

Data Appendix:
Unions, Norms, and the Rise in American Wage Inequality

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DATA SOURCES

The Current Population Survey, conducted by the Bureau of Labor Statistics, is a monthly survey sampling 50,000–60,000 households drawn from the civilian, non-institutional population of the United States. CPS microdata are available beginning in 1962 (although union questions are not available until the early 1970s) and contain a wealth of measures related to labor market outcomes and demographic indicators, making it an invaluable resource for research on the labor force. Although the CPS is a monthly survey, it does not survey completely new households each month. Rather, the sample is divided into 8 “rotation groups.” Each rotation group is interviewed for four consecutive months, dropped from the observation sample for 8 months, and then returned to the survey for an additional 4 consecutive months. Thus, surveyed households are measured for 8 months in total: 4 consecutive months in one year, followed by 4 consecutive months one year later.

Beginning in 1973, the CPS May survey began including questions on union membership. We use the CPS May series for years 1973–1981. No union questions were asked in any of the CPS surveys in 1982; our sample therefore includes no data for 1982.

Households in the fourth and eighth month of observation (the CPS refers to this as “month in sample”) are designated “outgoing rotation groups” (ORGs) because they are either leaving the sample for the 8 month hiatus, or they are leaving the sample permanently. The CPS-ORG data is comprised of those CPS observations in the fourth or eighth month in the observation sample. The ORG files have included union membership since 1983. Given the larger samples of the ORG data, we use these files for the remaining years of our sample: 1983–2007 (excluding 1994 data and most of the 1995 sample, for reasons detailed below).

Apart from the May 1980 data file, our CPS files come from the Unicon Research Corporation’s CPS Utilities program (<http://www.unicon.com/>). In the 1980 May file, the earnings information is invalid. For that year, we use the May CPS from ICPSR: <http://www.icpsr.umich.edu/icpsrweb/ICPSR/series/00024>.

SAMPLE CONSTRUCTION

Our sample is limited to full-time workers (defined as working 30 hours or more a week) with valid data on union membership, earnings, and hours worked per week. Changes in the CPS over our 35-year study period present several significant challenges for data analysis. Here we discuss several of the most serious of these challenges.

Allocated Earners

From 1979, respondents missing on wage items in the CPS have their wages imputed. Investigations of inequality find that the inclusion of imputed earners results in biased regression coefficients on non-match criteria (such as union membership) and an increase in residual wage variation. In recent years, inclusion of imputed earners leads to a reduction of union wage gaps of approximately .05 (Hirsch and Schumacher 2004: Table 6), and as Mouw and Kalleberg (2010) discuss, the inclusion of imputed earners may result in biased estimates of other related trends, such as within- and between-occupation wage dispersion (413). For these reasons our sample excludes imputed earners.

The process of dropping imputed earners is not straightforward. We follow the strategy of Hirsch and Schumacher (2004) as outlined in their Table 2 and estimate the proportion of wage and salary earners with allocated earnings for each survey year. We are able to match their proportion designated as allocated for the entirety of our series by following these steps:

1. 1973–1978: For these years, the CPS did not allocate earnings to respondents missing on earnings. We retain all non-missing earners.
2. 1979–1988, excluding 1982: The allocation flag accurately identifies all allocated earners, which we drop.
3. 1989–1993: For these years, the allocation flag only identifies a fraction of allocated earners. However, one can correctly identify respondents with imputed earnings by comparing the unedited weekly earnings item with the edited variable: we drop those not missing on the edited earnings variable but missing on the unedited variable.

4. 1994: Nonrespondents have their earnings imputed, however there is no valid allocation flag for this year. We exclude 1994 data.
5. 1995: We retain those respondents with non-imputed earnings for those months in which the allocation flag identifies imputed earners. This results in a sample size in 1995 approximately one-fourth as large as the preceding and following year's samples.
6. 1996–2007: For these years, the allocation flag correctly identifies imputed earners, which we drop.

This results in a final dataset spanning the years 1973-2007 (excluding 1982, 1994, and three-quarters of 1995) where allocated earners have been treated consistently.

Wage Measures

Our construction of an hourly wage variable replicates in broad outline the strategy detailed by Lemieux (2006). For all years, nonhourly workers' wages are defined by dividing weekly earnings by hours worked per week at respondent's main job. For hourly workers, we select the higher of two possible hourly wage variables: either weekly earnings divided by hours worked per week, or the straight time hourly wage series. In early years especially (pre-1989, in particular) a non-trivial number of hourly wage workers report a higher straight-time hourly wage than weekly earnings (which includes overtime, tips, and commissions) divided by hours worked per week. However, in the later years of the UNICON files, in the vast majority of cases, weekly earnings divided by hours worked per week is equal to or greater than the straight time hourly wage series. Thus for these years, we rely on weekly earnings divided by hours worked per week.

Beginning in 1995, the hours worked per week question includes, as a response choice for periodicity of earnings, "variable hours." For those respondents, Lemieux (2006: 495) imputes hours. We follow a helpful suggestion from a reviewer and substitute the values for the variable measuring total hours worked last week for those respondents whose value for the hours worked per week at main job variable is "variable." Note that this introduces a small amount of unavoidable inconsistency in our hourly

wage measure given that some fraction of the substituted responses capture hours worked for more than one job. We drop from the dataset those few respondents who report variable hours worked and who are missing on the total hours worked last week variable.

Wage Topcodes

The CPS raised its topcode values in 1989 and 1998. For the years directly preceding the resets, the fraction of CPS respondents who report topcoded earnings is nontrivial. Analysts utilizing the CPS files must make some assumption regarding mean wages for topcoded respondents. We impute earnings for the top fraction of earners from a Pareto distribution, similar to the strategy employed by Western, Percheski, and Bloome (2008: 911) and detailed by West (1985). Coding for the procedure is available upon request from the authors.

Industry Coding

Changes in the CPS industry codes over time—specifically, between the May 1981 and ORG 1983 dataset, and, beginning in 1992 and 2003—complicate the creation of a consistent industry classification. A consistent industry recode must balance the issues of sample size, changes in the CPS codes, and a desire for as detailed a set of industry measures as possible. The result is a set of 18 industry categories that span the 1973–2007 period. A few of these, such as mining and construction, are SIC 1-digit industry classifications and are consistently coded as such in the CPS over time. Others, such as “personal services” were extensively revised. However, we believe that the changes to the industry codes are not so great as to prevent a time-consistent recode. Below we describe our most significant recodes. A full set of Stata code for the industry measures are available upon request.

1. 1973-2002: The early industry code changes (between 1981 and 1983 and 1991 and 1992) are minor with respect to our 18-industry classification scheme. For example, “grocery retailing” (CPS industry code 628 in 1981) was simply reassigned to code 601. FIRE industries were measured by codes 707–719 in the early years. They were reassigned to values 700 and 712 in later years without much realignment of the underlying industries (the major exception being

savings and loan associations, added to the FIRE industries beginning with the 1983 ORG file). Other code changes were similarly superficial, and involved mostly assigning a new range of values to broad-based industries (SIC 1 and 2-digits) of the type we use. While some of 2- and 3-digit classifications shifted or changed, our industry groupings rely on stable 1 and 2-digit categories for these years.

2. 2003-2007: Industry codes significantly changed in later years, even affecting aggregated industry sectors. Matching “business/repair services,” “personal services,” “entertainment/recreation services,” and “professional/other services” between 2002 and 2003 involved unavoidable inconsistencies, as these categories were eliminated and their underlying industries allocated to existing or new categories (e.g., “accommodation and food services” includes some industries previously listed under “personal services”). Some 3-digit industries, such as “internet service provider,” were first recorded in the redesigned codes in 2003. Of the four industry categories that were not carried over from 2002 to 2003, most were directly reallocated to the new classification, but some coding choices (such as for “internet service providers,” mentioned above) involved subjective judgment. Our bridging strategy avoids major discontinuities, so the 2003 industry distribution is similar to the distribution in 2002.

REGRESSION RESULTS

The paper reports just the variance decompositions based on the variance function regressions, and not the regression results themselves. Variance function results for men, for all years, are reported in Tables D.1 and D.2. Table D.1 reports the results for the mean coefficients, and an R^2 statistic, given by the squared correlation of the predicted value, \hat{y}_i , with the observed dependent variable, y_i . Table D.2 reports the coefficients for the variance regression, and the sample size. Women’s results are reported in Table D.3 and D.4. A quadratic age term is also included in the regressions but these are transformed to orthogonal polynomials. Because the scale of age varies by year, according to the transformation, the age coefficients are suppressed in the table.

Table D.1. Mean regression (s.e.) on men's log hourly wages.

Year	Const.	<HS	<BA	≥BA	Black	Other	Midwest	South	West	IR Union	Union	R ²
1973	2.73 (270.37)	-14 (20.30)	.08 (9.73)	.36 (29.04)	-16 (14.23)	-19 (14.45)	-01 (1.39)	-.02 (1.92)	.05 (5.18)	.51 (26.33)	.15 (21.15)	.30
1974	2.72 (271.97)	-13 (17.67)	.08 (9.21)	.36 (30.32)	-18 (16.94)	-15 (12.23)	-.01 (.66)	-.02 (1.84)	.06 (6.24)	.49 (24.69)	.15 (19.31)	.30
1975	2.70 (275.68)	-17 (22.34)	.08 (10.58)	.36 (32.26)	-16 (15.59)	-17 (14.02)	.00 (.34)	.01 (1.03)	.08 (8.06)	.53 (27.60)	.16 (21.28)	.34
1976	2.69 (274.69)	-16 (20.85)	.09 (10.65)	.35 (31.23)	-17 (15.99)	-14 (11.09)	.02 (2.84)	.02 (2.71)	.09 (9.41)	.50 (26.30)	.17 (24.05)	.34
1977	2.61 (284.27)	-15 (21.23)	.08 (10.98)	.36 (35.37)	-19 (18.56)	-14 (11.94)	.05 (5.88)	.08 (9.26)	.14 (16.31)	.58 (31.86)	.22 (30.00)	.34
1978	2.65 (283.67)	-15 (20.98)	.08 (10.53)	.34 (33.54)	-17 (16.51)	-17 (15.96)	.03 (3.63)	.05 (6.22)	.11 (13.10)	.59 (30.48)	.21 (26.60)	.34
1979	2.65 (197.21)	-16 (15.91)	.08 (8.04)	.31 (22.24)	-18 (11.78)	-15 (10.21)	.05 (4.39)	.06 (4.59)	.14 (10.96)	.57 (21.81)	.19 (18.72)	.35
1980	2.55 (155.16)	-15 (11.67)	.09 (7.08)	.36 (20.35)	-18 (9.02)	-14 (7.16)	.04 (3.20)	.10 (6.28)	.19 (12.01)	.66 (18.93)	.21 (15.17)	.37
1981	2.56 (146.65)	-17 (12.43)	.07 (4.85)	.29 (15.32)	-20 (10.02)	-14 (7.59)	.04 (2.71)	.11 (6.54)	.19 (11.61)	.71 (18.75)	.19 (13.29)	.35
1983	2.58 (475.21)	-17 (38.03)	.10 (22.17)	.36 (65.97)	-18 (27.15)	-15 (25.16)	.01 (3.12)	.09 (16.86)	.15 (29.69)	.70 (54.80)	.23 (46.38)	.37
1984	2.60 (494.12)	-17 (35.72)	.10 (22.00)	.37 (70.29)	-19 (30.12)	-16 (25.97)	-.02 (3.46)	.06 (12.84)	.14 (26.63)	.70 (51.19)	.23 (43.43)	.38
1985	2.62 (527.04)	-17 (34.67)	.11 (25.67)	.39 (77.71)	-21 (32.79)	-17 (27.68)	-.05 (10.61)	.05 (10.23)	.12 (22.93)	.74 (56.03)	.23 (45.54)	.38
1986	2.66 (548.73)	-16 (35.81)	.11 (26.34)	.40 (80.05)	-18 (30.99)	-17 (27.35)	-.07 (16.33)	.01 (2.66)	.08 (15.87)	.73 (53.93)	.23 (47.65)	.38
1987	2.68 (535.35)	-16 (34.09)	.11 (25.82)	.40 (79.41)	-19 (30.14)	-16 (26.10)	-.10 (21.72)	-.01 (2.79)	.04 (8.35)	.71 (50.12)	.23 (46.10)	.38
1988	2.68 (513.07)	-15 (30.59)	.11 (24.81)	.41 (80.16)	-18 (27.33)	-16 (25.86)	-.11 (23.14)	-.04 (7.16)	.02 (3.21)	.72 (49.07)	.23 (43.41)	.37
1989	2.70 (511.18)	-16 (33.45)	.11 (25.01)	.45 (82.71)	-17 (27.11)	-15 (24.40)	-.13 (27.76)	-.06 (12.25)	-.01 (1.48)	.73 (46.66)	.22 (37.09)	.38
1990	2.69 (526.25)	-16 (33.12)	.12 (28.11)	.47 (88.09)	-17 (26.51)	-16 (27.92)	-.13 (28.34)	-.07 (13.44)	.00 (.91)	.70 (46.81)	.19 (35.92)	.38
1991	2.67 (489.80)	-17 (32.39)	.12 (26.39)	.46 (85.65)	-19 (27.93)	-16 (27.29)	-.11 (22.59)	-.05 (10.28)	.03 (4.73)	.68 (42.96)	.21 (33.62)	.38
1992	2.65 (502.18)	-16 (30.36)	.12 (28.04)	.48 (88.51)	-18 (26.74)	-15 (25.84)	-.12 (24.36)	-.06 (11.12)	.01 (1.93)	.68 (42.41)	.22 (35.53)	.38

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Year	Const.	<HS	<BA	≥BA	Black	Other	Midwest	South	West	IR Union	Union	R ²
1993	2.63 (493.10)	-.17 (31.49)	.13 (27.87)	.50 (88.40)	-.18 (25.92)	-.15 (25.74)	-.12 (23.46)	-.04 (8.18)	.02 (3.29)	.71 (43.15)	.23 (36.34)	.38
1995	2.65 (257.30)	-.16 (14.92)	.13 (14.99)	.49 (46.96)	-.16 (11.72)	-.16 (15.52)	-.07 (7.54)	-.03 (3.26)	-.01 (.90)	.61 (18.26)	.24 (17.89)	.35
1996	2.63 (400.87)	-.16 (24.34)	.12 (24.82)	.48 (76.79)	-.19 (23.56)	-.18 (27.25)	-.07 (11.42)	-.03 (4.45)	.00 (.37)	.66 (31.65)	.25 (28.50)	.35
1997	2.63 (413.31)	-.17 (27.34)	.12 (24.07)	.48 (79.69)	-.18 (22.45)	-.18 (27.68)	-.05 (8.00)	-.01 (1.54)	.01 (2.30)	.66 (31.55)	.25 (28.28)	.36
1998	2.65 (398.53)	-.17 (26.66)	.13 (24.19)	.51 (82.02)	-.17 (21.71)	-.18 (28.05)	-.04 (6.56)	.00 (.76)	.03 (5.09)	.64 (29.31)	.27 (29.98)	.34
1999	2.68 (390.05)	-.16 (24.95)	.13 (24.23)	.53 (83.16)	-.17 (20.59)	-.17 (27.11)	-.04 (5.44)	-.01 (1.36)	.02 (2.96)	.59 (25.79)	.24 (24.41)	.35
2000	2.68 (387.17)	-.16 (25.01)	.15 (27.36)	.54 (86.00)	-.18 (21.61)	-.17 (27.26)	-.05 (6.98)	-.01 (2.07)	.01 (1.17)	.64 (27.32)	.23 (23.64)	.36
2001	2.71 (404.49)	-.16 (24.36)	.15 (28.25)	.55 (86.57)	-.17 (18.84)	-.17 (27.80)	-.06 (9.89)	-.02 (2.96)	.01 (1.22)	.62 (26.57)	.23 (21.87)	.34
2002	2.73 (425.18)	-.16 (23.89)	.14 (28.22)	.55 (90.26)	-.17 (20.68)	-.17 (27.57)	-.08 (13.87)	-.03 (4.00)	.00 (.53)	.61 (25.73)	.24 (27.36)	.34
2003	2.73 (414.93)	-.16 (24.11)	.15 (28.35)	.54 (88.33)	-.18 (20.40)	-.17 (28.92)	-.07 (11.80)	-.03 (3.87)	.01 (1.30)	.57 (23.44)	.24 (22.76)	.35
2004	2.72 (413.28)	-.15 (22.50)	.14 (26.61)	.54 (88.98)	-.18 (20.11)	-.16 (27.57)	-.07 (11.07)	-.02 (2.31)	.01 (1.95)	.61 (24.43)	.25 (24.43)	.35
2005	2.69 (396.70)	-.16 (23.44)	.14 (28.24)	.55 (89.09)	-.21 (23.75)	-.16 (27.16)	-.07 (10.86)	.00 (.41)	.03 (4.77)	.64 (23.50)	.26 (23.67)	.35
2006	2.70 (409.89)	-.16 (24.56)	.14 (26.64)	.54 (89.08)	-.20 (22.46)	-.17 (30.36)	-.08 (13.76)	.01 (1.39)	.04 (5.94)	.67 (24.02)	.24 (21.31)	.35
2007	2.69 (392.51)	-.17 (24.47)	.14 (26.62)	.55 (89.85)	-.21 (24.45)	-.16 (28.56)	-.07 (11.35)	.02 (3.30)	.06 (9.65)	.67 (23.38)	.25 (23.80)	.35

Table D.2. Variance regression (s.e.) on men's log hourly wages.

Year	Const.	<HS	<BA	≥BA	Black	Other	Midwest	South	West	IR Union	Union	N
1973	-1.42 (49.47)	.03 (1.10)	.05 (1.61)	.42 (11.27)	.12 (2.77)	.10 (1.88)	-.02 (.69)	-.07 (2.32)	-.06 (1.81)	-1.06 (19.39)	-.42 (10.93)	17962
1974	-1.51 (52.20)	.16 (5.66)	.07 (2.24)	.36 (10.81)	.21 (4.49)	.02 (.44)	-.03 (.99)	-.06 (1.97)	-.08 (2.22)	-.90 (11.78)	-.48 (9.62)	16652
1975	-1.49 (46.25)	.07 (2.79)	.02 (.86)	.33 (9.06)	.16 (3.25)	-.08 (1.71)	-.05 (1.70)	-.07 (2.37)	.01 (.19)	-1.05 (16.39)	-.52 (13.63)	16235
1976	-1.55 (50.07)	.05 (1.89)	.08 (2.74)	.40 (11.65)	.02 (.41)	.12 (2.38)	-.10 (3.03)	-.09 (3.04)	-.04 (1.21)	-1.04 (16.24)	-.37 (11.33)	16101
1977	-1.61 (59.17)	.03 (1.13)	.11 (3.54)	.34 (10.65)	-.10 (2.23)	.02 (.54)	-.02 (.70)	-.02 (.57)	.15 (5.22)	-.96 (17.28)	-.33 (10.10)	19251
1978	-1.61 (49.53)	.03 (1.03)	.08 (2.86)	.36 (10.41)	-.06 (1.38)	-.09 (2.12)	.00 (.04)	-.06 (2.01)	.19 (6.59)	-1.02 (14.75)	-.39 (11.62)	18382
1979	-1.60 (34.82)	-.14 (2.94)	.00 (.06)	.32 (6.87)	.08 (1.26)	-.01 (.16)	-.09 (2.08)	-.08 (1.95)	.11 (2.37)	-.99 (11.11)	-.39 (8.19)	8625
1980	-1.79 (33.32)	-.06 (1.23)	-.01 (.15)	.34 (5.99)	.07 (1.03)	-.09 (1.04)	.01 (.36)	.05 (1.03)	.31 (5.83)	-.85 (6.00)	-.36 (6.50)	5409
1981	-1.68 (31.77)	-.01 (.32)	.08 (1.64)	.30 (5.94)	-.09 (1.14)	-.25 (3.67)	-.08 (1.19)	-.01 (.21)	.19 (2.61)	-.70 (7.46)	-.51 (8.88)	4997
1983	-1.68 (95.82)	-.06 (3.27)	.08 (5.13)	.37 (22.02)	.04 (1.58)	-.01 (.56)	-.03 (1.79)	-.03 (1.60)	.18 (10.45)	-.76 (17.14)	-.55 (25.27)	55038
1984	-1.70 (87.32)	-.04 (2.14)	.10 (6.50)	.37 (22.86)	-.04 (1.57)	.04 (2.12)	-.01 (.80)	-.03 (1.71)	.19 (9.78)	-.85 (17.65)	-.48 (20.41)	56276
1985	-1.65 (111.73)	-.05 (2.95)	.08 (4.76)	.27 (16.13)	-.05 (1.95)	.05 (1.99)	-.01 (.92)	-.04 (2.71)	.17 (9.88)	-.93 (23.23)	-.55 (23.15)	57932
1986	-1.64 (103.72)	-.05 (2.82)	.09 (5.56)	.24 (16.39)	-.07 (2.65)	.09 (4.10)	.03 (1.70)	-.06 (3.53)	.15 (8.29)	-1.05 (26.50)	-.63 (30.53)	59535
1987	-1.61 (87.12)	-.02 (1.01)	.10 (6.41)	.24 (14.18)	-.04 (1.79)	.08 (3.80)	.02 (1.31)	-.12 (6.49)	.08 (4.49)	-1.15 (23.60)	-.62 (23.11)	57476
1988	-1.62 (73.70)	-.04 (1.87)	.12 (7.15)	.27 (15.37)	-.01 (.48)	.00 (.04)	-.02 (.93)	-.09 (4.56)	.13 (6.33)	-1.06 (19.57)	-.62 (22.60)	54477
1989	-1.61 (93.70)	-.08 (4.33)	.16 (10.62)	.45 (28.44)	-.07 (3.20)	.03 (1.63)	.00 (.31)	-.10 (5.82)	.15 (8.26)	-1.15 (22.15)	-.51 (16.50)	55707
1990	-1.61 (84.23)	-.06 (3.37)	.15 (8.61)	.43 (25.40)	-.03 (1.40)	.07 (3.55)	-.05 (2.73)	-.10 (5.86)	.10 (5.72)	-1.13 (17.82)	-.45 (18.33)	58112
1991	-1.63 (90.08)	-.08 (4.22)	.14 (8.72)	.46 (28.48)	-.05 (1.90)	.05 (2.73)	-.04 (2.55)	-.12 (6.58)	.09 (5.01)	-.95 (17.82)	-.53 (15.85)	54931
1992	-1.67 (93.00)	-.10 (4.67)	.16 (9.42)	.48 (28.32)	-.02 (.92)	.06 (2.75)	-.04 (2.20)	-.11 (6.46)	.11 (5.84)	-.88 (15.90)	-.59 (17.91)	53974

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Year	Const.	<HS	<BA	≥BA	Black	Other	Midwest	South	West	IR Union	Union	N
1993	-1.64 (83.22)	-1.16 (7.69)	.20 (12.66)	.51 (29.54)	-.04 (1.53)	.04 (1.92)	-.05 (2.44)	-.12 (6.22)	.10 (5.42)	-1.02 (16.52)	-.50 (18.10)	52349
1995	-1.65 (47.16)	.04 (1.06)	.14 (4.78)	.53 (17.90)	-.02 (.40)	.04 (1.22)	-.05 (1.72)	-.05 (1.48)	.06 (1.74)	-.84 (6.72)	-.39 (6.71)	15833
1996	-1.64 (85.02)	-.03 (1.15)	.14 (7.51)	.46 (24.72)	.02 (.80)	.11 (4.80)	-.02 (1.16)	-.09 (4.44)	.10 (4.99)	-.93 (15.10)	-.43 (12.95)	44178
1997	-1.61 (82.40)	-.05 (2.31)	.14 (8.02)	.43 (23.95)	.00 (.15)	.08 (3.97)	-.02 (1.21)	-.09 (4.18)	.03 (1.77)	-.92 (13.96)	-.44 (12.83)	45142
1998	-1.56 (69.14)	-.09 (3.78)	.11 (5.95)	.46 (25.40)	.00 (.01)	.06 (3.12)	-.09 (4.53)	-.12 (5.89)	.04 (2.05)	-.78 (11.78)	-.51 (13.58)	44963
1999	-1.62 (70.09)	-.14 (6.14)	.14 (7.38)	.48 (25.86)	-.01 (.36)	.04 (2.13)	-.05 (2.59)	-.10 (4.27)	.07 (3.51)	-.73 (10.75)	-.39 (9.34)	43166
2000	-1.57 (83.00)	-.12 (5.13)	.17 (10.00)	.51 (29.24)	.00 (.13)	.06 (3.20)	-.11 (5.25)	-.10 (4.89)	.00 (.25)	-1.01 (18.44)	-.36 (10.52)	42614
2001	-1.59 (69.61)	-.17 (7.36)	.17 (8.88)	.49 (25.86)	.05 (1.77)	.04 (2.17)	-.07 (3.43)	-.07 (3.16)	.09 (4.37)	-.86 (10.63)	-.38 (7.89)	44272
2002	-1.60 (67.92)	-.12 (5.15)	.16 (8.53)	.50 (26.98)	-.03 (1.04)	.08 (4.00)	-.03 (1.71)	-.06 (2.81)	.06 (2.98)	-.90 (10.93)	-.35 (10.79)	47243
2003	-1.58 (73.47)	-.07 (3.06)	.12 (6.86)	.49 (29.19)	.01 (.44)	.07 (3.42)	-.10 (4.77)	-.09 (4.08)	.00 (.08)	-.86 (8.84)	-.24 (6.84)	45675
2004	-1.57 (76.01)	-.13 (5.63)	.15 (9.12)	.48 (28.33)	-.02 (.80)	.03 (1.66)	-.06 (2.71)	-.09 (3.91)	.05 (2.13)	-.95 (12.31)	-.35 (9.13)	45277
2005	-1.59 (80.40)	-.11 (4.07)	.14 (7.28)	.55 (30.46)	-.01 (.34)	.03 (1.71)	-.08 (4.16)	-.05 (2.67)	.03 (1.79)	-.91 (10.86)	-.32 (7.13)	46313
2006	-1.65 (73.97)	-.14 (6.09)	.11 (6.42)	.47 (27.66)	.01 (.44)	.07 (3.84)	-.06 (2.99)	-.04 (1.97)	.12 (6.00)	-.87 (9.39)	-.31 (8.72)	46477
2007	-1.56 (66.33)	-.14 (5.54)	.12 (6.31)	.44 (23.81)	-.09 (2.88)	.04 (2.32)	-.09 (4.26)	-.04 (2.11)	.05 (2.53)	-.99 (14.24)	-.30 (7.81)	46457

Table D.3. Mean regression (s.e.) on women's log hourly wages.

Year	Const.	<HS	<BA	≥BA	Black	Other	Midwest	South	West	IR Union	Union	R ²
1973	2.41 (226.74)	-0.19 (20.18)	.14 (12.79)	.33 (14.93)	-.07 (5.20)	-.09 (5.50)	-.02 (2.24)	-.11 (10.31)	.01 (.73)	.47 (19.90)	.11 (9.15)	.22
1974	2.41 (212.92)	-0.17 (17.62)	.11 (10.15)	.30 (15.25)	-.07 (5.39)	-.06 (3.69)	-.02 (2.15)	-.09 (7.57)	-.01 (1.03)	.44 (17.68)	.12 (9.83)	.19
1975	2.38 (209.37)	-0.20 (20.30)	.14 (12.86)	.31 (18.26)	-.05 (3.77)	-.06 (3.92)	-.04 (3.87)	-.07 (5.78)	.00 (.11)	.56 (21.68)	.15 (11.02)	.22
1976	2.40 (207.09)	-0.20 (19.99)	.12 (11.47)	.32 (18.56)	-.04 (2.96)	-.05 (3.33)	-.03 (2.78)	-.06 (5.04)	.04 (2.96)	.51 (19.38)	.15 (11.25)	.21
1977	2.37 (237.23)	-0.18 (20.02)	.12 (12.19)	.29 (19.55)	-.05 (4.60)	-.10 (6.94)	-.02 (1.95)	-.03 (3.02)	.04 (4.00)	.51 (21.02)	.19 (16.28)	.21
1978	2.36 (237.91)	-0.19 (21.78)	.12 (12.74)	.32 (22.97)	-.04 (3.79)	-.05 (3.85)	.01 (.64)	-.01 (.84)	.05 (4.40)	.53 (22.46)	.19 (16.14)	.23
1979	2.38 (187.99)	-0.17 (14.56)	.12 (10.14)	.31 (15.38)	-.07 (5.10)	-.08 (4.93)	.00 (.26)	-.02 (1.80)	.08 (5.55)	.46 (15.28)	.18 (10.69)	.22
1980	2.35 (146.54)	-0.17 (11.19)	.11 (7.49)	.33 (15.02)	-.05 (2.93)	-.10 (4.59)	-.01 (.83)	-.02 (1.01)	.07 (4.06)	.47 (11.34)	.21 (9.13)	.23
1981	2.34 (137.93)	-0.18 (11.25)	.11 (7.00)	.33 (14.44)	-.07 (3.35)	-.06 (2.52)	.00 (.06)	-.02 (.99)	.08 (4.16)	.52 (12.06)	.24 (8.81)	.26
1983	2.37 (433.42)	-0.21 (35.57)	.14 (29.03)	.36 (54.48)	-.05 (7.68)	-.09 (13.00)	-.01 (1.60)	.00 (.78)	.09 (15.10)	.55 (35.38)	.21 (21.46)	.24
1984	2.38 (431.35)	-0.22 (37.91)	.15 (30.67)	.38 (60.08)	-.07 (9.96)	-.10 (14.18)	-.03 (5.50)	-.01 (1.33)	.07 (12.13)	.57 (34.22)	.22 (24.31)	.26
1985	2.40 (453.93)	-0.23 (39.94)	.16 (31.63)	.40 (64.03)	-.06 (9.40)	-.09 (13.16)	-.05 (8.43)	-.03 (5.04)	.06 (10.14)	.59 (34.44)	.25 (14.56)	.26
1986	2.43 (473.83)	-0.23 (39.17)	.16 (34.19)	.42 (71.19)	-.07 (10.60)	-.11 (14.90)	-.08 (14.60)	-.04 (8.15)	.04 (7.47)	.61 (35.36)	.25 (15.25)	.27
1987	2.47 (473.54)	-0.23 (38.63)	.16 (35.03)	.43 (70.60)	-.08 (11.87)	-.10 (13.98)	-.11 (19.82)	-.07 (13.87)	.00 (.63)	.53 (29.20)	.25 (14.14)	.27
1988	2.48 (456.09)	-0.22 (36.05)	.17 (33.85)	.43 (68.72)	-.08 (12.31)	-.08 (10.27)	-.13 (23.17)	-.10 (17.73)	-.03 (5.01)	.53 (27.53)	.21 (12.16)	.27
1989	2.50 (456.78)	-0.22 (33.85)	.17 (34.56)	.47 (76.34)	-.08 (11.64)	-.08 (10.46)	-.15 (27.24)	-.13 (22.84)	-.07 (10.37)	.52 (26.76)	.22 (14.37)	.29
1990	2.50 (472.49)	-0.23 (36.84)	.18 (37.46)	.48 (79.99)	-.07 (11.51)	-.08 (12.56)	-.16 (28.96)	-.14 (24.81)	-.05 (7.55)	.50 (26.11)	.20 (13.94)	.30
1991	2.50 (457.93)	-0.22 (34.51)	.17 (34.35)	.47 (77.40)	-.06 (9.60)	-.09 (12.76)	-.14 (25.04)	-.13 (23.54)	-.03 (4.49)	.49 (24.42)	.17 (12.11)	.29
1992	2.51 (465.30)	-0.22 (33.41)	.18 (37.42)	.48 (78.27)	-.07 (11.01)	-.09 (12.81)	-.16 (28.60)	-.13 (23.87)	-.04 (7.00)	.45 (22.50)	.16 (11.84)	.30

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Year	Const.	<HS	<BA	≥BA	Black	Other	Midwest	South	West	IR Union	Union	R ²
1993	2.50 (437.83)	-.22 (32.54)	.18 (36.81)	-.49 (80.00)	-.07 (10.22)	-.09 (12.46)	-.14 (24.00)	-.13 (22.20)	-.04 (6.10)	.44 (21.03)	.18 (17.58)	.30
1995	2.46 (216.21)	-.22 (15.78)	.20 (21.94)	.53 (45.98)	-.06 (4.69)	-.09 (6.90)	-.10 (9.06)	-.10 (8.50)	-.05 (4.44)	.50 (11.08)	.22 (7.23)	.29
1996	2.46 (357.09)	-.22 (26.16)	.17 (31.39)	.52 (78.11)	-.08 (10.53)	-.10 (13.32)	-.10 (15.49)	-.10 (14.60)	-.05 (6.16)	.45 (16.35)	.20 (11.24)	.30
1997	2.46 (353.63)	-.21 (26.62)	.17 (30.99)	.52 (76.92)	-.08 (10.98)	-.10 (13.54)	-.09 (13.02)	-.08 (11.51)	-.03 (4.63)	.46 (16.48)	.22 (9.56)	.30
1998	2.49 (347.40)	-.22 (28.56)	.16 (30.01)	.52 (79.46)	-.07 (8.85)	-.10 (13.76)	-.07 (10.68)	-.07 (9.74)	-.02 (2.71)	.39 (13.63)	.19 (13.20)	.30
1999	2.50 (348.70)	-.21 (26.68)	.18 (32.55)	.54 (79.26)	-.06 (8.56)	-.10 (13.58)	-.06 (9.13)	-.07 (10.00)	-.03 (3.60)	.45 (15.47)	.19 (8.71)	.30
2000	2.51 (348.46)	-.21 (27.87)	.17 (30.95)	.55 (80.53)	-.08 (10.03)	-.10 (14.81)	-.07 (10.14)	-.08 (11.32)	-.04 (5.06)	.48 (14.88)	.19 (7.08)	.31
2001	2.52 (340.62)	-.20 (25.65)	.18 (32.02)	.56 (82.16)	-.08 (10.83)	-.10 (14.56)	-.07 (9.87)	-.08 (10.44)	-.02 (2.82)	.41 (13.05)	.18 (9.48)	.30
2002	2.55 (376.86)	-.21 (27.12)	.17 (31.68)	.54 (85.30)	-.09 (11.25)	-.10 (14.70)	-.07 (10.76)	-.06 (8.48)	-.03 (4.19)	.40 (12.50)	.21 (10.45)	.29
2003	2.56 (366.05)	-.21 (25.34)	.18 (31.93)	.53 (82.47)	-.07 (8.91)	-.11 (15.92)	-.09 (12.78)	-.08 (11.43)	-.03 (3.68)	.42 (12.77)	.20 (10.48)	.30
2004	2.56 (353.89)	-.22 (25.58)	.17 (30.74)	.54 (81.45)	-.07 (8.54)	-.09 (13.16)	-.08 (11.79)	-.08 (10.91)	-.03 (3.75)	.36 (10.46)	.20 (11.48)	.30
2005	2.53 (336.60)	-.24 (28.68)	.19 (33.42)	.55 (83.53)	-.08 (9.69)	-.10 (14.79)	-.08 (10.59)	-.06 (7.43)	.00 (.59)	.43 (11.46)	.18 (9.52)	.31
2006	2.52 (336.08)	-.20 (24.30)	.19 (32.46)	.56 (87.80)	-.07 (8.97)	-.10 (15.25)	-.08 (11.50)	-.05 (6.60)	.00 (.06)	.42 (10.95)	.20 (8.56)	.31
2007	2.52 (323.70)	-.20 (22.90)	.19 (32.42)	.56 (86.26)	-.07 (8.86)	-.10 (14.95)	-.08 (10.58)	-.05 (6.47)	.02 (2.55)	.38 (9.11)	.17 (9.31)	.31

Table D.4. Variance regression (s.e.) on women's log hourly wages.

Year	Const.	<HS	<BA	≥BA	Black	Other	Midwest	South	West	IR Union	Union	N
1973	-1.74 (43.04)	.08 (2.28)	-.02 (.64)	.54 (9.44)	.16 (2.74)	.06 (1.22)	.14 (3.11)	.09 (.99)	.16 (3.20)	-1.02 (12.10)	-.88 (11.96)	9451
1974	-1.66 (36.24)	.04 (1.13)	.00 (.03)	.37 (5.66)	-.01 (.20)	.07 (1.17)	.06 (1.43)	-.10 (2.11)	-.17 (3.43)	-.80 (6.86)	-.87 (11.82)	8946
1975	-1.67 (35.68)	.11 (2.86)	.04 (1.03)	.19 (3.79)	.06 (1.32)	.01 (.08)	-.03 (.59)	-.19 (4.11)	.12 (2.58)	-1.13 (10.42)	-.65 (6.26)	8935
1976	-1.65 (37.27)	.09 (2.40)	.05 (1.22)	.35 (5.69)	.04 (.89)	.08 (1.39)	-.06 (1.53)	-.36 (8.21)	-.04 (.95)	-.99 (9.83)	-.52 (7.17)	9206
1977	-1.93 (54.54)	.01 (.50)	.14 (4.12)	.42 (7.14)	-.02 (.58)	-.04 (1.05)	.12 (3.30)	-.10 (2.93)	.10 (2.36)	-.41 (4.80)	-.42 (7.73)	11288
1978	-1.91 (59.32)	-.03 (1.07)	.10 (2.80)	.37 (7.70)	.03 (.70)	-.05 (1.17)	.02 (.57)	-.15 (4.60)	.16 (3.59)	-.88 (8.34)	-.23 (4.57)	10925
1979	-2.12 (40.36)	-.18 (3.01)	.13 (3.15)	.63 (9.65)	-.05 (.88)	-.23 (3.11)	-.02 (.35)	-.08 (1.68)	.22 (4.37)	-.52 (4.02)	-.11 (1.86)	5393
1980	-2.21 (42.33)	-.08 (1.25)	.19 (3.31)	.46 (6.84)	-.30 (3.82)	.04 (.52)	.06 (1.04)	.03 (.43)	.06 (1.00)	-.05 (.60)	-.14 (1.27)	3576
1981	-2.02 (42.54)	-.10 (1.68)	.12 (1.80)	.33 (3.89)	.02 (.26)	.03 (.48)	-.01 (.14)	-.04 (.80)	.07 (1.06)	-.66 (3.79)	-.12 (1.41)	3375
1983	-2.03 (99.78)	-.13 (5.92)	.09 (5.01)	.44 (21.10)	-.07 (2.33)	-.04 (1.51)	.00 (.05)	-.04 (1.65)	.20 (8.98)	-.17 (2.73)	-.27 (7.63)	37039
1984	-2.00 (107.10)	-.12 (5.52)	.13 (7.78)	.42 (20.51)	-.04 (1.63)	-.03 (1.05)	.00 (.18)	-.02 (.80)	.16 (7.39)	-.16 (6.2)	-.36 (9.28)	38198
1985	-1.96 (106.56)	-.12 (4.58)	.15 (8.52)	.42 (19.47)	-.05 (2.06)	-.03 (1.37)	.05 (2.31)	.00 (.03)	.19 (9.16)	-.29 (4.75)	-.42 (5.86)	40056
1986	-1.91 (104.94)	-.11 (4.46)	.10 (5.98)	.33 (15.92)	-.10 (4.06)	.04 (1.56)	.03 (1.86)	.00 (.29)	.16 (8.41)	-.39 (6.23)	-.46 (6.58)	42435
1987	-1.91 (97.49)	-.14 (5.74)	.07 (3.92)	.32 (15.49)	-.03 (1.33)	.04 (1.50)	.09 (4.29)	.02 (.79)	.21 (9.68)	-.37 (5.27)	-.51 (6.81)	41689
1988	-1.90 (89.02)	-.11 (5.03)	.09 (5.14)	.35 (17.56)	-.05 (1.81)	.01 (.59)	.04 (1.87)	.05 (2.28)	.13 (5.74)	-.44 (5.24)	-.30 (5.40)	39651
1989	-1.88 (110.07)	-.10 (4.46)	.15 (8.28)	.39 (19.89)	-.07 (2.93)	-.04 (1.50)	.00 (.15)	.02 (.91)	.18 (8.58)	-.49 (6.30)	-.33 (5.54)	40209
1990	-1.92 (100.08)	-.12 (4.78)	.15 (8.42)	.44 (21.87)	-.03 (1.40)	.01 (.48)	.01 (.70)	.01 (.75)	.14 (6.41)	-.26 (3.27)	-.49 (6.96)	42475
1991	-1.88 (90.71)	-.17 (6.23)	.16 (9.77)	.43 (23.25)	-.15 (5.98)	.01 (.53)	-.02 (1.17)	.00 (.04)	.11 (5.10)	-.29 (3.60)	-.31 (4.98)	40857
1992	-1.87 (100.08)	-.18 (7.87)	.15 (8.66)	.48 (24.10)	-.07 (3.06)	.02 (.67)	-.07 (3.25)	-.03 (1.81)	.11 (5.45)	-.40 (5.99)	-.24 (4.79)	40602

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Year	Const.	<HS	<BA	≥BA	Black	Other	Midwest	South	West	IR Union	Union	N
1993	-1.85	-1.19	.17	.48	-1.11	.04	-.05	-.02	.11	-.57	-.18	39520
	(85.05)	(6.81)	(9.40)	(23.30)	(4.10)	(1.73)	(2.29)	(1.06)	(4.70)	(7.05)	(4.74)	
1995	-1.81	-.04	.10	.44	-1.10	.03	-.06	.00	.11	-.08	-.41	11857
	(50.87)	(1.04)	(3.10)	(12.04)	(2.19)	(.76)	(1.43)	(.02)	(2.51)	(.84)	(3.40)	
1996	-1.78	-.03	.14	.37	-.09	.03	-.07	-.05	.08	-.39	-.15	32804
	(75.44)	(1.25)	(7.38)	(17.81)	(3.06)	(1.32)	(3.16)	(1.97)	(3.46)	(4.48)	(3.00)	
1997	-1.70	-.18	.14	.41	-.07	-.01	-.15	-.10	.02	-.64	-.15	33824
	(74.66)	(6.05)	(7.17)	(18.40)	(2.54)	(.65)	(5.73)	(4.57)	(.77)	(6.99)	(2.42)	
1998	-1.74	-.17	.13	.43	-.05	.01	-.09	-.11	.08	-.46	-.30	33834
	(71.85)	(5.67)	(7.06)	(22.02)	(1.89)	(.56)	(3.78)	(4.39)	(3.24)	(4.31)	(6.21)	
1999	-1.72	-.17	.12	.43	-.08	.05	-.09	-.07	.03	-.66	-.10	32337
	(78.27)	(6.12)	(5.50)	(18.13)	(2.64)	(2.08)	(3.90)	(3.19)	(1.18)	(6.23)	(2.13)	
2000	-1.83	-.21	.20	.53	-.03	.05	-.11	-.03	.05	-.45	-.06	32099
	(84.28)	(6.84)	(10.96)	(26.40)	(1.29)	(2.10)	(4.55)	(1.37)	(2.19)	(3.98)	(1.14)	
2001	-1.74	-.18	.21	.50	-.19	-.05	-.08	-.02	.06	-.60	-.21	33448
	(71.67)	(5.63)	(10.18)	(22.50)	(7.60)	(2.17)	(3.53)	(.90)	(2.42)	(7.36)	(2.78)	
2002	-1.77	-.21	.19	.49	-.04	.01	-.10	-.01	.08	-.55	-.32	35744
	(87.42)	(6.89)	(9.87)	(26.64)	(1.49)	(.31)	(4.32)	(.39)	(3.83)	(6.32)	(4.28)	
2003	-1.75	-.13	.13	.45	-.09	.00	-.07	.00	.06	-.59	-.21	34726
	(84.76)	(3.89)	(7.18)	(24.45)	(3.32)	(.10)	(3.24)	(.05)	(2.45)	(5.76)	(2.83)	
2004	-1.72	-.15	.20	.50	-.07	.02	-.15	-.04	.00	-.73	-.17	34285
	(77.51)	(4.64)	(10.74)	(23.91)	(2.45)	(.77)	(6.04)	(1.78)	(.16)	(7.17)	(2.86)	
2005	-1.73	-.22	.19	.51	-.05	.01	-.10	.01	.07	-.79	-.18	34917
	(78.09)	(6.35)	(9.46)	(23.26)	(1.80)	(.28)	(4.70)	(.38)	(3.23)	(8.98)	(3.32)	
2006	-1.68	-.25	.14	.45	-.02	.03	-.13	.00	.06	-.93	-.27	35029
	(67.59)	(8.51)	(6.78)	(23.30)	(.72)	(1.19)	(5.56)	(.00)	(2.55)	(6.59)	(4.29)	
2007	-1.76	-.14	.16	.47	-.08	.02	-.07	.05	.03	-.15	-.24	35081
	(77.82)	(4.02)	(7.68)	(23.05)	(2.69)	(1.15)	(3.18)	(2.45)	(1.44)	(1.50)	(4.33)	

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