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Undocumented Workers and Regional Differences in Apparel Labor Markets

Carolyn Sherwood-Call

Economist, Federal Reserve Bank of San Francisco.

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The Immigration Reform and Control Act of 1986 (IRCA), which requires employers to verify that the workers they hire can work legally in the United States, would be expected to reduce the supply of undocumented workers. California's apparel industry appears to be particularly vulnerable to these changes, since it relies heavily on undocumented workers, but employment growth in California's apparel industry has continued to outpace that of the nation by a wide margin since employer sanctions went into effect. Empirical examination reveals little relationship between undocumented workers and employment in the apparel industry, suggesting that other factors are more important causes of growth in California's apparel industry.

In November 1986, Congress passed the Immigration Reform and Control Act of 1986, requiring employers to verify that the workers they hire can work legally in the United States. Stringent enforcement of this law should reduce the supply of undocumented workers, causing employment to fall and wages to rise in sectors and regions where undocumented workers have comprised a significant proportion of the labor force.

California's apparel industry appears to be particularly vulnerable to these changes. A number of analysts attribute its rapid growth, particularly when compared with the decline of the apparel industry nationally, to the ready supply of low-wage undocumented workers available in the state (Maram, 1980; UCLA Forecast, 1987). Industry participants note that in Southern California, which dominates apparel production in California,[1] most workers are Mexican, and by most accounts a large proportion of these are undocumented. Maram's study suggests that in 1980 about 60 percent of all garment workers in Los Angeles were undocumented Hispanics.[2] Moreover, because the apparel industry is highly competitive, with many small producers in a large number of countries, easy entry and exit, and relatively low profit margins, it is especially vulnerable to any change that increases production costs. Thus, a law that limits the supply of undocumented workers might be expected to retard growth in California's apparel industry.

In fact, however, the growth in California's apparel industry has continued to outpace that of the national industry by a wide margin since the ban on employing undocumented workers went into effect on June 1, 1987. Between July 1987 and July 1988, employment in California's apparel industry posted healthy growth of 3.1 percent, compared with a 2.4 percent decline in U.S. apparel employment during the same period.

Thus, despite its apparent vulnerability to the new law, California's apparel industry does not yet appear to have been affected by it. Why has the law not had the anticipated effects? This paper examines the provisions of the law and the characteristics of the apparel industry to evaluate the impact of the law and to determine whether the law is likely to affect the apparel industry in the future.

The paper is organized as follows. Section I discusses the implementation of the law. Section II describes the structure of the apparel industry. Section III sets out an economic theory of the effects of undocumented workers on regional labor markets. Section IV tests and interprets the hypotheses generated in Section III. Section V summarizes and draws conclusions.

I. The Immigration Reform and Control Act of 1986

The Immigration Reform and Control Act of 1986 (IRCA) became law in November 1986, but its key provision regarding undocumented workers (UWs) did not go into effect until June 1, 1987, when it became illegal for employers to hire UWs, and employers were required to verify the work status of all new employees. Even then, these provisions initially were not enforced with the full sanctions available under IRCA. Instead, on June 1, 1987, the Immigration and Naturalization Service (INS) began issuing citations to employers who violated these provisions of the law. Only the most egregious and repeated violations resulted in fines, and these fines were heavily publicized to discourage other employers from ignoring the law. After a twelve-month "first citation" period, the employer penalties became much more severe, with employers subject to fines of as much as $2,000 per violation for a first instance of knowingly hiring UWs. Under the law, even larger civil fines can be imposed for subsequent violations, and criminal penalties, including jail terms, can be imposed on employers who establish a "pattern or practice" of illegal hiring.

As a result of this phase-in period for employer sanctions, the full force of the law did not take effect until June 1988. Thus, it is not surprising that the law appears to have had no effect through July 1988. However, one cannot necessarily infer from this that IRCA will have no effect over the long term. The employer sanctions now in effect ultimately may deter the hiring of UWs, causing the inflow of migrants to slow substantially, and forcing significant adjustments in affected labor markets.

But there also is reason to believe that the employer sanctions may *not* deter employers from hiring UWs. The law requires employers to *check* documents that indicate workers' citizenship and residency status, but does not require employers to *verify* the authenticity of those documents. Moreover, the law explicitly bans employment discrimination on the basis of national origin or citizenship status. As a consequence, UWs who obtain false documents still would be able to find work and so would not be deterred from crossing the border.[3] In fact, in June 1988, the *New York Times* reported that illegal entries into the U.S. continued to rise, despite IRCA's sanctions. Moreover, if enforcement at the borders increases, the stock of UWs in the U.S. could rise, since Mexican workers who otherwise might return to Mexico for part of the year may stay in this country in order to minimize the number of border crossings.

II. The Structure of the Apparel Industry

Unlike most manufacturing industries, the apparel industry approximates a textbook case of perfect competition. It consists of a large number of relatively small firms. Four-firm concentration ratios[4] in eight 4-digit SIC categories of apparel[5] range from eight to 25 (Parsons, 1988). A ninth 4-digit category has a four-firm ratio of 49, which also is low by the norms for most other industries. Moreover, firms in the apparel industry tend to be small. In 1985, California apparel firms averaged 26 employees per establishment, compared with 44 for all manufacturing. Finally, ease of entry and exit characterize the industry because of its low capital-to-labor ratio. The value of capital averages only $4000 per employee, compared with $31,100 for all manufacturing industries (ILGWU 1985).

The Role of Labor

This low capital-to-labor ratio suggests that wages comprise a significant share of the cost of producing garments. In fact, labor compensation accounts for 53 percent of the value added by apparel manufacturers, and 27 percent of the value of finished apparel products,[6] according to the Annual Survey of Manufacturers. As a result, wage levels are an important determinant of the profitability of apparel manufacturing.

As important as the *cost* of labor is its *productivity*. Employers look for workers who are willing to work at the low level of wages offered by apparel manufacturers.

While employers prefer workers who are skilled and experienced garment makers, most garment workers have little formal education, often know little English, and tend to have few employment options outside the apparel industry. Cities with large immigrant populations frequently provide such workers.

Technology

Although garment manufacturing continues to be a labor-intensive process, some technological improvements have been made in recent years. Most of these improvements have been in the areas of fabric cutting and pattern making, where laser cutters and computerized sizing and pattern layouts are now in use. In addition, some products are particularly suited to the development of specialized machinery. For example, specialized machines are available for sewing pockets, zippers, or belt loops on blue jeans. This more sophisticated machinery is widely available, but only the larger plants can afford the substantial investment it represents. As a result, its use is somewhat limited, and many smaller shops continue to produce garments using less specialized technology.

Heterogeneity of Apparel Products

It is important to recognize that the apparel industry is far from homogeneous. Some of the differences are obvious. For example, some producers specialize in women's sportswear while others produce men's suits. These differences have important implications for the production processes and the plant's location relative to factor and product markets.

For one thing, production of some items can be automated more easily than can production of others. For example, as mentioned above, production of standard blue jeans can be automated or subcontracted to other locations. In contrast, tailored clothing requires considerably more hand work and closer supervision.

Production of high-fashion apparel also is difficult to standardize. Most garments for which demand can be predicted many months in advance, and for which designs are well established, can be produced almost anywhere. The manufacturer can subcontract the production to plants in other states or other countries. However, garments for which demand is less predictable need to be produced in a shorter time frame. For these more fashion-oriented items, the short lead time means that designers need to be close to the production facility in order to be able to check samples as they are made, make last-minute decisions regarding trims, and monitor the quality of production. Consequently, the cost of production labor is less important for these more fashion-oriented producers than it is for more standard garments, and they are more likely to locate in fashion design centers such as New York or Los Angeles.

Trends in International Trade

For all types of producers, pressures on profit margins have grown in recent years, leading to increased use of overseas production facilities. Estimates of import penetration indicate that imports have become significantly more important during the past twenty years.[7] As a result, patterns of international trade in garments play an increasingly important role in explaining the condition of the industry.

Overseas production offers the major advantage of lower labor costs. However, longer lead times and higher transportation costs make it inappropriate for some types of garments, particularly high-fashion garments. Although some foreign producers seem to be more responsive than their American counterparts are (Lardner, 1988), others have lax production standards and quality control procedures that make relying on them risky (Jacobs, 1988).

Frequent changes in quota and tariff restrictions further complicate life for overseas "sourcers." The Multi-Fiber Agreement (MFA) establishes a series of bilateral quotas for particular apparel items. Thus, most countries have limits on the number of items (skirts, jackets, etc.) that they can export to the U.S. These quotas are based on the country's past exports of each item. Thus, U.S. distributors cannot buy unlimited quantities of apparel items from the lowest-cost or highest-quality producers. Indeed, there is a strong incentive for countries to start producing apparel items they never have produced before, in order to supply as much as possible to the U.S. before quotas for that item from that country are imposed.

Another legal arrangement that affects international trade patterns is "Item 807," which permits U.S. firms to export cut fabric to Caribbean and Latin American countries (including Mexico) for assembly. The finished product, when returned to the U.S., is subject to tariff only on the value added in the foreign country—which, given prevailing wage rates in Item 807 countries, usually is a relatively small fraction of the finished price of the garment. Because materials and garments can be trucked to and from Mexico at low transportation costs, producers in California and Texas tend to be heavy users of Item 807.

III. Regional Labor Market Theory and Undocumented Workers

The role that the presence of UWs plays in California's apparel industry can be examined by considering labor markets in different regions, where a region is defined as a state. To take the simplest possible case, assume that each region produces an identical, homogeneous apparel product, and that the cost of living and the productivity of workers are identical across regions.

Two such regions, A and B, are illustrated in Chart 1. Initially, the supply of and demand for labor are S^0 and D^0 (with appropriate subscripts). Wages in the two regions are equal, at W^0, so neither workers nor firms have an incentive to move from one region to another. Employment initially stands at L_a^0 in region A and at L_b^0 in region B.

Now assume that region A experiences a sudden influx of UWs.[8] This shifts the labor supply curve in Chart 1a to the right, to S_a^1, initially reducing wages in region A to W_a^1, and increasing employment to L_a^1.

At this point, the system is in disequilibrium. The wage in region A, W_a^1, is lower than the wage in region B, which remains W^0. Consequently, firms seeking lower wages have an incentive to shift production from region B to region A. At the same time, workers seeking higher wages have an incentive to move from region A to region B. Migration of labor and firms would continue until the wage rates in the two regions are equalized.

In terms of Chart 1, migration of firms from region B to region A causes the labor demand curve to shift to the right in region A and to the left in region B. Migration of workers from region A to region B causes the labor supply curve to shift to the left (from S_a^1) in region A and to the right in region B. Migration stops, and the curves stop shifting, when wages have risen in region A and fallen in region B, to the point where they are equal in the two regions, at W^*. This equilibrium occurs when labor demand and supply reach D^2 and S^2 (with appropriate subscripts) in the graphs. At this point, wages are lower than they were initially (W^0), but they also are higher than they were in region A immediately after it received the influx of UWs (W_a^1). Employment in region A settles at L_a^*, higher than its initial level of L^0, and either higher or lower than the employment level after the initial influx of immigrants, L_a^1. Likewise, in region B, the direction of change in employment between L^0 and L_b^* is indeterminate, and depends on the relative magnitudes of the shifts in supply and demand curves.

If workers' productivity levels differ from one region to another, or if the cost of living differs, then *nominal* wages would not be expected to be equal in the two regions. Nevertheless, if workers and firms migrate freely from one region to another, the cost of labor, adjusted for differences in productivity and the cost of living, still should be equalized across regions.

However, this scenario assumes that both workers and firms can move freely among regions, an assumption that is not likely to be realized in practice. Workers as a group tend to move slowly in response to changing economic conditions. Apparel industry workers, who tend to have little formal education, tend to be particularly closely tied to their regions by strong cultural bonds. Thus, perhaps paradoxically, apparel workers may be more mobile be-

Chart 1A
Region A

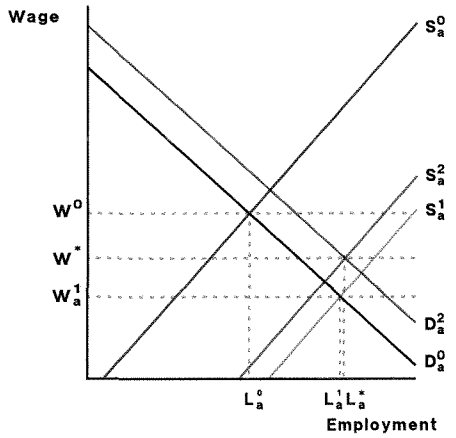
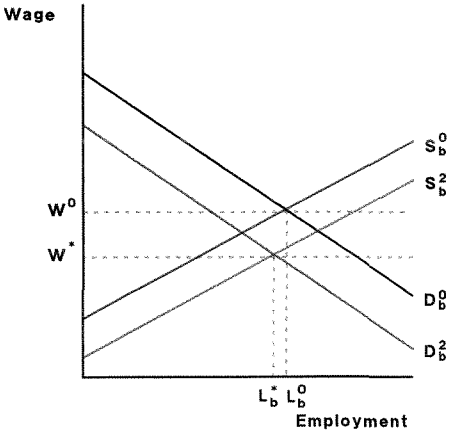


Chart 1B
Region B



tween Mexico and such centers of the Mexican community in the U.S. as Los Angeles than they are between Los Angeles and New York. Similarly, apparel workers in the Southeast may be unwilling to move to the Northeast for cultural or family reasons, despite higher pay in the Northeast.

Likewise, there may be reasons why firms do not respond to real wage differentials. For example, as mentioned earlier, proximity to designers can be important for products that are new on the market or for which demand is uncertain. These limits on firms' mobility could result in real wage differences among regions.

Thus, disequilibrium in real, quality-adjusted wages could persist because some workers and firms may be unwilling or unable to move in response to wage differentials among regions. In this case, an increase in a particular region's population of UWs would cause wages to fall more than they would in other regions that do not experience a similar influx of UWs. In such a disequilibrium world, wages (appropriately measured) could be persistently lower in regions that have large UW populations.

These observations lead to two empirically testable conjectures:

(1) Regions that receive undocumented workers from other countries should have a higher proportion of their *employment* in labor-intensive industries such as apparel than they would have if their populations included no UWs. This assumes that the initial influx of UWs is localized, but does not depend on whether migration of individuals and firms leads the system to approach equilibrium.

(2) If workers and firms are not perfectly mobile, *wage differentials* can persist, and wages will be lower in regions that receive UWs. However, if factors are perfectly mobile, there should be no significant regional differences in wage rates, and a regression that attempted to explain those differences might perform poorly.

IV. Testing the Undocumented Worker Hypothesis

The model presented in Section III can be formalized. To do so, consider the factors that determine the supply of and demand for labor in the apparel industry. The model of Section III and the information about the industry presented in Section II suggest that the number of workers available to apparel manufacturers in a particular region should rise if apparel wages rise, if the number of UWs is greater, and if a large proportion of the region's population has few alternatives to apparel industry employment. Education is used to proxy the general job skills that would allow workers a wide range of employment alternatives. Moreover, the demand for labor among apparel manufacturers would be greater if wages are lower, and if the state's production activity is more closely tied to design activity.

These factors suggest the following structural model:

$$S_L = f(UW, UNED, WAGE) \quad (1)$$

$$D_L = f(DESIGN, WAGE) \quad (2)$$

WAGE = apparel industry wage
UW = undocumented workers as a proportion of population
UNED = proportion of population without a high school education
DESIGN = importance of design to the state's apparel industry

If labor demand and supply curves are linear, demand and supply take the following form:

$$S_L = t + u\,UW + v\,UNED + w\,WAGE \quad (1')$$

$$D_L = x + y\,DESIGN + z\,WAGE \quad (2')$$

The theory suggests that u, v, w, and y should be positive, and z should be negative. The region's labor market clears when the wage is such that labor supply equals labor demand.[9] Using these conditions along with equations (1′) and (2′), one can solve for equilibrium employment, EMP, and wages:

$$EMP = [(zt - xw) + uz\,UW + vz\,UNED - yw\,DESIGN][1/(z-w)] \quad (3)$$

$$WAGE = [(x - t) - u\,UW - v\,UNED + y\,DESIGN][1/(w-z)] \quad (4)$$

To simplify the expression of the reduced form, define the following variables:

$$a = \frac{zt - xw}{z - w} \qquad e = \frac{x - t}{w - z}$$

$$b = \frac{uz}{z - w} > 0 \qquad f = -\frac{u}{w - z} < 0$$

$$c = \frac{vz}{z - w} > 0 \qquad g = -\frac{v}{w - z} < 0$$

$$d = -\frac{yw}{z - w} > 0 \qquad h = \frac{y}{w - z} > 0$$

Thus, the model is estimated in the following form:

$$EMP = a + b\,UW + c\,UNED + d\,DESIGN \quad (3')$$
$$WAGE = e + f\,UW + g\,UNED + h\,DESIGN \quad (4')$$

In the employment equation (3′), the coefficients b, c, and d are expected to be positive. That is, apparel employment should be more important in states where undocumented workers, less educated workers, and the design function, all are more prevalent.

In the wage equation (4′), f and g should be negative, since wages should be lower in regions that have greater supplies of potential apparel workers, as measured by the population's education level and undocumented workers. The coefficient h should be positive, since a more important design function would increase the demand for workers, and hence raise wages, *ceteris paribus*.

Based on the theoretical discussion in section III, the coefficient on UWs in equation (3′), b, should be positive, since an influx of UWs in a particular region should lead to a higher level of apparel employment than would exist otherwise. If factors are not perfectly mobile, there also may be systematic differences in wages, and so a higher UW population would be associated with lower wages. Thus, the coefficient f in equation (4′) might be expected to be negative. However, if factors are quite mobile, there may be little interregional wage variation, and so equation (4′) may have little predictive power.

The Data

The empirical work focuses on the states that have apparel industries of significant size, where "significant" is defined as having more than ten thousand workers in either 1975 or 1985. Table 1 lists total employment for each of the fifty states plus the District of Columbia for these two years. The states that meet this criterion comprise the nineteen most important apparel-producing states for both years, and account for about 95 percent of total U.S. apparel employment in both 1975 and 1985.

Table 2 lists each state's measure of each variable used in the regressions, along with the variables' means and standard deviations. The data sources and precise definitions of the variables are explained below.

EMP

EMP is defined as apparel industry employment, divided by the state's total payroll employment, to control for state size. These figures are computed using data for SIC 23[10] (Apparel and Other Textile Products) from the Employment and Earnings data base for 1980.[11] These data are compiled from a survey of all employers who file

Table 1

Apparel Employment by State

State	1975	Rank 1975	1985	Rank 1985
New York	185513	1	136968	1
California	85735	3	113568	2
Pennsylvania	126045	2	99608	3
North Carolina	53682	4	61582	4
New Jersey	52687	5	44899	5
Georgia	43083	7	43736	6
Texas	50553	6	42567	7
Tennessee	40246	8	39887	8
South Carolina	35288	10	38116	9
Alabama	28736	11	37488	10
Massachusetts	38683	9	35762	11
Florida	24034	12	27285	12
Mississippi	18291	13	20055	13
Virginia	15218	15	16653	14
Illinois	15842	14	11313	15
Ohio	14482	18	11258	16
Missouri	15087	16	10455	17
Maryland	14525	17	8271	18
Connecticut	11018	19	7060	19
Kentucky	3945	22	5578	20
Washington	3411	26	4715	21
Utah	4124	21	4373	22
Arizona	3778	24	4137	23
Indiana	3929	23	3798	24
Hawaii	3281	27	3496	25
Louisiana	5027	20	2885	26
Rhode Island	2284	31	2822	27
Oregon	2477	28	2632	28
New Hampshire	1523	33	2085	29
Colorado	2299	30	1976	30
Minnesota	3600	25	1701	31
Oklahoma	2476	29	1680	32
Wisconsin	471	39	1675	33
Delaware	1608	32	1130	34
Arkansas	945	34	953	35
Kansas	310	41	560	36
Michigan	731	35	557	37
West Virginia	0	50	511	38
Maine	460	40	369	39
Nebraska	681	36	340	40
Iowa	669	37	308	41
Nevada	91	43	210	42
Idaho	0	51	77	43
Vermont	648	38	73	44
District of Columbia	112	42	71	45
New Mexico	0	46	62	46
Wyoming	16	44	28	47
Alaska	13	45	21	48
Montana	0	47	16	49
South Dakota	0	49	0	50
North Dakota	0	48	0	51
Top 19/U.S.	0.9467		0.9429	

reports with the Treasury Department. Cornelius' survey (1988b) suggests that very few employers of UWs operate completely "underground," so the vast majority would be included in the survey. Employers who do not comply with labor laws, including the minimum wage and overtime provisions, may report wage and employment levels inaccurately in order to avoid detection.[12] For example, employers may report their total wage bills correctly, but under-report the number of workers if they are violating minimum wage laws or violating overtime provisions. This would lead EMP to be underestimated in states where UWs are important, which would bias the results toward finding no significant effect of UWs on apparel employment.

WAGE

The variable *WAGENOM* is defined as nominal average hourly earnings for production workers in the apparel industry (SIC 23). The wage data also are subject to potential biases from misreporting by employers who are violating minimum wage and overtime laws. In addition, nominal wages may not be strictly comparable across states because costs of living differ and workers' productivity may differ systematically by state.

An adjusted measure, *WAGEADJ*, can be constructed by dividing the average hourly wage in apparel by the average hourly wage in all manufacturing. Since states with the highest costs of living are likely to have the highest manufacturing wages, a high ratio of apparel to manufacturing wages would imply that "real" apparel wages in that state are higher than are real wages in a state with a lower ratio of apparel to manufacturing wages.

Normalizing by manufacturing wages also may adjust for productivity differences, *if* interstate differences in apparel workers' productivity are highly correlated with interstate differences in manufacturing workers' productivity. Of course, the skills required for apparel production are quite different from those required for other types of manufacturing, and the populations of workers also are quite different. Consequently, apparel workers' skill levels may not be highly correlated with the skill levels of workers in other manufacturing industries. However, the available data do not permit a better approximation of regional differences in apparel workers' skill levels.

Table 2

Summary Statistics 1980

STATE	EMP	WAGENOM	WAGEADJ	UW	UNED
Alabama	0.040	4.234	0.652	0.007	0.250
California	0.011	4.833	0.627	0.217	0.142
Connecticut	0.008	4.575	0.646	0.006	0.163
Florida	0.010	4.294	0.718	0.044	0.176
Georgia	0.033	4.032	0.699	0.011	0.237
Illinois	0.005	4.599	0.573	0.061	0.185
Maryland	0.009	5.002	0.658	0.040	0.165
Massachusetts	0.015	4.960	0.762	0.013	0.144
Mississippi	0.049	3.927	0.722	0.010	0.270
Missouri	0.016	N.A.	N.A.	0.007	0.217
New Jersey	0.018	5.035	0.689	0.028	0.177
New York	0.023	5.313	0.740	0.069	0.183
North Carolina	0.037	4.102	0.763	0.008	0.246
Ohio	0.004	5.113	0.596	0.005	0.154
Pennsylvania	0.026	4.773	0.629	0.003	0.184
South Carolina	0.039	4.132	0.739	0.007	0.257
Tennessee	0.040	4.322	0.710	0.007	0.277
Texas	0.013	4.080	0.571	0.065	0.207
Virginia	0.016	4.119	0.663	0.033	0.216
Mean	0.022	4.525	0.675	0.034	0.203
Std. Dev.	0.014	0.427	0.059	0.048	0.042

UW

In principle, constructing the *UW* variable is straightforward. To measure the importance of UWs in the labor force, one can divide the number of UWs by the working population. Here, the working population of a given state is defined as the number of respondents to the 1980 census who listed that state as their place of work.

However, reliable data on the presence of UWs is, for obvious reasons, both scarce and based on incomplete information. For example, the 1980 Census included detailed questions about nationality, birthplace, and language use. It did not include questions specifically about residency status, although several researchers (for example, Hill and Pearce, 1987; McCarthy and Valdez, 1986; Pearce and Gunther, 1985) have argued that the number of UWs in a given locality is highly correlated with the number of aliens who speak a language other than English at home. Defining UWs in this way has obvious problems, since many legal immigrants speak their native language at home.

More sophisticated estimates of the number of undocumented aliens residing in each state were calculated by two staff members at the Census Department, Passel and Woodrow (1984). They used 1980 Census data on the total alien population and INS data on the legally resident alien population, and estimated the number of undocumented aliens residing in each state by calculating the residual and making adjustments to account for known biases in the data. *UW* is the number of undocumented residents in each state, as estimated by Passel and Woodrow, divided by the state's total working population.

Even this measure has clear limitations. For one thing, it provides estimates of the stock of UWs in the U.S. during 1980, but does not permit analysis of the changes in that stock over time.[13] A more fundamental problem is that it relies on official data regarding a segment of the population with a strong incentive to hide its existence. Nevertheless, these estimates do represent a serious attempt to construct consistent data across states, using all available information regarding the presence of undocumented aliens.

UNED

The apparel industry, which depends heavily on workers with few employment alternatives, would be expected to be more important in states with relatively uneducated populations. *UNED* is defined as the proportion of the state's population without a high school education. Presumably, a higher value of *UNED* indicates that a relatively large proportion of the state's workers have few employment options.

DESIGN

The design variable is an attempt to account for differences in the fashion content of apparel production in various states by measuring the importance of the design community to the state's apparel industry. There are two alternative specifications of the design dummy. In one, separate dummies represent New York (*DESIGNNY*) and California (*DESIGNCA*). In the alternative specification, *DESIGND* is a dummy variable which equals 1 for New York and California, and 0 for all other states.[14]

Employment Regressions

Results of employment regressions using various combinations of explanatory variables are listed in the top panel of Table 3. The *UW* variable is expected to have a positive coefficient in all of the employment regressions, but the coefficients are negative when the regressions include the design variable. Moreover, the statistical significance is higher in the regressions that have negative coefficients. Thus, the presence of undocumented workers does not explain the variation in the ratio of apparel to manufacturing employment.

Table 3

Regression Results

(absolute values of T-statistics in parentheses)

			DESIGN		
Intercept	UW	UNED	CA	NY	$\bar{R}^2$
Dependent Variable: EMP					
−0.036	0.005	0.283			0.715
(3.577)	(0.115)	(6.227)			
−0.034	−0.084	0.281		0.018	0.772
(3.828)	(1.586)	(6.924)		(2.245)	
−0.029	−0.215	0.271	0.049	0.018	0.818
(3.548)	(2.814)	(7.410)	(3.081)	(2.572)	
Dependent Variable: WAGENOM					
6.174	−0.833	−8.025			0.544
(15.559)	(0.528)	(4.4570)			
6.250	−5.357	−8.112		0.907	0.727
(20.318)	(2.936)	(5.827)		(3.332)	
6.241	−5.131	−8.096	0.855	0.907	0.706
(18.823)	(1.661)	(5.562)	(1.350)	(3.207)	
Dependent Variable: WAGEADJ					
0.611	−0.221	0.355			0.026
(7.591)	(0.692)	(0.972)			
0.622	−0.870	0.343		0.130	0.187
(8.431)	(1.986)	(1.026)		(1.989)	
0.636	−1.227	0.317	0.213	0.131	0.149
(8.102)	(1.680)	(0.919)	(1.423)	(1.964)	

Failure to confirm the hypothesis could be because the presence of UWs does not have a significant effect on the supply of labor to apparel manufacturers, or because the *UW* variable is mismeasured. Alternatively, it could be because the employment variable does not capture the importance of apparel employment very well. As discussed earlier, if firms that do not comply with minimum wage and overtime laws under-report employment to hide their activities, estimated coefficients would be less likely to show a positive relationship between UWs and apparel employment. However, the fact that the education and design variables do have the expected signs suggests that EMP provides some information about the importance of the apparel industry.

One way to get around these problems would be to run regressions using rates of change in apparel employment

and UWs rather than proportions of the total populations at a single point in time. However, the data on UWs exist only for the census year 1980. In principle, data on other demographic variables, such as the Hispanic population, could be used to proxy for UWs.[15] However, only four of the states included in the empirical work had data on both wages and Hispanic population for 1975, so regressions using rates of change for the UW proxy include little information. Nevertheless, it is worth noting that among those four states, between 1975 and 1985 Florida and California had faster rates of growth in Hispanic population (79 and 63 percent, respectively) and growing apparel employment (16 and 17 percent). In contrast, Illinois and New York had slower rates of growth in Hispanic population (58 and 46 percent) and shrinking apparel employment (at rates of 38 and 25 percent, respectively). Although these figures are inadequate to substantiate the claim that the presence of UWs affects the apparel industry's health, they do support the possibility that the failure to confirm that hypothesis may be due to measurement problems rather than an inadequate theory.

Wage Regressions

The results of regressions using nominal apparel wages and the ratio of apparel to manufacturing wages are listed in the lower two panels of Table 3. The coefficients on UW consistently are negative in all six regressions, as the theory predicts, although the statistical significance of the coefficients varies among the regressions. The design dummies also have the expected signs but varying levels of statistical significance.

The performance of the education variable depends crucially on the specification. In the nominal wage equations, it is negative, as expected, and highly significant. However, in the adjusted wage equations it is positive but insignificant.

Overall, the wage equations suggest that there are significant differences in real, quality-adjusted wages among regions which are related systematically to the presence of UWs. Thus, immobilities of firms and/or workers appear to be significant in preventing labor markets from reaching interregional equilibrium.

Summary of Empirical Work

The effect of UWs on the apparel industry is unclear. Although the data provide little support for the contention that the presence of UWs stimulates employment (and, presumably, production) in the apparel industry, the evidence also is not strong enough to dismiss the possibility. Nevertheless, other factors, such as the employment alternatives of the legal population (including legal aliens) and the nature of the region's apparel industry, seem to be more important factors.

The regressions do suggest that the presence of UWs may be associated with lower wages, although UWs do not appear to be the most important factor affecting apparel wages. In all of the wage regressions, the coefficient on UWs is of the expected sign and is at least marginally significant. Thus, factor immobilities appear to prevent an interregional labor market equilibrium in which wages (however measured) are equalized across states.

V. Conclusions and Implications

This paper started by asking whether the new immigration law, IRCA, would stifle growth in California's apparel industry. The analysis presented here suggests that the impact of IRCA on the industry should be modest, for two reasons.

First, it is unlikely that the sanctions the law imposes on employers of undocumented aliens will effectively reduce employment of undocumented workers. Employers can comply with the law simply by requiring workers to provide documentation of their work status. Employers are not required to verify those documents, and are specifically forbidden from discriminating on the basis of national origin or citizenship status. As a result, employers are likely to continue to provide jobs to UWs. As long as jobs exist on this side of the border, there is an incentive for illegal immigration, and UWs likely will continue to comprise an important share of the U.S. labor supply.

Second, even if IRCA does reduce the supply of undocumented workers in the United States, such a reduction probably would not have a major effect on labor markets in the apparel industry. The empirical relationship between undocumented workers and employment is inconclusive. Data problems may be partially responsible, but the contrast between the inconclusiveness of the undocumented worker results and the conclusiveness of the results regarding the education and design variables suggests that the presence of undocumented workers probably was not the most important factor determining regional employment patterns within the apparel industry. The empirical work does not address the possibility that the presence of immi-

grants (including documented workers) is an important determinant of apparel industry health, but previous studies (such as Waldinger 1986) suggest that this may be the case.

Since undocumented workers apparently have not been the most important cause of the observed rapid growth in California's apparel industry during recent years, even if IRCA does effectively reduce the supply of undocumented workers to California's apparel industry, California should continue to be an attractive location for U.S. apparel manufacturers. Some firms may encounter problems finding sufficient labor at prevailing wages, and some marginally profitable firms may be driven out of business. Nevertheless, California's growing role as a design center, and its large populations of Hispanic and Asian immigrants as well, suggest that California's apparel industry could survive a reduction in the number of undocumented workers available to it.

ENDNOTES

1. In 1985, 74 percent of California's apparel workers were in Los Angeles County alone.

2. Although it is commonly believed that agriculture is the most important employer of undocumented workers, Cornelius (1988b) estimates that less than 15 percent of undocumented workers currently work in agriculture. Nonagricultural industries that account for large shares of undocumented workers include food processing, hotels, and manufacturing (including apparel).

3. UWs who are found to be carrying false documents are subject to deportation, but as the experience of the past several years indicates, the threat of deportation does not deter most would-be UWs.

4. The four-firm concentration ratio, defined as the percentage of the market covered by the industry's four largest firms, is a standard measure of the concentration and, by implication, the competitiveness of an industry.

5. In 1985, these eight categories accounted for 48 percent of U.S. apparel employment.

6. By way of comparison, among all manufacturing industries, labor compensation accounts for only 41 percent of value added and 17 percent of the value of shipments.

7. Specific estimates differ, however. Whereas Cline (1987) calculated that the import penetration ratio for apparel rose from 4 percent during the 1961–65 period to 31 percent in 1986, the ILGWU (1988) calculates that it rose from 9 percent in 1967 to 58 percent in 1987.

8. If agents were motivated only by economic incentives, the initial influx of immigrants would be expected to be spread evenly among the regions. Nevertheless, available evidence overwhelmingly supports the contention that immigrants arrive in only a few regions, due to cultural, language, social, and geographic factors.

9. This market clearing simply implies that a region's wages are determined by that region's labor demand and labor supply schedules, and should not be confused with the interregional labor market *equilibrium* which implies equal real wages across regions.

10. These data include the three-digit SIC category 239, which includes nonapparel textile items such as carpets, drapes, and automobile upholstery.

11. More recent employment data are available, but 1980 data are used because 1980 is the only year for which data are available on UWs.

12. Researchers disagree about whether these problems are important. According to Maram's 1980 study of Los Angeles apparel workers, 39 percent of the UWs reported making less than the minimum wage, and 82 percent reported violations of overtime regulations. In sharp contrast, Cornelius' broader 1984 worker survey (reported in (1988b)) reveals that only 2 of 177 firms paid their workers the minimum wage, and "virtually all workers who worked overtime were compensated for it."

13. The 1980 Census was the first that was designed with the problem of undercounting minority and undocumented residents in mind. However, most observers agree that the stock of UWs has been growing more or less continuously at least for the past fifteen years.

14. A third alternative would be to construct a variable that reflects the proportion of apparel employment in nonproduction jobs. However, because there are nonproduction jobs other than design, and because the ratio of nonproduction to production jobs varies with the type of apparel produced, this variable does not reflect accurately the relative importance of the design function across states.

15. The Hispanic population obviously is a very crude proxy for the population of UWs, both because many Hispanics are in the U.S. legally and because many UWs are not Hispanic.

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