LED Data Enhancements

Introducing New Quarterly Workforce Indicators by Worker Race, Ethnicity, and Education

LED Partnership Workshop
Arlington, VA
March 2011

Erika McEntarfer
LEHD Economic Research Group
Center for Economic Studies, US Census Bureau

Overview

- As part of the LED budget initiative, LEHD staff have been working on multiple enhancements to the microdata and public use data products
  - Enhancing core microdata with additional information on workers and firms
  - Expanding data coverage (federal jobs, self-employed)
  - New product development (job-to-job flows)
- Today will introduce the first deliverable from the budget initiative and discuss upcoming enhancements

New LED data w/race, ethnicity, and education now being released

- First set of deliverables from the LED budget initiative
  - New QWI tabulations by race & ethnicity, education by sex
  - New race, ethnicity, & education data in OnTheMap
- Enormous effort over the last year by the LEHD staff to get the new variables in the microdata and into the production code

New race & ethnicity variables in QWI and OnTheMap:

- Detailed employment indicators by six race variables
  - White alone
  - Black or African American Alone
  - Asian Alone
  - Native Hawaiian or Pacific Islander Alone
  - American Indian or Alaska Native Alone
  - Two or More Races
- And two ethnicity variables
  - Hispanic or Latino
  - Not Hispanic or Latino
- Full cross-tabulations for QWI, some categories collapsed for OTM

Adding race and ethnicity to the LEHD microdata

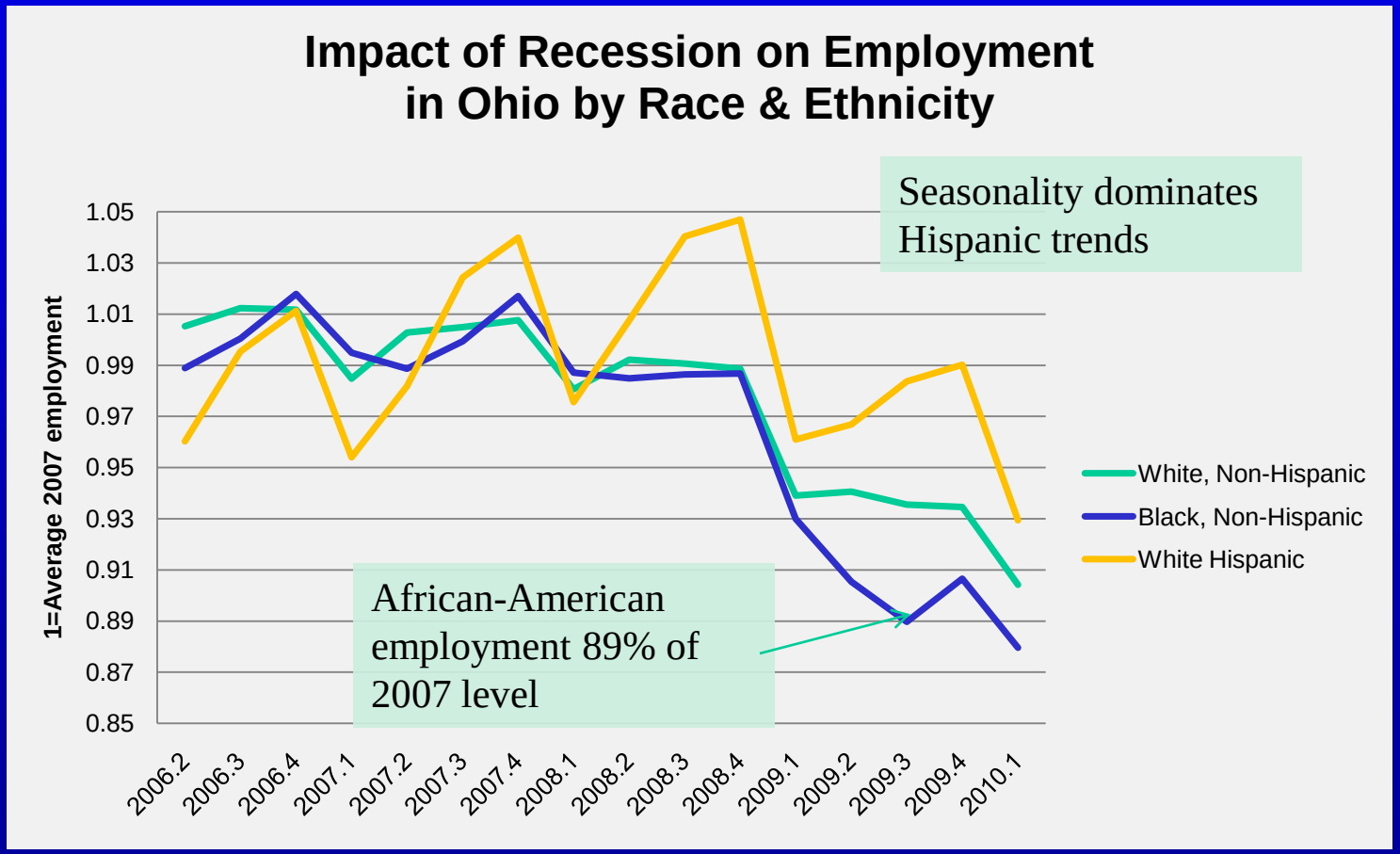
Individual Characteristics File (ICF)

Use Decennial race & ethnicity when available

PIK	Decennial Race	Decennial Ethnicity	SSA Race	QWI Race	QWI Ethnicity
Person1	White alone	Not Hispanic	White	White alone	Not Hisp
Person2	Black alone	Not Hispanic	Black	Black alone	Not Hisp
Person3	.	.	Hispanic	White alone	Hispanic

When no Decennial response, use Census Numident race as conditioning variable for OMB compliant variable impute

QWI Example: Has the recession impacted different workers differently?



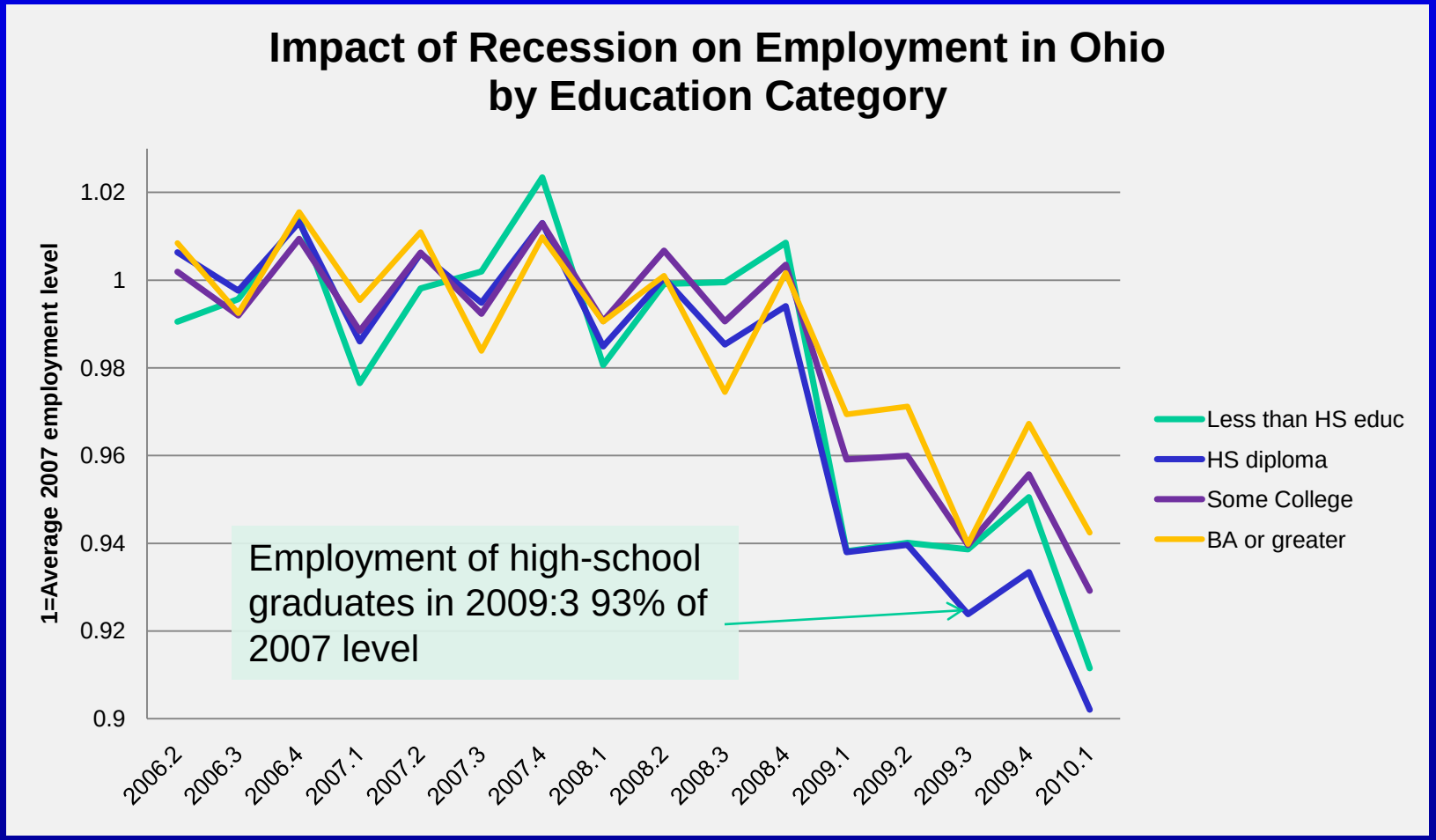
Education in QWI and OnTheMap

- New release has detailed industry and geography employment indicators by 4 education classes
  - Less than a high school diploma
  - High school graduate, no college
  - Some college or associates degree
  - Bachelor's degree or greater
- Education data are for workers age 25 and older only
  - Education status is dynamic, particularly before age 25
  - Needed a static education variable given limited source data
  - Older cut-off for OnTheMap

Why only four education categories?

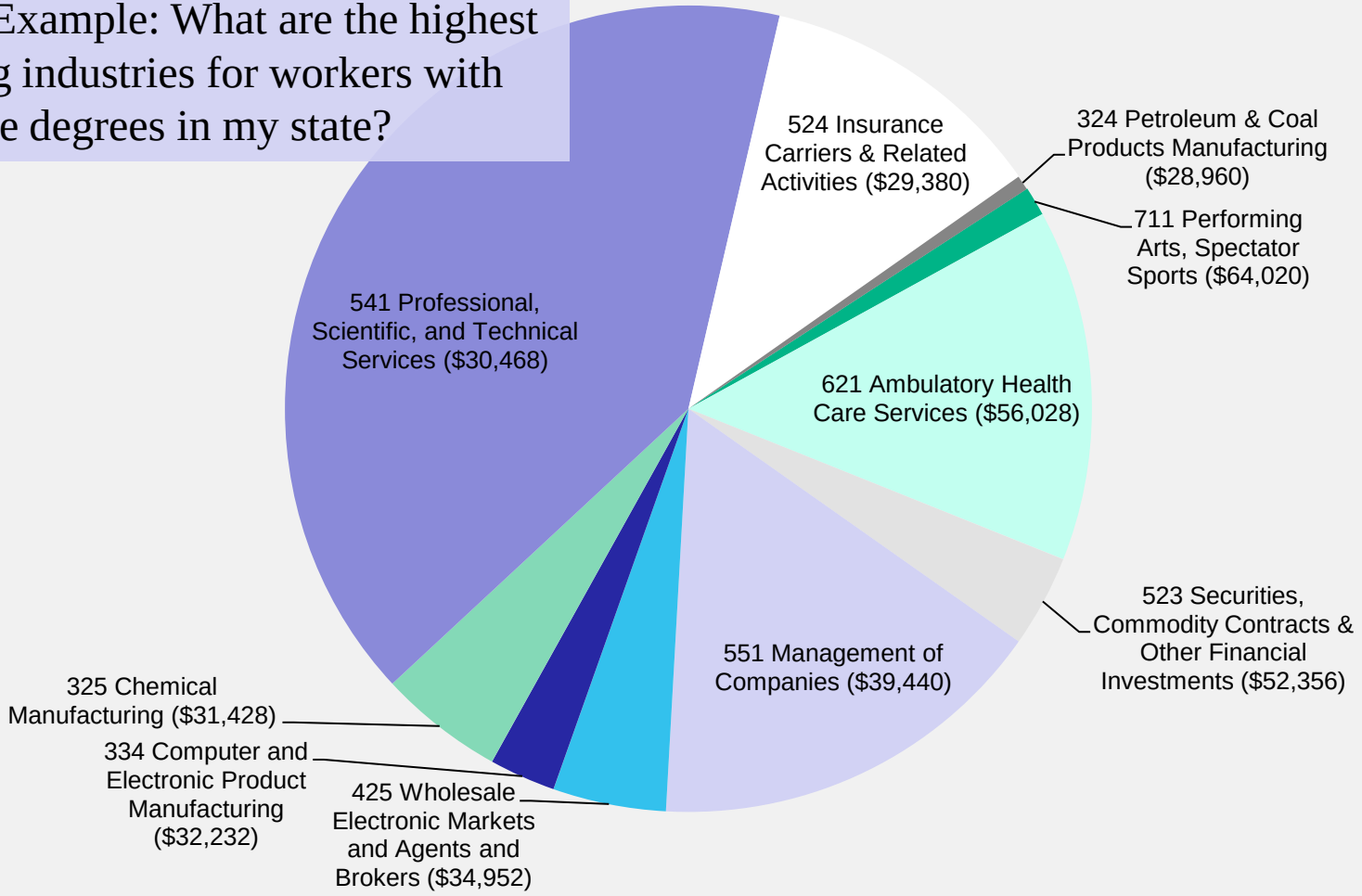
- No education registry or census captures educational attainment for the entire U.S. population
  - Limited survey data on educational attainment (Long Form, ACS, SIPP, etc)
  - Use state of the art imputation methods to capture small-area estimation properties
  - Need to keep set of education categories at a higher level of aggregation to make estimation feasible

QWI Example: Recession impact on employment by education.

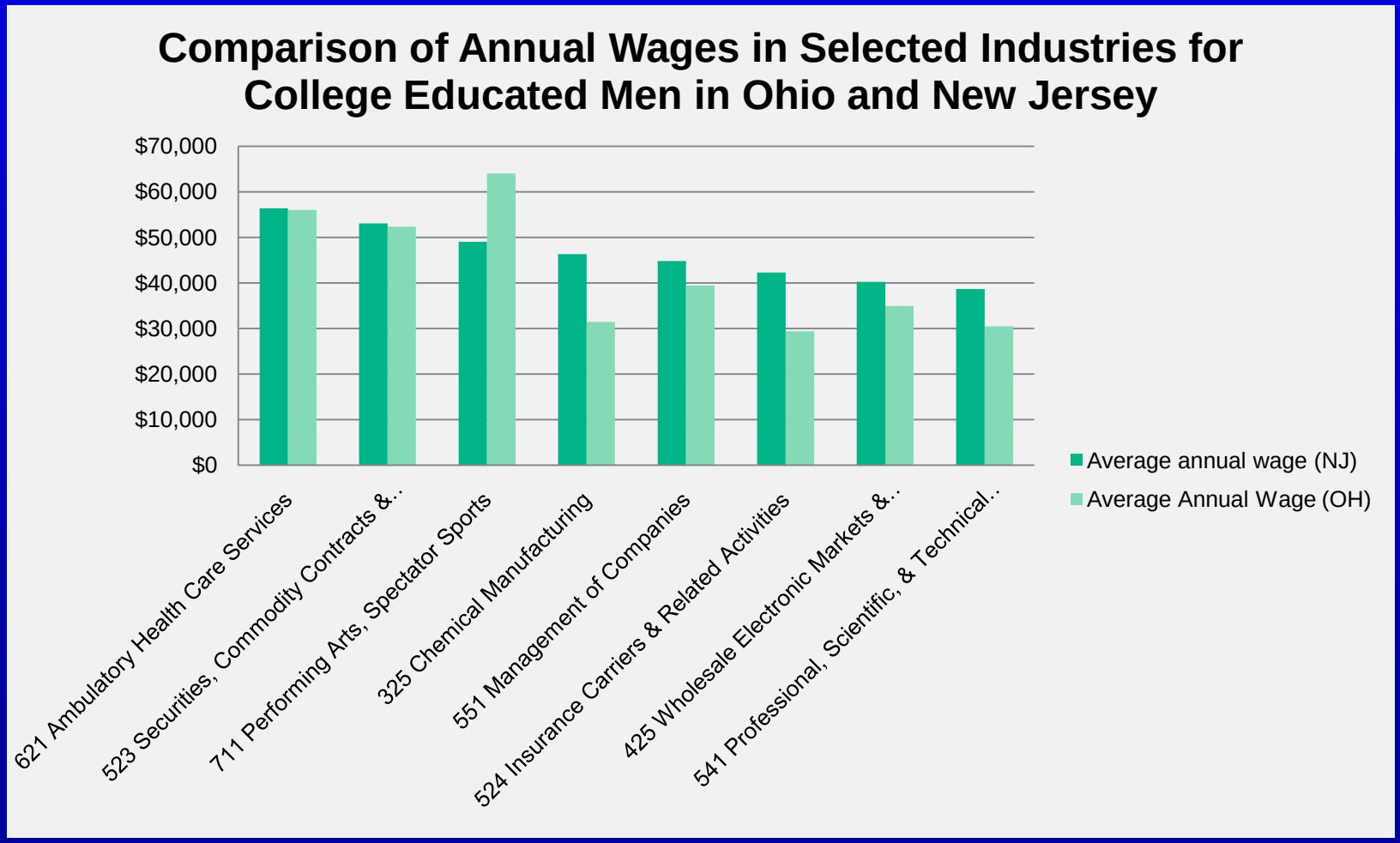


Highest Wage Industries for College-Educated Men in Ohio, by Share of Employment in Sector

QWI Example: What are the highest paying industries for workers with college degrees in my state?



QWI Example: Comparison of average wages for skilled workers across states.



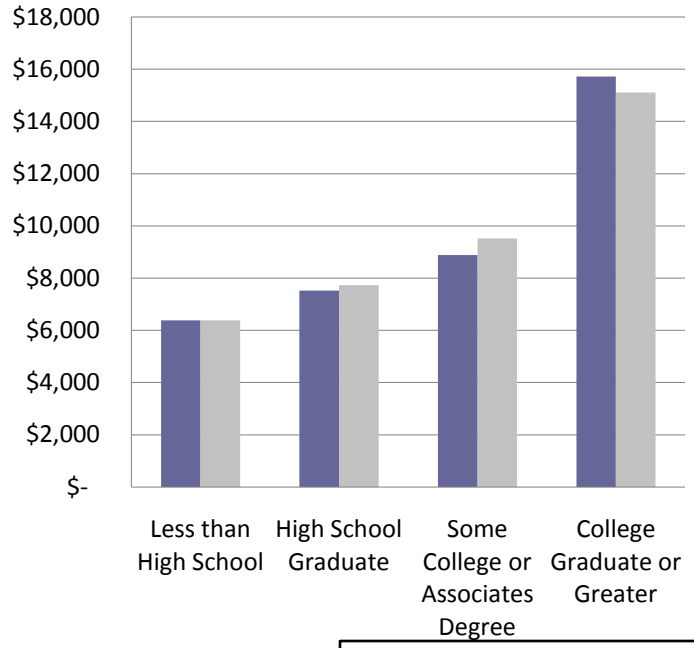
Imputing education when no survey response can be found

- Use information from workers with complete education data
  - Classify or assign each worker to a given cell (a particular combination of a set of known characteristics such as sex, age, industry, firm size, etc.)
  - Within each cell we estimate the distribution of education using the workers with complete information
- The resulting distribution is then used in our sampler to generate implicates

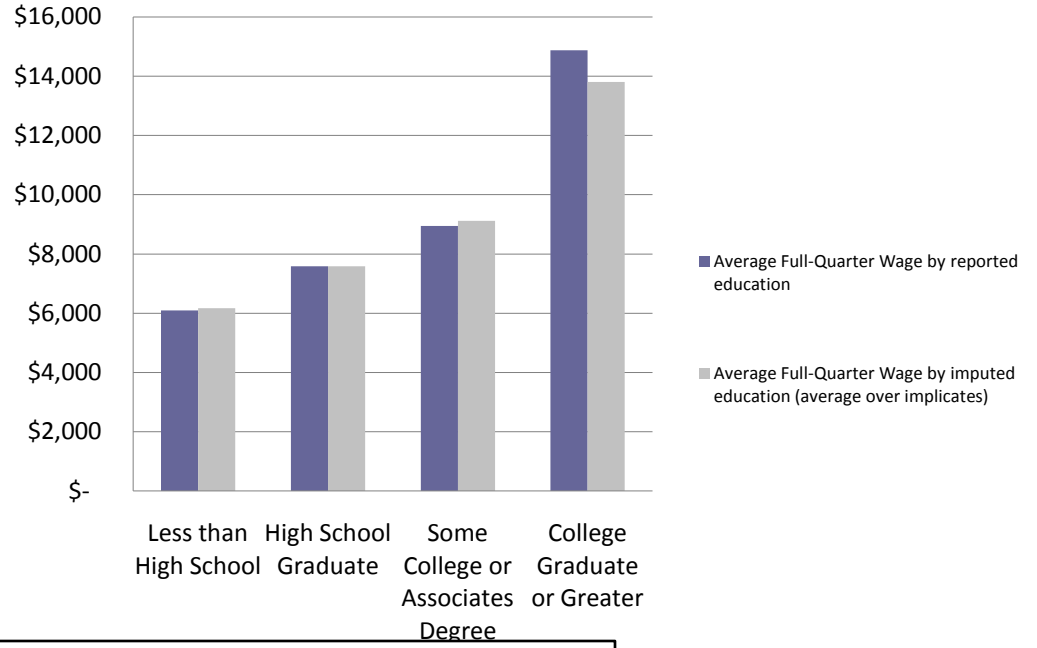
Checking the quality of the education impute

- Great care was taken in developing the imputation model and stratifying variables
- Will discuss in detail one test of quality of result:
  - Use sample with reported education. (‘D Sample’)
  - Compare key QWI statistics for this sample using reported education and compare to those using imputed education
  - Next slides show a sample of key results

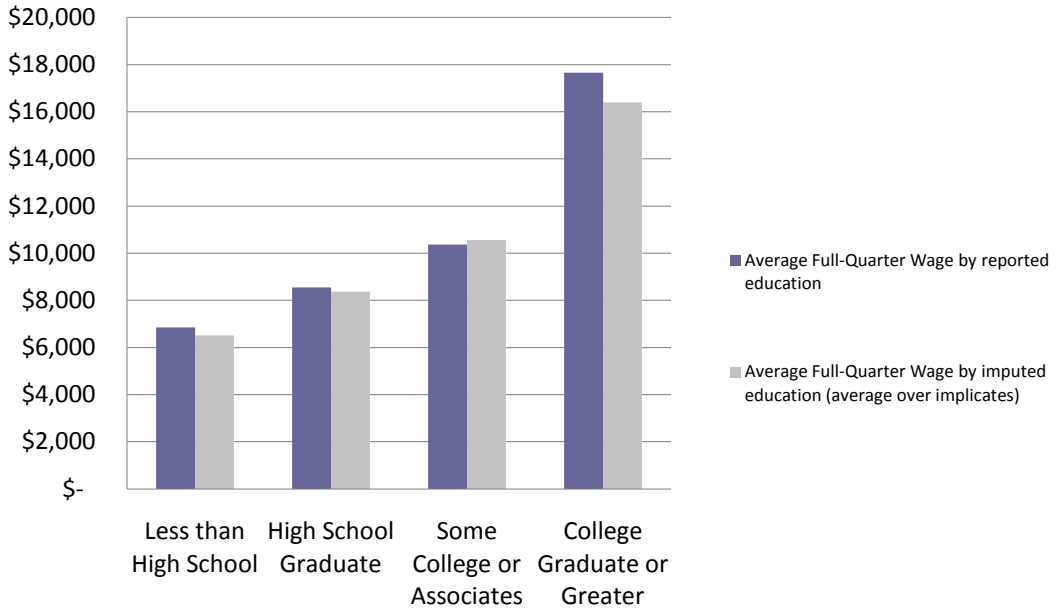
Illinois: Wages by Education



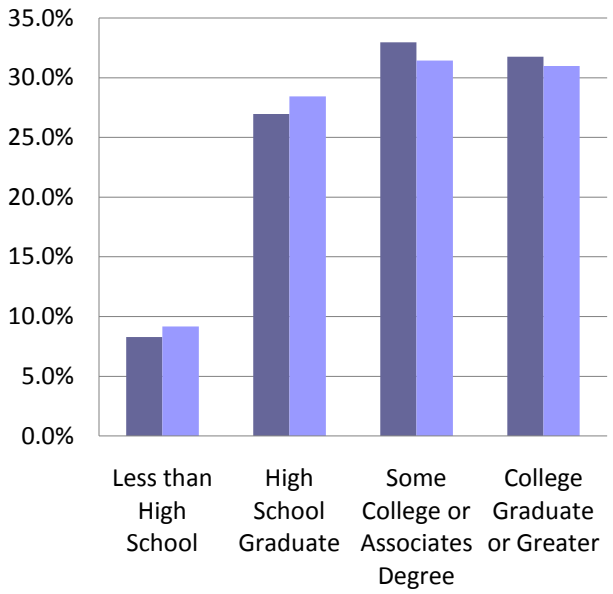
Delaware: Wages by Education



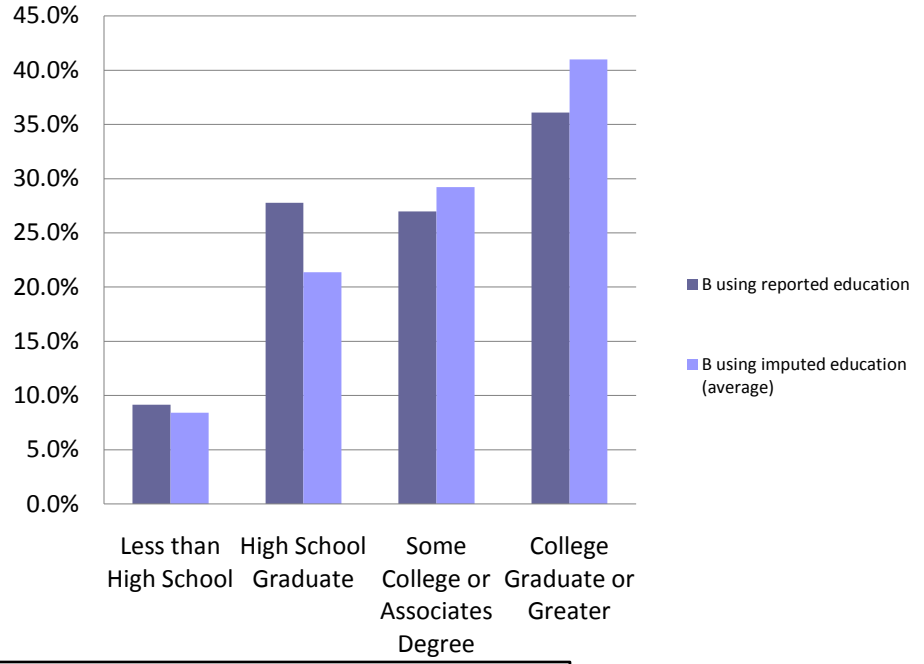
New Jersey: Wages by Education



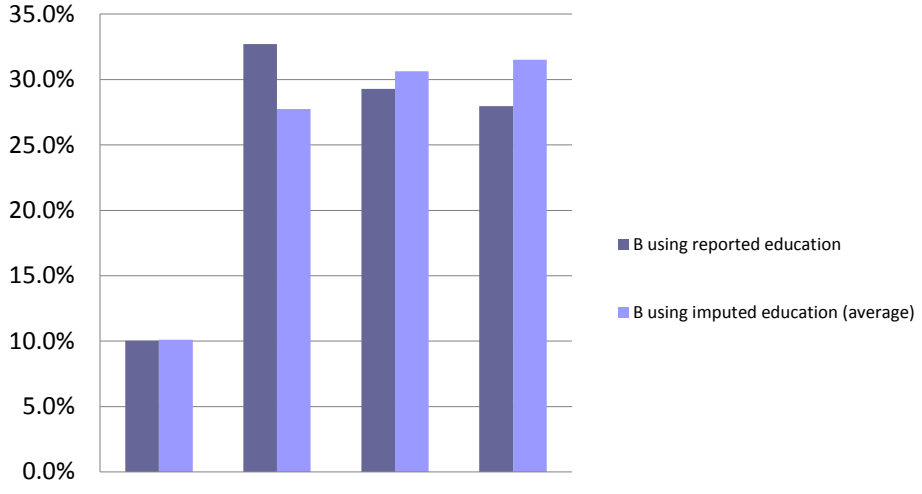
Illinois: Distribution of Employment by Education



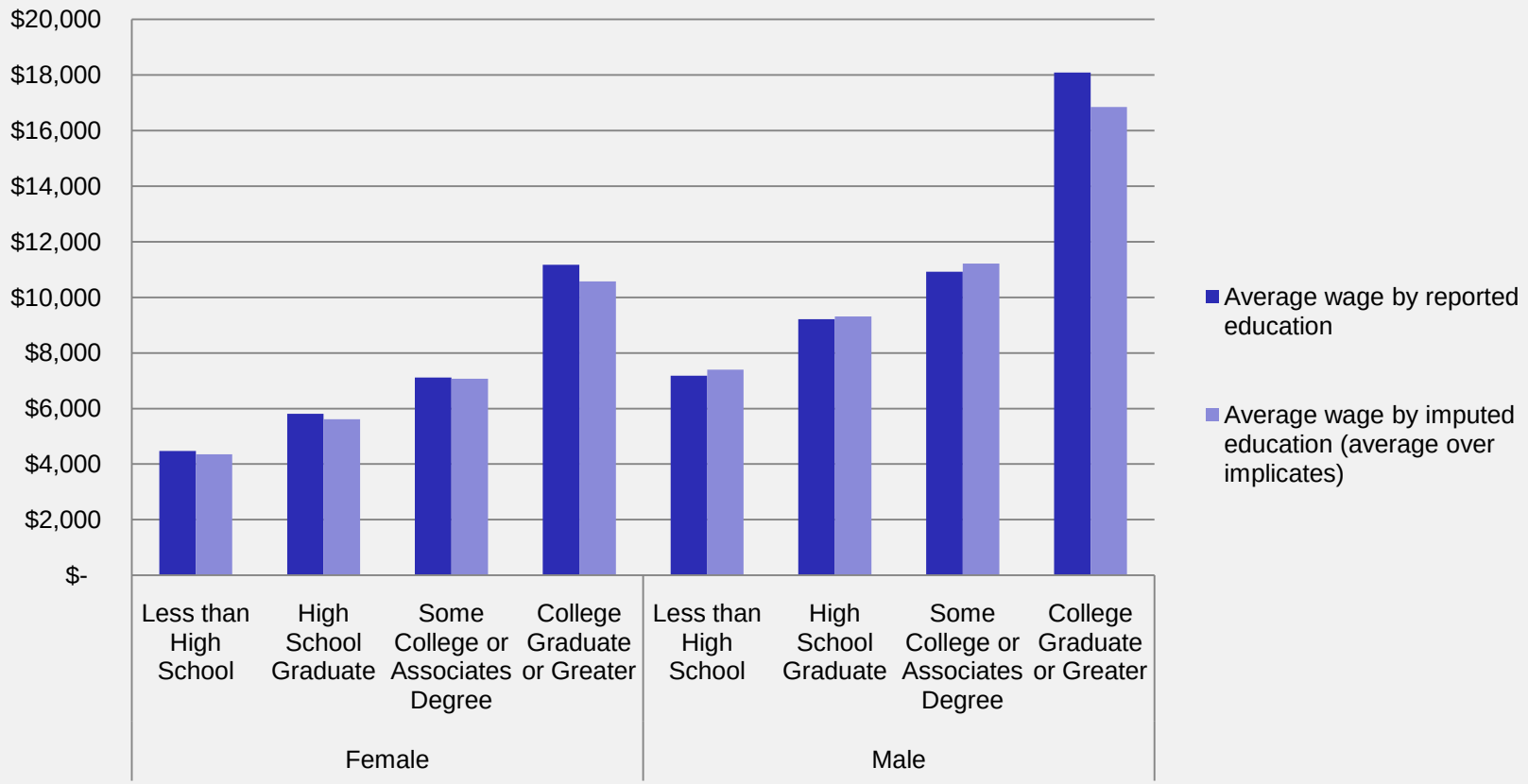
New Jersey: Distribution of Employment by Education



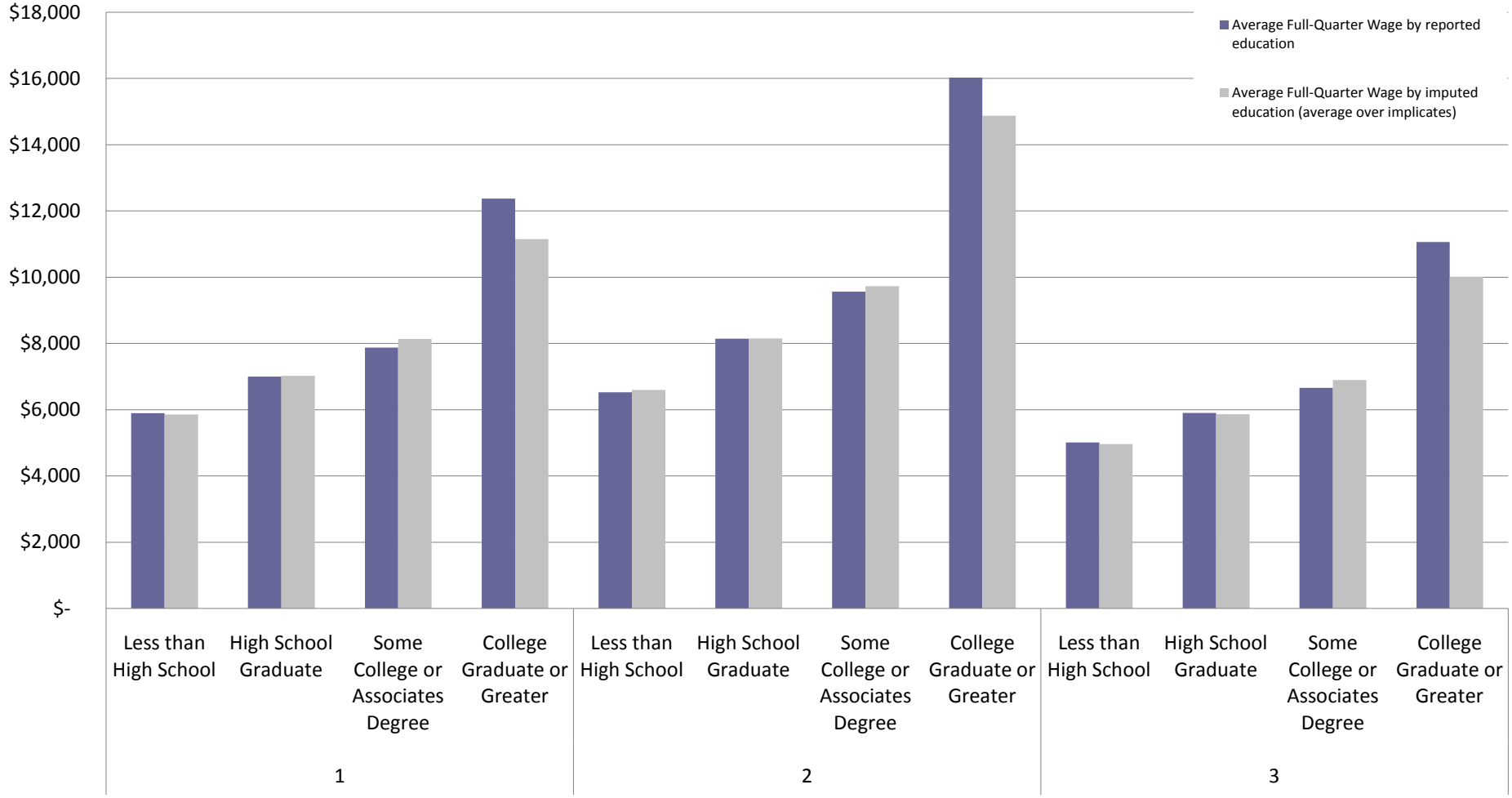
Delaware: Distribution of Employment by Education



Delaware: Wages by Sex and Education



Delaware: Wages by FIPS County



Summary of results

- Comparisons generally show close correspondence between estimates using reported education and imputed education
- At the statewide level:
  - The difference between average full-quarter wages ranges from -6.7% to +6.4% with the smallest difference being 0.2%.
  - The share of beginning of quarter employment varies by a range of -4.9 to 6.4 percentage points with the smallest difference being -0.1 percentage points.
- Results for full-quarter employment generally mirror those for beginning of quarter employment
- Differences in wages and employment by gender and geography are captured in estimates using the imputed variable.

Upcoming enhancements

- Federal Workers in QWI and OTM
  - Very soon
  - Integrating OPM data
  - Release of DC QWI and OTM

- New LED data on firm age and size
  - Age of firm (new firm, old firm)
  - Size of firm (small firm, large firm)
  - Due fall 2011.

Upcoming enhancements

- Integration of self-employment data
  - Add to OnTheMap to see where self-employed workers are
  - Due to frequency and timing issues, planning only to release in OnTheMap

- New product: job-to-job flows
  - Identify flows of workers between firms, industries, geographies
  - Better understand how labor markets adjust to trade, demand shocks, where new workers come from etc.

Contact Us

Comments/Questions
Erika.McEntarfer@census.gov

Center for Economic Studies
http://www.ces.census.gov/

Longitudinal Employer-Household Dynamics
http://lehd.did.census.gov