

POSTGRADUATE COURSE IN
Evaluation and Comparison of Methods of Measurements
DAY 2, EXERCISES

Exercise 4

In the lecture DAY 2, Example 2 we considered the “one-leg static balance”. In the same experiment another measure was the “one-leg dynamic balance” (Dataset: **exercise4.dta**).

1. Use the do-file **example2_graph.do** to make graphs similar to the lecture DAY 2 (slides 8-12).

Use the Stata command:

```
xi: xtmixed ln_bi i.day i.series i.repeat || pnr: || day: || series:
```

and answer the questions:

2. Are the training effects at repeats 2, 3, 4 and 5 of the same magnitude?
3. Is there a general training effect from series 1 to series 2?
4. Is there a general training effect from day 1 to day 2?

Now use the Stata command:

```
xi: xtmixed ln_bi i.day i.series repeat || pnr: || day: || series:
```

and answer the questions:

5. How do you interpret the effect of the variable repeat in this model?
6. Make the diagnostic plots (slides 27-28) corresponding to this model. Do you think the assumptions for the mixed model are fulfilled?
7. Repeat the computations for designs S, A and B on slide 20-22. Which design would you prefer?

Exercise 5

In the lecture DAY 2, Example 3 we compared the 3 methods **meta**, **metb** and **gold**. In the same experiment two other methods were examined: **metk** and **metp** (Dataset: **example3.dta**).

1. Use the Stata command **BAanalysis** to make pair wise comparisons of the 3 methods.
2. Would you prefer to make the analysis on log-transformed data?
3. Summarize your conclusions with respect to systematic differences between the 3 methods and their measurements errors.