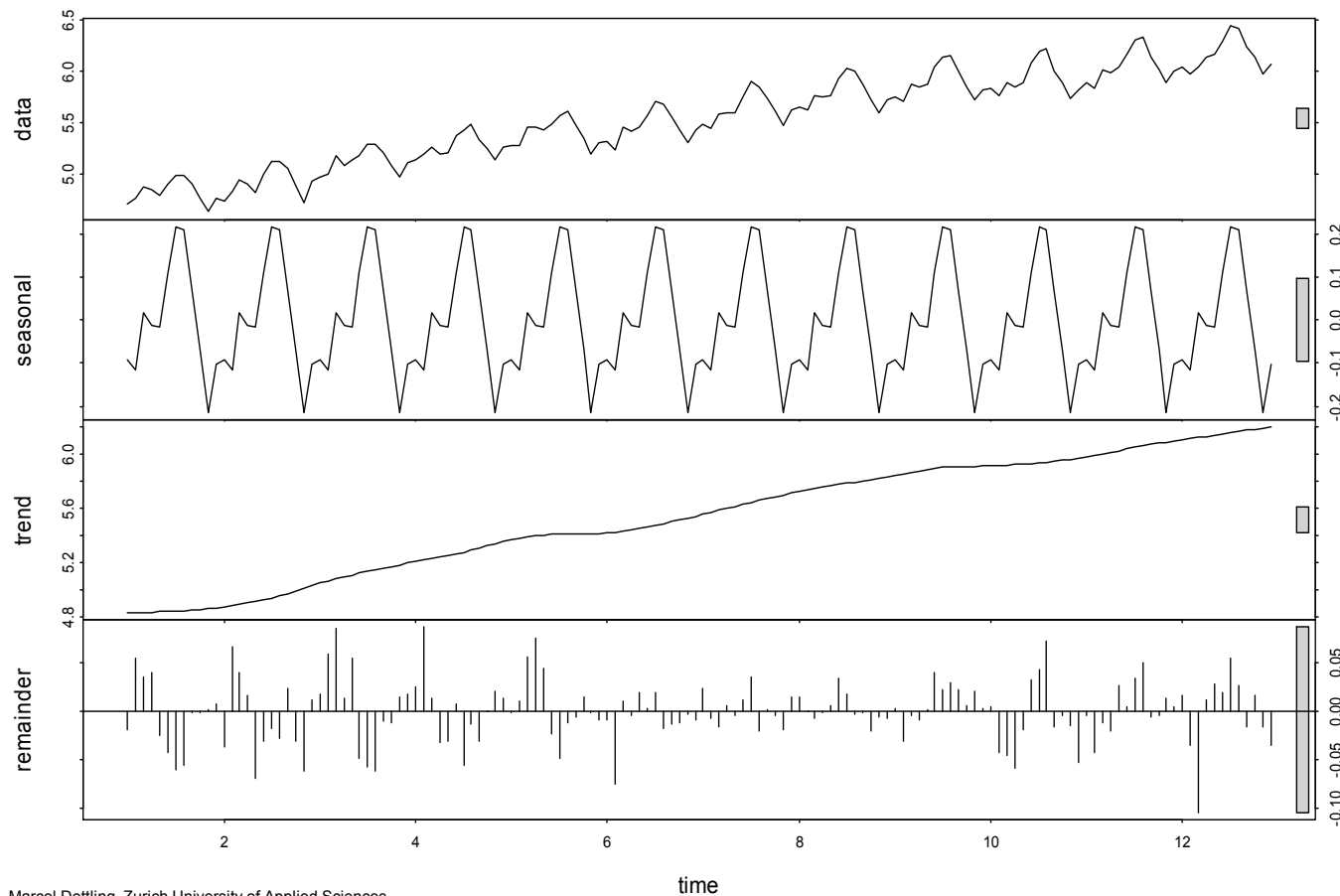


Applied Time Series Analysis

FS 2011 – Week 02

STL-Decomposition: Constant Season

```
stl(log(ts(airline, freq=12)), s.window="periodic")
```

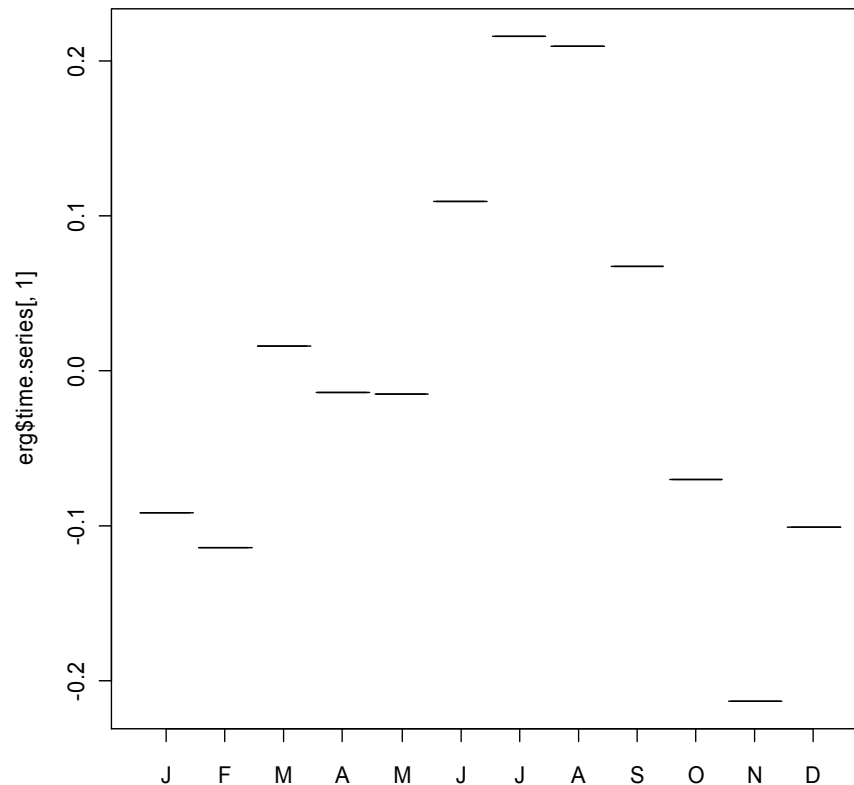


Applied Time Series Analysis

FS 2011 – Week 02

STL-Decomposition: Constant Season

```
stl(log(ts(airline, freq=12)), s.window="periodic")
```



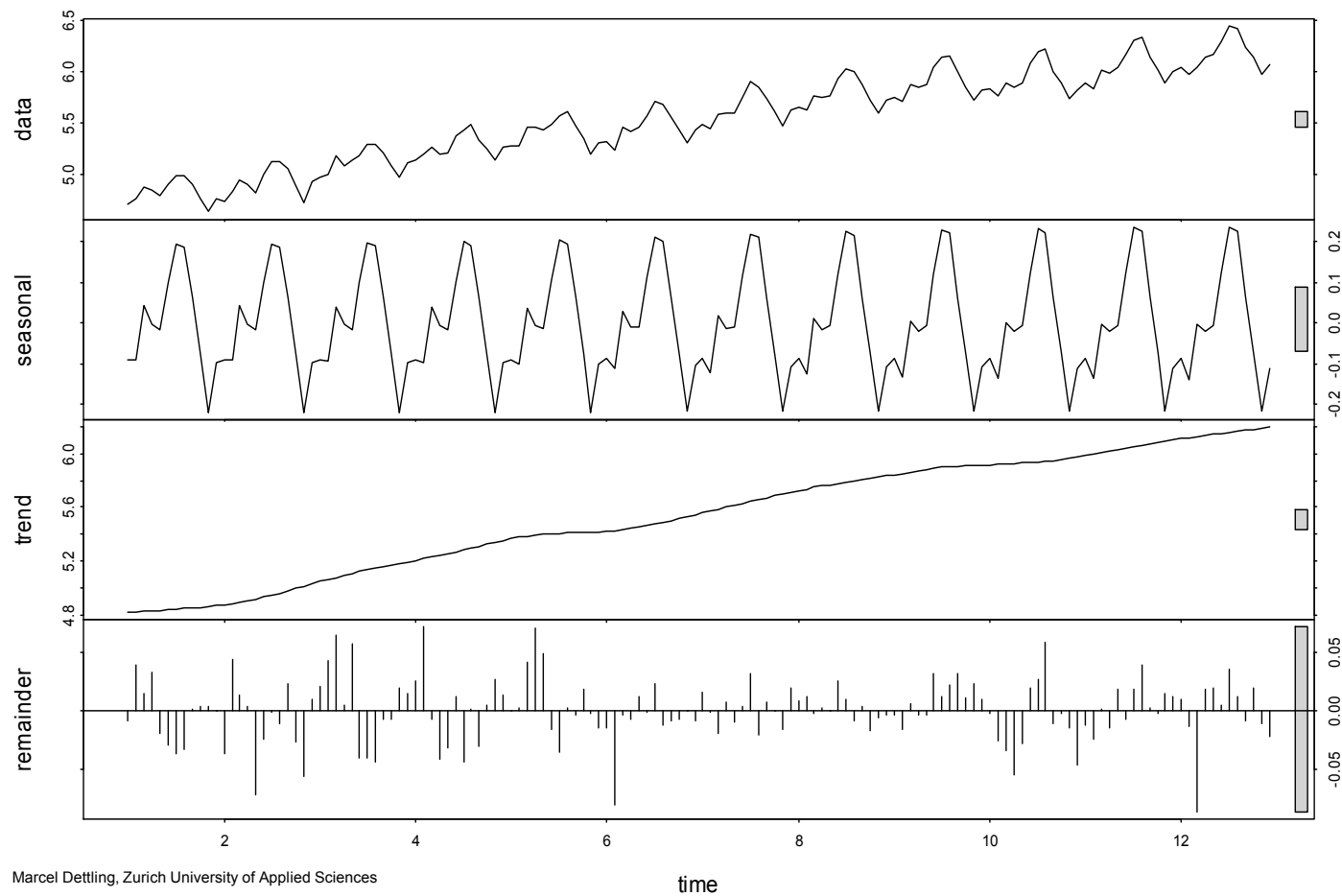
the seasonal effect here
is not time varying

Applied Time Series Analysis

FS 2011 – Week 02

STL-Decomposition: Evolving Season

`stl(log(ts(airline, freq=12)), s.window=15)`

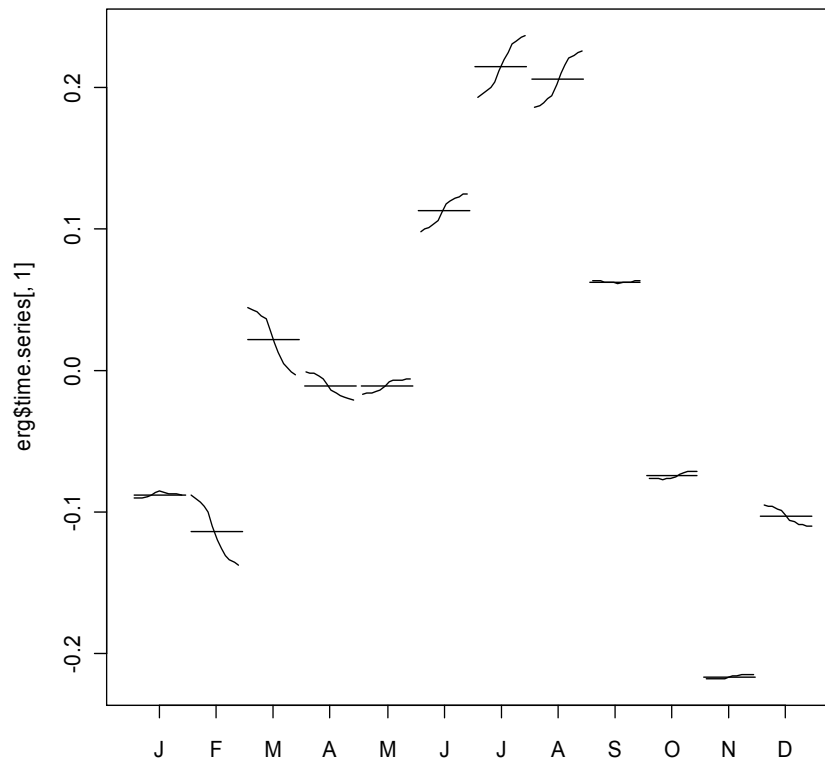


Applied Time Series Analysis

FS 2011 – Week 02

STL-Decomposition: Evolving Season

```
stl(log(ts(airline, freq=12)), s.window=15)
```



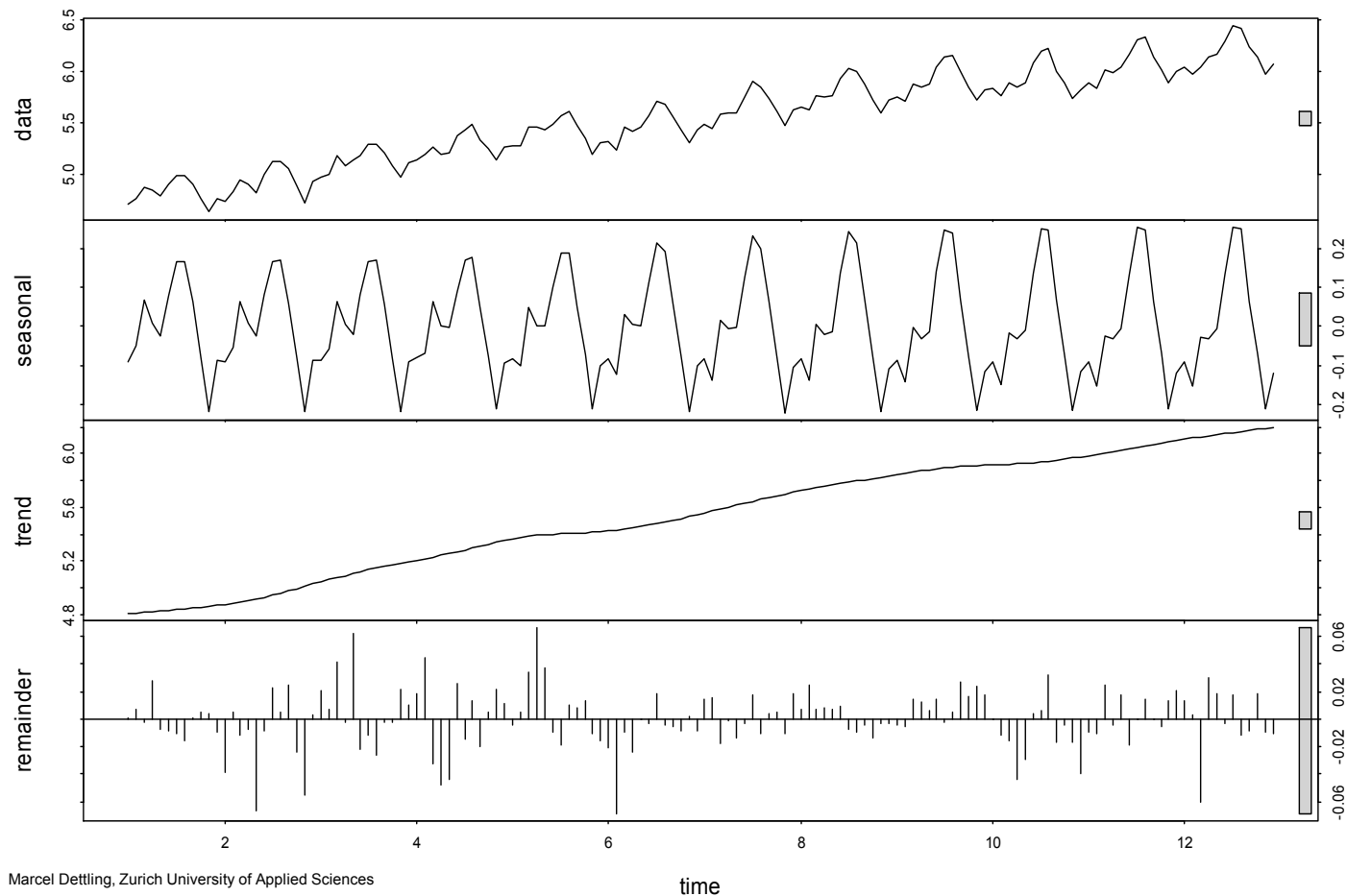
correct amount of
smoothing on the time
varying seasonal effect

Applied Time Series Analysis

FS 2011 – Week 02

STL-Decomposition: Evolving Season

`stl(log(ts(airline, freq=12)), s.window=7)`

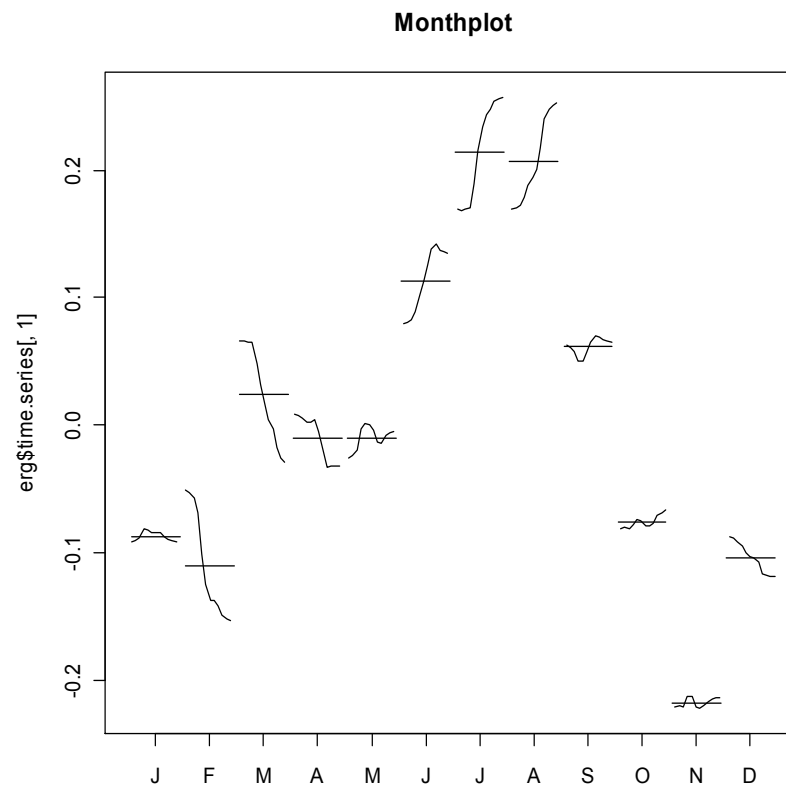


Applied Time Series Analysis

FS 2011 – Week 02

STL-Decomposition: Evolving Season

```
stl(log(ts(airline, freq=12)), s.window=7)
```



not enough smoothing
on the time varying
seasonal effect