**Well-articulated problem statement with "specific aim" and hypothesis, based on your lightning talk**

I want to investigate whether there is a relationship between the prevalence of online shopping and inflation rates in the US.

I believe that as online shopping increased, retailers’ overhead costs dropped, while competition over pricing increased, which led to lower prices for consumers. Therefore, as online shopping increased and online goods’ prices declined, overall inflation would track more closely to the behavior of online prices. By including these online metrics, I believe I will have a lower root mean squared error when forecasting actual PCE price month-on-month data, either for the overall inflation index or for various underlying component prices.

**An outline of any potential methods and models**

I expect inflation to be autoregressive to some degree, with an outsize influence from the price of energy, so these effects will need to be isolated and corrected for. Some of the variables I will be using will have very different scales so I will have to normalize or scale the data (i.e. frequency of word search in google trends, internet connectivity percentage, share of retail sales done online).

**Detailed explanation of extant data available**

I will use monthly time series data from 2008 through 2014 that includes the Billion Prices Project, Google Trends, BEA’s Personal Consumption Expenditures, the Census Bureau’s Retail Sales data, and internet connectivity data across the nation.

**Describe any outstanding questions, assumptions, risks, caveats**

Data on internet usage and online shopping inherently is biased to the behavior of the wealthier portion of the country since they will have greater internet connectivity and online literacy.

The cost of a poor model and incorrect forecasts could be incorrect monetary policy decisions, inadvertently slowing or speeding up the economy more than intended. If the model is used to make investment decisions, then the cost could be monetary if forecasts prove incorrect. Even if the root mean squared error is smaller using the model, the direction of the change in inflation might be incorrect and this is even more important in many cases.

**Define your goals and criteria, explain what success looks like**

Revisions, re benchmarking, measuring success of forecast against economists’ estimates, normalizing internet connectivity and online shopping as a share of total shopping.

**Demonstrate domain knowledge, including features or benchmarks from similar projects**

There have been several studies on the subject already, though I have found none yet that employ a combination of these datasets. Research in the EU suggests increased online shopping has a downward effect on price indices, while in other studies the use of online price data raises the inflation estimate likely due to suspected government manipulation of official sources.