

Regression and the DJIA

Lecture 52
Section 7.4

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Objectives

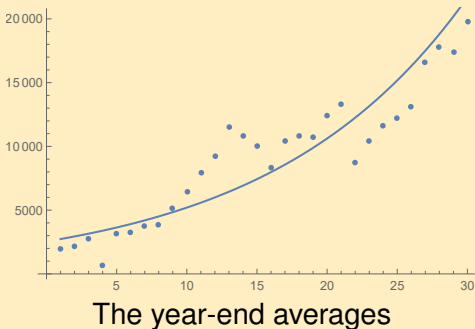
Objectives

- Apply the models to the DJIA.
- Predict the future of the DJIA.

Example

DJIA and Exponential Growth

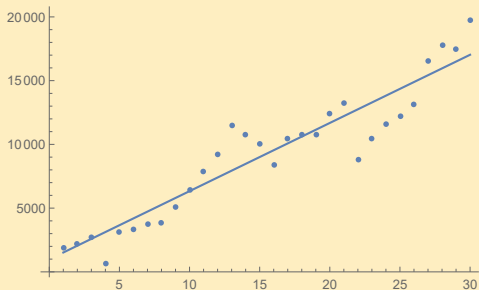
Fit the various models to the Dow-Jones Industrials year-end average for the last 30 years



Example

DJIA and Exponential Growth

Fit the various models to the Dow-Jones Industrials year-end average for the last 30 years

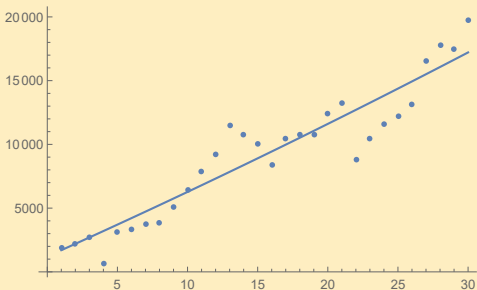


Linear model: $y = 983.7 + 534.87x$

Example

DJIA and Exponential Growth

Fit the various models to the Dow-Jones Industrials year-end average for the last 30 years

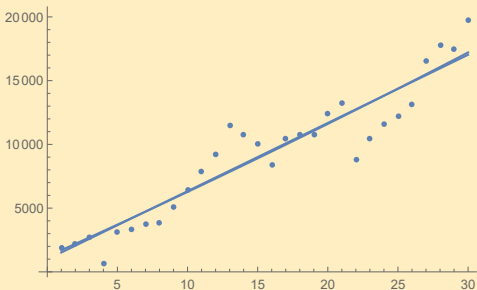


Quadratic model: $y = 1.35x^2 + 493.0x + 1206.9$

Example

DJIA and Exponential Growth

Fit the various models to the Dow-Jones Industrials year-end average for the last 30 years

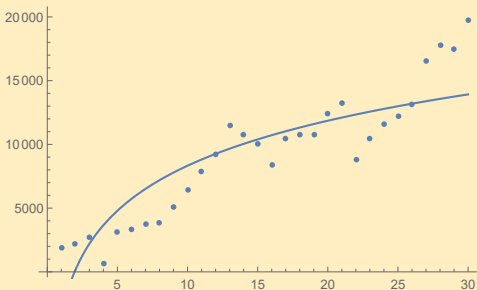


Linear model vs. quadratic model

Example

DJIA and Exponential Growth

Fit the various models to the Dow-Jones Industrials year-end average for the last 30 years

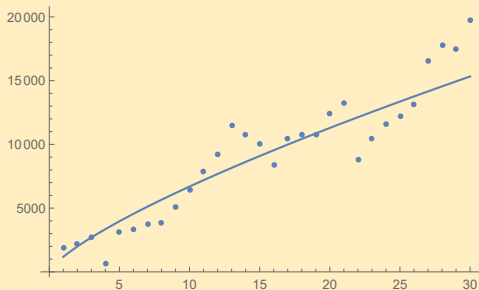


Logarithmic model: $y = -3395.8 + 5091.2 \ln x$

Example

DJIA and Exponential Growth

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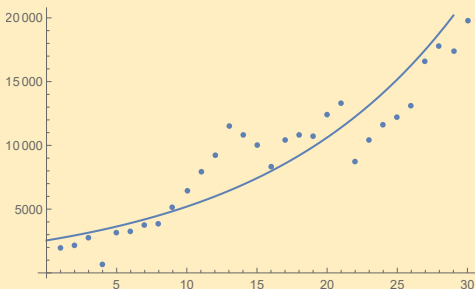


Power model: $y = 1178.1x^{0.7543}$

Example

DJIA and Exponential Growth

Fit the various models to the Dow-Jones Industrials year-end average for the last 30 years

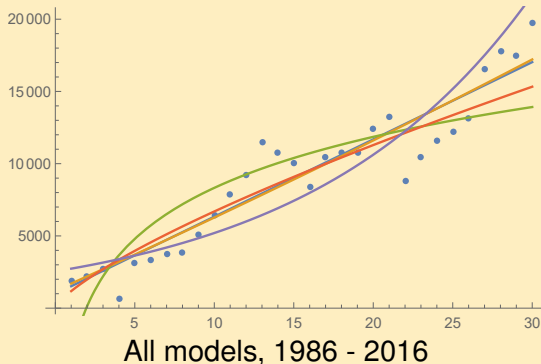


$$\text{Exponential model: } y = 2545.87.3(1.074^x)$$

Example

Choose a Predictor

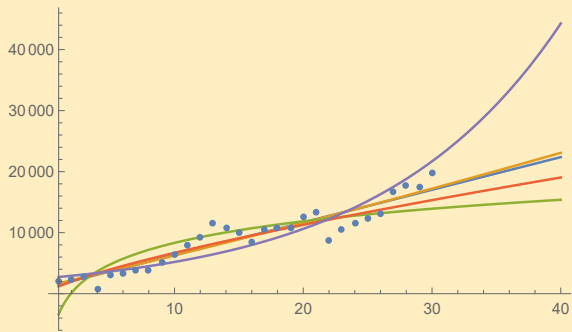
Which is the best predictor?



Example

Choose a Predictor

Which is the best predictor?

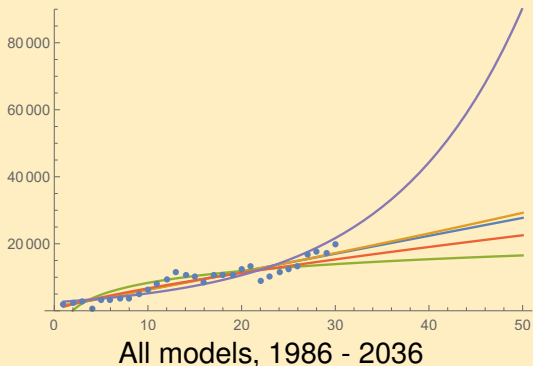


All models, 1986 - 2026

Example

Choose a Predictor

Which is the best predictor?



History of the DJIA

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Check out [DJIA - 100-year history](#)