

```
#!/ stata /home/aok/misc/proPre/miamiOh/miamiOh.do

//-----CSV ZIPPED DOWNLOAD MEH TOO MUCH DETAIL, EASISER INTERACTIVE

//https://apps.bea.gov/regional/downloadzip.cfm
//CAGDP2: GDP in Current Dollars by Cuntly and MSA

//CAINC4 Personal Income and Employment by MAJOR COmponent by COunty
pwd
cd /home/aok/misc/proPre/miamiOh/dat
ls

//unzipfile CAGDP2.zip


//-----INTERACTIVE BEA


// gdp (all counties)
//https://apps.bea.gov/itable/?ReqID=70&step=1&acrdn=5#eyJhcHBpZCI6NzAsInN0ZXBzIjpbMSwyNCwyOSw
yNSwzMSwyNiwyNywzMF0sImRhdGEiOltbIlRhYmxlSWQiLCI1MDEiXSxbIkNsYXNzaWZpY2F0aW9uIiwI
TkFJQ1MiXSxbI
klham9yX0FYZWEiLCI0Il0sWyJTdGF0ZSIsWyJYWVh0ZSIsWyJYWCJdXSxbIkFyZWUiLCI1MDEiLCI1MDEi
b1lVuaXRfb2ZfbWVhc3VyZSIsIkxldmVscyJdLFsiWWVhclIsWyIyMDIwIiwIiwMjAxOSIsIjIwMTgiLCIy
MDE3IiwIiwMjAxN
iIsIjIwMTUiLCIyMDE0IiwIiwMjAxMyIsIjIwMTIiXV0sWyJZZWFYQmVnaW4iLCItMSJdLFsiWWVhcl9Fbm
QiLCItMSJdXX0
=

cd ~/misc/proPre/miamiOh/dat
#!/ head gdp.csv

insheet using gdp.csv,clear comma
l in 1/5
ren v1 fips
ren v2 cs //county-state
renvars v3-v11 / y2012-y2020
d

drop if cs==" "

reshape long y,i(fips cs)j(yr)

ren y gdp

la var gdp "current gdp, thousands usd"
note gdp: CAGDP2 Gross domestic product (GDP) by county and metropolitan area; Gross Domestic
Product (GDP): All industry total (Thousands of dollars); Gross Domestic Product (GDP) is in t
housands of current dollars (not adjusted for inflation);BEA

gen s=substr(cs,-2,.)
keep if inlist(s,"IN","OH","WV","KY","PA","MI","IL","MO","NC") |s=="GA"

//count if fips==fips[_n-1]

save /tmp/gdp,replace

// pop and employment

ls
insheet using popAndEmp.csv, clear comma
l in 1/5

renvars v5-v8 / y2018-y2021

ren v1 fips
ren v2 cs
drop v3

ta v4
replace v4="emp" if v4=="Total employment"
replace v4="pop" if v4=="Population (persons) 3/"
keep if v4=="pop"|v4=="emp"

drop if cs==" "

reshape long y, i(fips cs v4)j(yr)
```

```
reshape wide y, i(fips cs yr) j(v4) string
l in 1/140

ren yemp emp
ren ypop pop

la var emp "total employment"
note emp: CAINC4 Personal income and employment by major component; BEA
la var pop "population"
note pop: CAINC4 Personal income and employment by major component; Census Bureau midyear population estimate; BEA

gen s=substr(cs,-2,.)
keep if inlist(s,"IN","OH","WV","KY","PA","MI","IL","MO","NC") |s=="GA"

save /tmp/popEmp,replace

//https://www.bea.gov/data/economic-accounts/regional
//GDP and Personal Income->per inc and empl by county-> "Economic Profile" table
//insheet using beaExtra.csv,comma clear
forval i=18/21{
insheet using bE`i'.csv,comma clear
gen yr=2000+`i'
save /tmp/bE`i',replace
}
clear
forval i=18/21{
append using /tmp/bE`i'
}

l in 1/5
//renvars v5-v8 / y2018-y2021
ta yr
ren v1 fips
ren v2 cs
drop if cs==" "
drop v3
ta v4
replace v4=trim(v4)
drop if v4=="|v4=="Description"|v4=="Place of residence profile"
replace v4="uneInsCom" if v4=="Unemployment insurance compensation"
replace v4="wagSal" if v4=="Wages and salaries"
replace v4="pCNetEar" if v4=="Per capita net earnings 4/"
replace v4="aveEarPJob" if v4=="Average earnings per job (dollars)"
replace v4="perInc" if v4=="Personal income (thousands of dollars)"

//reshape long y, i(fips cs v4) j(yr)
reshape wide v5, i(fips cs yr) j(v4) string
l in 1/5

d
ren v5* *

foreach v of varlist aveEarPJob pCNetEar perInc uneInsCom wagSal{
replace `v'="." if `v'==(NA) "
}
destring aveEarPJob pCNetEar perInc uneInsCom wagSal, replace
d

gen s=substr(cs,-2,.)
ta s
keep if inlist(s,"IN","OH","WV","KY","PA","MI","IL","MO","NC") |s=="GA"

la var uneInsCom "Unemployment insurance compensation"
note uneInsCom: Unemployment insurance compensation- Unemployment insurance compensation is made up of the following: State unemployment compensation are benefits consisting mainly of the payments received by individuals under state-administered unemployment insurance (UI) programs, but they include the special benefits authorized by federal legislation for periods of high unemployment. The provisions that govern the eligibility, timing, and amount of benefit payments vary among the states, but the provisions that govern the coverage and financing are uniform nationally.;; Unemployment compensation of Federal civilian employees are benefits which are received by former federal civilian employees under a federal program administered by the state employment security agencies acting as agents for the U.S. Government.;; Unemployment compensation of railroad employees are benefits which are received by railroad workers who are unemployed because of sickness or because work is unavailable in the railroad industry and in related industries, such as carrier affiliates. This UI program is administered by the Railroad Re
```

```
ren C coFips
```

```

ren D cs
ren E yr
drop F
ren G labForBls
la var labForBls "labor force, bls"
ren H empBls
la var empBls "employment, bls"
ren I uneBls
la var uneBls "unemployment, bls"
ren J uneRatBls
la var uneRatBls "unemployment rate, bls"
save /tmp/bls'y',replace
}

clear
forval y=15/21{
append using /tmp/bls'y'
}
gen fips=stFips+coFips
drop if fips==" "
drop if yr=="Year"
destring yr, replace

sort fips yr
drop if fips==fips[_n-1] & yr==yr[_n-1]

gen s=substr(cs,-2,.)
ta s

keep if inlist(s,"IN","OH","WV","KY","PA","MI","IL","MO","NC") | s=="GA"
save /tmp/bls,replace

//-----housing units census

/* forval i = 17/21{ */
/* insheet using https://www2.census.gov/econ/bps/County/co20'i'a.txt, comma clear names */
/* d */
/* drop region division */
/* ren county c */
/* ren surv yr */
/* ren fips fS */
/* ren v3 fC */
/* ren unit unit1 */
/* ren units unit2 */
/* ren v14 unit3 */
/* assert unit3[1]=="Units" */
/* ren v17 unit4 */
/* assert unit4[1]=="Units" */
/* drop v7 v9 v10 v12 v13 v15 v16 v18 v19 v21 v22 unitrep unitsrep v24-v30 */
/* d */
/* l in 1 */
/* drop in 1 */
/* destring fS fC, replace */
/* destring unit*, replace */
/* gen buiPer= unit1+unit2+unit3+unit4 */
/* l in 1/10 */
/* drop unit* */

/* save /tmp/buiPer'i',replace */
/* } */

clear
forval i = 17/21{
append using /tmp/buiPer'i'
}

keep if inlist(fS,13,17,18,21,26,29,37,39,42,54)
ta yr
destring yr,replace

la var buiPer "building permits: number of new privately-owned housing units"
note buiPer: These are unit counts, eg 1 building with 5 units is counted as 5; Estimates with
Imputation - includes reported data for monthly respondents and imputed data for nonrespondents.; Source: U.S. Census Bureau, Construction-Building Permits. Updated monthly, summarized here annually. Building Permits Survey; Definition: Building permits represent the number of new privately-owned housing units authorized by building permits in the United States. A housing

```

unit, as defined for purposes of this report, is a house, an apartment, a group of rooms or a single room intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants live separately from any other individuals in the building and which have a direct access from the outside of the building or through a common hall. In accordance with this definition, each apartment unit in an apartment building is counted as one housing unit. Housing units, as distinguished from "HUD-code" manufactured (mobile) homes, include conventional "site-built" units, prefabricated, panelized, componentized, sectional, and modular units. Housing unit statistics in these tables exclude group quarters (such as dormitories and rooming houses), transient accommodations (such as transient hotels, motels, and tourist courts), "HUD-code" manufactured (mobile) homes, moved or relocated units, and housing units created in an existing residential or nonresidential structure.; These numbers provide a general indication of the amount of new housing stock that may have been added to the housing inventory. Since not all permits become actual housing starts and starts lag the permit stage of construction, these numbers do not represent total new construction, but should provide a general indicator on construction activity and the local real estate market.; The value of new private housing units is the sum of the estimated valuation of construction on each building permit authorized in that year by local permit-issuing jurisdictions.; MORE INFO: <https://www2.census.gov/econ/bps/> ; <https://www2.census.gov/econ/bps/Documentation/cntyasc.pdf> ; https://www.census.gov/construction/bps/about_the_surveys/index.html ; <https://www.census.gov/construction/nrc/nrcdatarelationships.html>

save /tmp/buiPer,replace

//-----zillow

insheet using "https://files.zillowstatic.com/research/public_csvs/zhvi/County_zhvi_uc_sfrcondo_tier_0.33_0.67_sm_sa_month.csv?t=1671201942", comma clear names
d //dates as val labels

keep if inlist(state,"IN","OH","WV","KY","PA","MI","IL","MO","NC") |state=="GA"

drop regionid regiontype statename v10-v225
d

```
forval i=226/284{
//di "`':var label v'i'"
loc t "`':var label v'i'"
//di "`t'"
//loc t "2022-10-21"
loc tt= substr("`t'",1,4) + "_" +substr("`t'",6,2)
//di "`tt'"
//ren v'i' t':var label v'i'
ren v'i' t'tt'
}
```

```
//do some des stats for missing counts
foreach v of varlist t*{
di "`v'"
count if missing(`v')
}
//especially this is useful as it is for each co; especially problematic would be missing 11,
or 10, or even 9;;12 is missing by default
egen mi18=rowmiss(t2018_01 t2018_02 t2018_03 t2018_04 t2018_05 t2018_06 t2018_07 t2018_08 t2018_09 t2018_10 t2018_11 t2018_12)
ta mi18
egen mi19=rowmiss(t2019_01 t2019_02 t2019_03 t2019_04 t2019_05 t2019_06 t2019_07 t2019_08 t2019_09 t2019_10 t2019_11 t2019_12)
ta mi19 //thats fine
egen mi20=rowmiss(t2020_01 t2020_02 t2020_03 t2020_04 t2020_05 t2020_06 t2020_07 t2020_08 t2020_09 t2020_10 t2020_11 t2020_12)
ta mi20 //thats fine
egen mi21=rowmiss(t2021_01 t2021_02 t2021_03 t2021_04 t2021_05 t2021_06 t2021_07 t2021_08 t2021_09 t2021_10 t2021_11 t2021_12)
ta mi21 //thats fine
egen mi22=rowmiss(t2022_01 t2022_02 t2022_03 t2022_04 t2022_05 t2022_06 t2022_07 t2022_08 t2022_09 t2022_10 t2022_11 )
ta mi22 //thats fine
```

```
forval i=18/21{
egen t'i' = rowmean(t20'i'_01 t20'i'_02 t20'i'_03 t20'i'_04 t20'i'_05 t20'i'_06 t20'i'_07 t20'i'_08 t20'i'_09 t20'i'_10 t20'i'_11 t20'i'_12) //if !missing(t20'i'_01,t20'i'_02,t20'i'_03,t20'i'_04,t20'i'_05,t20'i'_06,t20'i'_07,t20'i'_08,t20'i'_09,t20'i'_10,t20'i'_11,t20'i'_12)
```

```
}
//add exception for 2022 last mo missing
loc i=22
egen t`i' = rowmean(t20`i' _01 t20`i' _02 t20`i' _03 t20`i' _04 t20`i' _05 t20`i' _06 t20`i' _07 t20`i' _08 t20`i' _09 t20`i' _10 t20`i' _11) //if !missing(t20`i' _01,t20`i' _02,t20`i' _03,t20`i' _04,t20`i' _05,t20`i' _06,t20`i' _07,t20`i' _08,t20`i' _09,t20`i' _10,t20`i' _11)
d
drop t*_* mi*
d

ren statec fS
ren municip fC

reshape long t,i(sizerank regionname state metro)j(yr)
replace yr=2000+yr

ren t zhvi
la var zhvi "Zillow Home Value Index, annual mean"
note zhvi: A smoothed, seasonally adjusted measure of the typical home value and market change
s across a given region and housing type. It reflects the typical value for homes in the 35th
to 65th percentile range. MORE INFO: https://www.zillow.com/research/zhvi-user-guide/

drop if yr==2022 //just keep it simple for now
save /tmp/zhvi, replace

//-----merge

use /tmp/gdp,clear

merge 1:1 fips yr using /tmp/popEmp
ta yr if _merge==2
ta cs if _merge==2 & yr>2011&yr<2021
drop _merge

merge 1:1 fips yr using /tmp/beaExtra
ta yr if _merge==1
drop _merge

merge 1:1 fips yr using /tmp/gdpPri
drop _merge

merge 1:1 fips yr using /tmp/bls
ta yr if _merge==1
drop _merge

//now will merge housing permits

gen fS=substr(fips,1,2)
gen fC=substr(fips,3,.)

l f* in 1/30
l f* in 1000/1030
destring fS fC, replace

sort fS fC yr
count if fS==fS[_n-1] & fC==fC[_n-1]&yr==yr[_n-1]

merge 1:1 fS fC yr using /tmp/buiPer

ta yr if _merge==2
l if _merge==2 //& yr<2021
drop if _merge==2 //& yr<2021

ta yr if _merge==1 //rt so still like 31 or 32 that didnt match; again see below; in qucik fac
ts they are NA tambien
ta cs if _merge==1 & y>2016

//therese were earlier convoluted investigations; now all clearer as just retained in busPri
only the states needed
ta s if _merge==2
ta fS if _merge==2
ta fS if _merge==1

drop _merge
```

```

merge 1:1 fS fC yr using /tmp/zhvi
ta yr if _merge==2
ta yr if _merge==1
l if _merge==1 & yr==2018
ta cs if _merge==1 & yr>2017 //so these are missing from zillow
drop _merge

//just keep it simple, taxes are from 15
keep if yr>=2015
save /tmp/ecoDat,replace

//-----TAXES

//LATER/MAYBE there is some real estate tax in irs
//https://taxfoundation.org/property-taxes-by-state-county-2022/
//real estate taxes paid
//census 5yr table B25103
//just get total like 1st col
//https://data.census.gov/table?q=B25103&g=0100000US$0500000&tid=ACSDT5Y2020.B25103
//unzipfile productDownload_2022-12-06T104304.zip

//-----IRS

//https://www.irs.gov/statistics/soi-tax-stats-county-data

/* loc y "17" */
/* loc s "mi" //oh */

/* forval y=15/19{ */
/* //foreach s in "oh" "mi" "in" "ky" "pa" "wv"{ */
/* foreach s in "in" "oh" "wv" "ky" "pa" "mi" "il" "mo" "nc" "ga"{ */

/* if `y`<17{ */
/* import excel using https://www.irs.gov/pub/irs-soi/`y`incy`s'.xls,clear */
/* } */
/* if `y`>16{ */
/* import excel using https://www.irs.gov/pub/irs-soi/`y`incy`s'.xlsx,clear */
/* } */

/* drop if B=="Under $1" */
/* drop if B=="$1 under $10,000" */
/* drop if B=="$10,000 under $25,000" */
/* drop if B=="$100,000 under $200,000" */
/* drop if B=="$200,000 or more" */
/* drop if B=="$25,000 under $50,000" */
/* drop if B=="$50,000 under $75,000" */
/* drop if B=="$75,000 under $100,000" */
/* sleep 1000 */

/* ta B */
/* ren B c */

/* gen sc=c+", "+ upper("`s'") */

/* ren A fips */
/* drop fips //would have to add state fips like by hand; just merge on county names */

/* l BL in 1/10 */
/* l BM in 1/10 */

/* if `y`==15{ */
/* assert BL=="State and local income taxes" in 4 */
/* ren BM stLoIncTax */
/* la var stLoIncTax "State and local income taxes, thousands of dollars" */

/* assert BN=="State and local general sales taxes" in 4 */
/* ren BO stLoSalTax */
/* la var stLoSalTax "State and local general sales taxes, thousands of dollars" */

```

```
/* assert BP=="Real estate taxes" in 4 */
/* ren BQ reaEstTax */
/* la var reaEstTax "Real estate taxes, thousands of dollars" */

/* assert BR=="Taxes paid" in 4 */
/* ren BS totTax */
/* la var totTax "Taxes paid, thousands of dollars" */
/* } */
/* ///!!already in 16 added personal prop tax */
/* if `y`==16{ */
/* assert BN=="State and local income taxes" in 4 */
/* ren BO stLoIncTax */
/* la var stLoIncTax "State and local income taxes, thousands of dollars" */

/* assert BP=="State and local general sales taxes" in 4 */
/* ren BQ stLoSalTax */
/* la var stLoSalTax "State and local general sales taxes, thousands of dollars" */

/* assert BR=="Real estate taxes" in 4 */
/* ren BS reaEstTax */
/* la var reaEstTax "Real estate taxes, thousands of dollars" */

/* assert BV=="Total taxes paid" in 4 */
/* ren BW totTax */
/* la var totTax "Taxes paid, thousands of dollars" */
/* } */

/* if `y`==17{ */
/* assert BP=="State and local income taxes" in 4 */
/* ren BQ stLoIncTax */
/* la var stLoIncTax "State and local income taxes, thousands of dollars" */

/* assert BR=="State and local general sales taxes" in 4 */
/* ren BS stLoSalTax */
/* la var stLoSalTax "State and local general sales taxes, thousands of dollars" */

/* assert BT=="Real estate taxes" in 4 */
/* ren BU reaEstTax */
/* la var reaEstTax "Real estate taxes, thousands of dollars" */

/* assert BX=="Total taxes paid" in 4 */
/* ren BY totTax */
/* la var totTax "Taxes paid, thousands of dollars" */
/* } */
/* if `y`==18{ */
/* assert BP=="State and local income taxes" in 4 */
/* ren BQ stLoIncTax */
/* la var stLoIncTax "State and local income taxes, thousands of dollars" */

/* assert BR=="State and local general sales taxes" in 4 */
/* ren BS stLoSalTax */
/* la var stLoSalTax "State and local general sales taxes, thousands of dollars" */

/* assert BT=="Real estate taxes" in 4 */
/* ren BU reaEstTax */
/* la var reaEstTax "Real estate taxes, thousands of dollars" */

/* assert BZ=="Total taxes paid" in 4 */
/* ren CA totTax */
/* la var totTax "Taxes paid, thousands of dollars" */
/* } */
/* ///!! note in 19 added like more breakdown like on property taxes */
/* if `y`==19{ */
/* assert BQ=="State and local income taxes" in 4 */
/* ren BR stLoIncTax */
/* la var stLoIncTax "State and local income taxes, thousands of dollars" */

/* assert BS=="State and local general sales taxes" in 4 */
/* ren BT stLoSalTax */
/* la var stLoSalTax "State and local general sales taxes, thousands of dollars" */

/* assert BU=="Real estate taxes" in 4 */
/* ren BV reaEstTax */
/* la var reaEstTax "Real estate taxes, thousands of dollars" */

/* assert CA=="Total taxes paid" in 4 */
/* ren CB totTax */
/* la var totTax "Taxes paid, thousands of dollars" */
```



```
/* } */

/* note stLoIncTax: IRS */
/* note stLoSalTax: IRS */
/* note reaEstTax: IRS */
/* note totTax: IRS */

/* drop if c==" " */

/* keep sc *Tax */

/* 1 in 1/10 */

/* gen year=2000+'y' */
/* save /tmp/'s','y',replace */
/* } */
/* } */

clear
forval y=15/19{
//foreach s in "oh" "mi" "in" "ky" "pa" "wv"{
foreach s in "in" "oh" "wv" "ky" "pa" "mi" "il" "mo" "nc" "ga"{
append using /tmp/'s','y'
}
}
ren year yr
ta yr

cap drop c2
gen str c2=substr(sc, 1, strlen(sc) - 11)
gen s2=substr(sc,-2,.)
gen cs=c2+", "+s2
ta cs
//fix naming
replace cs="Lagrange, IN" if cs=="LaGrange, IN"
//replace cs="St. Louis, MO" if sc=="St. Louis County, MO"
replace cs="St. Louis (Independent City), MO" if sc=="St. Louis city, MO"
drop sc

merge 1:1 cs yr using /tmp/ecoDat

ta yr if _merge==1
ta cs if _merge==1
drop if _merge==1

ta yr if _merge==2
count if _merge==2 & yr<2020
drop if _merge==2 & yr<2020

ta yr
ta cs

drop c2 s2 s c stF coF fS fC regionname state _merge

gen state=substr(cs,-2,.)
replace state=cs if substr(cs,-4,1)!=","

la var cs "county, state"
la var yr "year"
order state cs yr fips
sort state cs yr
destring *, replace

save dec17,replace //dec15

use dec17,clear

l in 1/8
d
set linesiz 150
pwcorr *Tax gdp gdpPr emp pop un* if yr==2018

//DONE start with simple list sepby coynty and sort on yr to see if makes sense, not to big v
ar year by yr
```

```

1 state cs yr fips st* rea* tot* in 6000/6100,sepby(fips)noo
1 state cs yr fips gdp emp pop in 6000/6100,sepby(fips)noo

1 cs yr  gdp emp pop *Tax *gdp* in 5000/5033,sepby(fips)noo

pwcorr *Tax gdp emp pop

hilo pop cs yr if pop<4000000,show(50)

hilo gdpPri cs yr if pop<4000000,show(50)

hilo gdpPri cs yr if pop<4000000,show(50)

//some checks
1 gdp if cs=="Jackson, WV" & yr==2018
1 gdp if cs=="Bates, MO" & yr==2020
1 gdpPri yr if cs=="Cass, IL"
1 perInc if cs=="Greenbrier, WV" & yr==2021
1 un* if cs=="Perry, PA" & yr==2021


1 cs yr wagSal pop emp uneInsCom if cs=="Habersham, GA" & (yr==2018|yr==2021)
1 cs yr wagSal pop emp uneInsCom if cs=="Trumbull, OH" & (yr==2018|yr==2021)


//some counties have tax of 0 did check a bunch with irs
1 emp* pop cs yr if reaEstTax<1
1 emp* pop cs yr if stLoIncTax<1 || stLoSalTax<1 | reaEstTax<1
1 emp* pop cs yr if stLoSalTax<1


//TODO check if also missing in source and do say in email as i say missing per bldg permits
ta cs if zhvi==. & yr>2017
//and fix these weird county names


hilo buiP cs  if yr==2021,show(12)
hilo zh cs  if yr==2021,show(12)

1 zh buiP pop perInc emp yr if cs=="Wayne, MI"
1 zh buiP pop perInc emp yr if cs=="Jefferson, KY"

1 if yr==2019 & cs=="Jefferson, KY"

1 if yr==2021 & cs=="Cook, IL"

hilo uneR cs if yr==2021 // goog Magoffin, KY unemployment rate
//https://fred.stlouisfed.org/series/KYMAGO3URN

1 uneR yr if cs=="Philadelphia, PA"
1 uneR yr if cs=="Lagrange, IN"

//compare with quick facts! fro like 5 esp big counties!; zillow too with quick facts esp fro
m hilo extremes!

```