Overview

Replication code and data for “How firms, bureaucrats, and ministries benefit from the revolving door: Evidence from Japan.”

The cleaned administrative data of post-bureaucratic retirement placement of civil servants will hereafter be referred to as “Amakudata.” The cleaned nonprofit contract and subsidy data will be referred to as “jNPO.” These can be viewed as the primary “analysis datasets,” in addition to the (non-publicly available) Nikkei NEEDS financial data.

Full replication data is available for all descriptive statistics and estimates in the ``Data", ``Is there a bifurcated job market for former civil servants?", ``Do investors reward firms for bureaucratic hires?", and ``Do nonprofits with bureaucratic connections receive more lucrative contracts?" sections.

Replication data CANNOT be provided for descriptive statistics and estimates in the ``Do firms that hire bureaucrats secure more government loans?" section for legal reasons, as this represents proprietary data from Nikkei Inc. Analyses in this section can be replicated by:

1. Downloading the universe of firm financial information and government loan data from Nikkei NEEDS (available to download using a Nikkei NEEDS financial database subscription or one-time bulk purchase from Nikkei Inc.) for years 2009 - 2019.
2. Running the provided replication code for the creation of cleaning of the time-series Nikkei NEEDS financial database, merging of the Nikkei NEEDS data with Amakudata, and analyzing the merged dataset. Please contact the author at t.n.incerti@uva.nl if you require additional information on how to obtain the data from Nikkei NEEDS or run the replication code.

The cleaned Amakudata and jNPO datasets are provided here. The cleaning code required to create Amakudata is not provided here, but is publicly available and can be found at https://github.com/tincerti/amakudata. A dashboard that allows users to explore and download the data can also be found at https://trevorincerti.shinyapps.io/amakudashboard/. The cleaning code required to create jNPO is also not provided here, but is publicly available and can be found at https://github.com/tincerti/jnpo.

Interview protocols are provided but full interview transcripts are not made publicly available for the purpose of confidentiality.

Instructions for running code (scripts relative path: "~/code")

1. Create relative paths for code (~/code), data (~data), figures (~figures), and tables (~tables).
2. Open the amakudari_replication.Rproj file which will set relative file paths. Alternatively, set relative file paths to the root directory.
3. Run 0.1 setup.R, which installs all dependencies, and should be run once prior to running other programs.
4. Run each .R file in order from 1.1 - 6.2 (once again noting that scripts 2.1 - 3.2 cannot be run without the Nikkei NEEDS data).
5. Alternatively to steps 3 and 4, users can execute 0.0_runfirst.R, which will run all analysis scripts that do not utilize Nikkei NEEDS data and produce all figures and tables.

Notes:

- A number of scripts require user defined functions provided in 0.2_functions.R. These functions are loaded at the beginning of each script that requires these dependencies, and 0.2_functions.R therefore does not need to be run by the user.
- Seeds (e.g., for bootstrapped standard error calculations) are set directly in each the relevant individual analysis scripts. Note, however, that the output from scripts in 4.1 - 5.2 may still produce slightly different results in successive runs (even when random seeds and software are perfectly harmonized) due to bootstrapping procedures.

Software requirements

Code run using R version 4.3.2 (2023-10-31) on macOS Sequoia 15.6.

Replication code files, descriptions, and outputs (relative path "~/code")

0.0_runfirst.R

- Runs all analysis scripts that do not utilize Nikkei NEEDS data and produces all figures and tables.
- NOTE: Also runs 0.1_setup.R, and therefore will INSTALL and/or UPDATE all required packages.

0.1_setup.R

- Installs all dependencies and required R libraries, and should be run once prior to running other programs. Will install all required libraries and/or update currently installed libraries to required versions for replication.

0.2_functions.R

- Creates user-written functions that are used throughout the other R scripts.
- NOTE: This file does not need to be run as it is loaded by the other .R files.

1.1_descriptive_tables.R

- NOTE: Not all of script cannot be run due to proprietary nature of the required data. However, all scripts and outputs are provided.
- This code analyzes descriptive statistics (bureaucrat demographics, industry destinations, and flows to specific industries) from Amakudata and outputs tables, as well as calculates some in-text references.
- Outputs the following appendix tables:

    - tables/a1_amakudari_example.tex (can be output)
    - figures/a2_amakudari_industry_short.png (cannot be output)
    - tables/a2_amakudari_industry_full.tex (cannot be output)
    - tables/a3_age.tex (can be output)

1.2_descriptive_figures.R

- This code analyzes descriptive statistics (bureaucrat demographics, industry destinations, flows to specific industries) from Amakudata and outputs figures.
- Outputs the following figures in the main text and appendix:

    - figures/1_hires_by_firm_type.pdf
    - figures/2_vm_firm_dest.pdf
    - figures/3_industry_ministry_facet.pdf

    - figures/a1_hires_by_firms.pdf
    - figures/a3a_hires_by_ministry.pdf
    - figures/a3b_hires_by_ministry_adjusted.pdf
    - figures/a6a_ministry_firm_type.pdf
    - figures/a6b_ministry_firm_type_patent.pdf
    - figures/a4_pub_interest_chord.pdf
    - figures/a5_private_chord.pdf
    - figures/a7_age_ridge.pdf

2.1_nikkei_financials_clean.R

- NOTE: Script cannot be run due to proprietary nature of the required data. However, all scripts and outputs are provided.
- This code combines all financial data from Nikkei NEEDS into a single cleaned time series dataset.

The resulting dataset integrates financial information from various sectors including industrial corporations, commercial banks, regional banks, insurance companies, and securities firms. Additionally, it merges this corporate attribute data with Amakudata.

- Outputs the following data (used in loan cleaning and analyses scripts 3.1, 3.2, 4.1, and 4.2):

  - data/nikkei_financials.RData.

2.2_nikkei_loan_clean.R

- This code combines all loan data (public and private) from Nikkei NEEDS into a single cleaned time series dataset.
- NOTE: Script cannot be run due to proprietary nature of the required data. However, all scripts and outputs are provided.
- Outputs the following data (used in loan cleaning and analyses scripts 3.2, 4.1, and 4.2):

  - data/loans_amakudari.Rdata
    - All loan data from Nikkei NEEDs in time series format, merged with firm financials an indicators for amakudari status.
  - data/nikkei_financials_loans.Rdata
    - All firm financial and attribute data from Nikkei NEEDS, merged with loan data and indicators for amakudari status.

2.3_nikkei_loan_descriptives.R

- This code provides financial descriptive statistics from Nikkei NEEDS, including financials by amakudari and government loan status.
- NOTE: Script cannot be run due to proprietary nature of the required data. However, all scripts and outputs are provided.
- Outputs the following figures and tables in the main text and appendix:

  - figures/4_amakudari_financial_overview.pdf

  - figures/a8a_loan_missing_time.pdf
  - figures/a8b_loan_missing_industry.pdf

  - tables/a4_amakudari_balance.tex
  - tables/a5_loans_balance.tex

3.1_loan_ts_match_estimates.R

- Conducts time-series cross sectional matching analysis of amakudari hires on government loans received by private sector firms.
- NOTE: Script cannot be run due to proprietary nature of the required data. However, all scripts and outputs are provided.
- Outputs the following tables and figures in the main text and appendix:

  - figures/5a_tscs_loan.pdf
  - figures/5b_tscs_loan_meti_mof.pdf

  - figures/a9_loan_treat_control.pdf
  - figures/a10_tscs_loan_meti.pdf
  - figures/a11_tscs_loan_mof.pdf
  - figures/a12_tscs_loan_other.pdf
  - figures/a18_tscs_loan_posttreatment.pdf
  - figures/a19_tscs_loan_private.pdf
  - tables/a13_tscs_loan_private.tex
  - figures/a14_tscs_loan_2lags.pdf

- figures/a16b_tscs_loan_2lags_meti_mof.pdf
- figures/a20c_tscs_loan_cbps.pdf
- figures/a21c_tscs_loan_cbps_meti_mof.pdf
- figures/a20d_tscs_loan_cbps_msm.pdf
- figures/a21d_tscs_loan_cbps_msm_meti_mof.pdf
- figures/a20b_tscs_loan_ps.pdf
- figures/a21b_tscs_loan_ps_meti_mof.pdf
- figures/a13_tscs_loan_leads.pdf
- figures/a23_tscs_balance.pdf
- figures/a24_tscs_balance_meti_mof.pdf

- tables/a6_tscs_loan.tex
- tables/a7_tscs_loan_meti.tex
- tables/a8_tscs_loan_mof.tex
- tables/a9_tscs_loan_meti_mof.tex
- tables/a10_tscs_loan_other.tex
- tables/a11_tscs_loan_lag.tex
- tables/a12_tscs_loan_lag_meti_mof.tex

3.2_loan_ts_match_robustness.R

- Conducts robustness checks related to pre-trends for time-series cross sectional matching analysis of amakudari hires on government loans received by private sector firms.
- NOTE: Script cannot be run due to proprietary nature of the required data. However, all scripts and outputs are provided.
- Outputs the following appendix tables and figures:

  - figures/a14_tscs_loan_2lags.pdf
  - figures/a15_tscs_loan_2lags_placebo.pdf
  - figures/a16b_tscs_loan_meti_mof_2.pdf
  - figures/a16c_tscs_loan_meti_mof_3.pdf
  - figures/a16d_tscs_loan_meti_mof_4.pdf
  - figures/a17a_tscs_loan_meti_mof_2_placebo.pdf
  - figures/a17b_tscs_loan_meti_mof_3_placebo.pdf
  - figures/a17c_tscs_loan_meti_mof_4_placebo.pdf
  - figures/a25_pre_trends.pdf
  - figures/a26_pre_trends_meti_mof.pdf

  - tables/a11_tscs_loan_lag.tex
  - tables/a12_tscs_loan_lag_meti_mof.tex

4.1_event_study.R

- NOTE: The “eventstudies” package is no longer available on CRAN. However, the package can be installed from the CRAN archive using install.packages("https://cran.r-project.org/src/contrib/Archive/eventstudies/eventstudies_1.2.2.tar.gz")
- Performs event studies of firm stock returns on the day of hiring announcements of former vice-ministers. Note that stock price data is pulled directly from Yahoo Finance within the script using the tidyquant package, and as such no stock price data is included in the replication files. Pulling data from tidyquant may take a few minutes.
- Outputs the following tables and figures in the main text and appendix:

  - figures/6_event_study.pdf

  - figures/a27_event_study_advisor_vm.pdf
  - figures/a28_event_study_meti.pdf

- tables/a14_event_study.tex
- tables/a15_event_study_director.tex
- tables/a16_event_study_internal.tex
- tables/a17_event_study_advisor_vm.tex
- tables/a18_event_study_meti.tex
- tables/a19_event_study_other.tex

4.2_event_study_robustness.R

- NOTE: The "eventstudies" package is no longer available on CRAN. However, the package can be installed from the CRAN archive using install.packages("https://cran.r-project.org/src/contrib/Archive/eventstudies/eventstudies_1.2.2.tar.gz")
- Performs robustness checks for the event study analysis. Note that stock price data is pulled directly from Yahoo Finance within the script using the tidyquant package, and as such no stock price data is included in the replication files. Pulling data from tidyquant may take a few minutes.
- Outputs the following appendix figures:

  - figures/a29_event_study_placebo_test.pdf
  - figures/a30_event_study_cmr.pdf
  - figures/a31_event_study_classic_wilcox.pdf
  - figures/a32_event_study_event_windows.pdf

5.1_npo_analysis_month.R

- NOTE: For exact replication, please install version 0.1.0 of the "DIDmultiplegt" package from the CRAN archive using install.packages("https://cran.r-project.org/src/contrib/Archive/DIDmultiplegt/DIDmultiplegt_0.1.0.tar.gz")
- This script conducts differences-in-differences analysis of the effect of former bureaucrats on NPO negotiated contract values using monthly aggregated data.
- NOTE: Code to create Figure 7 (lines 1-139) takes approximately 17 minutes to run on MacBook Pro M3 Max with 96 GB RAM. See also notes in script regarding the "fect" package used in robustness checks (figure a33).
- Outputs the following tables and figures in the main text and appendix:

  - figures/7_npo_amakudari.pdf

  - figures/a33_npo_robust_monthly.pdf
  - figures/a36a_benford_bid.pdf
  - figures/a36b_benford_neg.pdf
  - figures/a36c_benford_neg_amakudari.pdf

  - tables/a20_npo_binary.tex
  - tables/a21_npo_cont.tex
  - tables/a22_twfe_monthly.tex

5.2_npo_analysis_year.R

- NOTE: For exact replication, please install version 0.1.0 of the "DIDmultiplegt" package from the CRAN archive using install.packages("https://cran.r-project.org/src/contrib/Archive/DIDmultiplegt/DIDmultiplegt_0.1.0.tar.gz")
- This script conducts differences-in-differences analysis of the effect of former bureaucrats on NPO negotiated contract values using yearly aggregated data (as a robustness check).
- NOTE: Code takes approximately 20 minutes to run on MacBook Pro M3 Max with 96 GB RAM.
- Outputs the following appendix tables and figures:

  figures/a35_npo_robust_yearly.pdf

tables/a23_twfe_yearly.tex
figures/a34_npo_amakudari_yearly.pdf

Provided data files and descriptions (relative path "~/data")

- amakudata.csv - Digitized and cleaned records of civil servant re-appointments.
  - A codebook can be found at https://github.com/tincerti/amakudata.

- jNPO.Rdata - Cleaned nonprofit contract and subsidy data.
  - A codebook can be found at https://github.com/tincerti/jNPO.

- event_dates_avm.csv - Dates of former assistant vice minister hires as reported in the Nihon Keizai Shimbun. Variable descriptions are as follows:
  - date_ret: date of bureaucrat retirement.
  - name: name of bureaucrat.
  - position_level: former position within the bureaucracy.
  - ministry_short: former ministry within the bureaucracy.
  - firm_dest: name of destination firm (in Japanese).
  - firm_dest_en: name of destination firm (in English).
  - post_dest: role hired for at re-hiring firm (in Japanese).
  - ticker: stock ticker of re-hiring firm.
  - when: date re-hire was reported in the Nihon Keizai Shumbun. NA dates were not reported.
  - position: role hired for at re-hiring firm (in English).

- event_dates_vm.csv - Dates of former vice minister hires as reported in the Nihon Keizai Shimbun. Variable descriptions are as follows:
  - date_ret: date of bureaucrat retirement.
  - name: name of bureaucrat.
  - position_level: former position within the bureaucracy.
  - ministry_short: former ministry within the bureaucracy.
  - firm_dest: name of destination firm (in Japanese).
  - firm_dest_en: name of destination firm (in English).
  - post_dest: role hired for at re-hiring firm (in Japanese).
  - ticker: stock ticker of re-hiring firm.
  - when: date re-hire was reported in the Nihon Keizai Shumbun. NA dates were not reported.
  - position: role hired for at re-hiring firm (in English).

- jsy_agency_employees.csv - Data recording the total number of employees at ministries from the Japan Statistical Yearbook.
  - Wide format dataset containing the names of agencies and ministries and their total number of employees by year.
  - Each cell represents the number of employees in a given year for an agency or ministry.