3.3 Addendum: bias correction in SA algorithms

ESTP training

Description of the problem

- Log-additive decompositions
  - SEATS with log transformation, X11 with log-additive mode

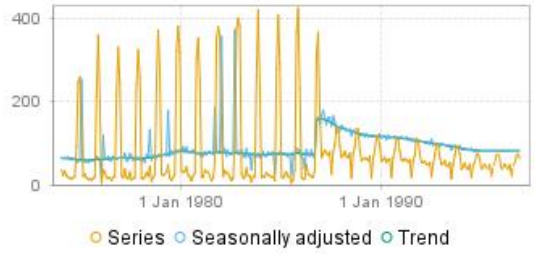
$$\log Y_t = t_t + s_t + i_t$$
$$\rightarrow Y_t = \exp t_t \cdot \exp s_t \cdot \exp i = T_t \cdot S_t \cdot I_t$$

$$\sum_{yearly} s_t \equiv 0 \leftrightarrow \sqrt[p]{\exp s_t} \equiv 1 \leftrightarrow \frac{1}{p} \sum_{yearly} S_t > 1$$

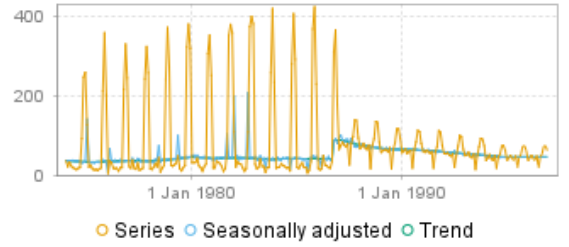
$$\frac{1}{p} \sum_{yearly} SA_t < \frac{1}{p} \sum_{yearly} Y_t$$

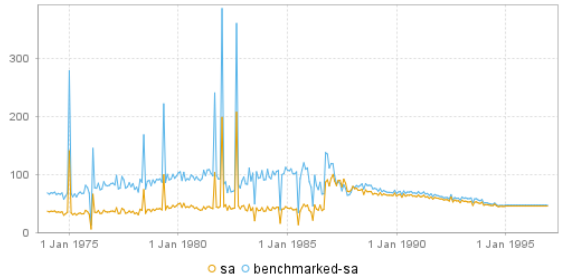
Possible solutions

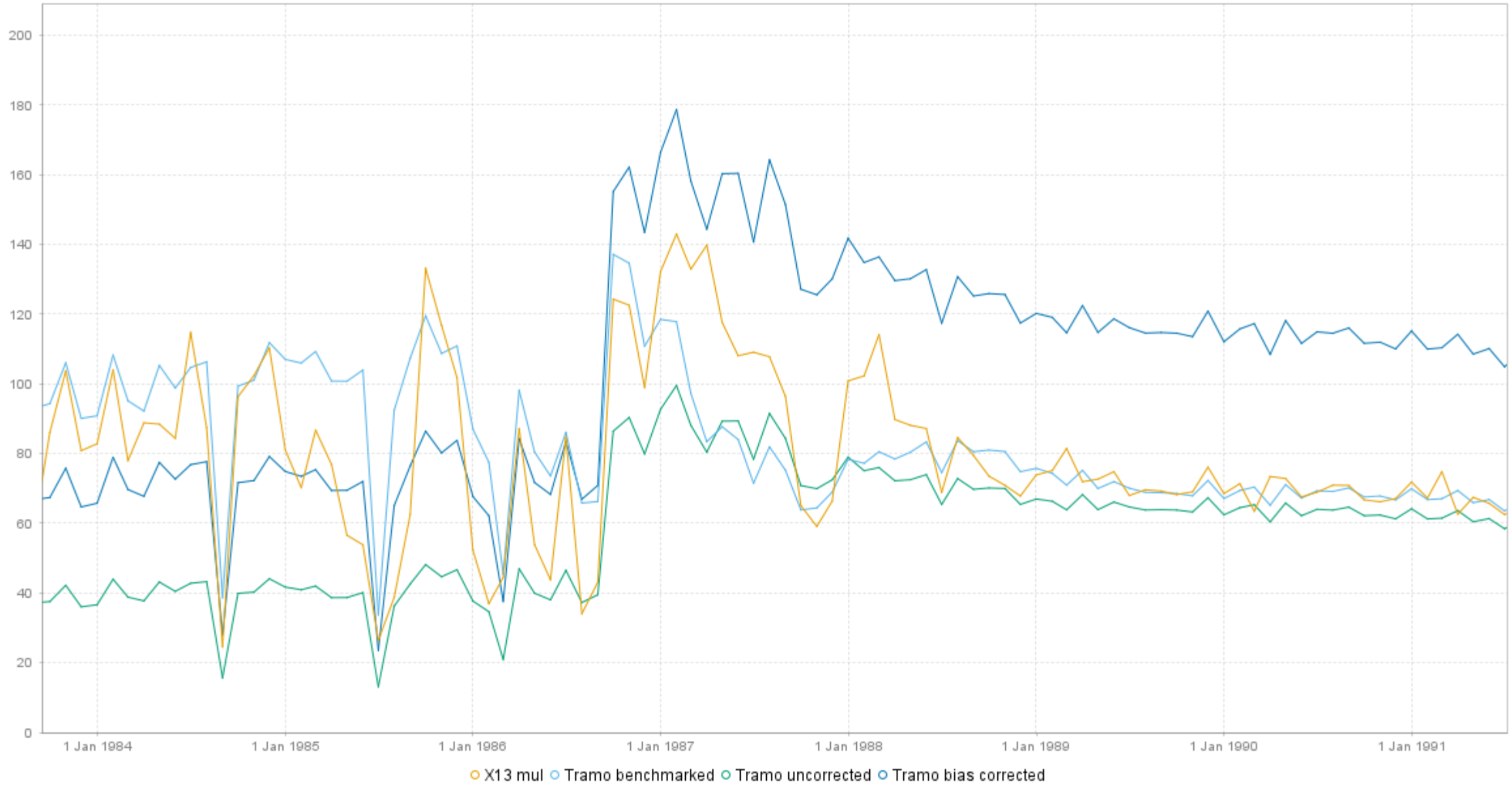
- Avoid log transformations
- Correct S, I and T for their average bias on the whole series (Tramo)
  - But…



- Don’t correct the bias (SA below the raw figures)
- Experimental options (X12): smooth correction
- Don’t correct and apply benchmarking







CONTRACTORS ORGANISING SOME OF THE COURSES ARE ACTING UNDER A FRAMEWORK CONTRACT CONCLUDED WITH THE COMMISSION

Additional remarks

- Bias correction will generate some revisions (constant factor)
- No good solution if the seasonal factors highly differ following the periods