Big City Project Databook

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   3. prepared by Annie Hsu (yhsu6@uh.edu) June 18, 2020 for the Big City Project
4. Definitions of variables in Big City Project in “./Stata/final/Master\_80\_17\_all.dta”
   1. Identification Variables:

|  |  |
| --- | --- |
| msa\_sc | Metropolitan Statistical area code (name by Prof. Steve Craig) (Folder: MSA County Components or Top 50 list)  =0 if not in MSA (Only include in TX files) |
| BC | Dummy variable  =1 if big city, =2 if twin city,  =0 if incorporated suburbs in MSA, =. if not in MSA |

|  |  |
| --- | --- |
| id\_govs | ID (positions 1-2 = state, position 3 = type, positions 4-6 = county or county-type area where government is located, positions 7-9 = unit identifier) |
| govs\_state | State govs code from 01-51 |
| govs\_type | =1 County government  =2 City/municipality government  =3 Township government total  =4 Special district government  =5 School district government  Include the type 2, 3 as the incorporated city/suburbs in the MSA |
| govs\_cnty | County GOVS code |

|  |  |
| --- | --- |
| fips\_state | State FIPS code |
| fips\_cnty | County FIPS code |
| fips\_pl | Place FIPS code |

|  |  |
| --- | --- |
| year | Start from 1980 to 2012 (2017) |
| popcity | Population adjusted in place level |
| popcnty | Population adjusted in county level |
| popcity\_sub | Population aggregated to a total suburb population in each MSA |
| popcnty\_msa | Population aggregated in MSA level |
|  |  |

The population estimation process is described in the Appendix.

* 1. Financial Variables (more details are described in the Appendix):

|  |  |
| --- | --- |
| tottax | Total tax revenue |
| totexp | Total expenditure |
| totcur | Total current expenditure |
| totcap | Total capital outlay expenditure |
| totdebt | Total long-term debt outstanding |

|  |  |
| --- | --- |
| curedu | elementary and secondary education current expenditure |
| curfire | fire protection current expenditure |
| curhealth | health current expenditure |
| curhos | hospital current expenditure |
| curhigh | highway current expenditure |
| curhouscom | housing and community development current expenditure |
| curlib | library current expenditure |
| curpark | parks and recreation current expenditure |
| curpolice | police current expenditure |
| curwelf | public welfare current expenditure |

|  |  |
| --- | --- |
| capedu | elementary and secondary education capital expenditure |
| capfire | fire protection capital expenditure |
| caphealth | health capital expenditure |
| caphos | hospital capital expenditure |
| caphigh | highway capital expenditure |
| caphouscom | housing and community development capital expenditure |
| caplib | library capital expenditure |
| cappark | parks and recreation capital expenditure |
| cappolice | police capital expenditure |
| capwelf | public welfare capital expenditure |

|  |  |
| --- | --- |
| base\_cur | = curfire + curpolice + curpark + curhigh + curlib |
| tran\_cur | = curhealth + curhos + curhouscom + curwelf |
| base\_cap | = capfire + cappolice + cappark + caphigh + caplib |
| tran\_cap | = caphealth + caphos + caphouscom + capwelf |
| other\_cur | = totcur - curedu - base\_cur - tran\_cur |
| other\_cap | = totcap - capedu - base\_cap - tran\_cap |

1. All the finance variables are in the real term (2017).
2. If the finance variables are in “Suburb” weighted level: “\_sub”
3. If the finance variables are in “County” weighted level: “\_cnty”
4. If the finance variables are in “MSA” weighted level: “\_msa”
5. If the finance variables are in “Per Capita” term: “\_pc”
   1. Demographic/ Institutional Data Variables:

|  |  |
| --- | --- |
| Num\_sub | The numbers of incorporated cities/towns/villages in the MSA |
| Num\_sub\_pc | Normalize the “Num\_sub” with suburban population |

|  |  |
| --- | --- |
| Num\_council | Total number of city council members |

|  |  |
| --- | --- |
| lat\_BC | Latitude of the central city (source: CBD\_lat\_long\_2012.xls) |
| long\_BC | Longitude of the central city |

|  |  |
| --- | --- |
| lat\_cnty | Latitude of the county government  (source: Gaz\_counties\_national.txt) |
| long\_cnty | Longitude of the county government |
| lat\_city\_90 | Latitude of the city government (source: 1990.xlsx) |
| long\_city\_90 | Longitude of the city government |
| lat\_city\_00 | Latitude of the city government (source: 2000.xlsx) |
| long\_city\_00 | Longitude of the city government |
| lat\_city\_10 | Latitude of the city government (source: 2010.xlsx) |
| long\_city\_10 | Longitude of the city government |

**Gender**: (2010: Census)

|  |  |
| --- | --- |
| popmale | Population that is male |
| popfmale | Population that is female |

**Age**: (2010: Census)

|  |  |
| --- | --- |
| popunfour | Numbers of persons under 14 |
| popuneig | Numbers of persons under 18 |
| popuntwy | Numbers of persons under 20 |
| popuntwel | Numbers of persons under 25 |
| popeigsix | Numbers of persons between the ages of 18 and 65 |
| popabsix | Numbers of persons above 65 |

**Labor**: (2010: ACS)

|  |  |
| --- | --- |
| laborfrc | The number of persons employed over the age of 16 |
| popunemp | The number of persons over the age of 16 that are unemployed |

**Occupancy**: (2010: Census)

|  |  |
| --- | --- |
| numoccup | Numbers of housing units that are occupied |
| numvacant | Numbers of housing units that are vacant |
| numowner | Numbers of housing units that are owner occupied |
| numrenter | Numbers of housing units that are renter occupied |
| vacantrent | Numbers of housing units that are vacant for rent |
| vacantsale | Numbers of housing units that are vacant for sale |
| vacantocc | Numbers of housing units that are vacant for occasional |

**Foreign**: (2010: ACS)

|  |  |
| --- | --- |
| popforn | The number of persons that are foreign born |

**Income**: (2010: ACS)

(ref: 2018\_ACSSubjectDefinitions.pdf, P.81: income in the past 12 months)

|  |  |
| --- | --- |
| poppoor | Numbers of persons ~ income below poverty level |
| medfamin\_r\_pc | Median families income in real term (per capita) |
| medhouin\_r\_pc | Median households income in real term (per capita) |
| aggincome\_r\_pc | Aggregate income in the past 12 months (per capita) |

**Personal Income**: (BEA: Personal Income Summary, Metropolitan Statistical Area)

|  |  |
| --- | --- |
| personal\_income | Per capita personal income.  Raw: All dollar estimates are in thousands of current dollars (not adjusted for inflation).  Annie: Double check with Google, not in thousands. |
| personal\_income\_r\_pc | Per capita personal income in real dollar term. |
|  |  |

**Education**: (2010: ACS)

|  |  |
| --- | --- |
| popnodip | Numbers of persons over the age of 25 no high school diploma  (less than 12 grade) |
| pophs | Numbers of persons over the age of 25 with high school diploma |
| pophsnoba | Numbers of persons over the age of 25 beyond high school but no BA degree |
| popba | Numbers of persons over age 25 have HS / some college/associate degree (9th grade to 3 years of college) |
| popgrad | Numbers of persons over age 25 have BA or higher |

**Race**: (2010: Census)

|  |  |
| --- | --- |
| pophisp | Numbers of persons that are Hispanic |
| popwhite | Numbers of persons that are white |
| popblak | Numbers of persons that are black |
| popother | Numbers of persons that are other race (i.e. Asian) |

**Family/Household**: (2010: Census)

|  |  |
| --- | --- |
| families | Numbers of families |
| hshlds | Numbers of households |

**Residence**: (2010: ACS)

|  |  |
| --- | --- |
| popsmhs | Numbers of persons who are residing the same house as they did 5(1) years ago |
| popsmcn | Numbers of persons who are residing the same county as they did 5(1) years ago |
| popsmst | Numbers of persons who are residing the same state as they did 5(1) years ago |

**1980, 1990, 2000: Census: five years**

**2010-2017: ACS: one year**

* 1. NHGIS identifiers:

|  |  |
| --- | --- |
| NHGISPLACE | “G” + State FIPS code + “0” + Place NHGIS code (6 digits) |
| GISJOIN | “G” + State FIPS code + “0” + Place FIPS code (6 digits) |

**Appendix: Population estimation series 1970-2017 (Current)**

There are two different type of datasets: county and city population

1. County:
   * 1. Source:

1970-1979: "./Population/County\_pop\_data/Cnty7079.xlsx"

1980-1989: "./Population/County\_pop\_data/e8089co.xlsx"

1990-1999: "./Population/County\_pop\_data/pop9099.txt"

2000-2009: "./Population/County\_pop\_data/sub-est00int.csv"

2010-2019: "./Population/County\_pop\_data/sub-est2019\_all.csv"

* + 1. Output:

All MSA: "./Stata/Population/Master\_popcnty7019.dta"

TX MSA: "./Stata/Population/Master\_popcnty7019\_TX.dta"

* + 1. Variables:
       1. Include from the raw data:
          1. popCensus: 1970, 1980, 1990, 2000, 2010
          2. popBase: 1990, 2000, 2010
          3. popest: population estimation
       2. Use the “intercensal\_estimates\_methodology” to generate the “popBase”:

(Not apply in the actual data)

* + - * 1. Linear interpolation: Pt=P\_census\_t\*(12/15) + P\_estimation\_t+1\*(3/15)
        2. popBase1970/07/01=popCensus1970\*(12/15) + popest1971\*(3/15)
        3. popBase1980/07/01=popCensus1980\*(12/15) + popest1981\*(3/15)
        4. popBase1990/07/01=popCensus1990\*(12/15) + popest1991\*(3/15)
      1. Use the “convert Census population estimates to the population estimates” to have the “popcnty”: (only apply for 1990-2000)
         1. Calculate the Census Base Growth Rate
         2. Calculate the Estimated Pop Growth Rate
         3. Find the year specific Estimated Pop Growth Rate
         4. Calculate the Adjusted Population Estimate
         5. For all years from ~~1970 to 2010~~
         6. There are two exceptions:

popcnty1970,1980,1990,2000,2010 = popCensus1970,1980,1990,2000,2010

popcnty2011-2019 = popest2011-2019

* + - 1. Use the “Guide to data sources for census pop estimates series\_REV”from the “./Important/Methodology…/” to distinguish the difference between “Intercensal” and “Post-censal” / “Vintage”

1. City:
   * 1. Source:

1980-1989: "./Population/nhgis0001\_ts\_nominal\_place.xlsx"

1990-1999: "./Population/City\_pop\_data/pop9099.txt" (Same as county source)

2000-2009: "./Population/City\_pop\_data/sub-est00int.csv" (Same as county source)

2010-2019: "./Population/ City\_pop\_data /sub-est2019\_all.csv" (Same as county source)

* + 1. Output:

All MSA: "./Stata/Population/Master\_popcity8019\_complete.dta"  
TX MSA: "./Stata/Population/Master\_popcity8019\_TX.dta"

* + 1. Variables:
       1. Include from the raw data:
          1. popCensus: 1980, 1990, 2000, 2010
          2. popBase: 1990, 2000, 2010
          3. popest: population estimation
       2. Use the “intercensal\_estimates\_methodology” to generate the “popBase”:

(Not apply in the actual data)

* + - * 1. Linear interpolation: Pt=P\_census\_t\*(12/15) + P\_estimation\_t+1\*(3/15)
        2. popBase1990/07/01=popCensus1990\*(12/15) + popest1991\*(3/15)
      1. Use the “convert Census population estimates to the population estimates” to have the “popcity”: (Not apply in the actual data)
         1. Calculate the Census Base Growth Rate
         2. Calculate the Estimated Pop Growth Rate
         3. Find the year specific Estimated Pop Growth Rate
         4. Calculate the Adjusted Population Estimate
         5. For all years from ~~1980 to 2010~~
         6. There are two exceptions:

popcity1980,1990,2000,2010=popCensus1980,1990,2000,2010

popcity2011-2019=popest2011-2019

* + - * 1. Example:

Fips\_code: 48/201/35000

Variables from raw data:

popCensus2000: 1952631

popBase2000:      1973648

popest2000:        1855442

popest2001:        1979589

popCensus2010: 2099451

popBase2010:        2095517

g\_census = (popCensus2010/popCensus2000)^0.1

g\_est = (popBase2010/popBase2000)^0.1

g1 = popest2001/popBase2000

Formula:

popman2000 =  popCensus2000

popman2001 = popCensus2000\* {g1\*(g\_census/g\_est)}

After the manipulation:

popcity2000:      1953631

popcity2001:      1961962

* + - 1. Use the “intercensal estimates methodology” to have the “popcity”:
         1. Pop\_t = Q\_t (Pop\_3652/Q\_3652)^(t/3652)

“t” = days since 4/1/1990

“Pop\_t” = Population intercensal estimation at time t

“Q\_t” = Population post-censal estimation at time t

“Pop\_3652” = Census count population at 4/1/2000

“Q\_3652” = Population post-censal estimation at 4/1/2000

* + - * 1. Data missing:

id”012058801”(fipstpl”01,08920”): missing popest in 2000 from “sub-est00int.csv”

“replace popest2000 = popCensus2000 if popest2000 ==0”

Similar case: 36 in “Population\_city.do” #336

Indianapolis central city id”**152049008**”(fipstpl”**18,36000**”): code mismatch

NHGIS: fipstpl”18,36010”

pop9099.txt: fipstpl“18,36003”

sub-est00int.csv: fipstpl“18,36003”

sub-est2019\_all.csv: fipstpl“18,36003”

Louisville central city id”**182056014**”(fipstpl”**21,48000**”): code mismatch

sub-est00int.csv: fipstpl“21,48006”

sub-est2019\_all.csv: fipstpl“21,48006”

Check: Census 2000 (jump)

Nashville central city id”**432019003**”(fipstpl”**47,52004**”): code mismatch

NHGIS: fipstpl”47,52006”

pop9099.txt: fipstpl”47,52006”

sub-est00int.csv: fipstpl“47,52006”

sub-est2019\_all.csv: fipstpl“47,52006”

iv) Place code modification 1980-1989:

* + - 1. abington township:  
         replace fips\_pl = "156" if fips\_state=="42"& fips\_pl=="25"
      2. aston township  
         replace fips\_pl = "3336" if fips\_state=="42"& fips\_pl=="360"
      3. baldwin township  
         replace fips\_pl = "3932" if fips\_state=="42"& fips\_pl=="487"
      4. bensalem township  
         replace fips\_pl = "5616" if fips\_state=="42"& fips\_pl=="740"
      5. bristol township  
         replace fips\_pl = "8768" if fips\_state=="42"& fips\_pl=="1227"
      6. caldwell borough  
         replace fips\_pl = "9220" if fips\_state=="34"& fips\_pl=="9250"
      7. cheltenham township  
         replace fips\_pl = "12968" if fips\_state=="42"& fips\_pl=="1800"
      8. crescent township  
         replace fips\_pl = "17048" if fips\_state=="42"& fips\_pl=="2512"
      9. east deer township  
         replace fips\_pl = "21024" if fips\_state=="42"& fips\_pl=="3170"
      10. falls township

replace fips\_pl = "25112" if fips\_state=="42"& fips\_pl=="3876"

* + - 1. hanover township  
         replace fips\_pl = "32440" if fips\_state=="42"& fips\_pl=="4867"
      2. haverford township  
         replace fips\_pl = "33144" if fips\_state=="42"& fips\_pl=="4970"
      3. kilbuck township  
         replace fips\_pl = "39624" if fips\_state=="42"& fips\_pl=="5525"
      4. leet township  
         replace fips\_pl = "42368" if fips\_state=="42"& fips\_pl=="5740"
      5. lower chichester township  
         replace fips\_pl = "44888" if fips\_state=="42"& fips\_pl=="5991"
      6. lower merion township  
         replace fips\_pl = "44976" if fips\_state=="42"& fips\_pl=="5995"
      7. lower moreland township  
         replace fips\_pl = "45008" if fips\_state=="42"& fips\_pl=="5996"
      8. lower southampton township  
         replace fips\_pl = "45112" if fips\_state=="42"& fips\_pl=="6002"
      9. marple township

replace fips\_pl = "47616" if fips\_state=="42"& fips\_pl=="6300"

* + - 1. moraga town

replace fips\_pl = "49194" if fips\_state=="6"& fips\_pl=="49187"

* + - 1. neville township  
         replace fips\_pl = "53136" if fips\_state=="42"& fips\_pl=="6716"
      2. ohio township  
         replace fips\_pl = "56392" if fips\_state=="42"& fips\_pl=="6979"
      3. plymouth township  
         replace fips\_pl = "61664" if fips\_state=="42"& fips\_pl=="7278"
      4. ridley township

replace fips\_pl = "64800" if fips\_state=="42"& fips\_pl=="7481"

* + - 1. sunny isles beach city  
         replace fips\_pl = "69550" if fips\_state=="12"& fips\_pl=="69555"
      2. sweetwater city

replace fips\_pl = "70275" if fips\_state=="12"& fips\_pl=="70345"

* + - 1. upper chichester township

replace fips\_pl = "78776" if fips\_state=="42"& fips\_pl=="8405"

* + - 1. upper dublin township  
         replace fips\_pl = "79008" if fips\_state=="42"& fips\_pl=="8415"
      2. upper moreland township  
         replace fips\_pl = "79176" if fips\_state=="42"& fips\_pl=="8425"
      3. upper southampton township  
         replace fips\_pl = "79296" if fips\_state=="42"& fips\_pl=="8435"
      4. whitemarsh township  
         replace fips\_pl = "84624" if fips\_state=="42"& fips\_pl=="8894"
      5. Indianapolis city   
         replace fips\_pl = "36000" if fips\_state=="18" & fips\_pl=="36010"
      6. Nashville and Davidson county metropolitan government

replace fips\_pl = "52004" if fips\_state=="47" & fips\_pl=="52006"

* + 1. Place code modification 1990-1999:
       1. Indianapolis city

replace fips\_pl = "36000" if fips\_state=="18" & fips\_pl=="36003"

* + - 1. Nashville and Davidson county metropolitan government

replace fips\_pl = "52004" if fips\_state=="47" & fips\_pl=="52006"

* + 1. Place code modification 2000-2009:
       1. caldwell borough  
          replace fips\_pl = "9220" if fips\_st =="34" & fips\_pl=="9250"
       2. indianapolis city   
          replace fips\_pl = "36000" if fips\_st =="18" & fips\_pl=="36003"
       3. monroeville municipality   
          replace fips\_pl = "52330" if fips\_st =="42" & fips\_pl=="50528"
       4. moraga town   
          replace fips\_pl = "49194" if fips\_st =="6" & fips\_pl=="49187"
       5. murrysville municipality   
          replace fips\_pl = "52332" if fips\_st =="42" & fips\_pl=="52432"
       6. sunny isles beach city   
          replace fips\_pl = "69550" if fips\_st =="12" & fips\_pl=="69555"
       7. sweetwater city   
          replace fips\_pl = "70275" if fips\_st =="12" & fips\_pl=="70345"
    2. Place code modification 2010-2019:
       1. caldwell borough  
          replace fips\_pl = "9220" if fips\_st =="34" & fips\_pl=="9250"
       2. indianapolis city  
          replace fips\_pl = "36000" if fips\_st =="18" & fips\_pl=="36003"
       3. moraga town  
          replace fips\_pl = "49194" if fips\_st =="6" & fips\_pl=="49187"
       4. monroeville municipality  
          replace fips\_pl = "52330" if fips\_st =="42" & fips\_pl=="50528"
       5. murrysville municipality  
          replace fips\_pl = "52332" if fips\_st =="42" & fips\_pl=="52432"
       6. sunny isles beach city  
          replace fips\_pl = "69550" if fips\_st =="12" & fips\_pl=="69555"
       7. sweetwater city  
          replace fips\_pl = "70275" if fips\_st =="12" & fips\_pl=="70345"

1. Data details:

I collect the population data from NHGIS (1980-1990) and the estimation population from the Census (2011-2017)

* 1. NHGIS file: Population/nhgis0001\_ts\_nominal\_place.xlsx
     1. The files only include Decennial Census data (1970-2010, AV0AA1970, 1980, 1990, 2000 and 2010). There is another variables (AV0AA125: population estimation in 2012, from ACS)
     2. missing “MEADOWS CITY” and “WESTWORTH VILLAGE”
  2. The Census:
     1. missing “WESTMINISTER CITY”, “MARSHALL CREEK TOWN”, “MEADOWS CITY”, “SPRING VALLEY CITY” and “WESTWORTH VILLAGE”
  3. There are 3 declining cities:
     1. “SPRING VALLEY CITY” (fipstpl: 48.69812), (year: 1970-2000)
     2. “MARSHALL CREEK TOWN” (fipstpl:48.46782), (year: 1990-2000)
     3. “WESTMINISTER CITY” (fipstpl:48.77680), (year: 1980-2010)

**Appendix: Population estimation series 1970-2017 (Previous)**

1. Decennial Census year (1970, 1980, 1990, 2000, 2010): 100% counts
2. The other year: estimations or interpolate with decennial census data
3. All population data sources are come from the Census, I process them by four methods:
   1. **Stephanie file**: Old datasets/ SAS\_stuff/ suburbdata2.dta
      1. She collected data from 1980 to 1997. I only capture 1980-1990 population from the file “suburbdata2” because the population 100% count data updated every ten years and the population estimation data updated every year. (i.e. The estimation of the population in 1997 is reported differently from a different year and I can have a more updated version from Berina’s file.)
      2. The way she adjusted the population estimation is following this method:

Take 1982 population estimation as an example:

* + - 1. Calculated the census growth rate of the census bureau for each decade

i.e. Census1990/Census1980 = A

(2) Calculated the estimation growth rate for each decade

i.e. Estimate1990/ Estimate1980 = B

(3) Calculated the growth rate for every year

(hint: the base year is the decennial census year)

i.e. (Estimate1982/ Estimate1980) ^ (1/2) =C

(4) Adjust the estimation for every year (except the decennial census year)

i.e. New Estimate 1982 = Census1980 \* [C\*(A/B)]

(5) From Stephanie note:

“Population estimates were collected from the census bureau for the years of 1970-2000 for all years available. The years that were available are 1970, 1973, 1975, 1976, 1977, 1978, 1982, 1984, 1986, 1988, 1990, and all years during the 1990s. (1970’s estimates were obtained from the statistical abstract.) To estimate the “estimates” for the missing years, we used the constant average growth rate between the two existing estimates that surround the missing one. (Ex: Estimates for 1971 and 1972 were calculated by using the constant average growth rate between 1970 and 1973.) Using the estimate endpoints of 1970, 1978, 1980, 1990, and 1999, we calculate the constant average growth rate of the census bureau estimates for each decade. These growth rates are used to calculate census bureau estimate trend line points for each year (excluding 1979). Next, we calculate the deviation of each census bureau estimate (and our created estimate for 71, 72, 74, 81, 83, 85, 87 & 89) from the census bureau estimate trend line for each year. These deviations are applied to a trend line created from the constant average growth rate of the decennial census population counts in 1970, 1980, 1990, and 2000. In 1979, the new estimate is equal to the decennial trend line point, because there is no estimate of 1979 or 1980 to recreate this, so there is no deviation from the estimated trend line to apply here. This method keeps all of the information that the census bureau incorporated to make the estimates of population, but readjusts the endpoints according to the actual population counts on the decennial census years.”

(6) There are some exceptions to the above method, please check “Stephanie\_Big\_Cities\_Data\_Notes\_7\_09”.

b)    **Berina file**: Population/ population\_to be fixed\_90\_2012.xlsx

i)      She collected data from 1990 to 2012. I only capture the 1990-2010 population from the file “population\_to be fixed\_90\_2012.xlsx” because the population 100% count data updated every ten years and the population estimation data updated every year. (i.e. The estimation of the population in 2017 is updated from the Census website in 2020 already.)

ii)    The re-estimation method is showing above.

iii)   There are several sheets in her excel file, but I only use “pop values” and “incorporated”. I consider there are some incorporated cities are located in different counties. For example, Houston city(pt.) is located in three different counties so I aggregate the populations for a given place when the data was presented in parts of a city in each county. In the “incorporated” sheet, I presented the aggregate population in the “main” county where most city population located.

iv)   I create a dummy variable ”City\_pt” to distinguish between two sheets. (check: population.do, #128)

v) It didn’t include “WIMBERLEY VILLAGE” (fipstpl:4879624)

Census file: Population/ pop\_data\_10\_18/sub-est2018\_48.csv

i)      I update the population estimation data from the latest version.

<https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/cities/totals/>

ii)    It is important to know when county code is equal to 0, it displays the total population estimation from the incorporated city.

c)    **NHGIS file**: Population/ nhgis0001\_ts\_nominal\_place.xlsx

i)      I use NHGIS file as a backup source for missing population, because there are some missing cities(places) in the Stephanie and Berina’s file.

ii)    It only has decennial census data which is the 100% population count. Therefore, I had to interpolate with decennial census start and endpoints by assuming constant growth rate.

iii)   It is a better source compare to Gazetteer file because it start from the year 1970 instead of 1990.

d)     **Gazetteer file**: Gaz\_place/ 1990.xlsx, Gaz\_place/ 2000.xlsx, Gaz\_place/ 2010.xlsx

i)      I use gazetteer file as a backup source for missing population, because there are some missing cities(places) in the Stephanie and Berina’s file.

ii)    Same as NHGIS, the gazetteer file only has decennial census data, so I follow the same method to interpolate the missing values.

iii) It starts from the year 1990.

**Appendix: Finance data**

1. Data Source: <https://www2.census.gov/programs-surveys/gov-finances/datasets/>
   1. The historical data: IndFin\_67\_12
      1. All the raw txt files spilt into three parts: a, b, c
      2. All the text files are in folder ”Raw”
      3. The user guides are in “IndFin\_1967-2012”
   2. The update annual data: 1992-2017

(Missing in cities level: 1993, 1994, 2007, 2008, 2009, 2010, 2011)

* + 1. I substring the item by using the “Documentation/Important/methodology\_for\_summary\_tabulations.xls” which download from: <https://www2.census.gov/programs-surveys/gov-finances/technical-documentation/classification-manual/>

1. Data manipulation:
   1. Some of the cities (except the big city) report their finance data every five years. Therefore, it is an “unbalanced” panel dataset and the time variable is with gaps.
   2. Estimate the “estimates” for the missing years by using the constant average growth rate between the two existing estimates that surround the missing one. (i.e. Estimates for 1971 and 1972) were calculated by using the constant average growth rate between 1970 and 1973.)
   3. There are two possible values for the finance variables: non-zero and zero. Therefore, there are three possible outcomes when we calculate the growth rate: non-zero, zero and “.” (when the denominator is zero). I use the command in Stata to read the value from the forward year; otherwise, replace the missing value with zero.
   4. It is more clear when you check the part: “Code Review“

**Appendix: Latitude and longitude data**

1. The CBD: “./Gaz\_place/CBD\_lat\_long\_2012.xls”
   1. Not include in the excel file:
      1. Place code modification:
         1. Indianapolis city (balance): 39.767721, -86.153535
         2. Louisville/Jefferson County metro government (balance): 38.254156, -85.759416
         3. Nashville-Davidson metropolitan government (balance):

36.16775, -86.784476

* + 1. Manually search from the Google map:
       1. Search city hall: Fort Worth, Oakland
       2. Right click the red pin, choose “What’s here?”
       3. Fort Worth City Hall: 32.749087, -97.330802
       4. Oakland City Hall: 37.805408, -122.272327

1. The 1990: “./Gaz\_place/1990.xlsx”
   1. Indianapolis city: 39776400, -86146196
   2. Nashville-Davidson (remainder): 36171550, -86784829
2. The 2000: “./Gaz\_place/2000.xlsx”
   1. Oakland city: 37.795227, -122.228111
   2. Indianapolis city (balance): 39.790942, -86.147685
   3. Nashville-Davidson (balance): 36.154838, -86.762141
3. The 2010: “./Gaz\_place/2010.xlsx”
   1. Indianapolis city (balance): 39.776664, -86.145935
   2. Louisville/Jefferson County metro government (balance): 38.178077, -85.666708
   3. Nashville-Davidson metropolitan government (balance): 36.1718, -86.785002

**Appendix: Code Review ( #: the number of line in Stata do file)**

1. Master.do
   1. #5-: using the “Cross-walk” file to generate the MSA list and the BC dummy. Therefore, we can have both the “Govs” code and “Fips” code.
      1. We should notice that the file only includes type = 2, 3 which are city-town-village level. There is no county-level (type =1) in this cross-walk file.
      2. If we only target the state of Texas, we notice there is only type 2 level.
      3. I call the MSA-list “Master.dta” which can help us merge the population and finance data.
   2. #363-: I generate the big city list which can help me organize the education variable in the “Cleaner.do”.
      1. The education variable is calculated at the county-level. Even though school districts follow state boundaries, we use the county level to capture the aggregate amount of education expenditure.
   3. #371-: I merge the “Master” file with the “pop\_90\_17.dta” which come from the Census and also from the excel which is collected by Berina

(More detail: Appendix: Population).

* + 1. There are some places (i.e.: Center Point city, AL, Balance of Blount County, AL, Balance of Jefferson County) are only in Berina’s file not in the “Master” file (\_merge==2). We need to drop them.
    2. #bysort fips\_state fips\_cnty fips\_pl:egen xx=count(\_n)
       1. Using the code to see the discontinuity of each place, we can notice:
          1. BRANCHVILLE TOWN (ST CLAIR) (01,115,08920): not exist after 2000, a new place.
          2. MORAGA TOWN (CONTRA COSTA)( 06,013,49194): Change the place code after 2000
          3. ISLANDIA CITY (MIAMI-DADE)( 12,086,34175): Is missing from the Berina file, need to use “NHGIS” to capture the population amount.
  1. #381-: I use the “Master” file with the “pop\_80\_89\_stephine” which comes from the dataset provided by Stephanie.

e)    #390-: Capture the (\_merge=1) to have the place code exist in the Master file but not in Berina and Stephanie’s file. We need to use the backup file: NHGIS (or Gazetteer) to complete the data, especially the part from 1980-1990.

f)     #409-: Use the “Master” file to merge the “NHGIS” or “Gazetteer” file, we drop the part before 1980.

g)    #426-: Append the Stephanie, Berina, the NHGIS, and the Gazetteer file.

h) #442-: I merge the Master file with the finance data.

i)     #448: I need to have the panelid id list before I interpolate the finance data.

j)    #456-: I need to interpolate the finance data by assuming the constant growth rate.

k)    #516-: I need the latitude and longitude date from the Gazetteer file

l)    #548-: I merge the finance data with the population data, the CPI data and the latitude & longitude data.

* + 1. #566-: I calculate the finance variable in suburban-level, in MSA-level and in county level.
    2. #578-: I generate the variable which display “number of suburbs”.
    3. #589-: I calculate the finance variable in per capita term.

m)#636-: I generate the variable which display “number of council seats”

1. Population.do
   1. #18-: The population file which provided by Berina.
   2. #372-: The population estimation data which provided from the Census.
   3. #507-: The population dataset provided by Stephanie.
   4. #530-: Generate the list of places (no population data)
   5. #541-: The population data which is provided from the NHGIS file.
   6. #635-: The population data which is provided from the Gazetteer file.
2. Cleaner70\_12.do
   1. #21-: Transfer the text file into .dta file.
   2. #66-: Extract different variables from different files.
   3. #126-: Merge the files from different parts.
   4. #156-: Append the file from different years.
   5. #170-: Rename the variables.
3. Cleaner12\_17.do
   1. #19-: Substring the string variables and the description is provided from the

“S&L Indiv Unit Data File Tech Doc.pdf”

* 1. #28-: Define all the finance variables which are included in this project.
  2. #288-: “String” the identification variables and fill in “0” if “id\_govs” is less than 9 digits.
  3. #304-: Append the data from different years.

**Appendix: Reference**

1. This databook is based on several documentations provided from Stephanie and Berina.
   1. **Folder: Documentation / Important**
   2. Stephanie\_Big\_Cities\_Data\_Notes\_7\_09.docx
   3. Big\_City\_Databook.doc
   4. Berina\_Big Cities Data Project Guidelines.pdf
   5. Berina source for Pop files.pdf
   6. Appendix II\_notes\_on\_data\_construction\_1980\_1989\_paper.docx
2. The population estimation:
   1. Folder: Documentation/Important/ Methodology Census Population Estimates Series
   2. 2019-vintage-natstcopr-methv2.pdf
   3. Intercensal Estimates Methodology.pdf
   4. To Convert Census Population Estimates to Our Population Estimates\_2020.docx
   5. 2000-2010 intercensal estimates methodology.pdf
   6. Guide to data sources for census pop estimates series\_REV.xlsx

Related link:

<https://www.census.gov/programs-surveys/cps/technical-documentation/subject-definitions.html>

<https://www.census.gov/glossary/#term_income>

<https://www.bea.gov/index.php/news/blog/2012-08-14/personal-income-more-your-paycheck>

Extra link:

ICPSR, keyword: decennial census, county business pattern

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paul.j.mackun@census.gov

pop estimation

**Appendix: A brief dictionary**

|  |  |  |  |
| --- | --- | --- | --- |
| Include in file A | | | |
| Revenue | | | |
| Variable name | Variable Component | | Description |
| totalrevenue | Category: B, C, D, T, A, U, X, Y | | Total Revenue |
| generalrevenue | Category: B, C, D, T, A, U | | General Revenue |
| totaligrevenue | Category: B, C, D | | Total IG Revenue |
| totalfedigrevenue | Category: B | | Total Fed IG Revenue |
| totalstateigrevenue | Category: C | | Total State IG Revenue |
| totlocaligrev | Category: D | | Tot Local IG Rev |
| genrevownsources | Category: T, A, U | | Gen Rev-Own Sources |
| totaltaxes | Category: T | | Total Taxes |
| propertytax | Item: T01 | | Property Tax |
| totsalesgrrectax | Item: T09, T10, T11, T12, T13, T14, T15, T16, T19 | | Tot Sales and Gross Receipts |
| totalgensalestax | Item: T09 | | Total General Sales Tax |
| totalselectsalestax | Item: T10, T11, T12, T13, T14, T15, T16, T19 | | Total Selective Sales Tax |
| individualincometax | Item: T40 | | Individual Income Tax |
| corpnetincometax | Item: T41 | | Corporate Income Tax |
| motorvehiclelicense | Item: T24 | | Motor Vehicle License Tax |
| totchgsandmiscrev | Category: A, U | | Charges and Miscellaneous Gen Rev |
| totalgeneralcharges | Category: A | | Total General Charges |
| chgtotaleducation | Item: A09, A10, A12, A16, A18, A21 | | Chg-Total Education |
| chgtotalhighed | Item: A16, A18 | | Chg-Total High Ed |
| chghospitals | Item: A36 | | Chg-Hospitals |
| chgregularhighways | Item: A44 | | Chg-Regular Highways |
| chgtollhighways | Item: A45 | | Chg-Toll Highways |
| chgairtransportation | Item: A01 | | Chg-Air Transportation |
| chgparking | Item: A60 | | Chg-Parking |
| chgtotalnatres | Item: A56, A59 | | Chg-Total Nat Res |
| chgparksrecreation | Item: A61 | | Chg-Parks & Recreation |
| chghousingcommdev | Item: A50 | | Chg-Housing & Comm Dev |
| chgsewerage | Item: A80 | | Chg-Sewerage |
| chgsolidwastemgmt | Item: A81 | | Chg-Solid Waste Mgmt |
| chgwatertransport | Item: A87 | | Chg-Water Transport |
| chgallothernec | Item: A89 | | Chg-All Other NEC |
| miscgeneralrevenue | Category: U | | Misc General Revenue |
| totalutilityrevenue | Item: A91, A92, A93, A94 | | Total Utility Revenue |
| waterutilityrevenue | Item: A91 | | Water Utility Revenue |
| electricutilityrev | Item: A92 | | Electric Utility Revenue |
| gasutilityrev | Item: A93 | | Gas Utility Rev |
| transitutilityrev | Item: A94 | | Transit Utility Rev |
| liquorstoresrevenue | Item: A90 | | Liquor Stores Revenue |
| totalfedigrevenue | Category: B | | Total Federal IG |
| fedigrairtransport | Item: B01 | | Fed IG Air Transportation |
| fedigreducation | Item: B21 | | Fed IG Education |
| fedigrempsecadm | Item: B22 | | Fed IG Emp Security Admin |
| fedigrgensupport | Item: B30 | | Fed IG General Support |
| fedigrhealthhos | Item: B42 | | Fed IG Health & Hospitals |
| fedigrhighways | Item: B46 | | Fed IG Highways |
| fedigrhouscomdev | Item: B50 | | Fed IG Housing & Comm Dev |
| fedigrnaturalres | Item: B59 | | Fed IG Other Natural Resources |
| fedigrpublicwelf | Item: B79 | | Fed IG Public Welfare |
| fedigrsewerage | Item: B80 | | Fed IG Sewerage |
| fedigrother | Item: B89 | | Fed IG Other |
| totalstateigrevenue | Category: C | | Total State IG |
| stateigreducation | Item: C21 | | State IG Education |
| stateigrothgensup | Item: C30 | | State IG General Support |
| stateigrhealthhos | Item: C42 | | State IG Health & Hospitals |
| stateigrhighways | Item:C46 | | State IG Highways |
| stateigrhouscomdev | Item: C50 | | State IG Housing & Comm Dev |
| stateigrpublicwelf | Item: C79 | | State IG Public Welfare |
| stateigrsewerage | Item: C80 | | State IG Sewerage |
| stateigrother | Item: C89 | | State IG Other |
| totlocaligrev | Category: D | | Total Local IG |
| localigrinterschoolaid | Item: D11 | | School Intergovernmental - Interschool System |
| totalinsurtrustrev | Item: X01, X02, X05, X08, Y01, Y02, Y04, Y11, Y12, Y51, Y52 | | Total Insurance Trust Rev |
| totalempretrev | Item: X01, X02, X05, X08 | | Total Emp Ret Rev |
| totalunemprev | Item: Y01, Y02, Y04 | | Total Unemp Rev |
| Expenditure (110) |  | |  |
| totalexpenditure | Category: E, I, J, X, Y, F, G, K, L, M, Q, S (X11?) | | Total Expenditure |
| totaligexpenditure | Category: L, M, Q, S | | Total IG Expenditure |
| directexpenditure | Category: E, F, G, I, J; Item: X11,X12 | | Direct Expenditure |
| totalcurrentoper | Category: E | | Total Current Operation |
| totalcapitaloutlays | Category: F, G | | Total Capital Outlays |
|  | | | |
|  | Category: F | | Total Construction |
|  | Category: G | | Other Capital Outlays |
| totassistsubsidies | Category: J | | Total Assist & Subsidies |
| totalinterestondebt | Category: I | | Total Interest on Debt |
| totalinsurtrustben | Category: X, (Y) | | Total Insurance Trust Benefits |
| totalsalarieswages | Item: Z00 | | Total Salaries & Wages |
| airtransdirectexpend | Item: E01, F01, G01 | | Air Trans-Direct Expend |
| airtranscuroper | Item: E01 | | Air Trans-Current Operation |
| airtranscapoutlay | Item: F01, G01 | | Air Trans-Cap Outlay |
| airtransconstruction | Item: F01 | | Air Trans-Construction |
|  |  | |  |
|  | Include in file B | |  |
|  |  | |  |
| misccomactivtotexp | Item: E03, F03, G03 | | Misc Com Activ-Tot Exp |
| misccomactivcuroper | Item: E03 | | Misc Com Activ-Cur Operation |
| misccomactivcapout | Item: F03, G03 | | Misc Com Activ-Cap Out |
| misccomactivconstr | Item: F03 | | Misc Com Activ-Constr |
|  |  | |  |
| correctdirectexp | Item: E04, F04, G04, E05, F05, G05 | | Correct-Direct Exp |
| correctcuroper | Item: E04, E05 | | Correct-Current Operation |
| correctcapoutlay | Item: F04, G04, F05, G05 | | Correct-Cap Outlay |
| correctconstruct | Item: F04, F05 | | Correct-Construct |
|  |  | |  |
| totaleductotalexp | Item: E12, F12, G12, E16, F16, G16, E18, F18, G18, J19, E21, F21, G21 | | Total Educ-Total Exp |
| totaleducdirectexp | Item: E12, E16, E18, E21, F12, F16, F18, F21, G12, G16, G18, G21 | | Total Educ-Direct Exp |
| totaleduccuroper | Item: E12, E16, E18, E21 | | Total Educ-Cur Operation |
| totaleduccapoutlay | Item: F12, F16, F18, F21, G12, G16, G18, G21 | | Total Educ-Cap Outlay |
| totaleducconstruct | Item: F12, F16, F18, F21 | | Total Educ-Construct |
|  |  | |  |
| elemeductotalexp | Item: E12, F12, G12 | | Elem Educ-Total Exp |
| elemeducdirectexp | Item: E12, F12, G12 | | Elem Educ-Direct Exp |
| elemeduccuroper | Item: E12 | | Elem Educ-Cur Operation |
| elemeduccapoutlay | Item: F12, G12 | | Elem Educ-Cap Outlay |
| elemeducconstruction | Item: F12 | | Elem Educ-Construction |
| higheredtotalexp | Item: E16, E18, F16, F18, G16, G18 | | Higher Ed-Total Exp |
| highereddirectexp | Item: E16, E18, F16, F18, G16, G18 | | Higher Ed-Direct Exp |
| higheredcuroper | Item: E16, E18 | | Higher Ed-Cur Operation |
| higheredcapoutlay | Item: F16, F18, G16, G18 | | Higher Ed-Cap Outlay |
| higheredconstruct | Item: F16, F18 | | Higher Ed-Construct |
|  |  | |  |
| empsecadmdirectexp | Item: E22, F22, G22 | | Emp Sec Adm-Direct Exp |
| empsecadmcuroper | Item: E22 | | Emp Sec Adm-Cur Operation |
| empsecadmcapoutlay | Item: F22, G22 | | Emp Sec Adm-Cap Outlay |
| empsecadmconstruct | Item: F22 | | Emp Sec Adm-Construct |
|  |  | |  |
| finadmindirectexp | Item: E23, F23, G23 | | Fin Admin-Direct Exp |
| finadmincuroper | Item: E23 | | Fin Admin-Cur Operation |
| finadmincapoutlay | Item: F23, G23 | | Fin Admin-Cap Outlay |
| finadminconstruction | Item: F23 | | Fin Admin-Construction |
|  |  | |  |
| fireprotdirectexp | Item: E24, F24, G24 | | Fire Prot-Direct Exp |
| fireprotcuroper | Item: E24 | | Fire Prot- Cur Operation |
| fireprotcapoutlay | Item: F24, G24 | | Fire Prot-Cap Outlay |
| fireprotconstruction | Item: F24 | | Fire Prot-Construction |
|  |  | |  |
| judicialdirectexpend | Item: E25, F25, G25 | | Judicial-Direct Expend |
| judicialcuroper | Item: E25 | | Judicial-Cur Operation |
| judicialcapoutlay | Item: F25, G25 | | Judicial-Cap Outlay |
| judicialconstruction | Item: F25 | | Judicial-Construction |
|  |  | |  |
| censtaffdirectexp | Item: E26, F26, G26 | | Cen Staff-Direct Exp |
| censtaffcuroper | Item: E26 | | Cen Staff-Cur Operation |
| censtaffcapoutlay | Item: F26, G26 | | Cen Staff-Cap Outlay |
| censtaffconstruction | Item: F26 | | Cen Staff-Construction |
|  |  | |  |
| genpubbldgtotalexp | Item: E31, F31, G31 | | Gen Pub Bldg-Total Exp |
| genpubbldgcuroper | Item: E31 | | Gen Pub Bldg-Cur Operation |
| genpubbldgcapout | Item: F31, G31 | | Gen Pub Bldg-Cap Out |
| genpubbldgconstruct | Item: F31 | | Gen Pub Bldg-Construct |
|  |  | |  |
| healthdirectexpend | Item: E32, F32, G32 | | Health-Direct Expend |
| healthcuroper | Item: E32 | | Health-Current Oper |
| healthcapitaloutlay | Item: F32, G32 | | Health-Capital Outlay |
| healthconstruction | Item: F32 | | Health-Construction |
|  |  | |  |
| totalhospitaldirexp | Item: E36, F36, G36 | | Total Hospital-Dir Exp |
| totalhospitalcuroper | Item: E36 | | Total Hospital-Current Oper |
| totalhospitalcapout | Item: F36, G36 | | Total Hospital-Cap Out |
| totalhospitalconstruct | Item: F36 | | Total Hospital-Construct |
|  |  | |  |
| totalhighwaysdirexp | Item: E44, F44, G44, E45, F45, G45 | | Total Highways-Dir Exp |
| totalhighwaycuroper | Item: E44, E45 | | Total Highways-  Current Oper |
| totalhighwayscapout | Item: F44, G44, F45, G45 | | Total Highways-Cap Out |
| totalhighwaysconstruct | Item: F44, F45 | | Total Highways-Construct |
| regularhwydirectexp | Item: E44, F44, G44 | | Regular Hwy-Direct Exp |
| regularhwycuroper | Item: E44 | | Regular Hwy-Cur Operation |
| regularhwycapoutlay | Item: F44, G44 | | Regular Hwy-Cap Outlay |
| regularhwyconstruct | Item: F44 | | Regular Hwy-Construct |
| tollhwytotalexpend | Item: E45, F45, G45 | | Toll Hwy-Total Expend |
| tollhwycuroper | Item: E45 | | Toll Hwy-Cur Operation |
| tollhwycapoutlay | Item: F45, G45 | | Toll Hwy-Cap Outlay |
| tollhwyconstruction | Item: F45 | | Toll Hwy-Construction |
|  |  | |  |
| houscomdirectexp | Item: E50, F50, G50 | | Hous & Com-Direct Exp |
| houscomcuroper | Item: E50 | | Hous & Com-Current Oper |
| houscomcapoutlay | Item: F50, G50 | | Hous & Com-Cap Outlay |
| houscomconstruct | Item: F50 | | Hous & Com-Construct |
|  |  | |  |
| librariesdirectexp | Item: E52, F52, G52 | | Libraries-Direct Exp |
| librariescuroper | Item: E52 | | Libraries- Current Oper |
| librariescapoutlay | Item: F52, G52 | | Libraries-Cap Outlay |
| librariesconstruction | Item: F52 | | Libraries-Construction |
|  |  | |  |
| naturalresdirectexp | Item: E55, F55, G55, E56, F56, G56, E59, F59, G59 | | Natural Res-Direct Exp |
| naturalrescuroper | Item: E55, E56, E59 | | Natural Res-Cur Oper |
| naturalrescapoutlay | Item: F55, G55, F56, G56, F59, G59 | | Natural Res-Cap Outlay |
| naturalresconstruct | Item: F55, F56, F59 | | Natural Res-Construct |
|  |  | |  |
| parkingdirectexpend | Item: E60, F60, G60 | | Parking-Direct Expend |
| parkingcuroper | Item: E60 | | Parking- Current Oper |
| parkingcapitaloutlay | Item: F60, G60 | | Parking-Capital Outlay |
| parkingconstruction | Item: F60 | | Parking-Construction |
|  |  | |  |
| parksrecdirectexp | Item: E61, F61, G61 | | Parks & Rec-Direct Exp |
| parksreccuroper | Item: E61 | | Parks & Rec- Current Oper |
| parksreccapoutlay | Item: F61, G61 | | Parks & Rec-Cap Outlay |
| parksrecconstruct | Item: F61 | | Parks & Rec-Construct |
|  |  | |  |
| policeprotdirectexp | Item: E62, F62, G62 | | Police Prot-Direct Exp |
| policeprotcuroper | Item: E62 | | Police Prot-Current Oper |
| policeprotcapoutlay | Item: F62, G62 | | Police Prot-Cap Outlay |
| policeprotconstruct | Item: F62 | | Police Prot-Construct |
|  |  | |  |
| protinspdirectexp | Item: E66, F66, G66 | | Prot Insp-Direct Exp |
| protinspcuroper | Item: E66 | | Prot Insp-Cur Operation |
| protinspcapoutlay | Item: F66, G66 | | Prot Insp-Cap Outlay |
| protinspconstruction | Item: F66 | | Prot Insp-Construction |
|  |  | |  |
| publicwelftotalexp | Item: J67, J68, E74, E75, E77, F77, G77, E79, F79, G79 | | Public Welf-Total Exp |
| publicwelfdirectexp | Item: E74, E75, E77, F77, G77, E79, F79, G79 | | Public Welf-Direct Exp |
| publicwelfcuroper | Item: E74, E75, E77, E79 | | Public Welf- Current Oper |
| publicwelfcashasst | Item: J67, J68 | | Public Welf-Cash Asst |
| publicwelfcapoutlay | Item: F77, F79, G77, G79 | | Public Welf-Cap Outlay |
| publicwelfconstruct | Item: F77, F79 | | Public Welf-Construct |
|  |  | |  |
|  | Include in file C | |  |
|  |  | |  |
| seweragedirectexpend | Item: E80, F80, G80 | | Sewerage-Direct Expend |
| seweragecuroper | Item: E80 | | Sewerage-Cur Operation |
| seweragecapoutlay | Item: F80, G80 | | Sewerage-Cap Outlay |
| sewerageconstruction | Item: F80 | | Sewerage-Construction |
|  |  | |  |
| swmgmtdirectexpend | Item: E81, F81, G81 | | SW Mgmt-Direct Expend |
| swmgmtcuroper | Item: E81 | | SW Mgmt-Cur Operation |
| swmgmtcapitaloutlay | Item: F81, G81 | | SW Mgmt-Capital Outlay |
| swmgmtconstruction | Item: F81 | | SW Mgmt-Construction |
|  |  | |  |
| watertransdirectexp | Item: E87, F87, G87 | | Water Trans-Direct Exp |
| watertranscuroper | Item: E87 | | Water Trans-Cur Operation |
| watertranscapoutlay | Item: F87, G87 | | Water Trans-Cap Outlay |
| watertransconstruct | Item: F87 | | Water Trans-Construct |
|  |  | |  |
| interestongendebt | Item: I89 | | Interest on Gen Debt |
| generalnecdirectexp | Item: E89, F89, G89 | | General NEC-Direct Exp |
| generalneccuroper | Item: E89 | | General NEC-Cur Operation |
| generalneccapoutlay | Item: F89, G89 | | General NEC-Cap Outlay |
| generalnecconstruct | Item: F89 | | General NEC-Construct |
|  | | | |
| liquorstorestotexp | Item: E90, F90, G90 | | Liquor Stores-Tot Exp |
| liquorstorescuroper | Item: E90 | | Liquor Stores-Cur Operation |
| liquorstorescapout | Item: F90, G90 | | Liquor Stores-Cap Out |
| liquorstoresconstr | Item: F90 | | Liquor Stores-Constr |
|  |  | |  |
|  |  |
| totalutiltotalexp | Item: E91, F91, G91, I91, E92, F92, G92, I92, E93, F93, G93, I93, E94, F94, G94, I94 | | Total Util-Total Exp |
| totalutilinterexp | Item: I91, I92, I93, I94 | | Total Util-Inter Exp |
| totalutilcuroper | Item: E91, E92, E93, E94 | | Total Util- Current Oper |
| totalutilcapoutlay | Item: F91, G91, F92, G92, F93, G93, F94, G94 | | Total Util-Cap Outlay |
| totalutilconstruct | Item: F91, F92, F93, F94 | | Total Util-Construct |
|  | | | |
| waterutiltotalexp | Item: E91, F91, G91, I91 | | Water Util-Total Exp |
| waterutilinterexp | Item: I91 | | Water Util-Inter Exp |
| waterutilcuroper | Item: E91 | | Water Util-Cur Oper |
| waterutilcapoutlay | Item: F91, G91 | | Water Util-Cap Outlay |
| waterutilconstruct | Item: F91 | | Water Util-Construct |
|  | | | |  |  |
| elecutiltotalexp | Item: E92, F92, G92, I92 | | Elec Util-Total Exp |
| elecutilinterexp | Item: I92 | | Elec Util-Inter Exp |
| elecutilcuroper | Item E92 | | Elec Util-Cur Operation |
| elecutilcapoutlay | Item: F92, G92 | | Elec Util-Cap Outlay |
| elecutilconstruct | Item: F92 | | Elec Util-Construct |
|  |  | |  |
| gasutiltotalexp | Item: E93, F93, G93, I93 | | Gas Util-Total Exp |
| gasutilinterexp | Item: I93 | | Gas Util-Inter Exp |
| gasutilcuroper | Item: E93 | | Gas Util-Cur Operation |
| gasutilcapoutlay | Item: F93, G93 | | Gas Util-Cap Outlay |
| gasutilconstruct | Item: F93 | | Gas Util-Construct |
|  |  | |  |
| transutiltotalexp | Item: E94, F94, G94, I94 | | Trans Util-Total Exp |
| transutilinterexp | Item: I94 | | Trans Util-Inter Exp |
| transutilcuroper | Item: E94 | | Trans Util-Cur Operation |
| transutilcapoutlay | Item: F94, G94 | | Trans Util-Cap Outlay |
| transutilconstruct | Item: F94 | | Trans Util-Construct |
|  | Item: X11 | |  |
| empretwithdrawals | Item: X12 | | Emp Ret-Withdrawals |
| unempcompbenpaymts | Item: Y05 | | Unemp Comp-Ben Paymts |
| unempextspecpmts | Item: Y06 | | Unemp-Ext & Spec Pmts |
| Debt (5) |  | |  |
| totaldebtoutstanding | Item: 44T, 49U, 64V | | Total Debt Outstanding |
| stdebtendofyear | Item: 64V | | ST Debt-End of Year |
| totallongtermdebtout | Item: 44T, 49U | | Total LTD Out |
| totalltdissued | Item: 24T, 29U | | Total LTD Issued |
| totalltdretired | Item: 34T, 39U | | Total LTD Retired |
| Cash and Security Holdings (10) | | | |
| totalcashsecurities | Item: W01, W31, W61, X21, X30, Z77, Z78, X42, X44, X47, Y07, Y08, Y21, Y61 | | Total Cash & Securities |
| insurtrustcashsec | Item: X21, X30, Z77, Z78, X42, X44, X47, Y07, Y08, Y21, Y61 | | Insur Trust-Cash & Sec |
| empretirecashdep | Item: X21 | | Emp Retire-Cash & Dep |
| empretiresectotfed | Item: X30 | | Emp Retire-Sec-Tot Fed |
| empretiresecmortgages | Item: X42 | | Emp Retire-Sec-Mortgages |
|  | | | |
| unempcompbalinustrs | Item: Y07 | | Unemp Comp-Bal In US Trs |
| nonintrustcashsec | Item: W01, W31, W61 | | Nonin Trust-Cash & Sec |
| sinkingfdcashsec | Item: W01 | | Sinking Fd-Cash & Sec |
| bondfdcashsec | Item: W31 | | Bond Fd-Cash & Sec |
| othnoninfdcashsec | Item: W61 | | Oth Nonin Fd-Cash & Sec |
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Note:

1. There are some important equations:
   1. Capital Outlay = Other Capital Outlay + Construction
   2. Direct expenditure = Current operation + Capital Outlay
   3. Total expenditure = Direct expenditure + Intergovernmental expenditure
2. STOCK and FLOW variable:
   1. Stock: totaldebtoutstanding, stdebtendofyear, totallongtermdebtout
   2. Flow: totalltdissued, totalltdretired
   3. If there is a missing value: Stock (extropolate), Flow (fill in zero)
   4. Dummy: =1, if the raw data exist.
3. Important detail:
   1. The historical data(67-12) didn’t include the “fireprotcuroper”, “healthcuroper”, “totalhospitalcuroper”, “totalhighwaycuroper”, “houscomcuroper”, “librariescuroper”, “parkingcuroper”, “parksreccuroper”, “policeprotcuroper”, “publicwelfcuroper”, “totalutilcuroper”: Calculated by formula (direct exp – capital outlay)

Source: Methodologyfor\_summary\_tabulations.xls

(2010 Publication Aggregates -- State & Local Government Finance)

Some MISTAKES in the METHODOLOGY excel:

1. Total Expenditure (56): the first L67 is a typo (it should be "J67"), double-counting E44 G79, doesn't include L50, shouldn't include S74  
2. Intergovernmental Expenditure (57): excel adds L50, double-counting M52  
3. Direct Expenditure (58): double counting F18     
3. Capital Outlay (60): excel does not include F60-F90  
4. Construction (61): excel does not include F60-F90  
5. Direct Expenditure (67): double counting G79  
6. Other Direct General Expenditure (70): ~~EI189~~   I89

**Appendix: Adjustments**

Big city population:

(1)Do file: Population\_city\_0203, Population\_cnty\_0203: adjust the postcensal data in another way. (change from “./Documentation/Important/Methodology Census Population Estimates Series/Census Population Estimates Series Information” to “./Documentation/Important/Methodology Census Population Estimates Series/SC\_City PopAdjustment for 1990s”)

(2)Manual adjustment:

a. Change the population in Louisville:

replace popCensus2000 = 554619 if fips\_state=="21" & fips\_pl=="48000":

b. Fill in the missing value in the raw data: popCensus1990=635230   
 (Jacksonville city -fips:12,35000)

c. There are some negative/unreasonable population number in the data(1990-2000): usually happen when the “popCensus1990” is much higher/lower than the base/post amount. So I generate the dummy “dum\_pop” to adjust the population. Please check the “Population\_city\_0203.do”. When the dum\_pop equal to 0, I follow the “SC\_City PopAdjustment for 1990s”. When the the dum\_pop equal to 1, I follow the “Census Population Estimates Series Information”.

Financial data:

(1)Typos:

a. replace totalrevenue =. if id\_govs=="062021007" & year==1985