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LABOR MARKET INSTITUTIONS AND GENDER DIFFERENCES IN WAGE INEQUALITY

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RÉSUMÉ

Dans cet article, nous présentons des résultats empiriques, sous forme quantitative et graphique, qui témoignent de l'importance des changements institutionnels dans l'accroissement de l'inégalité des salaires aux États-Unis au cours des années quatre-vingt. Nous montrons que le déclin dans la valeur réelle du salaire minimum et dans le taux de syndicalisation explique plus du tiers de l'accroissement de l'inégalité des salaires des hommes. Le déclin du salaire minimum explique aussi plus du tiers de l'accroissement de l'inégalité des salaires des femmes. L'impact relatif de ces institutions est encore plus grand lorsqu'on considère l'accroissement de l'inégalité des salaires de tous les travailleurs. Nos résultats indiquent qu'une part importante des augmentations récentes dans l'inégalité des salaires serait inexpliquée par les analyses typiques d'offre et de demande qui ignorent le rôle des institutions.

Mots clés : inégalité des salaires, salaire minimum, syndicats, estimation des densités par méthodes de noyau

ABSTRACT

In this paper, we present graphical and quantitative evidence on the important role played by changes in labor market institutions on the rise in wage inequality in the United States during the 1980s. We show that the decline in the real value of the minimum wage and in the rate of unionization explains over a third of the rise in inequality among men. The decline in the minimum wage also explains a third of the rise in inequality among women. The relative impact of labor market institutions is even larger when wage inequality among the whole workforce is considered. Our findings indicate that an important part of the recent increase in wage inequality would be missed by a standard supply and demand analysis that ignores the role of labor market institutions.

Key words: wage inequality, minimum wage, unions, kernel density estimation
1. INTRODUCTION

A large number of studies have investigated the causes of the growth in earnings inequality in the United States during the 1980s (see Levy and Murnane (1992) for a survey). Many studies have identified the relative decline in demand for less-skilled workers—due to expanding international trade and technological change—as the key factor in these changes. There remains a number of empirical puzzles, however, that this explanation cannot easily account for. First and foremost, earnings inequality did not rise as much in countries like France and Germany that were exposed to similar changes in the relative demand for less-skilled workers (Freeman and Katz (1995)). In addition, wage inequality in the United States increased faster among women than among men during the 1979–1988 period, especially in the lower end of the wage distribution. This is inconsistent with the wide-spread view that less-skilled men were concentrated in manufacturing occupations more adversely affected by the relative changes in labor demand than less-skilled women.

In this paper, we argue that changes in labor market institutions go a long way toward resolving these empirical puzzles. We show that thirty to forty-five percent of the increase in male and female wage inequality between 1979 and 1988 can be attributed to the decline in unionization (Card (1996) and Freeman (1993)) and to the erosion in the real value of the minimum wage (DiNardo, Fortin, and Lemieux (1996)). This explains an important part of the differential growth in inequality between the United States and countries such as Canada, France, or Germany where labor market institutions remained stable during this period.

In the case of men, de-unionization and the decline in the minimum wage both played an important role in the rise in wage inequality. De-unionization contributed to the “disappearance” of the middle of the distribution while the fall in the minimum wage played a key role in the collapse of the bottom of the distribution. By contrast, de-unionization had little impact on the female wage distribution while the decline in the minimum wage reshaped dramatically the lower end of this distribution. This explains why inequality expanded faster in
that part of the distribution for women than for men.

It is interesting to note that the 1973–1979 period, unlike the 1979–1988 period, witnessed a strengthening in labor market institutions — rising minimum wage and rising unionization rate — and a decline in wage inequality. We find the contribution of stronger institutions to the decline in inequality between 1973 and 1979 to be a the mirror image of the contribution of weaker institutions to the rise in inequality between 1979 and 1988. Finally, the analysis of the most recent 1988–1992 is less informative because there was very little change in wage inequality during this period.

Labor market institutions played an even more dramatic role in changes in the distribution of wages among the whole workforce (men and women together). We find that de-unionization and the erosion of the real value of the minimum wage account for fifty to seventy percent of the rise in wage inequality between 1979 and 1988. This suggest that the greater part of the changes in inequality during this period is due to changes in unionization, minimum wages, and in the way jobs and wages are allocated between men and women.

2. DATA AND ESTIMATION

We use data from the May 1973 Current Population Survey (CPS) and from the 1979, 1988, and 1992 Merged Outgoing Rotation Group files of the CPS to study the evolution of the distribution of hourly wages over the last two decades. Our samples consist of workers aged 16 to 65. The use of actual hourly wages, as opposed to weekly earnings, proves to be critical to the identification of the role of the minimum wage. We graph the density of real log wages in Figures 1 through 3 using weighted kernel methods. The weights used to compute all the statistics presented in this paper are the product of the CPS sample weights with usual hours of work. This procedure is used to avoid putting excessive weight on minimum wage workers who often supply a limited number of hours to the market.

We simulate the effect of changes in the minimum wage and in the rate of unionization using the following estimation procedure. The impact of a change in the real value of the minimum wage is obtained by contrasting the actual wage distribution with the counterfactual distribution that would have prevailed if the real value of the minimum wage had remained constant. Consider for instance the decline in the real minimum wage from $2.90 in 1979 to $2.11 (in 1979 dollars, $3.35 in 1988 dollars) in 1988. Roughly speaking, we estimate the counterfactual density by replacing the section of the 1988 density below the 1979 value of the minimum wage with the section of the 1979 density below the minimum wage, adjusting for changes in individual characteristics. We use a similar but reversed procedure for the 1973–1979 and 1988–1992 periods during which the real value of the minimum wage increased. Note that in dollars of 1979, the minimum wage increased from $2.52 to $2.90 between 1973 and 1979, that is from 46 percent of the median wage for men (64 percent for women) to 57 percent of the median wage (74 percent for women). Between 1988 and 1992, it increased from $2.11 to $2.25, that is from 41 percent of the median wage for men (49 percent for women) to 45 percent of the median wage (52 percent for women).

Similarly, the effect of changes in the unionization rate is obtained by contrasting the actual distribution of wages with the counterfactual distribution that would have prevailed if the unionization rate had remained as in the base period. Consider for instance the decline in unionization among men from 32 percent to 21 percent between 1979 and 1988 (comparable numbers are 17 percent and 13 percent for women). The counterfactual distribution is obtained putting more weight in 1988 on union workers than on nonunion workers to simulate what would happen if unionization rates were switched back to their higher 1979 levels. Details on all the estimations issues addressed in this paper are provided in DiNardo, Fortin, and Lemieux (1996).

3. DISCUSSION OF THE RESULTS

The density of log wages for 1973, 1979, 1988 and 1992 (in constant 1979 dollars) for men, women, and all workers are reported in Figure 1. The vertical line in each graph represents the real value of the minimum wage in the period. The most striking feature in Figure 1 is the extent to which the shapes of the distributions
are affected by the minimum wage. This is especially true for women in 1979 for which the minimum wage is actually the mode of the distribution. As is well known, there is also a clear widening of all the distributions between 1979 and 1988.

Changes in wage distributions are best illustrated by plotting the difference in the density of wages at two points in time. These density differences show precisely where in the distribution the most dramatic changes occur. The results presented in Figure 2 indicate once again the dramatic role played by the minimum wage.

Consider the case of women, which is the most telling. For each time period, there is a systematic increase in the density around the new value of the minimum wage, and a systematic decrease around the old value of the minimum wage. Note also that the changes in density are proportional to the magnitude of the change in the real value of the minimum wage. This explains why the 27 percent decrease in the minimum wage between 1979 and 1988 has a big impact on changes in densities, while the 6 percent increase between 1988 and 1992 only has a small impact.

The pattern of changes in male densities around the minimum wage is slightly different. For the periods 1973–1979 and 1979–1988, the increase in density around the new minimum wage is not matched by a decrease around the old minimum. Other forces, such as a decline in the relative demand for less-skilled workers, were already pushing many workers toward the minimum wage. As a result, the number of men “joining” the pool of minimum wage workers at the new minimum exceeds the number of men “leaving” the pool at the old minimum.

There is another important difference between men and women during the period 1979–1988. The large decrease in the male density around $10 is matched by a significant increase in the female density in this section of the distribution. These changes partly cancel out, which explains why there is little change in the density for all workers (Panel c of Figure 2) in this part of the distribution. This suggests that part of the economic progress of women during this period may have been made at the expense of men in the middle of the distribution.

An alternative explanation for the decrease in the middle section of the male density is the decline in unionization. Panel a) of Figure 3 presents the density of male wages in the union and the nonunion sector for 1979, 1988, and 1992. As is well know, there is much less wage dispersion in the union than in the nonunion sector. De–unionization is a source of rising inequality as it puts more weight on the more unequal nonunion distribution in the overall distribution of wages.

Panel b) of Figure 3 contrasts the actual density of male wages with the counterfactual density obtained by holding the unionization rate at its base period level. For instance the figure in the middle of Panel b) shows the difference between the actual 1988 density (“1988 weights”) and the counterfactual density obtained by “rewriting” union workers to get back the 1979 unionization rate (“1979 weights”). The figure shows that a significant fraction of the decline of the density around $10 is due to de–unionization.

Once the impact of changes in institutions on the density of wages has been estimated using the procedures described in Section 2, measures of wage dispersion such as the standard deviation of log wages, the Gini coefficient, and the difference between the 90th and the 10th percentiles of log wages are computed from the estimated densities. The results reported in Table 1 confirm the importance of institutions in the recent changes in wage inequality. Depending on the measure of wage inequality used, changes in institutions account for thirty to forty percent of the change in male wage inequality between 1979 and 1988. While the effect of the minimum wage is concentrated in the bottom of the distribution (10–50 differential), the effect of de–unionization occurs higher up in the distribution (50–90 differential).

By contrast, the effect of de–unionization is negligible for women. Since the effect of institutions is mostly due to changes in the minimum wage, it is concentrated in the bottom of the distribution (10–50 differential). Since more women than men are affected by changes in the minimum wage, this explains why inequality in the lower part of the distribution grew much faster among women than among men during the 1980s.

Table 1 also indicates that institutions contributed significantly to the decline in wage inequality between 1973 and 1979. During this period, the minimum
wage increased by 15 percent while the unionization rate among men remained stable. Finally, the 1979–1988 decline in the minimum wage played an even larger role in changes in wage inequality among men and women combined. Depending on the inequality measure used, it explains between thirty-nine and sixty-three percent of the rise in inequality during this period.

4. Conclusion

In this paper, we present graphical and quantitative evidence on the important role played by changes in labor market institutions in the rise in inequality during the 1980s. Market forces like trade and technology that are beyond the control of policy makers were thus not the only factors involved in the recent increase in wage inequality. Our results show that the decision to freeze the minimum wage at $3.35 from 1981 to 1990 had a dramatic impact on the lower end of the wage distribution. Other decisions like firing the PATCO strikers in 1981 may have also contributed to the increase in inequality by accelerating the decline in the rate of unionization.

We also find that wage inequality among the whole workforce increased relatively less than among men and women taken separately. In other words, changes in the distribution of male wages were partly offset by corresponding changes in the distribution of female wages. Inequality in the whole workforce increased by even less once we account for changes in the minimum wage and in the rate of unionization. Analyses that focus on men and women separately and ignore the role of labor market institutions thus overstate largely the recent increase in wage inequality.

Note, however, that even if changes in the distribution of male wages are offset by opposite changes in the distribution of female wages, this does not mean that wage losses of husbands are offset by wage gains of their wives. If wages of husbands and wives are positively correlated (assortative matching), the relative stability of the wage distribution among the whole workforce may hide important changes in the distribution of family income. Future work on the welfare consequences of the changing structure of wages should thus focus on the interaction between the distribution of male and female wages and the distribution of family income.

References


### Table 1: Changes in Measures of Wage Dispersion: 1973-70, 1979-88, and 1988-92

<table>
<thead>
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<th>1988-92</th>
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<td>1979-88</td>
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</table>

**Figure 1:** Kernel Density Estimates of Real Log Wages

- **a) Men**
- **b) Women**
- **c) All Workers**

Note: Differences as a percentage of average values. Numbers represent percentage of total variation explained in percentages.
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