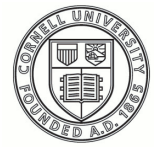

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Estimating Pay Gaps for Workers with Disabilities: Implications From Broadening Definitions and Data Sets

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Abstract

Purpose: To compare pay gap estimates across 3 different national survey data sets for people with disabilities relative to those without disabilities when pay is measured as wage and salary alone versus a (total compensation) definition that includes an estimate of the value of benefits.

Method: Estimates of the cost to the employers of employee benefits at the occupational level from an employer survey data set are matched to individual-level data in each of the 3 data sets. Multiple regression techniques are applied to estimate wage and salary and total compensation gaps between full-time men with and without disabilities.

Results: For full-time working men with disabilities (relative to those without disabilities), there is a consistently larger percentage wage and salary gap than percentage total compensation gap and breadth of the definition of pay affects the size of any estimated pay gap. In addition, there are differences in the estimated pay gaps depending on data source and disability measure.

Conclusions: Results obtained from a single data set or definition of key variables may not be broadly generalizable. Studies containing such limitations should be interpreted cautiously. Our research further suggests employers looking to hire persons with disabilities or those offering employment placement services should put substantial weight on the non-base pay component of the total compensation package.

Keywords

pay gap, disabilities, wage, salaries

Disciplines

Applied Statistics | Human Resources Management | Labor Relations | Management Sciences and Quantitative Methods | Social and Behavioral Sciences | Social Statistics

Comments

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Pay in the form of wage or salary earnings accounts for just less than 70% of the total hourly compensation costs of the average American worker.[1] Despite this, most academic studies of pay gaps among different demographic groups do not consider pay beyond that received in wages or salaries. In addition, common among empirical academic studies is to conduct pay gap analysis using only one data source and frequently only one definition of key variables such as income.

In other work, we have contributed to redressing these omissions in the study of pay gaps for people with disabilities by (a) expanding the compensation calculation from multiple national surveys to merge the value of various employer-provided benefits as reported in the Employer Costs for Employee Compensation survey, (b) conducting our analysis using individual-level pay observations from three different national survey data sets, and (c) repeating our analysis using differing definitions of disability and pay embodied in each these different sources (Hallock, Jin, & Barrington, 2013). To remove issues of hours worked and gender, we focused our analysis of the total compensation gap on U.S. male fulltime workers with disabilities and their nondisabled peers only. The results of that analysis have important implications for researchers, employers, and rehabilitation practitioners, which we present here.

We find that the percentage wage and salary gap for people with disabilities is larger than the percentage of the total compensation gap and that the size of the estimated gap varies across measures of pay, definition of disability, and data source. This suggests that practitioners as well as researchers should be cautious in interpreting point estimates of pay gap reported in research studies. We find such estimates vary depending on the data source and the measures of disability and pay. Studies reporting results obtained from an analysis of only one data set or one definition of disability may be too narrow in scope to offer estimates that are generalizable. Where our

estimates differ and where they are consistent across data set and definitions support the argument that whenever possible, researchers should not limit their studies to a single data set or definition of key variables; furthermore, readers of studies containing such limitations need to interpret results with caution.

We also find our result of a narrower total percentage compensation gap, relative to a percentage pay gap measured using only wage or salary earnings is true across the data sets and disability definition. For employers looking to hire persons with disabilities or those offering employment placement services, this finding of the narrowing of the estimated pay gap when total compensation is considered suggests that substantial weight should be put on the importance of non-base pay compensation when seeking the optimal employee-employer match. Employees with disabilities may have stronger preferences than their nondisabled peers for a benefits-rich compensation mix. Our finding of a narrow total compensation gap (relative to the wage and salary gap) also suggests that employer- provided benefits may be creating some degree of "job lock," whereby people with disabilities are more reluctant to switch jobs for better opportunities unless their current employer-provided benefits can be matched in a new employment opportunity (see Karpur, 2014, on job switch patterns regarding health benefits for people with disabilities).

COMPENSATION BEYOND WAGE AND SALARY PAY

As noted, hourly wage and salary pay accounts for 69% of the total hourly compensation costs for the average civilian American worker. In addition, the share of total compensation provided through wage or salary pay can vary notably by sector, occupation, and level of position (e.g., entry-level vs. executive). To illustrate this variation, Table 1 presents average compensation statistics for all civilian workers and examples of two occupations, service and management, contrasting between private industry and the state and local government sector.

Among private sector employees, management jobs pay more per hour, on average, than service jobs ($51.73 vs. $14.27). In addition, almost 30% of the total pay for these managers comes in the form of benefits, whereas less than a quarter does for private sector service employees. In contrast, state and the local government employees receive a higher proportion of their pay in benefits. State and local government service employees receive more than 40% of their total pay in the form of benefits (41.4%), which is even a greater proportion than their management counterparts (32.9%).

Insert Table 2 Here

Most studies of pay gaps do not consider pay beyond wages or salary. This is universally so in the existing literature on the pay gap experienced by people with disabilities and is mostly true in the pay gap literature across other demographic groups (see Altonji & Blank, 1999, for a survey of the early literature; and for more recent studies on discrimination and demographic differentials, see Bertrand & Mullainathan, 2004; Blau, Ferber, & Winkler, 2010; Fryer & Levitt,

2004; List, 2004; Neal, 2004). The good news is that some recent studies of gender pay gaps have started to advance the use of broader definitions of pay (Levy, 2006; Pierce, 2001, 2010; Solberg & Laughlin, 1995; Zhao, 2012).

It is important to acknowledge that it can be very difficult, if not impossible, to put a price on every job-related benefit. Beyond wage and salary income, the benefits gained from employment range from health care insurance, to pride in the mission and reputation of the employing organization, to personal satisfaction from occupying a large office or having enjoyable and engaging coworkers, to name just a few. In the largest sense, employment has even become an important contributor to one's personal and social identity, no longer simply a means to economic survival (Bruyere & Barrington, 2012, Chapter 1). In this broad context, employers make strategic business decisions on how many resources they will devote to which benefits. Individuals, differing in how they value or perceive various benefits, may seek employment and be most successful in jobs and organizations where the value they place on various benefits most closely aligns with the mix and level of benefits provided by the employer (Hallock, 2012, Chapters 4 and 11).

There exists a notable body of literature estimating the wage/salary gap between employees with disabilities and their nondisabled peers (Acemoglu & Angrist, 2001; Baldwin & Johnson, 1992, 1995, 2000; DeLeire, 2001; Haveman & Wolfe, 1990; Hendricks, SchiroGeist, & Broadbent, 1997; Kruse & Schur, 2003).[2] The main focus of these studies is to estimate the part of the wage gap that is attributable to productivity differences, with the remainder potentially attributed to discrimination. Johnson and Lambrinos (1985) find that wage discrimination accounts for between 30% and 40% of the offered wage differentials. DeLeire (2001) finds that only 5%—8% of the earning's gap is linked to discrimination.

What is not captured in these or other point estimates, however, is the value of employer-provided benefits. Given the importance of even measurable benefits in the compensation costs reported by employers, we believe that when estimating the pay gap for people with disabilities, it is important, to the degree possible, to include pay beyond wages and salaries. Consideration of this broader compensation gap is necessary for a more complete understanding of workplace outcomes for people with disabilities.

We argue that our findings of a smaller percentage of total pay gap (relative to the wage and salary gap) is an important finding for employers looking to hire persons with disabilities or those offering employment placement services. These results are consistent with the conjecture that workers with weaker preferences for cash pay versus benefits may sort into jobs that offer a larger share of benefits in the compensation package. An important implication is that substantial weight should be put on considering and measuring the total and mix of compensation, not just the level of wages and salaries. What is the share of total compensation coming in the form of wages or salary, and how much are the employer-provided benefits worth? Employees with disabilities may have stronger preferences than their nondisabled peers for a benefits-rich compensation mix, an important result that would be overlooked if the definition of pay stops at wage and salary income.

A CLARIFYING CONSIDERATION ON EMPIRICAL PAY GAP ANALYSIS

We mention in the foregoing section that the main focus of empirical analyses of the pay gap is to estimate that part of the wage gap that is attributable to productivity differences by isolating other contributing factors such as occupation or industry. Once all explanatory factors

that contribute to the productivity differences have been accounted for, some argue that the remainder of the gap presumably reveals discrimination. It is important to clarify that it is not at all certain that the residual in a given regression analysis is in fact discrimination. In practice, the "discrimination residual" can obviously also contain the effects of influences not empirically included in the analysis. In our study, for example, we control for productivity- correlated factors such as age, education, occupation, and so forth. However, there are other unobserved productivity-contributing factors such as individual ability and personality that along with the possibility of discrimination may be contributing to the pay gaps we estimate. The influence on the gender pay gap of one's actual work experience (Blau & Khan, 2011) or willingness to negotiate (Babcock & Laschever, 2003) is among many well-documented factors that we are unable to include in our analysis because the data do not exist in the data sets we explore.

In addition, and equally important, is the fact that the regression analysis does not rule out discrimination having played a role in the explanatory variables as well. Considerable experimental research has shown hiring to be biased based on demographic factors such as race and gender (Bertrand & Mullainathan, 2004; Goldin & Rouse, 2000). This means that occupation may be a significant variable in explaining the pay gap, but who ends up in which occupations can itself be an outcome of discrimination. Therefore, controlling for occupations in our empirical analysis may, in fact, mask some discrimination.

The main take-away of this study, however, is not to estimate to what degree discrimination causes the pay gaps but rather to show that there is a difference when we consider total compensation gaps relative to wage and salary gaps. An additional interesting question to ask is why we observe these differences. If we take a broad premise that both the wage gap and the total compensation gap are affected by the same unobserved individual characteristics and

include discrimination, then the difference between the two gaps speaks to a third factor (besides productivity and discrimination) that may be of interest: Workers with disabilities may substitute wage income for nonwage income. This may have some implications for how to design a more compelling pay package for workers with disabilities.

DIFFERING DATA SETS AND DEFINITIONS WITHIN

National household surveys in the United States contain rich demographic information at the individual level that is necessary for analyzing the pay gap and employment outcomes of people with disabilities. However, it is the business establishment surveys in the United States that contain the rich, employer-provided benefit data necessary to estimate total compensation. To include detailed measures of benefits into our calculation of pay, it was necessary to integrate the household and establishment surveys. We did this by linking individuals from the household surveys to the compensation data using the detailed (six-digit) occupation codes present across surveys.[3]

The household surveys that provide the individual-level observations used in our pay gap analysis include the American Community Survey-Integrated Public Use Microdata Series (ACS-IPUMS), the Current Population Survey-March Supplement (March CPS), the synthesized Health and Retirement Survey from the RAND Corporation (RAND- HRS), and the Survey of Income and Program Participation (SIPP). We then link these (at the detailed occupation level) with the richer, nonwage compensation data from the business establishment survey contained in the Employer Costs for Employee Compensation (ECEC).

Because there is no universally agreed on survey question for identifying an individual with a disability, the disability definition varies within and across data sources. The same is true for measures of pay. By employing four household-level national survey data sets, we reveal the impact that various measures of pay and disability can have on point estimates of the compensation gap for people with disabilities and provide a check on the impact that expanding the compensation definition beyond wages and salaries has on the magnitude of the pay gap for people with disabilities.

Disability Definitions

The definitions of disability used in the ACS- IPUMS and the March CPS are similar. There are six basic categories of disability used in each: (a) vision; (b) hearing; (c) ambulatory—walking and climbing stairs; (d) cognitive— remembering, concentrating, making decisions, and so forth; (e) self-care—dressing or bathing; and (f) independent living—doctor visits or shopping alone.

The RAND-HRS data contain nine measures of disability. There is one direct measure for cognitive disability, *Depression*, and eight "functional limitations" measures that are indices created by combining responses to multiple questions about a respondent's ability to do specific tasks. The one direct measure for cognitive disability, depression, is an index derived from the Center for Epidemiologic Studies Depression (CESD) scale.[4] The eight index measures for functional limitations are *Mobility*, *Large Muscle*, *Activities of Daily Living* (two different indices), *Gross Motor Skills*, *Fine Motor Skills*, and *Instrumental Activities of Daily Living* (two different indices begun in different survey waves). As explained in the user's guide, "All indices

are the sum of the number of difficulties a respondent has completing a particular set of tasks and uses a definition of difficulty that is comparable across [survey] waves" (St. Clair et al., 2010, p. 14, 2.2.1). The underlying tasks for the eight computed functional limitation indices are summarized in Table 2.

The SIPP, like the RAND-HRS data set, does not have a direct measure of disability, but neither does it provide a composite variable created from underlying measures in the survey. This necessitated our creating our own definition of disability for the SIPP. Using the criteria underpinning the RAND-HRS and the March CPS, we constructed six measures of disability from the SIPP data. These are (a) *hearing difficulty*; (b) *vision difficulty*; (c) *cognitive difficulty*—having difficulty understanding speech; (d) *ambulatory difficulty*—having difficulty walking 0.25 miles, climbing several flights of stairs, and any other walking difficulties; (e) *self-care difficulty*—having difficulty bathing, dressing, and eating; and (f) *independent living difficulty*—having difficulty using a regular telephone, taking correct amount of medicine on time, or handling money correctly.

For each of the four data sets, we created a single aggregated variable of *disabled* defined by having at least one positive count of difficulty or functional limitation as specified in the respective surveys' measures. Based on this aggregated variable, the percent of full-time working male workers who had some disability ranged between 3% and 6% in three of the four surveys—3.0% in the March CPS, 4.7% in the ACS-IPUMS, and 5.0% in the SIPP sample. The RAND-HRS focuses on older Americans and those with health problems; therefore, all workers included in the RAND-HRS have some functional limitation identified as a disability by this measure.

Employment and Compensation Definitions

The four individual-level surveys we analyze also differ in their definitions of employment and compensation.

In the ACS-IPUMS and the March CPS samples, we define full-time workers as those who have worked more than 35 hours a week and more than 48 weeks in the past 12 months. In the RAND-HRS, because the target population is more senior, we define total weeks requirement for a full-time worker is lower. The full-time workers in the RAND-HRS sample are those who have worked more than 35 hours a week and more than 36 weeks in the past 12 months. In the SIPP, because our reference weeks are the 4 weeks in the previous month, the full-time workers are those who have worked more than 35 hours in a week. Some workers who have worked fewer than 35 hours for some weeks in the past month are also considered as full-time if temporarily unable to work full-time because of injury, slack work, or material shortage, or because their full-time workweek is fewer than 35 hours, or they participated in a job sharing arrangement or were on vacation.

Insert Table 2 Here

In terms of wage and salary compensation, the ACS-IPUMS data contain a measure of wage or salary earned by the individual in the past 12 months. The hourly wage is constructed using this annual measure and weeks and hours worked in the past year. The RAND-HRS data contain imputed individual hourly wage and salary measures, whereas the SIPP reports monthly wage earned by the individual.

In terms of benefits (nonwage/nonsalary compensation), the ACS-IPUMS, RAND- HRS, and SIPP record only whether or not an individual has health insurance but not the cost of employer-provided insurance. The March CPS does provide a specific dollar amount paid by the employer for the employee's health insurance.[5] The ECEC data contain the richest measures of nonwage/nonsalary compensation available: the dollar value of total compensation costs recorded by the employer, including subcategories of benefit costs such as overtime, health care, and vacation (see Table 3 for a brief comparison of the data sources).

Insert Table 3 Here

Sampling Differences

Although each of the data sets we used in our analyses is national in scope, the breadth and sampling frameworks differ in accordance with each survey's specific purpose.

The U.S. Census Bureau executes the American Community Survey for the broad purpose of collecting "data on many subject areas to help communities make informed decisions. The American Community Survey shows how people live, whereas the 2010 Census shows the number of people who live in the U.S." (U.S. Census Bureau, n.d.a). The ACS-IPUMS (2009) includes 520,409 full-time male workers (46.5% of all working respondents) with an average hourly wage of $26.45.

The CPS, a joint survey of the U.S. Bureaus of both the Census and Labor Statistics, is focused a bit more narrowly on the U.S. labor market. It

> is the primary source of labor force statistics for the population of the United States . . . [and] the source of numerous high-profile economic statistics, including the national unemployment rate, and provides data on a wide range of issues relating to employment and earnings. The March CPS also collects extensive demographic data that complement and enhance our understanding of labor market conditions in the nation overall, among many different population groups, in the states and in substate areas. (U.S. Census Bureau, n.d.b)

In our March CPS survey sample, there are 34,940 full-time male workers with an average hourly wage of $27.15.

The HRS, supported by the National Institute on Aging and the Social Security Administration and administered by the University of Michigan,

> is a longitudinal panel study that surveys a representative sample of more than 26,000 Americans over the age of 50 every two years . . . [to explore] the changes in labor force participation and the health transitions that individuals undergo toward the end of their work lives and in the years that follow. (University of Michigan, 2014)

Because the RAND-HRS focuses on older Americans compared to the other surveys we employ, the average age of respondents is higher (62 years), and correspondingly, the share of full-time male workers is lower (31.77%), but their average hourly wage is higher ($28.31).

The U.S. Census Bureau's SIPP over-samples participants in government supplementary-income programs.

> The main objective of SIPP is to provide accurate and comprehensive information about the income and program participation of individuals and households in the United States, and about the principal determinants of income and program participation. . . . SIPP data allow the government to evaluate the effectiveness of federal, state, and local programs. (U.S. Census Bureau, n.d.c)

Not surprisingly, the average hourly wages of the male respondents working full-time was lower ($21.98) than in the other surveys. There are 70,796 full-time male workers in the SIPP sample, 44.62% of the total.

Table 4 presents descriptive statistics summarizing the sample characteristics of each original data set, and Figure 1 shows the wage- earnings distributions for full-time male workers

with disabilities and those without across the different individual-level data sets (wage/salary earnings truncated at the top 5%). Following from the difference in sampling framework and definitions of employment and earnings, the difference in the earnings distribution of fulltime male workers across the four individual- level data sets presented in Figure 1 is notable.

Insert Table 4 Here

Insert Figure 1 Here

The ECEC sample is constructed from surveys designed for business establishments, not individual respondents. The ECEC are data provided by the Bureau of Labor Statistics' Office of Compensation Levels and Trends as part of the National Compensation Survey (U.S. Bureau of Labor Statistics, 2013). The ECEC surveys employers quarterly, asking them to report the average hourly cost for total compensation and defined components for employees in each job within the specific business establishment. Compensation data are collected for wages and salaries and total benefits, and subcategories of benefits include paid leave, supplemental pay, insurance, retirement and savings, and legally required benefits. These subcategories are further divided into more narrow categories such as paid holidays, health insurance, defined benefit pension, and workers' compensation.

The ECEC data are reported for 28 subcategories for occupation level. In the case of companies with multiple locations, the observation is an occupation within a specific local operation, rather than the entire corporation or its individual employees. Because these data are

recorded at the occupation level, we do not have information on how many establishments and workers are contained in the sample for each occupation or what proportion of those workers are employees with disabilities. Thus, we cannot isolate male workers or calculate average compensation measures for full-time male workers by disability status using this source. For all full-time U.S. workers who work for the private industry (excluding state and local government employees) in the third quarter of 2013, the average hourly wage and salary reported in the ECEC is $23.43. Note that the reported average hourly wages and salaries for full-time workers (male and female) in the ECEC is noticeably lower than that of full-time male workers in the ACS-IPUMS, March CPS, and RAND-HRS but higher than that from the SIPP data.

OCCUPATIONAL CLASSIFICATION DETAIL

Expanding the compensation calculation to include an estimate of the value of employer-provided benefits is possible by linking the individual-level data sets to the benefits data found in the ECEC survey through the individual's reported detailed occupation. This approach limits the construction of the total compensation measures to the occupation level. Occupations in the United States are classified by the Bureau of Labor Statistics into a categorical system called the *Standard Occupational Classification* (SOC). Federal statistical agencies use the SOC "to classify workers into occupational categories for collecting, calculating, or disseminating data. All workers are classified into one of 840 detailed occupations according to their occupational definition" (U.S. Bureau of Labor Statistics, 2010). These 840 detailed occupations are represented by a six-digit code.

The hierarchy or specificity of the SOC coding is referred to by the number of digits. The full six-digit SOC code is used to identify the most detailed occupational classification. The fourth and fifth digits represent 461 broad occupational classes. The third digit represents 97 minor groups of occupations and the first two digits represent 23 major groups (U.S. Bureau of Labor Statistics, 2010). An example of a two-digit major occupational group consecutively broken down to a six-digit detailed occupation is as follows:

29-0000 Healthcare Practitioners and Technical Occupations

29-1000 Health Diagnosing and Treating Practitioners

29-1060 Physicians and Surgeons 29-1062 Family and General Practitioners

For more generalized use, the 23 major groups are aggregated further to a standardized intermediate aggregation level of 13 groupings, and ultimately, into a standardized high-level aggregation of six groups.[6]

Three of the four household surveys (the ACS-IPUMS, the March CPS, and the SIPP) have occupation categories disaggregated to six-digit detailed SOC level. The public use RAND-HRS, however, includes occupational coding representing 23 aggregated occupation categories at 2-digit SOC level only. In the case of the RAND-HRS, the two-digit SOC categories are divided into nine (rather than the standardized six) two-digit occupational groupings. The nine occupation categories at aggregated at the two-digit SOC level that we used with the RAND-HRS data are presented in the Appendix, mapped to the standardized high-level SOC aggregation of six groups.

Only the restricted access version of the ECEC has the finer (six-digit) level of detail in SOC coding. Special permission was obtained to analyze the ECEC on-site in Washington, DC using the restricted access version.

Estimating Total Compensation to Include a Measure of Benefits

The ECEC survey collects from employers their costs for employee total compensation. Described earlier, the categories of these data are presented here in Figure 2.

Extracting from the ECEC restricted-access data files, we aggregated all quarterly compensation measures at the six-digit SOC level to annual measures for the years 2004-2011.[7] We then matched the constructed ECEC annual compensation measures to the individuals in the ACS-IPUMS, the March CPS, and the SIPP at the six-digit SOC level. For the RAND-HRS, we matched the two-digit SOC data of the public-use ECEC data to the individuals in the RAND-HRS using the nine aggregated occupation categories mentioned previously and presented in the Appendix.

As described earlier, the respective individual- level data sets have differing definitions and detail on pay. The ACS-IPUMS, RAND-HRS, and SIPP contain only data on an individual's hourly wage/salary pay and a variable denoting whether or not the individual receives employer-provided health care benefits. The March CPS, however, also contains the actual dollar amount of any employer contribution to the individual employee's health insurance, as reported by the individual respondent.

Insert Figure 2 Here

To estimate total compensation for each individual in the ACS-IPUMS, RAND-HRS, and SIPP data sets, the ECEC average total benefits at the individual's six-digit occupational code was added to the individual's recorded wage/salary pay. If the individual is noted as not being covered by employer-provided health care, the ECEC average insurance benefit at the individual's six-digit occupational code was subtracted because this form of compensation was not received.

In formula specification, the total compensation measure was calculated for the ACS-IPUMS and SIPP data sets as:

Estimated hourly total compensation for individuals in the ACS-IPUMS and SIPP data sets = Individual Hourly Wage

+ average dollar value of employer-provided *total* benefits at the six-digit occupation (from the ECEC)

— average dollar value of employer-provided *health insurance* benefit costs at the six-digit occupation (from the ECEC) if the individual *does not* have employer- provided health insurance.

For the RAND-HRS data, the same computation was made but at the more aggregated two-digit SOC coding.

As mentioned earlier, the March CPS supplement provides an annual wage and salary measure but also contains the actual annual dollar amount of employer contributions to health

insurance. We construct the hourly wage for each individual as we did for the ACS-IPUMS (based on reported working weeks and hours). We then use the actual annual dollar value of employer-provided contributions to health insurance reported for each individual in the March CPS to define the estimation formula for total compensation to be:

Estimated hourly total compensation for individuals in March CPS data set =

Individual Hourly Wage

+ Average dollar value of employer-provided *total* benefits at the 6-digit occupation (from the ECEC)

— Average dollar value of employer-provided *health insurance* benefit costs at the 6-digit occupation (from the ECEC)

+ Individual-level employer-provided *health insurance* benefit costs (from March CPS) if the individual *has* employer-provided health insurance.

Using the formulas described previously, we calculated the average total compensation between disabled and nondisabled workers. We report some results in Table 5.

Insert Table 5 Here

In all four samples, the hourly total compensation for those workers with and without disabilities is about $10 higher than their hourly wage and salary pay only. Furthermore, as we hypothesized, the average raw percentage gap (not controlling for schooling, experience, race, marital status, or occupation differences) in total compensation between those with disabilities

and those without are generally smaller than the percentage gap computed from just wage or salary earnings. The percentage pay gaps are similar between the ACS-IPUMS and the March CPS. In the RAND-HRS sample, however, the gaps are larger. The wage and salary and the total percentage compensation gaps in the SIPP sample are smaller and neither gap between male full-time workers with and without disabilities is statistically significant. To understand these estimates more completely, we need to control for other covariates through standard techniques of multiple regression analysis.

Regression Estimates of Compensation Gaps by Disability Status

A primary concern has been whether or not the estimated percentage total compensation gap is smaller than the percentage wage gap and how any observed gap correlates with other employment-related characteristics at the individual level. Clarifying this can help us better understand what evidence there may be that is consistent with employees with disabilities and employees without disabilities making tradeoffs between wage or salary pay on one hand and compensation in the form of benefits on the other.

The differences in the wage and salary gap and total compensation gap between workers with and without disabilities (not controlling for other observables) reported in Table 5 are generally consistent with our hypothesis. However, the variation across data set and known effects of employment-related correlates, such as occupation, education, experience, race, and marital status, necessitate additional analysis. Table 6 displays additional summary statistics for these known correlates for each of the four individual-level data sets. As discussed previously, there is quite a bit of heterogeneity across the data seta.

To isolate the effects of these individual- level observables, we estimated a simple ordinary least squares regressions (OLS) wage equation, controlling for individuals' years of schooling, labor market experience, race, ethnicity, marital status, and occupation.[8]

Using data from the ACS-IPUMS, March CPS, RAND-HRS, and SIPP samples, we ran a series of OLS regressions, for either (log) wage and salary or (log) total compensation as the dependent variable, on a set of covariates (schooling, labor market experience, race, ethnicity, marital status, and occupation) and an indicator variable equal to 1 if the individual has some disability or functional limitations or zero otherwise.

We estimated the model for each of the four individual-level data sets (the ACS- IPUMS, the March CPS, the SIPP, and the RAND-HRS) and for each disability indicator therein. Because the SIPP sample is composed as a panel (39,667 persons over the 4-month period from June 2005 to September 2005), we treat the panel as independent observations and estimate a pooled OLS.[9] We expect that for each data set and disability indicator, the estimated total compensation gap will be smaller than the estimated wage and salary gap, as seen in a smaller estimated OLS coefficient on the disability status indicator variable in the regressions of (log) total compensation, relative to those of (log) wage and salary.

For simplicity, we report in Table 7 only the regression results using the very detailed occupation controls in the ACS-IPUMS, March CPS, and SIPP regressions, and (because of the data limitation previously described) the more aggregated two-digit SOC codes in the RAND-HRS regression.[10] Recall that these analyses are conducted only for males employed full- time.[11] Table 7, Panels A to D report the results from 14 regressions of compensation on the set of covariates including an indicator for type of disability (disabled, hearing, vision, cognitive, ambulatory, self-care, and independent living); a set of controls including education, experience,

and its square indicators for Black and Hispanic; and an indicator for married. Regressions underlying Panels A to C (ACS- IPUMS, March CPS, and SIPP) also controlled for occupation using the detailed set of 303 occupation indicator variables. The underlying regression of Panel D (RAND-HRS) controlled for occupation using the more aggregated two-digit SOC codes.

Insert Table 6 Here

Insert Table 7 Here

It is the row labeled “Disability” that presents the empirical estimates of the pay gap between full-time male workers with a disability and their nondisabled peers, removing the effects of the other observables (the isolated effect of each presented in the subsequent rows). The first column in Table 7 presents the sample regressions of the (natural logarithm of) wage and salary income on the indicator for disability and other control variables. The second column presents the same regression but of the (natural logarithm of) estimated total compensation. The third and fourth columns present the results from repeating these two regressions, but this time using a more narrow definition of disability—hearing difficulty in the case of Panels A to C and muscle difficulty in Panel D. The subsequent pairs of columns report the regression results for additional specific disability definitions.

Looking just at Panel A (ACS-IPUMS), the coefficient on disability in the first specification is —0.093. The interpretation of this coefficient is that, conditional on the set of covariates in the specification, those with a disability have about 9.3% lower wages than those

without a disability. In the next ACS-IPUMS specification where the pay gap is estimated for total compensation, conditional on the set of covariates, we estimate that those with a disability earn about 6.7% less in total compensation than those without. The smaller percentage pay gap when we consider total compensation rather than just wage and salary compensation is consistent with job match decision-making on the part of employees with disabilities that considers (and prefers) richer benefits in the total compensation package compared to nondisabled peers.[12]

This pattern—that the percentage gap is smaller when we consider total compensation than when we consider wages and salaries—is evident in the ACS-IPUMS specifications regardless of the number of occupation controls.[13] Estimates for the March CPS, the SIPP, and the RAND- HRS samples presented in the remaining panels of Table 7 can be interpreted similarly.

Figure 3 is a simple visualization and summary of our main findings, showing a comparison of the relative pay gaps across different disability types for each of the four data sets, corresponding to Panels A to D in Table 7. Figure 3, panel a, shows a comparison of the relative pay gaps across different disability types in the ACS-IPUMS sample; Figure 3, panel b, shows the comparable estimates for the March CPS sample; Figure 3, panel c, does the same for the SIPP; and Figure 3, panel d, for the RAND- HRS. The results for the March CSP, SIPP, and RAND-HRS are not as strong as those in from the ACS-IPUMS.[14]

We can see, however, that despite differences in the point estimates among data sources and among different disability measures within each data source, there is evidence that employees may be making labor supply decisions based on total employee compensation and that full-time workers with disabilities prefer (relatively) richer nonwage benefits. The important

implications of these findings for researchers, service providers, and employers interested in job placement and retention of people with disabilities are discussed in the following text.

LIMITATIONS

Hours worked and gender are known determinants of pay (Ehrenberg & Smith, 2014). We have limited our analysis of the total compensation gap for people with disabilities to U.S. male full-time workers with disabilities and their nondisabled peers. Although this is an effective method to remove the effects of these two important explanatory variables, it restricts the applicability of our results to this select population of workers.

In addition, data constraints force us to approximate individual benefits with occupational averages. Despite using very detailed occupational coding, it must be acknowledged that the smaller calculated total compensation pay gap might be because of the occupation level compensation approximation.

To generate more precise estimates, future work needs to explore more disaggregated information on benefits.

Insert Figure 3 Here

DISCUSSION AND IMPLICATIONS

Our research suggests that practitioners as well as researchers should be cautious in interpreting point estimates of pay gap reported in research studies for three reasons. First, we find that for people with disabilities, there is a consistently larger percentage wage and salary gap than percentage total compensation gap (where a value for employer-provided nonwage/nonsalary benefits is included). The breadth of the definition of pay can affect significantly the size of any estimated pay gap. Second, there are considerable differences in the estimated pay gaps depending on the data source used. Studies reporting results obtained from a single data set may not be broadly generalizable. And third, we find pay gap estimates range widely across the measure of disability.

Where pay gap estimates differ and where they are consistent across data set and definitions support the argument that whenever possible, researchers should not limit their studies to a single data set or definition of key variables; furthermore, readers of studies containing such limitations need to interpret results with caution.

Our research further suggests that for employers looking to hire persons with disabilities or those offering employment placement services should put substantial weight on the non-base pay component of the total compensation package when seeking the optimal employee-employer match. Our results are consistent with the idea that employees with disabilities have stronger preferences than their nondisabled peers for a benefits-rich compensation mix. Not only could relatively richer benefits provide a recruiting advantage for employers but also the potential risk of “job lock,” whereby people with disabilities are more reluctant to leave such jobs for career opportunities that could be better in other (potentially long-term) dimensions.

NOTES

1. The exact statistic in March 2014 was 69.0% for all civilian workers (U.S. Bureau of Labor Statistics, 2013).
2. See Jones (2008) for a survey of the literature and an international comparison.
3. Chung (2003) successfully uses this approach to study wage inequality (not pay gaps). However, Chung links the establishment pay data in the business establishment-level Employee Benefits Survey to individuals' records only using the house- hold-based CPS, and uses less detailed (three-digit) occupation codes. We use restricted access data at the Bureau of Labor Statistics to investigate occupations at a much finer level, as described previously.
4. The score on the CESD scale is computed from "the sum of five 'negative' indicators minus two 'positive' indicators. The negative indicators measure whether the respondent experienced the following sentiments all or most of the time: depression, everything is an effort, sleep is restless, felt alone, felt sad, and could not get going. The positive indicators measure whether the respondent felt happy and enjoyed life, all or most of the time" (see St. Clair et al., 2010, p. 15).
5. We note that individuals with disabilities may be more likely to access their health insurance more than nondisabled individuals. As a result, assigning them the average monetary cost may be understating their value of that form of pay. Our article does not make the distinction between the cost of compensation to the firm and the value employees place on that compensation. For a broader discussion of the difference between the cost of compensation and the value to employees, see Hallock (2012).

6. U.S. Bureau of Labor Statistics (2010), Table 4, p. 7. The six standardized occupations at the high level of aggregation (2010 SOC) are as follows:

High-level Major groups

Aggregation included		High-level aggregation title
1	11-29	Management, Business, Science, and Arts Occupations
2	31-39	Service Occupations
3	41-43	Sales and Office Occupations
4	45-49	Natural Resources, Construction, and Maintenance Occupations
5	51-53	Production, Transportation, and Material Moving Occupations
6	55	Military Specific Occupations

7. Note that the ACS-IPUMS, the RAND- HRS, and the March CPS are linked to the ECEC annual average files, whereas the SIPP is linked to quarterly average files in the third quarter of 2005. This is because the ACS-IPUMS, the RAND-HRS, and the March CPS report annual salaries and income, whereas the SIPP records monthly information. In addition, from 2004 to 2006, “Construction and extraction” and “Installation, maintenance, and repair” are combined, whereas from 2007 onward, “Natural resources, construction, and maintenance” and “Installation” are combined. Thus, the occupation categories used for linking in SIPP are different from those used in the ACS-IPUMS, the RAND-HRS, and the March CPS.

8. The OLS assumes a linear relationship between the dependent (left-hand side) and independent or explanatory (right-hand side) variables. The estimated coefficients on the explanatory or independent variables can be interpreted as how much the dependent variable changes when a given explanatory variable changes by one unit. See Greene (2011) for an explanation of this technique.
9. In analyzing the panel with a pooled OLS technique, we are essentially treating observations of a given person at different points in time as if each observation were of unique and different individuals. In other words, we assume each individual is a different person each time we observe him. Underpinning this assumption is the technical restriction postulating that there exists "a common intercept and a common set of slope coefficients for all units at all time periods" (Johnston, 1984, p. 397).
10. Results from regressions of the ACS- IPUMS, March CPS, and SIPP data using the more aggregated two-digit SOC codes are available upon request.
11. All of the specifications in Table 5 are on a restricted sample where compensation information is truncated at the top 5%. The untruncated versions are similar and are available upon request.
12. This pattern of smaller pay gap when total compensation is considered is evident in the ACS specifications regardless of the number of occupation controls. Regression results for all varying occupational controls are available upon request.
13. These regressions were also estimated for an intermediate set of occupational codes and for the broadest (and relatively few) occupational codes. Results of these additional regressions are available upon request.

14. It is important to remember that the March CPS, SIPP, and RAND-HRS samples are smaller than the ACS-IPUMS.

Table 1

TABLE 1. Employer Costs per Hour Worked for Employee Compensation and Costs as a Percent of Total Compensation: Civilian Workers in Selected Occupation, Third Quarter, 2013

	All Workers		Service				Management			
Compensation component	(Civilian)		(Private Industry)		(State/Local Govt)		(Private Industry)		(State/Local Govt)	
(occupation–level average)	$ Cost	%	$ Cost	%	$ Cost	%	$ Cost	%	$ Cost	%
Total compensation	$31.26	100.0%	$14.27	100%	$31.76	100.0%	$51.73	100.0%	$51.76	100.0%
Wages/Salaries	$21.54	69.1%	$10.78	75.5%	$18.62	58.6%	$36.32	70.2%	$34.71	67.1%
Benefits	$9.61	30.9%	$3.49	24.5%	$13.14	41.4%	$15.42	29.8%	$17.05	32.9%

Note. Govt = government. Source: Employer Costs for Employee Compensation (BLS, published November 12, 2013), Economic News Release, Table 1, Table 3, and Table 5. Retrieved from http://www.bls.gov/news.release/ecec.toc.htm

Table 2

TABLE 2. Underlying Tasks of the Eight RAND HRS Functional Limitation Indices

Index	Tasks	
Mobility	• Walking several blocks	• Climbing several flights of stairs
	• Walking one block	• Climbing one flight of stairs
	• Walking across the room	
Large muscle	• Sitting for 2 hours	• Getting up from a chair
	• Pushing or pulling a large object	• Stooping or kneeling or crouching
Activities of daily living (RwADLWA; following Wallace and Herzog, 1995)	• Bathing	• Dressing
	• Eating	
Activities of daily living (RwADLA)	• Bathing	• Walking across a room
	• Eating	• Getting in or out of bed
	• Dressing	
Gross motor skills	• Walking one block	• Climbing one flight of stairs
	• Walking across the room	• Bathing
Fine motor skills	• Picking up a dime	• Dressing
	• Eating	
Instrumental activities of daily living (starting with Wave 2 of survey)	• Using a telephone	• Handling money
	• Taking medication	
Instrumental activities of daily living (Starting with Wave 3 of survey)	• Using a telephone	• Handling money
	• Taking medication	• Shopping
	• Preparing meals	

Table 3

TABLE 3. Summary of Observation Level and Compensation Data by Data Set

Data Set	Observation Level	$ Wage/Salary Measure	Benefit Measure
ACS	person	annual	Yes/No–Covered by employer-provided health insurance, or not
CPS	person	annual	Dollar value of employer contribution to health insurance
HRS	person	hourly	Yes/No–Covered by employer-provided health insurance, or not
SIPP	person	monthly	Yes/No–Covered by employer-provided health insurance, or not
ECEC	occupation (within establishment)	hourly	Dollar value of total compensation, including categories of benefits (e.g., overtime, health care, vacation)

Note. ACS = American Community Survey; CPS = Current Population Survey; HRS = Health and Retirement Survey; SIPP = Survey of Income and Program Participation; ECEC = Employer Costs for Employee Compensation.

Table 4

TABLE 4. Sample-Level Comparison: Number of Observations, Average Age and Wages, and Occupations Aggregation Level

	ACS-IPUMS	March CPS	RAND-HRS	SIPP04 Wave 5
Year	2009	2010	2008	2005
No. of obs. (all workers)	1,119,943 (100%)	91,873 (100%)	3,868 (100%)	158,668 (100%)
No. of obs. (full-time male)	520,409 (46.47%)	34,940 (38.03%)	1,229 (31.77%)	70,796 (44.62%)
Age (all workers)	41.56	41.76	61.70	39.73
Average hourly wage (full-time male)	$26.45	$27.15	$28.31	$21.98
Occupation aggregation	Six-digit SOC 2000	Six-digit SOC 2000	Two-digit SOC 2000	Six-digit SOC 2000

Note. ACS-IPUMS = American Community Survey-Integrated Public Use Microdata Series; CPS = Current Population Survey; RAND-HRS = Health and Retirement Survey from the RAND Corporation; SIPP = Survey of Income and Program Participation; obs. = observations; SOC = Standard Occupational Classification.

Table 5

TABLE 5. Comparison of Wage and Salary Earnings and Total Compensation Across Data Set Average[a] Wage and Salary Earnings and Estimated Total Compensation for U.S. Full-Time Male Workers by Data Set and Disability Status

	ACS-IPUMS 2009			RAND-HRS 2008			March CPS 2010			SIPP04 Wave 5 2005		
Wage and salary earnings	$25.30			$28.31			$27.95			$22.64		
SD	(0.042)			(0.762)			(0.175)			(0.213)		
Total compensation	$35.39			$38.03			$39.35			$31.90		
SD	(0.047)			(0.810)			(0.200)			(0.220)		
% with disability[b]	4.7%			5.0%			3.0%			5.0%		
	With Disability	Without Disability	Gap %	With Disability	Without Disability	Gap %	With Disability	Without Disability	Gap %	With Disability	Without Disability	Gap %
Wage and salary earnings	$ 19.03	$ 22.40	17.7%[c]	$ 17.31	$ 28.84	66.6%[c]	$ 24.50	$ 28.05	14.5%[c]	$ 22.17	$ 22.72	2.5%
SD	(0.129)	(0.034)		(1.78)	(0.87)		(0.976)	(0.209)		(0.907)	(0.214)	
Total compensation	$ 27.17	$ 31.68	16.6%[c]	$ 25.19	$ 38.65	53.4%[c]	$ 34.76	$ 39.49	13.6%[c]	$ 31.20	$ 32.00	2.6%
SD	(0.143)	(0.038)		(1.84)	(0.92)		(1.163)	(0.240)		(0.959)	(0.222)	
N of full-time male workers (linked sample)			279,948			1,229			22,303			44,536

Note. ACS-IPUMS = American Community Survey-Integrated Public Use Microdata Series; CPS = Current Population Survey; RAND-HRS = Health and Retirement Survey from the RAND Corporation; SIPP = Survey of Income and Program Participation.

[a]These are "raw" averages with no controls for explanatory factors (such as schooling, experience, race, marital status, or occupation).

[b]With disability is defined as workers with some disabilities in any disability category. In the HRS, all workers in the sample have some disability as defined and the means from workers with Fine Motor Skill difficulty are reported as an example.

[c]Significant at 95% level; standard deviation (*SD*) in parenthesis.

Table 6

TABLE 6. Demographic and Labor Force Characteristics for All Workers and Workers With Disabilities Across Data Set (Full-Time Male Workers[a]; Wage and Compensation Truncated at Top 5%)

	ACS-IPUMS, 2009			March CPS, 2010			SIPP 2004, Wave 5			RAND HRS 2008, Wave 9		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	All Workers	With Disability		All Workers	With Disability		All Workers	With Disability		All Workers	With Mobility Difficulty	
Proportion of sample	1.00	0.049 (0.0004)[b]		1.00	0.03 (0.0012)		1.00	0.05 (0.0011)		1.00	0.22 (0.0120)	
Total wage earnings	N = 246,087 $19.77 (0.020)	Some 18.10 (0.090)	None 19.86[d] (0.020)	N = 20,452 22.11 (0.079)[b]	Some 20.61 (0.524)	None 22.16[d] (0.096)	N = 40,741 16.97 (0.045)[b]	Some 16.04 (0.237)	None 17.03[d] (0.052)	N = 1,147 23.60 (0.376)[b]	Some 19.79 (0.92)	None 24.68[d] (0.49)
Total compensation	N = 246,087 $29.21 (0.025)	 26.93 (0.117)	 29.33[d] (0.026)	N = 20,452 32.65 (0.106)	 30.28 (0.695)	 32.72[d] (0.128)	N = 40,741 25.64 0.059	 24.37 0.308	 25.73[d] 0.069	N = 1,147 33.10 (0.45)	 28.32 (1.07)	 34.45[d] (0.58)
Years of schooling	N = 246,087 13.39 (0.006)	 12.86 (0.025)	 13.41[d] (0.006)	N = 20,452 13.74 (0.018)	 13.31 (0.124)	 13.76[d] (0.022)	N = 40,741 13.48 (0.012)	 13.22 (0.059)	 13.5[d] (0.015)	N = 1,134 13.74 (0.09)	 12.93 (0.22)	 13.97[d] (0.10)
Age	N = 246,087 41 (0.025)	 47.51 (0.114)	 40.66 (0.025)	N = 20,452 42.15 (0.087)	 50.60 (0.612)	 41.89[d] (0.109)	N = 40,741 39.19 (0.061)	 46.69 (0.314)	 38.87[d] (0.070)	N = 1,147 60.14 (0.15)	 60.78 (0.34)	 59.96[d] (0.16)
Experience	N = 245,660 21.66 (0.025)	 28.67 (0.115)	 21.29[d] (0.026)	N = 20,405 22.46 (0.088)	 31.29 (0.626)	 22.19[d] (0.109)	N = 40,411 19.86 (0.061)	 27.53 (0.321)	 19.53[d] (0.070)	N = 1,134 40.39 (0.18)	 41.88 (0.44)	 39.97[d] (0.19)
Black (= 1 if Yes)	N = 246,087 0.1 (0.001)	 0.1 (0.003)	 0.1 (0.001)	N = 20,452 0.09 (0.002)	 0.08 (0.012)	 0.09 (0.002)	N = 40,741 0.1 (0.001)	 0.06 (0.006)	 0.1[d] (0.002)	N = 1,147 0.08 (0.01)	 0.1 (0.02)	 0.08 (0.01)
Hispanic (= 1 if Yes)	N = 246,087 0.16 (0.001)	 0.12 (0.003)	 0.17[d] (0.001)	N = 20,452 0.15 (0.002)	 0.11 (0.014)	 0.15[d] (0.003)	N = 40,741 0.16 (0.002)	 0.08 (0.008)	 0.16[d] (0.002)	N = 1,147 0.07 (0.01)	 0.1 (0.02)	 0.06 (0.01)
Married (= 1 if Yes)	N = 246,087 0.6 (0.001)	 0.59 (0.005)	 0.6 (0.001)	N = 20,452 0.63 (0.003)	 0.63 (0.024)	 0.63 (0.004)	N = 40,741 0.59 (0.002)	 0.59 (0.013)	 0.59 (0.003)	N = 1,147 0.69 (0.01)	 0.73 (0.04)	 0.68 (0.02)
Insurance (= 1 if Yes)	N = 246,087 0.75 (0.001)	 0.69 (0.004)	 0.75[d] (0.001)	N = 20,452 0.64 (0.003)	 0.61 (0.024)	 0.64 (0.004)	N = 40,741 0.77 (0.002)	 0.74 (0.011)	 0.77[d] (0.002)	N = 1,145 0.7 (0.01)	 0.68 (0.04)	 0.7 (0.02)
Weekly working hours	N = 246,087 44.53 (0.017)	 44.51 (0.077)	 44.53 (0.017)	N = 20,452 43.95 (0.056)	 43.74 (0.341)	 43.95 (0.067)	N = 40,741 43.61 (0.046)	 44.29 (0.343)	 43.59[d] (0.052)			
Annual working weeks[c]	N = 246,087 1.02 (0.000)	 1.03 (0.001)	 1.02 (0.000)	N = 20,452 51.88 (0.004)	 51.89 (0.029)	 51.88 (0.005)						

[a]Full-time worker defined as follows: ACS-IPUMS, 2009: Full-time workers are those who have worked more than 35 hours a week and more than 48 weeks in the past 12 months. March CPS, 2010: Full-time workers are those who have worked more than 35 hours a week and more than 48 weeks in the past 12 months. SIPP 2004, Wave 5: Full-time workers are those persons 15+ with a job in the reference month who have worked more than 35 hours a week. Some workers who have worked less than 35 hours for some weeks in the past month are also considered as full-time if temporarily unable to work full-time because of injury, or full-time workweek is less than 35 hours, or slack work, or material shortage, or participated in a job sharing arrangement, or on vacation; RAND HRS 2008, Wave 9: Full-time workers are those who work 35+ hours per week, 36+ weeks per year.

[b]Parentheses denote standard errors.

[c]= 1 if 50–52 weeks worked during past 12 months; = 2 if 48–50 weeks worked during past 12 months.

[d]$|t| >= 1.96$.

Table 7

TABLE 7. OLS Analysis of the Effects of Disability on Wage and Compensation (Full-Time Male Workers; Wage and Compensation Truncated at Top 5%)

	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
Disability measure	With Disability		Hearing Diff		Vision Diff		Cognitive Diff		Ambulatory Diff		Self-Care Diff		Independent Living	
Dependent variable	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)
Panel A. ACS-IPUMS 2009														
Disability	−.093**	−.067**	−.052**	−.040**	−.129**	−.090**	−.135**	−.094**	−.109**	−.077**	−.086**	−.052**	−.083**	−0.062**
	(0.005)	(0.003)	(0.007)	(0.004)	(0.012)	(0.007)	(0.012)	(0.007)	(0.009)	(0.006)	(0.021)	(0.012)	(0.016)	(0.010)
Schooling	.033**	.026**	.033**	.026**	.033**	.026**	.033**	.026**	.033**	.026**	.033**	.026**	.033**	0.026**
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Experience	.026**	.019**	.026**	.019**	.026**	.019**	.026**	.019**	.026**	.019**	.026**	.019**	.026**	0.019**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Experience 2	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Black	−.085**	−.060**	−.085**	−.060**	−.084**	−.059**	−.084**	−.060**	−.084**	−.059**	−.084**	−.060**	−.084**	−0.060**
	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)
Hispanic	−.070**	−.063**	−.069**	−.062**	−.068**	−.061**	−.069**	−.062**	−.069**	−.062**	−.069**	−.062**	−.069**	−0.062**
	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
Married	0.116**	0.086**	0.117**	0.086**	0.117**	0.086**	0.116**	0.086**	0.116**	0.086**	0.117**	0.086**	0.117**	0.086**
	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
ECEC occp. six-digit (303)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	249,262	249,426	249,262	249,426	249,262	249,426	249,262	249,426	249,262	249,426	249,262	249,426	249,262	249,426
R^2	.285	.535	.284	.535	.285	.535	.285	.535	.285	.535	.284	.534	.284	0.535
Panel B. March CPS 2010														
Disability	−0.039	−0.035*	0.009	−0.006	−0.102*	−0.069*	−0.064	−0.047	−0.036	−0.036	−0.048	−0.060	−0.189**	−0.118*
	(0.020)	(0.014)	(0.030)	(0.020)	(0.050)	(0.034)	(0.054)	(0.037)	(0.031)	(0.023)	(0.072)	(0.060)	(0.073)	(0.047)
Schooling	0.044**	0.032**	0.044**	0.032**	0.044**	0.032**	0.044**	0.032**	0.044**	0.032**	0.044**	0.032**	0.057**	0.041**
	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Experience	0.023**	0.016**	0.023**	0.016**	0.023**	0.016**	0.023**	0.016**	0.023**	0.016**	0.023**	0.016**	0.025**	0.018**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Experience 2	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Black	−.059**	−.047**	−.059**	−.047**	−.059**	−.047**	−.059**	−.047**	−.059**	−.047**	−.059**	−.047**	−.095**	−0.069**
	(0.014)	(0.008)	(0.014)	(0.008)	(0.014)	(0.008)	(0.014)	(0.008)	(0.014)	(0.008)	(0.014)	(0.008)	(0.011)	(0.007)
Hispanic	−.072**	−.054**	−.071**	−.054**	−.071**	−.054**	−.071**	−.054**	−.071**	−.054**	−.071**	−.054**	−.101**	−0.083**
	(0.010)	(0.007)	(0.010)	(0.007)	(0.010)	(0.007)	(0.010)	(0.007)	(0.010)	(0.007)	(0.010)	(0.007)	(0.008)	(0.006)
Married	0.107**	0.092**	0.107**	0.093**	0.107**	0.093**	0.107**	0.093**	0.107**	0.093**	0.107**	0.093**	0.138**	0.119**
	(0.008)	(0.005)	(0.008)	(0.005)	(0.008)	(0.005)	(0.008)	(0.005)	(0.008)	(0.005)	(0.008)	(0.005)	(0.007)	(0.004)
ECEC occ. six-digit (343)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	19,929	20,427	19,929	20,427	19,929	20,427	19,929	20,427	19,929	20,427	19,929	20,427	32,336	32,320
R^2	.305	.614	.305	.614	.305	.614	.305	.614	.305	.614	.305	.614	.245	0.443
Panel C. SIPP2004 Wave 5, February 5–August 5														
Disability	−.133**	−.083**	−.098**	−.074**	−.103**	−.062**	−.255**	−.185**	−.158**	−.091**	−.115	−.099**	−.276**	−0.161**
	(0.016)	(0.009)	(0.021)	(0.013)	(0.034)	(0.019)	(0.056)	(0.035)	(0.027)	(0.013)	(0.062)	(0.037)	(0.071)	(0.030)
Schooling	0.044**	0.030**	0.044**	0.030**	0.044**	0.030**	0.044**	0.030**	0.045**	0.030**	0.045**	0.030**	0.044**	0.030**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Experience	0.026**	0.019**	0.026**	0.019**	0.026**	0.019**	0.026**	0.019**	0.026**	0.019**	0.026**	0.019**	0.026**	0.019**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Experience 2	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−.000**	−0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Black	−.082**	−.060**	−.080**	−.059**	−.079**	−.058**	−.079**	−.058**	−.079**	−.058**	−.079**	−.058**	−.080**	−0.059**
	(0.010)	(0.006)	(0.010)	(0.006)	(0.010)	(0.006)	(0.010)	(0.006)	(0.010)	(0.006)	(0.010)	(0.006)	(0.010)	(0.006)
Hispanic	−.072**	−.070**	−.070**	−.069**	−.069**	−.068**	−.070**	−.068**	−.070**	−.068**	−.069**	−.068**	−.071**	−0.069**
	(0.009)	(0.006)	(0.009)	(0.006)	(0.009)	(0.006)	(0.009)	(0.006)	(0.009)	(0.006)	(0.009)	(0.006)	(0.009)	(0.006)
Married	0.108**	0.081**	0.110**	0.082**	0.110**	0.081**	0.109**	0.081**	0.110**	0.082**	0.110**	0.082**	0.109**	0.081**
	(0.006)	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)

(Continued)

Table 7 (continued)

TABLE 7. OLS Analysis of the Effects of Disability on Wage and Compensation (Full-Time Male Workers; Wage and Compensation Truncated at Top 5%) *(Continued)*

	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
Disability measure	With Disability		Hearing Diff		Vision Diff		Cognitive Diff		Ambulatory Diff		Self-Care Diff		Independent Living	
Dependent variable	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)	Log (Wage)	Log (Comp)
ECEC Occ. six-digit (303)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	40,531	40,515	40,531	40,515	40,531	40,515	40,531	40,515	40,531	40,515	40,531	40,515	40,531	40,515
R^2	.302	.617	.301	.616	.300	.616	.301	.616	.301	.617	.300	.616	.301	0.617
Panel D. RAND HRS 2008 Wave 9														
Functional Limitation	Mobility Difficulty		Muscle Difficulty		Daily Living Difficulty (3)		Daily Living Difficulty (5)		Gross Motor Skill Difficulty		Fine Motor Skill Difficulty		Depression	
Coefficient	−.125**	−.070**	−.045	−.035	−.086	−.067	−.035	−.032	−.095*	−.084**	−.117*	−.096*	−.068*	−0.067**
	(0.048)	(0.022)	(0.033)	(0.020)	(0.072)	(0.051)	(0.063)	(0.044)	(0.045)	(0.030)	(0.059)	(0.042)	(0.034)	(0.020)
Schooling	0.041**	0.027**	0.041**	0.027**	0.041**	0.027**	0.041**	0.027**	0.040**	0.026**	0.041**	0.027**	0.039**	0.025**
	(0.007)	(0.004)	(0.007)	(0.004)	(0.007)	(0.004)	(0.007)	(0.004)	(0.007)	(0.004)	(0.007)	(0.004)	(0.007)	(0.004)
Experience	0.028	0.022*	0.029	0.022*	0.028	0.022*	0.028	0.022*	0.028	0.022*	0.028	0.022*	0.029	0.023*
	(0.017)	(0.011)	(0.017)	(0.011)	(0.017)	(0.011)	(0.017)	(0.011)	(0.017)	(0.011)	(0.017)	(0.011)	(0.019)	(0.012)
Experience 2	−.000*	−.000*	−.000*	−.000**	−.000*	−.000**	−.000*	−.000**	−.000*	−0000**	−.000*	−.000**	−.000*	−0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Black	−0.016	−0.007	−0.021	−0.011	−0.019	−0.009	−0.019	−0.009	−0.017	−0.007	−0.022	−0.011	−0.021	−0.011
	(0.056)	(0.028)	(0.056)	(0.028)	(0.056)	(0.028)	(0.056)	(0.028)	(0.056)	(0.028)	(0.056)	(0.028)	(0.059)	(0.030)
Married	.134**	.095**	.132**	.095**	.128**	0.092**	0.129**	0.092**	0.131**	0.094**	0.129**	0.093**	0.115**	0.082**
	(0.038)	(0.024)	(0.038)	(0.024)	(0.038)	(0.024)	(0.038)	(0.024)	(0.038)	(0.024)	(0.038)	(0.024)	(0.040)	(0.025)
HRS occ. (23)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Observations	1445	1445	1445	1445	1445	1445	1445	1445	1445	1445	1445	1445	1359	1359
R^2	.226	.502	.221	.499	.221	.499	.22	.498	.221	.5	.222	.5	.212	0.496

Note. Robust standard errors in parentheses.

*$p < .05$. **$p < .01$.

Figure 1

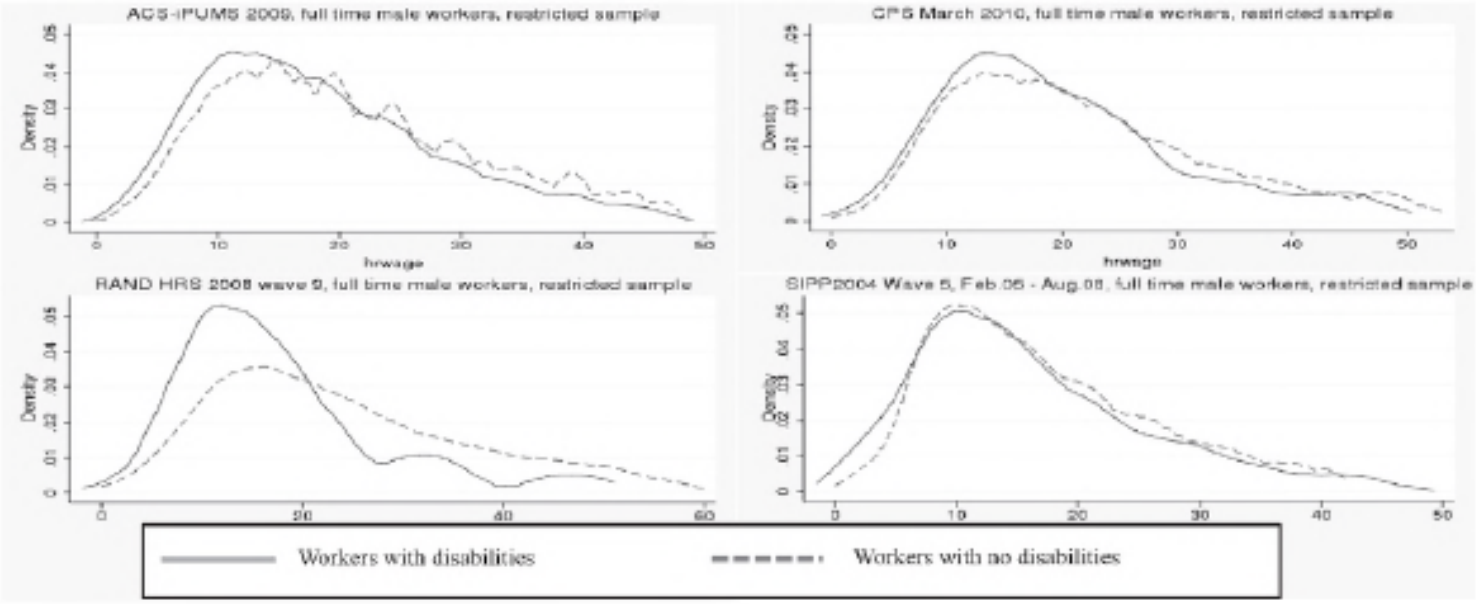


FIGURE 1. Comparative distribution of wages across individual-level data sets kernel density estimate—distribution of hourly wages in the ACS-IPUMS, the March CPS, the RAND HRS, and the SIPP. The blue solid line in the HRS plot represents workers with some fine motor skill limitations; the red dotted line in the HRS plot represents workers with no fine motor skill limitations.

Figure 2

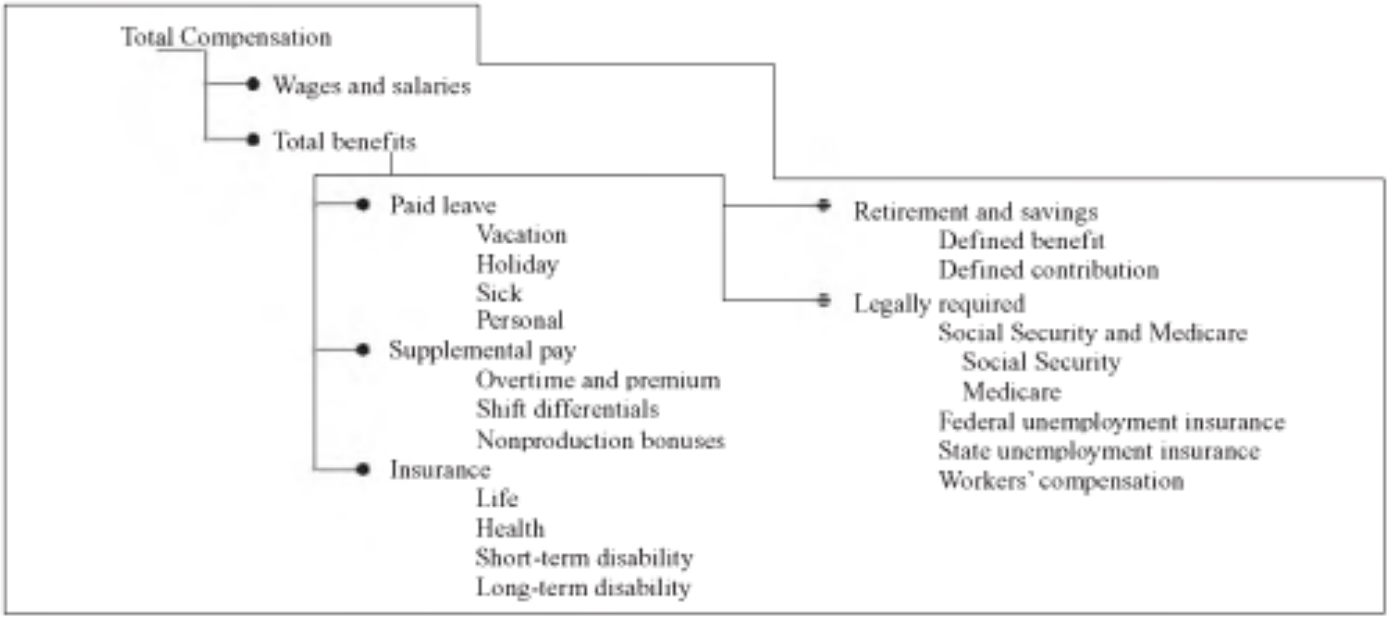


FIGURE 2. Categories and subcategories of compensation reported in the Employer Costs for Employee Compensation.

Figure 3

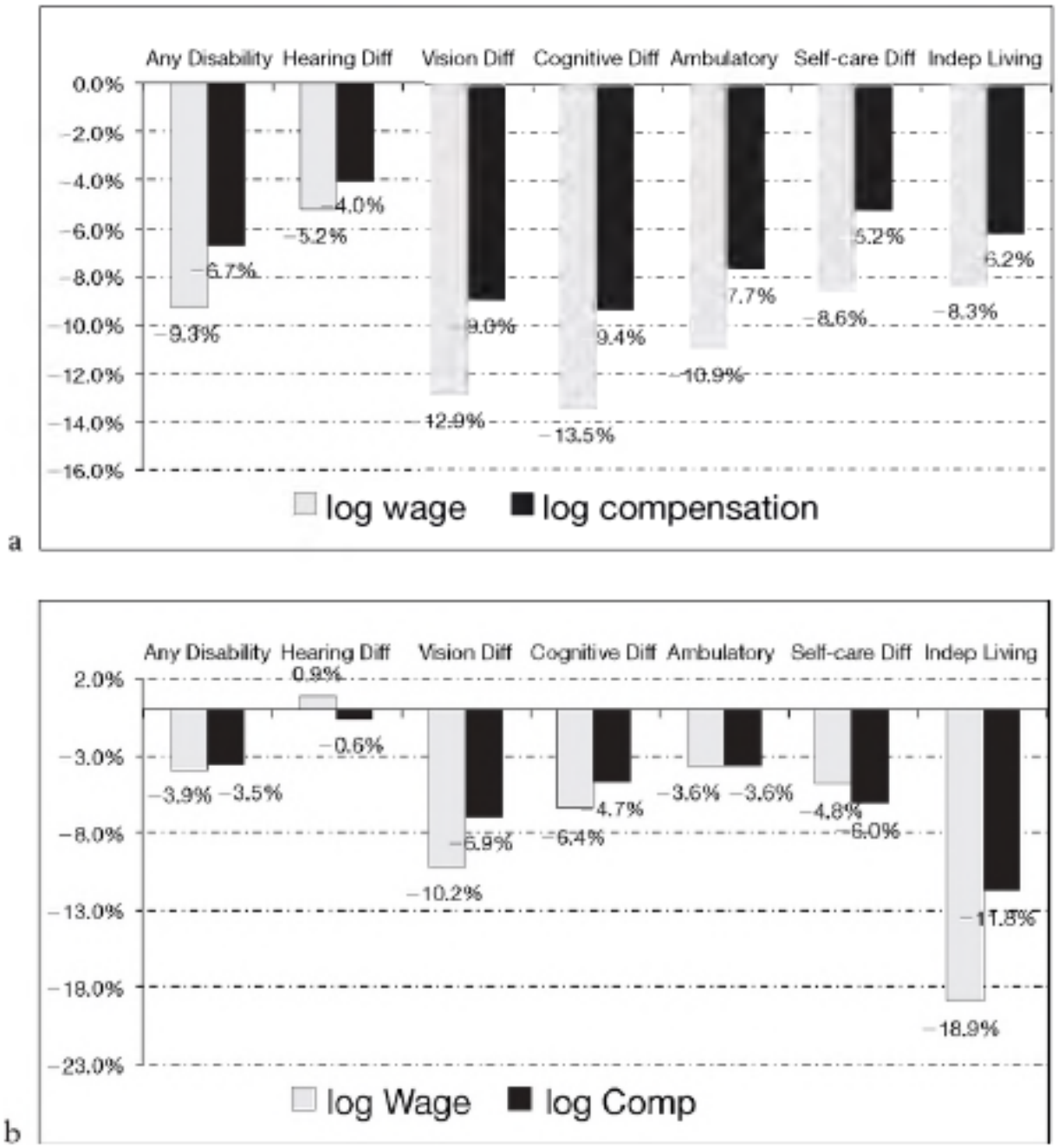
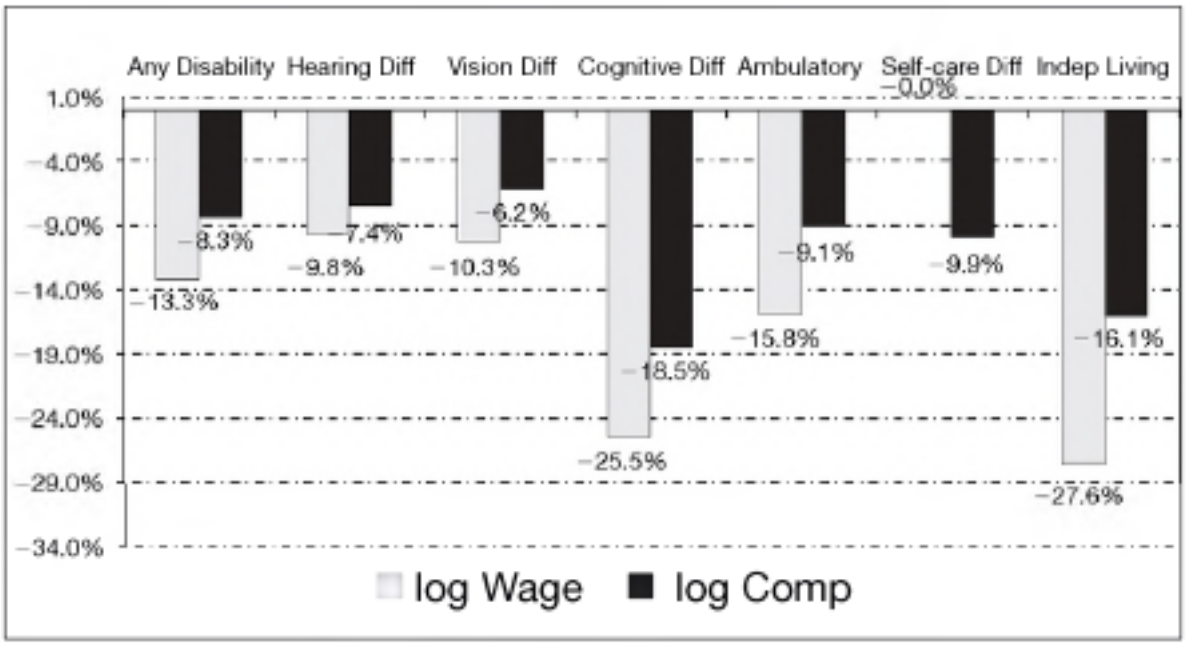
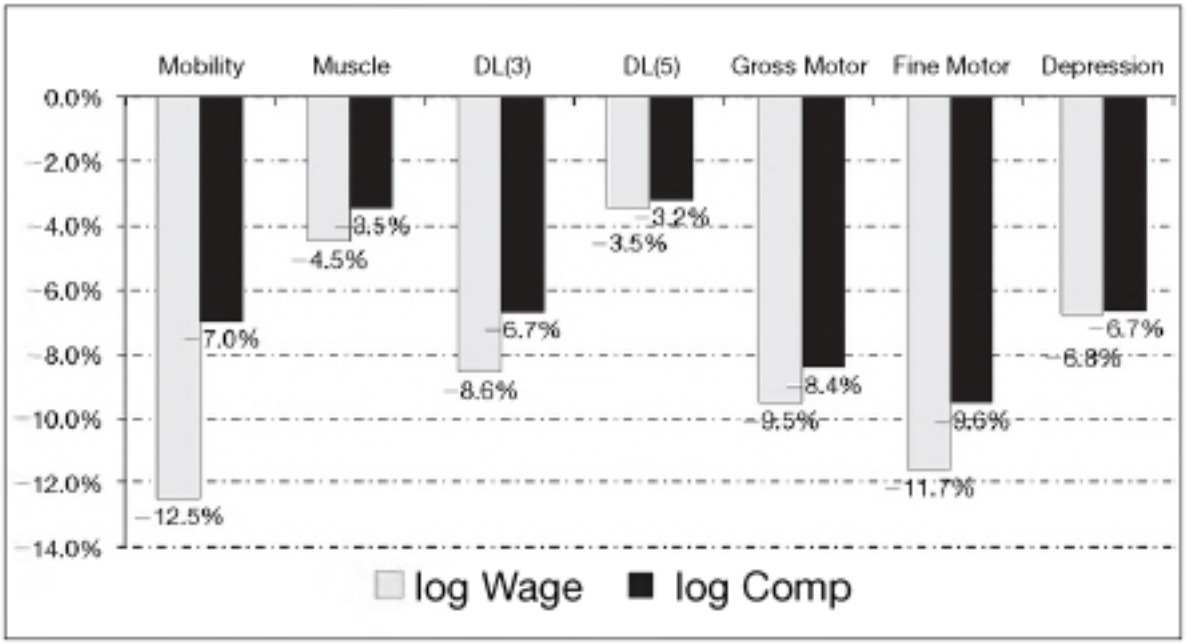


FIGURE 3. OLS estimates of pay gap for wage/salary versus total compensation (full-time male workers; wage and compensation truncated at top 5%): ACS-IPUMS, 2009 (a); March CPS, 2010 (b); SIPP, 2004 (c); and RAND HRS (d). Diff = difficulty; Indep = independent. DL = activities of daily living.

Figure 3 (continued)



c



d

FIGURE 3. *(Continued)*

Appendix

Mapping of the 2-Digit Occupational Groups: Six Standardized SOC 2-Digit Occupations and Nine Occupational Grouping Used with RAND HRS and ECEC Merging

Six standardized occupations at the 2-digit level of aggregation (2010 SOC)			Nine occupation groupings used to merge RAND HRS to ECEC at the 2-digit level of aggregation		
SOC Standard Occupation Groups	2-digit SOC groups	SOC Titles	Occupation Groups in RAND HRS and ECEC Merging	2-digit SOC groups	Occupation Titles
1	11–29	Management, Business, Science, and Arts	1	11–13	Management, Business, Finance
			2	15–29	Professional
2	31–39	Service	3	31–39	Services
3	41–43	Sales and Office	4	41	Sales
			5	43	Office and Adm. Support
4	45–49	Natural Resources, Construction, & Maintenance	6	47	Construction and Extraction
			7	49	Installation
5	51–53	Production, Transportation, and Material Moving	8	51	Production
			9	53	Transportation
6	55	Military Specific Occupations			

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