**Web Decom and E-decomp - Time Series Analysis using R**

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**Decomp**
- for seasonal adjustment and trend estimate.
- written by Fortran.
- using Square Root Filter.

**Decomp family**
- Timsac84 (Fortran)
- Tsview.uni (S)
- Web Decom (CGI & S or R)
- S-Decomp (S)
- MITI-Decomp (S & Excel)
- E-Decomp (Excel VBA & R)

R-(D)COM interface (by Thomas Baier)

**Concepts of “Web Decom”**
- A WWW Site
- Statistical Software of Time Series model including Seasonal Adjustment model (Decomp)
- All Calculation can be done by server machine
Menu of “Web Decomp”

- **Decomp**
  - State space modeling of seasonal adjustment
  - ([Kitagawa and Gersh 1984](#))

- **plot**
  - Time series plot

- **autocor**
  - Plot of autocorrelation ([TIMSAC72](#))

- **spectrum**
  - Non-parametric spectrum ([TIMSAC72](#))

- **ARfit**
  - Fitting AR model ([TIMSAC72](#))

- **ARMAfit**
  - Fitting ARMA model ([Kitagawa 1993](#))

- **log**
  - Log-transformation

Menu of “Web Decomp”

- **diff**
  - First difference

- **diff4**
  - Seasonal difference for quarterly data

- **diff12**
  - Seasonal difference for monthly data

- **Volatility**
  - Fitting Stochastic Volatility model

Windows of Web Decomp

(More methods will be added)
access numbers of Web Decomp

Total = 18871

About Decomp

- State Space Model

\[ \Delta^i T(t) = e_1(t) \]
\[ S(t) = -S(t-1) - \ldots - S(t-p) + e_2(t) \]
\[ A(t) = a_1 A(t-1) + \ldots + a_q A(t-q) + e_3(t) \]
\[ y(t) = T(t) + S(t) + A(t) + TD(t) + e_4(t) \]

T: Trend
S: Seasonal
A: AR (Cyclical component)
TD: Trading day
y: Observation
e1-e4: i.i.d noise

Parameter of Decomp

- Log transform:
- Seasonal frequency:
- Trend Order:
- AR Order:
- Trading Day Effects:
Output

- Graph output
- Data output
- Value of parameter and other statistics

Summary of access list

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E-Decomp

- EXCEL
- VBA
- R-(D)COM
- DLL
- R