Codebook for, "Comparing Dynamic Pies: A Strategy for Modeling Compositional Variables in Time and Space"

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Contents

1 Data Description 2

2 Program Description 5

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1 Data Description

- `fips`: State id variable.
- `year`: Year.
- `pct_ss`: % of expenditures spent on social services. Source: US Census Bureau's US Census of Governments Dataset ("State_Govt_Finances.mdb").
- `pct_lm`: % of expenditures spent on labor market policy. Source: US Census Bureau's US Census of Governments Dataset ("State_Govt_Finances.mdb").
- `pct_educat`: % of expenditures spent on education. Source: US Census Bureau's US Census of Governments Dataset ("State_Govt_Finances.mdb").
- `pct_pubserv`: % of expenditures spent on public services. Source: US Census Bureau's US Census of Governments Dataset ("State_Govt_Finances.mdb").
- `pct_oth`: % of expenditures spent on "other", which includes interest paid on the general debt, spending on utilities, liquor stores, the environment, and other expenditures not elsewhere classified. This category constitutes less than 10 percent of the budget, on average. Source: US Census Bureau's US Census of Governments Dataset ("State_Govt_Finances.mdb").
- `edu_ss`: $ln\left(\frac{Education}{SocialServices}\right)$. The natural log of education expenditures over social services.
- `pubserv_ss`: $ln\left(\frac{PublicServices}{SocialServices}\right)$. The natural log of public services expenditures over social services.
- `lm_ss`: $ln\left(\frac{LaborMarket}{SocialServices}\right)$. The natural log of labor market expenditures over social services.
- `oth_ss` : $ln\left(\frac{Other}{SocialServices}\right)$. The natural log of other expenditures over social services.
- `Wed_unemployment1`: Spatial-X variable of state unemployment. Source: Original unemployment data from the US Bureau of Labor Statistics.

- `real_pincome_pc`: Real state personal income, per capita. Source: US Bureau of Economic Analysis.

- `unemployment`: The state-wide rate of unemployment, expressed in %. Source: US Bureau of Labor Statistics.

- `demgov`: Dichotomous variable equal to 1 if the current governor is a Democrat, zero otherwise. Independent governors constitute only 18 state-years (about 1 percent of the data). Source: Klarner, Carl, 2013, "Governors Dataset", http://hdl.handle.net/1902.1/20408. IQSS Dataverse Network. V1.

- `dedu_ss`: $\Delta ln\left(\frac{Education}{SocialServices}\right)$. The change in education spending relative to social services.

- `dunemployment`: $\Delta Unemployment$. The change in unemployment.

- `dreal_pincome_pc`: $\Delta PersonalIncome$. The change in personal income.

- `dunemp_demgov`: $\Delta Unemployment \cdot Demgov$. The change in unemployment interacted with Democratic governor.

- `dincome_demgov`: The change in personal income interacted with Democratic governor.

- `dpubserv_ss`: $\Delta ln\left(\frac{PublicServices}{SocialServices}\right)$. The change in the logged-ratio of public services spending relative to social services.

- `dlm_ss`: $\Delta ln\left(\frac{LaborMarket}{SocialServices}\right)$. The change in the logged-ratio of labor market spending relative to social services.

- `doth_ss`: $\Delta ln\left(\frac{Other}{SocialServices}\right)$. The change in the logged-ratio of other spending relative to social services.

- `demgov_unemployment`: Unemployment interacted with Democratic governor.

- `demgov_Wed_unemployment`: Unemployment interacted with the spatial-X unemployment variable.

- `demgov_real_pincome_pc`: Democratic governor interacted with personal income per capita.
- `demgov_edu_ss`: Democratic governor interacted with $ln\left(\frac{Education}{SocialServices}\right)$.
- `demgov_pubserv_ss`: Democratic governor interacted with $ln\left(\frac{PublicServices}{SocialServices}\right)$.
- `demgov_lm_ss`: . Democratic governor interacted with $ln\left(\frac{LaborMarket}{SocialServices}\right)$.
- `demgov_oth_ss` : Democratic governor interacted with $ln\left(\frac{Other}{SocialServices}\right)$.
- `id`: ID variable needed for mapping using `spmap`. Source: US Census Bureau. Available at: https://www2.census.gov/geo/tiger/GENZ2013/cb_2013_us_state_500k.zip.
- `longitude` : Longitude of a state. Needed for mapping using `spmap`. Source: US Census Bureau. Available at: https://www2.census.gov/geo/tiger/GENZ2013/cb_2013_us_state_500k.zip.
- `latitude`: Latitude of a state. Needed for mapping using `spmap`. Source: US Census Bureau. Available at: https://www2.census.gov/geo/tiger/GENZ2013/cb_2013_us_state_500k.zip.
- `STATENS`: Variable needed for mapping using `spmap`. Source: US Census Bureau. Available at: https://www2.census.gov/geo/tiger/GENZ2013/cb_2013_us_state_500k.zip.
- `AFFGEOID`: Variable needed for mapping using `spmap`. Source: US Census Bureau. Available at: https://www2.census.gov/geo/tiger/GENZ2013/cb_2013_us_state_500k.zip.
- `GEOID`: Variable needed for mapping using `spmap`. Source: US Census Bureau. Available at: https://www2.census.gov/geo/tiger/GENZ2013/cb_2013_us_state_500k.zip.

- `STUSPS`: Variable needed for mapping using `spmap`. Source: US Census Bureau. Available at:
https://www2.census.gov/geo/tiger/GENZ2013/cb_2013_us_state_500k.zip.

- `NAME`: Name of the state. Source: US Census Bureau. Available at:
https://www2.census.gov/geo/tiger/GENZ2013/cb_2013_us_state_500k.zip.

- `LSAD`: Variable needed for mapping using `spmap`. Source: US Census Bureau. Available at:
https://www2.census.gov/geo/tiger/GENZ2013/cb_2013_us_state_500k.zip.

- `ALAND`: Variable needed for mapping using `spmap`. Source: US Census Bureau. Available at:
https://www2.census.gov/geo/tiger/GENZ2013/cb_2013_us_state_500k.zip.

- `AWATER`: Variable needed for mapping using `spmap`. Source: US Census Bureau. Available at:
https://www2.census.gov/geo/tiger/GENZ2013/cb_2013_us_state_500k.zip.

2 Program Description

We used three Stata programs in order to create the dynamic simulations shown in the paper. Each is described briefly below. We plan on releasing these commands in a suite of compositional time series programs shortly.

- `paneldynsimpieinter`: A program very similar to `dynsimpie` (Philips, Rutherford and Whitten 2016), but with additional options to add id's for the panel structure of the data, as well as allowing the user to add an interaction.

- `dynsimladderplot`: A program identical to `paneldynsimpieinter`, but instead of producing a "change-from-baseline" dynamic simulation, it creates a ladderplot, as shown in the main paper.

- `orderplot`: A graphing program that relies on the saved dataset from `paneldynsimpieinter` to create slope plots like the ones seen in the main paper.

References

Klarner, Carl. 2013. "Governors Dataset." http://hdl.handle.net/1902.1/20408. IQSS Dataverse Network. V1.

Philips, Andrew Q, Amanda Rutherford and Guy D. Whitten. 2016. "Dynsimpie: A program to examine dynamic compositional dependent variables." *Stata Journal* 16(3):662–677.