EMPOWERING CENSUS USERS

Rethinking the Census Data Portal

April 27, 2018

DPI-663, Demo Day: Team Census
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How does Census Data influence us?

Public Good

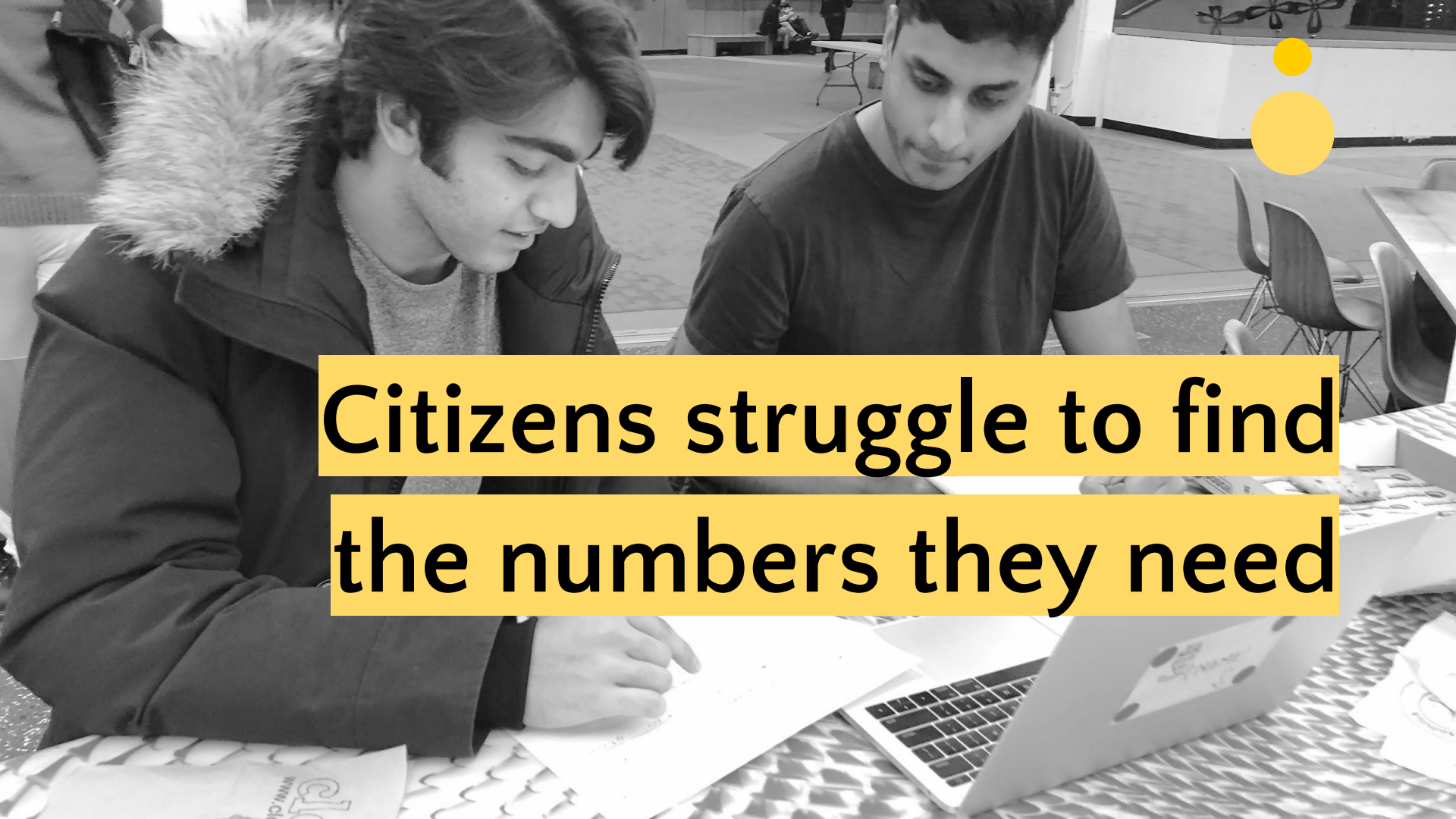
We spent **$13 Billion** on the 2010 Census and **$33 Million** on the previous data portal.

Key Decisions

$600 billion of federal government funds are distributed per year by Census data.

Transparency

Researchers, journalists, and programmers use **130 Census surveys** to inform our nation.



Citizens struggle to find the numbers they need

Meet Valerie Selo

Using **basic demographic data** to determine where her non-profit organization's support goes for **low-income and vulnerable populations**

She uses Wikipedia or Google because the **Census site is too hard to navigate**

Inaccurate numbers lead to less effective results

The data matters ...

informing key government decisions on

rescue efforts

social security allocation,

public health responses to infectious diseases,

where new **hospitals and schools** are built and more...

...and the possibilities for it are exciting!

Census data is inspiring new efforts from

data storytelling in **journalism,**

uncovering new local trends to **minimize traffic,**

to **data-based start-ups and social innovations.**

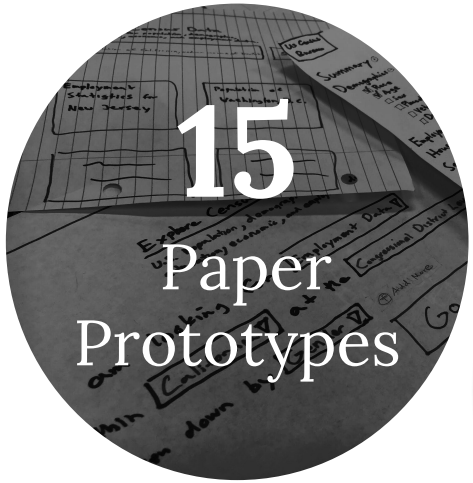
Together with the Census, we're working to improve access to data

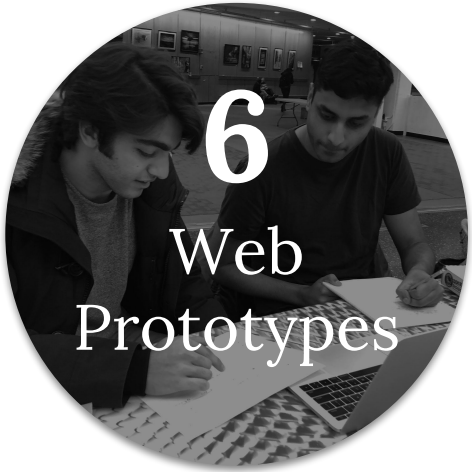
- Exciting new initiatives and the launch of a new **beta** data portal site

Our Process

25
User
Interviews

40
User Tests


15
Paper
Prototypes


6
Web
Prototypes

Users have *very* different needs and behaviors

Who uses the Census website?

Fact-hunters

A community leader looking for quick facts about their neighborhood

Trendies

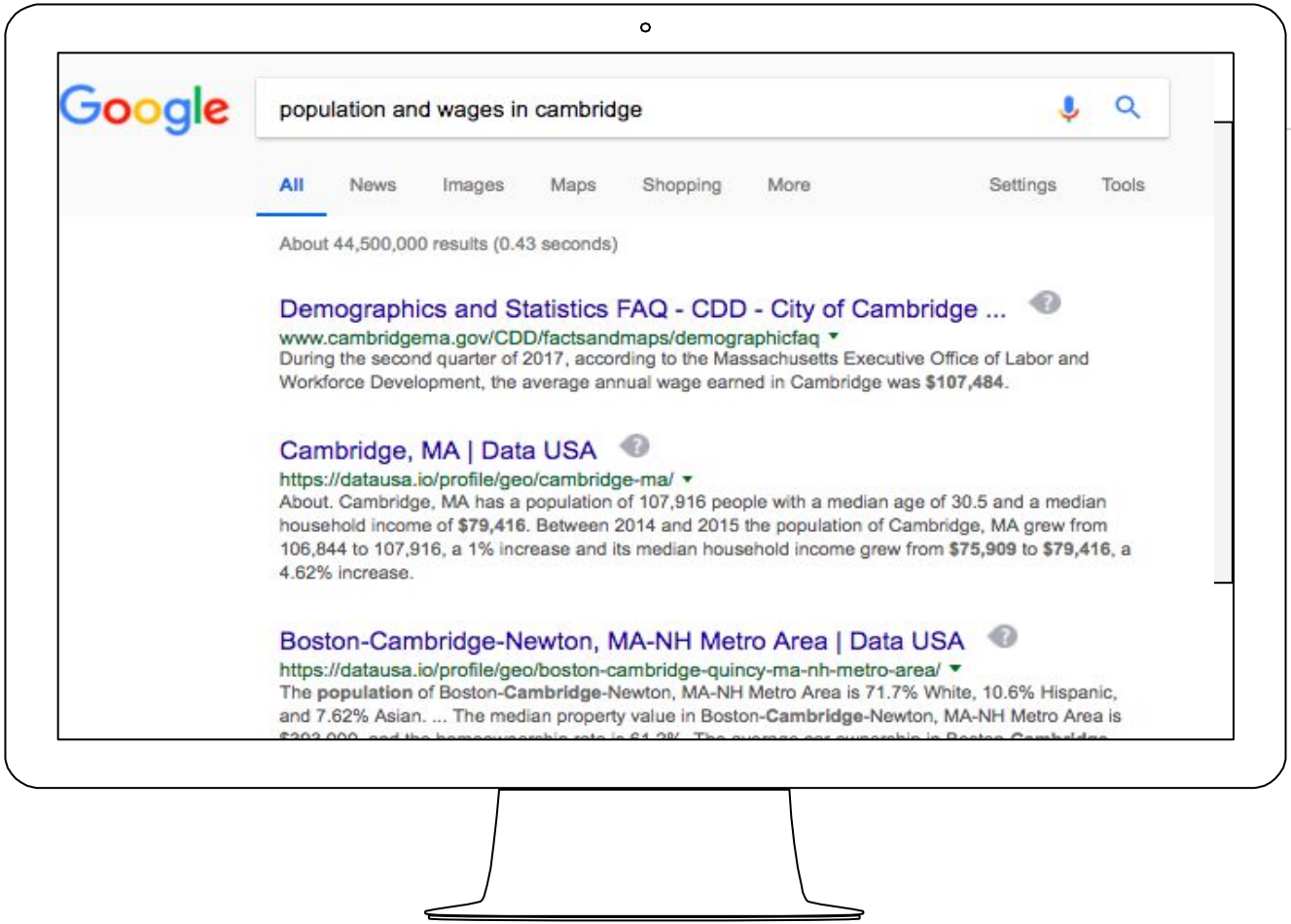
A political analyst looking at trends across data like demographic trends

Experimenters

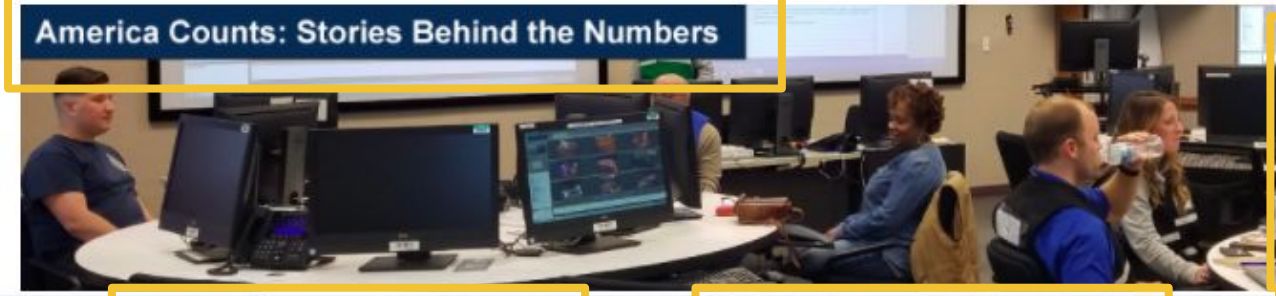
An economist comparing race and education data between cities.

Searching the Census

- Census.gov is not a top result
- Could be inaccurate sources



America Counts: Stories Behind the Numbers



Population Numbers Help Virginia Cities Plan Evacuation Routes

Learn how Census Bureau data can be used for emergency planning in this featured story on **America Counts: Stories Behind the Numbers.**

POPULATION CLOCK

U.S. Population

327,304,75

World Population

7,458,079,843

Mar 06, 2018 01:34 UTC (Eastern+5) Learn More >>

QUICKFACTS

Did You Know

25.2%
of persons in Graham city, North Carolina are under 18 years

Source: 2010 Census

Select a state to begin

U.S. Census Bureau Economic Indicators

Construction Spending January 2018 Report Released 10:00 AM EST, 3/1/18	$1,262.8 B	0.0%
Advance International Trade: Goods January 2018 Report Released 8:30 AM EST, 3/27/18	$74.4 B Deficit	3.0%
Advance Wholesale Inventories	$617.7 B	

View All

* change not statistically significant
• significance not reported / applicable

Latest News

2016 Manufacturing and International Trade Report
February 28, 2018
A comprehensive comparison between detailed manufacturing product class data and associated import and export data.

Housing Vacancy Survey Annual Statistics: 2017
February 27, 2018
Annual statistics for the 2017 rental and homeowner vacancy rates, homeownership rates and characteristics of units.

Are You in a Survey?

Learn more >>

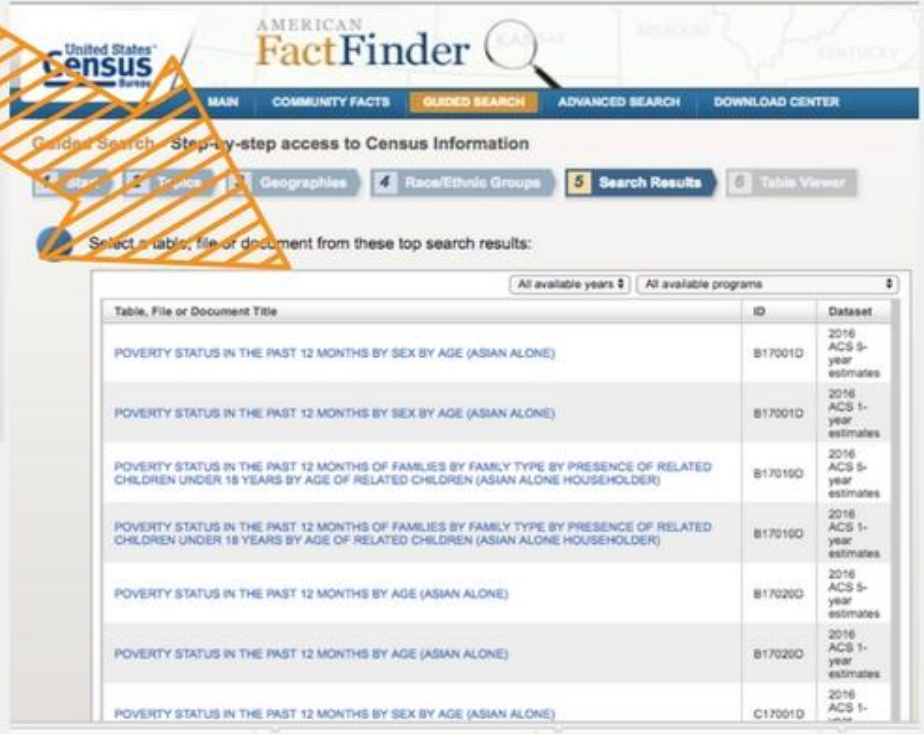
The Week Ahead

Mon	Tue	Wed	Thur	Fri
Mar 5	Mar 6	Mar 7	Mar 8	Mar 9

Errors

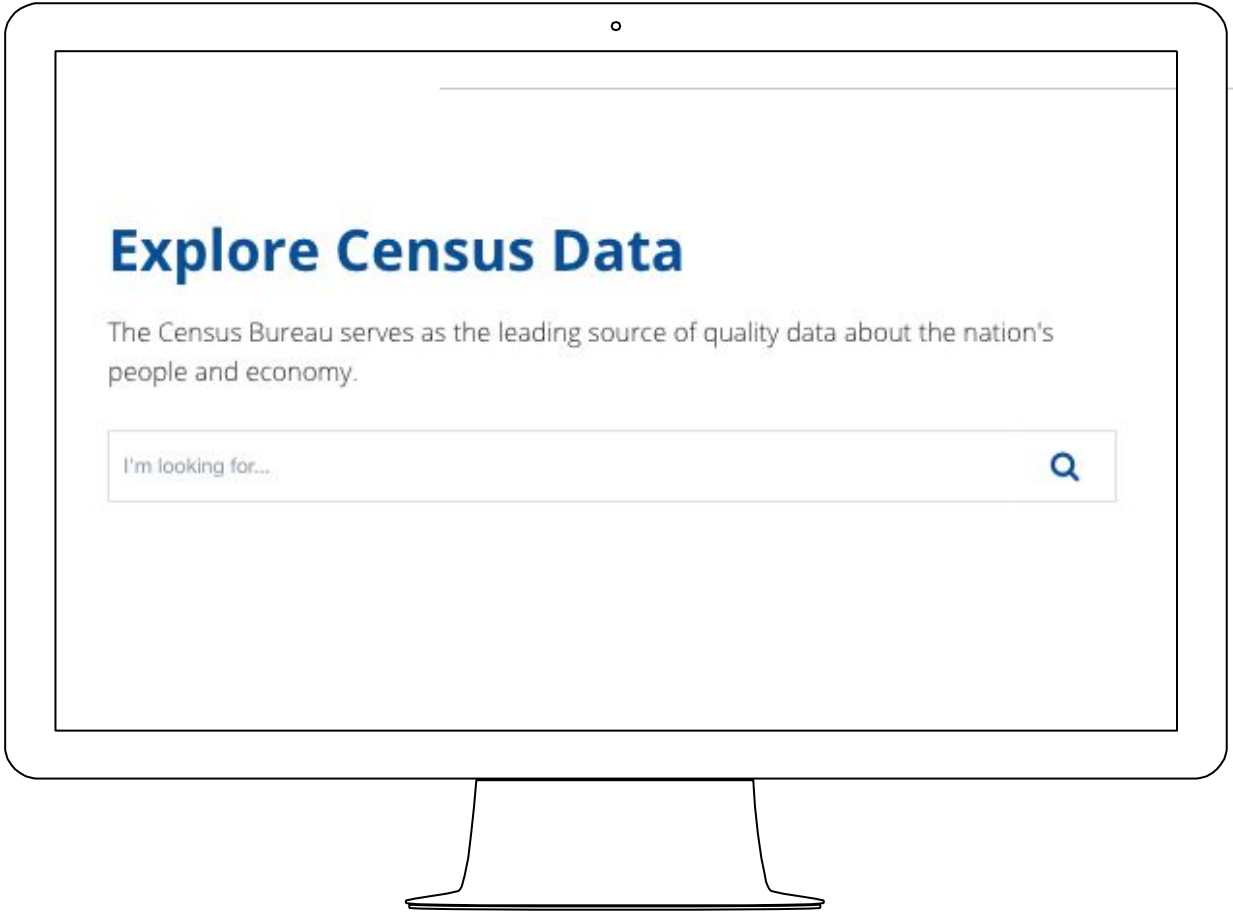
Could not compare data across races. User drops off.

Too many results > 130



Beta site

- Looks great, clean, and simple
- Not much supporting information



Search is hard to master

- “Cambridge, income”

AGE AND SEX
Source: Table S0101

View Full Table

	Cambridge city, Massachusetts		
	Total	Male	Female
	Estimate	Estimate	Estimate
Total population	108,757	53,044	55,713
AGE			
Under 5 years	4.0%	4.2%	3.8%
5 to 9 years	3.1%	3.5%	2.8%
10 to 14 years	2.8%	2.9%	2.8%
15 to 19 years	8.4%	7.7%	9.0%

- “Income, Cambridge MA”

$70,954 +/- $343

Median household income in Massachusetts

The U.S. Census Bureau collects economic data on the people residing in our nation. Total cash income is the sum of the amounts reported including wages, salary, commissions, bonuses, tips,self-employment income, interest, dividends, Social Security, public assistance payments, distributions from retirement accounts, pensions, or any other sources of regularly received cash income.

This number is calculated using Table DP03.
Data from the 2016 American Community Survey 5-Year Estimates.

- “Income in Cambridge”

$57,617 +/- $115

Median household income in United States

The U.S. Census Bureau collects economic data on the people residing in our nation. Total cash income is the sum of the amounts reported including wages, salary, commissions, bonuses, tips,self-employment income, interest, dividends, Social Security, public assistance payments, distributions from retirement accounts, pensions, or any other sources of regularly received cash income.

This number is calculated using Table DP03.
Data from the 2016 American Community Survey 1-Year Estimates.

Results Page

- Tries to cater to everyone
- Facts, tables, maps, links with no context
- Hard to navigate

About 1,093,690 results

323,127,515 +/- *****

Population in United States

All people, male and female, child and adult, living in a given geographic area.

This number is calculated using Table DP05.
Data from the 2016 American Community Survey 1-Year Estimates.

Tables

AGE AND SEX
Source: Table S0101

	United States
	Total
	Estimate
Total population	
AGE	
Under 5 years	
5 to 9 years	
10 to 14 years	
15 to 19 years	

POPULATION 60 YEARS AND OVER IN THE UNITED STATES
Source: Table S0102

POPULATION 65 YEARS AND OVER IN THE UNITED STATES
Source: Table S0103

View all tables (1846)

Maps

AGE AND SEX
Source: Table S0101

POPULATION 60 YEARS AND OVER IN THE UNITED STATES
Source: Table S0102

POPULATION 65 YEARS AND OVER IN THE UNITED STATES
Source: Table S0103

View all map results (1846)

Webpages

U.S. Census Bureau QuickFacts: UNITED STATES
QuickFacts UNITED STATES. QuickFacts provides statistics for all states and counties, and for cities and towns with a population of 5,000 or more.

Population Clock - Census.gov
United States Census Bureau. U.S. Department of Commerce | Blogs ... Income is the gauge many use to determine the well-being of the U.S. population.

Poverty - Census
This report presents data on income, earnings, income inequality & poverty in the United States based on information collected in the 2017 and earlier CPS ASEC.

Machine Readability

The data comes in a format with unclear labels

	Worcester County, Massachusetts	
	Estimate	Margin of Error
Total:	36,202	+/-618
Income in the past 12 months below poverty level:	3,780	+/-720
Male:	1,693	+/-376
Under 5 years	125	+/-190
5 years	0	+/-28
6 to 11 years	171	+/-110
12 to 14 years	78	+/-64
15 years	13	+/-19
16 and 17 years	91	+/-66
18 to 24 years	429	+/-128
25 to 34 years	192	+/-74
35 to 44 years	201	+/-120
45 to 54 years	178	+/-85
55 to 64 years	63	+/-43
65 to 74 years	120	+/-80
75 years and over	32	+/-34
Female:	2,087	+/-432
Under 5 years	55	+/-49
5 years	17	+/-27
6 to 11 years	81	+/-67
12 to 14 years	90	+/-66
15 years	51	+/-36
16 and 17 years	73	+/-55
18 to 24 years	568	+/-217
25 to 34 years	453	+/-156
35 to 44 years	241	+/-126
45 to 54 years	222	+/-110
55 to 64 years	93	+/-53
65 to 74 years	89	+/-62
75 years and over	54	+/-46
Income in the past 12 months at or above poverty level:	32,422	+/-765
Male:	15,969	+/-478
Under 5 years	1,142	+/-148
5 years	209	+/-111
6 to 11 years	1,402	+/-202
12 to 14 years	909	+/-184
15 years	192	+/-86
16 and 17 years	575	+/-97
18 to 24 years	1,099	+/-176
25 to 34 years	2,837	+/-133
35 to 44 years	3,117	+/-137
45 to 54 years	2,267	+/-127
55 to 64 years	1,262	+/-80
65 to 74 years	592	+/-76
75 years and over	366	+/-43
Female:	16,453	+/-443
Under 5 years	1,144	+/-145
5 years	206	+/-95
6 to 11 years	1,397	+/-186
12 to 14 years	660	+/-151
15 years	187	+/-65

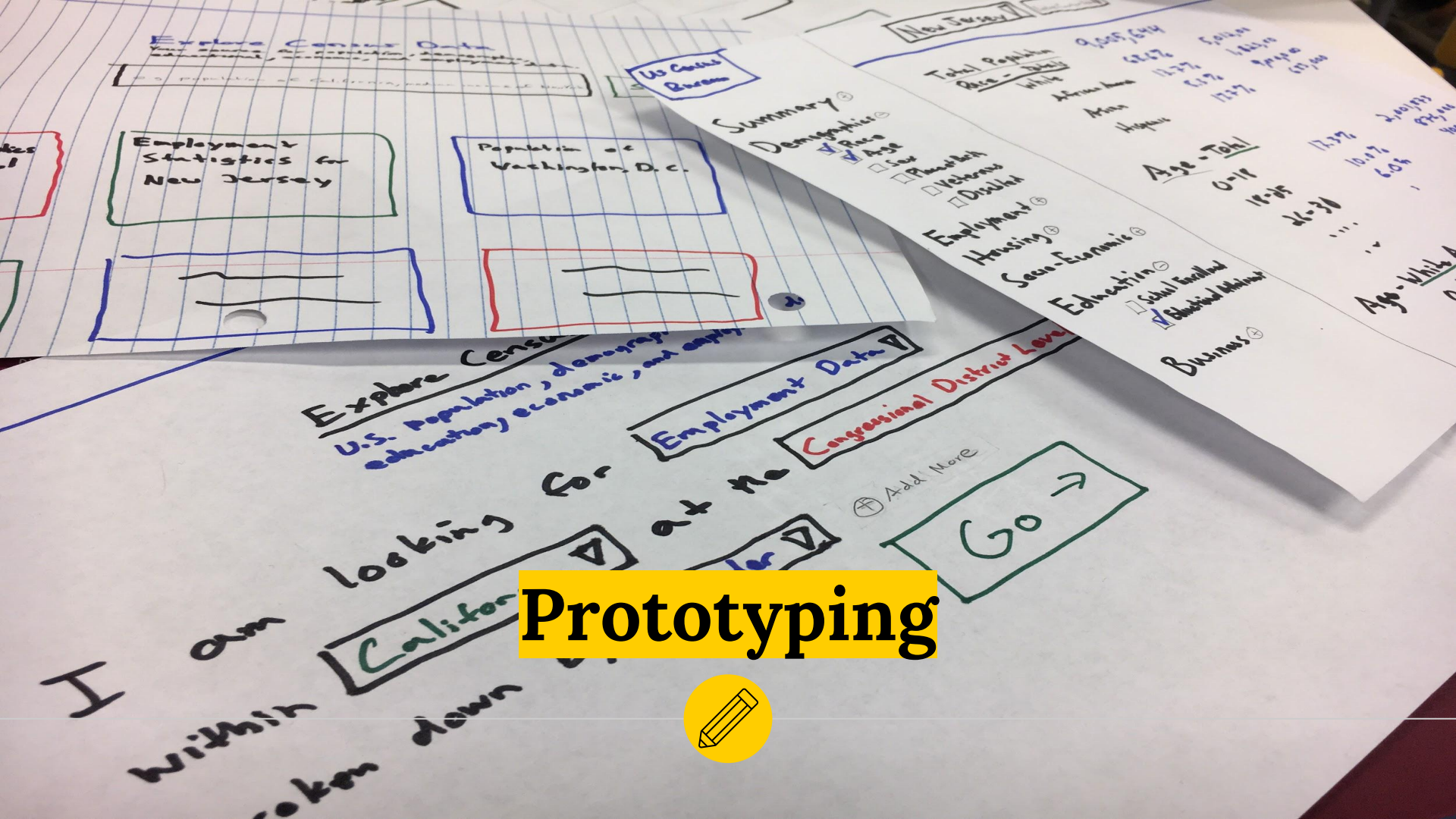
	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO
1	HD01_VD51	HD02_VD51	HD01_VD52	HD02_VD52	HD01_VD53	HD02_VD53	HD01_VD54	HD02_VD54	HD01_VD55	HD02_VD55	HD01_VD56	HD02_VD56	HD01_VD57	HD02_VD57	HD01_VD58	HD02_VD58
2	Estimate; Inc	Margin of Er	Estimate; Inc	Margin of Er	Estimate; Inc	Margin of Er	Estimate; Inc	Margin of Er	Estimate; Inc	Margin of Er	Estimate; Inc	Margin of Er	Estimate; Inc	Margin of Er	Estimate; Inc	Margin of Er
3	187	65	434	89	1163	216	2953	197	3315	152	2304	130	1486	77	791	73
4																

Key findings

1. There are lots of different user types

2. Users don't know what data the Census has

3. The search didn't help all user types find the data they want



Prototyping

A User Testing Story

Explore Census Data

U.S. population, demographics, education, economic, and employment data

I am looking for Demographic Data

at the State Level

for Alabama

broken down by Gender

for the year 2017

Go →

VS

Explore Census Data

The Census Bureau serves as the leading source of quality data about the nation's people and economy.

I'm looking for...

Guided Search

Fact Hunters

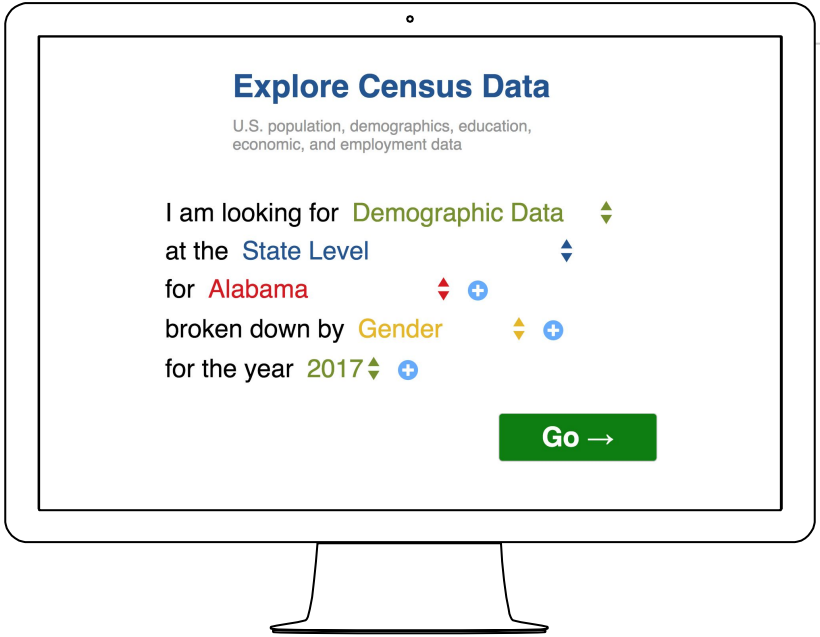
"It's a lot of steps for one piece of information."

Trendies

"I know what I want and how to get it."

Experimenters

"I can compare surveys and information!"

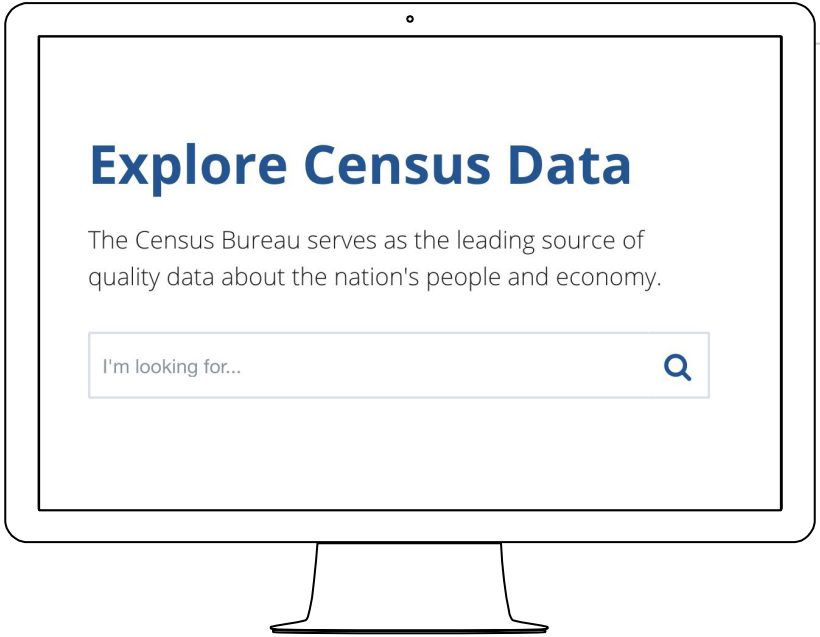


Open Search

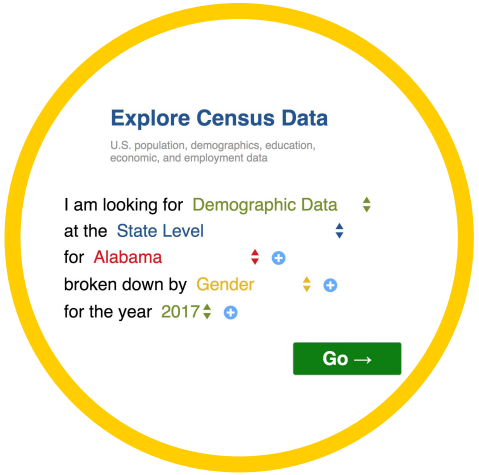
Fact Hunters
"It's familiar and if it works, I get what I need."

Trendies
"I don't know what is available."

Experimenters
"All I need is a clean API."



Reconciling User Needs



Guided Search

+

Open Search

=

Our Prototype

The Landing Page

How The Beta Looks Now

United States Census Bureau

Explore Census Data

The Census Bureau serves as the leading source of quality data about the nation's people and economy.

I'm looking for...

On our landing page, we aimed to help people understand what data the Census actually has

United States Census Bureau

Explore Census Data

U.S. population, demographics, education, economic, and employment data

Search Examples

Population of Cambridge, Commute time in California

Search

Guided Search

Advanced Search

Browse by Topics

Browsable Topics

Population

Economy

Housing

Education

Employment

Business

Government

Health

International Trade

Emergency Preparedness

Income & Poverty

Data API (new)

The Guided Search Page

For our guided search, we focused on features for Experimenters and Trendies

United States Census Bureau

Explore Census Data

U.S. population, demographics, education, economic, and employment data

I am looking for Demographic Data

at the State Level

for Alabama

broken down by Gender

for the year 2017

Go →

Dropdowns Adjust Dynamically

Multiple Options

The Search Results Page

How The Beta Looks Now

United States Census Bureau

Demographics of Cambridge

All Tables Maps Webpages

About 61,110 results

323,127,515 +/- *****

Population in United States

All people, male and female, child and adult, living in a given geographic area.

This number is calculated using Table DP05.
Data from the 2016 American Community Survey 1-Year Estimates.

Tables

COMPARATIVE DEMOGRAPHIC ESTIMATES
Source: Table CP05

View Full Table

	United States		
	2012-2016 Estimates	2007-2011 Estimates	Statistical Significance
SEX AND AGE			
Total population	318,558,162	306,603,772	c
Male	49.2%	49.2%	*
Female	50.8%	50.8%	*

Our search results page acts as a step between the landing page and the page users want

United States Census Bureau

Demographics of Cambridge

Search

Advanced Search | Filter Results

130,000 Residents of Cambridge

According to the American Community Survey 2017

Is this what you were looking for?

Source of Data Easily Accessible

Demographics of Cambridge, MA

City Page

An informative page about the city of Cambridge, Massachusetts, including demographic, economic, educational, and socio-economic data

Demographics of Massachusetts

State Page

An informative page about Massachusetts, including demographic, economic, educational, and socio-economic data

Cambridge, MA - American Community Survey 2017

Survey Page

The American Community Survey is run every year and is compiled in 1-year, 3-year, and 5-year summaries. Shown for Cambridge, MA.

Clear Information and Context

Racial Demographics - Cambridge, MA

City Page

Tags for Search Results

Racial Demographics of Cambridge on the Cambridge Summary page

U.S. Demographic Data

Topic Page

Explore Demographics for the entire U.S. View maps, tables and infographics.

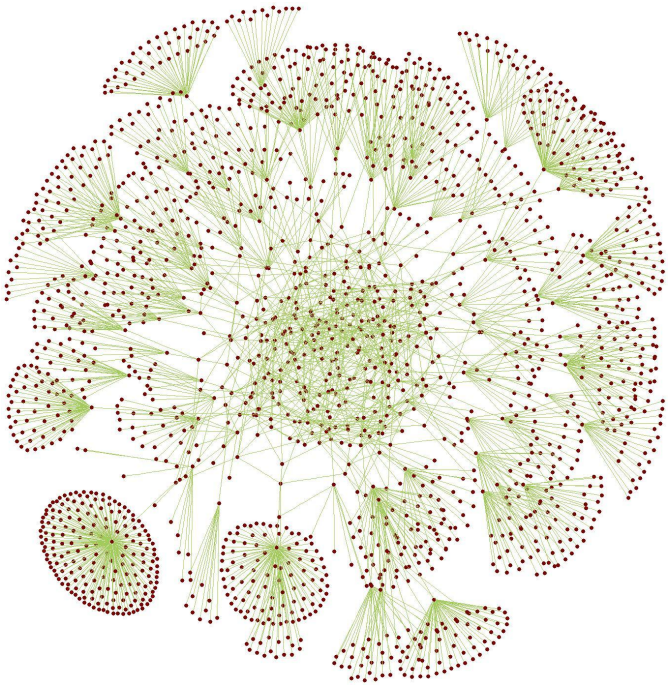
Were these results helpful?

Prompts for Feedback

The Big Picture

Census Website

The Internet



Expanding the Reach

- Partnerships with search engines & news orgs
- Open data initiatives
- Embeddable content
- Community outreach

Partnerships: Search Engines

Google

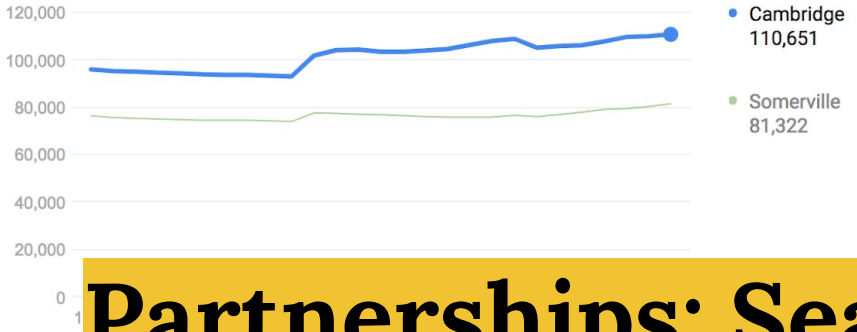
population of cambridge

All | News | Images | Maps | Shopping | More | Settings | Tools

About 1,580,000 results (0.40 seconds)

Cambridge / Population

110,651 (2016)

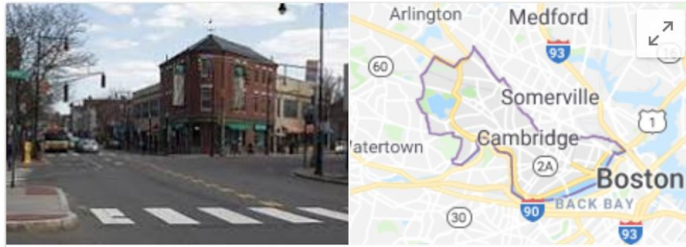


Explore more

Sources include: United States Census Bureau

Feedback

Demographics and Statistics FAQ - CDD - City of Cambridge ...
www.cambridgema.gov/CDD/factsandmaps/demographicfaq
The 2010 U.S. Census recorded **105,162 residents**, a 3.8% increase from the 2000 U. S. Census. The 2000 decennial census found that the population of Cambridge was **101,355**.



Cambridge

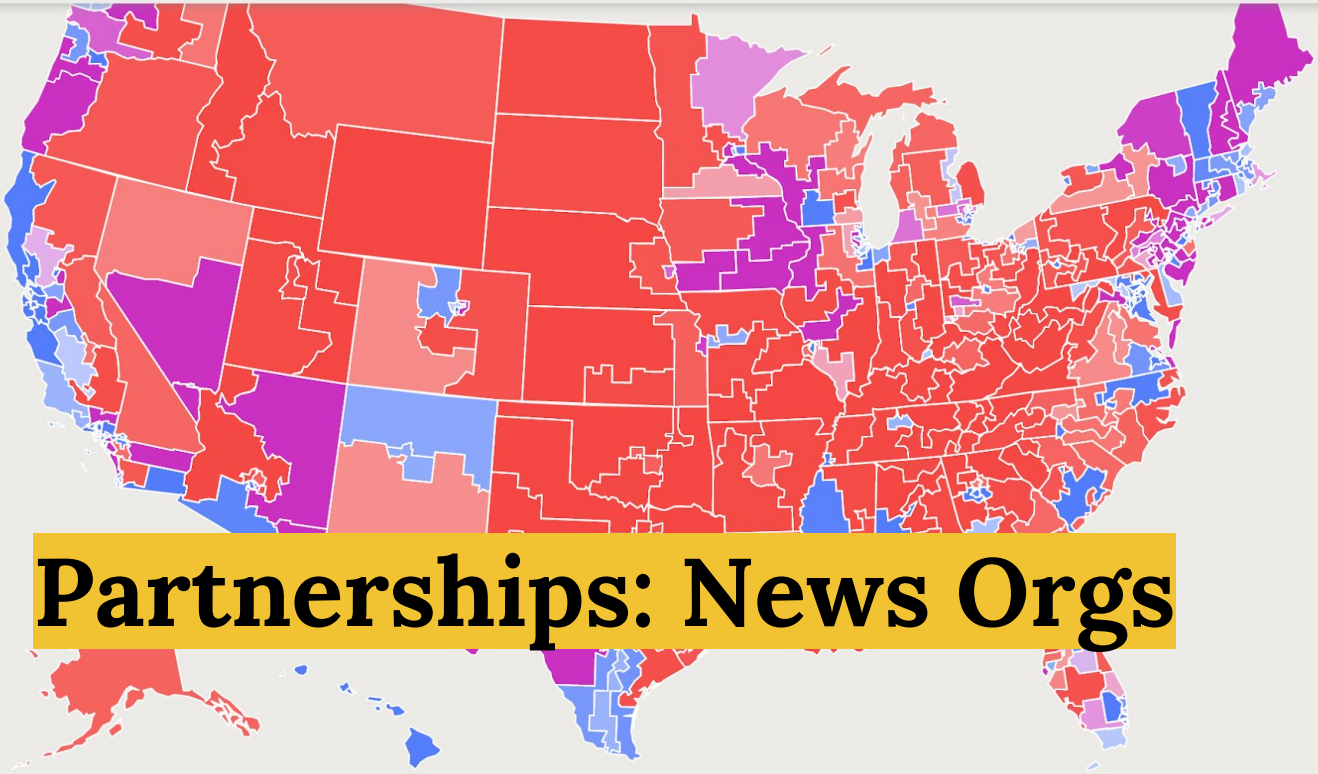
City in Massachusetts

Cambridge is a city in Massachusetts, across the Charles River from Boston. It's home to Harvard University. At the heart of campus, grassy dener Library. Harvard vard Art Museums M. Sackler collections. itute of Technology (MIT).

Population elsewhere

Boston	673,184 (2016)
Massachusetts	6.824 million (2016)
Cambodia	15.76 million (2016)

Show current district boundaries	Gerrymander districts to favor Republicans	Gerrymander districts to favor Democrats	Match partisan breakdown of seats to electorate	Promote highly competitive elections	Maximize number of majority-minority districts	Make district shapes compact (using an algorithm)	Make districts compact while following county borders



Partnerships: News Orgs

Search Data.gov

DATA.GOV

DATA TOPICS IMPACT APPLICATIONS DEVELOPERS CONTACT

OPEN GOVERNMENT

Data.gov is the federal government's open data site, and aims to make government more open and accountable. Opening government data increases citizen participation in government, creates opportunities for economic development, and informs decision making in both the private and public sectors.

Data.gov implements the Executive Order on making government data open and machine readable as well as the federal Open Data Policy.

Open Source

Data.gov was built with open source software, CKAN, and WordPress. Anyone, especially local, state, and foreign governments are welcome to borrow the code behind Data.gov.

Open Data in the United States

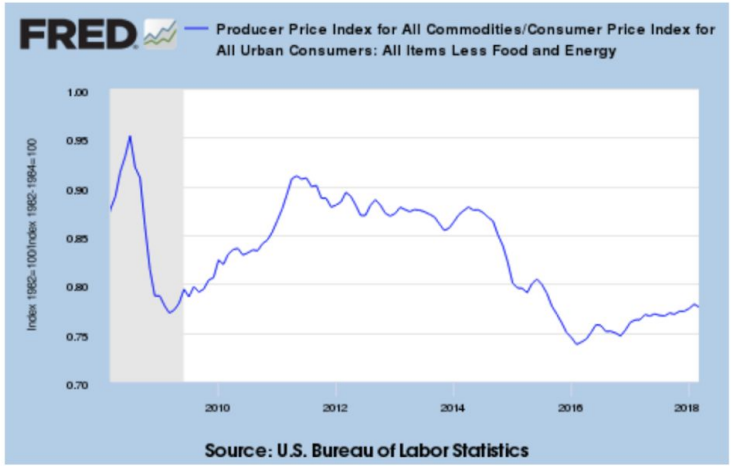
Open Data Initiatives

Numer

- C
- Counties.Data.gov
- States.Data.gov

By collaborating with these non-federal data sources, Data.gov is able to include this data in the catalog. Searches on the Data.gov catalog will return relevant datasets from both federal and non-federal sources.

U.S. States | U.S. Cities and | International | International



What I see here is a secular upward trend, presumably driven by rising demand from emerging economies in the face of limited resources, culminating in a big price rise in 2007-2008; we can

Embeddable Content

Where, in all this, is evidence of huge inflationary pressures? The basic story seems, again, to be one of a secular upward trend reflecting real factors, with more or less the kinds of fluctuations around that trend that you'd expect given the business cycle.

It's also worth pointing out that the commodities price spike of 2007-2008 was seen by some as a harbinger of major inflation; they were wrong.

man is an Op-Ed columnist for The New York Times.

- Biography »
- Columns »

BOOKS

- End This Depression Now! (2013)
- Principles of Economics, 2nd ed. (2009)
- The Return of Depression Economics and the Crisis of 2008 (Dec. 2008)
- The Conscience of a Liberal (Oct. 2007)

Community Outreach

Push the data out to the world

We're a team!

Special thanks to the Census Team

- Zachary Whitman
- Drew Zachary
- Rob Chestnut