Title

> **Inference requirements —** Requirements for inference

Description

The ds, po, and xpo commands, like other estimation procedures, require certain conditions be met so that their inferential results are valid. In addition, the plugin and CV selection methods have distinct properties and may perform differently under some conditions.

Remarks and examples   stata.com

We assume you have read [LASSO] **Lasso inference intro**.

We fit a model with, for example, dsregress with the default plugin selection method, and then we refit the model using CV. We get slightly different results. Which is correct?

Plugin and CV are more than just different numerical techniques for model estimation. They make different assumptions, have different requirements, and have different properties. Asking which is correct has only one answer. Each is correct when their assumptions and requirements are met.

In terms of practical advice, we have two alternative recommendations.

The first one involves lots of computer time.

1. Fit the model with xpo and the default plugin.

2. Fit the model with xpo and CV.

3. Compare results. If they are similar, use the results from step 1.

This alternative will save computer time.

1. Fit the model with ds with the default plugin.

2. Fit it again with ds but with CV.

3. Fit it again with po with the default plugin.

4. Fit it again with po but with CV.

5. Compare results. If they are similar, you are likely on solid ground. If so, perform step 6.

6. Fit the model again with xpo with the default plugin and use those results.

You can combine these two recommendations. Start with the alternative, and if it fails at step 5, follow the first set of recommendations.

Also see

[LASSO] **Lasso inference intro** — Introduction to inferential lasso models

[LASSO] **lasso** — Lasso for prediction and model selection

For suggested citations, see the FAQ on citing Stata documentation.