Replication of Simulations in DoubleML - An Object-Oriented Implementation of Double Machine Learning in R

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Files for Replication of Figures and Results in `DoubleML` Package Vignette

The examples and results from the paper *DoubleML - An Object-Oriented Implementation of Double Machine Learning in R* can be reproduced with the R files listed in the following:

1. Section 4: *Basic idea and key ingredients of double machine learning* - Code for replication of simulation examples
   - `examples_failure_n_500_p_20.R`
2. Section 7.8: *A short simulation study* - Code for replication of simulation results
   - Cross-fitting: `examples_failure_n_500_p_20.R`
   - PLR: `sim_plr.R`
   - PLIV: `sim_plivX.R`
   - IRM: `sim_irm.R`
   - IIVM: `sim_IIVM.R`
   - Merging plots: `merge_plots.R`
   - Simultaneous inference: `sim_siminf.R`
3. Code chunks: The reproducible code contained in the code chunks is available via
   - `doubleml_codechunks.R`
   - *Note*: The code in `doubleml_codechunks.R` has been automatically produced from the manuscript (`.Rmd`) using `knitr::purl()`, see also Chapter 3.4 of *Xi et al. (2020)*

All data sets and DGPs used in the paper can be replicated via corresponding functions as provided in the `DoubleML` package. The required function calls are contained in the code chunks of the paper. The API documentation is available via https://docs.doubleml.org/r/stable/reference/.

The replication materials are also available from the GitHub repository https://github.com/DoubleML/DoubleMLReplicationCode. The code is regularly executed via GitHub actions.

The current development version of `DoubleML` is available via the GitHub repository at https://github.com/DoubleML/doubleml-for-r. The stable version can be downloaded from CRAN https://CRAN.R-project.org/package=DoubleML.

In case you have any questions, do not hesitate to contact philipp.bach@uni-hamburg.de

References

Xie, Y., Dervieux, C., & Riederer, E. (2020). R Markdown Cookbook. CRC Press.