ISA 444: Business Forecasting

23 - Time Series Regression

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Spring 2021

Outline

Learning Outcomes for Today's Class

Main Learning Outcomes

- **Explain the simple and multiple linear regression models and interpret the parameters.**
- **Interpret the sample linear regression coefficients in the language of the problem.**
- **Use a simple linear regression model for trend adjustment (time-series data).**

Outline

The Simple Linear Regression Model

$$y_t = \beta_0 + \beta_1 x_{t,1} + \epsilon_t$$

y_t :

β_0 :

β_1 :

$x_{t,1}$:

ϵ_t :

The Multiple Linear Regression Model with q Predictors

$$y_t = \beta_0 + \beta_1 x_{t,1} + \beta_2 x_{t,2} + \cdots + \beta_q x_{t,q} + \epsilon_t$$

β_0 :

$\beta_1, \beta_2, \ldots, \beta_q$:

Outline

Live Coding in Class

```
pacman::p_load(tidyverse, fpp2, astsa)
jj = jj #from the astsa package
```

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