```
/* Estimate county-by-year price indices and plots coastal price indexes over time
 *
 * Version 2 (May 2023) Aggregate price indices and plot county-level prices
 * Version 1 (September 2022) Price indices estimated at the blk-grp from Core Logic data
 */

#delim;
clear;
clear matrix;
set mem 4g;
set more off;
set matsize 10000;

/*****************************************************************************/
/* Step 1:  Load data and Estimate Price Indices at the County-level*/
/*****************************************************************************/

/*

/*REGRESSION ANALYSIS TO ESTIMATE COUNTY LEVEL PRICE INDICES REQUIRE PROPRIETARY SALES TRANSACTION DATA */

/* Set Globals */
global geo "tract fips blkgrp"
global time "year quarter"

foreach g of global geo {
    foreach t of global time {
        di "-----------------------------------------------------"

scalar ng = 3
forvalues key=1/`=ng' {
    display `key'
    if `key'==1 {
    **Block group by year price index
    global geo "blkgrp"
    global time "year"
    }
    else if `key'==2 {
    **Census tract by year price index
    global geo "tract"
    global time "year"
```

```
42      }
43      else if `key'==3 {
44      **County by year price index
45      global geo "fips"
46      global time "year"
47      }
48
49
50          timer on 1
51          use data/appendcsv/sale_trim.dta,clear /* Sales
    transaction from proprietary Core Logic Data */
52          dis "data loaded for `g'_`t'"
53          gen dummy_s=`g' + `t'
54          *gen dummy_s = blkgrp+year
55          destring dummy_s,gen(dummy_n)
56          format %20.0g dummy_n
57
58          xtset dummy_n
59
60          dis "Hedonic regressionon Structural Attributes"
61          preserve
62          eststo basic: xtreg log_price acres living stories
    garage_ind pool_ind, fe
63          esttab basic using "index/`g'_`t'.rtf", replace wide
64          predict fe, u
65          gen index_b=fe+ _b[_cons]
66          sort dummy_n
67          collapse (mean) index_b, by(`g' `t')
68          label var index "Price index by $geo and $time,
    controlling for basic covariates"
69          save "index/`g'_`t'.dta", replace
70          restore
71
72          dis "regression on additional variables"
73          preserve
74          eststo additional: xtreg log_price acres living bedrooms
    age garage_ind pool_ind, fe
75          esttab additional using "index/`g'_`t'.rtf", append wide
76          predict fe, u
77          gen index_a=fe+ _b[_cons]
78          sort dummy_n
79          collapse (mean)index_a, by(`g' `t')
80          label var index_a "price index by $geo and $time, with
    additional covariates"
81          merge 1:1 `g' `t' using "index/`g'_`t'.dta"
82          drop _merge
83          save "index/`g'_`t'.dta", replace
84          restore
```

```
85
86
87          timer off 1
88          timer list 1
89      }
90
91  }
92
93  */
94
95  /*****************************************************************
    ****************************************/
96  /* Step 2:  Load county x year price indices from hedonic reg and
    merge 2010 population by county */
97  /*****************************************************************
    ****************************************/
98
99  #delim;
100 use "county_yearly_price_index_V5.dta", clear;
101
102 summarize;
103 sort countyid year;
104
105 /* Merge 2010 Population by County*/
106
107 #delim;
108 use "county_population_est_2000_2010.dta", clear;
109
110 rename stname statename;
111 rename ctyname countyname;
112
113 merge m:m statename countyname using
    "county_yearly_price_index_V5.dta",
114 keepusing(countyid countyname statename);
115
116 keep if _merge == 3;
117 drop _merge sumlev region division state;
118
119 order county countyid;
120 keep county countyid statename countyname census2010pop;
121 sort countyid statename countyname;
122
123 save "county_pop_2010.dta", replace;
124
125 #delim;
126 use "county_yearly_price_index_V5.dta", clear;
127 sort countyid statename countyname year;
128 merge m:m countyname statename using "county_pop_2010.dta",
```

```
keepusing(countyid statename countyname census2010pop);

drop _merge;
sort countyid statename countyname year;

save "county_yearly_price_index_V6.dta", replace;

/*****************************************************************
*************************************/
/* Step 3:  Aggregate Price indices by inland vs coastal counties
and PLOT population weighted indices */
/*****************************************************************
*************************************/

/* Collapse price_index by county by state by Year*/
#delim;
use "county_yearly_price_index_V6.dta", clear;

gen pop_10 = 0;
gen pop_90 = 0;

replace pop_10 = 1 if census2010pop < 16500;
replace pop_90 = 1 if census2010pop > 500000;

collapse (first) statename (mean) east_coast (mean) gulf_mexico (
mean) index (mean) index_5 [aweight = census2010pop], by(state year
 shoreline_county);

twoway ((line index_5 year if shoreline_county == 1) (line index_5
year if shoreline_county == 0), by(state));

save "county_yearly_price_index_V7.dta", replace;

/* Collapse price index by coastal vs non-coastal counties*/

#delim;
use "county_yearly_price_index_V7.dta", clear;
gen price = exp(index);

collapse (mean) index index_5 (mean) price, by(year
shoreline_county);

twoway (line price year if shoreline_county == 1) (line price year
if shoreline_county == 0);
twoway (line index_5 year if shoreline_county == 1) (line index_5
year if shoreline_county == 0);

save "county_yearly_price_index_V8.dta", replace;
```