Modeling

Group 6

```
# Get couldabeens
couldabeens <- read_csv("../data-gen/couldabeens.csv")
# Get payroll revenue data
payroll_rev <- read_csv("../data/revenue-payroll.csv")
payroll <- find_labShare(payroll_rev)
```

Predictors

```
# Revenue and Labor Share
cor(couldabeens$totRev, couldabeens$labShare)
```

```
## [1] -0.5044864
```

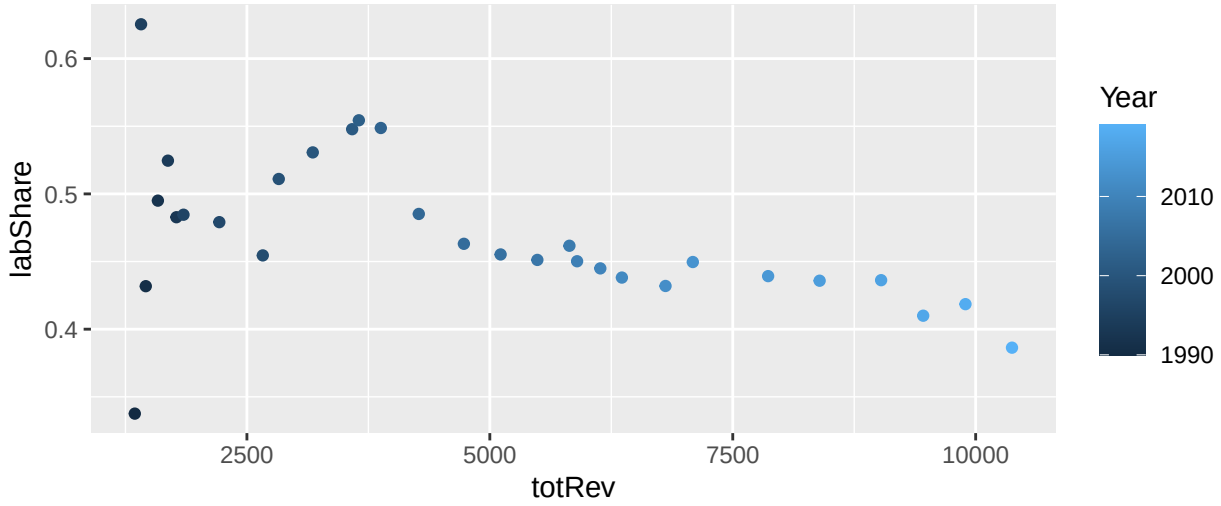
```
cor(couldabeens$totRev, couldabeens$totPayroll)
```

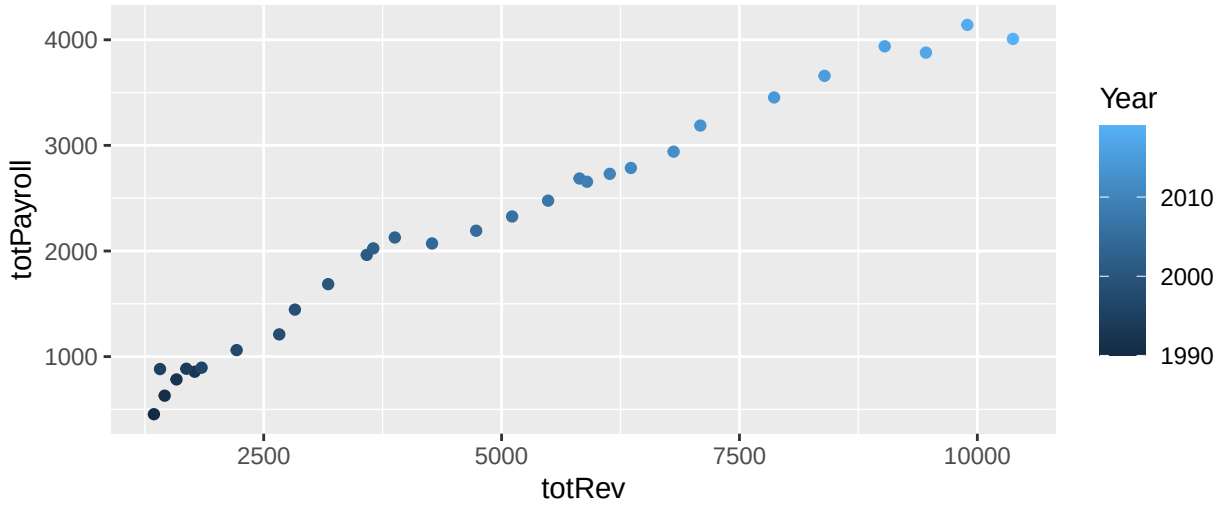
```
## [1] 0.9897413
```

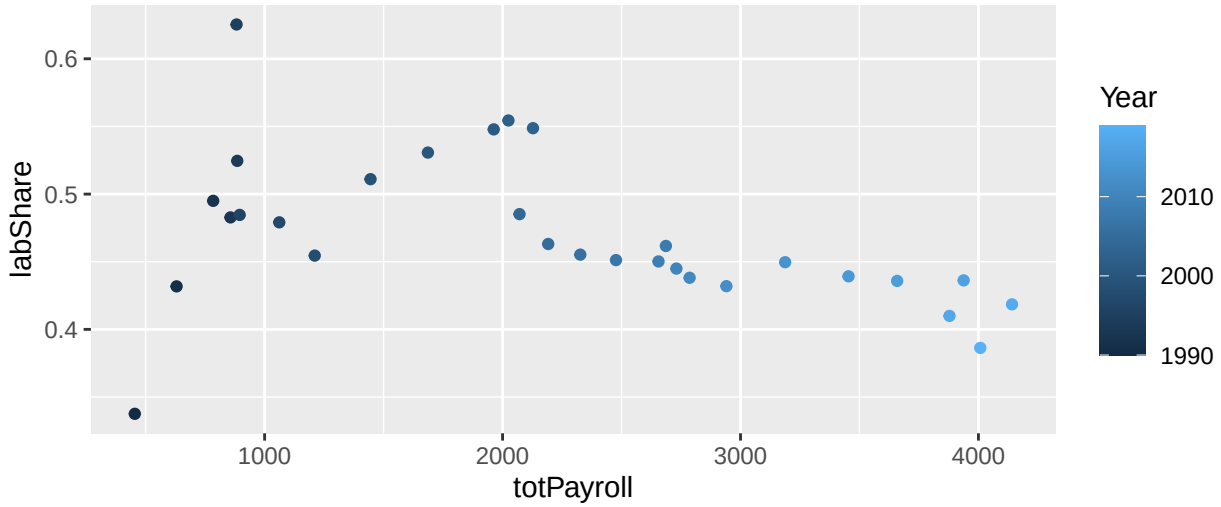
```
cor(couldabeens$totPayroll, couldabeens$labShare)
```

```
## [1] -0.4059079
```

Predictor Visualization





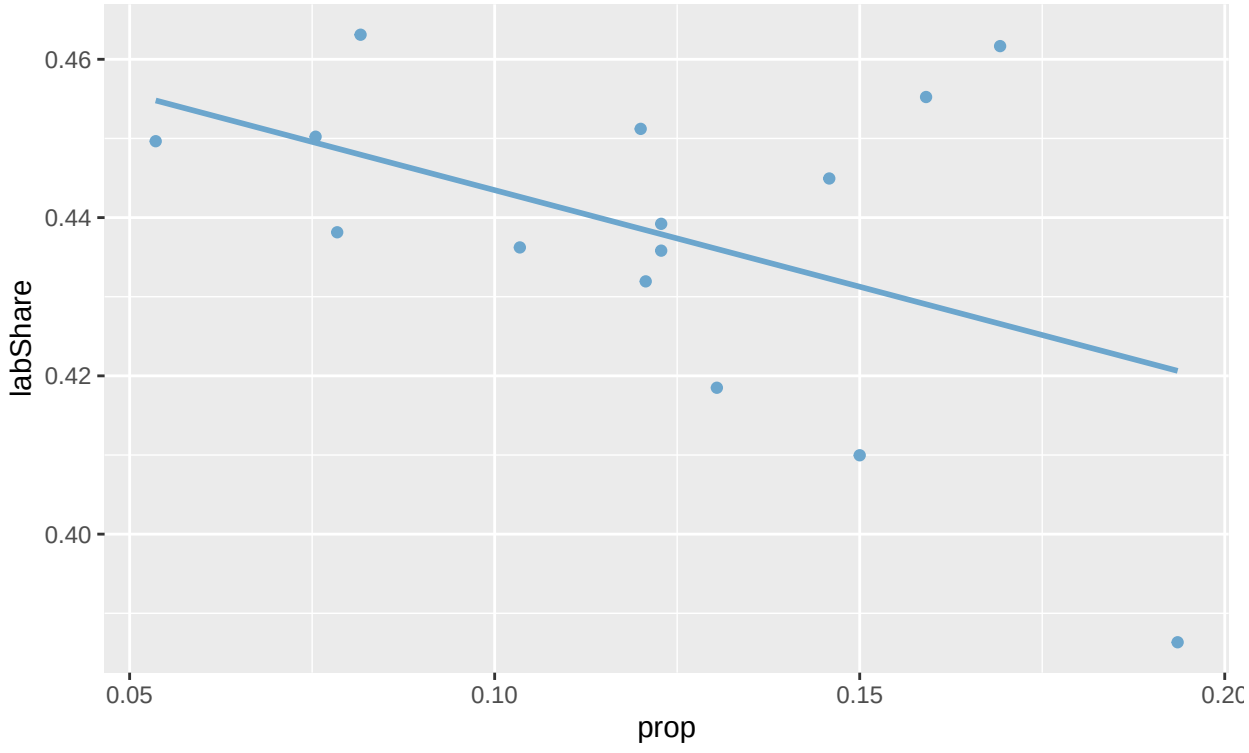


Linear Model: Labor Share

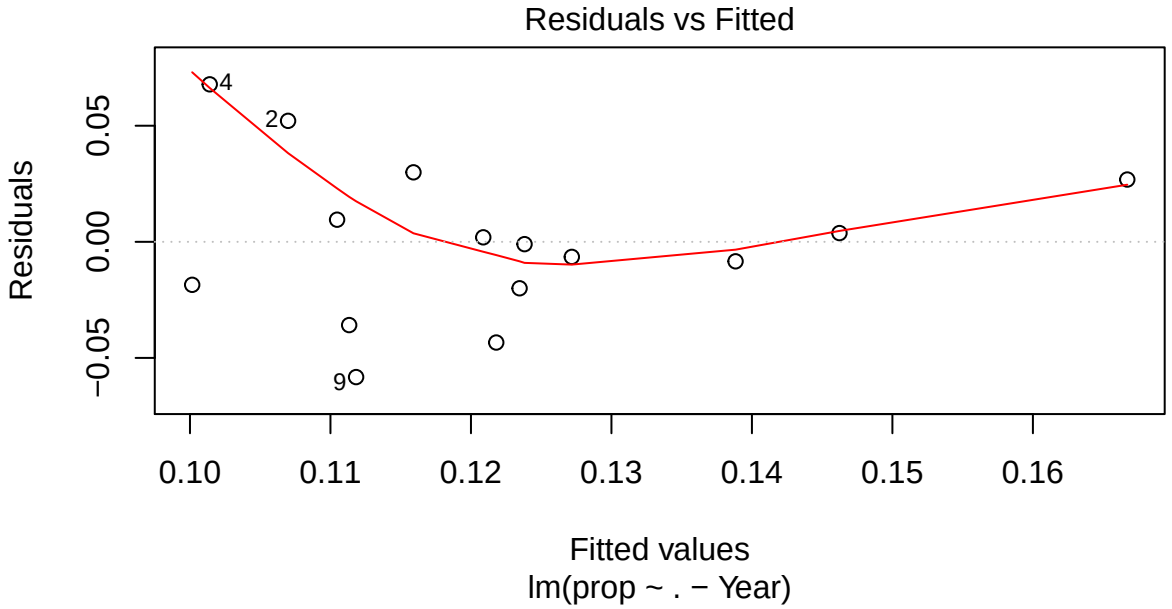
```
##   Year       prop  labShare
## 1 2004 0.08163265 0.4631073
## 2 2005 0.15909091 0.4552351
## 3 2006 0.12000000 0.4512095
## 4 2007 0.16923077 0.4616658
## 5 2008 0.07547170 0.4502196
## 6 2009 0.14583333 0.4449408
```

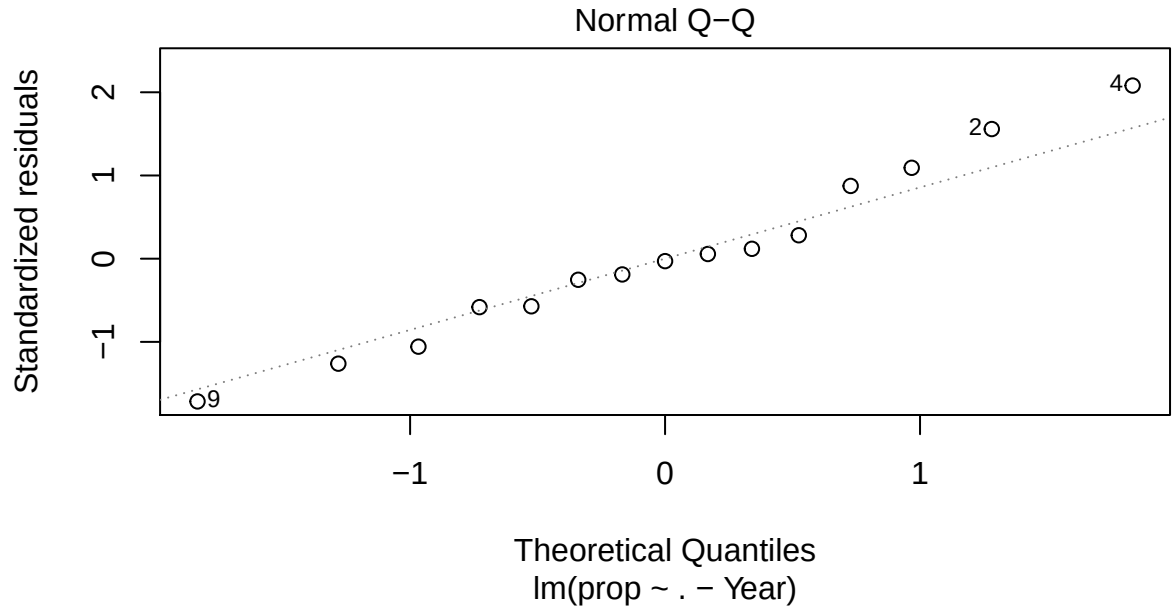
```
##
## Call:
## lm(formula = prop ~ . - Year, data = dataset1)
##
## Residuals:
##       Min        1Q    Median        3Q       Max
## -0.058253 -0.019268 -0.001008  0.018178  0.067824
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.5017     0.2036   2.464   0.0284 *
## labShare     -0.8670     0.4642  -1.868   0.0845 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.03558 on 13 degrees of freedom
## Multiple R-squared:  0.2116, Adjusted R-squared:  0.151
## F-statistic:  3.49 on 1 and 13 DF,  p-value: 0.08446
```

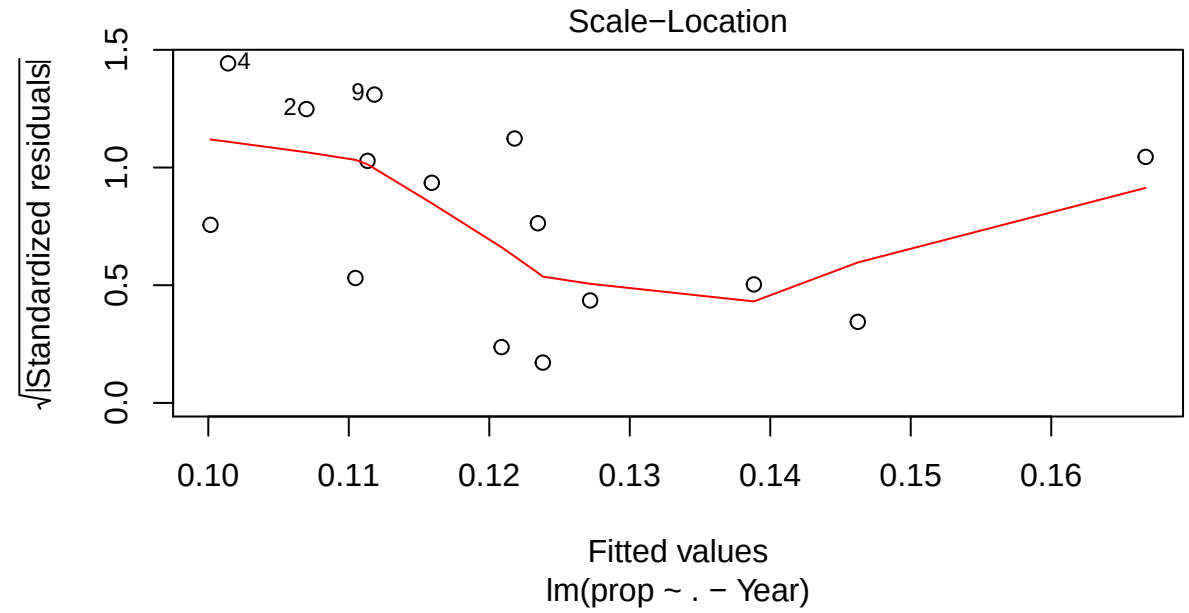
Relationship between Labor Share and Couldabeen Rates

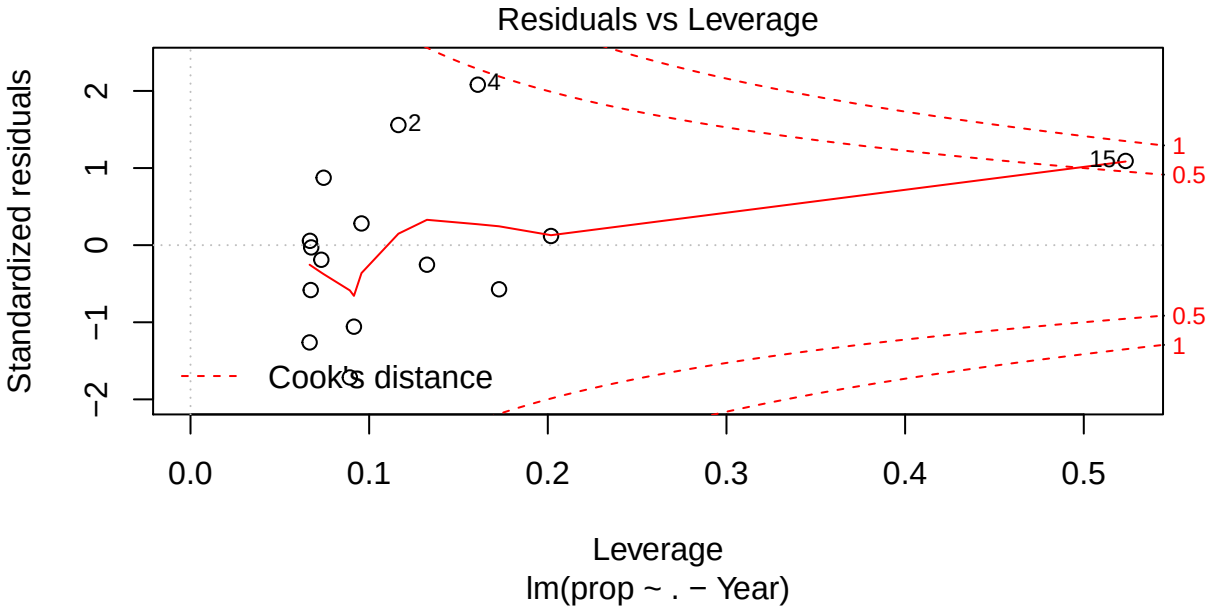


Diagnostic Plots






Scale−Location
√|Standardized residuals|
0.0
0.5
1.0
1.5
4
2
9
0.10
0.11
0.12
0.13
0.14
0.15
0.16
Fitted values
lm(prop ~ . − Year)


Residuals vs Leverage
Standardized residuals
−2
−1
0
1
2
4
2
15
1
0.5
0.5
1
Cook's distance
0.0
0.1
0.2
0.3
0.4
0.5
Leverage
lm(prop ~ . − Year)

Couldabeen Rates across the Years