NATIONAL ACADEMIES

Sciences
Engineering
Medicine

Evaluation of Compensation Data Collected Through the EEO-1 Form

Briefing on Consensus Panel Report

The Committee on National Statistics

The Division of Behavioral and Social Sciences and Education

Panel Members

- WILLIAM M. RODGERS III (*Chair*), Federal Reserve Bank of St. Louis

- M.V. LEE BADGETT. University of Massachusetts

- PAUL P. BIEMER, RTI International

- LISA CATANZARITE, UNITE-LA and Association of Chamber of Commerce Executives

- SIWEI CHENG, New York University

- REBECCA DIXON, National Employment Law Project

- LISETTE GARCIA, Penn State University

- CLAUDIA GOLDIN, Harvard University

- JUDITH K. HELLERSTEIN, University of Maryland

- ELIZABETH HIRSH, University of British Columbia

- KRISTEN M. OLSON, University of Nebraska-Lincoln

- DONALD TOMASKOVIC-DEVEY, University of Massachusetts

- VALERIE RAWLSTON WILSON, Economic Policy Institute

NATIONAL ACADEMIES *Sciences Engineering Medicine*

Peer Reviewers of the Report

- ERICA GROSHEN, Cornell University

- KENNETH W. WACHTER, University of California, Berkeley

- KATHERINE G. ABRAHAM, University of Maryland

- FRANCINE D. BLAU, Cornell University

- KEVIN F. HALLOCK, University of Richmond

- ANI HUANG, HR Policy Association

- G. ROGER KING, HR Policy Association

- NICOLE MASON, Institute for Women's Policy Research

- JAKI MCCARTHY, U.S. Department of Agriculture, (retired)

- JUSTIN MCCRARY, University of Columbia

- LINCOLN QUILLIAN, Northwestern University

Report Sponsor

- Equal Employment Opportunity Commission

Any opinions, findings, conclusions, or recommendations expressed in this publication do not necessarily reflect the views of any organization or agency that provided support for the project.

Outline

- Motivation for the Study
- Sources of Evidence
- Overall Assessment
  - Value of Data as Collected
  - Appropriate Use as Collected
- Recommendations for Future Collection
  - Short-Term Improvements Needed
  - Long-Term Improvements Needed
- Discussion
- Annexes
  - Verbatim Conclusions and Recommendations
  - Instruments and Measures

NATIONAL ACADEMIES *Sciences Engineering Medicine*

Motivation for the Study

- The EEO-1 Component 2 Data Collection

- Charge to the Panel

01

6
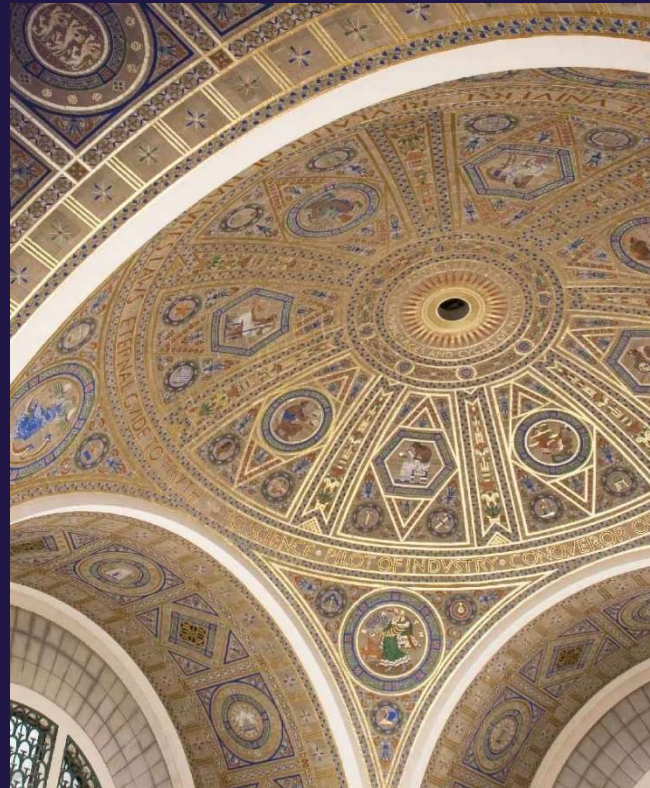
The EEO-1 Component 2 Collection

- Since 1966, EEOC has surveyed private employers for data on the sex and race/ethnicity of their employee (Component 1)

- In 2016, EEOC received OMB approval to collect pay data and the number of hours worked (Component 2)

- OMB rescinded its approval for the pay data collection (Component 2) in 2017. The historical collection (Component 1) continued. Component 2 resumed in 2019 by court order.

- In 2020, EEOC asked NASEM to examine the quality of Component 2 data as collected, and to provide recommendations for future collection.

NATIONAL ACADEMIES *Sciences Engineering Medicine*

The National Academies of Sciences, Engineering, and Medicine will appoint an expert panel to review and ***evaluate the quality of compensation data*** that the U.S. Equal Employment Opportunity Commission (EEOC) collected from certain private-sector employers and federal contractors between July 15, 2019 and February 14, 2020.

The EEOC's large scale collection of pay information affords an opportunity to ***review the methods used*** and the ***circumstances of the collection***, to ***document lessons learned***, and to ***identify ways to improve potential future collections***.

The panel will ***review EEOC's methodology for collecting the compensation data through the EEO-1 form*** as well as EEOC's various communications with employers in carrying out the collection.

The panel will ***consider existing data quality frameworks*** to assess the data collected and will issue a report with conclusions and recommendations to ***inform the EEOC's assessment of the data and its approach to future data collections.***

Charge to the Panel

NATIONAL ACADEMIES *Sciences Engineering Medicine*

Sources of Evidence

- Open panel meetings with stakeholders

- Design reports, forms, and rulings

- Original data analysis of EEO-1
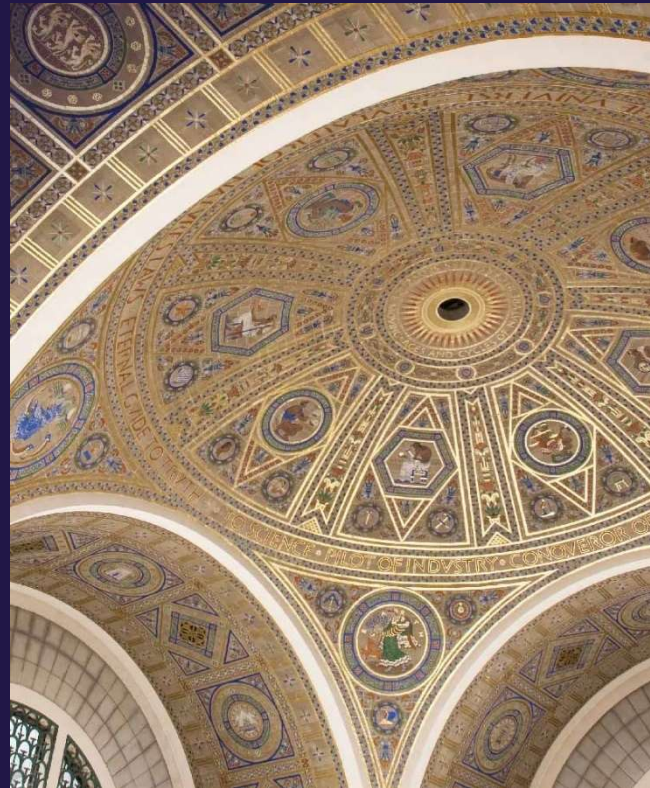
02

Sources of Evidence: Stakeholder Input

- A series of open panel meetings were held with
  – EEOC,
  – the Office of Federal Contract Compliance Programs,
  – employer pay equity and human resource specialists,
  – representatives of Illinois and California pay data collection efforts, and
  – civil rights advocates.

NATIONAL ACADEMIES *Sciences Engineering Medicine*

Sources of Evidence 2: Reports and Rulings

- The panel reviewed:
  - the 2013 National Academies Report,
  - the 2015 Sage Computing Report,
  - the 2016 EEO-1 information collection request and accompanying instruments,
  - the 2019 EEO-1 Component 2 methodology reports, and relevant literature,
  - relevant academic and methodological studies, and
  - court documents rendering the decision to resume Component 2 data collection in 2019 for reporting years 2017 and 2018, and the court's decision to complete collection in February 2020.

# Sources of Evidence 3: Original Data Analysis (1)

- EEOC provided EEO-1 Component 2 data for 2017 and 2018
  - Component 1 data for 2017 and 2018 were also provided to assist analysis of Component 2 data
- RTI International performed statistical analysis at the direction of the panel

NATIONAL ACADEMIES Sciences Engineering Medicine

Sources of Evidence 3: Original Data Analysis (2)

- The panel compared EE0-1 data to benchmarks:
  - EEO-1 data across Components 1 and 2 and across years 2017-2018
  - Census Bureau's Business Dynamics Statistics
  - Bureau of Labor Statistics' Quarterly Census of Employment and Wages
  - Census Bureau's American Community Survey
- The panel conducted an exemplar analysis, using a prior EEOC report as a guide

NATIONAL ACADEMIES
Sciences
Engineering
Medicine

Overall Assessment

03

- *Value as collected*

- *Appropriate use as collected*
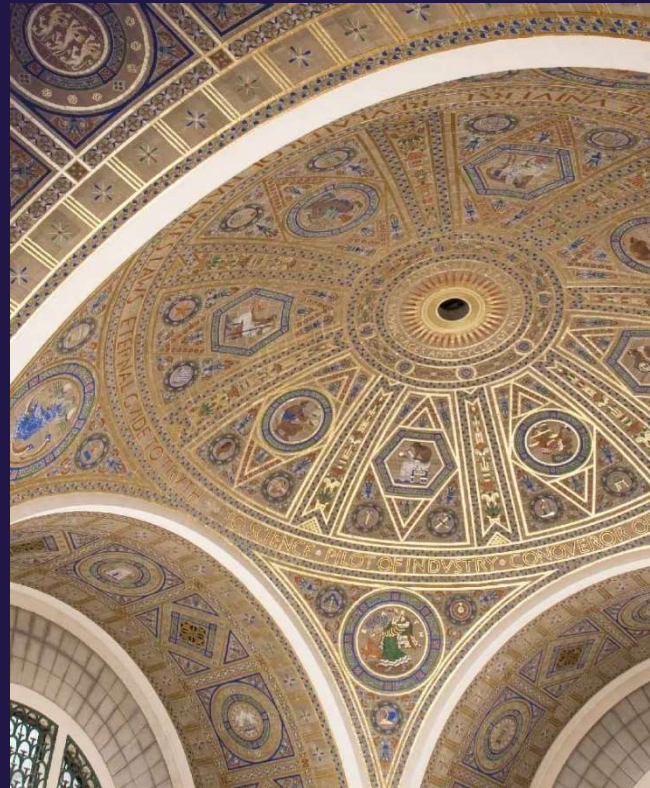
Value of data: EEO-1 pay data are a unique resource

- EEO-1 data are the only federal data source for pay data, occupation, and demographic characteristics collected at the employer level, which is helpful for enforcement efforts, for employer self-assessment, and for providing a broad description of pay practices (Conclusion 1-1).

NATIONAL ACADEMIES *Sciences Engineering Medicine*

EEO-1 pay data are incomplete

- Significant coverage issues were found that should be addressed (Conclusion 4-1)

  – Only two-thirds (65%) of eligible firms were asked to complete the surveys.

  – 58 percent of eligible firms provided data (covering 82 percent of establishments).

  – Pay data appeared for only about 68 percent of responding establishments.

  – For these reasons, the coverage rate for pay data was only 58 percent for firms and 55 percent for establishments.

NATIONAL ACADEMIES *Sciences Engineering Medicine*

16

EEO-1 pay data have reliability issues

- Most data appeared reliable, but some errors were extreme (Conclusion 5-1)

  – Extreme errors appeared, with some employers reporting more employees than in the U.S. population.

  – Other data were internally inconsistent, impossible, or highly suspect.

  – The reliability issues reflect in part the speedy fielding of the survey under court order, along with instructions to NORC to do minimal data cleaning.

  – *35 percent of the provided pay data were potentially suspect or not verifiable, and excluded from* the panel's exemplar analyses

How design and data issues affected the analysis

FIGURE 8-1 Anticipated Total Eligible Firms and Establishments and Available Pay Data, 2018 Component 2
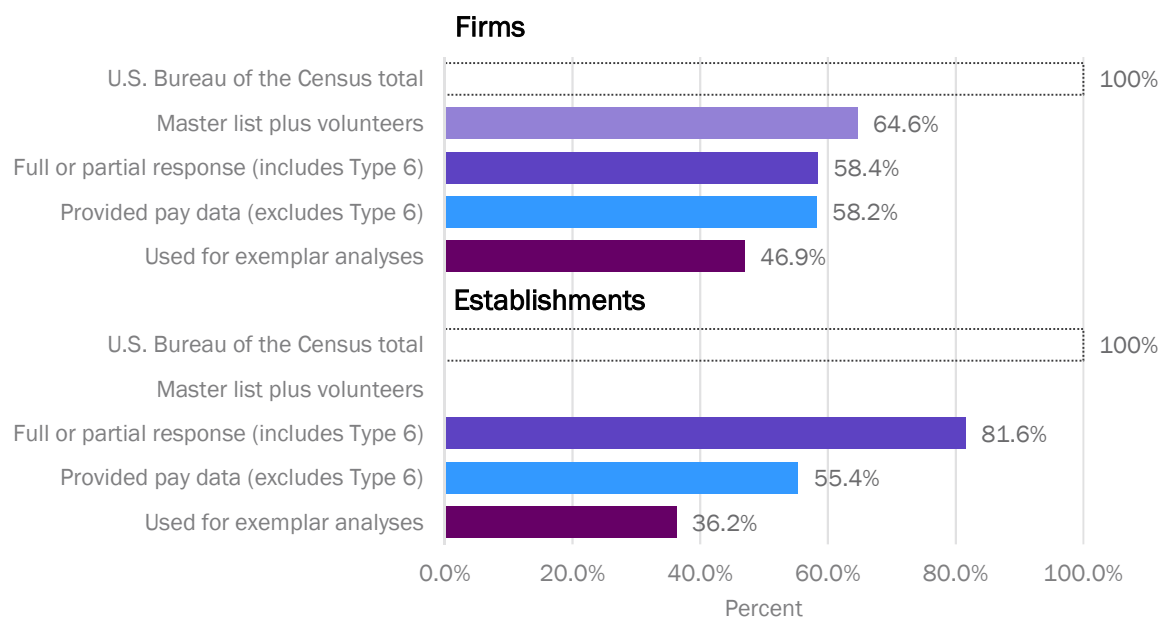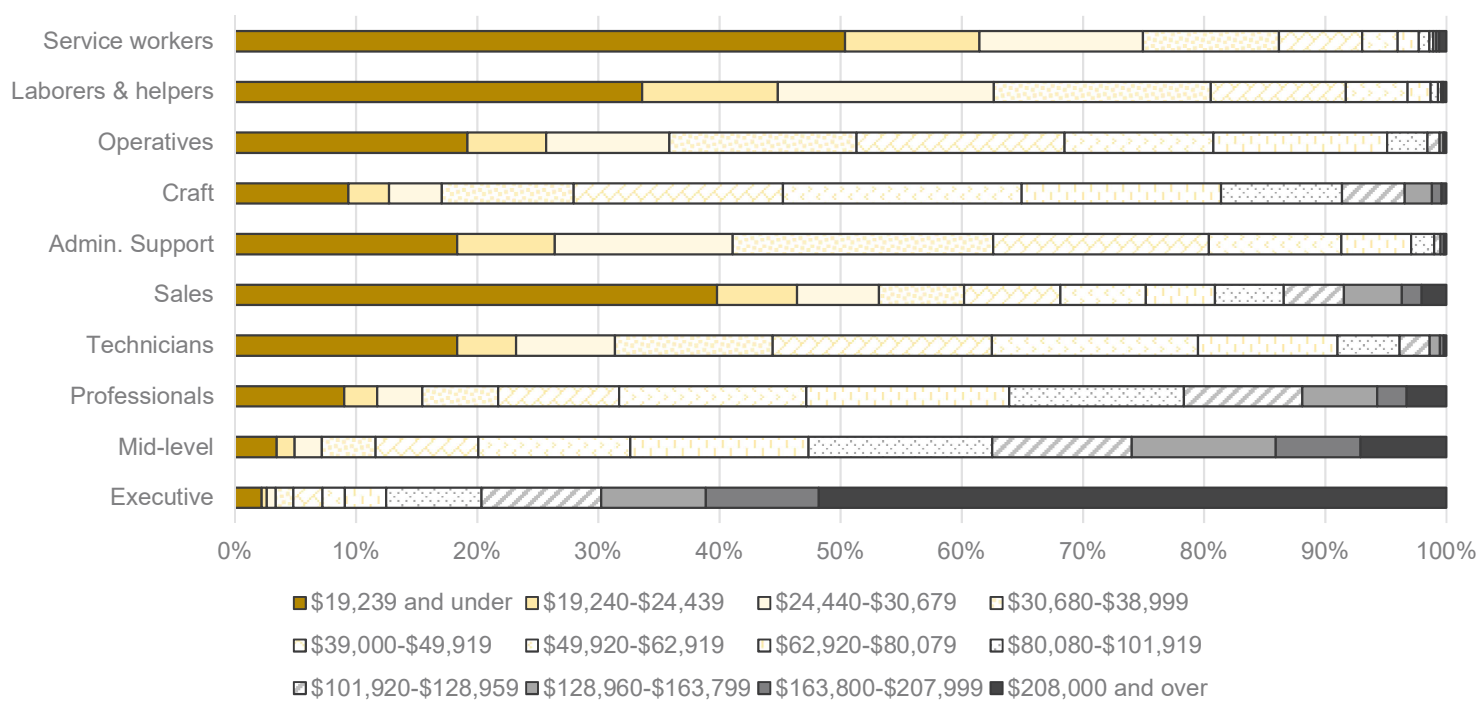

Response rates were good, but coverage and design issues had the biggest impact on available data
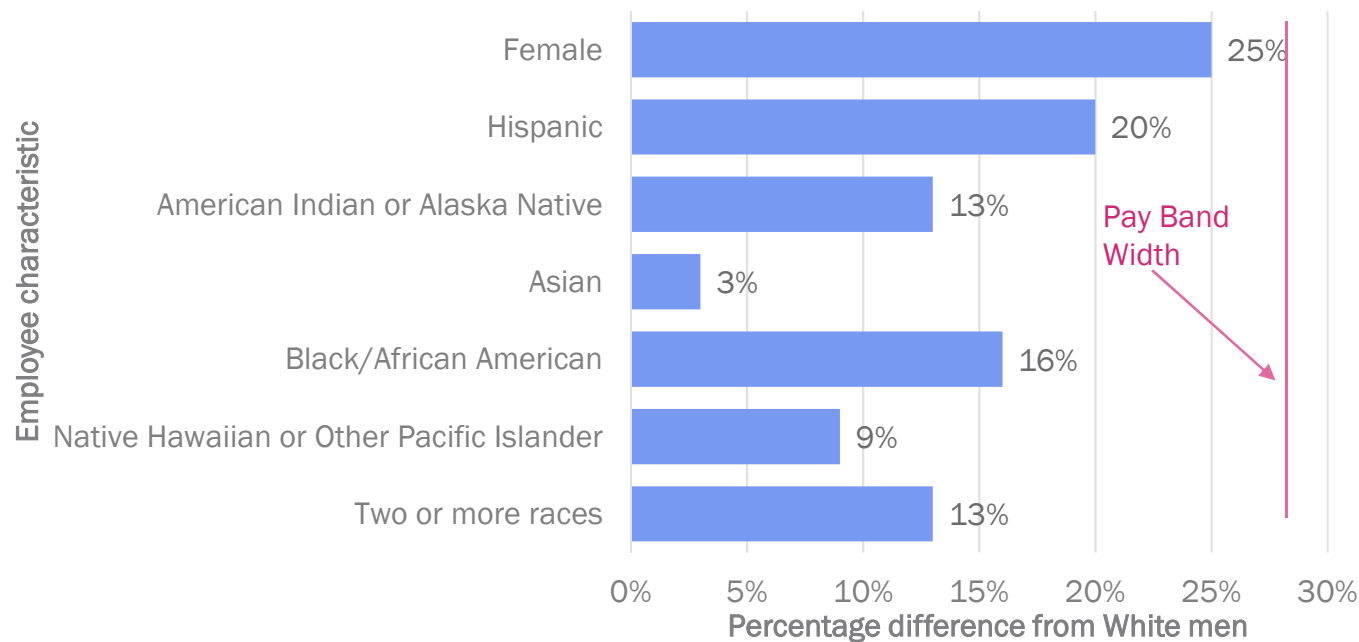
Other measurement issues also appeared

- Box 1 on W-2s does not measure all compensation (Conclusion 3-1)

- Pay bands were overly broad (Conclusion 3-2)

- Job categories were overly broad and outdated (Conclusion 3-3)

- Measures of sex and race/ethnicity did not align with federal best practices and standards, respectively (Conclusion 3-4)

- No data were collected for some groups protected by EEOC (Conclusion 3-5)

- Data on legitimate causes of pay gaps, such as education and experience, were not collected (Conclusion 3-6)

- Firm and establishment identifiers are neither consistent nor unique (Conclusion 4-2)

NATIONAL ACADEMIES   *Sciences Engineering Medicine*

Job categories are so broad that they encompass every pay band

Legend:
- $19,239 and under
- $19,240-$24,439
- $24,440-$30,679
- $30,680-$38,999
- $39,000-$49,919
- $49,920-$62,919
- $62,920-$80,079
- $80,080-$101,919
- $101,920-$128,959
- $128,960-$163,799
- $163,800-$207,999
- $208,000 and over

NATIONAL ACADEMIES
Sciences
Engineering
Medicine

Pay bands are broad within jobs compared with national pay disparities

SOURCE: Figure adapted from Figure 6-6 in panel report, based on 2018 ACS data. Estimates are after adjusting for job category, industry, and state.

Appropriate Use of the Data: Use with Caution (1)

- After cleaning, Component 2 data can be used to estimate raw pay gaps at the national level by sex, race/ethnicity, and occupation (Conclusion 6-1)

  – Because of under-coverage and nonresponse, the 2017–2018 Component 2 data collection is not designed to produce national totals.

- After cleaning, Component 2 data can be used to prioritize EEOC initial investigations and allocate resources, with limitations (Conclusion 7-1)

NATIONAL ACADEMIES *Sciences Engineering Medicine*

Appropriate Use of the Data: Use with Caution (2)

- Component 2 data have limited utility in analyzing pay differences within small establishments for enforcement or self-assessments purposes (Conclusion 7-2).

    – This issue is not due to coverage or data errors, but instead relates to the number of observations available for comparison within a given small establishment.

- Before analysis, data should first be inspected for errors, and cleaned where appropriate (Recommendation 5-1)

    – Some data will be fine as is, depending on the focus of the analysis and which establishments are included.

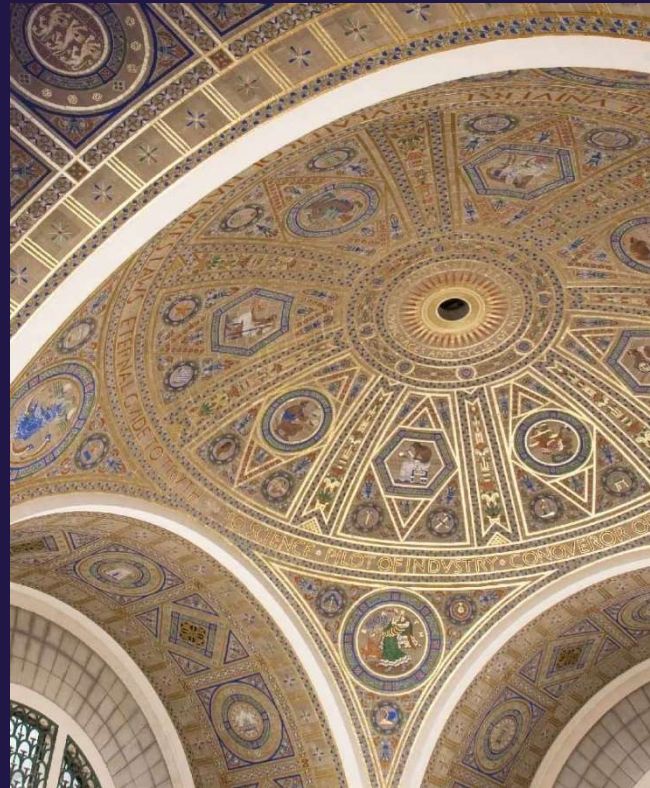NATIONAL ACADEMIES *Sciences Engineering Medicine*

Unsuitable Uses of Component 2 Data As Collected

- Without extensive cleaning, Component 2 hours worked data should not be used to calculate hourly wages (Conclusion 7-3)

- Component 2 data are not suitable for direct determinations of bias or reasonable cause for enforcement purposes (Conclusion 7-4)

- Component 2 data have limited utility for employer self-assessment as they do not include measures of legitimate factors for pay differences, and occupation and pay bands are broader than typically required (Conclusion 3-6)

Future Pay Data Collection

04

-Short-term improvements needed

- Long-term improvements needed

Improve Coverage of Employers in EEO-1 Master List

– Improvement is needed in both the respondent frame and outreach to newly-eligible firms.

– Firms and establishments are born and die continuously; the frame should be updated annually.

– EEOC should collaborate with other federal agencies that continuously update firm lists (Recommendation 4-1)

NATIONAL ACADEMIES *Sciences* *Engineering* *Medicine*

For National and Sub-national Estimates, Use Weights to Adjust for Under-coverage and Nonresponse

– Survey statisticians commonly use weighting to adjust for the probability of selection in a sample and for nonresponse.

– Since the EEO-1 master list appears significantly incomplete, weighting would be appropriate (Recommendation 4-2).

NATIONAL ACADEMIES *Sciences Engineering Medicine*

Reduce Employer Reporting Burden

- Collect Component 1 and 2 data as a single collection (Recommendation 2-1)
  - Having a single pay period for all data simplifies data cleaning and improves data consistency.
- Cease Type 6 and Type 2 reports; require Type 8 (Recommendation 2-2)
  - Requiring Type 8 reports rather than Type 6 reports would address data gaps.

NATIONAL ACADEMIES   *Sciences Engineering Medicine*

Improve Submission Instructions for Professional Employer Organizations

- Require each firm's report to be filed separately.
- Employer's industry code should be submitted.
- Responsible employer should certify submissions by PEOs.

Improve Measurement

- Use W-2 Box 5 to measure total compensation (Recommendation 3-3)

- Use narrower pay bands and expand bands for top earners (Recommendation 3-4)

- Use federal standard measures of race/ethnicity (Recommendation 3-5)

- Collaborate with federal agencies in developing, testing and measuring sex, gender identity, and sexual orientation as appropriate (Recommendation 3-6)

- Switch to Standard Occupational Classification federal standard (Recommendation 3-8)

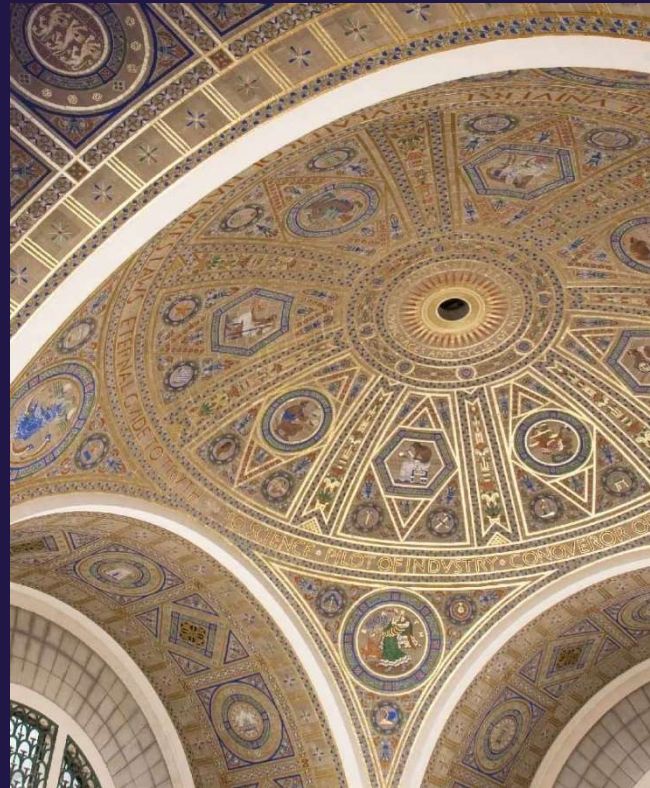NATIONAL ACADEMIES *Sciences Engineering Medicine*

If EEOC Elects to Keep the Current Survey Format...

- Improvements could be made to the current instrument to substantially reduce, and possibly eliminate, many of the errors and weaknesses observed (Conclusion 3-7)

- Conduct field testing to identify and resolve issues with form design that may contribute to error (Recommendation 5-2)

  – The collection of employee counts and hours in a side by side format may address some issues.

- Implement a standard reporting period (Recommendation 3-1)

  – Improves comparability of data and reduces respondent burden.

NATIONAL ACADEMIES *Sciences Engineering Medicine*

Future Pay Data Collection

-Short-term improvements needed

*- **Long-term improvements needed***

05

32

Current EEO-1 Survey Format...

- **increases** employer burden,

- **limits utility** for EEOC case processing, and

- **restricts utility** for self-assessment (Conclusion 3-8).

NATIONAL ACADEMIES *Sciences Engineering Medicine*

Transition to Collection of Individual-level Pay Data

– Employers already report individual pay data to multiple state and local government agencies

– Individual-level pay data will lessen respondent burden while improving data quality

– BLS' transition to individual pay data in the OEWS may be instructive

– Solves multiple measurement problems (Recommendation 3-7)

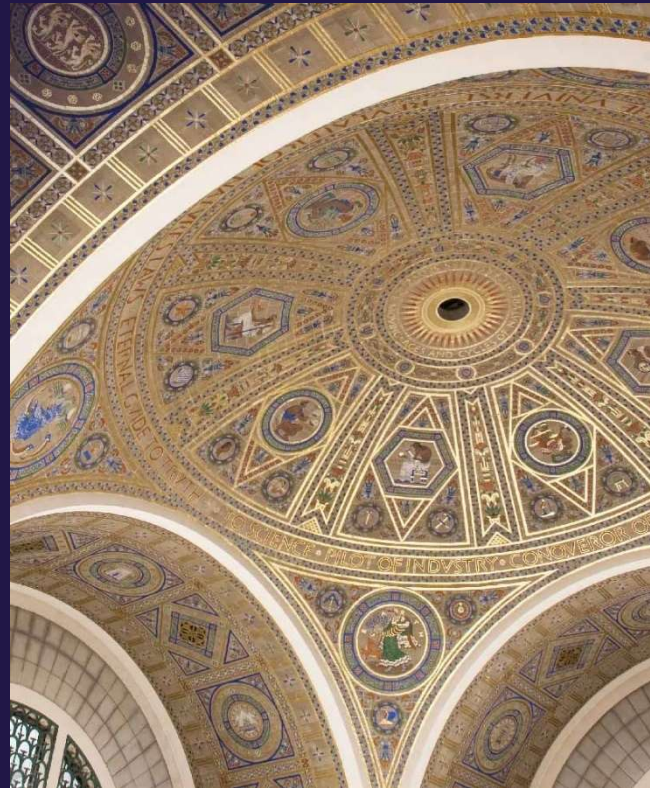NATIONAL ACADEMIES *Sciences Engineering Medicine*

Improve Collaborations and Data Access with Stakeholders

– Strengthen consultation and data sharing with the public, employers, and federal and state employment data collection agencies (Recommendation 8-2)

NATIONAL ACADEMIES *Sciences Engineering Medicine*

Discussion

-Questions and answers

06