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# Using Time Series Analysis to Forecast Daily Municipal Water Demand

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## Abstract

In this report, the daily water demand of the Swedish municipality of Vetlanda is analyzed, for the purpose of forecasting. By regressing on calendar effects found in the data, and assuming a seasonal ARIMA structure for the errors, a suitable model is selected through a combination of the Ljung-Box test, the Akaike Information Criterion, and backtesting procedures. The resulting  $ARIMA(1,0,5)(1,1,2)_7$  error model with  $t(5.4)$ -distributed innovations is then estimated, and a 90 day forecast is provided.

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