

# Gestión de Cadenas de Aprovisionamiento Globales

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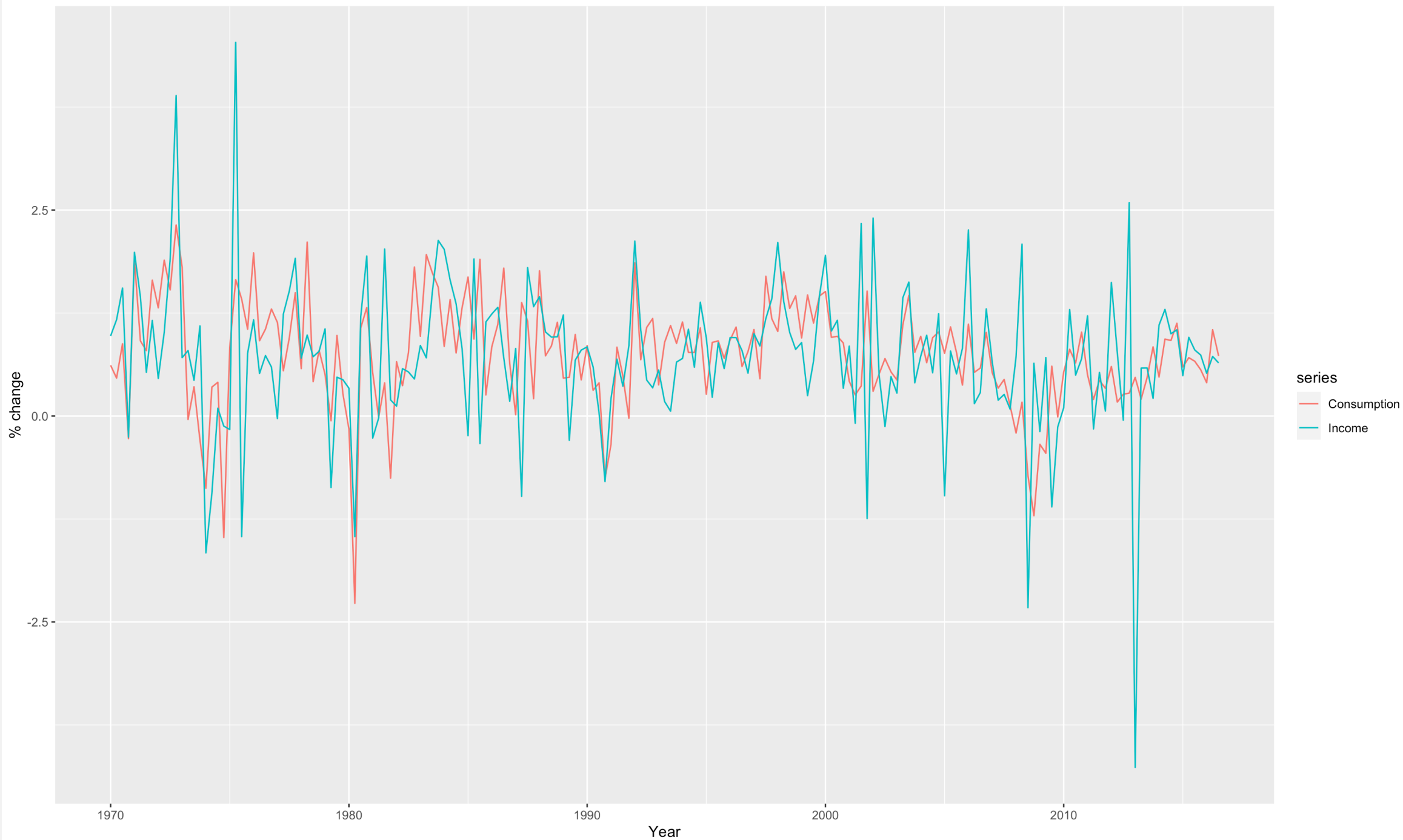
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# Times Series







```
Call:
tslm(formula = Consumption ~ Income, data = uschange)
```

```
Residuals:
    Min       1Q   Median       3Q      Max
-2.40845 -0.31816  0.02558  0.29978  1.45157
```

```
Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.54510     0.05569   9.789  < 2e-16 ***
Income       0.28060     0.04744   5.915 1.58e-08 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 0.6026 on 185 degrees of freedom
Multiple R-squared:  0.159,    Adjusted R-squared:  0.1545
F-statistic: 34.98 on 1 and 185 DF,  p-value: 1.577e-08
```

Consumption (quarterly % change)

2  
1  
0  
-1  
-2

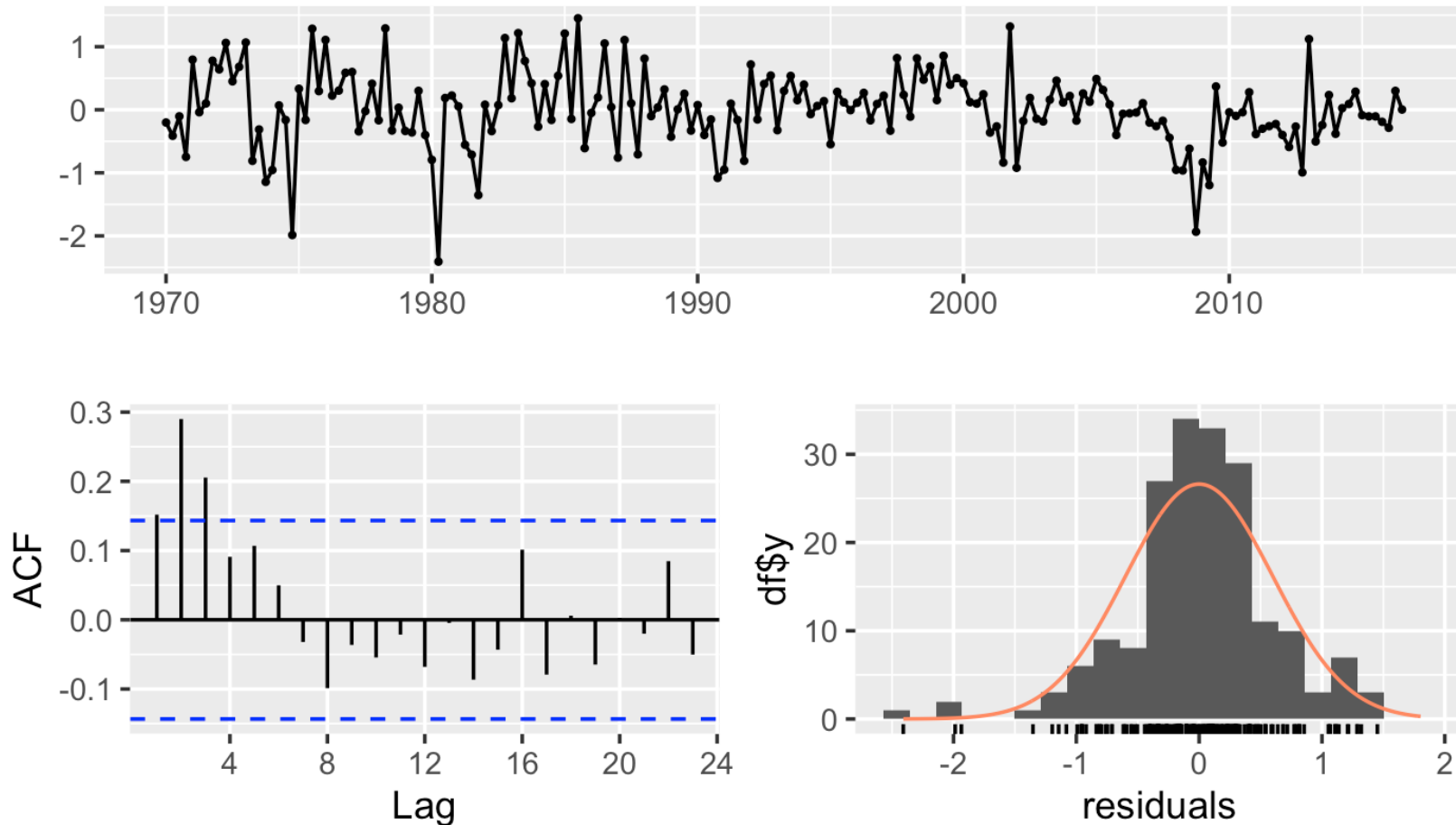
-2.5

0.0

2.5

Income (quarterly % change)

## Residuals from Linear regression model

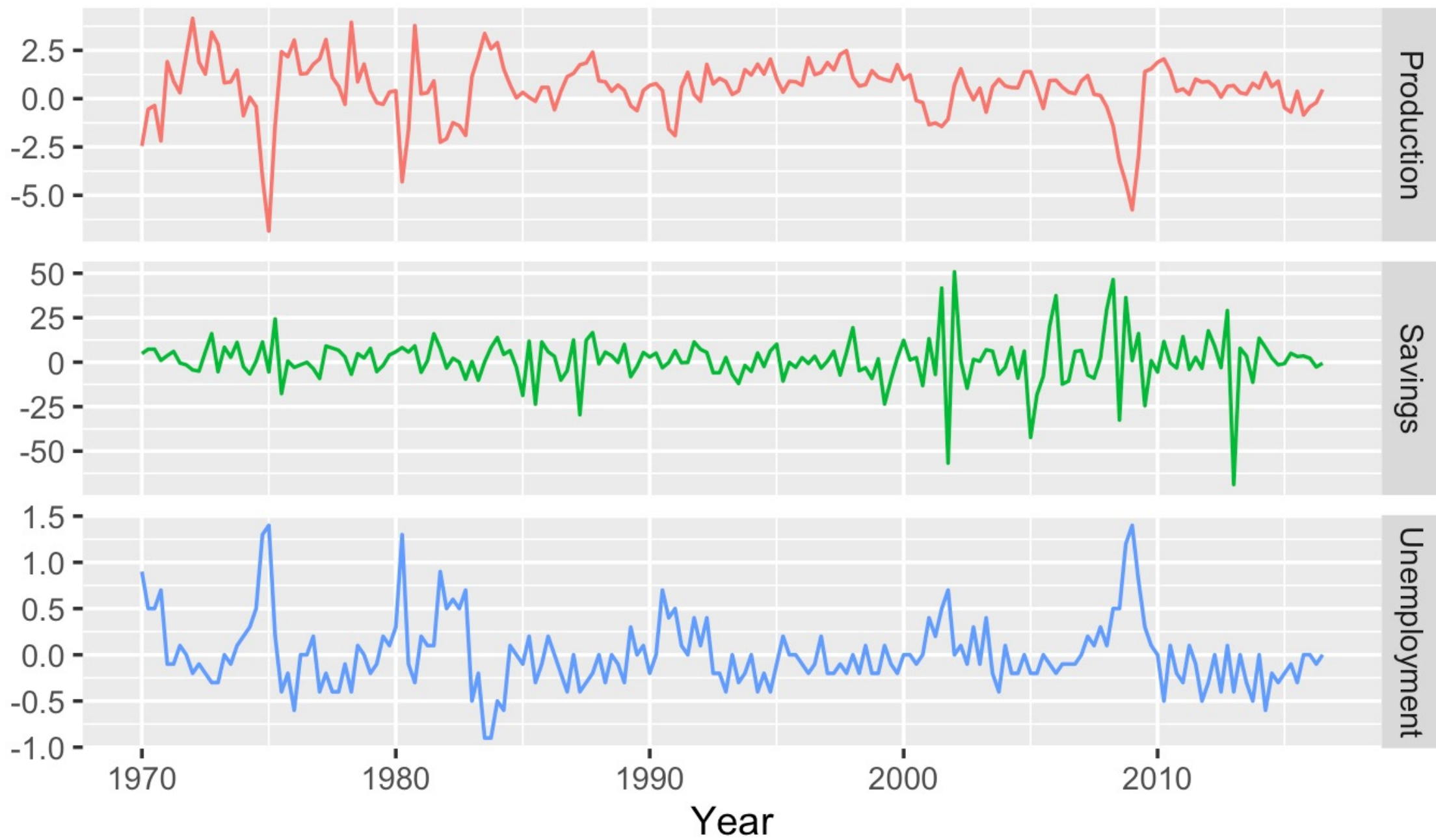


Breusch-Godfrey test for serial correlation of order up to 8

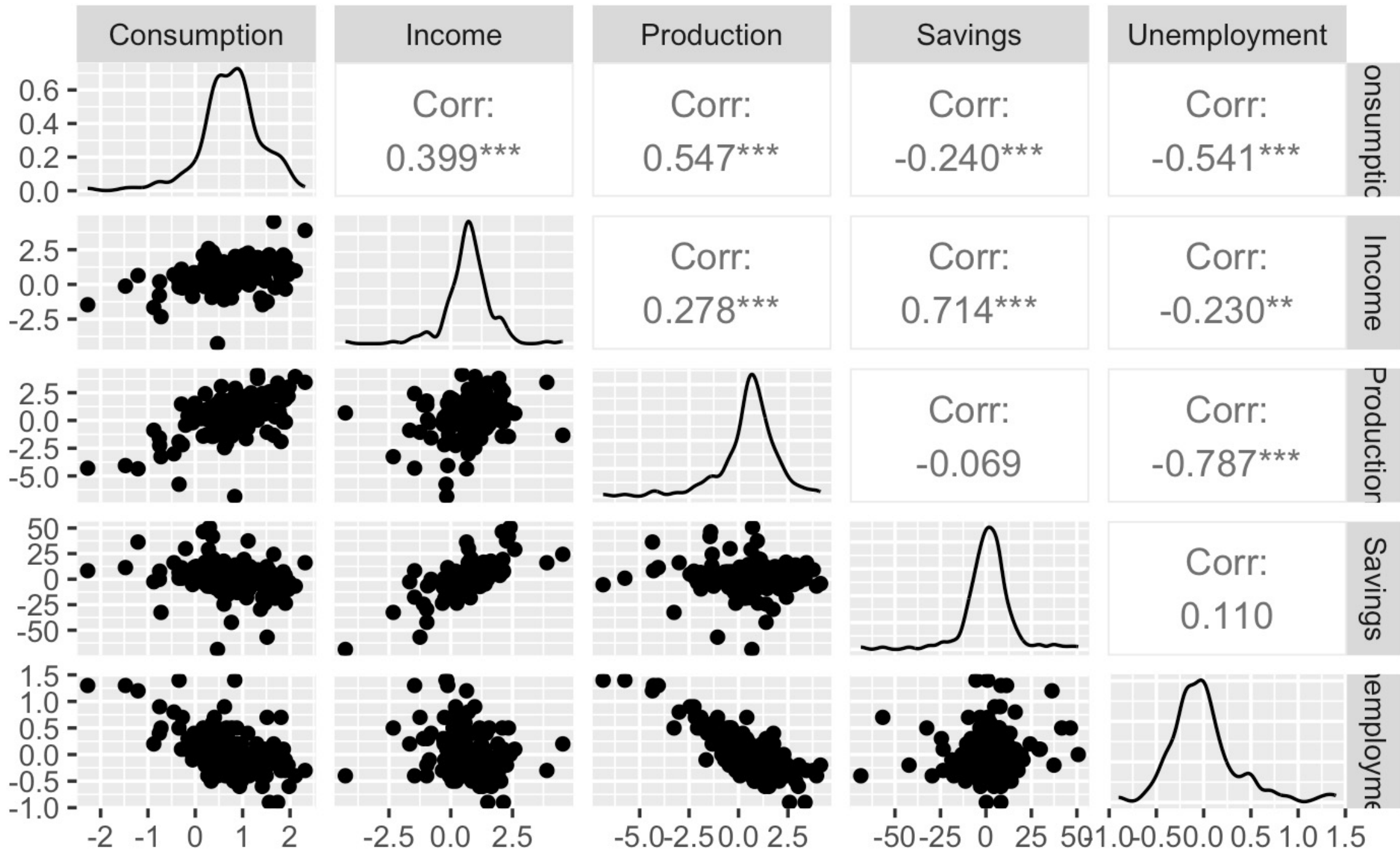
data: Residuals from Linear regression model  
LM test = 27.422, df = 8, p-value = 0.0005977

$H_0$  (null hypothesis): There is no autocorrelation at any order less than or equal to  $p$ .

$H_a$  (alternative hypothesis): There exists autocorrelation at some order less than or equal to  $p$ .









## Percentage change in US consumption expenditure



```
Call:
tslm(formula = Consumption ~ Income + Production + Unemployment +
      Savings, data = uschange)
```

Residuals:

|           | Min      | 1Q       | Median   | 3Q      | Max     |
|-----------|----------|----------|----------|---------|---------|
| Residuals | -0.88296 | -0.17638 | -0.03679 | 0.15251 | 1.20553 |

Coefficients:

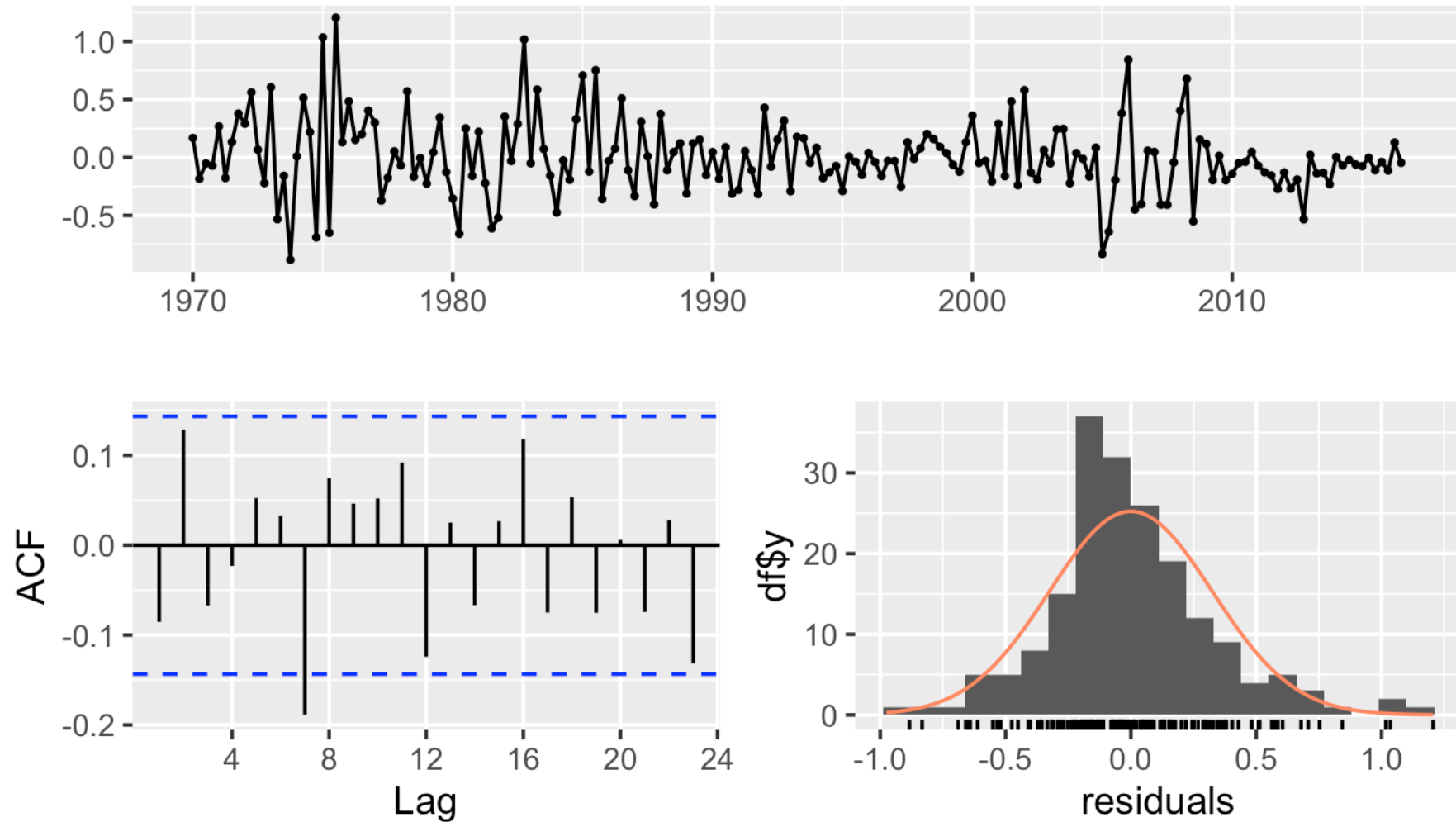
|              | Estimate | Std. Error | t value | Pr(> t )     |
|--------------|----------|------------|---------|--------------|
| (Intercept)  | 0.26729  | 0.03721    | 7.184   | 1.68e-11 *** |
| Income       | 0.71449  | 0.04219    | 16.934  | < 2e-16 ***  |
| Production   | 0.04589  | 0.02588    | 1.773   | 0.0778 .     |
| Unemployment | -0.20477 | 0.10550    | -1.941  | 0.0538 .     |
| Savings      | -0.04527 | 0.00278    | -16.287 | < 2e-16 ***  |

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.3286 on 182 degrees of freedom  
 Multiple R-squared: 0.754, Adjusted R-squared: 0.7486  
 F-statistic: 139.5 on 4 and 182 DF, p-value: < 2.2e-16

## Residuals from Linear regression model



Breusch-Godfrey test for serial correlation of order up to 8

data: Residuals from Linear regression model  
LM test = 14.874, df = 8, p-value = 0.06163



# THANK YOU!!

Section for questions

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**centrum**  
**PUCP** ESCUELA PARA  
LOS BUENOS  
NEGOCIOS

**Carlos Mariño, Ph.D.**  
Director de Investigación  
Profesor

📞 (511) 626 7100 ext 7200

✉ [cmarino@pucp.pe](mailto:cmarino@pucp.pe)

🌐 [www.centrum.pucp.edu.pe](http://www.centrum.pucp.edu.pe)

