Has wage inequality stopped growing?

Earnings inequality increased sharply in the early 1980s, tapered off in the late 1980s, and reaccelerated in the 1990s; although inequality increased overall and for men and women separately, a combined analysis overlooks differences in the labor market dynamics of men and women

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It is by now almost a platitude of labor economics that wage inequality has increased quite sharply since the late 1970s, for both men and women.[1] This article examines several questions regarding that generalization:

1. Did earnings inequality among all workers stop growing in the mid-1980s?
2. What data serve best to measure the trend in equality, and which metrics are the most revealing?
3. In examining trends in wage inequality, when should we look at the combined distribution of men's and women's earnings, rather than at their separate distributions?

In answer to the first question, we present extensive evidence that overall earnings inequality has consistently increased since 1979, although the rate of increase has not been constant. The sharpest increase was in the early 1980s, followed by a flattening in the second half of the 1980s and a reacceleration in the 1990s. With regard to the second question, we argue the relative virtues of the variety of data sets brought to bear on this issue, concluding that, of the three data sets we examine—the March Current Population Survey (CPS), the CPS Outgoing Rotation Group files, and the Survey of Income and Program Participation—the second is best for measuring earnings inequality. Nevertheless, to the extent that we can compare these data sets, they all show persistently growing inequality. Finally, addressing the third question, we argue that combining data on male and female earners provides some insights, but inappropriately ignores differences in men's and women's labor market dynamics.

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Evidence from the March CPS

The data set that has been most commonly exploited to examine trends in earnings inequality is the March CPS, wherein respondents are asked questions about their annual earnings, as well as the number of weeks and the usual weekly hours they worked the previous year. Their responses may then be used to calculate hourly wage rates for all workers, including the self-employed. To measure inequality trends, we utilize these wage rates to calculate Gini coefficients and percentile wage differentials.[2]

However, before we can reliably measure inequality trends in the CPS or, for that matter, any other public-use data set, we must deal with the issue of top codes, an issue that becomes particularly germane when earnings at the top are growing quickly relative to those elsewhere in the earnings distribution. The top-code problem stems from the fact that reported earnings are capped in the public-use files of the CPS. In 1981 through 1983, for example, the top code for annual earnings was $75,000; beginning in 1984, it was raised to $99,999. Because workers can report earnings

from different sources in the March CPS (typically, earnings from the longest held job and other earnings), either one or both of the values they report can be top coded.

There are a number of ways to approach the top-coding problem. One is simply to ignore top coding. Doing this, however, is a problem in Gini analysis, because nominal wage growth over a period when the top code does not change or increases only slightly will lead to increasing shares of earners who are top coded, thus biasing the Gini coefficients downward. Such a downward bias applied between 1981 and 1987, when the top code stayed between $75,000 and $99,999, before doubling in 1988.

We employ two different approaches to the top-code problem. The first is to truncate all data at or above the top code, so that one examines only the population unaffected by top coding.[3] In the March CPS data on earnings, this can be accomplished by truncating the distribution at the 98th percentile.[4]

Table 1. Gini coefficients, all workers, 1979–95, March CPS

Year	Hourly wage			
	Weighted by persons[1]	Weighted by hours[1]	Weighted by hours and truncated[2]	Person-weighted weekly earnings[1]
1979	0.3418	0.3358	0.3089	0.3864
1980	.3426	.3360	.3093	.3868
1981	.3467	.3403	.3125	.3924
1982	.3506	.3441	.3166	.3968
1983	.3512	.3434	.3172	.3983
1984	.3551	.3476	.3213	.4010
1985	.3569	.3502	.3229	.4027
1986	.3618	.3557	.3268	.4076
1987	.3597	.3532	.3254	.4048
1988	.3621	.3545	.3235	.4072
1989	.3632	.3566	.3253	.4069
1990	.3609	.3548	.3247	.4037
1991	.3617	.3552	.3258	.4062
1992	.3633	.3568	.3255	.4085
1993	.3726	.3666	.3325	.4175
1994	.3772	.3719	.3359	.4239
1995	.3790	.3723	.3364	.4212
1996	.3860	.3804	.3390	.4399
Annualized percent changes:				
1979–89	.61	.60	.52	.52
1989–96	.87	.93	.59	1.12

[1] Employs Pareto-imputed values for top-coded cases.

[2] Top 2 percent of earnings distribution omitted.

SOURCE: Authors' analysis of March CPS.

The second approach is to assume that the unobserved upper tail of the earnings distribution is Pareto distributed and to use the observed values below the top code, along with the definition of the Pareto distribution, to impute the average value of earnings above the top code. These Pareto-imputed averages tend to increase as the nominal wage distribution shifts to the right, even when the top code remains fixed. The approach is far from perfect—it involves imputing one value for all top-coded earners[5]—but we would argue that, for the purpose of calculating Gini indexes, it is better than ignoring top codes altogether.

Columns one and two of table 1 show the Gini coefficients from the March CPS for the hourly wages of all earners.[6] (Column one is weighted by persons, column two by hours; we discuss these relative weighting schemes shortly.) The table reveals that wage inequality grew steadily through 1986, flattened from 1986 to 1990, rose sharply in 1993, and continued to grow through 1996. The bottom panel of the table shows the annualized percent change in the Gini coefficients over the two business cycles covered by the analysis, 1979–89 and 1989–96. When Gini coefficients are measured in this way, the annualized rate of increase actually proves to have been larger in the 1990s than in the 1980s.

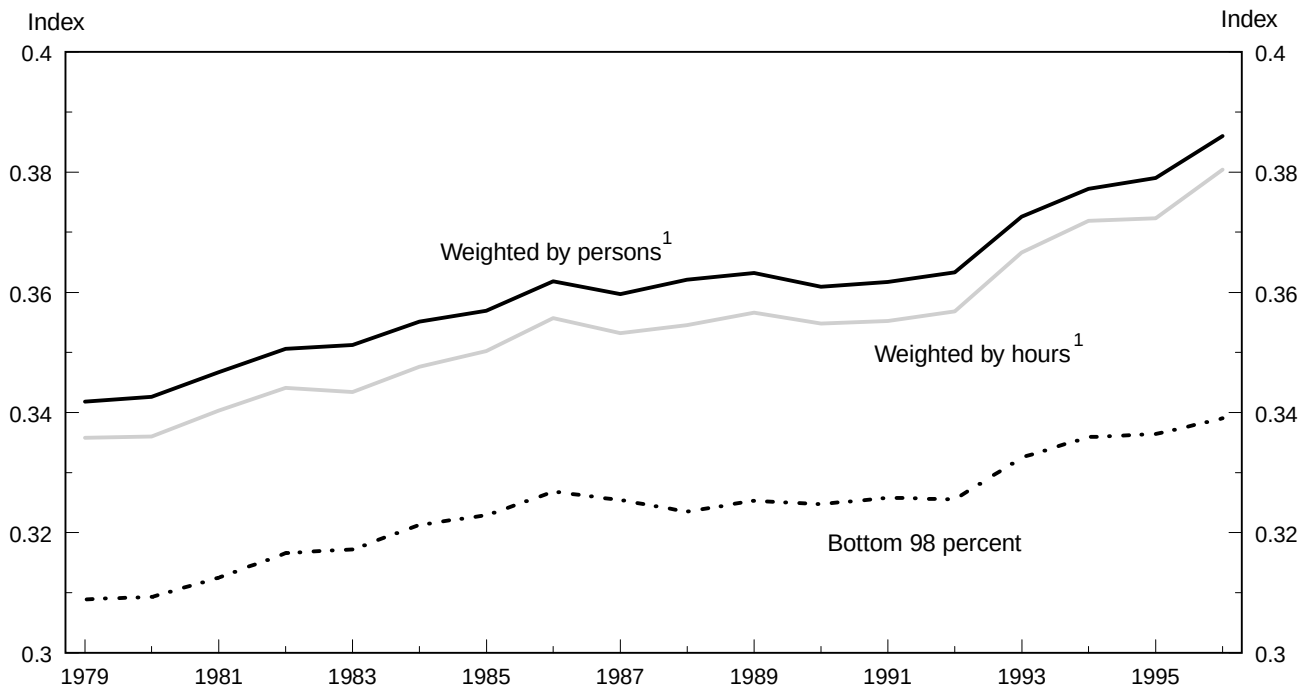
One might argue that each worker should be weighted by his or her hours worked, so that a person working 40 hours would count twice as much as one working 20 hours.[7] We discuss the rationale for this weighting scheme later; here, we merely point out that the hour-weighted and person-weighted measures show the same trends, suggesting that the choice of weighting by persons or hours leads to similar results regarding growth rates. (See chart 1.)

We also examine the trends in a sample truncated to exclude the top 2 percent, thus avoiding top-coded cases.[8] As column three of table 1 shows, wage inequality rose continuously in this sample as well, again accelerating in the l990s. We conclude that, according to the March CPS data, wage inequality grew persistently during the 1980s and 1990s, a finding that becomes evident using weighting by hours or persons and examining the bottom 98 percent of the distribution, or using the entire distribution with some correction for top coding.

One last issue regarding the March CPS series is the extent to which the change in the survey procedure affects the results for recent years. Beginning in 1994, March data (with values for 1993) were collected using computer-assisted interviewing, as opposed to the earlier paper-and-pencil method.[9] The relevant question is whether this change in survey method could have led to merely an observed (as opposed to an actual) increase in wage inequality from 1992 to 1993.

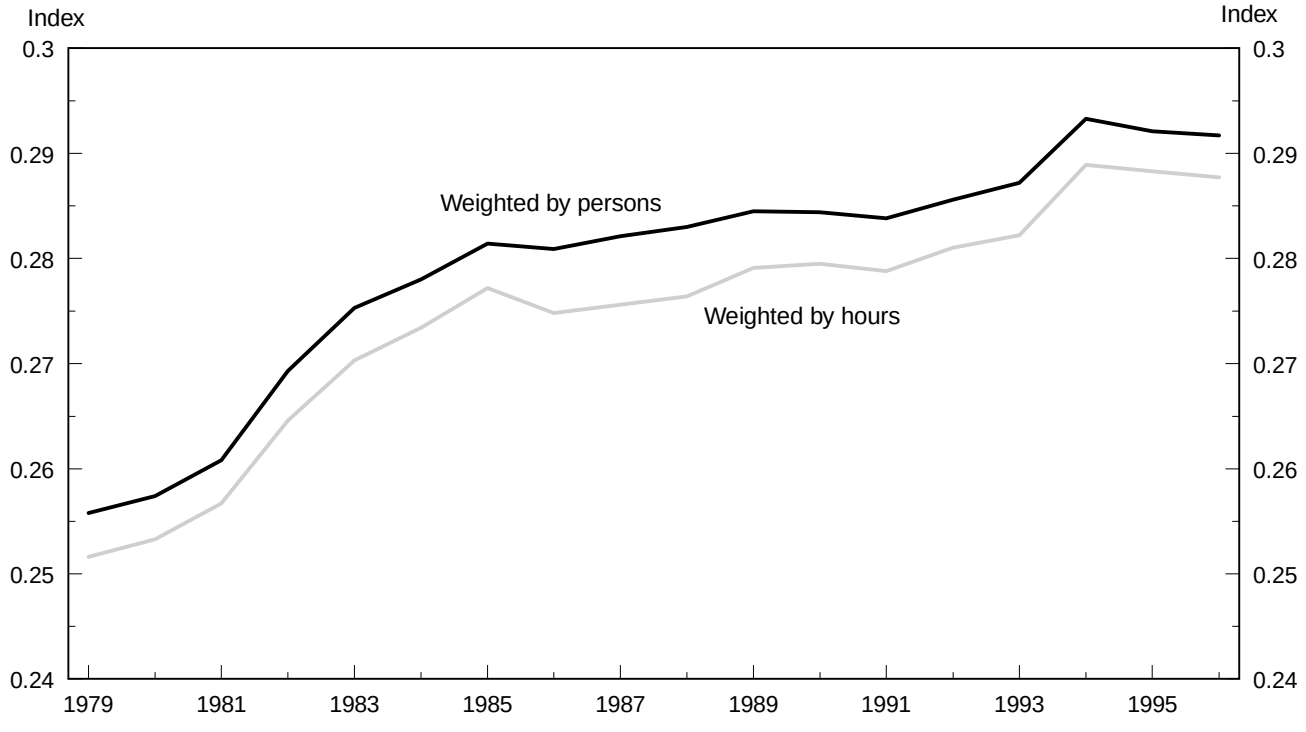
A review of the available evidence, however, suggests that the observed increase in wage inequality between 1992 and 1993 primarily reflects real changes in the economy, rather

Chart 1. **Gini coefficients, March CPS, 1979–96**



[1] Includes Pareto-imputed top codes.

Chart 2. **Gini coefficients, Outgoing Rotation Group CPS, bottom 97 percent, 1979–96**



than just changes in survey techniques. For one, a change in demographic weights was also introduced in 1994, and the impact of new weights on inequality, if present, is a real impact, even though the impact of demographic shifts should be allocated over a longer period of time. Second, there is no evidence to suggest that implementing computer-assisted interviewing either led to, or could be expected to lead to, an upward bias in the Gini index. The most detailed analysis of this question comes from former Census Bureau economist Paul Ryscavage, who looked at the impact of the switch to computer-assisted interviewing on income and earnings inequality.[10] Ryscavage judged the impact of the switch to be "inconclusive,"[11] but he also pointed out that the "forces for greater income inequality may have been particularly strong between 1992 and 1993."[12] It is worth noting that when we use the bottom 98 percent of the earnings distribution to calculate Gini coefficients, as shown in table 1, we find that inequality grew consistently from 1993 to 1996, 4 years during which computer-assisted interviewing was in place. Moreover, we also find some growth in wage inequality over the 1992–93 period in the CPS Outgoing Rotation Group data (though less than in the March data), which were not affected by the new survey methods until 1994. In sum, there is ample evidence of growing wage inequality over the current recovery, and there is no reason to wholly discount the 1992–93 increase.

Table 2. Gini coefficients, bottom 97 percent, all workers, 1979–96, Outgoing Rotation Group CPS

Year	Hourly wage		Person-weighted weekly earnings
	Weighted by persons	Weighted by hours	
1979	0.2558	0.2516	0.3000
1980	.2574	.2533	.3021
1981	.2608	.2567	.3060
1982	.2693	.2646	.3163
1983	.2753	.2703	.3223
1984	.2780	.2734	.3237
1985	.2814	.2772	.3256
1986	.2809	.2748	.3284
1987	.2821	.2756	.3298
1988	.2830	.2764	.3298
1989	.2845	.2791	.3265
1990	.2844	.2795	.3261
1991	.2838	.2788	.3276
1992	.2856	.2810	.3296
1993	.2872	.2822	.3312
1994	.2933	.2889	.3383
1995	.2921	.2883	.3386
1996	.2917	.2877	.3386
Annualized percent changes:			
1979–89	1.07	1.04	.85
1989–96	.36	.44	.52

SOURCE: Authors' analysis of Outgoing Rotation Group CPS data.

Evidence from Outgoing Rotation Groups

The CPS Outgoing Rotation Group file is, in our opinion, a better data set for measuring changes in inequality in hourly earnings than is the March CPS. The data set has three main attributes. First, about two-thirds of respondents report an hourly wage, so this measure need not be constructed, as it is in the March data, from annual earnings, annual weeks, and weekly hours. Second, respondents are asked about their usual hourly and weekly earnings in the previous week, as opposed to the previous year in the March survey and each of the previous 4 months in the Survey of Income and Program Participation, thus lessening recall bias. (Recall bias develops when there is a time lapse between the occurrence of an event and the survey respondent's reporting of the event).[13] Third, the sample from the Outgoing Rotation Groups is 3 times that of the March CPS, thus providing more accurate estimates. Table 2 reports the trends in Gini coefficients for hourly and weekly earnings from these data, using the bottom 97 percent of the distribution to avoid the top-coded cases. The hourly wage coefficients from the table are graphed in chart 2 (page 5).[14]

Both the table and the chart reveal continued increases in earnings inequality over the full period. Like the March CPS data, the data from the Outgoing Rotation Groups show a steep increase in the first half of the 1980s, with a flattening thereafter. Unlike the March CPS data, however, in the Outgoing Rotation Group the trend in inequality decelerates over the current cycle, but continues to grow at one-third to two-fifths the rate of the 1980s.

Criticisms have been raised about the Outgoing Rotation Group data as well. Some critics point out that respondents in this group are asked about their *usual*, as opposed to *actual*, weekly hours and earnings.[15] But there are a number of reasons to question such criticisms.

First, as previously noted, about two-thirds of the respondents in the Outgoing Rotation Group directly report an hourly wage; for these cases, the analyst need not impute an hourly wage by dividing annual, monthly, or weekly earnings by usual hours, as in the March CPS, Survey of Income and Program Participation, and Outgoing Rotation Group survey, respectively. Second, we are aware of no evidence that the reporting of usual, as opposed to actual, values would lead to a bias in the *trend* in inequality. This critique of the data from the Outgoing Rotation Groups implies that when respondents answer the question about usual earnings and hours, high-wage workers overestimate earnings and low-wage workers underestimate them, and that this bias has worsened over time.[16] Such a bias, however, has never been shown, and it is hard to imagine why it would exist.

Third, an article by Rodgers and colleagues—sometimes cited in this context—fails to speak to the issue at all. Their article examines measurement error in the Panel Study of In-

come Dynamics, a survey that is completely separate from the CPS. More importantly, the usual pay period in the Panel Study is the past 2 weeks, whereas that of the CPS is the past 1 week. Furthermore, the usual question on hours from the Panel Study asks about hours per week. The authors find significant measurement error in earnings data derived from these responses and hypothesize that the 2-week reference period for earnings and the 1-week reference period for hours may have confused respondents. Clearly, this finding cannot reasonably be ascribed to the Outgoing Rotation Group data. Finally, Rodgers and colleagues explicitly state that their analysis of the Panel Study of Income Dynamics can shed no light on the measurement error in the directly reported hourly wage rate.[17]

Inequality of weekly wages

It is also useful to examine inequality trends in weekly wages, capturing the effects of changes in the distribution of both hourly wages and hours worked, as well as their interaction. Our finding that the inequality of weekly wages has grown persistently since 1979 adds to the array of evidence that wage inequality has continued to increase.

The trends in the inequality of weekly wages in the March CPS and in the Outgoing Rotation Group CPS are also presented in tables 1 and 2. In the March CPS, the inequality trends for weekly wages closely correspond to those for hourly wages (compare column four with columns one and two in table 1), suggesting that the inequality in weekly hours has not grown. In the data from the Outgoing Rotation Group CPS, however, inequality grew faster for weekly than hourly wages over the current business cycle (1989–96), intimating that the growth in inequality of hours played an important role in the 1990s, a finding that would be missed by focusing on hourly wages alone.

The "correct" metric

Because the Gini coefficient summarizes the shape of the entire earnings distribution in a single number, it is less revealing about the structure of earnings than is, say, a series of per-

Table 3. Decile cutoffs, all workers, 1973–96, Outgoing Rotation Group CPS

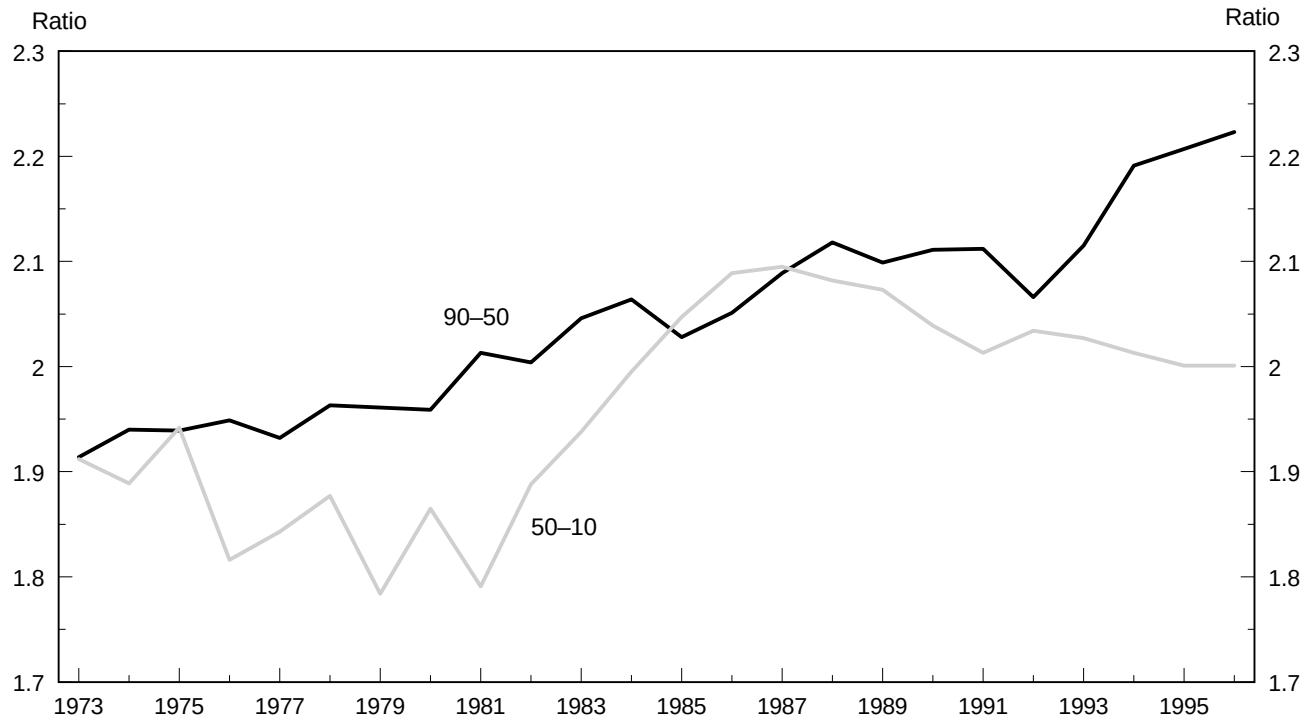
[In 1996 dollars]

Year	1	2	3	4	5	6	7	8	9	90–50	50–10	90–10
1973	5.93	7.16	8.51	9.90	11.35	13.02	15.12	17.28	21.72	1.914	1.912	3.660
1974	5.86	7.03	8.35	9.67	11.08	12.75	14.78	17.04	21.49	1.940	1.889	3.666
1975	5.71	6.97	8.24	9.57	11.09	12.92	14.62	17.03	21.51	1.939	1.942	3.766
1976	6.15	7.14	8.31	9.61	11.16	12.98	14.89	17.31	21.76	1.949	1.816	3.540
1977	6.08	7.05	8.23	9.57	11.22	12.88	14.94	17.66	21.66	1.932	1.843	3.561
1978	6.02	7.11	8.28	9.66	11.31	12.97	14.98	17.70	22.19	1.963	1.877	3.684
1979	6.28	7.17	8.41	9.90	11.20	12.97	15.34	17.88	21.96	1.961	1.784	3.497
1980	5.93	7.01	8.23	9.56	11.06	12.87	14.94	17.70	21.68	1.959	1.865	3.655
1981	6.02	6.87	8.18	9.34	10.77	12.74	14.85	17.52	21.69	2.013	1.791	3.605
1982	5.79	6.74	8.06	9.38	10.93	12.75	15.01	17.69	21.90	2.004	1.888	3.784
1983	5.61	6.61	7.90	9.25	10.87	12.67	15.17	17.58	22.24	2.046	1.938	3.965
1984	5.46	6.63	7.82	9.20	10.90	12.67	15.02	17.87	22.50	2.064	1.995	4.118
1985	5.37	6.69	7.87	9.22	10.98	12.80	14.91	17.98	22.27	2.028	2.047	4.151
1986	5.35	6.84	8.09	9.54	11.18	13.13	15.36	18.16	22.94	2.051	2.089	4.286
1987	5.33	6.77	8.09	9.58	11.16	13.27	15.27	18.15	23.31	2.089	2.095	4.377
1988	5.30	6.69	8.01	9.54	11.04	13.12	15.28	18.24	23.39	2.118	2.082	4.411
1989	5.27	6.56	7.87	9.40	10.93	12.76	15.18	18.16	22.93	2.099	2.073	4.352
1990	5.33	6.60	7.92	9.33	10.87	12.60	14.95	17.99	22.95	2.111	2.039	4.304
1991	5.40	6.62	7.90	9.23	10.87	12.58	14.80	17.78	22.96	2.112	2.013	4.252
1992	5.37	6.53	7.81	9.13	10.91	12.46	14.77	17.84	22.55	2.066	2.034	4.203
1993	5.32	6.49	7.77	9.13	10.78	12.61	14.85	17.92	22.80	2.115	2.027	4.288
1994	5.24	6.40	7.61	8.92	10.55	12.42	14.76	17.97	23.11	2.191	2.013	4.410
1995	5.21	6.37	7.61	8.96	10.43	12.34	14.71	17.81	23.01	2.207	2.001	4.416
1996	5.17	6.40	7.67	8.94	10.35	12.22	14.72	17.79	23.01	2.223	2.001	4.450
Annualized percent changes:[1]												
1973–79 ..	.9	.0	–.2	.0	–.2	–.1	.2	.6	.2	.8	–2.1	–2.7
1979–89 ..	–1.7	–.9	–.7	–.5	–.2	–.2	–.1	.2	.4	1.4	2.9	8.6
1989–96 ..	–.3	–.3	–.4	–.7	–.8	–.6	–.4	–.3	.0	1.8	–1.0	1.4

[1] Annualized point differences multiplied by 100.

SOURCE: Authors' analysis of Outgoing Rotation Group CPS data. See David Webster, "Wage Analysis Computations," Appendix B, in Lawrence Mishel, Jared Bernstein, and John Schmitt, *The State of Working America, 1996–97* (Armonk, NY, M. E. Sharpe, 1997), for a description of methods.

Chart 3. **Overall wage inequality, 90–50 and 50–10 cutoffs, Outgoing Rotation Group CPS, 1973–96**



centile differentials—that is, ratios of percentile cutoffs (90–10, 90–50, 50–10, 75–25, and so forth). These differentials also have the advantage of not invoking the top-code problem, because analysts typically choose cutoffs—like the 90th percentile—below the top-code value.

To take advantage of the percentile differentials approach, however, it is important to observe the trend in different relative quantiles, and not simply the ratio of, for example, the ninth decile cutoff to the tenth. Table 3 (page 7) presents the full wage series from the Outgoing Rotation Group CPS for all workers, by decile cutoff over the 1973–96 period, computed using a smoothing technique to deal with the clustering of wage data at certain intervals.[18] As the bottom panel shows, the 90–10 ratio grows in the 1990s, but at a slower rate than in the 1980s. However, as chart 3 reveals, this trend is due to a pattern of wage growth in which the 50–10 ratio flattens and the 90–50 ratio accelerates. In other words, starting in the mid-1980s, those at the top of the wage scale continued to pull away from those in the middle, with middle- and low-wage workers faring comparably poorly. (That is, both suffered similar losses in real wages.) Table 4 shows the decile cutoffs from the Outgoing Rotation Group data for men and for women.

The decile cutoffs from the March CPS data for all workers show a similar pattern. (See table 5, page 10.) The 90–10 cutoff for all workers grew 1.3 points per year in the 1980s and then decelerated, increasing at less than half that rate in the 1989–96 period. The 50–10 cutoff ratio, after growing 1.1 points per year in the 1980s, was essentially flat in the l990s. But, as in the data from the Outgoing Rotation Groups, the wage gap in the 90–50 ratio actually grew more rapidly over the 1989–95 business cycle.[19] Table 6 (page 11) shows the decile cutoffs for men and for women from the March CPS data.

Thus, we find continued, albeit slower, growth in the 90–10 differential in recent years, in both the March CPS and the Outgoing Rotation Group CPS. However, analyses that examine only the relative wage movements at the top and bottom of the earnings distribution (that is, the 90–10 ratio) miss important shifts in the character of the growth of inequality and, in particular, the continued strong growth in the 90–50 differential.

Conceptual choices in measurement

Two important issues regarding the most informative way to measure wage inequality have arisen in recent literature: weighting by hours compared with weighting by persons and combining data on men and women. As we have shown, the weighting procedure changes the levels, but not the trends, in wage inequality. Therefore, we will say little about this

Table 4. **Decile cutoffs, male and female workers, 1973–96, Outgoing Rotation Group CPS**

[In 1996 dollars]

Year	1	2	3	4	5	6	7	8	9	90–50	50–10	90–10
Male												
1973	7.00	8.99	10.59	12.14	13.76	15.60	17.17	19.76	25.17	1.828	1.966	3.594
1974	6.94	8.84	10.41	11.94	13.62	15.16	16.90	19.16	24.30	1.783	1.963	3.500
1975	6.74	8.58	10.25	11.94	13.62	15.11	16.93	19.66	24.34	1.787	2.020	3.610
1976	6.91	8.65	10.30	12.10	13.59	15.34	17.16	19.86	25.13	1.850	1.965	3.635
1977	6.81	8.53	10.27	12.11	13.74	15.34	17.59	19.98	24.81	1.806	2.017	3.643
1978	6.88	8.65	10.50	12.01	13.82	15.79	17.73	20.18	24.95	1.805	2.009	3.627
1979	6.91	8.78	10.56	12.28	14.06	15.96	17.91	20.80	25.35	1.803	2.035	3.669
1980	6.71	8.60	10.15	11.81	13.83	15.56	17.76	20.07	24.31	1.757	2.060	3.620
1981	6.52	8.38	10.06	11.78	13.55	15.50	17.52	20.16	24.70	1.823	2.079	3.790
1982	6.25	8.08	9.76	11.66	13.44	15.70	17.69	20.42	24.97	1.859	2.151	3.997
1983	6.03	7.79	9.46	11.42	13.26	15.54	17.51	20.23	25.42	1.917	2.198	4.213
1984	5.99	7.70	9.36	11.33	13.18	15.21	17.65	20.30	25.90	1.966	2.199	4.322
1985	5.95	7.63	9.42	11.35	13.28	15.20	17.75	20.59	26.09	1.964	2.231	4.383
1986	5.99	7.76	9.70	11.49	13.65	15.56	17.93	21.21	26.42	1.935	2.280	4.412
1987	5.98	7.81	9.63	11.35	13.54	15.33	17.70	20.86	26.97	1.993	2.262	4.508
1988	6.04	7.75	9.49	11.18	13.22	15.30	17.62	20.85	26.59	2.012	2.189	4.404
1989	6.03	7.56	9.27	10.98	12.78	15.04	17.40	20.38	25.53	1.998	2.118	4.231
1990	5.92	7.43	9.18	10.84	12.53	14.73	17.27	20.37	25.92	2.069	2.118	4.381
1991	5.77	7.28	9.01	10.65	12.42	14.50	17.13	20.15	25.69	2.068	2.151	4.449
1992	5.66	7.15	8.81	10.57	12.26	14.30	16.83	19.99	25.58	2.086	2.164	4.515
1993	5.60	7.16	8.71	10.60	12.10	14.19	16.64	19.89	25.75	2.129	2.162	4.601
1994	5.54	7.11	8.48	10.26	11.83	13.97	16.50	19.89	25.61	2.164	2.137	4.624
1995	5.65	7.14	8.49	10.20	11.97	13.98	16.43	19.64	25.61	2.140	2.118	4.534
1996	5.68	7.08	8.49	10.04	11.85	13.93	16.34	19.74	25.27	2.132	2.086	4.447
Annualized percent changes:[1]												
1973–79	–.2	–.4	–.1	.2	.4	.4	.7	.9	.1	–.4	1.2	1.2
1979–89	–1.3	–1.5	–1.3	–1.1	–1.0	–.6	–.3	–.2	.1	2.0	.8	5.6
1989–96	–.9	–.9	–1.3	–1.3	–1.1	–1.1	–.9	–.5	–.1	1.9	–.5	3.1
Female												
1973	4.94	6.13	6.90	7.71	8.69	9.78	11.02	12.70	15.71	1.807	1.760	3.181
1974	5.40	6.01	6.73	7.59	8.49	9.53	10.77	12.47	15.32	1.804	1.574	2.839
1975	5.21	5.96	6.76	7.61	8.53	9.57	10.88	12.78	15.52	1.819	1.638	2.979
1976	5.51	6.39	7.02	7.77	8.62	9.67	11.09	13.03	15.86	1.841	1.564	2.879
1977	5.75	6.32	6.93	7.74	8.65	9.72	11.17	12.95	16.05	1.856	1.503	2.790
1978	5.59	6.32	7.02	7.76	8.64	9.79	11.29	13.03	16.05	1.857	1.545	2.870
1979	5.99	6.49	7.06	7.87	8.83	10.04	11.20	13.02	16.25	1.840	1.474	2.712
1980	5.59	6.23	6.97	7.79	8.79	9.78	11.15	13.07	16.08	1.828	1.572	2.875
1981	5.78	6.25	6.88	7.77	8.71	9.81	11.07	13.15	16.49	1.893	1.507	2.853
1982	5.55	6.08	6.86	7.88	8.72	9.92	11.56	13.50	16.66	1.910	1.571	2.999
1983	5.38	5.95	6.84	7.82	8.83	9.94	11.66	13.66	16.95	1.920	1.640	3.149
1984	5.22	5.87	6.88	7.76	8.89	10.18	11.72	13.90	17.23	1.939	1.702	3.301
1985	5.10	5.85	6.96	7.82	8.91	10.36	11.94	14.36	17.77	1.994	1.746	3.481
1986	5.07	5.93	7.05	8.08	9.14	10.63	12.28	14.53	18.06	1.976	1.803	3.562
1987	5.00	5.96	7.02	8.13	9.35	10.73	12.51	14.79	18.36	1.962	1.873	3.675
1988	4.92	6.04	6.96	8.08	9.40	10.73	12.67	14.77	18.79	2.000	1.910	3.819
1989	4.90	6.04	6.99	8.03	9.34	10.67	12.56	15.06	18.90	2.024	1.904	3.854
1990	4.94	5.99	7.03	8.13	9.32	10.69	12.34	14.97	18.92	2.030	1.889	3.834
1991	5.01	5.96	7.01	8.15	9.31	10.84	12.56	15.00	19.22	2.065	1.857	3.835
1992	5.08	5.92	6.97	8.16	9.34	10.96	12.54	15.15	19.55	2.094	1.838	3.847
1993	5.08	6.00	7.02	8.18	9.39	10.90	12.91	15.54	19.70	2.097	1.847	3.874
1994	5.03	5.92	6.94	8.04	9.27	10.73	12.71	15.56	20.00	2.157	1.845	3.980
1995	4.98	5.94	6.95	7.99	9.18	10.58	12.57	15.36	19.73	2.150	1.842	3.960
1996	4.96	5.94	6.95	8.00	9.19	10.72	12.64	15.38	19.91	2.165	1.855	4.016
Annualized percent changes:[1]												
1973–79	3.3	1.0	.4	.3	.3	.4	.3	.4	.6	.5	–4.8	–7.8
1979–89	–2.0	–.7	–.1	.2	.6	.6	1.2	1.5	1.5	1.8	4.3	11.4
1989–96	.2	–.2	–.1	–.1	–.2	.1	.1	.3	.7	2.0	–.7	2.3

[1] Annualized point differences multiplied by 100.

SOURCE: Authors' analysis of Outgoing Rotation Group CPS data. See David Webster, "Wage Analysis Computations," Appendix B, in Lawrence Mishel, Jared Bernstein, and John Schmitt, *The State of Working America, 1996–97* (Armonk, NY, M. E. Sharpe, 1997), for a description of methods.

practice. The choice of weights simply depends on the question being asked. If one is interested in market demand alone, then weighting by hours is appropriate. In our opinion, however, because the issue of inequality is also a social issue, it is perhaps best thought of as between persons, and not hours.

The much larger conceptual issue, in terms of its importance in understanding inequality trends, is whether it makes sense to base conclusions about the growth of wage inequality exclusively on the combined wage distribution of men and women earners and to discount findings that earnings inequality has continued to increase among both men and women separately. We now turn to evaluating this choice.

First, it is true that the increase in wage inequality of the combined distribution is less than that of either men or woman separately. But this simply reflects the fact that there has been wage compression between men and women.[20] Accordingly, we must ask whether and when it makes sense to combine the genders in analyzing inequality, thereby taking account of increased gender equity.[21]

For a variety of reasons, labor market analysts across the various schools of thought have analyzed men's and women's labor market outcomes separately. To some, the special labor supply decisions of women (or at least, decisions generally different from those of men) and the rapid growth of women's labor supply necessitate a separate analysis. For example, women's labor force participation grew rapidly, from 44.7 percent in 1973 to 59.3 percent in 1996, whereas men's participation edged down slightly, from 78.8 percent to 74.9 percent. This large growth in women's share of the labor force means that measures of inequality among women, or among men and women combined, can be greatly affected by the character of the new workers, such as whether they are above or below average in terms of wages, skills, education, and experience. Other analysts believe that the existence and persistence of gender discrimination, as reflected in occupational and sectorial segregation resulting in the past and current wage gap between men and women, necessitate a separate analysis of the two. The bottom line, however, is that gender, for whatever reason, matters greatly in the labor market. This can be seen empirically by asking the question whether men and women should be pooled together in estimating wage equations. The answer is that one invariably rejects the hypothesis

Table 5. Decile cutoffs, all workers, 1975–96, March CPS

[In 1996 dollars]

Year	1	2	3	4	5	6	7	8	9	90–50	50–10	90–10
1975	4.91	6.47	7.87	9.39	11.11	13.14	15.49	18.26	23.18	2.086	2.264	4.723
1976	4.98	6.56	7.94	9.46	11.14	13.17	15.54	18.46	23.40	2.100	2.239	4.701
1977	4.98	6.55	7.97	9.51	11.27	13.17	15.41	18.62	23.68	2.102	2.263	4.758
1978	5.35	6.78	8.13	9.64	11.40	13.44	15.80	19.21	24.72	2.168	2.134	4.625
1979	5.34	6.83	8.20	9.77	11.40	13.21	15.79	19.37	24.72	2.170	2.134	4.630
1980	5.24	6.64	8.01	9.49	11.13	12.92	15.46	18.74	24.10	2.165	2.126	4.603
1981	5.04	6.47	7.86	9.23	10.74	12.71	15.23	18.59	23.93	2.228	2.131	4.749
1982	5.01	6.45	7.92	9.41	10.93	12.97	15.53	19.03	24.36	2.229	2.182	4.863
1983	4.95	6.35	7.85	9.32	10.90	12.99	15.35	18.91	24.38	2.236	2.202	4.925
1984	4.84	6.28	7.75	9.21	10.90	13.05	15.65	18.98	24.65	2.262	2.254	5.098
1985	4.82	6.32	7.81	9.22	11.01	13.21	15.84	19.22	24.87	2.260	2.282	5.157
1986	4.81	6.42	7.96	9.44	11.30	13.51	16.20	19.75	25.45	2.252	2.350	5.291
1987	4.79	6.49	8.05	9.53	11.38	13.45	16.22	19.86	25.49	2.240	2.374	5.319
1988	4.78	6.49	8.00	9.57	11.46	13.60	16.24	19.73	25.26	2.204	2.400	5.290
1989	4.79	6.46	7.89	9.57	11.42	13.52	16.17	19.75	25.28	2.214	2.386	5.281
1990	4.76	6.32	7.75	9.35	11.21	13.26	15.83	19.30	25.00	2.230	2.355	5.251
1991	4.74	6.26	7.66	9.31	11.08	13.24	15.73	19.31	24.75	2.234	2.339	5.224
1992	4.72	6.31	7.68	9.30	11.07	13.26	15.94	19.24	24.80	2.240	2.346	5.253
1993	4.65	6.26	7.61	9.21	10.95	13.07	15.73	19.25	25.09	2.292	2.353	5.394
1994	4.75	6.24	7.60	9.22	11.02	13.08	15.64	19.46	25.46	2.310	2.322	5.363
1995	4.67	6.18	7.60	9.20	10.95	13.04	15.79	19.34	25.33	2.312	2.348	5.429
1996	4.68	6.14	7.65	9.33	11.07	13.12	15.71	19.11	25.64	2.316	2.365	5.479
Annualized percent changes:[1]												
1975–79 ..	2.1	1.4	1.0	1.0	.6	.1	.5	1.5	1.6	1.0	–1.5	–.5
1979–89 ..	–1.1	–.6	–.4	–.2	.0	.2	.2	.2	.2	.2	1.1	1.3
1989–96 ..	–.3	–.7	–.4	–.4	–.4	–.4	–.4	–.5	.2	.6	–.1	.5

[1] Annualized point differences multiplied by 100.

SOURCE: Economic Policy Institute analysis of March CPS. Sample comprises workers aged 18–64, including incorporated self-employed.

Table 6. Decile cutoffs, male and female workers, 1975–96, March CPS

[In 1996 dollars]

Year	1	2	3	4	5	6	7	8	9	90–50	50–10	90–10
Male												
1975	6.04	8.27	10.31	12.30	14.23	16.34	18.42	21.32	26.52	1.864	2.356	4.390
1976	6.09	8.24	10.26	12.33	14.27	16.27	18.65	21.70	26.89	1.884	2.342	4.413
1977	6.05	8.23	10.31	12.32	14.40	16.32	18.80	21.89	27.36	1.900	2.378	4.519
1978	6.29	8.32	10.40	12.41	14.36	16.72	19.35	22.47	28.10	1.956	2.282	4.464
1979	6.28	8.48	10.54	12.54	14.50	16.81	19.59	22.67	28.17	1.943	2.308	4.485
1980	6.01	8.13	10.05	11.89	14.03	16.41	18.96	22.35	27.56	1.965	2.336	4.590
1981	5.86	7.90	9.81	11.62	13.73	16.23	18.83	22.16	27.54	2.006	2.343	4.701
1982	5.69	7.78	9.68	11.60	13.81	16.12	19.08	22.39	28.22	2.043	2.428	4.962
1983	5.52	7.58	9.46	11.43	13.59	16.00	18.86	22.41	28.17	2.072	2.464	5.105
1984	5.37	7.47	9.30	11.35	13.73	16.24	18.89	22.24	28.26	2.058	2.557	5.261
1985	5.40	7.46	9.32	11.46	13.73	16.27	19.01	22.62	27.95	2.037	2.540	5.173
1986	5.49	7.51	9.51	11.66	13.91	16.57	19.51	23.02	29.06	2.090	2.533	5.293
1987	5.40	7.57	9.47	11.62	13.79	16.41	19.48	23.21	28.90	2.095	2.552	5.347
1988	5.45	7.66	9.52	11.59	13.85	16.35	19.33	22.86	28.97	2.091	2.543	5.318
1989	5.45	7.53	9.40	11.44	13.56	16.07	19.13	22.82	28.93	2.134	2.488	5.309
1990	5.40	7.26	9.08	11.13	13.20	15.60	18.52	22.24	28.60	2.167	2.442	5.292
1991	5.26	7.02	8.89	10.95	13.10	15.40	18.25	21.78	27.91	2.130	2.491	5.306
1992	5.24	6.93	8.77	10.73	12.93	15.38	18.28	21.45	28.00	2.166	2.469	5.347
1993	5.11	6.79	8.58	10.50	12.72	15.18	18.09	21.54	28.26	2.222	2.490	5.531
1994	5.22	6.89	8.73	10.56	12.68	15.14	18.10	21.78	28.79	2.270	2.428	5.513
1995	5.13	6.90	8.68	10.51	12.59	15.06	17.98	21.82	28.70	2.281	2.452	5.593
1996	5.12	6.94	8.76	10.64	12.62	14.99	17.94	21.67	29.00	2.298	2.464	5.662
Annualized percent changes:[1]												
1975–79	1.0	.6	.5	.5	.5	.7	1.6	1.5	1.5	1.1	–.5	.5
1979–89	–1.4	–1.2	–1.1	–.9	–.7	–.4	–.2	.1	.3	.9	.8	1.7
1989–96	–.9	–1.1	–1.0	–1.0	–1.0	–1.0	–.9	–.7	.0	1.1	–.1	.9
Female												
1975	4.02	5.41	6.41	7.36	8.39	9.58	11.06	13.11	16.36	1.949	2.090	4.073
1976	4.27	5.61	6.57	7.49	8.52	9.75	11.22	13.27	16.32	1.915	1.996	3.822
1977	4.55	5.83	6.75	7.75	8.86	10.12	11.72	13.95	17.68	1.996	1.948	3.888
1978	4.64	5.90	6.86	7.81	8.86	10.16	11.67	13.73	17.38	1.961	1.908	3.741
1979	4.79	6.03	6.92	7.86	8.93	10.22	11.71	13.59	17.43	1.951	1.867	3.643
1980	4.62	5.84	6.79	7.76	8.87	9.99	11.46	13.43	17.23	1.942	1.920	3.728
1981	4.47	5.75	6.64	7.65	8.73	9.96	11.28	13.39	16.98	1.944	1.953	3.796
1982	4.53	5.73	6.71	7.84	8.90	10.05	11.67	13.92	17.74	1.992	1.965	3.915
1983	4.47	5.66	6.73	7.86	9.06	10.15	11.86	14.17	18.11	1.998	2.028	4.053
1984	4.37	5.58	6.71	7.80	9.00	10.28	12.06	14.44	18.33	2.035	2.061	4.195
1985	4.36	5.54	6.77	7.89	8.99	10.41	12.27	14.74	18.72	2.082	2.063	4.296
1986	4.31	5.58	6.87	8.06	9.19	10.77	12.69	15.21	19.45	2.117	2.132	4.512
1987	4.36	5.68	6.93	8.17	9.41	10.91	12.92	15.52	19.95	2.121	2.158	4.576
1988	4.34	5.68	6.91	8.12	9.46	11.12	13.04	15.80	20.08	2.122	2.179	4.623
1989	4.31	5.74	6.98	8.12	9.53	11.14	13.16	15.85	20.48	2.149	2.209	4.747
1990	4.32	5.73	6.93	8.03	9.41	11.10	13.02	15.70	20.30	2.156	2.180	4.701
1991	4.39	5.70	6.86	8.03	9.47	11.04	13.11	15.79	20.31	2.144	2.156	4.624
1992	4.37	5.68	6.83	8.09	9.56	11.24	13.34	16.10	20.67	2.161	2.191	4.735
1993	4.32	5.63	6.77	8.11	9.57	11.19	13.22	16.14	20.72	2.165	2.216	4.797
1994	4.32	5.64	6.71	8.05	9.55	11.28	13.32	16.32	21.16	2.217	2.212	4.903
1995	4.24	5.63	6.77	8.06	9.54	11.22	13.29	16.37	21.17	2.218	2.249	4.989
1996	4.22	5.61	6.80	8.16	9.56	11.27	13.37	16.42	21.53	2.252	2.266	5.103
Annualized percent changes:[1]												
1975–79	4.5	2.8	1.9	1.6	1.6	1.6	1.4	.9	1.6	.0	–2.8	–2.8
1979–89	–1.0	–.5	.1	.3	.6	.9	1.2	1.6	1.6	1.0	1.7	2.7
1989–96	–.3	–.3	–.4	.1	.1	.2	.2	.5	.7	.7	.4	1.0

[1] Annualized point differences multiplied by 100.

SOURCE: Authors' analysis of March CPS. Sample comprises workers aged 18–64, including incorporated self-employed.

that the coefficients in a wage equation are the same for women as for men. (That is, the wage determination process is different for men and women.)

Consequently, we prefer to follow the conventional approach of measuring inequality separately for men and for women. A combined analysis, however, provides a useful reminder that the overall growth of wage inequality is less than the sum of the growth of wage inequality among men and women analyzed separately.

Our preferred approach, shown in charts 4 and 5, uses the 90–50 and 50–10 cutoff ratios from the Outgoing Rotation Groups of the CPS. The charts reveal a steady increase in inequality in the 90–50 cutoff since 1979 for both genders, although inequality has fallen slightly for men since 1994. The 50–10 differentials fell steeply for men and flattened for women in the late 1980s. In our opinion, these figures most accurately characterize the trend in earnings inequality over the 1980s and thus far into the 1990s.

Income and Program survey

A number of recent analyses of growth in inequality have turned to the Survey of Income and Program Participation, a longitudinal survey conducted by the Census Bureau.[22] In this section, we evaluate the advantages and disadvantages of that survey relative to the CPS. Our assessment is that the Outgoing Rotation Group CPS dominates the Survey of Income and Program Participation with regard to measuring hourly wage inequality, although the latter survey may have some advantages over the March CPS. This said, we present hourly wage inequality data from the Income and Program survey (computed by Peter Gottschalk) that appear to move much like those of the Outgoing Rotation Group presented earlier. That is, they show a continued growth of male wage inequality, as measured by the 90–10 differential, throughout the 1980s and a flattening in the 1990s. We do not know, however, whether inequality, as measured by the men's 90–50 differential, continued to increase in the mid-1990s in the Income and Program survey, as it has in the Outgoing Rotation Group survey, as we have seen no analysis of this measure with respect to the former survey.

Because respondents to the Income and Program survey are asked to recall their monthly earnings and usual (not actual) hours from each of the previous 4 months, recall bias in that survey may be smaller than in the March CPS, whose respondents are asked in March of a given year to recall their annual earnings from the previous year (along with annual weeks worked and usual weekly hours). But by this criterion, the best data set would be the Outgoing Rotation Group CPS, which focuses on the week prior to the survey. It seems to us that a respondent's ability to recall his or her earnings and hours 4 months ago should be notably worse than to do so for the previous week (although the Outgoing Rotation Group question on usual earnings and hours does not give an explicit time frame). Thus, by the criterion of recall bias, the Outgoing Rotation Group CPS dominates the Survey of Income and Program Participation. Finally, the sample sizes are far larger in the former than in the latter.

Lastly, it is important to know how well data from the Income and Participation Survey track other data on income and wages. For example, what is the trend in family income inequality in data from that survey relative to other data sets such as the March CPS and the Panel Study of Income Dynamics, both of which show increases in income inequality? How well do the Income and Program survey data match national totals on wages and salaries?[23]

Clearly, it is worthwhile to learn what the Survey of Income and Program Participation can tell us about the various trends in income and wages. Nevertheless, it is best to be cautious about claims based on an analysis of data from that survey until a broader evaluation is undertaken and the advantages and disadvantages of the survey relative to other data sources are adequately investigated.

The analysis most comparable to our work with the CPS is that by inequality analyst Peter Gottschalk, who has examined the change in the logarithm of the 90–10 ratio for the hourly wages of male workers aged 22 to 62 during 1983–93. Gottschalk's results, unpublished, are shown in the following tabulation (and graphed in chart 6, page 14):

Year and quarter	*Logarithm of wages*	*Year and quarter*	*Logarithm of wages*
1983, IV	1.298	1988, III	1.365
1984, I	1.299	1988, IV	1.374
1984, II	1.324	1989, I	1.423
1984, III	1.309	1989, II	1.428
1984, IV	1.327	1989, III	1.394
1985, I	1.351	1989, IV	1.372
1985, II	1.346	1990, I	1.399
1985, III	1.341	1990, II	1.389
1985, IV	1.357	1990, III	1.378
1986, I	1.360	1990, IV	1.403
1986, II	1.354	1991, I	1.421
1986, III	1.358	1991, II	1.407
1986, IV	1.376	1991, III	1.398
1987, I	1.400	1991, IV	1.399
1987, II	1.381	1992, I	1.398
1987, III	1.372	1992, II	1.396
1987, IV	1.396	1992, III	1.388
1988, I	1.392	1992, IV	1.396
1988, II	1.386	1993, I	1.377

Gottschalk's analysis is quarterly, and we have added a four-period moving average. The upward trend through the 1980s is evident, as is the flattening in the early 1990s. (The

Chart 4. Male wage inequality, 90–50 and 50–10 cutoffs, Outgoing Rotation Group CPS, 1973–96

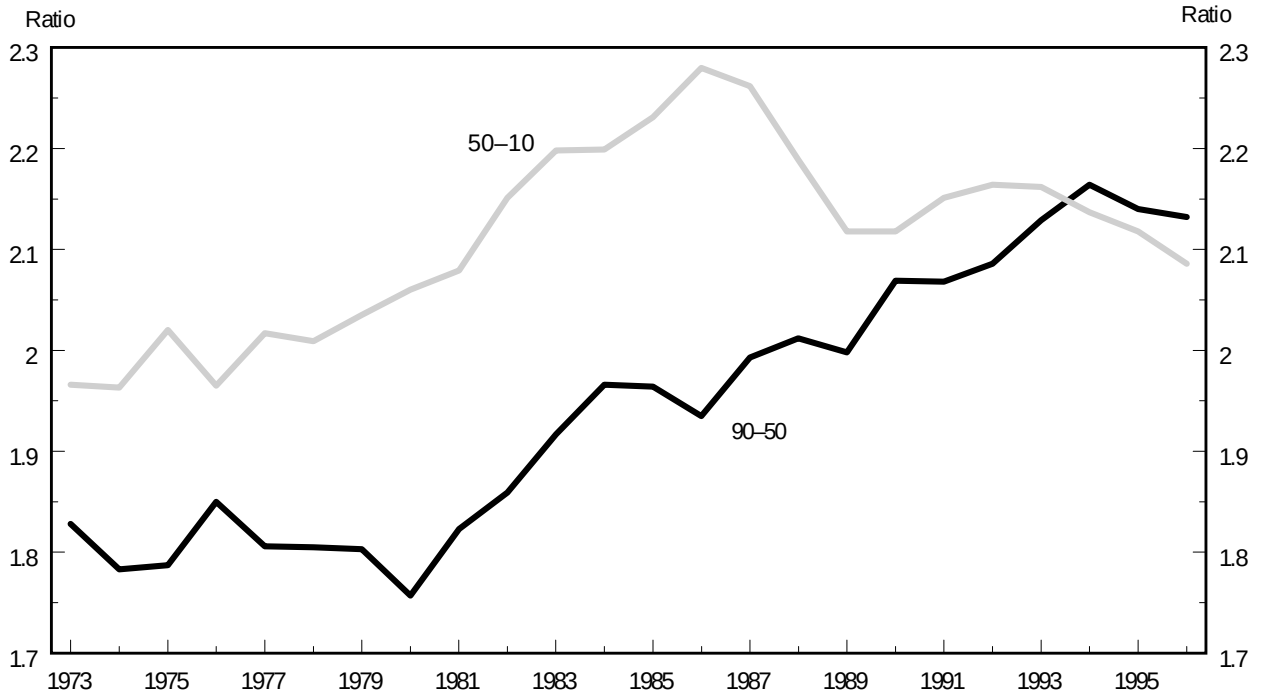


Chart 5. Female wage inequality, 90–50 and 50–10 cutoffs, Outgoing Rotation Group CPS, 1973–96

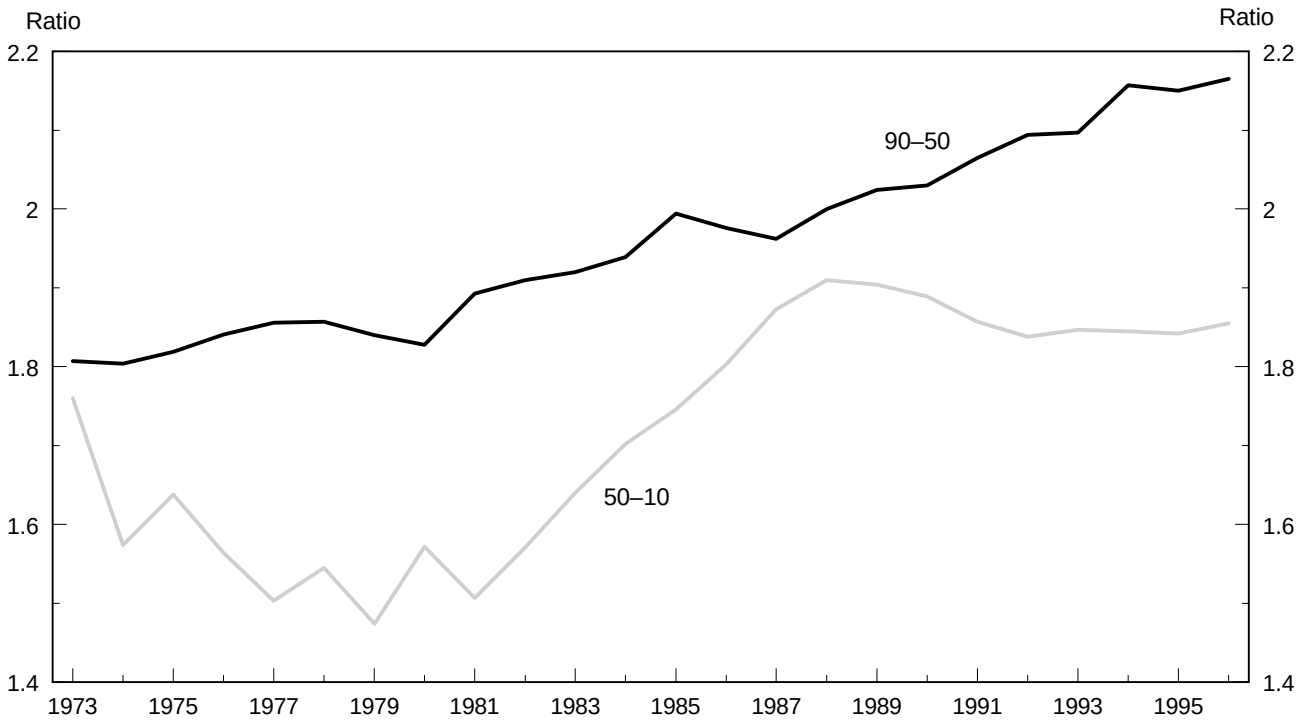
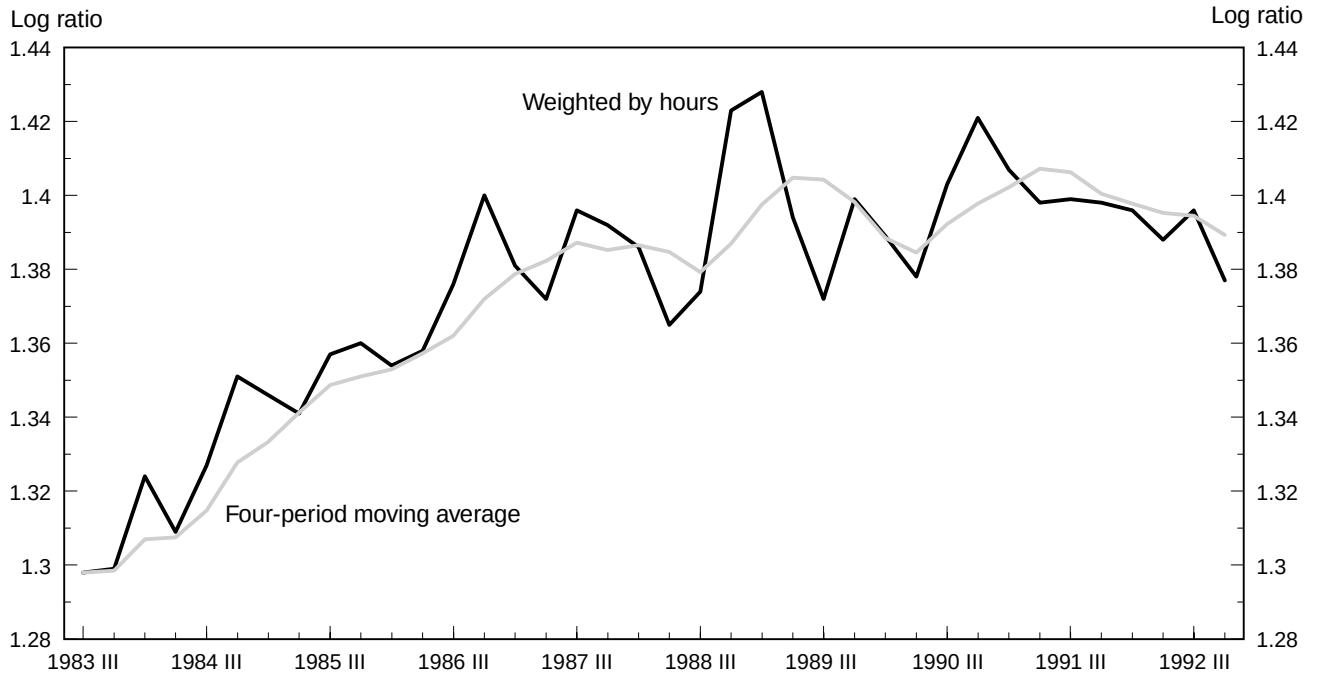


Chart 6. **Logarithm of 90–10 cutoff ratio of hourly wage, men aged 22 to 62, Survey of Income and Program Participation, third-quarter 1983 through third-quarter 1992**



SOURCE: Peter Gottschalk, unpublished; self-employment earnings not included.

data from the Outgoing Rotation Group CPS show a similar pattern in the 90–10 ratio for men; see table 4, page 9.) When we average the results for the years 1984–92, however, wage inequality among men increases by .08 logarithm point.

THE CONVENTIONAL WISDOM on the increase in wage inequality during the 1980s and 1990s has been formed by hundreds of papers that use various data sets (mostly the CPS). The analysis set forth in this article, using data from the March CPS and Outgoing Rotation Group CPS, as well as the Survey of Income and Program Participation (for men), supports the conventional wisdom: wage inequality did continue to grow in the 1990s.

Our conclusion is based on trends in both the Gini coefficient and relative wage quantiles. We show that, while the 90–10 wage ratio has risen, its growth rate significantly decelerated in the 1990s relative to the 1980s. However, the 90–50 differential grew and even accelerated in the 1990s. Likewise, the growth in the Gini coefficient applied to the March CPS data actually accelerated slightly in the 1990s. While a convincing benchmark of what constitutes a large increase in the Gini coefficient is elusive, we note that the increase in the Gini index for family income from 1979 to 1989 is widely considered to be "large." Over that period, this measure of inequality in family income grew 0.9 percent per year.[24] How does recent growth in wage inequality compare with this rate? Column three of table 1 (which truncates the top 2 percent of the distribution) indicates that wage inequality since the most recent business cycle peak has grown 0.6 percent annually, or two-thirds the rate of growth in family income inequality. Such growth cannot reasonably be dismissed as economically or socially insignificant.

The persistent rise in earnings inequality is an attribute of the nature of growth over the last few recoveries. This is particularly true of the current recovery, in which unemployment has stayed below 6 percent for more than 3 years. A large body of empirical research shows that the income distribution historically compresses over business-cycle expansions.[25] As the CPS data reveal, however, that clearly has not been the case in the last two recoveries.

In the current recovery, there is a unique aspect to the increase in wage inequality that was not the case over the 1980s: most of the growth in inequality in the 1990s has been among workers with similar characteristics, so-called within-group wage inequality. While a large share of the growth in inequality in the 1980s could be attributed to the well-documented growth in education differentials, particularly the college wage premium, this premium has been flat for men and has slowed for women in the 1990s. Thus, the recent increase in the 90–

50 differential, as well as in the Gini index, is mostly a result of growing within-group inequality.[26]

This pattern of inequality growth does not comport well with the oft-repeated description of an economy in which all are doing well except "less educated, less skilled workers." In fact, the flattening of the 50–10 differential reflects real wages falling less at the bottom than the middle over the period starting around 1987. Especially given that hourly wages fell among the bottom 80 percent of the work force over the 1989–96 period, the best description of the trend in wages during this period is that the wages of high-wage workers grew, while those of the rest of the work force flattened or declined.

Finally, while it is interesting to note that inequality in the combined distribution of men and women has risen more slowly than that of each gender separately, we consider this approach to obscure important differences. We take the more conventional viewpoint among labor market economists that the market forces which shape the wage determination process reflect important gender differences, including labor supply, industry and occupation placement, and discrimination. Nevertheless, the increase in wage inequality in the combined distribution has clearly been nontrivial. The interesting and important questions in inequality analysis—Who are the relative winners and losers? and What factors are driving the trends?—remain as compelling today as ever. □

Footnotes

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www.epinet.org

Click on "Datazone".

[1] See Frank Levy and Richard Murnane, "U.S. Earnings Levels and Earnings Inequality: A Review of Recent Trends and Proposed Explanations," *Journal of Economic Literature* (September 1992), pp. 1333–81.

[2] The Gini coefficient, or Gini index, is a conventional measure of inequality that ranges from zero when all earnings are shared equally to unity when one person has all the earnings in an economy. Along with other scalars, such as the log variance, the Gini index and relative wage percentiles are probably the most common techniques for measuring wage inequality. John Dinardo, Nicole Fortin, and Thomas Lemieux have introduced an innovative technique for examining changes in inequality through the use of kernel density estimators. (See John Dinardo, Nicole Fortin, and Thomas Lemieux, "Labor Market Institutions and the Distribution of Wages, 1973–1992: A Semi-Parametric Approach," *Econometrica* [September 1996], pp. 1001–44.)

[3] For an example of this type of truncation, see Lynn A. Karoly and Gary Burtless, "Demographic Change, Rising Earnings Inequality, and the Distribution of Personal Well-Being, 1959–1989," *Demography*, vol. 32, no. 3, 1995, pp. 379–405.

[4] Truncating the distribution above the necessary cutoff will lead to a downward bias in the growth of the Gini index in a period when the true earnings of workers with very high wages are rising relative to the wages of others. We find, for example, that the series of Gini coefficients for the bottom 98 percent of the earnings distribution has risen more quickly than that of the bottom 95 percent, particularly in the 1990s.

[5] Actually, we calculate Pareto-imputed means by gender; they are available from the authors.

[6] In our analysis of wages in this article, we exclude outlier cases, defined as cases wherein the hourly wage is less than $0.50 or greater than $100.00 in 1989 dollars.

[7] This statement is strictly true only for those workers with identical demographic weights. Our analysis in this article applies the CPS demographic weights.

[8] In an earlier version of this article, we used the bottom 98 percent of the *hourly wage* distribution. Here, our sample for this column comprises the bottom 98 percent of the *annual earnings* distribution.

[9] Also, top codes were raised over this period, but we impose the same top code ($99,999) as in earlier years for the sake of consistency.

[10] See Paul Ryscavage, "A Surge in Growing Income Inequality?" *Monthly Labor Review*, August 1995, pp. 51–61.

[11] *Ibid.*, p. 57.

[12] *Ibid.*, p. 60. Ryscavage finds an increase in the share of high earners in the 1993 March data with allocated earnings. Because there is a positive correlation between nonreporting and income levels, an increase in allocations among high earners should lead to a *downward* bias in inequality growth. (The Census Bureau allocates earnings using a "hot-deck" procedure that assigns the reported earnings value from a record with characteristics similar to those of the case with the missing value.)

The impact of the survey design change also was analyzed by Anne E. Polivka. (See her "Data Watch: The Redesigned Current Population Survey," *Journal of Economic Perspectives*, vol. 10, no. 3, pp. 169–80.) Although Polivka does not examine the effect of the design change on inequality specifically, she shows that the change had no significant effect on the overall unemployment rate.

[13] Note that the question on usual earnings for the Outgoing Rotation Group does not specify a period. The survey is, however, solely focused on the respondent's employment situation of the previous week. Thus, we are confident that responses to the usual-earnings question are correctly interpreted.

[14] Note that we do not use the Pareto procedure to impute the mean value of earnings above the top code in the data from the Outgoing Rotation Group, because, in this series, the earnings cutoff changes only once, in 1986, when it almost doubles. In that case, Pareto imputations would lead to implausible jumps in the year-to-year Gini index around the period of the change. This problem does not appear in the March CPS data, for which top codes are more frequently updated.

[15] See, for example, Willard L. Rodgers, Charles Brown, and Greg J. Duncan, "Errors in Survey Reports of Earnings, Hours Worked and Hourly Wages," *Journal of the American Statistical Association* (December 1993), pp. 1208–18. As we point out later, this critique also holds for the Survey of Income and Program Participation, in which workers are asked how many hours per week they *usually* worked at their job over the past month.

[16] Under the assumed pattern of bias, observed inequality could grow either because the bias worsened or because there was simply a larger relative share of high earners. Only in the former case, however, would the rising trend in inequality be misrepresentative. In their comparison of annual earnings and earnings from the usual pay period, Rodgers, Brown, and Duncan found that low earners tend to overreport, while high earners tend to underreport, their earnings. As the share of high earners rises, this pattern would have the effect of dampening inequality growth in data from the Outgoing Rotation Group survey relative to March CPS data.

[17] Rodgers, Brown, and Duncan, "Errors in Survey Reports," p. 1217.

[18] See David Webster, "Wage Analysis Computations," Appendix B, in

Lawrence Mishel, Jared Bernstein, and John Schmitt, *The State of Working America, 1996–97* (Armonk, NY, M. E. Sharpe, 1997). Prior to 1979, these data are derived from the May CPS.

[19] The Gini coefficient is more sensitive to transfers from the middle of the wage scale than are other scalars, such as the log variance, which is more sensitive to transfers from the bottom of the distribution. This may partially explain the similar acceleration in the Gini index and the 90–50 cutoff ratio in the 1990s.

[20] The ratio between the median female and the median male hourly wage was 0.63 in 1979 and 0.77 in 1995. (See Mishel, Bernstein, and Schmitt, *The State of Working America*.) Eighty-two percent of the narrowing of the gap over that period was due to a decline in the median male hourly wage.

[21] Note that, because women are paid less than men, aggregating the two groups increases the proportion of low-wage workers and, in turn, increases the variance of the distribution at a point in time. This effect can lead to increases in measures of overall inequality over time, due to growth in the labor force participation of women. A countervailing factor, however, is the compression of the gender gap.

[22] For example, Robert I. Lerman, *Reassessing Trends in Earnings Inequality in the U.S.* (Washington, DC, The Urban Institute, 1997), uses this survey as a series of cross sections.

[23] This question gets at the issue of underreporting, which may be systematic. Such comparisons are typically made for the CPS by the Census Bureau. (See, for example, Current Population Report, Series P–60, no. 172, *Money Income of Households, Families, and Persons in the United States: 1988 and 1989* [U.S. Department of Commerce, Bureau of the Census, 1991, pp. 385–91].)

[24] The preceding calculations use family Gini coefficients from table F-4 of the Census Bureau's World Wide Web site and take the Gini coefficient for earnings from table 1, column one, of the text of this article. Both of these statistics are derived from the March CPS.

[25] See Rebecca M. Blank and Alan S. Blinder, "Macroeconomics, Income Distribution, and Poverty," Sheldon Danziger and Daniel Weinberg , eds., in *Fighting Poverty: What Works and What Doesn't* (Cambridge, MA, Harvard University Press, 1986), for an example of work of this nature and for historical citations. A recent paper by Blank and David Card ("Poverty, Income Distribution, and Growth: Are They Still Connected?" *Brookings Papers on Economic Activity*, no. 2 [Washington, DC, Brookings Institution, 1993]), found that a 1-point fall in unemployment led to a gain in family earnings in the bottom quintile that was twice as large (in percentage terms) as the gain for the highest fifth.

[26] For evidence of this claim, see tables 3.24 and 3.25 in Mishel, Bernstein, and Schmitt, *The State of Working America*, in which growth in wage inequality is decomposed into within- and between-group components.