Accessing ACS Data Using Missouri Census Data Center Web Tools

Presentation for ACS Data Users Conference. Alexandria, VA, May 12, 2017

MCDC provides easy access to ACS data

- The data are for the United States going back to 2005.

- Access is provided via:

- Easy web applications for displaying standard profiles:

  - ACS Profile

  - ACS Trends

  - CAPS for ACS

- ACS Standard Profile Extract Assistant.

- Direct access to data (our standard profiles and summary tables) via **Uexplore/Dexter** web apps.

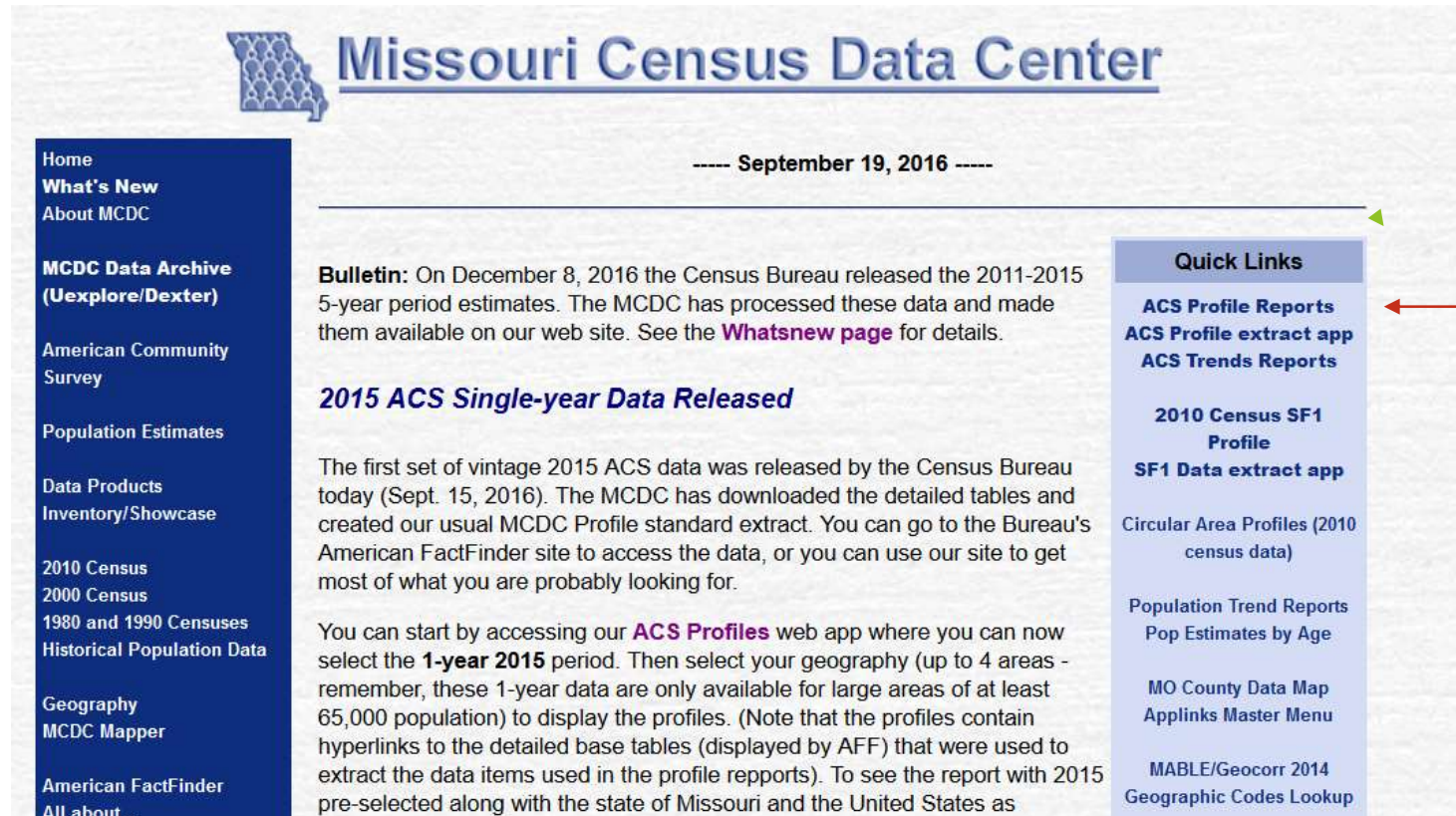- Custom programming (including ACS/PUMS access).

ACS Profiles – Data Sets

- These custom extracts include the most-used data items: over 360 data items, most with corresponding Pct and MOE variables. For example:

  - Age0_4, **Pct**Age0_4, Age0_4**_MOE** .

- Modeled on Census Bureau profiles with same 4 major categories: Demographic, Economic, Social and Housing.

- Similar but not identical.

- Variables are derived from the Summary tables. MOEs estimated.

- Enhanced geography variables including internal point lat-long and areas.

- 2010 census pop count added for most geographies.

ACS Profiles – The Web App

- Dynamic web application that accesses the acsprofiles data set(s).

- Allows you to select and compare up to **four geographic areas** (can be mixed levels) for a single time period (vintage/period).

- Provides access to all available data for the entire U.S. going back to vintage 2005.

- Generated report has many hyperlinks and a critical mouse-over feature to view MOE info.

Access App Via MCDC Home Page
First Item in the Quick Links box (upper right)

App Uses Dynamic Menus to Lead User Through Choices – mostly geography.
Usage notes are displayed on initial screen.

After selecting 4 geographic areas...

Output – part 1

Note links in geographic section at top.

Usage notes explain the use of fonts and MOEs.

Subject	Columbia city, Missouri Number	Columbia city, Missouri Percent	Boone County, Missouri Number	Boone County, Missouri Percent	Missouri Number	Missouri Percent	United States Number	United States Percent
E3. OTHER INCOME MEASURES								
Universe: Various								
Reference tables: B19301 B11010 B19202 B19214 B11001 B19325 B20017								
Per-capita income	$25,995		$26,609		$27,384		$29,979	
Nonfamily households	24,683	53.2	32,053	46.4	854,881	36.0	40,677,496	34.4
Median nonfamily income	$24,970		$28,222		$30,092		$33,617	
Mean nonfamily income	$39,239		$41,628		$42,538		$49,834	
All full-time workers	40,189		60,294		2,062,094		106,358,684	
All male full-time workers	21,537	53.6	32,020	53.1	1,146,474	55.6	61,032,256	57.4
All female full-time workers	18,652	46.4	28,274	46.9	915,620	44.4	45,326,428	42.6
Median earnings for workers	$24,998		$27,552		$30,139		$31,394	
Median earnings for male full-time, year-round workers	$41,265		$42,334		$45,897		$49,938	
Median earnings for female full-time, year-round workers	$37,886		$37,809		$35,759		$39,940	
E4. POVERTY STATUS OVER THE LAST 12 MONTHS								
Universe: Persons for whom poverty status is determined								
Reference tables: B17001 B17021 B17010 B17007 C17002								
Persons for whom poverty status is determined	110,123		165,818		5,901,967		313,476,416	
Persons below poverty	27,040	24.6	30,604	18.5	875,495	14.8	46,153,076	14.7
Persons under 18 for whom poverty status is determined	21,519		35,592		1,362,918		72,454,786	
Persons under 18 in poverty	3,304	15.4	3,718	10.4	275,711	20.2	15,000,273	20.7

Sample section of report

With over 350 data lines plus headers, universes, and reference table links it is a lengthy report. The pdf version is 16 pages.

ACS Profiles Features

▶ Standard user friendly interface.

▶ Allows selecting single time period and geographic areas (up to 4 - mix and match).

▶ User can specify which of the 4 major categories they want to see. (DESH)

▶ Detailed Usage Notes and Online tutorials walk the user through the interface.

▶ Profile reports are organized into over 40 "tables" (subject areas).

▶ Most tables have links to graphics (charts) related to the data.

▶ There are also links to allow display of Summary tables relevant to the table. (Links to AFF for these table displays)

Result of clicking table C17002 link

ACS Profiles Features (continued)

▶ Data cells are displayed in one of 3 fonts to indicate margin of error categories. Bold for reliable, barely visible light gray for cells with relative MOE's of 35% of more.

▶ Margin-of-error intervals (including relative MOEs) can be viewed by hovering the mouse over a cell.

▶ Links allow converting the output to pdf and Excel formats.

▶ A link is provided for Dexter to access the dataset used as source of the report.

▶ Links are provided for each geographic area to see a corresponding ACS Trends report for that area (single-year data).

▶ A metadata link shows the formulas used to derive each variable (based on summary table cells). A "Universe" column indicates denominator for the Percent value.

▶ Does not allow selecting Block Groups.

ACS Trends Report

▶ Format and data very similar to ACS Profiles reports.

▶ Instead of up to 4 geographic areas for one point in time you get data for a single geographic area for two selected (non-overlapping) time periods.

▶ Link to this app is in the *Quick Links* box. Also linked to from the geographic header section of companion ACS Profiles report.

Sample ACS Trend Report

ACS Profiles Extract Assistant

▶ This web app is for when you want access to (all or selected) ACS Profiles data for many geographic areas.

▶ E.g. all counties in the U.S. or all census tracts in Virginia or all block groups in Montana.

▶ User friendly front end lets you choose geographic level(s), geographic universe (nation, state or counties), and which of the 40 subject tables.

▶ The good/bad news is that it takes you to Dexter to complete the extract.

▶ Online video tutorial is linked to.

▶ Note "old style" page.

The Extract Assistant Page (top)

Extract Assistant Page (bottom)

Which takes you to Dexter

Dexter -- Data Extracter
Dexter Quick Start Guide
Section headers are links to the relevant sections of **online help**.

Data Set: **/pub/data/acs2015** - `usstcnty5yr` : . rows/observations, 998 columns/variables (appx)

See detailed metadata for this dataset.

Rankster option: `Not interested` ⌄ -or- skip dexter and go straight to rankster

`Quick Look`

I. Choose Output Format(s)

- Delimited File: ⦿Comma ("csv") ○Tab-delimited ○none
- Listing/Report: ○Plain text ○PDF ○HTML ⦿none (**Not** recommended for over 30 variables)
- Database File: ○DBF ○SAS dataset (Windows) ⦿none

Check here ☐ if requesting *only* a report in plain text or html format that you want piped directly to your browser.

II. Choose rows (observations) to keep by specifying a *filter*.

	Variable/Column	Operator	Value
☐(	SumLev - Geographic Summary Level ⌄	In List (Separate items with :) ⌄	040:050
	⦿ And ○ Or ○ And Not		
☐(	State ⌄	In List (Separate items with :) ⌄	29

CAPS ACS Reports

- Circular Area Profiling System.

- There is actually a family of CAPS apps that generate data for n-mile circular areas for various sets of data (2000 STF3, 2010 STF1, ACS latest vintage 5-year estimates). The apps link to one another.   A [capsindex](#) page lets you choose.

- User enters a site (lat-long coordinates & optional name) & a list of (up to 5) radii.

- A link to **google maps** makes it easy to get coordinates based on a street address.

- Output is a set of reports (one for each radius specified) that contain the same basic data that you see from our **ACS Profiles** app but now aggregated to approximate a circular area.

- *Format* of the report(s) is different from **ACS Profiles** output (no frills here) - but it's the same data.   (Currently estimates only, no MOEs)

- Uses the latest available 5-year period estimates. ACS data at the census tract or block group level is aggregated to estimate the circular area.

- Not recommended for radii of less than 3 miles. (But that doesn't stop anyone)

- The latest (beta) version uses a new algorithm to enhance the way we include or exclude a tract/BG from the aggregation. Uses "BBIA"="Block-based Inclusion Algorithm".

ALPS and CAPS

- This is of interest to users who want to see a lot (i.e. thousands) of circular areas profiled.

- The Address List Processing System (ALPS) provides processing of files with street addresses and/or latitude-longitude coordinates.

- We do not allow users on our web site to run more than 500 CAPS runs in a day (we add them to a deny-service list).

- ALPS products are created by MCDC/OSEDA staff for customers on a fee basis.

- For example, $310 for a file with 5000 locations .

- A typical CAPS with ACS data run via the web takes about 2 or 3 seconds to complete.

- Using an enhanced batch-based algorithm for handling large number of points we have found that we can process about 160 locations per second (!) This is with the enhanced BBIA algorithm.

- ALPS needs to be automated and marketed and cost less.

Accessing ACS Data Using Uexplore/Dexter

- If you already know how these utility applications (Uexplore and Dexter) work then this is a very viable tool, especially when accessing the mcdcprofiles data sets.

- Accessing the Base (i.e "Summary") tables is more of a challenge.

- We did a webinar on this topic several years ago. We need to do an update.

- Not nearly enough time to get into this today.

Key Neighborhood Indicators Using ACS

▶ We have developed a crude prototype of a system that uses mostly ACS data to define key indicators at the census tract level.

▶ Involves use of thematic/menu maps to display data and provide access to brief narrative summaries of what a neighborhood is "like".

▶ See more detailed presentation at MCDC web site.

Links

- This presentation is available at
  http://mcdc.missouri.edu/tutorials/acsconf2017/acsconf2017.ppt

- A web page with links to pages referenced in the presentation (plus a few more that we did not have time for) is available at
  http://mcdc.missouri.edu/tutorials/acsconf2017/acsconflinks.shtml .

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