Structural change in (economic) time series

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Methods for detecting structural changes, or change points, in time series data are widely used in many fields of science and engineering. This chapter sketches some basic methods for the analysis of structural changes in time series data. The exposition is confined to retrospective methods for univariate time series. Several recent methods for dating structural changes are compared using a time series of oil prices spanning more than 60 years. The methods broadly agree for the first part of the series up to the mid-1980s, for which changes are associated with major historical events, but provide somewhat different solutions thereafter, reflecting a gradual increase in oil prices that is not well described by a step function. As a further illustration, 1990s data on theăvolatility of the Hang Seng stock market index are reanalyzed.

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