

Hypothesis Testing and Regression

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*This material is part of the **statsTeachR** project*

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Today's Lecture

Extraordinary claims demand extraordinary evidence.

-Carl Sagan, astronomer

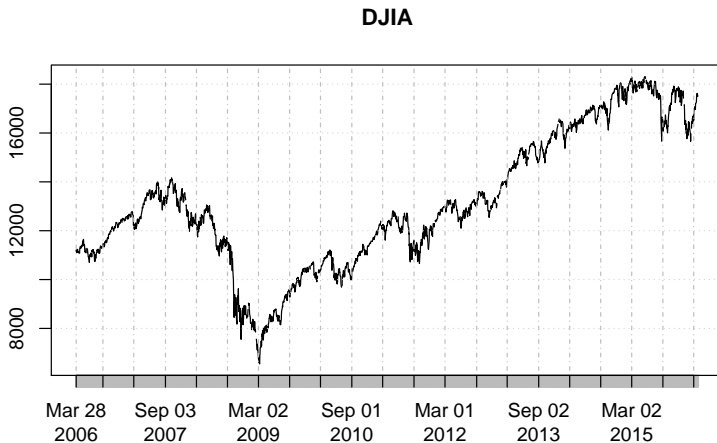
Today's central question

How can we formally evaluate statistical evidence from a dataset in the context of regression?

Based loosely on Kaplan, Chapters 13-15.

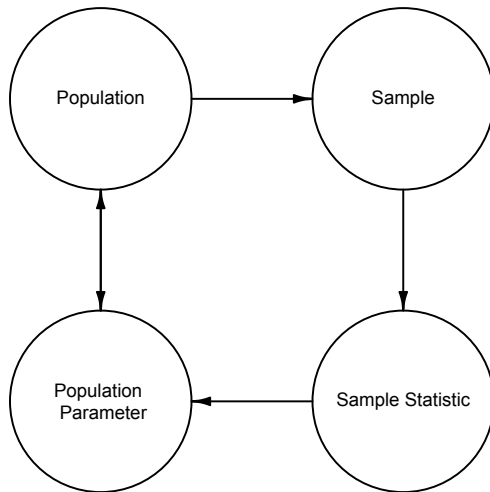
Example A: Is the stock market random?

```
library(quantmod)
getSymbols("DJIA", src='FRED')
plot(DJIA)
```



Process of building a statistical model

Circle of Life



Today's key topics

- Sampling distributions
- Standard error
- Confidence errors and intervals for coefficients
- Prediction intervals for future observations