

BEA's Prototype Estimates of GDP for Metropolitan Areas

A Report to the
BEA Advisory Committee

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BEA
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Measuring the Nation's Economy.



BEA Introduces Prototype Estimates of GDP by Metropolitan Area

- On September 26, 2007, the U.S. Bureau of Economic Analysis released experimental measures of economic output produced in the Nation's metropolitan areas.
- GDP is BEA's featured measure of economic activity.
- Prototype statistics made available for evaluation and comment by data users.
- Part of BEA's commitment to make accounts more responsive, timely, relevant and accurate for data users.

Responsive to Needs of Data Users

- Previously, sub-state statistics of economic activity limited to measures of earnings and personal income.
- Resulted in an information gap in regional economic data
- Estimates of GDP by metropolitan area developed to meet needs and requests of data users.

Methodology and Estimates

- Developed a methodology that is simple and transparent.
- Methodology relies heavily on industry earnings data (which represent 64 percent of GDP) to allocate state GDP to counties, that are then aggregated to metropolitan areas
- Estimates are comprehensive and fully integrated with other estimates prepared by BEA.

Estimates' Methodology

- Equation for prototype estimates:

$$GMP_{i,m,yr} = \sum_{co=1}^N \left(\frac{GDP_{i,st,yr}}{Earnings_{i,st,yr}} \times Earnings_{i,co,yr} \right)$$

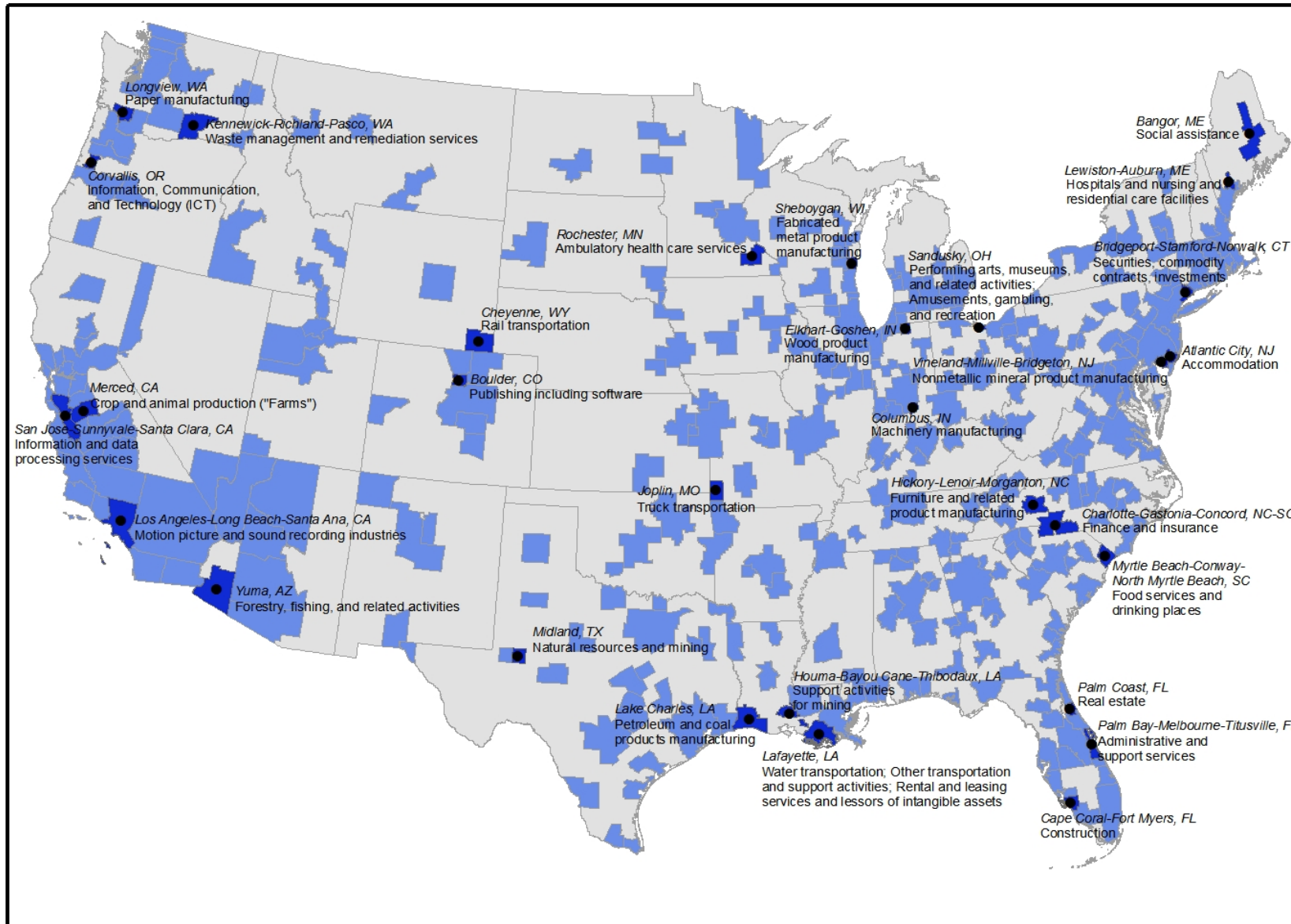
N = number of counties in MSA

- Sum of gross county product controlled to GDP-by-state estimates.
- Chained-dollar GDP by metropolitan area computed with national deflators.

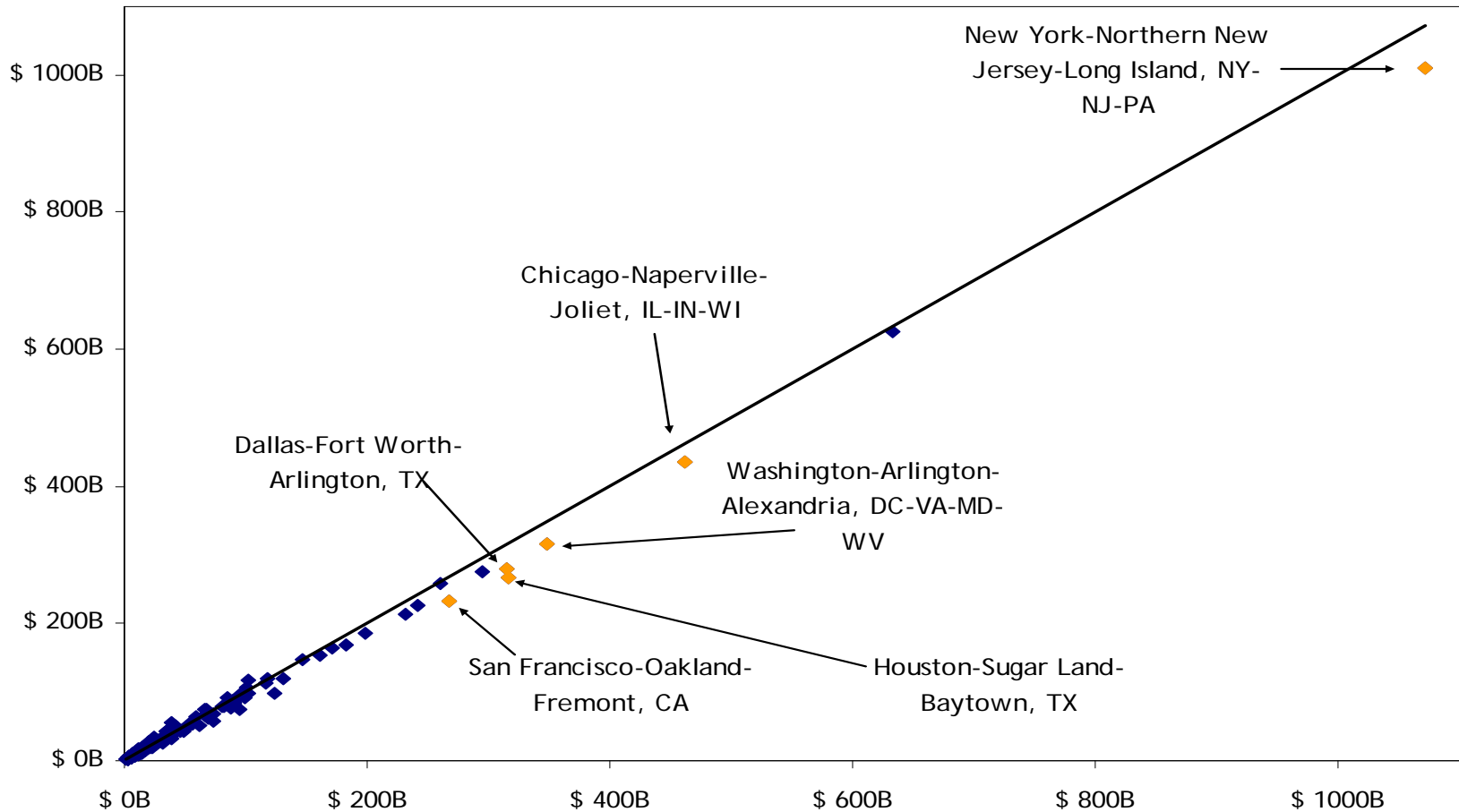
Evaluation Tools

- Internal sources
 - GDP by state
 - Earnings by place of work
 - Personal income by place of residence
 - Location quotients
- External sources
 - Standard & Poor's CompuStat Database
 - Global Insight and Moody's Economy.com
 - Numerous industry and local government websites

Chart 1. Metropolitan Statistical Areas with Highest Concentrations of Industry Activity, 2005



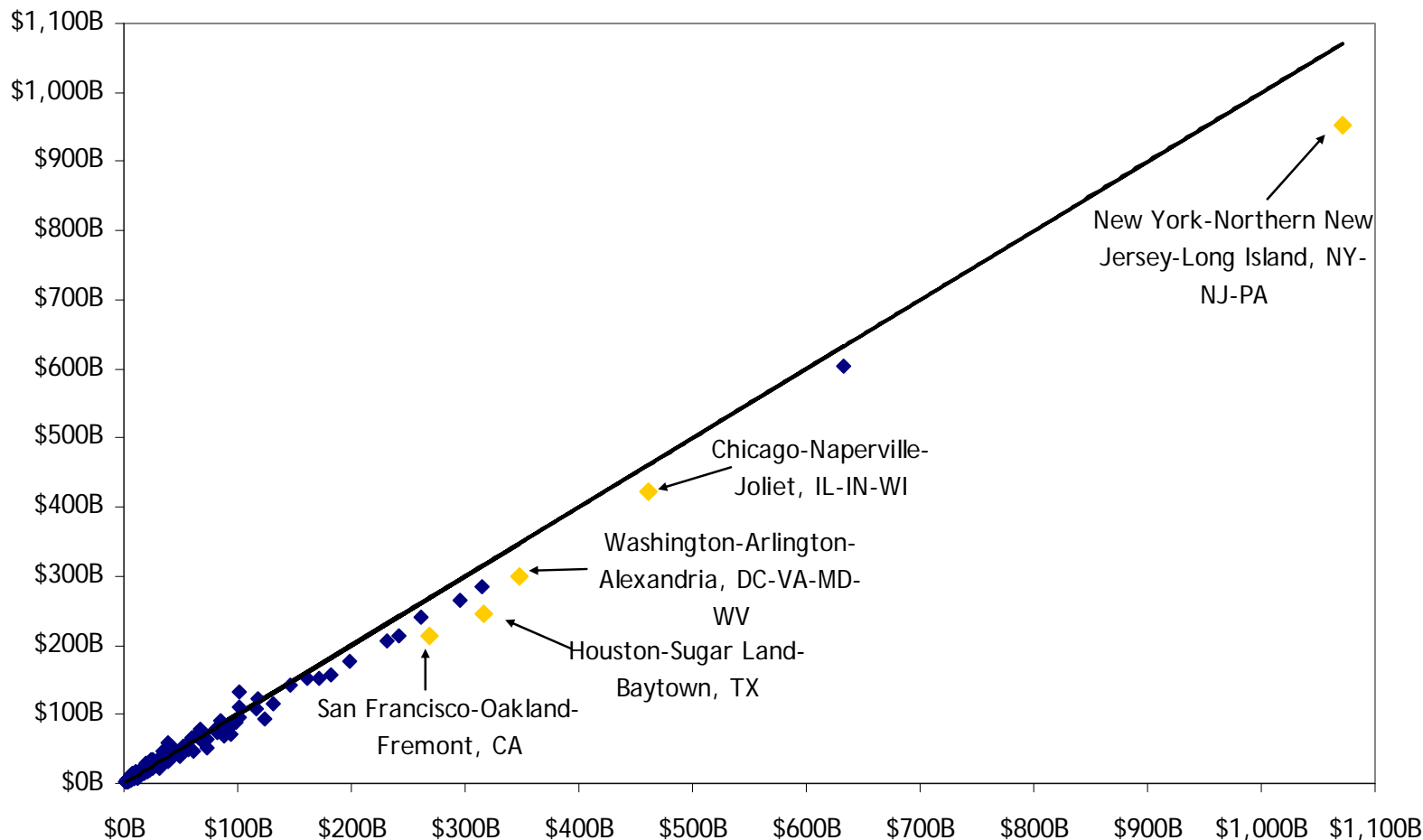
Economy.Com GMP Compared to BEA Prototype GDP by Metropolitan Area, 2005



Source: September 2006 Moody's Economy.com data release.

Note: The 45 degree reference line indicates where points would be located if Economy.com GMP and BEA GDP by metropolitan area were equal. Values are shown in millions of current dollars.

Global Insight GMP Compared to BEA Prototype GDP by Metropolitan Area, 2005



Source: "GMP The Engine of America's Growth," January 2007. Prepared for the U.S. Conference of Mayors by Global Insight.

Note: The 45 degree reference line indicates where points would be located if Global Insight GMP and BEA GDP by metropolitan area were equal. Values are shown in billions of current dollars.

What Questions Can These Data Answer?

- What is the size of my metropolitan area's economy?
- Is my metropolitan area's economy growing or declining and how does it compare with the state, with the Nation?
- What industries are driving my metropolitan area's economic growth?

Potential Uses of the Data

- Potential important uses include:
 - Determining the overall size and growth of metropolitan economies
 - Assessing the impacts of natural or man-made disasters on cities
 - Analyzing comparative industrial growth across the Nation's metropolitan areas

Metropolitan Area GDP in Perspective in 2005

- Current-dollar GDP for the Nation was \$12.4 trillion; it was \$1.6 trillion for California, the largest state.
- GDP in the New York metropolitan area was \$1.1 trillion, the largest MSA.
- Metropolitan areas produced 90 percent of U.S. current-dollar GDP in 2005.

Metropolitan Areas in Perspective

- The top 5 metropolitan areas account for 23 percent of U.S. GDP.
- The top 10 metropolitan areas account for 34 percent of U.S. GDP.
- The smallest 75 metropolitan areas account for less than 2 percent of U.S. GDP.

Metropolitan Areas in Perspective

- The New York metropolitan area ranks 2nd among states and ranks 10th among countries in output.¹
- 26 out of 363 metropolitan areas have populations greater than 2 million.
- 266 metropolitan areas have populations less than 500,000.²

¹ World Development Indicators database, World Bank, April 23, 2007.

² Census Bureau midyear population estimates. Estimates for 2000-2005 reflect county population estimates available as of March 2007.

Ten Largest Metropolitan Areas, 2005

(Ranked by prototype estimates of GDP by metropolitan area, and published estimates of Earnings, and Personal income)

	Rank ¹		
	GDP by metropolitan area	Earnings	Personal Income
New York-Northern New Jersey-Long Island, NY-NJ-PA . . .	1	1	1
Los Angeles-Long Beach-Santa Ana, CA	2	2	2
Chicago-Naperville-Joliet, IL-IN-WI	3	3	3
Washington-Arlington-Alexandria, DC-VA-MD-WV	4	4	4
Houston-Sugar Land-Baytown, TX	5	6	9
Dallas-Fort Worth-Arlington, TX	6	5	7
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	7	7	5
San Francisco-Oakland-Fremont, CA	8	9	6
Boston-Cambridge-Quincy, MA-NH	9	8	8
Atlanta-Sandy Springs-Marietta, GA	10	10	11

Source: April 2007 local area personal income release which is reported for 2006 OMB metropolitan statistical area definitions.

¹ Rank for each series is based on current-dollar estimates.

Chart 2. Percent Change in Real GDP by Metropolitan Area, 2004-2005

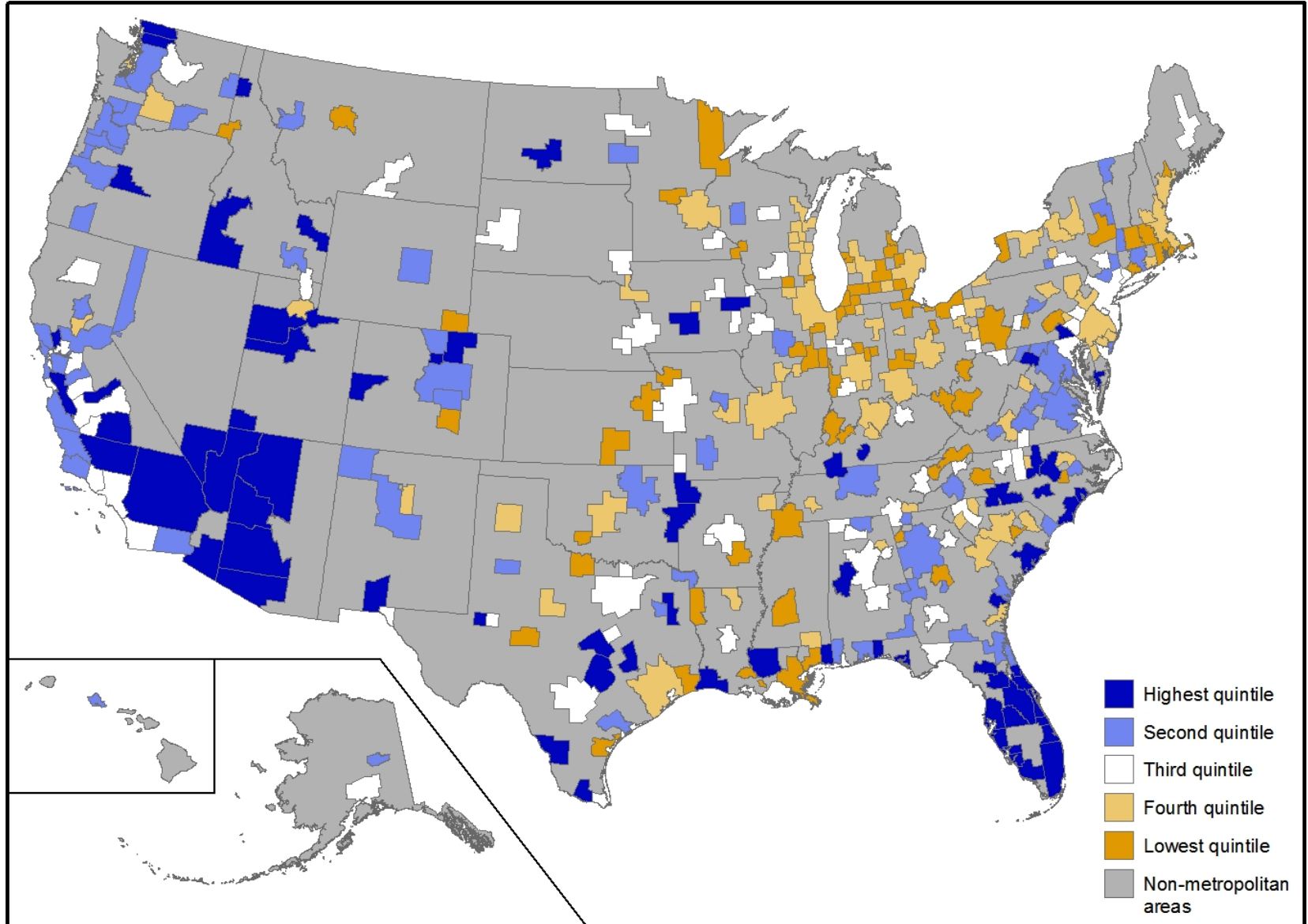
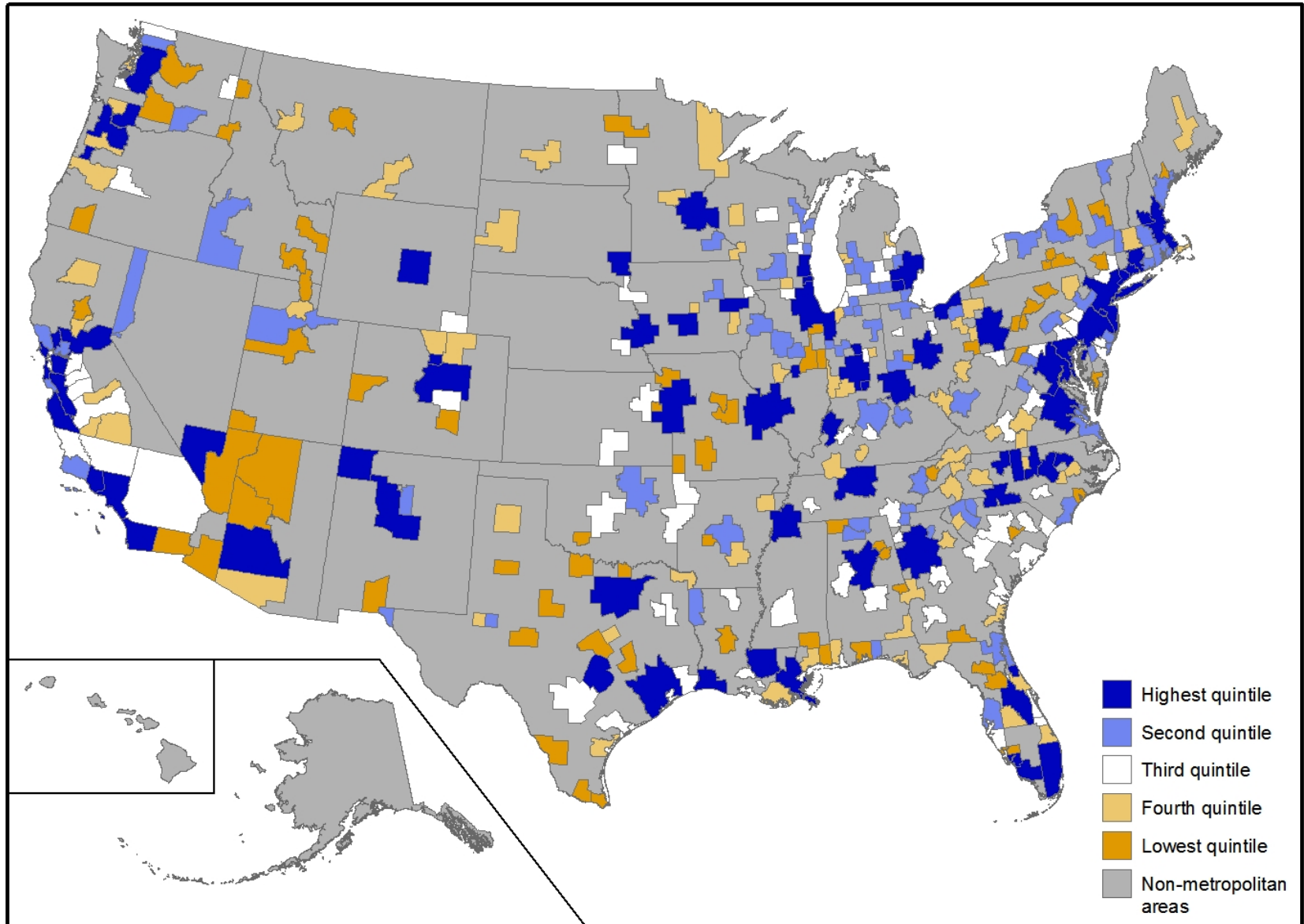


Chart 3. Real GDP Per Worker by Metropolitan Area, 2005



GMP Estimates by Private Sector Firms

- Gross county product is not controlled to GDP-by-state values.
- Estimates are not consistent with BEA's regional and national accounts.
- Firms do not have access to undisclosed values for input data.

Challenges

- Unavailability of GDP-by-state data sources for MSAs.
- Weak correlation of earnings and output for some capital-intensive industries.
- State relationship of GDP to earnings may not apply to all MSAs.
- Earnings data are not available for years prior to 2001.

FAQs, GDP by Metropolitan Area

Q Why do you refer to these estimates as “prototype?”

A These are experimental estimates prepared with a relatively simple methodology and limited staff and are being released for the first time for review and comment by our data users.

FAQs, GDP by Metropolitan Area

Q Do you have plans to produce these statistics for metropolitan divisions?

A The term “Metropolitan Division” is used to refer to a county or group of counties within a Metropolitan Statistical Area that has a population core of at least 2.5 million. Because of sample sizes and associated data quality and confidentiality issues even at the MSA level, we currently have no plans to produce data for Metropolitan Divisions.

FAQs, GDP by Metropolitan Area

Q You released data for 2005 on September 26, 2007. Do you have plans for making these data more timely?

A The data we released today are experimental estimates based on source data that ran through 2005. BEA is always looking to improve the timeliness of its estimates, as well as their accuracy and relevance.

BEA continues to assess the possibility of producing these statistics annually. Acceleration of their release to within one year of the reference year appears to be feasible.

GDP by Metropolitan Area: Future Work

- Monitor user reaction and accuracy of prototype top-down GDP-by-metropolitan-area estimates and revise methodology if appropriate and feasible.
- Further research to refine top-down estimates.

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