

Replication Package for “Nurturing National Champions? Local Content in Solar Auctions and Firm Innovation” by Florian Münch and Fabian Scheifele

Overview:

This is the code and data to replicate all figures and tables of the paper "Nurturing national champions? Local content in solar auctions and firm innovation" by Florian Münch & Fabian Scheifele (Energy Policy, Volume 179, August 2023, 113574, DOI: <https://doi.org/10.1016/j.enpol.2023.113574>).

Data availability and provenance statement:

The data used in this paper comes primarily from four different sources, namely the Indian Patent Office, Solar Energy Corporation of India (SECI), Tofler and Dun's & Bradstreet and is publicly accessible (either directly or after the creation of a free-of-charge account). Some sources (e.g Indian Patent Office) have however limits on how many data entries can be downloaded at once, which is why data collection was automatized in this case (see Section 4.4 of paper). The raw data that is necessary to replicate the analysis is shared in this replication package.

Details on each data source:

The three raw datasets used in this analysis are all own creations, but below you find the information of the sources and how they were constructed.

1. Auction data and firm origin

Datafile: combined_results.xlsx

This data contains bid-level (1 row =1 bid) information of the auction results of all federal electricity auctions that were held by the Solar Energy Corporation of India (India) between 2013 and 2017. It contains information about the company, the bid (prices and volumes) and the auction itself. Most of this data is available at SECI's website (https://www.seci.co.in/archives/data_archives) but some additional auction results were provided directly by SECI.

Firm origin (Indian or international) was obtained through the Mergent Intellect database: <https://www.mergentintellect.com/>

While mergent intellect is not a public database, the origin of the firm is easily verifiable through websearch.

2. Firm revenues and creation date:

Datafile: firm_sales_employees.xlsx

This dataset is at the firm-year level and contains the total annual revenues of all the bidders, the firm's year of foundation and the total number of employees. The revenue data was compiled from [Tofler](#) as well as from the firm's annual reports (annual reports were only available for larger firms). Employee data was compiled from [Dun & Bradstreet](#) as well as from annual reports. Unfortunately, Dun & Bradstreet does not provide a time reference for the employee figures, which is why we only have one value for most companies.

3. Patent data:

Datafile: firmpatent.dta

Patent data was obtained using the public search in the Indian Patent Advanced Search System (INPASS) of the Indian Patent Office (Intellectual Property India):

<https://ipindiaservices.gov.in/publicsearch>

The bidders refined firmname name (excluding any legal annotations) was used as applicant name.

System requirements:

- Stata 17 (the master file automatically sets your stata version)

To replicate the results please follow the following steps:

1. Save the Zip-file onto your computer and extract the files at a location of your choice.
2. Open the file master_lcr.do (located in the sub-folder "code") and adjust the directory in Line 45 to the directory where you extracted the zip file.
3. Run master_lcr.do and all outputs will be saved in the sub-folders of the folder "output".
4. Below you find a table that describes which file relates to which figures/table of the paper.

List of tables and figures (in order of appearance in the paper)

Please note that only code-created tables and figures are listed here and not manually created graphics.

Figure/Table No.	Stata do-file	output file name
Figure 2	bid_descriptives.do	output/descriptive-statistics-figures/spatents_ts.png
Table 1	bid_descriptives.do	output/final_figures/baltab_auctions.tex
Table 2	cs_match_quality.do	baltab_lcr_pre_post.tex
Table 3	cs_descriptives.do	output/final_figures/table1.tex
Figure 5	cs_descriptives.do	output/final_figures/prepost_solar_LCR.png
Figure 6	event_callaway_santanna.do	output/final_figures/spatents_staggered_event_nsm2.png
Table 4	cs_main_regression.do	output/final_figures/three_panel.tex
Figure 7	event_callaway_santanna.do	output/final_figures/revenue_staggered_event_nsm2.png
Figure 8	cs_demand_shock.do	output/final_figures/usd_stacked.png
Table 5 (Appendix)	cs_variable_choice.do	output/final_figures/variable_choice_all.tex
Table 6 (Appendix)	cs_ps_estimation.do	output/final_figures/firststage.tex

Table 7 (Appendix)	event_callaway_santanna.do	output/regression-tables/csdid_table.tex
Table 8 (Appendix)	cs_main_regression.do	output/final_figures/did_robust_nn.tex
Table 9 (Appendix)	cs_regression.do	output/final_figures/three_panel_continuous.tex
Table 10 (Appendix)	cs_hetero.do	output/regression-tables/logit_patent_hetero.tex
Table 11 (Appendix)	cs_hetero.do	output/regression-tables/logit_bid_winning.tex
Table 12 (Appendix)	cs_descriptives.do	output/final_figures/baltab_firmlevel.tex
Figure 10 (Appendix)	bid_descriptives.do	output/final_figures/patent_auction_evolution.png
Figure 11 (Appendix)	cs_descriptives.do	output/final_figures/firms_frequency_sector.png
Figure 12 (Appendix)	cs_descriptives.do	output/final_figures/treatment_intensity.png
Figure 13 (Appendix)	cs_descriptives.do	output/final_figures/firms_cs_solarpatents.png
Figure 14 (Appendix)	cs_descriptives.do	output/final_figures/solarpatents_sector.png
Figure 15 (Appendix)	cs_descriptives.do	output/final_figures/manufacturer_LCR_solarpatents.png
Figure 16 (Appendix)	event_visualize.do	output/final_figures/avg_revenues_bn.png
Figure 17 (Appendix)	mechanism_demand_shock.do	output/final_figures/mw_won_stacked.png
Figure 18 (Appendix)	mechanism_common_support.do	output/final_figures/common_support_all.png

In case of any questions or remarks do not hesitate to contact the authors (email addresses are provided on the paper).

References

- Dun & Bradstreet, n.d. Dun & Bradstreet - Accelerate Growth and Improve Business Performance [WWW Document]. URL <https://www.dnb.com/> (accessed 3.21.23).
- Intellectual Property India, n.d. Intellectual Property India [WWW Document]. URL <https://ipindiaservices.gov.in/publicsearch> (accessed 3.21.23).
- Mergent Intellect, n.d. Mergent Intellect [WWW Document]. URL <https://www.mergentintellect.com/> (accessed 3.21.23).
- Solar Energy Corporation of India Limited(SECI), n.d. Solar Energy Corporation of India Limited(SECI), A Government of India Enterprise, Under Ministry of New and

Renewable Energy [WWW Document]. URL

https://www.seci.co.in/archives/data_archives (accessed 3.21.23).

Tofler, n.d. Check Company Details Online. Get Company Financials & Director Information [WWW Document]. Tofler. URL <https://www.tofler.in/> (accessed 3.21.23).