Hypothesis Testing and Regression

Author: Nicholas G Reich

Today's Lecture

Extraordinary claims demand extraordinary evidence.
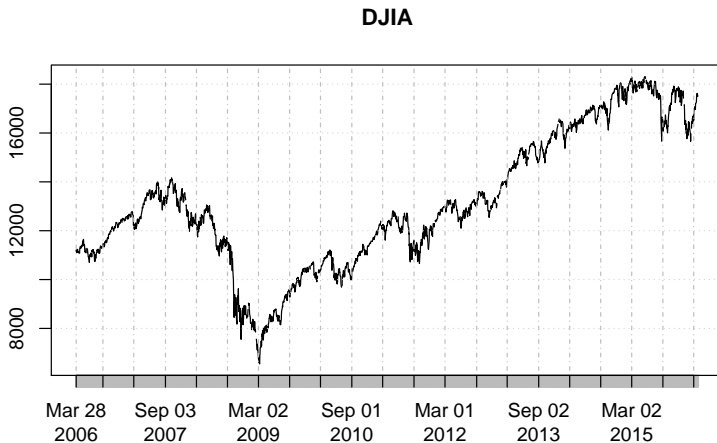-Carl Sagan, astronomer

Today's central question

How can we formally evaluate statistical evidence from a dataset in the context of regression?
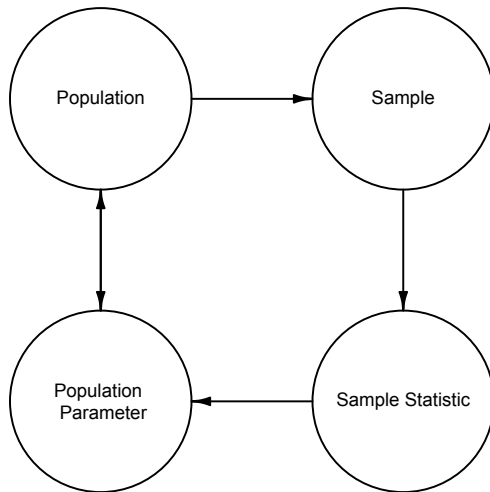
Based loosely on Kaplan, Chapters 13-15.

Example A: Is the stock market random?

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


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