



Case Study: Energy

The energy industry uses business intelligence (BI) technology to aid management analysis and decision-making. Accurate, usable, and timely information is becoming recognized as an important factor in managing business operations.

In energy industry companies are entrepreneurial, and the challenge for BI advocates is to provide [BI solutions that enhance entrepreneurial ability](#) and add value to the bottom line. Industry opportunities for BI applications include project performance and analysis, work analysis, inventory analysis, and trading activity analysis.

The energy industry as a whole is heavy industry at its finest: big money, big facilities, and, for the most part, global scope. Information, in general, is not yet widely seen as an essential management tool that adds value to those who run the business. A critical success factor for those undertaking BI initiatives in the energy industry is to implement solutions that provide real payback through cost savings, production optimization, and enhancing revenues.

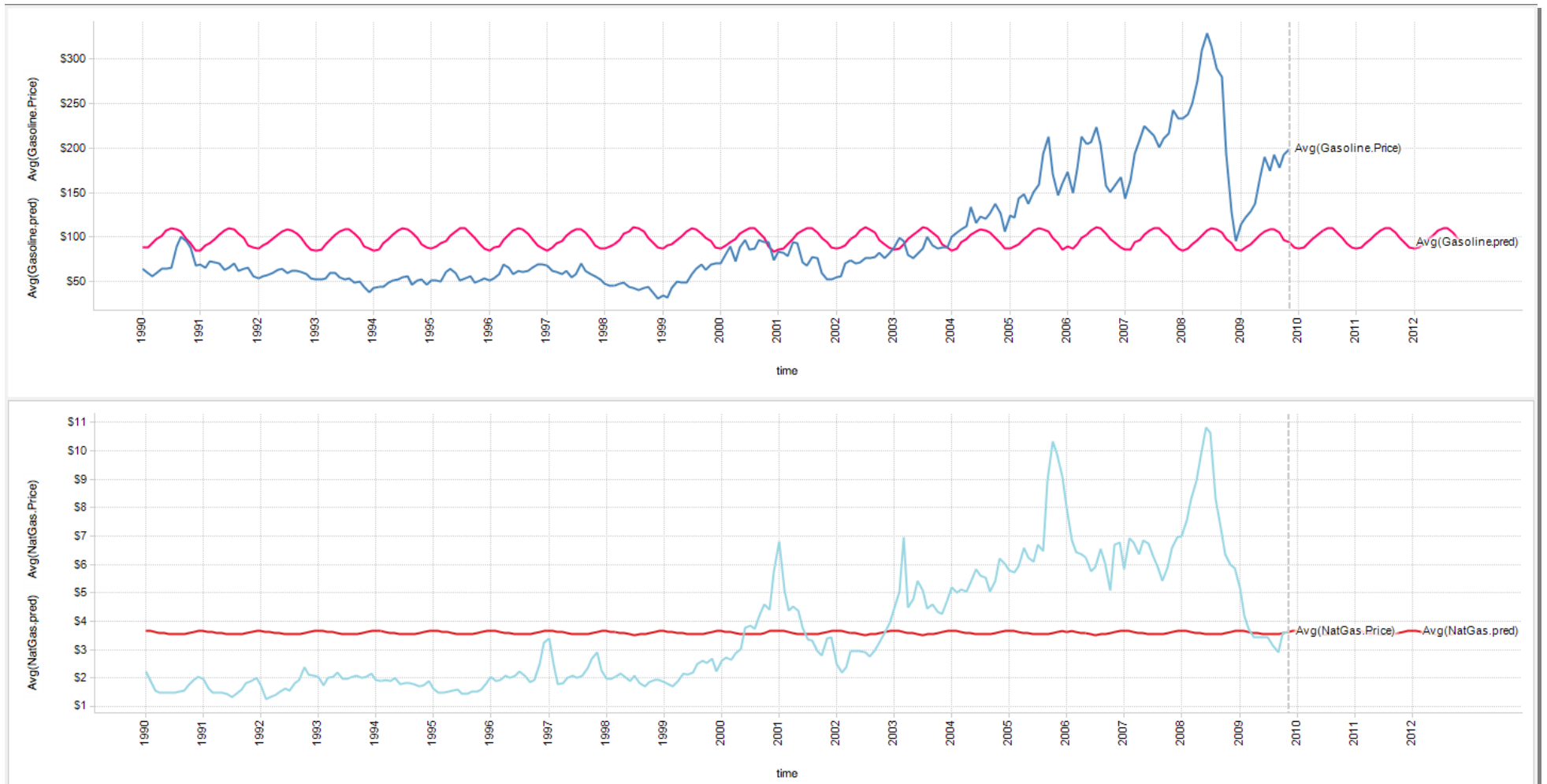
Modeling & Forecasting Energy Prices

This analysis uses predictive analytics to forecast energy prices (price of gasoline & natural gas) based on a number of underlying factors.

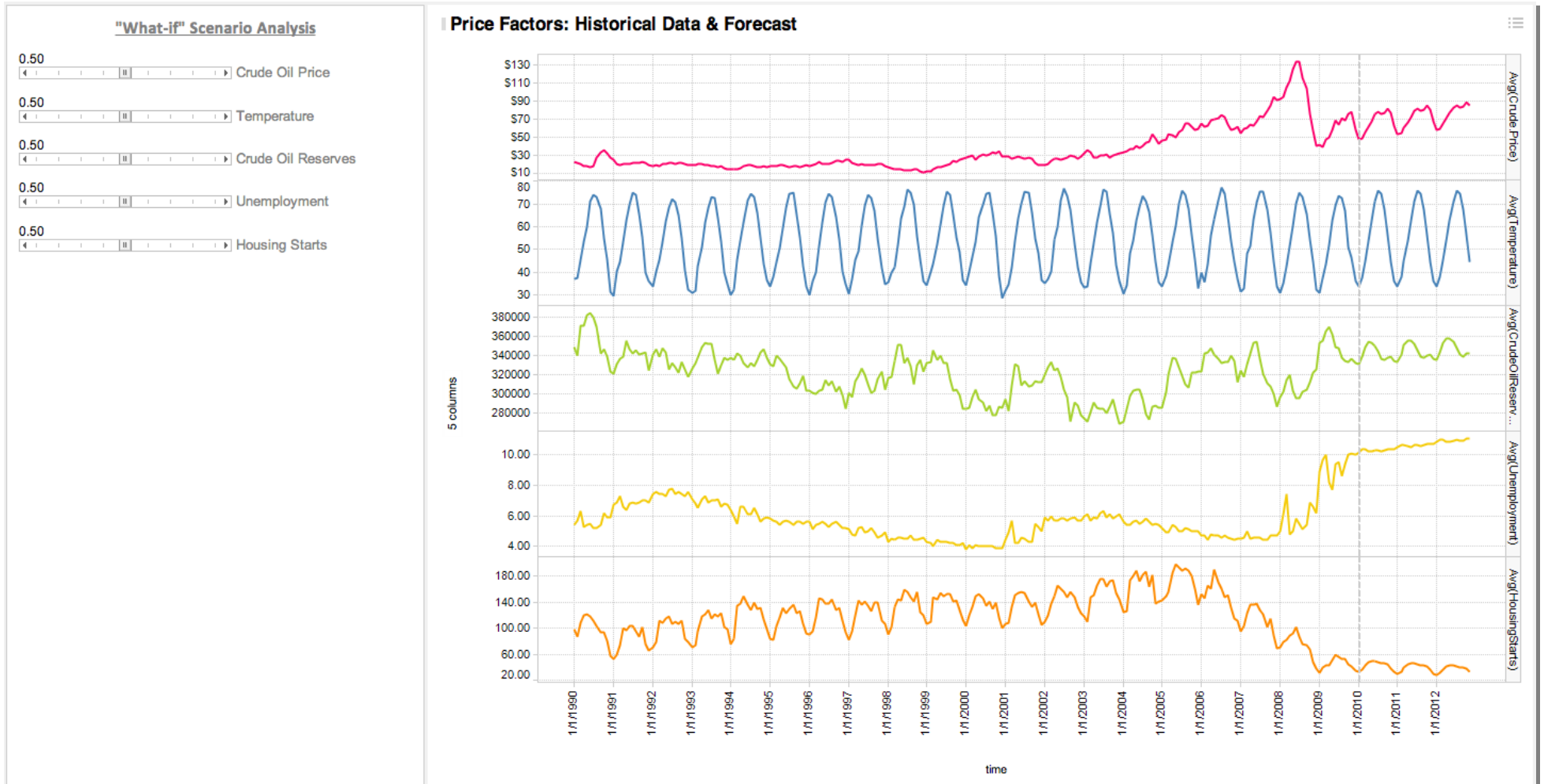
An executive or line of business manager can monitor historical and predicted energy. They can then do “What-If” scenarios to see how the prices are affected by hypothetical changes (up or down) in the future movements of the underlying factors.

An analyst can refine the model by selecting which variables to include, and then assess the model quality.

Price Forecasts (Executive View)



What-If Analysis: Price Factors

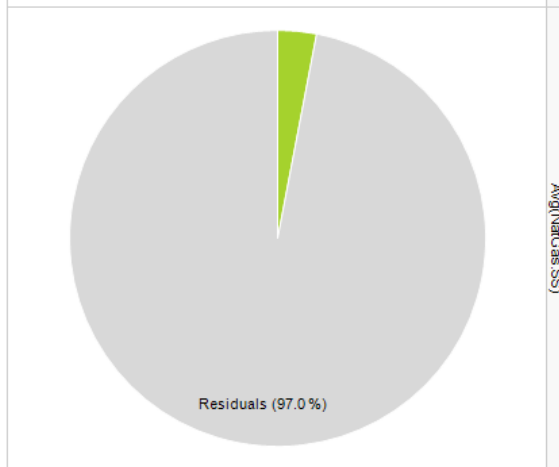
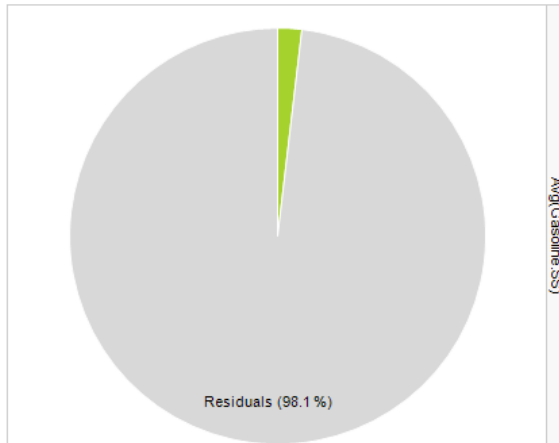


Model Assessment

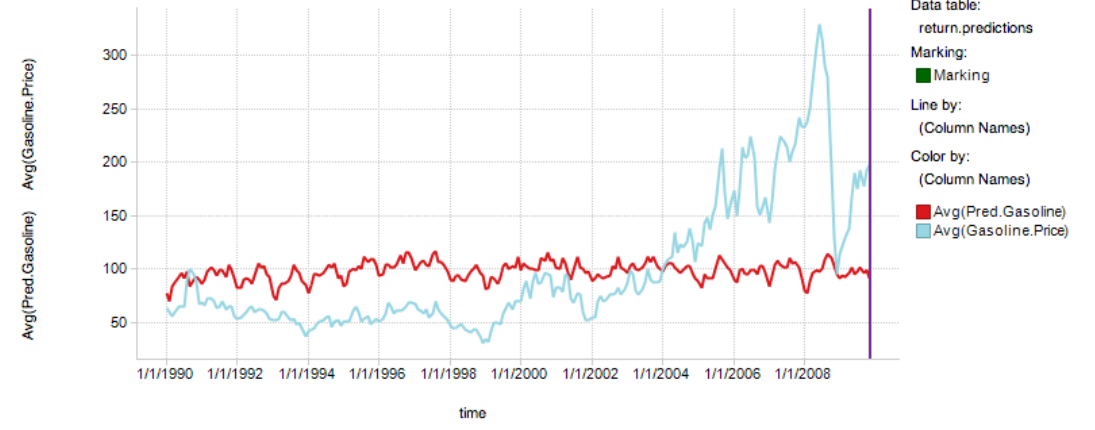
Choose the independent variables:

- Crude.Price
- Temperature
- CrudeOilReserves
- GasolineReserves**
- Unemployment
- HousingStarts

Analysis of Variance: Components of Model



Gasoline - Price Data and Model Fits



Natural Gas - Price Data and Model Fits

