Two-tier stochastic frontier analysis for the social sciences.

Alecos Papadopoulos, Christopher Parmeter, 2025

README for Application ch. 5.6- Going Green in China

Files and their contents

|  |  |
| --- | --- |
| Gretl 2TSF Exp mle code Appl\_5.6.inp | Gretl code to replicate the application 5.6(ML estimation and computation of metrics) |
| Gretl 2TSF Exp mle code Appl\_5.6.txt | The same, in .txt format |
| Gretl\_session\_5.6\_EnviReg\_NO\_MISSING\_depvar.gretl | The gretl session file with the corrected data sample used in the book. |
| App\_5.6\_EnviReg\_NO\_MISSING\_depvar\_data\_sample.csv | Data sample used in the book in .csv format |

Original paper Lei, P., Cai, Q., & Jiang, F. (2024). Assessing the impact of environmental regulation on enterprise high-quality development in China: A two-tier stochastic frontier model. *Energy Economics,* *133*, 107502.

The full data set can be downloaded from the journal website.

Variables used in the study

| **Label in software** | **Variable description** | **Name in book** | **Comments** |
| --- | --- | --- | --- |
| lnhqd | Logarithm of the High Quality Development (hqd) Index |  | Dependent variable |
| d\_lnhqdHIGH | Binary for observations belonging around the second mode of the dependent variable distribution (see Fig. 5.1 | D\_lnhqdHIGH | Binary |
| lnsize | Total Assets (ln) | lnsize |  |
| lnlev | Debt-to-Assets ratio (ln) | lnlev |  |
| lnboard | Size of Board of Directors (ln) | lnboard |  |
| lncash | Cash ratio (ln) | lncash |  |
| dual | Separation of ownership and control | dual |  |
| gdp |  | gdp |  |
| fin | Financial level of the city | fin |  |
| internet | Number of internet users at the city level | internet |  |
| mobile | Number of mobile phone users at the city level | mobile |  |
| market | Pollution fees and environmental taxes | market |  |
| command | Number of local administrative penalty cases for breach of environmental regulations. | command |  |

--