Bachelor's Thesis Title: Development of a Synthetic Composite Leading indicator for the U.S economy

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The objective of the thesis is to create a synthetic leading indicator for the U.S. economy. The focus is on predicting recessions and effectively selecting essential economic components through meticulous analysis of economic data. The research aims to contribute to a better understanding of economic cycles in the United States.

Methodology:

- **Data collection:** to source monthly seasonally unadjusted time series data from the FRED database and identify their trends with the use of Linear Dynamic Harmonic Regression.
- **Variable selection:** compare recession and expansion confirmations sourced from the differenced trends of candidate data with recessions and expansions announced by the National Bureau of Economic Research of the United States.
- **Synthetic Indicator Construction:** integrate filtered time series data into a leading indicator built using the custom E4 Octave library with the LDHR method.