Assignment 10
Data Analytics Colloquium
Changepoint Models with Dr. Patrick Brandt
11/17/22

Introduction

Assignment 10 Question: Review the visualization methods used in presentation.
Meeting Date and Time: 11/17/22 8 pm to 10 pm central time.
Subject: Dr. Brandt demonstrated the Changepoint (CP) models: Statistics and Time Series for policy intervention and change identification.
Problem: Observe some data such as time series and you reach a boarder (time, space, etc.), how do you identify the change and its boundary.

Models

Types of CP Models

Model Type 0: Basic time series intervention model / causal inference setup
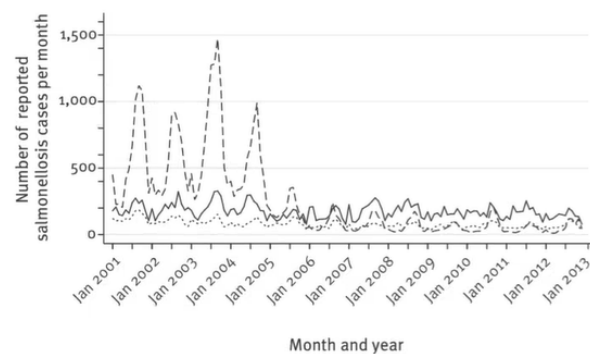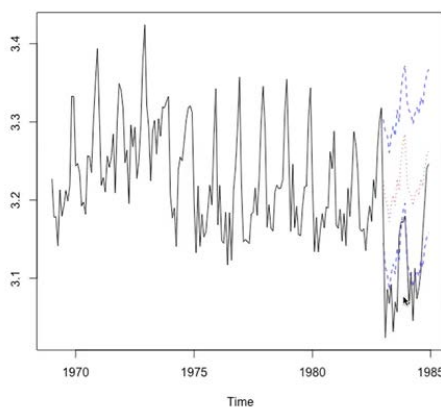Model Type 1: Binary segmentation
Model Type 2: L1/L0 regularization and lasso
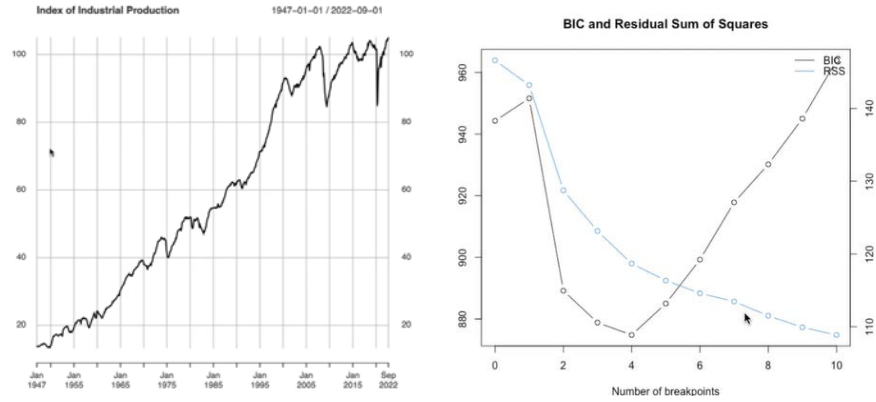Model Type 3: Bayesian methods

Individual Models

Model Type 0 (standard ARIMA, regression, etc.)

Graphics: Linear time series line graphs (standard and log based), for example:
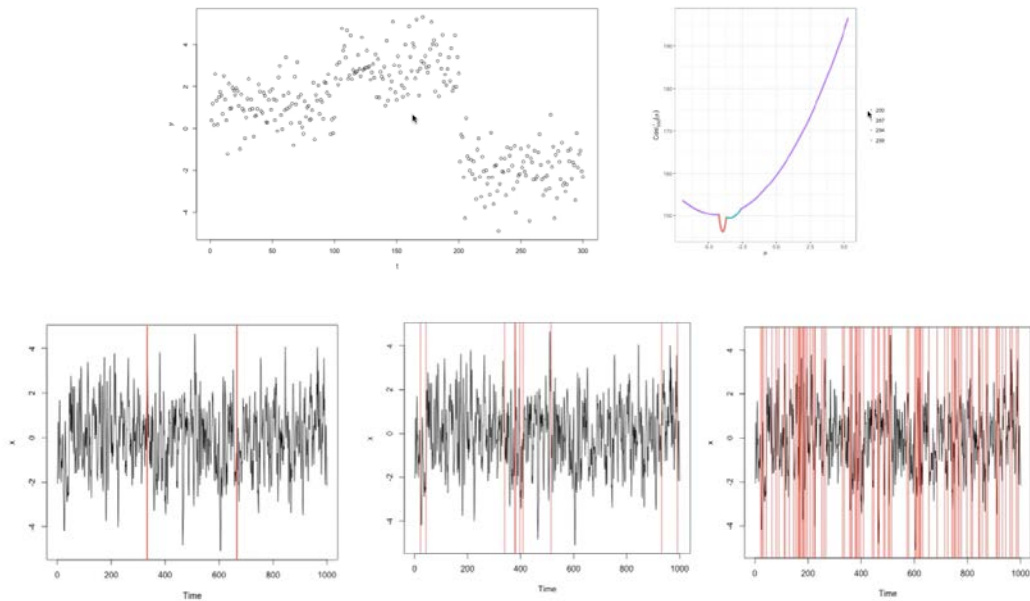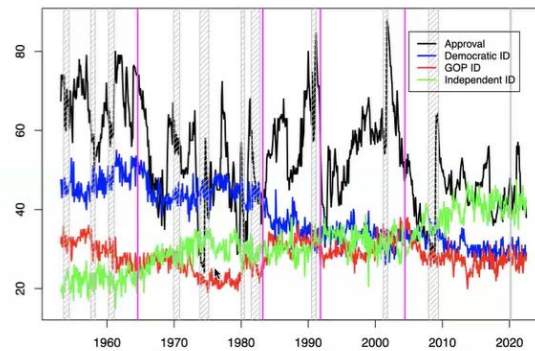
Model Type 1 (Bai-Perron Model linear programming)

Graphics: Linear time series and comparison line graphs, for example:

Model Type 2: L1/L0 regularization and lasso (regularizations, fused lasso, BS univariate)

Graphics: Scatter plot, line comparison charts, segmented time series line chart, for example:

Model Type 3: Bayesian methods

[NOT COVERED DURING PRESENTATION]

Recommended Literature

References / cites

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