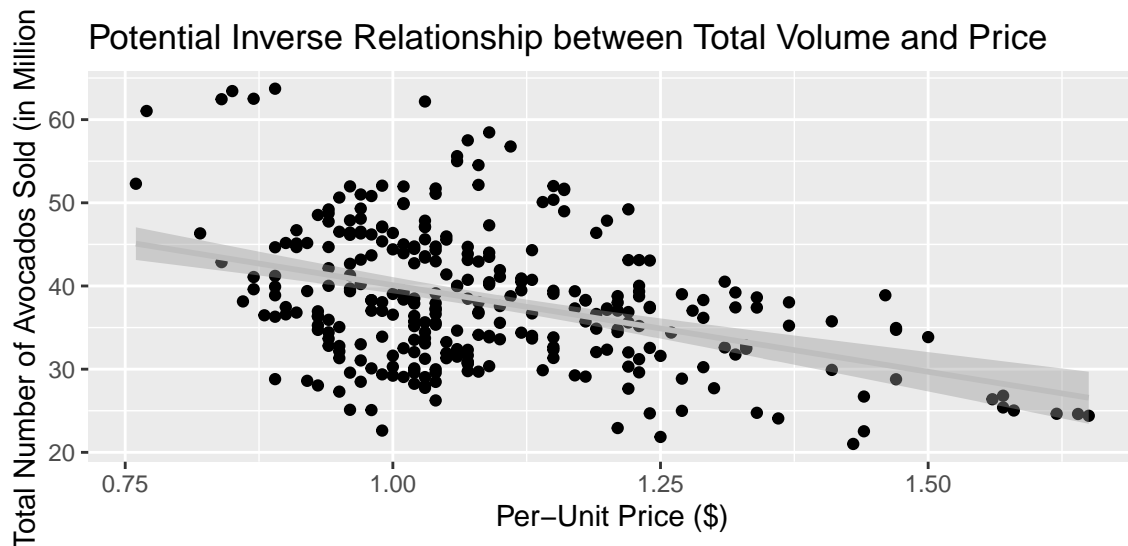4/15/2021

Exploratory Data Analysis
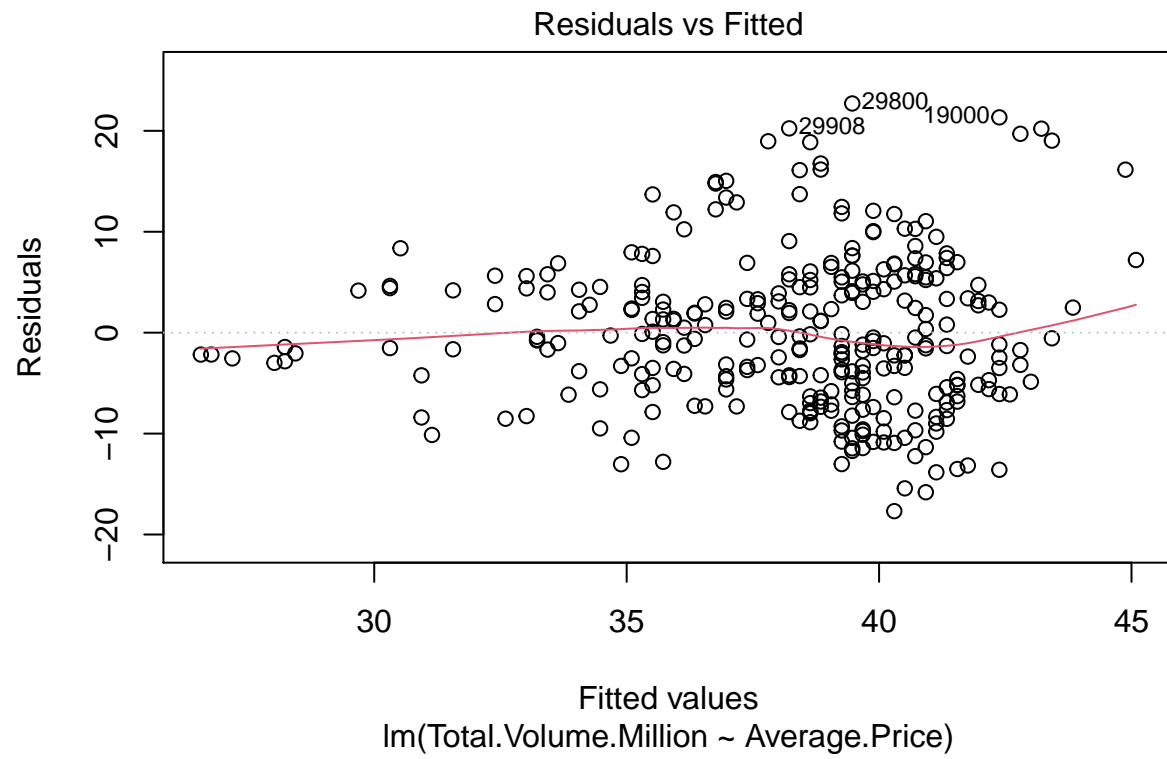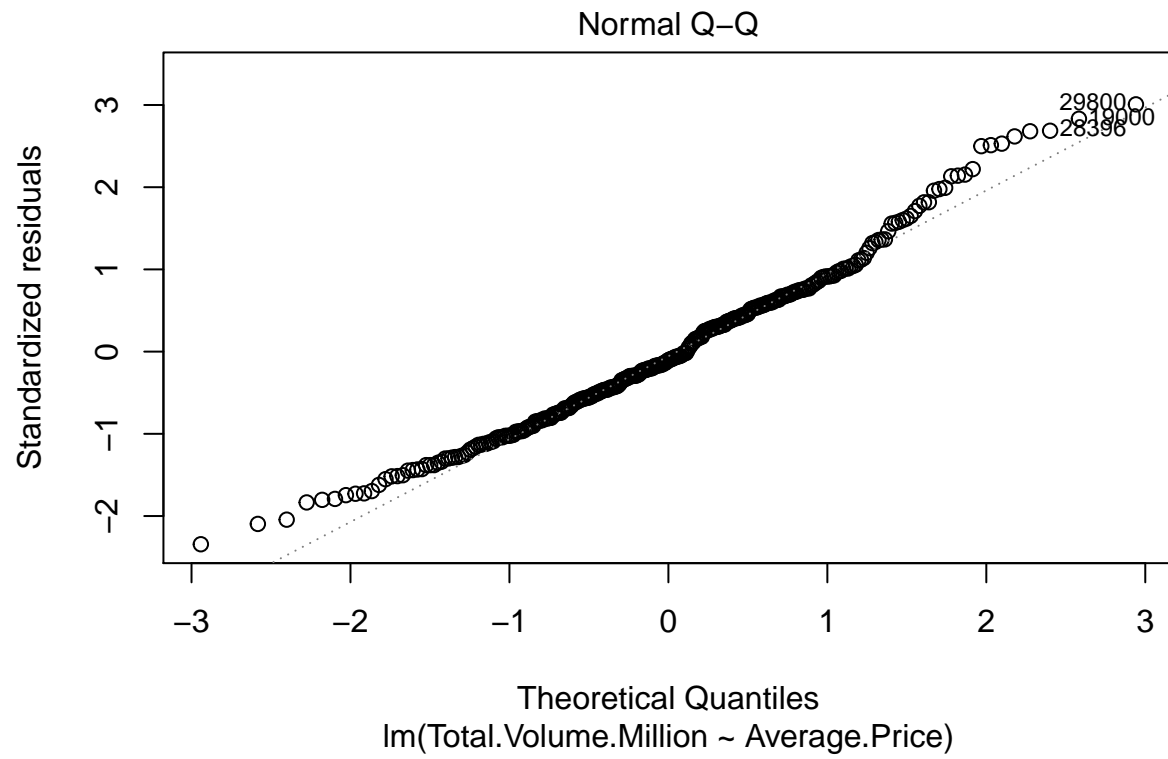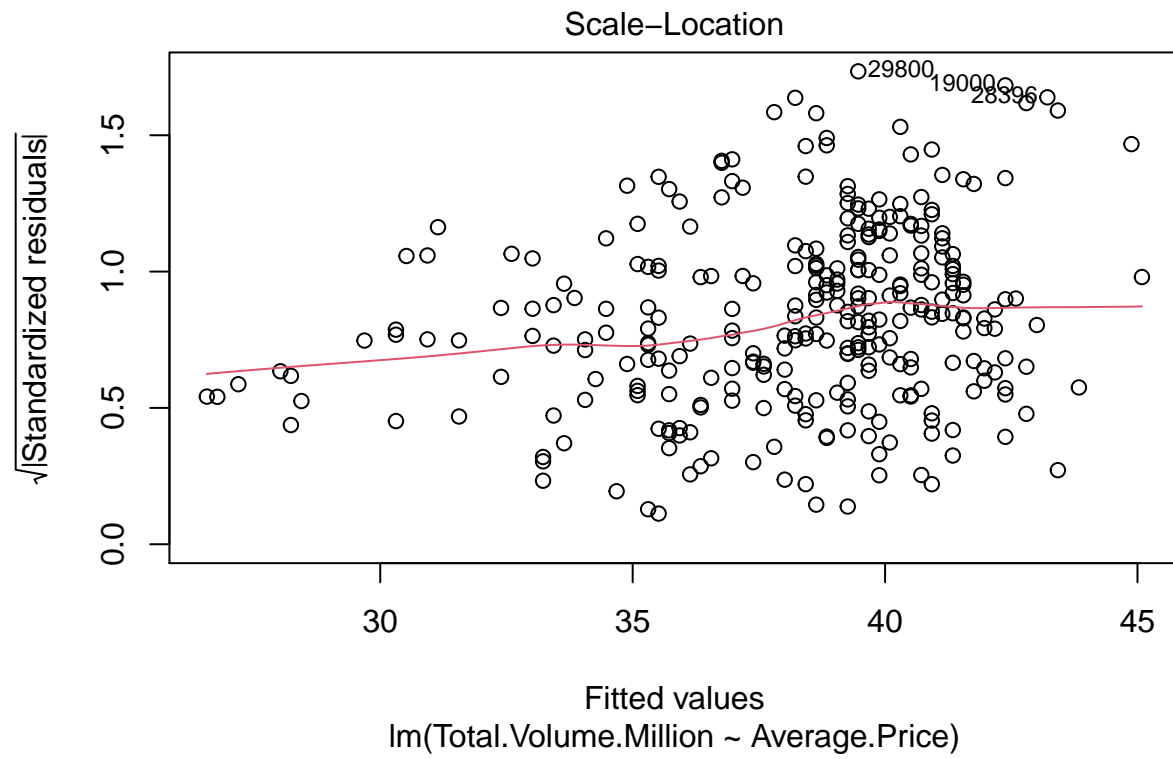
EDA

Figure 1: Scatter Plot of Per-Unit Price v.s. Total Volume of Avocados Sold in Millions
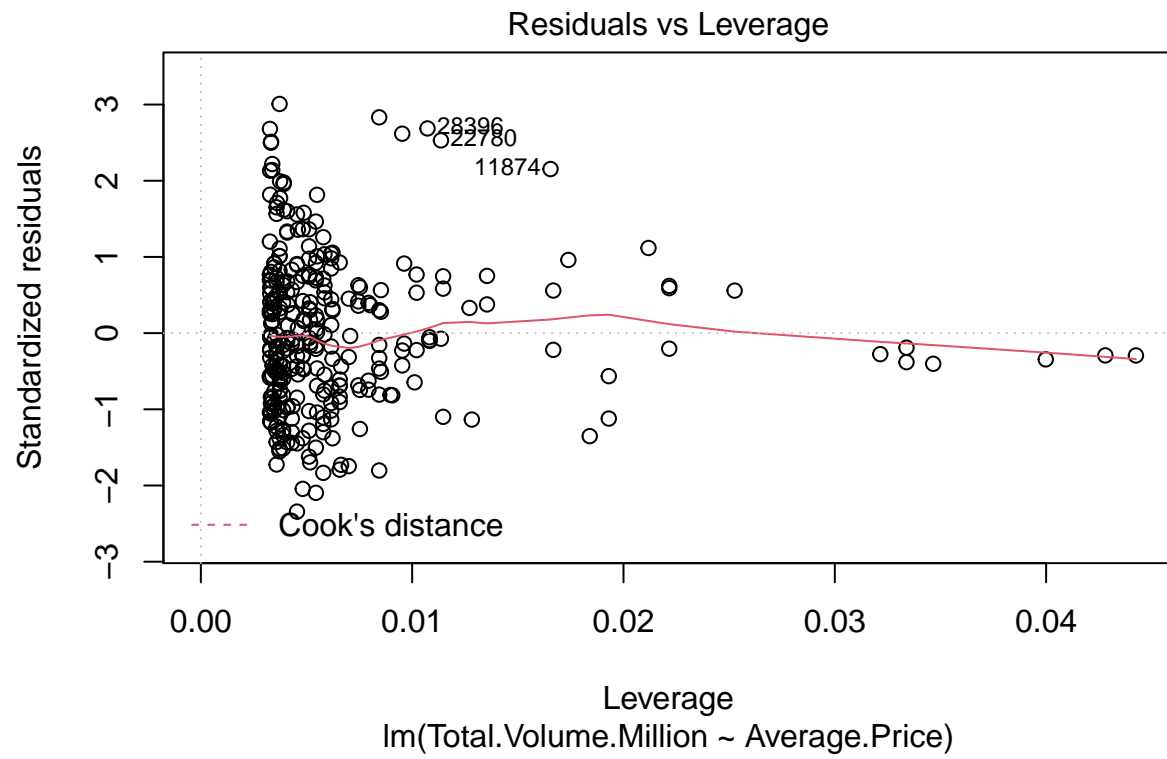
```
##
## Call:
## lm(formula = Total.Volume.Million ~ Average.Price, data = df.total.weekly.conventional)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -17.6834 -5.5458 -0.7967  4.6969 22.7105
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)     60.905      3.006  20.264  < 2e-16 ***
## Average.Price  -20.812      2.731  -7.621 3.22e-13 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7.565 on 304 degrees of freedom
```

```
## Multiple R-squared:  0.1604, Adjusted R-squared:  0.1577
## F-statistic: 58.09 on 1 and 304 DF,  p-value: 3.221e-13
```
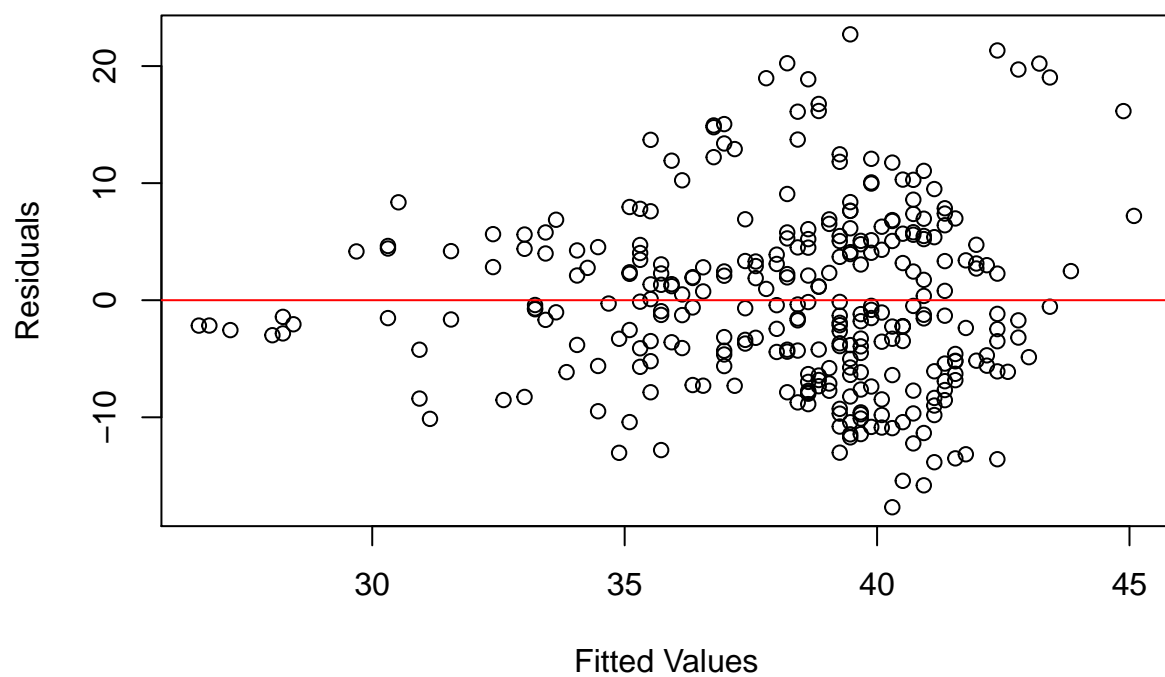
Residuals vs Fitted

Fitted values
lm(Total.Volume.Million ~ Average.Price)

Normal Q–Q

Theoretical Quantiles
lm(Total.Volume.Million ~ Average.Price)

Scale−Location

lm(Total.Volume.Million ~ Average.Price)

Residuals vs Leverage

Standardized residuals

28396
22780
11874

Cook's distance

Leverage
lm(Total.Volume.Million ~ Average.Price)

Heteroscedasticity in Residuals vs. Fitted Value plot

Residuals

Fitted Values

Residuals Slightly Positively Skewed

Potential Inverse Relationship between Total Volume and Price

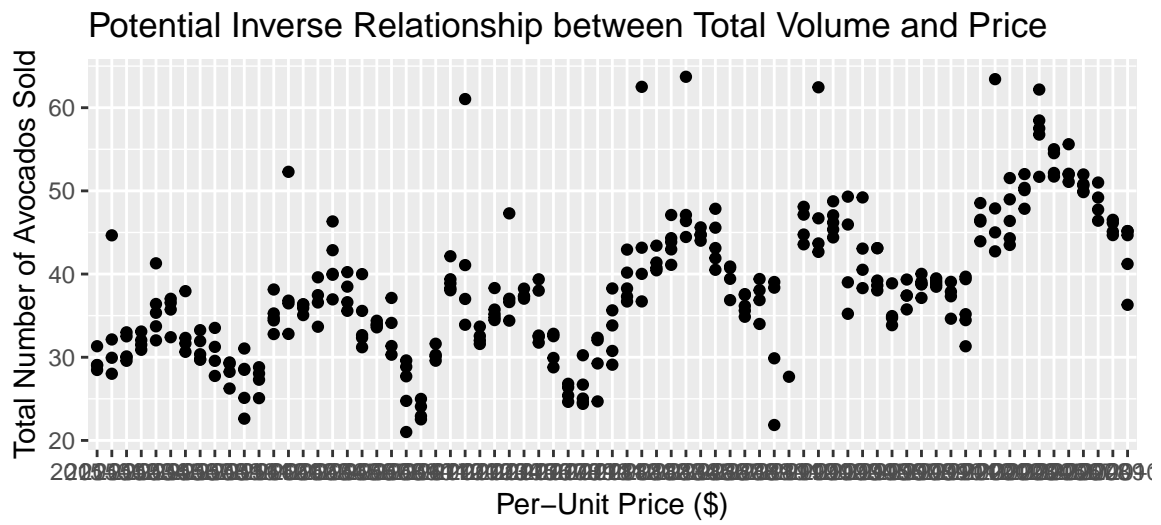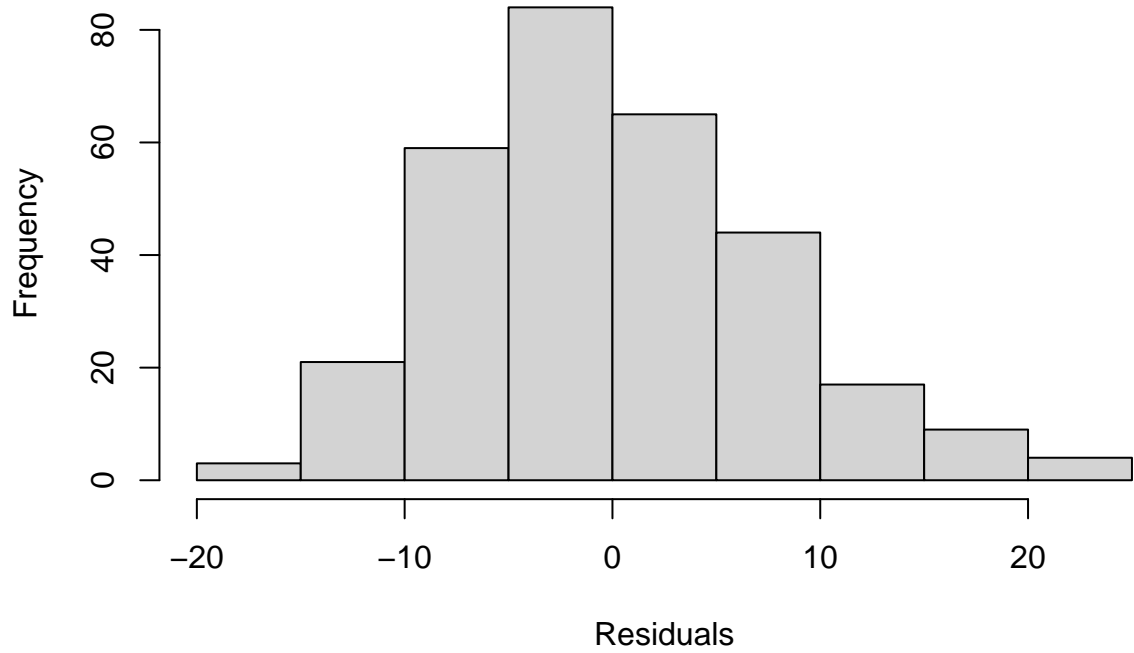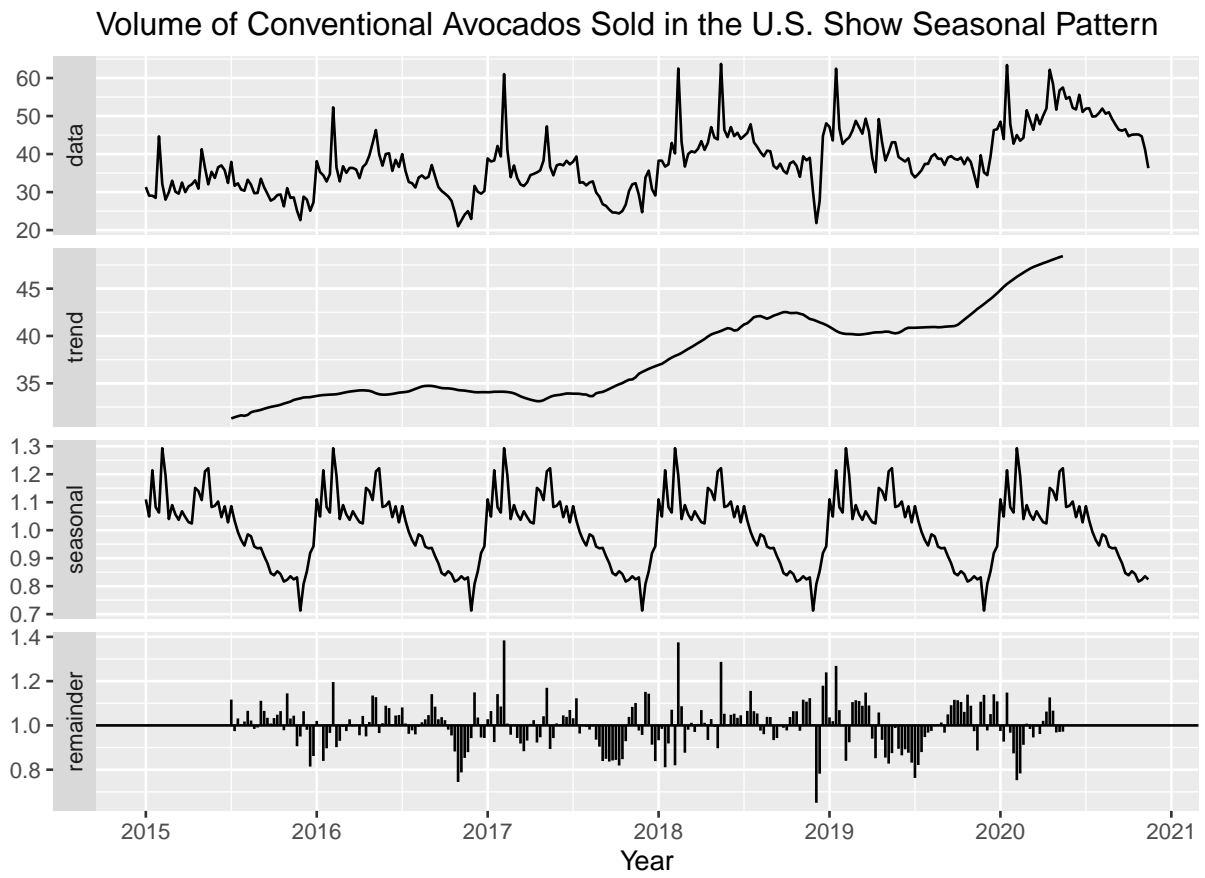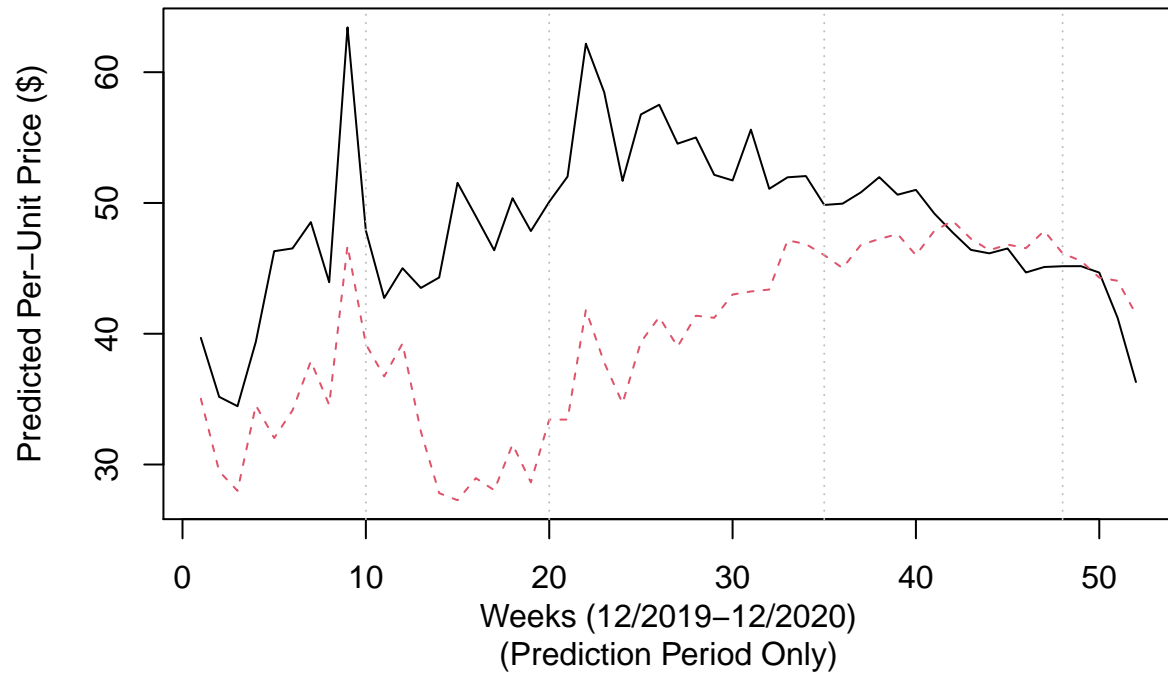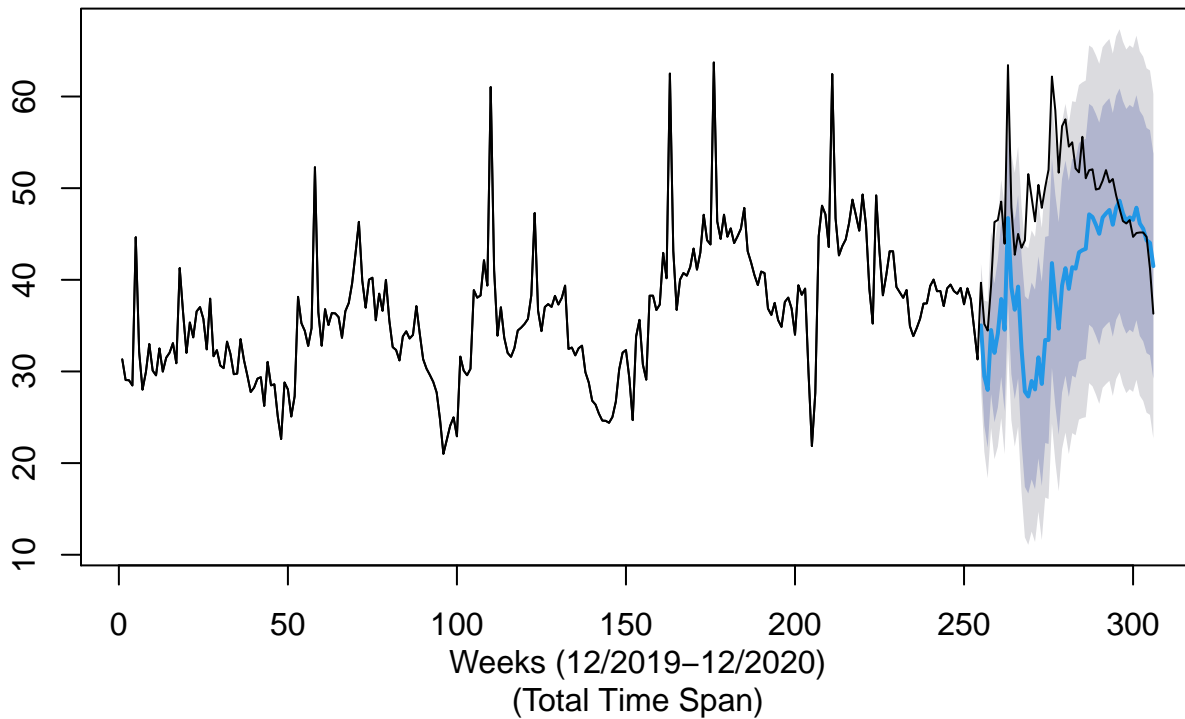Figure 2: Scatter Plot of Per-Unit Price v.s. Total Volume of Avocados Sold

Figure 3: Time Series Plot of Total Volume of Conventional Avocados in the U.S.

1 Year Per−Unit Price Prediction

1 Year Prediction with Uncertainty

Weeks (12/2019–12/2020)
(Total Time Span)

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