# Notes

## Stationarity transformation of time series

?

## Stationarity tests

Tests to check the null hypothesis of stationarity:

* KPSS test of Kwiatkowski (1992)
* Unit root hypothesis

Goal: Not to reject the null hypothesis of stationarity, at the 5% level. (p.88 W.FC)

Reason: Stationary time series models (i.e. ARMA) can only be fitted to stationary series.

Electricity Load formula:

Load = seasonal component + stochastic comp

Seasonal structure: periodogram (show frequency correlations in data) p.87 W.FC

## ARMA model selection

Measure goodness of fit

* AICC criterion
* BIC criterion

## ARMA model evaluation

Testing residuals, should exhibit the same distribution as the applied series (ie. white noise, zero mean, variance of series).

“If the fitted model is appropriate, then the residuals should behave in a manner that is consistent with the model. “ p.89 W.FC

* White noise w zero mean + variance (like series).

## White noise tests

Used i.e. to test residuals for having a random (white noise) distribution.

* Prove that “there is not sufficient evidence to reject the white noise hypothesis of the residuals at the common 5% level. “ p.89 W.FC

White noise Tests:

* Portmanteau
* Turning point
* Difference-sign
* Rank test for randomness

## Energy load models

Daily loads of 2 years (p. 87 W.FC) -> 24months -> hourly loads of one month

## Energy markets

Continuous trading vs ? (Fortlaufendes Handeln vs ? )

<http://de.wikipedia.org/wiki/Stromb%C3%B6rse>

EU-weite Strombörse ?

<http://www.faz.net/aktuell/wirtschaft/binnenhandel-eu-will-eine-einheitliche-stromboerse-12589781.html>

Regelenergie vs. Ausgleichsenergie (Strommarkt)

* Greenpeace Energy – direkter zukauf aus ÖkoKraftwerken + Ausgleichsenergie

<http://www.greenpeace-energy.de/presse/artikel/article/greenpeace-energy-zur-aktuellen-diskussion-ueber-oekostrom.html>?