

Files for replicating the results in “**Monopsony power and wages: Evidence from the introduction of serfdom in Denmark**”

All estimations are carried out in STATA 16/SE on a Windows 10 system. The folder “Serfdom.zip” contains the do file and datasets. The do-files “replication_tables.do” and “replication_figures.do” replicate the tables and the figures. A folder called “\Data” containing all datasets should be created to run the replication files. Runtime for all tables and figures is about 35 minutes (on a Dell 7420 latitude laptop) for the tables (because acreg runs slowly and even more slowly older laptops) and 20-30 seconds minutes for the figures (though to check the figures it is best to run code for each one by one).

The following packages are needed to produce some of the results and figures and should be installed.

coefplot from <http://fmwww.bc.edu/RePEc/bocode/c>

ivreg210 from <http://fmwww.bc.edu/RePEc/bocode/i>

acreg from <http://fmwww.bc.edu/RePEc/bocode/a>

outreg2 from <http://fmwww.bc.edu/RePEc/bocode/o/>

ranktest from <http://fmwww.bc.edu/RePEc/bocode/r>

ivreg210 from <http://fmwww.bc.edu/RePEc/bocode/i>

hdfe from <http://fmwww.bc.edu/RePEc/bocode/h>

lean1 scheme can be found by typing search lean1 in the command line in STATA.

“outreg2” creates a txt file of each table, which can be inspected in STATA or Excel. The outreg2 commands can be commented out.

“lean1” can also be commented out. It is used to format all graphs in black and white. Note that Figure 6 has been edited in the STATA graph editor so that the vertical line for 1733 is dashed rather than solid.

The estimations are carried out using PC and path names should be changed when using MAC instead.

The “\Data” folder in the zip file contains the following datasets needed for replication:

Main dataset: out2corr5.dta. This dataset contains the main variables used to code farmhands and other occupations. Farmhands are denoted “unskilled” in the do file, and the main variable of interest farmhands multiplied by the serfdom dummy is called “unskilledserfdom” in the dataset.

Dataset with barley prices: barley_prices_2.dta contains the data used to generate the log of barley the price denoted “logpricebarley”.

Dataset with rye prices: rye_prices_2.dta contains the data used to generate the log of the rye price denoted “logpricerye”.

Datasets with estate level innovations:

- a. manors_2.dta: This dataset contains the data on the variables “Change of owner dummy”, “New building finished”, “Other improvements to the estate”.
- b. data_for_merge.dta: This dataset contains the data on the variables “Koppelwirtschaft, 1782” & “clover_ adoption_1775”

- c. count_manors_for_match.dta: This dataset contains the information needed to calculate Herfindal index.

Datasets for Denmark & Scania:

- a. Scania.dta: This dataset contains data for both Denmark and Scania and the farmhand multiplied by serfdom is called "Serfdom_DK".
- b. EXRdata.dta contains information to compute real wages and convert to a common currency.

Dataset with information on apprentices:

apprentice_data.dta: This dataset contains information on apprentices and the main variables are dummy serfdom1 (Serfdom in Table 9) and serfdomd1, serfdomd2, serfdomd3, serfdomd4 called period 1-4 in Table 9.

Dataset for pseudopanel:

pseudopanel.dta: This dataset is the pseudo panel. The coefficients reported are the ones on the variable "serdomunskilled" (=Farmhands x serfdom in the Tables).

Datasets with aggregate variables:

- a. farmhands.dta: Aggregate data used to plot average farmhand (log) wages and other variables.
- b. urban_rural.dta: Aggregate data used to plot rural and urban wages.

Replication of Figure 5

The borders for Denmark and Scania are taken from the 1700 Historical Atlas from Euratlas, which can be purchased at the following link <https://www.euratlas.net/history/europe/1700/index.html>. In this Atlas we consider the shapefile "sovereign_states.shp" and select for the variable short_name the following values:

Bremen, Falster, Funen, Jutland, Lolland, Moen, Scania, Schleswig, Sweden, Zealand. The projection used is WGS84- EPSG:4326 for this shape file.

The zip files manor_coordinates.zip contains the shapefiles for the coordinates of the manors located in Denmark and in Scania. Also in this case, the projection used is WGS84- EPSG:4326. Both files can be loaded into a standard GIS platform (e.g., QGIS).

The procedure in QGIS requires to first load "sovereign_states.shp" and then "manor_coordinate.shp". Afterwards colours can be adjusted.

Data availability and data sources

The data for this paper were collected by the authors from various sources as listed below. The resulting data set is available from the authors as well as on the journal home page. The individual level data for Denmark in the main data set for wages and worker characteristics were collected for the Danish price history and so were the barley and rye prices (Andersen and Pedersen, 2004); The raw data from Andersen and Pedersen were originally digitized by Mette Ehlers (Andersen and Pedersen, 2004: p. 17-18). None of the authors are active in academia and have expressed that they have no interest in the data they compiled, so to make available the wage data as made available to in raw form, this has been posted at Jensen's home page:

<https://sites.google.com/site/peterseconstuff/home/data>. The price data for barley and rye can be found in Tables 1.2 and 1.3 in Andersen and Pedersen (2004). As is clear from Andersen and Pedersen (2004), the data for prices and wages were compiled and digitized from archival material available at Rigsarkivet (the Danish National Archives), where it exists in written form for the estates listed in the paper (Herlufsholm, Sorø Akademi, Giesegaard, Bregentved, Giesegaard, Holsteinborg, Fuirendal, Løvenborg, Juellinge, Taasinge, Frederiksgave, Erholm-Søndergade, Frijsenborg, Støvringgaard, Lindenberg, Odden and Gisselfeld). Andersen and Pedersen (2004, p. 170) list the archives as they were around 2004, and they have now merged to Rigsarkivet (<https://www.sa.dk/en/>). The manorial archives listed are not subject to any GDPR restrictions because of their age, but they need to be ordered to be seen and used at one of the branches of Rigsarkivet.

The Swedish Data were collected and digitized by Gary (2018) from the following Scanian archives in Sweden: Lunds Landsarkiv, Jordberga godsarkiv, Karsholm godsarkiv, Knutstorp godsarkiv, Maltesholm godsarkiv, Rosendal godsarkiv, Rydsgård godsarkiv, Skarhult godsarkiv, Trolle Ljungby godsarkiv, Vittskövle godsarkiv and Malmö Stadsarkiv; see Gary (2018, p. 35 in Paper 1) for an overview of the archives and the archival material. The archives can typically be accessed without appointments. The data provided in this replication package are Gary's digitization and if wants to access the "raw" data, one would need to visit and inspect the material on site in the archives; an example of how the source material looks is given on page 14 in Paper 1 in Gary (2018). Most estate level variables are taken from Boberg-Fazlic et al. (2020). The variables by Boberg-Fazlic et al. (2020) all come from printed material or publicly available material; please consult their paper for the sources. Three variables (Change of owner dummy, New building finished, Other improvements to the estate), which were coded by the authors, are based on information from the website of the Danish Research Centre for Manorial Studies. (<https://herregaardsforskning.dk>), which has compiled individual pages on each manor with the history of ownership, building and other changes (in Danish). The full list of pages used are provided under data, but two examples that may cause confusion are given here:

Frederiksgave (which changed nameto Hagenskov): <https://www.danskeherregaarde.dk/nutid/hagenskov>

Taasinge (which changed nameto Valdemar slot) (<https://www.danskeherregaarde.dk/nutid/valdemars-slot>)

Price levels (set equal to 100 for 1705) and exchange rate data are from Abildgren (2018) and Edvinsson and Söderberg (2010) and are downloadable from <https://sites.google.com/view/kim-abildgren/historical-statistics> and

<https://www.riksbank.se/en-gb/about-the-riksbank/the-tasks-of-the-riksbank/research/historical-monetary-statistics-of-sweden/volume-i-exchange-rates-prices-and-wages-1277-2008/>. Data for urban

wages in Copenhagen come from Khaustova and Sharp (2015), who also list the data in an appendix. The data for apprentices in Odense were provided in spreadsheet format to the authors by the Odense database, which is a project by Odense Stadsarkiv (<https://www.odensedatabasen.dk/>), though the homepage is only available in Danish unfortunately. The easiest way to obtain the data in raw form is to request it at odensedatabasen@odense.dk. The original source for the data on apprentices in the Odense database is guild protocols and these can be obtained at the Rigsarkivet.

All the sources for all data sets are listed below under Data.

Data

Latest accessed May 30th, 2022 for all data.

Online databases/ data sources

Abildgren, K. (2018). 'Data from: A chart & data book on the monetary and financial history of Denmark.', *Working Paper*, 29 December. Available online at <https://sites.google.com/view/kim-abildgren/historical-statistics>

Andersen, D.H. and E.H. Pedersen (2004). *Data from: History of prices and wages in Denmark: 1660-1800. Volume II*. Copenhagen: Schultz Grafisk. The raw wage data are available online at <https://sites.google.com/site/peterseconstuff/home/data>

The Danish Research Centre for Manorial Studies: Bregentved. Available online at <https://www.danskeherregaarde.dk/nutid/bregentved>

The Danish Research Centre for Manorial Studies: Erholm-Søndergade. Available online at <https://www.danskeherregaarde.dk/nutid/erholm>

The Danish Research Centre for Manorial Studies: Hagenskov. Available online at <https://www.danskeherregaarde.dk/nutid/hagenskov>

The Danish Research Centre for Manorial Studies: Frijsenborg. Available online at <https://www.danskeherregaarde.dk/nutid/frijsenborg>

The Danish Research Centre for Manorial Studies: Fuirendal. Available online at <https://www.danskeherregaarde.dk/nutid/fuirendal>

The Danish Research Centre for Manorial Studies: Gavnø. Available online at <https://www.danskeherregaarde.dk/nutid/gavnoe>

The Danish Research Centre for Manorial Studies: Giesegaard. Available online at <https://www.danskeherregaarde.dk/nutid/giesegaard>

The Danish Research Centre for Manorial Studies: Gisselfeld. Available online at <https://www.danskeherregaarde.dk/nutid/gisselfeld>

The Danish Research Centre for Manorial Studies: Herlufsholm. Available online at <https://www.danskeherregaarde.dk/nutid/herlufsholm>

The Danish Research Centre for Manorial Studies: Holsteinborg. Available online at <https://www.danskeherregaarde.dk/nutid/holsteinborg>

The Danish Research Centre for Manorial Studies: Juellinge. Available online at <https://www.danskeherregaarde.dk/nutid/juellinge>

The Danish Research Centre for Manorial Studies: Lindenberg. Available online at <https://www.danskeherregaarde.dk/nutid/lindenberg>

The Danish Research Centre for Manorial Studies: Løvenborg. Available online at.
<https://www.danskeherregaarde.dk/nutid/loevenborg>

The Danish Research Centre for Manorial Studies: Odden. Available online at.
<https://www.danskeherregaarde.dk/nutid/odden>

The Danish Research Centre for Manorial Studies Sorø Akademi. Available online at.
<https://www.danskeherregaarde.dk/nutid/soroe-store-ladegaard>

The Danish Research Centre for Manorial Studies: Støvringgaard.
<https://www.danskeherregaarde.dk/nutid/stoevringgaard>

The Danish Research Centre for Manorial Studies: Valdemar slot.
<https://www.danskeherregaarde.dk/nutid/valdemars-slot>

Edvinsson, R., J. Söderberg (2010), 'Data from: The evolution of Swedish consumer prices 1290–2008', in *Historical Monetary and Financial Statistics for Sweden, Volume I: Exchange rates, prices, and wages, 1277–2008* (eds. Rodney Edvinsson, Tor Jacobson and Daniel Waldenström) Sveriges Riksbank and Ekerlids. Available online at <https://www.riksbank.se/en-gb/about-the-riksbank/the-tasks-of-the-riksbank/research/historical-monetary-statistics-of-sweden/volume-i-exchange-rates-prices-and-wages-1277-2008/>

Odense Stadsarkiv: Odense databasen. Available online at <https://www.odensedatabasen.dk/>

Offline databases/ data sources

Andersen, D.H. and E.H. Pedersen (2004). *Data from: History of prices and wages in Denmark: 1660-1800. Volume II*. Copenhagen: Schultz Grafisk.

Gary, K. (2018). *Data from: Work, Wages and Income: remuneration and labour patterns in Sweden 1500-1850*. Lund Studies in Economic History 91, Lund University.
<https://portal.research.lu.se/en/publications/work-wages-and-income-remuneration-and-labor-patterns-in-sweden->

Boberg-Fazlic, N., Jensen, P.S., M. Lampe, P. Sharp, and C. Skovsgaard (2020). 'Data from: Getting to Denmark': the role of elites for development.' Unpublished working paper. Paper is available at:
https://findresearcher.sdu.dk:8443/ws/portalfiles/portal/173697803/dpbe5_2020.pdf

Khaustova, E. and Sharp, P. (2015). 'Data from: A note on Danish living standards using historical series 1713-1913.' *Journal of European Economic History* 44(3), 142-172.