UNIONS AND WAGE INEQUALITY IN MEXICO

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This paper offers empirical evidence on the impact of trade unions on wage inequality in Mexico. The results indicate that unions were a strongly equalizing force affecting the dispersion of wages in 1984, but were only half as effective at reducing wage inequality in 1996. Not only did the unionized percentage of the labor force fall considerably over the period, unions also lost some of their ability to reduce wage dispersion among the workers they continued to represent. Had unions maintained in 1996 the same structural power they possessed in 1984, the rise in wage inequality in the formal sector of the labor market between those years would have been reduced by roughly 11%.

Rising wage inequality has become an international phenomenon in recent decades, affecting both developed and developing economies, Mexico among them. The explanations offered for increased wage dispersion in Mexico have focused on the rather dramatic liberalization of trade the country undertook beginning in the mid-1980s.[1] Three such hypotheses in particular have received attention. First, it may be that trade liberalization has put Mexico in competition with other developing economies that possess even lower wages for less-skilled labor, thereby depressing the wages of unskilled workers relative to skilled workers (Hanson and Harrison 1999; Cragg and Epelbaum 1996). Second, perhaps trade liberalization has resulted in a disproportionate reduction in the appropriable rents of blue-collar workers, whose jobs suffered the largest reductions in protection levels (Revenga 1997). Third, the reduction of restrictions on the inflow of foreign capital may have resulted in an increased demand for skilled labor by foreign firms, and there-

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Copies of the computer programs used to generate the results presented in this paper can be obtained from the author at the Department of Economics, University of California, Riverside, CA 92521.

[1]Between 1985 and 1989, import licensing was eliminated in all but a few strategic sectors of the economy; the average tariff declined from roughly 25% to 12% and the maximum tariff declined from 100% to 20%; and reference prices were eliminated entirely (Ten Kate 1992). In addition, Mexico joined GATT (the General Agreement on Tariffs and Trade) in 1986, and signed a free trade agreement with the United States and Canada that took effect in January 1994.

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fore rising relative wages of skilled workers (Feenstra and Hanson 1997).

This paper explores a different possible explanation. It takes its cue from the research of economists who have studied the impact of domestic institutional changes such as declining unionization on rising wage inequality in the United States (Freeman 1993; DiNardo, Fortin, and Lemieux 1996).[2] Union coverage in Mexico has indeed declined rather dramatically over the same time period that wage dispersion has risen, suggesting a possible causal relationship between the two. In this paper, I offer empirical evidence of this relationship in the Mexican case and, in a departure from the U.S. studies, also explore the extent to which the declining ability of unions to reduce wage dispersion through the institutions of collective bargaining has contributed to growing wage inequality.

Unions and the Dispersion of Wages

Unions may affect the dispersion of wages in three distinct ways (Lewis 1963; Freeman 1980). First, unions raise the wages of union workers relative to a group of nonunion workers who, due either to legal proscription or to extreme hindrances to organizing, are "beyond the pale" of unionization. In developing countries such as Mexico this group typically consists of lower-paid informal sector workers. Thus, this effect of unions leads to an increase in the overall dispersion of wages, as unions raise the wages of higher-paid formal sector workers relative to those of lower-paid informal sector workers.

The second effect of unions on wage dispersion comes from the higher wages union workers obtain relative to those of comparable nonunion workers in the same industries and occupations. This effect increases wage dispersion by creating wage differences between similarly situated workers that would not exist except for the actions of unions.

Finally, unions may reduce wage dispersion within the union sector as compared to the comparable nonunion sector. Unions may do this in a variety of ways and for a variety of reasons. By means of so-called standard rate policies, unions typically strive to "take wages out of competition" both within and across plants (Reynolds and Taft 1956; Slichter, Healy, and Livernash 1960). The effect of such policies may be to reduce or eliminate arbitrary pay differences across workers (based on gender or geographical region, for example) and to level the wage structure with regard to the productive characteristics of workers (such as education and occupation).

Within plants, standard rate policies take the form of collective bargaining language establishing a system of formal job classifications that tie wages to jobs as opposed to people. Because these union policies create "equal pay for equal work," they may eliminate arbitrary pay differences, such as those based on gender. In addition, unions may negotiate, for ethical reasons or to foster solidarity, a leveling of the pay structure across these job classifications, thereby raising the pay of less-skilled workers by proportionately more than that of high-skilled workers.

Unions also typically strive to standardize pay across plants both within and even across industries. At its most effective, multi-plant and multi-employer bargaining can result in similar pay for similar job classifications within an industry, and may even reduce wage differentials between similarly skilled workers across industries. This can act to reduce arbitrary pay differences across workers based, for example, on geographical region.

There is significant empirical evidence to suggest that the dispersion-decreasing effects of unions dominate their dispersion-increasing effects in developed countries (Freeman 1980; Card 1996; Lemieux

[2]The importance of domestic institutional factors, as opposed to or in conjunction with trade liberalization, in accounting for growing wage inequality in developing countries is suggested by the results in Robbins (1995). Robbins found that trade liberalization led to increased relative wages of skilled workers in Chile, Colombia, Costa Rica, and the Philippines, but not in Argentina or Malaysia.

1998). The lack of micro-survey data has, until very recently, prevented studies of this kind in the developing world. A recent paper on unions in South Africa, however, finds evidence for an equalizing effect of unions on wage inequality in that country (Schultz and Mwabu 1998).

If unions are an equalizing force in the distribution of wages, and if the power of unions to equalize wages has waned at the same time that the distribution of wages has become more unequal, it is legitimate to ask whether the rising wage inequality may be attributable to declining union power. The empirical evidence for the United States suggests that the declining power of unions can account for a significant share of the increased wage inequality over the 1980s (Freeman 1993; DiNardo et al. 1996; Card 2001). What does the evidence suggest in the case of Mexico?

The data to be used in the empirical analysis below offer the following initial insights. The dispersion of wages—measured here as the variance of the natural log of wages—in the formal sector of the economy is much lower among union workers than among nonunion workers, suggesting that the dispersion-reducing effect of unions in Mexico may be significant. The variance of ln wages for the union sector was roughly 50% of that for the nonunion sector in 1984, and roughly 70% in 1996.

The data also reveal that between 1984 and 1996 the variance of ln wages in the overall economy rose from 0.555 to 0.663, or by roughly 19%. To get a better sense of what this means, we can compare the percentage difference between various quintiles and the median ln wage across the two years. In 1984, the first quintile was 10% below the median ln wage, and the fifth quintile was 11% above the median ln wage. In 1996, the first quintile was 39% below the median ln wage, and the fifth quintile was 47% above the median ln wage.

Finally, the data reveal that while wage dispersion rose in both the union and nonunion segments of the formal sector labor market, the variance of ln wages rose by 81% in the union sector, but by only 37% among nonunion workers. The ratio of nonunion/union dispersion fell from 3.92 to 1.39, or roughly 65%, over the period. Thus, wage dispersion grew substantially in Mexico over the 1980s and 1990s, but more so in the union sector than in the nonunion sector.

What happened to union power over this same period? To begin with, unions appear to have suffered a significant decline in coverage. The data used in this study reveal a decline from roughly 31% to 21% in the unionized percentage of the formal sector labor force between 1984 and 1996. The factors accounting for this decline are not yet well understood. However, most labor experts would cite changing political forces as one of the most important contributing factors.

The success of the labor movement in Mexico has been linked historically to its alignment with the ruling Institutional Revolutionary Party (PRI), which held power for most of the twentieth century (Middlebrook 1995). State and federal labor authorities can exert substantial influence over both the union registration process and contractual relations between unions and employers. Beginning with the shift in Mexico's development strategy in the 1980s, unions fell into disfavor among influential members of the PRI. As a consequence, union organizing and maintenance of membership became more difficult in the 1980s and 1990s. The government also acted to contain union bargaining demands, forcing wage concessions or minimal wage increases in particularly crucial industries. In reducing the benefits of unionization, these government actions may have quelled support for unions among existing members and made union organizing less attractive for those who were considering membership.

Not only did unions lose coverage among the labor force, but they also appear to have lost the power to level wages and to reduce or eliminate arbitrary pay differences through collective bargaining. While the influence of centralized bargaining structures has never been great in Mexico, beginning in the 1980s, various developments appear to have weakened the ability of unions to take wages out of competition across plants. These developments include the break-up of bargaining structures in the newly privatized industries (De la Garza 1990); the concerted efforts of the political authorities to maintain lower wages in the foreign assembly plants of the north (Shaiken and Herzenberg 1987); and modifications to the *contratos-leyes,* which are legal mandates initiated by unions that create wage uniformity across plants in particular industries and geographical regions.

Perhaps even more important, the newly emerging assembly plants in the north brought demands for greater labor flexibility in production. This led to wider job classifications, or to their absence altogether, in many unionized plants, and to greater discretion on the part of management to attach wages to people as opposed to jobs. Pay-for-skills payment schemes may increase wage dispersion across individuals in a plant, while gain-sharing arrangements may do the same for work groups. Moreover, once wages are no longer attached to jobs, there is increased scope for arbitrary pay differences to arise across workers. These institutional reforms soon spread from the northern plants to their industry counterparts in the south, and then to other industries as well. This development complicated union efforts to level wages and reduce arbitrary pay differences within plants.

The evidence thus far presented is at least consistent with the view that unions reduce wage dispersion in Mexico, and that lost union power accounts for some of the rising wage inequality over the 1980s and 1990s. However, the evidence is suggestive at best. The lower dispersion of wages in the union sector could be the result of union policies that foster greater wage equality, but it could also be reflective of less dispersion in the wage-determining characteristics (such as the education level or the occupational mix) of union workers compared to nonunion workers. Moreover, the lowering of within-group wage dispersion is only one of three ways in which unions may affect overall wage dispersion. A method must be found for assessing the importance of the other two effects of unions on wage inequality, and then a procedure must be established for combining estimates of the three effects to arrive at an assessment of the union impact on overall wage inequality.

Even if union policies are found to be genuinely responsible for the lower within-group wage dispersion in the union sector, and even if this dispersion-reducing effect of unions is found to dominate the two dispersion-increasing effects, the evidence presented thus far does not firmly implicate lost union power in the rising wage inequality of the 1980s and 1990s. The decline in unionization may result from changes in the structural power of unions to organize new members and to maintain old ones, but it may also be due to the changing industry and occupation mix of the labor force. Similarly, the increased relative dispersion of wages in the unionized segment of the formal sector might be due to changing contract language and the breakdown of centralized bargaining structures, but it might also be merely the result of increased relative dispersion in the wage-determining characteristics of union workers. Moreover, in this case as well, a method must be found for combining the changes in the three effects of unions on wage dispersion in order to discern how important changes in union power have been to the growing dispersion of wages. It is to these various tasks that I now turn.

Empirical Specification

This section of the paper spells out procedures for combining the three effects of unions on wage inequality and for separating wage dispersion owing to wage-determining characteristics from dispersion owing to the structural or institutional determinants of wages. These procedures allow for the calculation of a set of counterfactuals that sheds light on the effects of unions on wage inequality. Two counterfactual questions are of particular interest. First, what would the dispersion of wages be in the economy if union workers were transferred to the nonunion sector and made subject to the pay policies that exist there? Second, what would have been the dispersion of wages in the economy in 1996 if unions had possessed in that year the same structural power to influence wages as they had in 1984?

The metric I use to capture the dispersion of wages is the variance of ln wages, whose square root—the standard deviation of ln wages—is a common measure of wage inequality. The variance of ln wages is an appropriate metric to use when wages are set by the standard ln wage equation of empirical labor economics, when the union impact on wages is measured in relative terms, and when wages follow a lognormal distribution.

My primary focus will be on the union and nonunion segments of the formal sector labor market. I shall make use of the conditional variance formula

$$\text{(1)} \qquad \sigma_F^2 = \bar{U}\sigma_U^2 + (1 - \bar{U})\sigma_N^2 + \bar{U}(1 - \bar{U})(\bar{W}_U - \bar{W}_N)^2,$$

where U is the percentage unionized in the formal sector, σ_U^2 is the variance of ln wages among unionized workers, σ_N^2 is the variance of ln wages among nonunion workers, $\bar{W}_U$ is the mean of ln wages in the union segment, and $\bar{W}_N$ is the mean of ln wages in the nonunion segment.

The formula allows for the derivation of the formal sector variance of ln wages based on information about the union and nonunion segments that together compose this sector. Note that the formula neatly displays the two distinct ways in which unions can influence formal sector wage dispersion. Unions increase formal sector wage dispersion by increasing the mean ln wage for union workers compared to nonunion workers. They decrease wage dispersion to the extent that they reduce the variance of ln wages in the union segment compared to the nonunion segment.

The third effect of unions on wage dispersion in the overall economy stems from their influence on formal sector wages, and the impact this has on the difference between the mean of ln wages in the formal and informal sectors. If, as is typical and is true in our data, formal sector wages are higher on average than informal sector wages, then this third effect of unions is dispersion-increasing.

The counterfactuals I generate make use of the conditional variance formula and the estimated coefficients and residual variances from ln wage equations of the form

$$\text{(2)} \qquad W_U = \alpha_U + \beta_U X_U + \varepsilon_U,$$

$$\text{(3)} \qquad W_N = \alpha_N + \beta_N X_N + \varepsilon_N,$$

where W is ln wages, β is a vector of estimated coefficients (capturing the structural and institutional determinants of wages), X is a vector of wage-determining characteristics, ε is the error term, and U and N are subscripts that refer to the union and nonunion sectors, respectively.[3]

Armed with the conditional variance formula and information from the estimation of equations (2) and (3) for the two years 1984 and 1996, we can proceed to the construction of appropriate counterfactuals that shed light on the two central questions posed by this paper: whether unions reduce the dispersion of wages, and whether the changing power of unions has contributed to rising wage inequality over the period.

Do Unions Reduce the Dispersion of Wages?

To explore the effect of unions on wage dispersion, I compare the actual variance

[3]A common concern in the estimation of equations (2) and (3) is bias due to sample selection. The difference in estimated coefficients across these two equations may reflect the impact of union pay policies, or simply the differential selection of workers into the union and nonunion sectors. More important, the selection process may be one that biases downward the estimated returns to observed skills in the union sector relative to the nonunion sector (Abowd and Farber 1982). I am unable to correct for selection bias with panel data techniques, which recently have been shown to be particularly useful for addressing the hypothesized pattern of selection (Card 1996; Lemieux 1998). However, the results of studies making such corrections find that the equalizing effects of unions are not substantially altered.

of ln wages with various counterfactual measures of this variance. There are two counterfactuals to consider. First, union workers are transferred (as it were) to the nonunion sector, where they are subject to the pay policies that exist there. Second, nonunion workers are transferred (as it were) to the union sector, where they experience the pay policies that exist there. In the first scenario, I use the estimation results from equation (3) and the characteristics of union workers to generate the variance of ln wages and the mean of ln wages that union workers would possess if they were in the nonunion sector. In the second scenario, I use the estimation results from equation (2) and the characteristics of nonunion workers to generate the variance of ln wages and the mean of ln wages that nonunion workers would possess if they were in the union sector.

In each case, the counterfactual measures of the within-group variance of ln wages and the mean of ln wages are placed in equation (1) to derive counterfactual measures for the variance of ln wages in the formal sector. If unions are instrumental in reducing wage dispersion, the counterfactual variance ln wage measure under the first counterfactual scenario should be significantly larger than the actual measure. Under the second counterfactual scenario, it should be significantly smaller than the actual measure. The difference between the actual and counterfactual measures is purely reflective of structural differences in pay policies across the union and nonunion sectors, and not of differences in wage-determining characteristics across the sectors.

The precise derivation of the two counterfactual components—that is, the within-group variance of ln wages and the mean of ln wages—under the first counterfactual scenario is as follows. (The derivation of these measures under the second counterfactual scenario follows an analogous procedure.) The counterfactual union variance of ln wages is

$$\hat{\sigma}_U = \hat{\sigma}^2_{explained} + \hat{\sigma}^2_{residual}, \tag{4}$$

where

$$\hat{\sigma}^2_{explained} = \Sigma_i \hat{\beta}^2_{N_i} \sigma^2(X_{Ui}) + \Sigma_i \Sigma_j \hat{\beta}_{N_i} \hat{\beta}_{N_j} \sigma(X_{U_i} X_{U_j}), \tag{5}$$

$$\hat{\sigma}^2_{residual} = \sigma^2(\hat{\varepsilon}_N), \tag{6}$$

and the $\hat{\beta}_{N_i}$ and $\hat{\beta}_{N_j}$ are estimated coefficients from the nonunion ln wage equation, $\sigma(X_{U_i})$ is the variance in characteristic i among union members, $\sigma(X_{U_i} X_{U_j})$ is the covariance between characteristics i and j among union members, and $\sigma^2(\hat{\varepsilon}_N)$ is the variance of the estimated residual in the nonunion ln wage equation.

The second component of the counterfactual calculation is the counterfactual union mean of ln wages,

$$\bar{\hat{W}}_U = \hat{\alpha}_N + \hat{\beta}_N \bar{X}_U, \tag{7}$$

where $\hat{\beta}_N$ is the vector of estimated coefficients from the nonunion ln wage equation, and $\bar{X}_U$ is the vector of mean characteristics from the union sample.

When these two counterfactual components are placed in the conditional variance formula, the other components of the formula—namely, the variance of nonunion ln wages and the mean of nonunion ln wages—are assumed to remain unchanged. Thus, I am ignoring the spillover and threat effects of unions on employment and wages in the nonunion sector. This is a common approach in the literature on union relative wage effects (Lewis 1986).[4]

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[4]Lewis argued that because we do not know how the emergence of unions and higher wages in the union sector affect the nonunion sectors of the economy, our estimates of the union relative wage effect (and, by analogy, my estimates of the union relative variance effect) are a special kind of counterfactual measure. They are a measure of the wage "gap" between sectors—the difference between what union workers currently earn and what their wages would be if they were transferred to the nonunion sector as it currently exists—and not a measure of the wage "gain" between sectors—the difference between what union workers currently earn and what their wages would be if unions were completely absent from the industrial landscape.

Has Changing Union Power Contributed to Rising Wage Inequality over the Period?

If unions are found to decrease wage dispersion, then it is reasonable to ask whether the decline in union power between 1984 and 1996 can account for any of the rise in wage inequality over the period. To shed light on this issue, I derive counterfactual measures that address the following question: What would the variance of ln wages have been in 1996 had the structural power of unions remained the same as it was in 1984? By "the structural power of unions" I mean the ability to organize and maintain union membership and the ability to influence the level and dispersion of wages through collective bargaining.

Two counterfactual measures are considered. The first, which follows an approach common in the literature, simply takes the 1984 values for the extent of unionization, the union-nonunion difference in the mean of ln wages, and the union-nonunion difference in the dispersion of wages as the basis for deriving a 1996 counterfactual measure of formal sector wage dispersion. These three components are assumed to reflect union power and are thus held constant over the period. In generating the counterfactual, the mean of ln wages and variance of ln wages in the nonunion sector are set at their 1996 values in equation (1) and the remaining elements of the equation are derived with reference to the 1984 values for union density, difference in ln wages, and difference in dispersion.

There are at least two drawbacks to this approach. The first is that changes over time in the three components of union power reflect changes in both the structural power of unions and the wage-determining and union-status-determining characteristics of workers. Fixing these three components at their 1984 levels in the counterfactual calculation thus amounts to holding constant both union power and worker characteristics, whereas it is only the former that we wish to hold constant.

A second drawback is that the measure of union power regarding wages is not consistent with the measure of union power regarding wage dispersion. Because wages are measured in natural logs, using the union-nonunion ln wage gap from 1984 as the basis for the counterfactual derivation implies that union wages have remained a constant percentage of nonunion wages. This is not the implication, however, when using the 1984 gap in the variance of ln wages, because the variances are not measured in natural logs. If the power of unions with regard to wages is best measured as the percentage by which unions raise wages over nonunion wages, then their power with regard to wage dispersion should be measured as the percentage by which unions reduce wage dispersion over nonunion wage dispersion.

The second counterfactual measure I derive addresses both of these concerns. It makes use of the nonunion estimated wage equation for 1984 and 1996, along with an estimated union-status equation for 1984 of the form

$$U = \alpha + \delta Y + \varepsilon, \tag{7}$$

where U is a dichotomous (0,1) variable indicating union status, δ is a vector of estimated coefficients, Y is a vector of variables determining the union status of workers, and ε is the error term. From the union status regression, I predict the extent of unionization for the formal sector labor force in 1996, assuming the power of unions to organize and maintain members (that is, the estimated δ vector) had remained as it was in 1984. From the nonunion regression equations, I first predict the mean and dispersion of ln wages for union workers were they to be subject to nonunion pay policies in both years, exactly as described in the previous section. I then derive the percentage by which unions increase wages and decrease dispersion (that is, the union relative wage and dispersion effects) for union workers in 1984 by comparing the 1984 predicted measures to their actual measures. Finally, I adjust the 1996 predicted mean and dispersion measures for union workers in the nonunion sector by the 1984 percentages to arrive at the counterfactual measures of mean ln wage and variance of ln wages in the union sector for 1996, thereby fixing the union relative wage and dispersion effects at their 1984 values. With these predicted measures of union density and mean ln wage and variance of ln wages in the union sector, I am able to generate a counterfactual measure of formal sector wage dispersion that allows for changes in wage-determining and union-status-determining characteristics over time, but keeps the structural power of unions constant.

For each counterfactual scenario, the resulting counterfactual measure of formal sector wage dispersion is compared to its actual measure. If the declining power of unions accounts for some of the rise in wage inequality over the period, then restoring union power to its level at the outset of the period will yield a counterfactual measure of dispersion that is less than the actual measure. The difference between the counterfactual and actual measures of dispersion in 1996 reflects that portion of the overall change in dispersion that is attributable to declining union power.

Data

The data for the analysis come from the 1984 and 1996 *Encuesta Nacional de Ingresos y Gastos de los Hogares* (INEGI 1986, 1998). These are national household surveys that began in 1984 and continued in 1989, 1992, and every two years thereafter (the 1998 and 2000 surveys were only recently made available to researchers). Each survey is a stratified sample based on city size, with a similar sampling distribution across the survey years, and weights that render the sample representative of the national experience. I use information on working individuals from the surveyed households. The data contain good information on certain labor market characteristics of workers. Most important for my analysis, however, these are the only micro-level surveys in Mexico that contain information on the union status of workers.[5]

The samples used in this analysis are composed of wage earners who are 16 years of age or older and who work at least 20 hours per week.[6] The earnings variable is the hourly wage, and is computed from reported earnings during the month prior to the survey and reported hours of work. To ensure an accurate measure of the wage, I delete from the sample those who are self-employed or working without pay. Reported earnings for the self-employed are likely to include returns on owned capital, which would bias upward the measured wage. Because information is available on union status only for the primary job of a respondent, I also exclude from the analysis those who hold more than one job. The 1984 sample contains 3,531 individuals and the 1996 sample contains 11,610. Table 1 gives the definitions for the full set of variables used in the analysis.

The nonunion sample is divided into two segments for purposes of analysis—workers who work in jobs that are typically "beyond the pale of unionization," and those who work in jobs that are comparable to union jobs elsewhere in the economy. I refer to the first segment as the "informal" sector and to the second, in combination with the union sample, as the "formal" sector. These two sectors are distinguished based on industry and occupation categories. The informal sector is composed of

[5]Unions in Mexico are a varied bunch. Some work diligently on behalf of their members while others, known as "sindicatos fantasmos" or "ghost unions," have virtually no effect on worker welfare, and exist only to collect union dues from employers. It is possible that workers affiliated with the latter type of union are completely unaware of the union's existence, and hence may respond in the negative to the survey question regarding union affiliation.

[6]Few workers under the age of sixteen or who work less than 20 hours per week are unionized. Including this group of individuals in the nonunion sample raises the variance of ln wages for this segment significantly, and leads to even stronger results regarding the dispersion-reducing activities of unions than those reported below.

Table 1. Variable Definitions.

Variable	*Definition*
Wage	natural log of respondent's hourly wage
Age	Age of respondent
Age^2	Age squared of respondent
Male	1 if respondent is male; 0 if female
$Primaria_1$	1 if respondent attended *primaria,* but did not complete it; 0 otherwise
$Primaria_2$	1 if respondent completed *primaria* and nothing more; 0 otherwise
$Secundaria_1$	1 if respondent attended *secundaria,* but did not complete it; 0 otherwise
$Secundaria_2$	1 if respondent completed *secundaria* and nothing more; 0 otherwise
$Preparatoria_1$	1 if respondent attended *preparatoria,* but did not complete it; 0 otherwise
$Preparatoria_2$	1 if respondent completed *preparatoria* and nothing more; 0 otherwise
$Superior_1$	1 if respondent attended *superior,* but did not complete it; 0 otherwise
$Superior_2$	1 if respondent completed *superior* and nothing more; 0 otherwise
Postgrado	1 if respondent attended *postgrado;* 0 otherwise
$Technical_1$	1 if respondent completed a technical or commercial training program that required no formal education; 0 otherwise
$Technical_2$	1 if respondent completed a technical or commercial training program that required completion of *primaria;* 0 otherwise
$Technical_3$	1 if respondent completed a technical or commercial training program that required completion of *secundaria;* 0 otherwise
$Technical_4$	1 if respondent completed a technical or commercial training program that required completion of *preparatoria;* 0 otherwise
South	1 if respondent lives in the south of Mexico; 0 otherwise
Union	1 if respondent is affiliated with a union; 0 otherwise
Occupation	13 categorical variables (0,1) indicating respondent's occupation
Industry	19 categorical variables (0,1) indicating respondent's industry

workers in agriculture, forestry, and fishing, and those who engage in domestic service or who are sellers of goods or services without a fixed or stable establishment.

Although I use these familiar labels to describe the divisions in the labor market of my sample, it is not really my purpose to accurately capture the formal and informal sectors of the economy. I have divided the sample in this way merely to ensure that the union-nonunion comparisons are legitimate. That is, when asking whether unions decrease wage dispersion for a comparable group of workers, by eliminating what I refer to here as the informal sector from the analysis, I hope to have achieved a truly meaningful nonunion comparison group. Holding the informal sector out for separate analysis biases against the finding that unions decrease wage inequality. If the informal sector workers were included as part of the comparison nonunion segment, the structural differences between the sectors—which drive the finding that unions decrease wage inequality—would be far more pronounced than those reported below.

Results

Table 2 gives the estimated coefficients from the union and nonunion ln wage equations. Table 3 gives the variance components that are derived from these equations. These two tables offer evidence on the structural differences in pay policies between the union and nonunion sectors, and thus on the likelihood that the lower union wage dispersion reported above is indeed due to pay policies as opposed to a lower dispersion of wage-determining characteristics. The results suggest that union pay policies level the pay structure for productive characteristics and reduce or eliminate arbitrary pay differences across workers.[7]

Looking first at the 1984 results, the most striking finding is the lack of statistically significant gender discrimination in pay in the union sector. This compares with a statistically significant and quite sizable pay difference based on gender in the nonunion sector.[8] To the extent that such pay differences are indeed arbitrary, and not a reflection of uncaptured worker productive characteristics, union pay policies that standardize wages appear to completely eliminate arbitrary pay differences based on workers' gender.

The north-south pay differential is also lower—by roughly one-half—in the union sector than in the nonunion sector. The north-south pay differential may reflect differences in productive characteristics, but it may also be the result of differences in the relative power of workers in the north. In this case, the results suggest that collective bargaining is able to partially counteract the power imbalance between north and south, and to reduce the arbitrary pay differentials that result from this imbalance.

There is evidence in these findings of a leveling of the pay structure with regard to worker productive characteristics, as well. While the numerical estimates of the returns to education are lower in the union sector than in the nonunion sector, few of the estimated coefficients on the schooling variables are in fact statistically significantly different across the two equations. The evidence for wage structure leveling is statistically much stronger with regard to occupational differences in pay. (To economize on space, in Table 2 I do not report the inter-occupation and inter-industry differentials in pay.) Occupation differentials reflect returns to skills that are acquired informally, through on-the-job training for example. The standard deviation of the set of estimated occupation coefficients is 0.25 in the union sector and 0.31 in the nonunion sector, and many of the estimated coefficients on the occupational categorical variables are statistically significantly different across the union and nonunion estimated wage equations. There is also evidence of leveling with regard to the returns to technical training.

Turning to the 1996 results presented in the last four columns of Table 2, the leveling of the wage structure and the reduction of arbitrary pay differences due to union pay policies are apparent in these results as well. For example, the lower return to technical schooling in the union sector persists in the 1996 results. The difference in the north-south pay differential between the union and nonunion sectors is virtually unchanged from the 1984 findings. And the extent of wage structure leveling with regard to inter-occupation wage differentials even increases a bit over the period. The standard deviation of the set of estimated inter-occupation wage differentials is 0.342 in the nonunion sector and .207 in the union sector in 1996, compared with 0.312 and 0.25, respectively, in 1984.

However, there are also signs that the ability of unions to level wages and to reduce arbitrary pay differences both within and across establishments diminished over the period. Most striking, the gender pay differential is now positive and statistically significant in the union sector, and much closer to the gender differential in the nonunion sector. Union power across industries has become more dispersed over the period as well. The standard deviation of the inter-industry wage differentials increases from 0.141 to 0.189 in the union sector, but remains roughly unchanged at 0.114 in the nonunion sector. Moreover, in contrast to the 1984 results, many of the inter-industry effects are statistically sig-

[7]A Chow test reveals that the estimated coefficients from the union and nonunion wage equations are statistically significantly different (1% level) in both 1984 and 1996.

[8]Panagides and Patrinos (1994) reported similar findings in their empirical exploration of the union relative wage effect in Mexico.

Table 2. Descriptive Statistics and Estimated Log Wage Equations.

	1984				1996			
	Mean, Std. Dev.		Estimated Coefficients		Mean, Std. Dev.		Estimated Coefficients	
Explanatory Variable	Union	Nonunion	Union	Nonunion	Union	Nonunion	Union	Nonunion
Age	34.69	31.21	0.068**	0.051**	35.66	31.273	0.036**	0.056**
	(11.21)	(11.86)	(0.007)	(0.005)	(10.52)	(11.05)	(0.005)	(0.003)
Age^2	1329.2	1114.7	–0.0008**	–0.0005**	1382.2	1100.1	–0.0003**	–0.0006**
	(872.93)	(920.97)	(0.00008)	(0.0001)	(819.25)	(839.44)	(0.0001)	(0.00004)
Male	0.63	0.734	0.036	0.192**	0.574	0.695	0.075**	0.152**
	(0.483)	(0.442)	(0.032)	(0.03)	(0.495)	(0.46)	(0.023)	(0.016)
$Primaria_1$	0.148	0.208	0.096	0.215**	0.069	0.117	0.045	0.049
	(0.355)	(0.406)	(0.098)	(0.069)	(0.253)	(0.321)	(0.094)	(0.041)
$Primaria_2$	0.261	0.263	0.354**	0.398**	0.164	0.194	0.265**	0.21**
	(0.439)	(0.44)	(0.097)	(0.071)	(0.37)	(0.395)	(0.091)	(0.04)
$Secundaria_1$	0.066	0.067	0.508**	0.471**	0.032	0.055	0.395**	0.272**
	(0.248)	(0.251)	(0.105)	(0.076)	(0.177)	(0.227)	(0.097)	(0.047)
$Secundaria_2$	0.216	0.21	0.482**	0.44**	0.25	0.295	0.425**	0.317**
	(0.412)	(0.407)	(0.102)	(0.076)	(0.433)	(0.456)	(0.092)	(0.04)
$Preparatoria_1$	0.036	0.035	0.515**	0.485**	0.052	0.056	0.532**	0.459**
	(0.187)	(0.183)	(0.109)	(0.088)	(0.222)	(0.23)	(0.097)	(0.051)
$Preparatoria_2$	0.116	0.051	0.594**	0.62**	0.160	0.102	0.521**	0.564**
	(0.321)	(0.22)	(0.107)	(0.083)	(0.367)	(0.302)	(0.094)	(0.045)
$Superior_1$	0.046	0.047	0.457**	0.628**	0.097	0.063	0.787**	0.775**
	(0.209)	(0.212)	(0.116)	(0.088)	(0.296)	(0.243)	(0.098)	(0.05)
$Superior_2$	0.097	0.062	0.674**	0.878**	0.153	0.081	0.78**	1.00**
	(0.296)	(0.24)	(0.118)	(0.091)	(0.36)	(0.273)	(0.097)	(0.054)
Postgrado	0.001	0.005	0.72	1.19**	0.016	0.007	0.995**	1.39**
	(0.03)	(0.067)	(0.699)	(0.151)	(0.124)	(0.084)	(0.132)	(0.098)
$Technical_1$	0.01	0.012	–0.175	–0.0002	0.007	0.01	0.146	0.04
	(0.1)	(0.11)	(0.158)	(0.072)	(0.083)	(0.101)	(0.111)	(0.055)
$Technical_2$	0.069	0.055	–0.005	0.17**	0.037	0.024	–0.054	0.026
	(0.253)	(0.228)	(0.047)	(0.048)	(0.19)	(0.153)	(0.051)	(0.043)
$Technical_3$	0.128	0.075	0.056	0.183**	0.171	0.128	0.042	0.109**
	(0.334)	(0.264)	(0.048)	(0.044)	(0.376)	(0.334)	(0.031)	(0.022)
$Technical_4$	0.004	0.003	–0.037	0.154	0.026	0.013	–0.014	0.138*
	(0.065)	(0.053)	(0.294)	(0.177)	(0.16)	(0.114)	(0.088)	(0.0733)
South	0.175	0.186	–0.141**	–0.293**	0.088	0.071	–0.14**	–0.331**
	(0.38)	(0.389)	(0.033)	(0.029)	(0.283)	(0.256)	(0.036)	(0.024)
Occupation	—	—	YES	YES	—	—	YES	YES
Industry	—	—	YES	YES	—	—	YES	YES
Constant	—	—	4.31**	3.87**	—	—	1.38**	0.648**
			(0.238)	(0.192)			(0.16)	(0.122)
Adjusted R^2	—	—	0.486	0.458	—	—	0.554	0.496
Observations	—	—	934	2,099	—	—	2,041	7,396

Note: Standard errors are in parentheses. Results are corrected for heteroskedasticity using White's heteroskedasticity-consistent estimator.

*Statistically significant at the .10 level; **at the .05 level.

nificantly different across the union and nonunion sectors in 1996.

One of the more striking features of the 1996 results compared to the 1984 results is the well-documented rise in the return to education. The Table 2 results reveal that the increased return to formal education has occurred in both the union and non-

Table 3. Is Wage Dispersion Lower in the Union Sector Than in the Nonunion Sector? (Variance Components from Table 2 Results)

Sector	$\sigma^2_{explained}$	$\sigma^2_{residual}$	σ^2
		1984	
(1) Union Sector	.131	.124	.255
(2) Nonunion Sector	.221	.249	.470
		1996	
(3) Union Sector	.261	.202	.463
(4) Nonunion Sector	.312	.312	.624

Notes: $\sigma^2_{\text{explained}}$ = SSR/N; $\sigma^2_{\text{residual}}$ = SSE/N; and σ^2 = SST/N. All of the union-nonunion variance comparisons are statistically significantly different at the 5% level.

union sectors. In both sectors, the returns to low levels of education (the completion of *secundaria* and below) are dramatically lower in 1996 than they were in 1984, while the returns to high levels of education (the completion of *superior* and above) are dramatically higher. In 1996, the ratio of the return associated with the completion of *superior* relative to the return associated with the completion of *secundaria* was 1.8 in the union sector and 3.2 in the nonunion sector. The corresponding ratios in 1984 were, respectively, 1.4 and 2. The return to education in the union sector is flatter than that in the nonunion sector, but once again the differences are not collectively statistically significant.

Table 3 reports the union and nonunion variance of ln wage measures, but also gives their breakdown into explained and residual variance components derived from the estimated wage equations in Table 2.[9] The differences in explained variances across the union and nonunion sectors reflect both pay policies and wage-determining characteristics. Below, I parse out the separate effects of pay policies and use these in the counterfactual derivations. The differences in residual variances, however, reflect differences in wage dispersion among workers with the same wage-determining characteristics. Thus, these results reflect the differential effect of union pay policies only.

The significantly smaller residual variances in the union sector than in the nonunion sector in both 1984 and 1996 are yet another piece of evidence suggesting that union policies act to reduce wage dispersion through either leveling or reductions in arbitrary pay differences. However, the changes in the residual variances over time also suggest that union policies may have lost some of their dispersion-reducing effect over the intervening period. The union-nonunion residual variance ratio rose over the period from roughly 0.5 to 0.65. The union residual variance rose by roughly 63%, while the nonunion residual variance rose by only 25%.

Do Unions Reduce Formal Sector Wage Dispersion?

Table 4 gives actual and counterfactual variance ln wage measures for the formal sector for 1984 and 1996, as well as the various components that are used to derive these measures as indicated by equation (1).[10] For any given counterfactual variance of ln wage measure, the components that are themselves counterfactuals depend on the particular exercise being conducted.

[9]The differences are all statistically significant (5% level).

[10]Mean wages are lower in 1996 because Mexico introduced a new currency in January of 1994—the New Peso—that converted to the old Peso at a rate of 1/1000.

Table 4. Do Unions Reduce Formal Sector Wage Dispersion? (Actual and Counterfactual Variance Components)

Estimate	U	σ^2_U	$(1-U)$	σ^2_N	W_U	W_N	σ^2_F
				1984			
(1) Actual	.308	.255	.692	.470	5.38	4.95	.443
(2) Counterfactual $U \rightarrow N$	.308	.437	.692	.470	5.21	4.95	.474
(3) Counterfactual $N \rightarrow U$	.308	.255	.692	.277	5.38	5.14	.282
				1996			
(4) Actual	.205	.463	.795	.624	2.37	1.89	.629
(5) Counterfactual $U \rightarrow N$	.205	.648	.795	.624	2.25	1.89	.650
(6) Counterfactual $N \rightarrow U$	.205	.463	.795	.400	2.37	2.03	.431

Notes: *U*ArrowSign*N* indicates that union workers experience the pay structure in the nonunion sector and *N*ArrowSign*U* indicates that nonunion workers experience the pay structure in the union sector.

For example, in row 2 the counterfactual exercise involves subjecting union workers to the pay policies of the nonunion sector (as indicated by $U \rightarrow N$). Thus, the variance of ln wages and the mean of ln wages in the union sector are the two counterfactual components making up the counterfactual variance of ln wage measure listed in the last column of row 2. The counterfactual in row 3 subjects nonunion workers to the pay policies of the union sector, and thus has the variance of ln wages and the mean of ln wages in the nonunion sector as the two counterfactual components.

The row 2 results reveal that if union workers had been subject to the pay policies of the nonunion sector in 1984, the dispersion of wages in the formal sector would have risen from 0.443 to 0.474. This suggests that union pay policies decreased formal sector wage dispersion by roughly 6.5%. Recall that there are two distributive effects to consider. First, unions increase dispersion through union relative wage effects. Thus, transferring union workers to the nonunion sector will reduce wage dispersion by reducing the difference in mean ln wages between sectors, as can be seen by comparing the difference between the fifth and sixth columns of rows 1 and 2. Second, union pay policies may also reduce within-group dispersion by leveling the wage structure for worker productive characteristics and reducing or eliminating arbitrary pay differentials. And this is precisely what the column (2) results indicate: subjecting union workers to nonunion pay policies raises within-group dispersion from 0.255 to 0.437. The results in the last column suggest that the dispersion-decreasing effect of unions dominates the dispersion-increasing effect.[11]

Having explained in some detail the results of row 2, we can now move more rapidly through the remaining rows of results. In row 3, I consider the counterfactual in which nonunion workers are subject to the pay policies of the union sector. The results suggest that the formal sector variance of ln wages would fall substantially under this scenario, offering yet further support for the claim that unions reduce wage dispersion.[12]

[11]The two counterfactual components in row 2 contain interesting information in their own right. The counterfactual mean ln wage in the union sector is a measure of what union workers would earn if they were transferred to the nonunion sector. Thus, the difference between the counterfactual mean ln wage (5.21) and the actual mean ln wage (5.38) is a measure of the union relative wage effect, which in this case is roughly 18%. The difference between the counterfactual mean ln wage (5.21) and the actual mean ln wage for nonunion workers (4.95) is a measure of the extent to which the wage-determining characteristics of union workers differ from those of nonunion workers.

[12]The larger difference between actual (0.443) and counterfactual (0.282) measures in this scenario as opposed to that of row 2 is due in large part to the

Turning to the results of similar counterfactual exercises using the 1996 data, as shown in rows 4 through 6, the conclusion is the same—unions reduce formal sector wage dispersion. Subjecting union workers to the pay policies of the nonunion sector increases wage dispersion (row 5). Subjecting nonunion workers to the pay policies of the union sector decreases wage dispersion (row 6).

While the analyses from both periods suggest that unions reduce wage dispersion, there are also clear signals in the data that unions lost some of their power to do so in the later years. Compare, for example, the 6.5% rise in formal sector wage dispersion in 1984 under the counterfactual in which union members are transferred to the nonunion sector (rows 1 and 2) with the 3.2% rise under a similar scenario in 1996 (rows 4 and 5).

The smaller increase in 1996 is accounted for by two factors. First, the percentage of the formal sector labor force that is unionized has fallen from 31% to 21%. This means that, for any given amount by which the union sector is able to reduce dispersion relative to the nonunion sector, the impact on formal sector wage dispersion is less because a smaller percentage of the work force is "transferred" to nonunion jobs. Second, unions appear to have lost some of their ability to reduce within-group dispersion. When I made union workers subject to nonunion pay policies in 1984, within-group dispersion rose from 0.255 to 0.437, or roughly 70%. A similar exercise in 1996 raises within-group wage dispersion by only 40%, from 0.463 to 0.648.[13]

higher proportion of nonunion workers in the economy. Under the first counterfactual scenario only 31% of the labor force is "transferred" to a new sector, whereas 69% is "transferred" to a new sector under the second counterfactual scenario.

[13]Lost union power also reduces the union relative wage effect (from 18% in 1984 to 13% in 1996), and this reduces the dispersion-increasing effect of unions. Thus, the fact that unions are less successful in decreasing wage dispersion in later years is reflective of the depth of their losses in the areas of union coverage and union pay policies.

Has Changing Union Power Contributed to Rising Wage Inequality?

In Table 5, I present a set of counterfactual variance calculations that allows for greater insight into the effect of changing union power on the rise in formal sector wage inequality over the period 1984–96. The counterfactual exercises involve granting the union movement in 1996 the power it possessed in 1984. I use two different counterfactuals, and thus two different notions of "union power held constant." The first assumes that unions in 1996 possess exactly the same extent of unionization in the labor force as in 1984, and that the gap in the variance of ln wages and the gap in mean ln wages are the same as in 1984. The second counterfactual adjusts these measures for changes that are accounted for by changes in the union-status-determining and wage-determining characteristics of workers.

The components of the first counterfactual derivation are shown in row 3 of Table 5. If the unionized labor market in 1996 had possessed exactly the same relative features as in 1984, the variance of ln wages in the formal sector would have been 0.597 instead of 0.629. The difference accounts for roughly 17% of the increase in wage dispersion from 1984 to 1996. The components of the second counterfactual derivation are shown in row 4. If the structural power of union power had remained the same relative to the nonunion sector, the formal sector variance of ln wages in 1996 would have been 0.608. The difference between this and the actual variance of ln wages in 1996, which is entirely attributable to changing union power, accounts for 11% of the overall increase in wage dispersion over the period. The remainder is accounted for by other factors, such as the changing occupational or industrial mix resulting from trade liberalization or the changing skill endowments of the work force resulting from the changing demand for worker skills.

Interestingly, the difference between the extent of unionization in 1984 and the 1996 counterfactual measure in row 4 is

Table 5. Has the Changing Power of Unions Contributed to Rising Wage Inequality? (Actual and Counterfactual Variance Components)

Estimate	U	σ^2_U	$(1 - U)$	σ^2_N	W_U	W_N	σ^2_F
				1984			
(1) Actual	.308	.255	.692	.470	5.38	4.95	.443
				1996			
(2) Actual	.205	.463	.795	.624	2.37	1.89	.629
(3) Counterfactual I	.308	.409	.692	.624	2.32	1.89	.597
(4) Counterfactual II	.306	.378	.694	.624	2.42	1.89	.608

Notes: Counterfactual I assumes $U_{96} = U_{84}$; $(\sigma^2_U - \sigma^2_N)_{96} = (\sigma^2_U - \sigma^2_N)_{84}$; and $(W_U - W_N)_{96} = (W_U - W_N)_{84}$. Counterfactual II generates predicted values from estimated regression equations.

minimal. This suggests that if, for instance, government policy regarding union organizing or the willingness of workers to join unions had not changed over the period, the extent of unionization also would have changed by very little. Thus, the bulk of the decline in unionization from 0.308 in 1984 to 0.205 in 1996 can be accounted for by the changing structural ability of unions to organize and maintain members, and not by changing demographic, occupational, or industrial determinants of unionization.

The most significant factor accounting for the reduced level of wage dispersion in both counterfactual measures is the lower within-group dispersion of unions (in column 2) rather than the increased extent of unionization (in column 1). In the first counterfactual calculation, the former is over three times more important in the reduced counterfactual measure of dispersion than is the increased extent of unionization. In the second counterfactual calculation, it is more than twice as important. Thus, it is the declining ability of unions to both reduce arbitrary pay differences across workers and level the pay structure over worker characteristics, more than de-unionization, that accounts for the growing wage inequality in Mexico.

As a final comment on this exercise, it is worth noting that the counterfactual measures in Table 5 are conservative estimates of the extent to which reduced union power has contributed to rising wage inequality in Mexico. Both assume that unions are merely passive reactors to whatever changes take place in the nonunion sector. Unions are assumed to have no equalizing impact on wage dispersion in the nonunion sector through threat effects, and wage dispersion in the union sector is constrained to differ from that in the nonunion sector by some percentage or absolute amount. What if we were to assume, instead, that unions had been able to maintain the same structural bargaining power—as reflected in the estimated coefficients from the union wage equation from 1984—over this period of tremendous changes in wage-setting in the nonunion sector? Using the 1996 wage-determining characteristics of union workers, along with the union estimated wage equation from 1984, I find that wage dispersion in the union sector in 1996 would have been 0.275 instead of 0.463. Using this number in the second counterfactual calculation, I find that formal sector wage dispersion would have been 0.578 instead of 0.629. Under this assumption, then, lost union power would account for roughly 30% of rising formal sector wage dispersion over this period.

Do Unions Reduce Overall Wage Inequality?

Bringing the informal sector into the analysis allows us to account for the third effect of unions on wage dispersion—namely, the extent to which unions increase wage dispersion by increasing the gap between formal and informal sector mean ln wages.[14] Using a conditional variance formula like equation (1) above, but in which the formal and informal sectors are the two groups to be combined, and using the results in Tables 4 and 5 to arrive at the variance of ln wages and the mean ln wage in the formal sector, we can generate counterfactual measures of the variance of ln wages in the overall labor market.

While the equalizing impact of unions, and the extent to which their lost power can account for rising wage inequality, is dampened somewhat, the fundamental results are unchanged. Unions reduced overall wage dispersion in 1984 by 2.6% and in 1996 by 1.9%. Had unions possessed in 1996 the same underlying structural power they had in 1984, the rise in overall wage inequality would have been lower by 5.6%.

Conclusion

The results of this study suggest that unions are an equalizing force in the dispersion of wages in Mexico. Unions reduce formal sector wage dispersion, and, as a consequence, the overall dispersion of wages among wage earners in the formal and informal sectors combined. They do this by negotiating collective bargaining agreements that level wages with regard to the productive skills of workers and reduce arbitrary pay differences across workers.

Losses in the structural power of unions to maintain and organize workers and to influence wage dispersion through collective bargaining diminished the dispersion-decreasing effect of unions between the mid-1980s and the mid-1990s. Wage dispersion in the economy rose as a result. The empirical results presented in this paper suggest that roughly 11% of the increase in formal sector wage inequality over the period, and 5.6% of the rise in overall wage inequality, can be accounted for by the declining power of unions.

This study, like most others that have tackled the causal influences of rising wage inequality over the 1980s and 1990s in Mexico, has taken a "mono-causal" approach—that is, it looks at one and only one determinant of the increased inequality. Future research should be devoted to specifying what portion of the increased wage dispersion can legitimately be ascribed to each of the various causal factors that have been shown thus far to matter.

Proponents of the view that increased wage dispersion in Mexico is attributable to the decline in capturable rents resulting from the elimination of trade protections (for example, Ravenga 1997) might claim, for example, that my analysis overstates the role of declining union power in the increased wage inequality. They might argue that if my analysis had included profit rates or concentration ratios on the right-hand side of estimated wage equations, a larger role would have been granted to changes in these wage-determining characteristics, and a correspondingly smaller role would have been assigned to structural changes in union power.

Of course, every "mono-causal" analysis is open to similar criticisms. Feenstra and Hanson (1997) claimed that increased wage dispersion in Mexico is related to the increased demand for skilled workers by the large number of foreign firms that have entered the country since Mexico's relaxation of restrictions on foreign investments in the early 1980s. Their evidence is based on cross-sectional findings regarding the higher returns to skills along the border region, where foreign assembly plants are congregated. I could argue, however, that the higher return to skills has less to do with the skill demands of employers than it does with the quality of industrial relations in this region. There is a well-noted absence of unions along the border, and those that do exist are likely to be "ghost unions" or to possess collective bargaining agreements that prevent unions from leveling wages for productive skills.

[14]Once again, we have not corrected for possible nonrandom selection, this time into the formal and informal sectors. See Marcouiller, Ruiz de Castilla, and Woodruff (1997) for an attempt to do so with Mexican wage data.

Future research should undertake a comparative exploration of the various causal factors that have been linked to rising wage inequality in Mexico over the past two decades. The results of the present paper suggest that declining union power warrants consideration as one of those causal factors.

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