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NOTES

1. 1978 EEOC REPORT, p. XI.
2. Charles Gregory and Harold Katz, Labor and the Law, p.548.
3. U.S. General Accounting Office, "EEOC Has Made Limited Progress in Eliminating Employment Discrimination", 1976.
4. U.S. General Accounting Office, "Further Improvements Needed in EEOC Enforcement Activities", April 19, 1981.
5. U.S. General Accounting Office, op. cit., 1976.
5. Future work will examine Title VII litigation in greater detail.
7. U.S. Bureau of Labor Statistics, Handbook of Labor Statistics, 1980, Table 69, p.140.
Since these statistics on education refer to all employees, they may possibly obscure an influx of the highly educated into manufacturing.
8. The positive sign on the change on proportion blue-collar here and in table 5.13 is puzzling.
9. Arthur Anderson and Co., Cost of Government Regulation Study for the Business Roundtable: A Study of the Direct Incremental Cost Incurred by 48 Companies in Complying with the Regulations of Six Federal Agencies in 1977, 1979.
10. Letter from Kevin S. McGuiness, Equal Employment Advisory

Council, dated July 21, 1981.

11. Congressional Research Service, "Costs of Affirmative Action Programs in Employment", memorandum from Paul Downing, dated April 2, 1976.
12. Letter from Brenda McChristian-Brooks, National Association of Manufacturers, to Staff Director, Senate Committee on Labor and Human Resources, dated December 2, 1981.
13. "Survey of Federal Contractor Experiences with SFCCP", unpublished summary of questionnaire results, 1981.
14. Ann Howard and Douglas Bray, "Today's Young Managers: They Can Do It, But Will They?" Harvard Magazine, (5:4), Summer 1981, pp.23-28.
15. Harry Katz, Thomas Kochan, and Kenneth Gobeille, "Industrial Relations Performance, Economic Performance, and the Effects of Quality of Working Life Efforts: An Inter-Plant Analysis", unpublished paper, M.I.T., 1982.

Table 5.1: The Influx of Minorities and Women into Manufacturing.

	1960	1966	1970	1978
% Non-White Male	.06	.08	.09	.11
% Female	.24	.26	.28	.31

Source: 1960 and 1970 Census of Population.
1966 and 1978 EEOC Reports.

Note: The statistics are derived from a sample of 222 years by industry cells with data for both 1966 and 1977 from the EEOC Reports. Asians and Native Americans are grouped with whites.

Table 5.2: Change in the Demographic Composition of the Work Force in Manufacturing, 1966 to 1978.

	1966	1978
Total Employment	12,504,627	13,821,226
% Non-White Male	.077	.109
% White Female	.240	.256
% Non-White Female	.023	.059
% Managerial and Professional—Total	.113	.152
% Non-White Male	.008	.036
% White Female	.047	.095
% Non-White Female	.001	.007
% Clerical, Technical Sales—Total	.165	.161
% Non-White Male	.014	.032
% White Female	.480	.581
% Non-White Female	.006	.044
% Blue Collar—Total	.722	.687
% Non-White Male	.100	.141
% White Female	.224	.235
% Non-White Female	.028	.070

Note: The statistics are derived from a sample of 555 state by industry cells with data for both 1966 and 1977 from the EEOC Reports. Asians and Native Americans are grouped with whites.

Table 5.3: The Impact of Title VII Litigation and the Contract Compliance Program on Workplace Demographics.

Equation	Occupation	Dependent Variable	Title VII	PC74*	Lagged Dependent	Intercept	R ²	MSE
1	All	Black/Total	.277 (.083)	.009 (.011)	.933 (.030)	.035 (.009)	.65	.0042
2	All	Black Male/Total Male	.250 (.077)	.004 (.010)	.869 (.027)	.033 (.008)	.68	.0036
3	All	Black Female/Total Female	.729 (.121)	.041 (.017)	.741 (.047)	.058 (.013)	.36	.0091
4	White-collar	Black/Total	.136 (.035)	.010 (.005)	1.39 (.110)	.019 (.004)	.26	.0008
5	White-collar	Black Male/Total Male	.111 (.028)	.007 (.004)	1.29 (.09)	.016 (.003)	.32	.0005
6	White-collar	Black Female/Total Female	.270 (.052)	.023 (.007)	.898 (.116)	.030 (.006)	.17	.0017
7	Professional & Managerial	Black/Total	.158 (.026)	.00008 (.0036)	.943 (.124)	.023 (.003)	.17	.0004
8	Professional & Managerial	Black Male/Total Male	.144 (.025)	.0013 (.0034)	1.08 (.13)	.019 (.003)	.17	.0004
9	Professional & Managerial	Black Female/Total Female	.315 (.051)	.020 (.007)	-.001 (.035)	.030 (.005)	.09	.0017
10	Blue-collar	Black/Total	.312 (.100)	.010 (.014)	.930 (.031)	.043 (.011)	.65	.0062

Table 5.3: The Impact of Title VII Litigation and the Contract Compliance Program on Workplace Demographics.

Equation	Occupation	Dependent Variable	Title VII	PC74*	Lagged Dependent	Intercept	R ²	MSE
11	Blue-collar	Black Male/Total Male	.267 (.099)	.0027 (.014)	.857 (.028)	.045 (.011)	.65	.0060
12	Blue-collar	Black Female/Total Female	.857 (.156)	.062 (.022)	.658 (.043)	.068 (.017)	.35	.0151

*PC74 is the proportion of employment in a state by industry cell in establishments that were federal contractors in 1974.

Table 5.4: Estimated Effect of the Number of Title VII Class Action Suits Decided in the Federal District Courts on the 1978 Proportion of Employment by Occupation, 1966-1978.

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	MEAN		% Δ Change 1966-78	% Δ Change in proportion due to a change in number of cases per firm	Change in standard deviation of proportion due to a standard deviation change in number of cases
	1966	1978			
1. Black Proportion of All Employment	.081	.120	33	3.4**	.088
2. Black Male Proportion of Male Employment	.085	.112	32	2.9**	.083
3. Black Female Proportion of Female Employment	.056	.135	141	13.0**	.213
4. Black Proportion of All White- Collar Employment	.011	.042	282	12.4**	.150
5. Black Male Proportion of Male White- Collar Employment	.010	.034	240	11.0**	.148

Table 5.4: Estimated Effect of the Number of Title VII Class Action Suits Decided in the Federal District Courts on the 1978 Proportion of Employment by Occupation, 1966-1978.

	MEAN		% Δ Change 1966-78	% Δ Change in proportion due to a change in number of cases per firm	Change in standard deviation of proportion due to a standard deviation change in number of cases
	1966	1978			
6. Black Female Proportion of Female White- Collar Employment	.012	.060	400	22.5**	.210
7. Black Proportion of All Professional and Managerial Employment	.005	.029	480	31.6**	.246
8. Black Male Proportion of Male Professional and Managerial Employment	.005	.026	420	28.8**	.238
9. Black Female Proportion of Female Professional and Managerial Employment	.011	.048	336	28.6**	.258

Table 5.4: Estimated Effect of the Number of Title VII Class Action Suits Decided in the Federal District Courts on the 1978 Proportion of Employment by Occupation, 1966-1978.

	MEAN		% Δ Change 1966-78	% Δ Change in proportion due to a change in number of cases per firm	Change in standard deviation of proportion due to a standard deviation change in number of cases
	1966	1978			
10. Black Proportion of All Blue- Collar Employment	.104	.150	44	3.0**	.082
11. Black Male Proportion of Male Blue- Collar Employment	.109	.144	32	2.4**	.072
12. Black Female Proportion of Female Blue- Collar Employment	.082	.174	112	10.5**	.196

Note: Estimated from regressions for 555 States by industry cells in manufacturing, with 1966 proportion of blacks in relevant category, and cell proportion of employment in federal contractor establishments held fixed.

** Significant at 1% level.

Table 5.5: Cross-Section Production Functions, 1966 & 1977. Dependent Variable. Value Added.

Equation Variable	1. 1966	2. 1977
Labor	.65 (.030)	.71 (.038)
Percent Non-White Male	-.21 (.088)	-.20 (.106)
Percent Female	-.16 (.108)	.007 (.128)
Capital	.38 (.025)	.32 (.028)
Percent Blue-Collar	-.50 (.140)	-.35 (.164)
Intercept	1.85 (.112)	1.99 (.146)
Industry and Regional Dummies	Yes	Yes
N	513	536
R ²	.978	.957
S.E.E.	.024	.040
Productivity Ratios		
C ₁ : Non-white to white male	.68	.71
C ₂ : Female to white male	.75	1.01

Note: Each equation includes 19 industry dummies and 3 regional dummies. Standard errors in parentheses.

Notes: Estimated from regressions for 333 states by industry cells in manufacturing, with 1966 proportion of blacks in relevant category, and cell proportion of employment in federal contractor establishments held fixed. ** Significant at 1% level.

Table 5.6: Confidence Intervals for Estimated Ratios of Marginal Products.

1966

$COR (B_{LH}, B_{RM}) = -.012$

	-2σ	0	$+2\sigma$
ΔB_{RM}			
B_{RM}	-.386	-.21	-.034
B_{LH}	.65	.65	.65
C	.41	.68	.95

$COR (B_{LH}, B_{PF}) = -.273$

	-2σ	0	$+2\sigma$
ΔB_{PF}			
B_{PF}	-.376	-.16	.056
B_{LH}	.67	.65	.63
C	.44	.75	.91

1977

$COR (B_{LH}, B_{RM}) = -.246$

	-2σ	0	$+2\sigma$
ΔB_{RM}			
B_{RM}	-.41	-.20	.01
B_{LH}	.71	.71	.71
C	.42	.71	1.01

$COR (B_{LH}, B_{PF}) = -.247$

	-2σ	0	$+2\sigma$
ΔB_{PF}			
B_{PF}	-.25	.007	.26
B_{LH}	.73	.71	.69
C	.66	1.01	1.38

Note: LH = Total labor input
 RM = Percent non-white male
 PF = Percent female

Table 5.7: Means and Standard Deviations of Variables Used in Trans-log Estimates.

Variable	Mean		Standard-deviation	
	1966	1977	1966	1977
White-Male labor (WM)	4.33	4.12	.93	.88
Non-White Male labor (RM)	1.58	2.00	1.68	1.43
Female labor (F)	3.17	3.36	1.23	.97
WM ²	19.58	17.75	8.21	7.39
RM ²	5.32	6.05	5.61	5.44
F ²	11.54	12.22	7.91	6.63
WM × RM	7.51	8.85	8.45	7.19
WM × F	14.26	14.28	7.27	6.17
RM × F	5.60	7.21	6.24	5.83
Capital	6.33	6.51	1.26	1.18
Capital ²	41.65	43.73	16.86	16.18
Percent Blue Collar	.766	.732	.096	.097
Value-added	6.90	7.06	1.03	.948
N	505		533	

WM = White-Male labor input
 RM = Non-White Male labor input
 F = Female labor input

Table 5.8: Trans-log Production Functions with Capital \times Industry Interactions, 1966-1977. Dependent Variable: Value-added.

Equation Variable	1. 1966		2. 1977	
White-Male labor (WM)	.26	(.12)	.54	(.14)
Non-White Male labor (RM)	.05	(.03)	.13	(.04)
Female labor (F)	.32	(.06)	.33	(.09)
WM^2	.057	(.015)	.040	(.019)
RM^2	.00085	(.0023)	.011	(.004)
F^2	.041	(.009)	.072	(.017)
$WM \times RM$	-.0026	(.007)	-.010	(.012)
$WM \times F$	-.093	(.018)	-.128	(.028)
$RM \times F$	-.0043	(.004)	-.025	(.009)
Capital	.56	(.19)	-.11	(.22)
$Capital^2$	-.005	(.01)	.04	(.02)
Percent Blue Collar	-.39	(.14)	-.38	(.17)
Intercept	1.38	(.60)	3.13	(.79)
Regional Dummies	Yes		Yes	
Industry Dummies	Yes		Yes	
Capital \times Industry Dummies	Yes		Yes	
N	505		533	
R^2	.98		.96	
S.E.E.	.022		.036	
Productivity Ratios				
C_1 : Non-white to white male	.49		.62	
C_2 : Female to white male	.92		1.10	
Elasticities of Substitution				
σ_1 : Non-white males to white males	1.11		.69	
σ_2 : Females to white males	.65		.61	

Table 5.9: Years of Schooling Completed by Race, Sex, and Occupation.

<u>Demographic Group</u>	<u>Occupation</u>	<u>1966</u>	<u>1977</u>
Females	All	12.3	12.6
Males	All	12.3	12.6
Females	Managers & Professionals	15.3	16.0
Males	Managers & Professionals	14.3	16.0
Females	Blue-collar	10.5	12.0
Males	Blue-collar	11.1	12.2
Non-White Males	All	10.0	12.1
White Males	All	12.3	12.7
Non-White Males	Managers Professionals	15.7	16.1*
White Males	Managers Professionals	14.3	16.1
Non-White Males	Blue-collar	9.4	11.9*
White Males	Blue-collar	11.3	12.3

*1976 data.

Table 5.10: Pooled Time-Series Cross-Section Production Function
1966 and 1977. Dependent Variable: Change in Value
Added.

Labor, 1966	.92	(.048)
Percent Non-White Male, 1966	-.44	(.19)
Percent Female, 1966	-.25	(.16)
Capital, 1966	.14	(.04)
Percent Blue Collar, 1966	-.65	(.24)
Labor, 1977	.82	(.05)
Percent Non-White Male, 1977	-.33	(.18)
Percent Female, 1977	-.12	(.17)
Capital, 1977	.22	(.04)
Percent Blue Collar, 1977	-.50	(.23)
Intercept	.21	(.15)
Industry and Regional Dummies	Yes	
N	445	
R ²	.77	
S.E.E.	.028	
C ₁ , 1966	.52	
C ₂ , 1966	.73	
C ₁ , 1977	.60	
C ₂ , 1977	.85	

Note: Beta reported for 1977, Beta for 1966, from equation of
form:

$$Y_{77} - Y_{66} = B_{77}X_{77} - B_{66}X_{66}$$

Table 5.11: Pooled Cross-Section with Restricted Unchanging Coefficients.
 Dependent Variable: Change in Value-Added.

Δ Labor	.87 (.04)	
Δ Percent Non-White Male	-.36 (.17)	
Δ Percent Female	-.22 (.15)	
Δ Capital	.18 (.04)	
Δ Percent Blue Collar	.57 (.22)	
Intercept	.22 (.03)	
Industry and Regional Dummies	Yes	
N	445	
R ²	.77	
S.E.E.	.028	
C ₁	.58 (.17)	
C ₂	.75 (.17)	

Note: Data reported for 1977. Data for 1966 from equation of form: $Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 D_{it} + \epsilon_{it}$

Table 5.12: 1977 Cross-Section with Changes in Demographics.
 Dependent Variable: Value Added 1977.

Δ Percent Non-White Male 1966-1977	.06 (.21)
Δ Percent Female 1966-1977	.03 (.18)
Labor 1977	.66 (.04)
Percent Non-White Male 1977	-.15 (.12)
Percent Female 1977	-.18 (.16)
Capital 1977	.36 (.03)
Percent Blue Collar 1977	-.53 (.18)
Intercept	2.10 (.16)
Industry and Regional Dummies	Yes
N	445
R ²	.961
S.E.E.	.036

Table 5.13: The Impact of Government Policy On Productivity, Pooled Cross-Section Production Functions, 1966 & 1977.
 Dependent Variable: Change in Value-Added.

Percent of Employment in Federal Contractor Establishments	.00095 (.00051)
Title VII Litigation per Establishment, 1966-1977	-.13 (1.01)
Δ Labor	.87 (0.04)
Δ Percent Non-white Male	-.34 (.17)
Δ Percent Female	-.22 (.15)
Δ Capital	.18 (.04)
Δ Percent Blue-Collar	.53 (.22)
Intercept	.16 (.05)
Industry and Region Dummies	yes
N	445
R ²	.77
S.E.E	.028

Chapter 6: Equal Employment Opportunity and Trade Unions

How harmful or helpful have unions been to the employment interests of minorities and females? In the political sphere, the AFL-CIO has often joined with blacks and females in a familiar coalition. In the workplace, these groups have not been able to forge a unity of interest. Open conflicts, including litigation and demonstrations, have often emerged at the local level.

This chapter addresses three related issues. First, what impact have unions had on the employment of minorities and females. To determine whether minority and female employment has been helped or hindered by unionism, the change during the late 1970's in the employment of male and female hispanics, blacks, whites and asians is compared across union and non-union plants.

Second, how have unions mediated affirmative action pressure? The success of federal policies to improve employment opportunities for minorities and females depends not only on the response of employers, as this problem has usually been modeled, but also on that of unions. The study of the impact of federal anti-discrimination and affirmative action regulation is still young, and has yet to seriously address the role played by unions in mediating regulatory pressure. Union seniority provisions came into sharp conflict with equal employment opportunity policy during the stagnant seventies. While this provoked many anecdotes and law cases, the actual impact on employment of this

conflict involving federal, corporate, and union policy has never been studied with the attention it deserves.

Third, why has unionization increased so dramatically among blacks at the same time that private sector unionism is in decline? The study design here isolates from the confounding effects of regional, industry or establishment growth, directly controls for affirmative action pressure, and attempts to separate individual union, establishment and demographic group effects in explaining this growth.

This study analyzes a new and detailed longitudinal set of data on 1273 California manufacturing establishments between 1974 and 1980. The ethnic diversity of this state provides informative contrasts across hispanics, asians, blacks and whites. The analysis proceeds in five stages. First, we establish the expected roles played by unions, firms, demographic groups, and the government within the framework of a model of the supply and demand for union and non-union labor. Second, we estimate the mean difference in demographic changes between union and non-union plants using both T-tests and weighted log-odds regressions. Third, to isolate a general proclivity toward unionism among minorities or females from the behavior of unions themselves, we exploit the distribution of unions across establishments and industries to estimate differences across individual unions. Fourth, to test for spillover and omitted variable bias, employment patterns among white-collar workers are also studied. The interaction of affirmative action with unionism is analyzed

In the fifth section, and our conclusions are summarized in the final section.

The goal here is to open a new level of empirical research on the question of the impact of unionization on minority and female employment.

Section 1. Background

Why should the unionized sector in manufacturing be any different in its employment of hispanics, blacks, asians, and women? In broadest terms, there are four major actors whose policies and preferences are of immediate concern. These are the unions, the companies, the demographic groups, and the federal government. In this section, we shall first place each of these actors within a model of minority and female employment, and then proceed to discuss their expected roles.

The demand for labor may usefully be thought of as:

$$L_{ij} = f(U_i, S_j, F_{ij}, D_{ij}, W_j) \quad (1)$$

where

- L_{ij} = demand for labor of demographic group j by firm i
- U = unionization
- S = skill requirements
- F = federal anti-discrimination and affirmative action pressure
- D = firm tastes for discrimination
- W = wage

The supply of labor is given by:

$$L_{ij}^S = F(G_{ij}, S_j, T_{ij}, W_j) \quad (2)$$

where

G = geographic commuting cost

S = skill availability

T = average group preferences

This model is presented chiefly to structure the following discussion of expected impact and paths. We shall return to it again at the end of this section to set up empirical tests that isolate union, demographic group, establishment, and government effects.

The Role of Unions

The first impulse is to ascribe differences between the union and non-union sectors to the policies and practices of the unions themselves. The most obvious way unions can affect the demographic composition of the workforce is by directly controlling hiring. The key distinction here is between craft and industrial unions, or more precisely and tautologically, between referral and non-referral unions. Under Landrum-Griffen, construction unions have what is in practice a closed shop with the union often controlling who may be hired. The broad scope this gives to discrimination is revealed in studies which show evidence of discrimination against blacks in the unionized construc-

tion trades, but not in other unionized occupations. As the history of the construction, longshoring, maritime and printing trades shows, the legal restrictions on unions' control of hiring are not always honored in practice. In California manufacturing, typically thought of as non-referral, it is not uncommon to find modified referral clauses in collectively bargained contracts. Typically, the company agrees to notify the union first when a job opens. Of course, these clauses are carefully worded to comply both with the closed-shop prohibition and with Title VII, but there is no law against discriminating in favor of friends of union members per se. The question of referral practices in the unions is an empirical one that cannot be resolved by reference to contractual provisions or labor law. While the substantial differences between construction craft unions and others is universally acknowledged, there is no evidence that rules out the power of unions in the manufacturing sector to influence the hiring decisions of employers.

If, as seems reasonable, we grant the unions in manufacturing some influence, then their attitudes become important, and these attitudes are strongly shaped by circumstances. First it should be noted that minorities and females can undercut the union grievance system by taking their case directly to the courts or the EEOC, as established in the case of *Alexander v. Gardner-Denver Company*, and this internal political consideration may influence unions' attitudes. More importantly, to bargain effectively, a union must organize enough of its industry to reduce the elasticity of demand for union labor. Unions faced

with an industry employing substantial numbers of blacks or females have typically found it in their hearts to take a more liberal stand toward the employment and organizing of such potential competitors. (Ashenfelter, Fogel, Marshall). But these cross-industry patterns cannot easily explain the relative prevalence of blacks, for example, in union plants within an industry. Differences are relative, so an egalitarian union may appear angelic next to a discriminating non-union sector, but the historical record shows unions following, and forced to adapt to the relative lack of discrimination in the non-union sector. (Marshall, Fogel).

Seniority is one of the ruling principles of industrial unionism. It is well known that quit rates are much lower in the union sector, in response to strong seniority benefits, high compensation, and the union voice mechanism. (Block, Freeman). This in itself will tend to freeze the workforce and slow the entry of any previously discriminated against group, a point we shall return to later. So even in the absence of current discrimination, we would expect minorities and females to make slower progress in increasing their share of employment in the union sector.

Since 1965 the courts have often struggled with the problem raised by facially neutral seniority systems that lock in the effects of past discrimination. The conflict between union seniority clauses and federal anti-discrimination and affirmative action policy has been painfully exposed by recent recessions

when last-in first-out union seniority clauses have helped undo years of federal pressure to increase minority and female employment. The problem has been exacerbated by unions' tendency to promote layoffs. (Medoff). The law in this area is still developing, and was undergoing significant changes during the period studied. Before 1977 the lower federal courts, most notably in the case of Quarles v. Phillip-Morris, had judged seniority systems that perpetuated the effects of past discrimination to be illegal, and these early decisions may have influenced some of the companies studied here. The blunt edge of these court decisions gave rise in a number of cases to difficult negotiations to reassign seniority rights and redraw seniority units. (Ichniowski). In 1977, these lower court decisions were overruled by the Supreme Court decision in the Teamsters case. This ruling gave greater weight to Section 703(h) of the Civil Rights Act of 1964, largely insulating seniority units that are created and administered in a non-discriminatory fashion from charges of locking in pre-1965 discrimination. An employer who might be successfully sued under Title VII for his low representation of females or minorities is largely immunized from such suit if this underrepresentation is due to the functioning of a seniority system that has been non-discriminatory in intent and administration since 1965.

We would expect then that during the late seventies minorities and females would make smaller employment gains in the union sector, both because union seniority systems reduce workforce turnover, and because such systems tend to insulate the firm from

Title VII damages.

Unions' attitudes toward minorities and females may also be influenced by an egalitarian ideology that is sympathetic to the poor and the weak, and by the contingencies of liberal coalition politics at the national level. But it is a long road down to the locals, which respond more closely to their own local problems than to the noble words of their national leaders. (Marshall).

The Role of the Federal Government

The protection afforded unionized plants under Section 703(h) of Title VII has already been noted. The other arm of federal policy in this arena is affirmative action regulation under Executive Order 11246 and its successors. This pressure is directed against federal contractors, not directly against unions in the manufacturing sector. The legal limits of such compulsion are largely circumscribed by reference to Title VII, so the same judicial interpretations that immunize unionized establishments under Title VII tend also to insulate them from affirmative action pressure.

Unionized establishments are more likely than their non-union counterparts to be federal contractors in the study sample. A more important finding is that among contractors, union plants are not any more likely to undergo a compliance review, the chief affirmative action enforcement procedure. While there are major cases in the past of the government setting out after construc-

tion unions, most notably in the Philadelphia Plan, the government appears to be largely neutral between the union and non-union sectors of manufacturing.

The Employers

There seems little reason to expect unionized employers to act differently, ceteris paribus, in their employment of minorities and females for reasons other than the indirect influence of the unions or the government mentioned above, or the direct impact of the union wage effect. Unions have been estimated to raise wages by 15 percent in the manufacturing sector, (Lewis). This will tend to reduce employment in the unionized sector and may work against minorities or females in hiring if they are less skilled. But it is not clear that these groups are any less productive than whites in ways that are material to manufacturing. (Leonard, 1983a). In addition, unionized plants tend to be larger, and are more likely to be part of a multi-plant corporation. These two factors, along with the fact of unionization itself, contribute to more formalized personnel procedures that may reduce discrimination.

Group Preferences

The relative employment of blacks may be greater in the union sector not because of the preferences of the unions, the government, or the employers, but rather because of the preferences of blacks themselves. In a number of studies during the 1970's, blacks are reported to have much stronger preferences

than whites for unions. (Farber and Saks, Farber, Freeman and Medoff, Kochan). The evidence is less clear on preferences among women and hispanics. This preference is usually attributed to the relative freedom from discrimination afforded blacks and others by unions' egalitarian policies. This explanation must be tempered by the abundant litigation charging unions with maintaining discriminatory seniority units, although it cannot be denied that unions tend to protect workers from arbitrary treatment at the hands of the employer. Both the NLRB and the courts have upheld the responsibility of unions as exclusive bargaining agents to fairly represent minority and female employees. The relative egalitarianism of the union sector has probably diminished over time as conditions have improved in the non-union sector. Recent studies of racial wage discrimination in CPS samples find that the difference between the union and non-union sector has narrowed, largely because of the overriding equalizing force of Title VII. (Freeman and Medoff, Leonard).

Of greater importance perhaps in explaining black preferences is the union wage effect. In 1967, this was greater for black males and for white females than for white males, although black females lagged behind the others. (Ashenfelter). At this time, black males and white females had more to gain from working in a union plant. The higher return for blacks among experienced men is still observed when probability of selection into the union sample is controlled for. (Leigh). During the 1974 recession, as the union wage effect for white males increased, this difference narrowed. The ratio of black male to white male union

wage effects dropped from a remarkable 2.24 in 1967, to 1.38 in 1975. (Ashenfelter, 1979). Just as striking, during this stagnant period for white male unionization, the percent of black males organized increased from .32 in 1965 to .37 in 1975, and the percent of black females unionized increased from .13 to .22. (Ashenfelter, 1979). The substantial increase in black unionization is concentrated between 1970 and 1975, and cannot be explained by changes in the distribution of blacks across occupations or industries. (Holzer). This growth may give some measure of the strong impact of Title VII of the Civil Rights Act of 1964 in allowing blacks to realize their preferences in the job market, a question we hope to shed some light on here.

Empirical Strategy

To summarize these countervailing forces briefly, the question to be addressed empirically in the next section is whether blacks' stronger preferences for unions outweighs the impact of unions in slowing change in the composition of the workforce. The government's role is expected to be essentially neutral across sectors, and is directly controlled for since we know which establishments are federal contractors subject to affirmative action, and which have undergone a compliance review. Bias due to the possible impact of individual establishment effects is guarded against in two ways. First, all regressions control for past employment patterns, and so essentially difference out time invariant individual effects. Secondly, white-collar employment patterns in which the unions have little say, are compared to

blue-collar patterns, with the difference attributed to unions. Union effects, as distinct from a generalized preference for unions by any particular demographic group, are tested both by differentiating the union impact on blacks, hispanics, and females; and by estimating the impact of individual unions.

Section 2. Unions and the Employment of Hispanics, Blacks, and Females

Unionized establishments exhibit strikingly different employment patterns than non-unionized establishments in the same industry and SMSA. In light of the fact that unions in the manufacturing sector cannot legally control hiring and in light of the prevalent view that they do not directly influence hiring, this is a remarkable finding made more so by the direction of the effect.

Table 1 presents T-tests of the equality across union and non-union establishments of the levels and changes in the racial and sexual composition of the blue-collar workforce between 1974 and 1980 in a longitudinal sample of 1273 California manufacturing establishments with at least one hundred employees each. The characteristics and construction of this new sample are described in the appendix.

Unionized establishments start out in 1974 with a higher representation of black males, 6.6% compared to 4.9% for the non-union establishments. More importantly, black males' employment share grows faster in the union sector. It reaches 7.7% in

1980, compared to 5.3% among the non-unionized. The rate of change in means is 17 percent in the union sector in just six years, far greater than the 6 percent in the non-union sector. The mean rates of change in both sectors are even greater, suggesting that growth in employment share has been relatively greater where that share was initially low. On the other hand, with finer controls we shall later see contrary evidence showing tipping.

Despite the increase in black male share in the union sector, the percentage of black males who are unionized in the study sample falls slightly from .72 in 1974 to .70 in 1980 because of the faster growth of total employment in the non-union sector. While the number of black males employed in the union sector increased by 17 percent, the number employed in the non-union sector increased by 27 percent.

Comparing the changes in employment patterns of black males to that of hispanic males, black females, or hispanic females warns that there can be no simple monolithic explanation of the higher level and faster growth rate of black male employment share in the union sector. Whatever process preferentially sorts black males into union jobs has not similarly affected black females, hispanic males, or hispanic females.

Hispanic males do start out with higher representation in the union sector but faster non-union growth renders this difference insignificant by 1980. Female hispanics are initially significantly more heavily represented in non-union jobs, and this

differential grows over time. Black females also start out with greater employment share in the non-union sector, but their growth rates do not differ significantly across sectors. In both sectors, the greatest proportional employment gains are enjoyed by asians of both sexes, because they begin with such small shares. Asian growth has been significantly greater in the non-union sector. It is also remarkable that between 1974 and 1980 whites lost their majority position in California manufacturing. Their share dropped by 21 percent from .61 to .48 of blue-collar employment. White females share fell faster in the non-union sector. For white males, there is no significant difference in the decline across sectors.

It is important to note that total employment has not increased in the union sector, although smaller plants have grown. Absolute minority and female employment in this sector has grown while white male employment has declined. This finding stands out in view of the commonly held belief about the impact of union seniority ladders on minority and female employees. Last-in first-out would be expected to reduce minority and female share during a recession because these groups typically have lower seniority than white males. The explanation may simply be that California manufacturing did not suffer from a great recession between 1974 and 1980. In the study sample, employment in the union sector was stable. According to the Department of Labor, total employment in California manufacturing increased by 18 percent between 1974 and 1980, with an insignificant decline between 1979 and 1980, and a 6 percent decline between 1974 and

1975. (Employment and Training Report of the President 1981, Table d-2, p. 230).

California serves as a strong warning against the facile identification of minority with black. Hispanics are the largest minority group in California, constituting 38 percent of blue-collar employment in manufacturing in 1980. This compares with black's 9 percent and asians' 6 percent, and is not far behind white's 48 percent. Moreover, hispanics have grown the fastest, increasing their share fully 10 percentage points in just six years from .28 in 1974. This sharp growth has not been accommodated without conflict. The California State President of the Mexican-American Political Association has said that the:

"[Civil Rights movement] has pitted the black community against the Mexican-American community. This may be unspeakable, but to deny that it exists is to put blinders on oneself" (Tribune 3/24/83 p. A-14)

It must at once be recalled that the dominant pattern we find here is an increase in hispanic share and a corresponding decrease in white share, alongside a smaller increase in black share.

Log-Odds Estimates

The basic results found in the means above stand up well in more rigorous tests. The definitions and sample statistics of the variables used in this analysis are given in Table 2. Table 3 presents our central regression results. These are estimates

of log-odds models, weighted by the establishment's total blue-collar employment, and controlling for past employment share, two or three digit SIC industry, SMSA, and the percent of blue-collar workers who are craft workers. The essential findings here are in general not significantly changed by weighting. These regressions also control for establishment size and growth rate, and whether or not the establishment was unionized, part of a multi-plant company, a federal contractor subject to affirmative action in 1974, or reviewed for compliance with affirmative action between 1974 and 1980. With these extensive and detailed controls, black male share still increases significantly faster in the union sector. As can be seen in equation 2 of Table 3, this difference of 1.3 percentage points is not small. It amounts to 19 percent of their initial share.

This equation also shows that the federal contract compliance program has successfully pursued affirmative action for black males. The increase in black male employment share is significantly larger among federal contractors subject to affirmative action, and among contractors that are reviewed for compliance. This result with finer geographic controls is in accord with recent findings for a national sample. (Leonard, 1983b). The relative size of the union impact here can best be appreciated by comparing it with that of affirmative action. The impact of unionization is just slightly less than that of undergoing a compliance review, and actually greater than that of being a federal contractor. Before entering into the question of causality, it is remarkable that unionization appears to act as a more

powerful affirmative action program for black males than does the federal affirmative action program itself.

It has often been argued that black males' employment is limited by their lack of skills. It is then worth noting that in this sample their share of blue-collar employment among all males has increased most in craft-intensive work-forces. In addition, the overall importance of growth in facilitating the entry of minorities and females into manufacturing can be seen in the significant negative impact of establishment growth on white male employment, a summary measure.

In contrast to the faster increase in black male employment in the union sector, unionization has had no significant impact on hispanic male employment, nor on that of black females, white females, or asian males. If black males' improved employment under unionism were due only to blacks' attitudes toward unions or proximity to unionized establishments, or to unionized establishments' employment practices, one might reasonably expect similar patterns among blacks of both sexes, but we find no significant evidence of such a pattern for black females. Black males not only differ from black females, they also differ from hispanic males. The theory of discrimination that explains why predominantly white unionized establishments should favor the employment of black males, while treating hispanic males indifferently at best, cannot be a simple one. In this regard, there are two factors that may help explain the observed pattern for hispanic males. First, compared to blacks, hispanics are on

average more recent immigrants to California, and a large but unknown fraction are here illegally. They may well be further back in line for union jobs, and the illegals may have greater trepidation and difficulty in obtaining employment at the larger and more formal union establishments. Second, most studies of hispanic-white earnings ratios have found little evidence of discrimination once language and education are controlled for. (Borjas). If black males are attracted to union shops by the insulation from discrimination they enjoy under the umbrella of union egalitarianism, it is possible that hispanics may not feel as acute a need for such protection, but this is doubtful. It helps to compare hispanics with blacks among females. While unionization has had an insignificant positive impact on black females, hispanic female employment grows significantly slower in the union sector. This is more consistent with the view that hispanics, as more recent immigrants, are further back in the queue for union jobs. A more closely knit hispanic family cannot explain the difference in employment across sectors.

The distribution of each minority group in California is markedly different, and provides useful test variation. These regressions include five SMSA dummies, whose coefficients and selection reflect population demographics. The areas are the Los Angeles SMSA, containing 47 percent of the sample; the combined San Diego, Anaheim, and Riverside SMSAs; the San Francisco SMSA, the San Jose SMSA, all other Northern California counties, and all other Southern California counties. Reflecting their respective population concentrations, black share increases faster in

Los Angeles and San Francisco, hispanic increases faster in Los Angeles and San-Diego, and asian increases faster in San Francisco and San Jose.

Concerning the impact of affirmative action, in California manufacturing the program has significant impacts on blacks and on white males. Both female and male black employment shares increase significantly faster in establishments that are federal contractors, and at establishments that undergo a compliance review. Although white males' share of total blue-collar employment does increase significantly at contractor establishments, the proportionate increase is larger for black males, 19% compared to 14%, so black males' share of male employment does increase among contractors. The largest minority in California, the hispanics, have not been greatly affected by affirmative action. Their employment share grows slower at contractors and faster at reviewed contractors, but the effects are not significant. At the same time, white females gained under affirmative action, but not significantly.

The salient finding in this section is that black male employment share has increased faster in the union sector. In the following sections we turn to questions of causality and attempt to determine how much of this difference can be explained by union policy, or by differences in employer or government behavior across sectors.

Section 3. Differences Across Unions

Unions are not undifferentiated in either their attitudes or their policies toward affirmative action, or in their actual minority and female membership. Because many large unions have organized plants across a number of industries, and because most industries have been organized by a number of unions, it is possible to separate out the impact of individual unions. If there were no significant differences across unions once industry, SMSA, and plant occupational structure were controlled for, that would constitute strong evidence that the swifter expansion of black male employment share in the unionized sector was primarily due to black males' stronger preference for union jobs, rather than to any policy or practice of any individual unions. That does not appear to be the case here. There are significant differences in minority and female employment growth across unions that in a number of cases correspond closely to differences in these unions' public statements on discrimination and affirmative action.

Here only the most striking cases can be alluded to. Union A, long noted for its liberal stance, has been among the most outspoken proponents of equal rights for blacks. In contrast to most AFL unions, Union A accepted and integrated blacks into existing locals as blacks entered this union's primary industry during the depression. In these early years the union was among the pioneers in formally establishing an internal fair employment practices department. While taking a strong stand on civil rights at the national level, Union A has also been a co-defendant in a plethora of Title VII litigation charging that it

maintained discriminatory seniority ladders at the local level. It would seem the union had reached only partial accommodation with its black members.

In 1982, Union A held contracts in eight different two-digit SIC industries in California manufacturing. Table 4 shows that both black and hispanic males have augmented their share of blue-collar employment significantly more in the twenty-five plants organized by Union A than in most other unionized plants. However discriminatory union seniority ladders may have been, they have not discouraged black or hispanic males from gaining employment. While the average union impact is to raise black male employment share by 1.3 percentage points, the corresponding increase in plants organized by Union A is 2.8 percentage points. For hispanic males the difference is even greater. Their employment share grows slower, insignificantly, in the union sector as a whole, but grows by 4.1 percentage points in Union A plants. In fact, Union A is the only union with a significant positive impact on hispanic employment. This reinforces the interpretation of these patterns as directly influenced by union policy rather than just reflecting ethnic group preferences.

Union B's history has been similar in many ways to Union A's. While blacks have long been employed in large numbers in Union B's primary industry, the union has been the target of a large number of Title VII cases charging discriminatory seniority ladders. But once again, black male employment share has grown significantly faster, by two percentage points, than elsewhere in

the union sector.

One explanation advanced for blacks' strong preference for union employment is that egalitarianism within most unions limits the scope for any discriminatory treatment, including racial discrimination. The multitude of Title VII charges concerning discriminatory promotion ladders at both Union A and B would seem to belie this thesis, but one must consider the alternative. Blacks may prefer a unionized plant not because discrimination is absent, but simply because it is weaker. Moreover, these discriminatory seniority systems have been frequently and successfully attacked in the courts since 1965. At the same time, members of both Union A and B are among the most well paid industrial workers in America. The substantial union wage effect in these unions are likely to be even larger for blacks, and may well outweigh the finer costs of occupational segregation within the plant. Better to ride second class than to walk.

While minority male employment gains at Union A correspond to the union's long liberal history, Union C was prominently known before 1965 for its racially segregated locals. By the late seventies things had changed. Black male employment share in the 57 plants organized by Union C significantly increased by 2.3 percentage points, more than the average of other unions.

At the other extreme are a number of craft oriented unions in which minority and female employment has fallen relative to other union or non-union plants. The exclusionary ethic of these unions appears to carry over and influence employment patterns in

manufacturing, where their referral rights are not so strongly established.

The evidence here suggests that an important part of the explanation for the observed patterns of minority and female employment in general, and of the growth of black male share in the union sector in particular, is to be found in the policies and practices of individual unions. This stands out in the contrast between the craft-oriented unions which appear to retard minority and female employment, and Union A which increases black and hispanic male employment share more so than do other unions.

Section 4. White Collar Workers in Unionized Establishments

Establishments hire both white and blue collar workers, but with few exceptions it is only the blue collar workers who are unionized, a difference which will be exploited in this section. This institutional fact allows us to test whether the union effect found above is really an establishment effect. The establishments that are unionized may differ in some ways, such as location or skill requirements, that are uncontrolled for, but correlated with unionization. This is a priori unlikely because our controls are quite detailed and include two or three digit SIC industry, SMSA, establishment size and growth, and the proportion of craft workers among the blue-collar. Nevertheless, it cannot be entirely ruled out.

While unionization may influence blue-collar employment it is difficult to see how unionization in itself can affect white-

collar demographics. There are, of course, indirect paths such as the company that promotes from the ranks, or that hires supervisors who match the race or sex of its production workers, who we have found are more likely to be black in the union sector. Alternatively, this could come about through the clustering of blacks in establishments that already employ many blacks. Plants, like neighborhoods, may tip. In fact, one of the major arguments in favor of affirmative action rests upon just such externalities: the costs of searching for and obtaining a job are lower if the plant is integrated. Firms are required to reach out to potential minority and female employees to counteract such clustering among predominant white males. Leaving these indirect, but potentially important, paths aside, we would not expect the presence of a collective bargaining contract among the production workers of a plant to have any impact on the demographic composition of the non-production work-force.

It does. Black males share of white-collar jobs increases significantly faster in unionized establishments, as seen in Table 5. In absolute terms the effect is small, less than a quarter percentage point. However, relative to blacks males' 1974 share of 1.5 percent this is a substantial increase. The interpretation of this estimate is complicated by the further findings in Table 5 that hispanic males' share also increases significantly faster in the union sector, while white females share increases significantly less. These last two patterns for white-collar workers are reversed among blue-collar workers, although the coefficients in the latter case are insignificant.

The result for white-collar hispanic men may be due to stronger affirmative action pressure in favor of hispanics in the union sector, particularly for white-collar jobs.

Unionization affects white-collar employment demographics both directly and indirectly through its impact on blue-collar demographics. The tests in Table 5 explicitly control for the indirect path by holding fixed past blue-collar employment share. In every case higher past blue-collar share is significantly correlated with subsequent white-collar share, even conditioning on past white-collar share, SMSA, and industry. This suggests either strong spillover from blue-collar to white-collar or an omitted variable such as proximity to minority neighborhoods. The spillover hypothesis is considerably strengthened by observing the same pattern for females, who do not live in ghettos. Taken together, this evidence of spillover and tipping accords with the essentially tribal model of the labor market that informs many of the arguments in favor of affirmative action.

The union effects on white-collar demographics persist even when indirect paths through blue-collar employment are controlled for. The tests in Table 5 may then qualify the previous findings for black male production workers. Black male employment share in unionized establishments has increased in white-collar jobs as well as in blue-collar jobs. Before considering the implications of this finding in detail, it is important to remember that the union effect among white-collar workers is less than that among the blue-collar. Nevertheless, it is possible that unionization

is correlated with some uncontrolled for establishment characteristic that favors the growth and not simply the level, of black male employment. Since SMSA is controlled for, this would require, for example, that the unionized plants in Los Angeles be closer to Watts and other concentrations of black population than are non-union plants. Since the sample of plants is longitudinal, this cannot simply be due to the establishment of new plants in the suburbs after 1974. Also note that this within SMSA geographic proximity cannot explain why white-collar hispanic males are more heavily represented at union plants at the same time relative gains for their blue-collar brothers are nowhere to be seen. Moreover, while black male employment has increased relative to that of white males in the union sector, no such effect was observed in Tables 3 among blue-collar females. Unionism is associated with a 5 percent greater employment share for black females, which is less than the 9 percent for white females. It is also interesting to note that a pioneering study of establishment demographics between 1967 and 1970 also found a positive union effect on growth of black male share even after controlling for distance from black residence area. (Burman). To take another example, since two and sometimes three digit SIC industry is controlled for, along with the percent of craft workers among blue-collar, and the percent of clerical workers among white-collar, this omitted variable bias argument would require that the skill requirements of union plants differ in very fine ways that favor blacks not only in blue-collar jobs, but also in white-collar jobs, yet at the same time hinder hispanic employ-

ment. While possible, in my opinion these scenarios are unlikely. The question of geographic proximity is addressed in detail in the next chapter. The simplest explanation is that many of the white-collar workers in this sample are in fact unionized, as fully 29 percent of all black male managerial workers were reported to be in 1967. (Ashenfelter).

This section has shown that unionized establishments not only employ more black males in blue-collar jobs, to a lesser extent they also employ more black males in white-collar jobs. Part of this effect may be accounted for by spillover from blue-collar demographics, but part remains and may suggest establishment specific effects.

Section 5. Unions and Affirmative Action

Under most circumstances, unions should retard the progress of minorities and females under affirmative action for reasons that have much to do with unions but little to do with current discrimination. It is well known that unions reduce quits. Lower turnover will in itself reduce the rate of penetration of minorities and females into the workplace, as Chapter 3 proved.

An increase in black's share of hires or terminations has a greater impact on black's share of stock the greater is the hire or termination rate respectively. In theory the impact of affirmative action on protected groups' share of flows and stock could be hidden by disparate turnover rates between union plants and non-union plants. If ϕ and b are both small (or of similar mag-

nitude), then λ is close to 1 and λn is close to 1. In this case P_t changes only slowly from P_{t-n} . By the same token, firms characterized by high turnover rates can show large improvements in minorities' and females' employment share without large changes in hiring and firing policy. Thus if affirmative action requires equal effort from all firms, rather than equal results, then high turnover firms should be held to higher employment goals along an adjustment path.

Affirmative action might be successful in increasing blacks' share of hires, H , and reducing their share of terminations, T , at union establishments. But since these establishments typically have lower turnover rates θ and b than non-union establishments, the change in stock ΔP_t is expected to be lower, masking the impact of affirmative action. Unionized plants are characterized by relatively stable work forces of long tenure. Unless long-tenure jobs are themselves the product of an intention to discriminate, which is unlikely, it is appropriate to judge affirmative action in such stable industries by its impact on minorities' and females' share of new hires and terminations rather than their share of employment. Since the workforces turnover slowly, a positive change in flow shares will have to cumulate for years before it has a significant effect on employment stock shares.

For our purposes here, the important point to remember is that the seniority systems that are part and parcel of unionism will tend to freeze the workforce at a plant, a fact which the

Supreme Court in its 1977 Teamsters decision it has come to accept. When this is combined with the fact that unionized employment did not grow in the study sample, one would expect affirmative action to appear less successful in unionized establishments for two reasons that have nothing to do with discrimination: low turnover and low growth.

On the other hand, we have already seen that while other protected groups have not progressed significantly faster in the union sector, black males have. Black males also start with a higher 1974 share in the union sector. Similarly, while other protected groups have not significantly benefited from affirmative action in California manufacturing, blacks have. One might then reasonably expect two such positives to interact in a larger positive, but this would embody an oversimplified conception of how affirmative action works.

The pressures under affirmative action are to remedy underutilization of minorities and females. If black males are relatively overrepresented in the union sector, affirmative action can act to increase black males' overall share while bringing no direct pressure to bear in the union sector. But of course, with a limited supply of blacks, the non-union sector's gain may well be the union sector's loss. This is especially likely to occur if at the same time hispanics are relatively underrepresented in the union sector. The combined impact of the contract compliance program may then be to substitute hispanic males for black males in the union sector,

Table 6 tests for such interactions between unionization and affirmative action pressure, and finds significant evidence of a negative interaction only for black males. Black males' employment share increases 3.1 percentage points more in unionized non-contractors than in non-unionized non-contractors. This share increases by 1.1 percentage points in unionized contractors compared to non-unionized contractors. This is balanced by changes in the employment of hispanic men, where there is a positive interaction between union and contractor status. In the union sector, black males' share decreases by .004 among contractors, while hispanic males' share increases by .021. Affirmative action does not always and everywhere lead to increases in black employment, nor is it intended to. These estimates suggest that while hispanic male employment has increased faster under affirmative action in the contractor sector, black male employment has increased slower, if at all. This may reflect to some degree the relative abundance of black males in the union sector, and correspondingly less affirmative action pressure to increase their share. In 1974, 6.6 percent of all employees in the union sector were black males, compared to only 4.9 percent in the non-union sector. While hispanic males were also relatively abundant in the union sector, the proportionate disparity was not so great, .21 in the union sectors compared to .19 in the non-union sector. A plausible explanation of the observed interactions is not in terms of the way unions mediate affirmative action pressures, but rather in terms of the different immediate goals toward which that pressure is directed in the union sector.

Absent strong demonstration effects, that pressure should be most obvious in the case of compliance reviews, but here the interactions terms are insignificant and the evidence inconclusive. Judged on the evidence among contractors, the union sector appears more concerned with increasing hispanic male employment than that of black males.

Section 6. Summary and Conclusion

This chapter has presented eight main findings.

(1) Black males share of blue-collar employment has increased faster in union plants than in non-union plants in California manufacturing between 1974 and 1980. This indicates that the growth in unionization among blacks is not due simply to different regional or industry growth rates. We find a positive union effect even when industry, region, size, growth, and affirmative action pressure are controlled for. This suggests that the wide precedents set by Title VII of the Civil Rights Act of 1964 has opened doors for the expression of black employment preferences.

(2) While union seniority systems force the layoff of low-tenure workers during a recession, the recessions of 1974 and 1979 did not harm minorities and females any more in the union than the non-union sectors.

(3) Unionization has no significant impact on blue-collar employment share of other groups, with the exception of a significantly negative impact on hispanic females. The notion that

unions as a whole are any more or less discriminatory is belied by the absence of significant effects for hispanic males, black females, and whites.

(4) There are significant differences across particular unions within industry and region that correspond with each unions public record of EEO policy and practice. Black male employment increases most in industries with a long history of black employment, in unions that take a liberal position towards EEO, and in industries with a large union wage effect. Craft type unions have a negative impact.

(5) Plants, like neighborhoods, tip. The higher the past level of employment share, the greater the subsequent growth. There is also evidence of spillover from blue-collar to white-collar employment patterns.

(6) Part of the blue-collar employment patterns for blacks may represent the force of omitted establishment specific variables, location in particular, since unionization also affects white-collar demographics.

(7) Affirmative action is successful in promoting the blue-collar employment of blacks, both male and female, but is insignificant for male and female hispanics, and for white females.

(8) Black males advance under affirmative action is slower in the union sector, while that of hispanics is faster. This may reflect individualized affirmative action pressure across plants.

Changes in employment share among hispanics, blacks, asians, whites, and women are a response to forces on both the supply and demand sides of the market. Unionized establishments in California manufacturing do not exhibit any more discrimination than do non-union establishments against black or hispanic men, or against black or white women. Title VII appears to have been effective in increasing employment opportunities for blacks, allowing them to realize their preference for union jobs.

Administrative records to determine which establishments had undergone an affirmative action compliance review. These reviews essentially count only those performed by the Department of Defense, and so are concentrated in the durable goods manufacturing industries. The characteristics of this 500 sample are discussed in greater detail in Chapter 3. (Leonard, 1983b). From this national longitudinal file, the 1273 establishments in the manufacturing sector in California with more than 100 employees were selected.

The union status of each of these establishments was determined by examining the 1982 collective bargaining contract collection of the California State Department of Industrial Relations. The Department has more than 3,400 private-sector agreements on file, and makes intensive efforts to obtain all contracts covering 50 or more employees. In 1982 this file included 1,364 contracts in the manufacturing sector, covering 450,310 employees.

The coverage of this file is extensive, especially for

Appendix. Data

A new and detailed set of information at the establishment level of disaggregation was assembled for this study. EEO-1 reports detailing establishment level demographics were matched for the years 1974 and 1980 to produce a longitudinal file. All of the data on establishment demographics, occupational structure, employment growth, industry, location, and contractor status comes from this file. This was in turn matched with DFCCP administrative records to determine which establishments had undergone an affirmative action compliance review. These reviews essentially count only those performed by the Department of Defense, and so are concentrated in the durable goods manufacturing industries. The characteristics of this EEO sample are discussed in greater detail in Chapter 3. (Leonard, 1983b). From this national longitudinal file, the 1273 establishments in the manufacturing sector in California with more than 100 employees were selected.

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contracts covering more than 50 employees. According to the US Department of Labor there were 2,001,000 employees in California manufacturing in 1980. (Employment and Training Report of the President, 1980, table d-2, p. 230). Applying the national average of 29.9 percent non-production workers in manufacturing yields 1,402,700 production workers. (Employment and Training Report of the President, 1980, table c-3, p. 213). In a pooled 1973-1975 CPS sample of 6022 private-sector production workers in California, Freeman and Medoff estimate the percent unionized at .35, close to the national average of .36. (Freeman and Medoff, 1979, p. 166, Table 4). Nationally, Freeman and Medoff report that 49% of production workers in manufacturing were union members. On this basis, we would expect to find 687,300 union members among production workers in California manufacturing.

88 percent of all employees covered by collective bargaining agreements covering at least 100 workers in California manufacturing are subject to union shop or modified union shop security clauses. (California Department of Industrial Relations, 1982, Table 1). So the contract file then includes about 396,000 union members, or 58 percent of the number we would expect to find by applying the Freeman-Medoff estimates of percent unionized to BLS totals. Part of this discrepancy may be due to the striking decline in unionism in California. Union members as a percent of all production workers in California manufacturing dropped from .56 in 1975 to .42 in 1979. (California Department of Industrial Relations, 1980, p.2, Table 1). If we adjust Freeman and Medoff's 1973-1975 benchmark downwards by the same 25% to .37,

then we would expect 519,000 union members in California manufacturing. On this basis the contract file includes 76% of all union members in California manufacturing. The remainder are likely to be in establishments of less than 100 employees, which are excluded from the study sample. To the extent that some unionized establishments are still not identified as such, this measurement error will bias our results against finding any difference between the union and non-union sectors.

Table 1: T-Tests of Changes in Demographic Proportions of Blue-Collar Employment by Union Status, 1974-1980.
N=806 Non-Union and 467 Union Establishments.

Line	Demographic Group	Union Status	1974		1980		Mean Δ	Mean $\lambda\Delta$
			Mean	σ	Mean	σ		
1	Black	N	.049	.08	.053	.07	.003	28
2	Males	Y	.066	.07	.077	.08	.011	44
3			(3.8)		(5.6)		(2.7)	(1.6)
4	Hispanic	N	.187	.19	.255	.22	.067	75
5	Males	Y	.213	.18	.263	.19	.049	47
6			(2.4)		(0.7)		(2.5)	(1.6)
7	Asian	N	.013	.02	.030	.04	.017	1.31
8	Males	Y	.014	.02	.026	.03	.012	1.41
9			(0.6)		(1.6)		(2.2)	(0.4)
10	White	N	.427	.27	.332	.24	-.096	-.18
11	Males	Y	.522	.23	.428	.25	-.093	-.13
12			(7.0)		(6.2)		(0.3)	(1.1)
13	Black	N	.020	.10	.026	.06	.008	.68
14	Females	Y	.016	.03	.023	.04	.007	1.01
15			(1.9)		(1.2)		(0.4)	(0.8)
16	Hispanic	N	.106	.15	.142	.18	.037	.68
17	Females	Y	.106	.05	.075	.11	.019	.92
18			(6.3)		(7.4)		(3.5)	(2.0)
19	Asian	N	.016	.06	.028	.01	.013	1.67
20	Females	Y	.004	.02	.009	.01	.005	1.21
21			(59.7)		(57.8)		(7.8)	(11.9)
22	White	N	.176	.20	.129	.14	-.046	.17
23	Females	Y	.100	.13	.091	.11	-.009	.40
24			(7.3)		(5.1)		(5.9)	(2.1)
25	Total	N	197	255	232	316	35	.57
26		Y	381	789	381	774	0	.24
27			(6.1)		(4.8)		(2.1)	(1.7)

Notes: T-Tests across means in parentheses, on every third line. In every case, F-tests reject equality of variances across union and non-union establishments, with more than 99% confidence. The last column is the mean of percentage changes, not the percentage of change in means, and is calculated only for those with positive initial share.
 N = non-union in 1982. Y = union in 1982.

Table 1: T-Tests of Changes in Demographic Proportions of Blue-Collar Employment by Union Status, 1974-1980
 N=508 Non-Union and 487 Union Establishments

Line Group	Demographic Status	1974		1980		Mean	Mean
		t	Mean	t	Mean		
1	Black						
2	Male						
3							
4	Hispanic						
5	Male						
6							
7	Asian						
8	Male						
9							
10	White						
11	Male						
12							
13	Black						
14	Female						
15							
16	Hispanic						
17	Female						
18							
19	Asian						
20	Female						
21							
22	White						
23	Female						
24							
25	Total						
26							
27							

Note: T-Tests across means in parentheses on every third line in every case. T-tests reject equality of variances across union and non-union establishments with more than 95% confidence. The last column in the mean of percentage changes not the percentage of change in means and is calculated only for those with positive initial share.
 N = non-union in 1982. Y = union in 1982.

Table 2: Variable Definitions, Means, and Standard Deviations.
N = 1273.

Variable Name	Mean	Standard Deviation	Definition
UNION	.367	.48	= 1 if establishment was unionized in 1982.
CONTRACT	.724	.45	= 1 if establishment was part of a contractor company in 1974.
REVIEW	.186	.39	= 1 if establishment completed a compliance review between 1974 and 1980 exclusive.
SIZE	264	527	Total number of blue-collar employees in 1974.
GROWTH	.450	3.20	Rate of growth of blue-collar employment from 1974 to 1980.
SINGLE	.280	.45	= 1 if establishment was not part of a multi-establishment company.
PCRAFT	.248	.31	Proportion of blue-collar employees who are craftworkers.
PCLERK	.295	.14	Proportion of white-collar employees who are clerical workers.

Table 3: Log-Odds Equations of the Effect of Unionization on Blue-Collar Employment by Demographic Group.
N = 1273.

Demographic Group:	White Males	Black Males	Hispanic Males	White Females	Black Females	Hispanic Females
Equation:	1	2	3	4	5	6
UNION	.58 .025 (.041)	1.27 .212 (.055)	-.86 -.045 (.047)	1.08 .104 (.063)	.134 .048 (.062)	-2.89 -.273 (.070)
CONTRACT	6.45 .278 (.062)	1.03 .172 (.084)	-1.04 -.054 (.071)	.94 .090 (.096)	.54 .197 (.095)	-1.12 -.106 (.107)
REVIEW	-.25 -.011 (.043)	1.43 .239 (.058)	.67 .035 (.050)	1.20 .115 (.067)	.37 .137 (.066)	.24 .023 (.074)
P74*	81.66 3.52 (.096)	60.6 10.10 (.374)	86.21 4.79 (.145)	67.18 6.46 (.188)	44.58 16.38 (.700)	88.83 8.38 (.311)
SIZE	.0013 .000057 (.000013)	.00025 .000041 (.000018)	-.000038 -.000002 (.000015)	.00016 .000015 (.000021)	.00030 .00011 (.000021)	-.000064 -.000006 (.000023)
GROWTH	-2.00 -.086 (.025)	-.059 -.0098 (.034)	.27 .014 (.029)	.33 .032 (.039)	-.016 -.0060 (.039)	1.43 .135 (.044)
SINGLE	-2.92 -.126 (.057)	-.55 -.091 (.077)	2.86 .149 (.066)	-3.28 -.315 (.089)	-.52 -.191 (.088)	-.35 -.033 (.098)
PCRAFT	11.02 .475 (.093)	3.08 .514 (.117)	4.03 .210 (.100)	-.99 -.098 (.136)	-1.28 -.470 (.135)	-10.25 -.967 (.153)
MSE	93.8	169.6	122.4	222.5	218.4	276.4
MEAN 1980 SHAKE	.366	.064	.259	.118	.029	.121

Note: The first line is $100(df/dx)$ evaluated at mean F. The second is the coefficient from the log-odds equation. The third is the standard error. All equations include 20 industry and 3 region dummies. P74 is the 1974 employment share of the given group.

TABLE 4: DIFFERENCES IN DEMOGRAPHIC CHANGES ACROSS UNIONS IN MANUFACTURING
N=1273

DEMOGRAPHIC GROUP		WHITE MALES	BLACK MALES	HISPANIC MALES	WHITE FEMALES	BLACK FEMALES	HISPANIC FEMALES
UNION	N						
ALL	466	.58	1.27	-.86	1.08	.13	-2.89
		.025	.212	-.045	.104	.048	-.273
		(.041)	(.055)	(.047)	(.063)	(.062)	(.070)
A	25	1.42	2.81	4.11	-1.40	.60	-6.42
		.061	.469	.215	-.135	.215	-.606
		(.088)	(.117)	(.099)	(.133)	(.132)	(.148)
B	43	5.27	2.04	-2.83	-3.06	-.42	-9.54
		.227	.340	-.148	-.294	-.150	-.900
		(.105)	(.140)	(.120)	(.162)	(.158)	(.176)
C	57	1.93	2.27	-1.55	1.97	.50	-1.45
		.083	.378	-.081	.189	.177	-.137
		.076	(.100)	(.086)	(.116)	(.113)	(.127)
D	23	2.78	-1.87	-7.49	-5.99	-.40	-1.40
		.120	-.312	-.392	-.576	-.144	-.132
		(.184)	(.244)	(.209)	(.280)	(.276)	(.308)
E	2	19.49	-9.67	-6.78	1.44	-2.56	-6.90
		.841	-1.611	-.355	.138	-.913	-.651
		(.593)	(.788)	(.674)	(.905)	(.893)	(.994)
F	3	5.8	-9.60	-9.87	3.07	-5.10	-8.14
		.250	-1.600	-.517	.295	-1.821	-.768
		(.281)	(.373)	(.319)	(.429)	(.423)	(.471)

Note: The first line is $100 (\partial P / \partial X)$ evaluated at mean P. The second is the coefficient from the log-odds equation. The third is the standard error. ALL is the average union effect from Table 3. The individual union effects are estimated in the same sample with the same additional controls plus twenty union dummies and are relative to the non-union sector.

Table 5: Log-Odds Equations of the Effect of Unionization on White-Collar Employment by Demographic Group.
N = 1270.

Demographic Group: Equation:	White Males 1	Black Males 2	Hispanic Males 3	White Females 4	Black Females 5	Hispanic Females 6
UNION	.522 .021 (.018)	.224 .077 (.038)	.644 .103 (.034)	-1.34 -.069 (.021)	.151 .062 (.044)	-.061 -.013 (.038)
CONTRACT	-.846 -.034 (.034)	.291 .100 (.071)	.775 .124 (.065)	.562 .029 (.040)	.244 .100 (.082)	-.061 -.013 (.072)
REVIEW	-.771 -.031 (.018)	.221 .076 (.039)	.394 .063 (.036)	-.893 -.043 (.022)	.278 .114 (.045)	-.009 -.002 (.039)
W74%	72.37 2.91 (.091)	43.77 15.04 (.987)	54.20 8.67 (.543)	62.61 3.23 (.114)	49.94 20.49 (1.55)	52.10 11.18 (.853)
P74%	7.46 .300 (.044)	6.37 2.19 (.291)	7.50 1.20 (.160)	10.06 .519 (.068)	3.73 1.53 (.517)	8.06 1.73 (.234)
SIZE	-.0000075 -.0000030 (.0000028)	.0000035 .0000012 (.0000060)	-.0000013 -.0000021 (.0000055)	.000025 .0000013 (.0000034)	.0000073 .0000030 (.0000069)	-.0000010 -.0000022 (.0000061)
GROWTH	-.473 -.019 (.011)	.076 .026 (.023)	.069 .011 (.021)	.233 .012 (.013)	-.0156 -.0064 (.027)	-.0247 -.0053 (.023)
SINGLE	.547 .022 (.029)	-.806 -.277 (.080)	.0075 .0012 (.055)	-.581 -.030 (.034)	-.322 -.132 (.070)	-.298 -.064 (.061)
PCLFRK	20.27 -.815 (.098)	-.404 -.139 (.173)	-2.70 -.432 (.159)	23.36 1.20 (.105)	1.62 .666 (.200)	4.94 1.06 (.178)
MWF	11.0	18.3	40.4	15.5	65.1	49.8
MEAN 1980 SHARE	.536	.030	.067	.263	.025	.049

Note: The first line is $100(dP/dX)$ evaluated at mean P. The second is the coefficient from the log odds equation. The third is the standard error. All equations include 20 industry and 5 region dummies. W74 is the given groups' 1974 share of white-collar jobs. P74 is the given groups' 1974 share of blue-collar jobs.

TABLE 6: INTERACTIONS BETWEEN UNIONS AND AFFIRMATIVE ACTION
N=1273

	<u>White Males</u>	<u>Black Males</u>	<u>Hispanic Males</u>	<u>White Females</u>	<u>Black Females</u>	<u>Hispanic Females</u>
UNION (U)	-.231 -.010 (.101)	3.04 .506 (.135)	-4.97 -.260 (.115)	1.11 .107 (.155)	.41 .147 (.154)	-1.34 -.127 (.173)
CONTRACT (C)	5.61 .242 (.070)	1.57 .261 (.094)	-2.20 -.115 (.080)	.97 .093 (.108)	.58 .207 (.107)	-.76 -.072 (.120)
REVIEW (R)	1.83 .079 (.063)	1.56 .260 (.085)	.038 .0020 (.072)	1.13 .109 (.097)	.62 .223 (.097)	.77 .073 (.108)
U × C	2.39 .103 (.112)	-1.97 -.328 (.150)	4.34 .227 (.128)	-.080 -.008 (.172)	-.16 -.058 (.171)	-1.44 -.136 (.192)
U × R	-3.67 -.158 (.081)	-.25 -.042 (.108)	1.20 .063 (.092)	.104 .010 (.125)	-.42 -.151 (.124)	-.95 -.090 (.138)
$\frac{\partial P80}{\partial C}$ u=0	.056	.016	-.022	.010	-.006	-.008
$\frac{\partial P80}{\partial C}$ u=1	.080	-.004	.021	.009	.004	-.022
$\frac{\partial P80}{\partial R}$ u=0	.018	.016	.0004	.011	.006	.008
$\frac{\partial P80}{\partial R}$ u=1	-.018	.013	.012	.012	.002	-.002

Note: These equations are estimated in the same sample and with the same additional controls as Table 3. P80 is 1980 share of blue-collar employment of given demographic group.

Chapter 7: The Interaction of Residential and Employment Segregation

The burning ghettos of twenty years ago focused attention on the plight of the poor urban black. The violence and disorder of that time generated interest in peaceful means of accommodation and integration, among which may be numbered affirmative action. While attention has since lapsed, the problems of that day have not gone away. In an early and controversial study, John Kain demonstrated that blacks may have greater difficulty in finding jobs because of the geographical isolation of black ghettos from jobs. Poor urban transportation systems may translate residential segregation into employment segregation and unemployment. Indeed, part of today's unprecedented unemployment rates among blacks has been attributed to the suburbanization of employment: as the jobs have moved out of the central city, the blacks have been unable to follow.

We have already seen that affirmative action has been successful in increasing black males' share of employment among federal contractors. This finding may reflect a spurious correlation if contractor establishments were located closer than non-contractors to concentrations of black population. In other words, since most of our previous tests did not include detailed geographic controls, it is possible that contractors are closer to blacks, and that what we have labeled a contractor effect is really in part a geographic effect.

In this chapter we will show evidence that black employment

patterns are strongly influenced by residential patterns, demonstrating the importance of the local labor market. We will also show that affirmative action has been successful in promoting black male employment even when geographic effects are controlled for.

The first section of this chapter reviews Kain's work and that of his subsequent critics. The second section discusses our results, and the third presents our conclusions.

The Kain Controversy

John Kain's work was the first to link discrimination in the housing market to the distribution and level of non-white employment in urban areas. Kain used data on place of work and place of residence obtained from the Detroit Area Traffic Study of 1952, and the Chicago Area Traffic Study of 1956 to test three hypotheses: First, residential segregation affects the geographic distribution of black employment. Second, residential segregation increases black unemployment, and third, the post-war suburbanization of employment has hindered black employment. The central tests in this work are regressions for each city of the percent black employed across workplace zones on the percent black resident in each workplace zone and on distance from the major black ghetto. Kain's major finding is that blacks share of employment is significantly higher in heavily black neighborhoods and close to the major ghetto.

One interpretation of this result is that residential segre-

gation causes employment segregation. From this it follows that the underrepresentation of blacks in employment may overstate employment discrimination, and that the suburbanization of employment will tend to reduce black employment opportunities and increase black unemployment.

Kain's work attracted much criticism on both empirical and theoretical grounds. Offner and Saks reanalyzed the Chicago data and found that the original results were sensitive to specification. In particular, Offner and Saks found evidence of tipping behavior: black employment share increases at an increasing rate as black residential share increases. One possible policy interpretation of this result is that residential integration might decrease employment opportunities for blacks. While this point provoked further controversy, for our purposes here it is important to bear in mind that Offner and Saks' results agree with Kain's in showing that black employment share increases with distance from the major ghetto.

Once stated, this result seems obvious. But does it then follow that black unemployment can be partly blamed on the physical inaccessibility of jobs? Some recent work by Ellwood has argued that, surprisingly, the answer may be no. Examining unemployment in Chicago during the 1970's, Ellwood finds that distance and travel time from potential jobs cannot account for much of black unemployment, suggesting that, in some sense, there may be "enough" jobs for blacks near the ghetto. Nevertheless, this may be true at the same time that black access to jobs

beyond the ghetto is constrained.

The theoretical criticism of Kain's work, which Kain himself notes, is that his results are consistent with a world in which blacks are choosing the optimal place to live. The issue is essentially one of simultaneity and reverse causation. If there were no residential discrimination, but strong and pervasive employment discrimination, blacks might find it advantageous to live near plants that would employ them. While this is unlikely to be the dominant trend, it would make improvements in urban transport and efforts at residential integration largely beside the point in ameliorating the employment problems of urban blacks.

It is very difficult to give this argument much credence. First, there is an abundance of independent evidence demonstrating the strength of residential discrimination and segregation. If anything, one lesson from the history of federal efforts to integrate neighborhoods and workplaces over the last two decades is that it is far easier to get whites and blacks to work side by side than it is to get them to live side by side. Secondly, tastes for discrimination are not uniform. While a neighborhood may tip, it is difficult to believe that the reason so few blacks live in the suburbs is because all suburban employees discriminate against them. After all, if there were no residential discrimination, all it would take to integrate a neighborhood would be one enlightened employer. Third, given that housing, on a quality adjusted basis, is more expensive in the central city,

why should all the non-discriminating firms cluster around the central central when they could presumably offer their black workers lower wages elsewhere?

In this chapter we test for causality by comparing changes in residential and employment segregation over time in a sample of large cities. In the following section, we test for the impact of residential segregation on employment segregation, and for the impact of affirmative action conditional on residential segregation.

Section 2: Results

Los-Angeles and Chicago are polar cases in terms of residential segregation, Chicago being among the most highly segregated American cities, and Los Angeles among the least. But even the most integrated cities in America are still essentially segregated. The Watts riots of 1965 demonstrated that blacks in Los Angeles, as in other cities, felt disenfranchised and disenfranchised. The McCone Commission report on the causes of the riot focused on the problems faced by blacks in finding and holding a job, and pointed out that "the inadequate and costly transportation currently existing throughout the Los Angeles area seriously restricts the residents of the disadvantaged areas such as South Central Los Angeles." Have the changes made since 1965 made any difference?

To bring some empirical light to bear on these issues, this study analyzes the change in establishment level employment demo-

graphics between 1974 and 1980 as a function of residential demographics surrounding the workplace, and as a function of distance and travel time from concentrations of black population.

Our results may be simply stated. First, distance from the main ghetto is one of the strongest and most significant determinants of levels and changes in the racial composition of the workforce. The further away an establishment is from the ghetto the fewer blacks it employs and the slower the rate at which it adds blacks to its workforce over time. Patterns of residential segregation are strongly reflected in patterns of employment segregation. This is a phenomena both the courts and the DFCPP have taken into consideration in comparing an employer's demographic patterns with those of the local labor market.

Second, and most important for the central thesis of this study, affirmative action still promotes the employment of black males even when residential demographics and distance from the main ghetto are controlled for. Contractors are not located closer to concentrations of black population in any significant way, as one simultaneity argument would run. By promoting the integration of the workplace, affirmative action holds out the promise of reducing residential segregation in the long run.

Third, the positive impact of unions on black male employment is also not an artifact of location. Even when residential demographics are controlled for, unionized plants still increase their employment of black males at a faster rate than non-unionized plants.

Section 3: Conclusions

Employment patterns for blacks have been strongly influenced by residential segregation. The level and rate of growth of black employment are both higher closer to the ghetto. While affirmative action has been successful in prompting establishments in both the central city and the suburbs to hire more blacks, its efficacy in intergrating the workplace is still limited by residential segregation.

Chapter 8: What Should the DFCCP Do?

The wastebaskets of Washington are all too familiar with proposals for the reform of regulation. This chapter suggests ways in which the operation of the DFCCP could be improved, but more usefully it frames ways to think about what the DFCCP does. This chapter explores the efficient allocation of the DFCCP's regulatory effort. Couching the analysis at times in terms of a multi-product, multi-market monopolist, the first section discusses allocation across firms in light of spillovers across firms, across goals, and across time. Next we consider the regulatory tools available to the DFCCP, and the constraints on their use. The DFCCP can be broadly conceived of as pursuing either anti-discrimination or income redistribution policy. The implications of these two distinct goals for targeting enforcement are explored in the next two major sections. Finally, the implications for targetting of current operating procedures within the DFCCP are explored.

Section 1. Efficient Allocation of Regulatory Effort

The DFCCP at any point in time, has a fixed amount of money and manpower with which to enforce affirmative action. At the roughest level, it faces a theoretical problem common to all regulatory agencies in allocating these limited resources. The problem is theoretically similar to that of a multi-market monopolist with a fixed output.

Chapter 5: What Should the DCCP Do?

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(c) Suppose the regulator's goal can be collapsed into one dimension, which we label π . We will discuss a few plausible definitions of π later. Assume the regulator is constrained only by a fixed budget, B . If total cost is unchanged by varying across firms the allocation of a given level of aggregate regulatory pressure, then the regulator's problem is to:

$$\text{MAX}_{X_1, X_2} \pi(X_1, X_2) - \lambda(C(X_1 + X_2) - B) \quad (1)$$

where $\pi(\cdot)$ is a production function.

X_i is the level of regulatory pressure on firm i

C is a cost function

B is the regulator's budget

λ is a lagrange multiplier on the budget constraint

The regulator will now optimize by choosing X_1 and X_2 so that: $\pi_1 = \pi_2$; the marginal benefit of regulatory pressure is equalized across firms.

This simple formulation establishes an intuitive foundation for more complex variants. More realistically, costs are an increasing function of the level of regulatory pressure in each firm. Escalation from a compliance review to administrative proceedings to debarment proceedings increases costs. In this case the regulator's problem is:

$$\text{MAX}_{X_1, X_2} \pi(X_1, X_2) - \lambda(C(X_1) + C(X_2) - B) \quad (2)$$

The regulator will now be at an optimum when the ratio of marginal benefits is equal to the ratio of marginal costs:

$$\frac{\pi_1}{\pi_2} = \frac{C'(X_1)}{C'(X_2)} \tag{3}$$

Assuming $C' > 0$, $C'' < 0$, $f_1, f_2 > 0$, $f_{11}, f_{22} < 0$, f_i/C need not map one-one onto X_i , but taking the budget constraint into account will lead to a unique solution. In particular, this solution suggests that if one firm is a push-over, or a good corporate citizen, that yields easily to government pressure, then pressure should be reallocated toward such a firm where relatively great gains can be obtained with little resistance. In such a world, the accomodating firm invites attack, and the most recalcitrant may go unchallenged.

Spillover effects are also likely to be important. In terms of the multi-market monopolist analogy, the markets are not perfectly isolated. A positive spillover, or demonstration effect, occurs when bringing regulatory pressure to bear on firm A improves firm B's performance. Negative spillovers might plausibly occur if there were only a few firms in a given labor market: (oligopsony), so that if one firm hired many minorities it would be more difficult for other firms to perform well. The small numbers case invites strategic behavior with no obvious closed form solutions and is irrelevant in the eyes of the OFCCP, so we leave it aside and concentrate on the demonstration effect. Now the regulator maximizes

$$\pi[\alpha^1(X_1, X_2), \alpha^2(X_1, X_2)] - \lambda[C(X_1) + C(X_2) - B] \tag{4}$$

where ϕ_i is firm i 's response function to regulatory pressure. At an optimum

$$\frac{\pi_1 \alpha_1' + \pi_2 \alpha_1'}{\pi_1 \alpha_2' + \pi_2 \alpha_2'} = \frac{C'(X_1)}{C'(X_2)} \quad (5)$$

The ratio of marginal benefits is again set equal to the ratio of marginal costs, but now the marginal benefit of regulatory pressure on firm 1 includes the demonstration effect on firm 2 in addition to the direct effect on firm 1.

So far we have assumed that the regulator had a single goal. In reality the goals of the DFCCP are more complex. As protection under affirmative action has been extended to additional demographic groups, the policy of the DFCCP in promoting the interests of any one protected group has become problematical. The regulator's policy now depends on externalities across goals within firms, which may be either positive or negative. For example, suppose the regulator is interested in two demographic groups, females and blacks, and so maximizes

$$\pi(\alpha(X^A, X^B), \beta(X^B, X^A)) - \lambda(C(X^A + X^B) - B) \quad (6)$$

- where
- is the firm's production function for female success
 - is the firm's production function for black success
 - XA is regulatory pressure for female success
 - XB is regulatory pressure for black success

Now the first order conditions yield:

$$\pi_1 \alpha_1 + \pi_2 \beta_2 = \pi_1 \alpha_2 + \pi_2 \beta_1 \quad (7)$$

If there are economies of scale in enforcement or compliance, then $\partial 2, \partial 2 > 0$. In this case there is positive spillover across goals, and by promoting females the DFCCP would also promote blacks.

In the opposite case, $\partial 2, \partial 2 < 0$ there is negative spillover. There are limited resources for compliance within the firm; and the number of job openings is limited, so by pushing to attain female goals, the DFCCP frustrates the achievement of black goals. A quiet way to kill affirmative action is to extend its benefits to all groups, thereby benefitting none outside the affirmative action bureaucracy.

The degree of negative spillover is likely to depend on the size of the demographic group. Blacks typically make up a smaller proportion of the labor pool than females, so the firm can improve the situation of blacks without detracting much from females. On the other hand, to make more room for elephants the mice must suffer, so it is likely that $\partial 2 < \partial 2 < 0$. If the regulator weights black success no less than female success, he will put more effort into advancing blacks because there is less of a negative backwash onto the other group. If the regulator cares only about the aggregate levels of black and female success and not at all about its dispersion across firms, he will segregate goals across firms. In other words, if pushing females hinders black success within any one firm the regulator who desires both will advance the cause of women at some firms, and of blacks at other firms. The same result will obtain if the second deriva-

tives of the firm production functions, b_{11} and b_{12} are positive. In this tipping case, the more members of a given protected group the firm employs, the easier it is to hire or promote additional members of that group.

The regulator faces not only the spillover across firms and across goals we have so far discussed, but also spillover across time. Firm's behavior is endogenous, and adjusts over time to perceived patterns of enforcement. For example, absent endogenous firm behavior the DFCCP might decide to target only large firms. Over time however, small firms will realize that for them affirmative action is not enforced, and that they have little incentive to comply with affirmative action regulations. Such a deterministic policy may result in no net improvement in the employment of minorities and females in the contractor sector, but simply a reshuffling from small to large firms. This argues for a randomized targetting policy in which no group of firms this side of heaven faces a zero probability of enforcement.

The broad issues involved in the efficient allocation of regulatory effort have been discussed in this section. The DFCCP should allocate its effort across establishments so as to equalize the marginal benefit gained from each establishment. In so doing, the DFCCP should take account of a variety of spillovers. First, there are demonstration effects across firms so that pressuring one firm may send a strong signal to others. Second, there may be either economies of scale or tradeoffs within the

firm between pursuing affirmative action for different demographic groups. This may also involve tipping behavior within firms. Finally, firm behavior is endogenous over time, and is expected to respond to the DFCCP's past record of enforcement.

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Section 2. Credible Threats and Efficient Regulatory Tools

Given a fixed budget to deter crime, how should it be spent? A potential criminal worries about the probability of being caught as well as the penalty if caught. Standard deterrence models tell us that if the criminally minded are risk averse, or if the marginal cost of intensive regulatory pressure is decreasing, while that of extensive pressure is non-decreasing, then it is more efficient for the regulator to increase the penalties imposed on criminals than to increase their probability of being caught.

DFCCP enforcement can be thought of as a two stage process. The DFCCP audits some firms in compliance reviews. Some of those considered deficient and recalcitrant are pursued to the next level of enforcement. The costs to the DFCCP of a compliance review or of an administrative proceeding are assumed to be fixed, so the DFCCP's problem is to choose the optimum levels of compliance review and administrative proceedings activity, and of administrative penalties given its fixed budget:

$$\underset{R,A,C^A}{MAX} F[R(\bar{C}^R+AC^A)]-\lambda[R(\bar{D}^R+A\bar{D}^A)-B] \tag{8}$$

where F is a production function of a representative firm for protected group success.

R is the probability of a firm being reviewed.

A is the probability of a firm undergoing administrative proceedings, conditional on being reviewed.

CR is the fixed cost to the firm of a review.

Section 5 - Economic Incentives and Efficient Regulatory Tools

Given a fixed budget to deter crime, how should it be spent? A potential criminal worries about the probability of being caught as well as the penalty if caught. Standard deterrence models tell us that if the criminally minded are risk averse, or if the marginal cost of intensive regulatory pressure is decreasing, while that of extensive pressure is non-decreasing, then it is more efficient for the regulator to increase the penalties imposed on criminals than to increase their probability of being caught.

DECP enforcement can be thought of as a two stage process. The DECP audits some firms in compliance reviews. Some of those considered deficient and recalcitrant are pursued to the next level of enforcement. The costs to the DECP of a compliance review or of an administrative proceeding are assumed to be fixed, so the DECP's problem is to choose the optimum levels of compliance review and administrative proceedings activity, and of administrative penalties given its fixed budget:

$$\text{MAX}_{A, R, C} \{ R(C^2 + AC^2) - R(A^2 + AR^2) - B \}$$

(8)

where F is a production function of a representative firm for protected group success.

R is the probability of a firm being reviewed.

A is the probability of a firm undergoing administrative proceedings, conditional on being reviewed.

C is the fixed cost to the firm of a review.

CA is the cost to the firm of an administrative proceeding.

DR is the fixed cost to the DFCCP of a review.

DA is the fixed cost to the DFCCP of an administrative proceeding.

B is the DFCCP's budget per firm.

This formulation implicitly assumes homogeneous risk-neutral firms equally weighted by the DFCCP.

The first order conditions yield:

$$(\bar{C}^R + AC^A)F - \lambda(\bar{D}^R + A\bar{D}^A) \tag{9}$$

$$R C^A F - \lambda R \bar{D}^A \tag{10}$$

$$R A F - 0 \tag{11}$$

$$R(\bar{D}^R + A \bar{D}^A) - B \tag{12}$$

Equation (12) is simply the budget constraint. Equation (11) dominates the solution. It is assumed costless to the DFCCP to increase the penalty imposed by an administrative proceeding, so it is optimal to drive the marginal benefit of sanction levels to zero by raising sanctions. Equations (9) and (10) say that reviews and administrative proceedings should be used until their marginal benefit is equal to their marginal cost, given the budget constraint.

Of course, the economist's advice that efficient regulation entails severe penalties ignores some fundamental political and moral realities. While the public hanging of those caught driv-

ing at 60 mph would likely reduce speeding, it would also be seen as grotesquely out of proportion to the direct social cost of the crime. In addition, it is ex post inequitable across criminals. Since the companion of high penalties is low surveillance, a greater proportion of miscreants would go unpunished. The combination of these two is unlikely to engender respect for the state.

The practical difficulty faced by the DFCCP is in determining when the marginal benefit from more intense sanctions is zero. Ultimate sanctions, in war, in crime, and in regulation, have special characteristics. First, suppose the DFCCP could put a firm out of business and force it to dissolve its assets. While this would serve as a stern warning to others who might discriminate, it need not lead directly to improved opportunities for minorities and females if capital adjustment costs are high.

Now consider the ultimate sanction actually imposed by the DFCCP: a corporation is barred from holding federal contracts. This commercial exile is an admission of failure to influence the firm's behavior. Curiously, the ultimate punishment consists of banishing the worst offenders beyond the realm of further pressure from the DFCCP. A corporation that has been prohibited from holding federal contracts has also been released from its affirmative action obligations.

A further paradox is that where the DFCCP has effective leverage because government contracts comprise a large portion of a firm's business, debarment is such a disruptive penalty that it

is not used. On the other hand, where one could envision actually debarring a firm, the threat is weak. In fact, some firms, such as Sears, whose business does not depend largely on government contracts have pre-empted the threat by eschewing federal contracts, in effect debarring themselves. In other situations, in which firms are critically dependent on the government, the government is often just as dependent on the firms. This is particularly the case in public utilities or in the defense industry, where markets for specialized military products are often characterized by bilateral monopoly: one buyer, one seller. Even in cases where there are many sellers, debarment is often impractical. Consider the case of the briefly debarred Prudential Insurance Company. The sheer number of insurance and investment contracts that would have had to be broken and replaced threatened to result in an administrative nightmare. Bluntly put, the government cannot debar the missile maker without harming itself, and its threat to debar the paperclip maker is hollow. The government debarring a firm is like a family disowning a son: when meaningful it is too severe to be a practical threat for small transgressions outside the core of the relationship, and it removes the exile from further influence -- unless he underestimated his dependency.

This discussion suggests that while efficient regulation may entail the threat of severe penalties, debarment seems ill-suited to the role.

The effective sanctions available to the DFCCP include some

2 main remedies

less tangible than back-pay awards or the double-ended pistol of debarment. The government can at times defy the economist and create something out of virtually nothing using show trials and publicity.

public opinion

Show trials are an efficient means of magnifying the perceived threat of government intervention. During the Carter Administration, the DFCCP pursued a few well-publicized debarments. Many were promptly enjoined by the courts, but not before businesses were made aware that the DFCCP was willing to use its ultimate sanction.

In part, affirmative action enforcement today is a game played with backward-looking mirrors. An internal affirmative action bureaucracy has become entrenched in the largest corporations, and this internal bureaucracy has goals of its own that internalize within the corporation the external government goals even when external pressure declines. Since these corporate affirmative action professionals influence the flow of information to the corporation concerning affirmative action regulation, and are usually individually committed to affirmative action, they can promote their own goals and enhance their employment prospects by keeping the threat of external pressure alive. Of course, we expect firms to learn over time the true extent of enforcement.

Publicity is a more subtle sanction, but it may be among the most powerful available to the DFCCP. Corporate management does not like to be publicly labelled racist or sexist, even in

Industries that do not sell directly to the public, perhaps because such labels encourage Title VII law suits.

Efficient regulation may entail intense sanctions rather than extensive surveillance. Debarment, however, does not seem to fill the role because it is politically and economically costly to the government and need not be costly to the debarred firm. Fines or backpay awards impose direct costs on the firms and constitute a more credible threat since they impose lower costs on the government. Short of that, the more subtle pressure of publicity can influence firms at little cost to the government.

summary

Although subtle forms of discrimination may not reveal themselves in the underrepresentation of members of a given group, statistical underrepresentation does provide precise evidence, though not proof, of discrimination. Complete screening for discrimination would test every aspect of the employment relationship for color and sex biasness. This is costly, so it seems reasonable to select for further investigation those establishments in which minorities or females are underrepresented employment. While the operational definition of underrepresentation has been debated in lengthy detail in the courts and elsewhere, all that needs to be pointed out here is that by issuing a set of vague and self-contradictory regulations, the DPCP has left itself virtually unscathed in this area. To simplify the

Section 3. Targeting Against Discrimination

While affirmative action extends beyond anti-discrimination, one of the legs it stands on is anti-discrimination law. Currently, in fact, the DFCCP is responsible for pursuing cases of systematic discrimination. In the administration of E.O. 11246, the burden of proof is on the contractor, not on the regulator, so the DFCCP can often accomplish in weeks what would take months of costly litigation for the EEOC or private parties to accomplish. If the DFCCP were concerned only with reducing the effects of employment discrimination, how should its regulatory pressures be targeted? How should it decide which establishments to review?

Uncertain Discrimination

Although subtle forms of discrimination may not reveal themselves in the underrepresentation of members of a given group, statistical underrepresentation does provide *prima facie* evidence, though not proof, of discrimination. Complete screening for discrimination would test every aspect of the employment relationship for color and sex blindness. This is costly, so it seems reasonable to select for further investigation those establishments in which minorities or females are underrepresented in employment. While the operational definition of underrepresentation has been debated in lengthy detail in the courts and elsewhere, all that needs to be pointed out here is that by issuing a set of vague and self-contradictory regulations, the DFCCP has left itself virtually unrestrained in this area. To simplify the

discussion, this section assumes a fixed and known labor supply, common to all firms.

Let π percent of a labor force population be black, with population variance $\pi(1-\pi)$. Think of a firm's employment practices as a color blind draw with replacement from this population. The expected value of P , the sample mean percent black, is π . The variance of the sample mean is $\pi(1-\pi)/N$, where N is firm size. If no firms discriminate, then randomly we expect 2.5% of all firms to employ fewer than $\pi - 2\pi(1-\pi)/N$ percent black.

The legal and administrative use of underrepresentation as *prima facie* evidence of discrimination presumes that discriminators are more likely to be in the tail of the distribution. But how should the DFCCP select the threshold at which it will reject the null hypothesis of non-discrimination? This will depend on the relative cost of making type I and type II errors.

One goal of the regulatory bureaucracy is to live and grow by maximizing net political support. If its political base were anti-discrimination it would gain political support by minimizing type II errors. If this were all that mattered it would set a low threshold and would pressure all firms. Balancing this incentive is the cost of a type I error. At low thresholds, many non-discriminating firms will be harrassed, breeding antagonism and eating away political support.

The regulator's tradeoff involves solving:

$$MAX G = [1-\beta(P)]Z - \alpha(P)C_I - \beta(P)C_{II} - \lambda[N(P)C_R - X - Y] \tag{13}$$

with first order condition:

$$-\beta'(Z + C_{II}) - \alpha' C_I - \lambda N' C_R = 0 \tag{14}$$

where P_t is the threshold level. Firms with percent black below P_t are audited.

$\phi(P_t)$ is the probability of a type I error, of falsely accusing under the null hypothesis that firms do not discriminate. $\phi' > 0$.

$\phi(P_t)$ is the probability of a type II error, letting the guilty go. $\phi' < 0$.

$N(P_t)$ is the density function of number of firms by percent black.

Z is the political benefit of correctly identifying a discriminating firm.

C_I is the political cost of a type I error: falsely pursuing the innocent.

C_{II} is the political cost of a type II error: allowing discriminators to operate unchallenged.

C_R is the cost of a review.

X is any politically neutral but financially costly activity of the regulator.

Y is the regulator's budget.

The first order condition states that to maximize political support while satisfying the budget constraint, the regulator should increase P_t until the marginal benefit of catching

discriminators is equal to the marginal cost of false accusations, additional reviews, and missing discriminators.

Three figures may help to illustrate this. Figure 6.1 shows type I and type II errors for assumed density functions under the null hypothesis H_0 that firms do not discriminate and under H_1 , that firms do discriminate. Obviously for firms of a given size, as θ decreases, ϕ increases. In figure 6.2 the level of costs and benefit are graphed as a function of threshold level P , and figure 6.3 shows a hypothetical net political benefit function. At P^* net political support is maximized. The regulator may choose a threshold below P^* because of the budget constraint, but it will not normally choose a level above P^* .

There may be a dynamic between the level of political support and the budget constraint, corresponding to the political cycle of regulatory capture. The simple insight is obvious in a vastly simplified model of the political process. Consider two political regimes X and Z . Under the X regime the regulators are captured by members of protected groups, who weight type II errors more heavily than type I and increase the regulators' budget, allowing P to rise toward P^* . Since the bureaucracies' weights differ from the electorates', the antagonism of the falsely harrassed rises until a change of regimes occurs. Under the Z regime, the regulators' budget is reduced, and type I errors are weighted more heavily than type II, both of which lower P , resulting in less regulatory pressure. In this stark, one issue world, the regulators' weighting will be forced towards

Identity with the median voters weighting by the competition of political candidates.

So far we have assumed all firms are the same size. The variance of the sample mean decreases with sample size, so the prima facie evidence of discrimination in a firm with a given percent black is statistically stronger the larger the work force of the firm. Intuitively, as the firm draws a larger sample it is more likely to resemble the population. To hold the probability of a type I error fixed, as firm size n increases, P_t -- the level below which regulatory pressure is applied -- must also increase. We know that $\phi = \text{Prob}(P < \bar{t} - k\phi)$, where \bar{t} is the population mean, and $k\phi$ is read off a table of the binomial or normal distribution. The threshold level P_t is equal to $\bar{t} - k\phi$, where $\phi = (\bar{t}(1-\bar{t})/n)^{1/2}$.

So

$$dP/dn = (k/2n) ((\pi(1-\pi))/n)^{1/2} \tag{15}$$

This is positive, so holding ϕ fixed implies that as the firm size increases the regulator should pursue firms with higher black representation. This is important since there is in fact a broad range of firm sizes, and ϕ may be presumed to be small. It would be irrelevant for large ϕ , since $k\phi$ goes to infinity as ϕ increases.

The economists' first rule of thumb concerning regulation, if he admits any role for it at all, is that it should specify ends and let firms choose their own means toward that end in a

decentralized and presumably efficient manner. The previous discussion shows that it becomes difficult to decide statistically whether the firm is meeting regulatory goals as the firm becomes smaller. This consideration may lend some support to the DFCCP's emphasis on detailed regulation of the employment process, although in practice these regulations are enforced with greater frequency at large than at small establishments.

We concluded above that confronted with two firms with the same level of below average black representation, the regulator should pursue the larger firm because the evidence in favor of discrimination becomes more statistically compelling with firm size. This conclusion must be tempered by placing the DFCCP within its broader regulatory and legal context. Recourse to the DFCCP is not the sole avenue open to victims of systematic discrimination: they may also bring suit privately or through the EEOC under Title VII. The statistical evidence in large firms that is compelling to the DFCCP is also compelling in the courts. By the same token, the DFCCP can pursue less compelling cases which stand less chance of success in the courts. Given its limited resources and comparative advantage, this suggests that the DFCCP temper its pursuit of large firms and divert some resources towards cases that are not likely to be resolved in private litigation because they fall short of court standards.

Certain Discrimination

Up to now we have concentrated on the problem of inferring discrimination on the basis of sample proportions. Suppose we

now leave this issue aside and assume that any firm that deviates at all from the population mean discriminates. This will allow us to focus on the tradeoff between firm size and deviation from mean black share in reducing discrimination. If the DFCCP's goal is to reduce discrimination against blacks, how should it trade off firm size and deviation of black representation in targeting enforcement?

The variance is a well-developed and tractable measure of dispersion. If the DFCCP's goal were simply to reduce the variance of black representation across firms it would target both tails of the distribution. However, the DFCCP has no mandate to pursue firms because white males are underrepresented. The DFCCP is only concerned with the half-variance; the variation below the mean. For simplicity we shall use the variance with the understanding that the DFCCP only targets firms below the mean. It is also natural to assume that the DFCCP minimizes the weighted variance, weighted by firm size, because the DFCCP is more concerned with helping victims of discrimination than with absolute justice. Under these assumptions, the DFCCP's goal is to target pressure on the bottom tail of the distribution so as to minimize the weighted variance of blacks' employment share across firms:

$$\sigma_v^2 = \sum_{i=1}^N E_i (P_i - \pi)^2 \quad (16)$$

where

E_i is employment in firm i .

π is the population mean of blacks' share.