

Improving Day Ahead Electricity Load Forecasts with Google Trends

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July 28, 2014

Abstract

1 Introduction

1. Intro to short term load forecasting.
2. Why crowd sourced, non technical, information could be useful.
3. Google trends is the summation of Google searches.
4. Outline of paper

2 Data Sources

2.1 PJM Load Forecasts and Actuals

1. Data sources.
2. Documentation of forecasting.
3. Forecast bias
4. Statistically adjusted forecasts.
5. Note that almost all hours are biased and that co-movements are good for peak hours

2.2 Google Trends

1. Where to get the data
2. Limitations
3. Forming a population weighted index.
4. Other common searches that will be used as counter examples.

3 Post Forecast Addition of Google Trends Data

1. Simple hourly models with Trends.
2. Gross comparison with actual forecast and statistically adjusted forecasts.
3. Why this is insufficient.

3.1 Drop Forward Cross-validation

1. Cross validation concepts.
2. Why drop forward cross validation is the right concept.
3. Comparison of drop forward statistically adjusted and Trends adjusted with gross comparisons.
4. Reiteration that comparison with raw forecasts is a slam dunk.

3.2 Counter-factual Test with Other Common Google Searches

1. Comparison with: news, recipe, traffic, gas.
2. Note that some of them kinda work.

4 Summary and Conclusions