The Value of Government Data

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- Regina Powers, David Beede, Sabrina Montes, and Rob Rubinovitz
Overview

- Motivation
- Why Should the Government Collect and Disseminate Data?
- What are the Costs?
- Who Benefits from Government Data?
Motivation

- Austere budget environment

- Some statistical programs under attack, mission being questioned

- More and more government programs are being “evaluated”
  - We’re behind the curve

- Would like your help
Why Should the Government Collect and Disseminate Data?
Constitution Article I, Section 2

“Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective Numbers. . . . . The actual Enumeration shall be made within three Years after the first Meeting of the congress of the United States, and within ever subsequent Term of ten years, in such Manner as they shall by Law direct.”
Why Should the Government Collect and Disseminate Data?

Government’s Unique Advantages

Comprehensive
Transparent
Consistent
Available to All
Confidential
Why Should the Government Collect and Disseminate Data?

Comprehensive: We Cover Everybody

• Strive to get data on ALL people and ALL businesses

• People
  – Rich/poor, urban/rural, young/old, north/south, east/west, ....
  – Solid random samples

• Businesses
  – Large/small, private/public, all geographies, all industries
  – Solid random samples
  – Economic Census , along with Census of Government and Census of Agriculture, covers 98 percent of economic activity
Transparency

• Our methods are open to the public
• Questions answered upon request
• Results in integrity and faith in our system
Example: GDP is comprehensive and transparent.
Consistency

Data is consistent from one period to the next, adding value to the information

Data is consistent across surveys

- “Household”/”Family”
- Race/ethnicity
- Geographic definitions (City, town, ...)

Why Should the Government Collect and Disseminate Data?
Available to All

Free to the public (mostly)

Public good:
  – Consumption by one user does not preclude or diminish consumption by another user
  – Once information is published, all can use it

External benefits: additional beneficial uses of the information may exist beyond those enjoyed by initial users
We Protect Confidentiality

- Perfect track record
Overview

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- What are the Costs?

- Who Benefits from Government Data?
What are the Costs?

Federal Government Spending on Principal Statistical Agencies
FY 1976-2013

Total Spending

$2.4 billion average

$1.2 billion average

Spending Excluding Census Bureau

Sources: Budget information compiled from Analytical Perspectives, President's Budget; Statistical Programs of the U.S. Government Supplement to President's Budget; Actual Agency Budgets; Principals and Practices for a Federal Statistical Agency
Note: Budget amounts converted to real 2012 dollars using PCE deflator.
What are the Costs?

Costs in Perspective

FY 2012 Federal Budget Authority for Selected Functions

International development and humanitarian Assistance
Space flight, research, and supporting activities
General science and basic research
Military Construction
Disaster relief and insurance
Conservation and land management
Pollution control and abatement
Federal correctional activities
Training and employment
Water resources
Energy supply
Community development
Agricultural research and services
Legislative functions
Principal Statistical Agencies
Recreational resources
Area and regional development

10-year average in 2012 dollars

Billions of Dollars
Who Benefits from Government Data?

Many Users, Many Beneficiaries

Federal Government

State and Local Governments

Non-Government Organizations

Private Businesses

Individuals
Use by Federal Policymakers

- **Macro:** Essential for assessing the overall economic health of the country
  - Critical for preparing the Federal budget, projecting tax revenue, and allocating funds
  - Basis for monetary, trade, investment, exchange rate, and financial policies

- **Micro:**
  - Funding formulas (over $400 billion based on the ACS)
  - Policy formulation
Use by Local Governments and Private/Public Partnerships

- Allocating Resources for Public Services
  - Schools
  - Roads
  - Police and other first responders
  - Hospitals

- Economic Development
Example: Re-aligning a School District

- The Fontana Unified School District in California experienced rapid population growth that required building new schools.
- Changes in distribution of the population required review of feeder patterns and boundary realignment.
- A consultant provided boundary options using analytic tools relying on data from the Decennial Census, ACS, CPS, BEA and BLS.
- There are about 14,000 public school districts in the United States with about 49.5 million students.
Who Benefits from Government Data?

Capital Outlays and Construction Expenditures of Public School Systems, 2001-2011

Source: U.S. Census Bureau, Public Education Finances Report, 2001-2011
Example: Building Transportation Infrastructure

• In 2011, the San Diego Association of Governments prepared its 2050 Regional Transportation Plan.

• The RTP was informed by models using ACS demographic, and economic, and commuting data to forecast population growth, distribution, and travel patterns.

• Many of the projects outlined in the transportation plan are currently in development.

• The value of construction put in place for highways and streets was $80.5 billion in 2012.
Who Benefits from Government Data?

Annual Construction Spending, Highways and Streets, 2002-2012

Source: U.S. Census Bureau, Annual Value of Construction Put in Place, 2002-2012
Example: Fighting Crime

The Illinois State Police used mapping software to identify methamphetamine hot spots.
Decennial Census data were used to develop a list of risk factors to identify the hot spots.
ACS data can also be used to help identify other crime hot spots to target resources more efficiently.
There were 11,000 meth laboratory incidents in 2012.
Who Benefits from Government Data?

Total Property Crimes
2002-2011

Millions

Source: FBI's Uniform Crime Reporting Statistics - UCR Data Online
Example: Locating a New Hospital

• Michigan’s Department of Community Health led a committee study a new community hospital approval procedure.

• Used 2000 Decennial Census data for a model to identify areas with inadequate access to existing hospitals.
Who Benefits from Government Data?

Annual Construction Spending in Health Care, 2002-2012

Source: U.S. Census Bureau, Annual Value of Construction Put in Place, 2002-2012
Example: Investing in Downtown Development

- A Business Improvement District in downtown Philadelphia needed to decide where to invest in better lighting, trees, signs, and parks.
- Used data from the Census Bureau’s LEHD program on where people live and work to define the downtown area.
- 1,249 principal cities of metropolitan and micropolitan statistical areas
- 729 incorporated places with population 50,000 or more
- 3,143 counties
- 40,000 members of American Planning Association
Example: Local Economic Development

- The **Northeast Indiana Regional Partnership**, public-private economic development organization, created the Northeast Indiana Economic Dashboard, using BEA’s Per Capita Personal Income and GDP-by-Metro statistics to gauge economic performance.

- The **City of Jacksonville, Florida** uses BEA’s Per Capita Personal Income and Average Annual Earnings by Job statistics as benchmark indicators for measuring economic progress raising the income of Duval County residents.
Who Benefits from Government Data?

Use by Private Sector Businesses
Example: Locating a New Establishment Site

• A large pet supplies retailer used a GIS-based site selection tool to mitigate risk from opening new stores.
• The tool used data from 2010 Decennial Census and ACS to make 5-year projections.
• Using its own industry benchmarks, the retailer demonstrated the tool reduced risk and yielded positive return.
Who Benefits from Government Data?

New Retail Establishments Per Year, 2000-2011

Source: U.S. Census Bureau, Business Dynamics Statistics
Example: Breaking into Exporting

- A coffee producer in San Antonio, Texas received customized market research from the U.S. Commercial Service.
- Market research was based in part on detailed ITA and Census export data by country and product.
- The market research helped the company break into export markets to Mexico, Italy, Iraq, Australia, and Japan.
- Export’s share of revenue increased from 2% to 60%, and the company added jobs.
- In 2011 302,000 U.S. companies exported goods valued at $1.5 trillion.
- The vast majority of U.S. companies do not export, suggesting there may be huge potential to increase the number of exporters.
Example: Settling Legal Disputes

- 73 automobile dealerships were terminated by General Motors and Chrysler and pursued arbitration under federal legislation.
- The dealerships hired a consulting firm that used Economic Census data to assess overall industry structure and economic conditions (among other tasks) to dispute the terminations.
- More than 90 percent of dealerships received favorable settlements or were reinstated.
- Management consulting services had revenues of $126 billion in 2011.
- Offices of lawyers had revenues of $236 billion in 2011.
Example: Product Marketing

• An automobile manufacturer developed a marketing campaign for a new vehicle.
• The company used a market segmentation tool to identify the most profitable categories of prospective customers to target, where they were located, and their favored media channels.
• As a result, a direct mail campaign had a high response rate.
• The market segmentation tool relied on data from Decennial Census, Census demographic estimates and projections for population, households, families and housing units, and the CPS.
• Advertising and related services and market research industries had revenues of $110 million in 2011.
Who Benefits from Government Data?

Annual Revenue for Service Industries, 2004-2012

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<th>Year</th>
<th>Advertising</th>
<th>Management Consulting</th>
<th>Legal</th>
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<tr>
<td>2012</td>
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<td>171.2</td>
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Source: U.S. Census Bureau, Quarterly Services Survey
Example: Choosing Real Estate Investments

- A real estate investor determines whether houses in a county are under- or overpriced based on the ratio of average sales price to median household income.
- Uses median household income from the Census State & County QuickFacts website.
- Identified a county where houses were underpriced, secured financing and partners, and bought houses that appreciated in value more than expected.
- Existing home sales were 4.66 million in 2012.
- Investors accounted for 20.2 percent of home purchases.
Example: Choosing a Career

- A high school honors student was trying to decide on a career path.
- He researched careers using BLS’s Occupational Outlook Handbook, which contains information for many occupations on what workers do on the job, working conditions, required training and education, earnings, and projected job growth.
- He decided to major in mechanical engineering and landed a job at a large tech company.
- About 3.4 million students are expected to graduate from high school in 2012-2013.
- Nearly 900,000 associates degrees and 1.7 million bachelor’s degrees are expected to be conferred in 2012-2013.
- Baby boomers have held an average of about 11 jobs during their working years, which suggests that job change, and possibly career change, is an expectation for today’s workers.
Who Benefits from Government Data?

Degrees Conferred by School Year, 2003-2012

Example: Forecasting the Weather

- The National Weather Service of the Commerce Department’s National Oceanic and Atmospheric Administration collects an enormous amount of meteorological data every day.
- The NWS publishes weather forecasts; and private sector meteorologists use NWS data to make their own forecasts.
- Tens of millions of people visit Weather.com each month, and it is consistently a top-visited site.
- Researchers surveyed a sample of adults and found that 96 percent of adults report consulting weather forecasts, obtaining an average of 3.8 forecasts a day, for a total of 301 billion in 2006.
- The median valuation for a year’s worth of forecasts is $286, suggesting the aggregate value of forecasts was $31.5 billion in 2006 (or about 10.5 cents each).
- Federal spending on meteorological operations and research totaled $3.4 billion, and private sector spending on weather forecasting was $1.7 billion in 2007.
Who Benefits from Government Data?

Unique Monthly Visitors to Weather.com
2006-2013

Sources: Top 50 Web Properties for July, various years; Comscore.com, Marketingcharts.com, PRNewswire.com, VenutureBeat.com
A Favorable Return on the Investment

• By its nature as a public good, government data are difficult to value
• But, the benefits of the data extend to citizens both directly and indirectly through better decision-making by Federal policymakers, local governments, businesses, and individuals
• As our examples illustrate, government data support the information infrastructure that is key to the success of the economy in an information age.
Where Does the Money Go?
Costs in Perspective

- Healthcare Construction (41.8 Billion USD)
- Retail Construction (27 Billion USD)
- Public School Construction (40 Billion USD)
- Highway and Street Construction (80.5 Billion USD)
- Statistical Agency Budgets (3.6 Billion USD)
- Advertising Revenue (94.8 Billion USD)
Your Ideas??