

Package Name: BNMW

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Add-in Type: Global

Default Proc Name: bnmwd

Default Menu Text: BN-MW decomposition

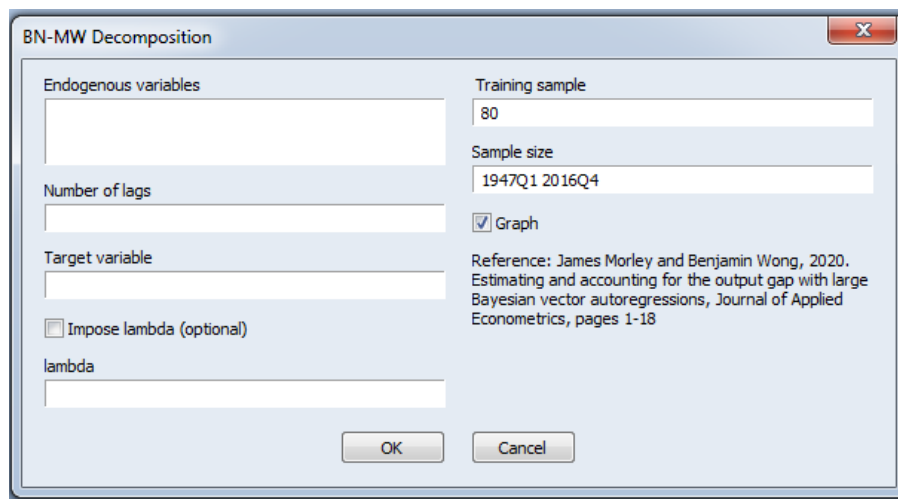
Interface: Dialog and command line

Description

This add-in estimates the trend and cycle of a time series given a large information set using the Beveridge-Nelson decomposition based on a vector autoregression (Morley & Wong 2020). First, they show how to determine which conditioning variables span the relevant information by directly accounting BN trend and cycle in terms of contributions from different forecast errors. Second, they use the Bayesian shrinkage to avoid overfitting problem in finite samples when estimating large models.

Dialog

Upon running the add-in from the menus, a dialog will appear:



The dialog box titled "BN-MW Decomposition" contains the following fields and options:

- Endogenous variables:** A text input field.
- Training sample:** A text input field with the value "80".
- Sample size:** A text input field with the value "1947Q1 2016Q4".
- Number of lags:** A text input field.
- Target variable:** A text input field.
- Impose lambda (optional):** A checkbox that is currently unchecked.
- lambda:** A text input field.
- Graph:** A checkbox that is currently checked.
- Reference:** A text area containing the reference information: "Reference: James Morley and Benjamin Wong, 2020. Estimating and accounting for the output gap with large Bayesian vector autoregressions, Journal of Applied Econometrics, pages 1-18".
- Buttons:** "OK" and "Cancel" buttons at the bottom.

The first box lets you specify the endogenous variables or group for Large BVAR. On the next box enter number of the lag. On the third box enter number of the target variable. If you ticked the impose lambda (checkbox), you have to insert the prior parameter lambda in the appropriate box. Other boxes are self-explanatory.

Command line:

`bnmwd(options) #lag #target_variable @ endogenous_variables or group`

for example:

```
group dlog_bench23
dlog_bench23.add d(logc111clp2_ifs,1)
dlog_bench23.add d(loggdp96,1)
...
dlog_bench23.add d(logc111is_ifs,1)
```

```
bnmwd(sample="1959q3 2016q4") 4 2 @ dlog_bench23
```

```
bnmwd(sample="1959q3 2016q4") 4 2 @ dlogc111clp2_ifs dloggdpc96
dlogpcecc96 dlogdpic96 dlogindpro dcumfns dlogcel6ov unrate dloghoanbs
dloghoust dlogpcectpi dloggdpcptpi dlogcpiaucsl dlogppiaco
dlogces3000000008 dlogophnfb dfedfunds dt10yffm dlogm1real dlogm2real
dlogtotresns pc_nonborres dlogc111is_ifs
```

options

Impose	Impose the lambda: 0 (default) or 1
Lambda	Prior parameter: lambda
tsample	Training sample: 80 (default:20 years)
sample	Sample size
graph	Draw graph: 0 or 1 (default)

References:

James Morley & Benjamin Wong, 2020. "Estimating and accounting for the output gap with large Bayesian vector autoregressions," *Journal of Applied Econometrics*, John Wiley & Sons, Ltd., vol. 35(1), pages 1-18, January.