SW and ADF test (Inflation)

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Data

Data: 145+1-5=141 series in total.

The "spread" series (difference between two I(1) series) are removed.

One of the I(1), "CP3FM" was omitted in the original data set, now is added.

log() is done.

ADF test

Step 1, ADF test to the 146 original series.

Step 2, mark "I(0)" variables as "I(0)".

Step 3, ADF test to the first-differenced 146 series.

Step 4, check for contradictions, found "PCED_RecServices" in AIC.

Step 5, mark "I(1)" variable as "I(2)" (including "PCED_RecServices").

Step 6, mark the rest as "I(1)".

Step 7, repeat the above 6 steps for both "AIC" and "BIC".

Lasso 1

$$\begin{aligned}\Delta y_t = y_{t-1} \\ &+ \Delta y_{t-1} + \Delta y_{t-2} + \Delta y_{t-3} + \Delta y_{t-4} \\ &+ I(0)_{t-1} + I(0)_{t-2} + I(0)_{t-3} + I(0)_{t-4} \\ &+ I(1)_{t-1} + I(1)_{t-2} + I(1)_{t-3} + I(1)_{t-4} \\ &+ \Delta I(2)_{t-1} + \Delta I(2)_{t-2} + \Delta I(2)_{t-3} + \Delta I(2)_{t-4}\end{aligned}$$

Lasso 2

$$\begin{aligned}\Delta y_t = y_{t-1} \\ &+ \Delta y_{t-1} + \Delta y_{t-2} + \Delta y_{t-3} + \Delta y_{t-4} \\ &+ I(0)_{t-1} + I(0)_{t-2} + I(0)_{t-3} + I(0)_{t-4} \\ &+ \Delta I(1)_{t-1} + \Delta I(1)_{t-2} + \Delta I(1)_{t-3} + \Delta I(1)_{t-4} \\ &+ \Delta^2 I(2)_{t-1} + \Delta^2 I(2)_{t-2} + \Delta^2 I(2)_{t-3} + \Delta^2 I(2)_{t-4}\end{aligned}$$

Lasso 3

$$\begin{aligned}\Delta y_t = y_{t-1}&\\ &+ \Delta y_{t-1} + \Delta y_{t-2} + \Delta y_{t-3} + \Delta y_{t-4}\\ &+ I(0)_{t-1} + I(0)_{t-2} + I(0)_{t-3} + I(0)_{t-4}\\ &+ \Delta I(1)_{t-1} + \Delta I(1)_{t-2} + \Delta I(1)_{t-3} + \Delta I(1)_{t-4}\\ &+ \Delta^2 I(2)_{t-1} + \Delta^2 I(2)_{t-2} + \Delta^2 I(2)_{t-3} + \Delta^2 I(2)_{t-4}\\ &+ I(1)_{t-1} + \Delta I(2)_{t-1}\end{aligned}$$