

Ronald Reagan Presidential Library
Digital Library Collections

This is a PDF of a folder from our textual collections.

Collection: Barr, William: Files
Folder Title: [Affirmative
Action Studies] (5 of 7)
Box: 1

To see more digitized collections visit:

<https://reaganlibrary.gov/archives/digital-library>

To see all Ronald Reagan Presidential Library inventories visit:

<https://reaganlibrary.gov/document-collection>

Contact a reference archivist at: reagan.library@nara.gov

Citation Guidelines: <https://reaganlibrary.gov/citing>

National Archives Catalogue: <https://catalog.archives.gov/>

The relevant derivative is :

$$d\sigma^2/dP_i = 2E_i (P_i - \pi) \tag{17}$$

For firms an equal distance from the mean, the decrease in weighted variance, VARW, is proportional to firm size, so the DFECF should pursue larger firms first among those equidistant from the mean.

Holding VARW fixed and totally differentiating we find:

$$\frac{dE_i}{dP_i} = \frac{-2E_i}{(P_i - \pi)} \tag{18}$$

This is the tradeoff between targeting size and deviation that leaves Δ VARW unchanged. Intuitively, equal reductions in VARW can be achieved by pushing to the population mean small firms that deviate greatly or large firms that deviate little.

So far we have assumed that each individual firm's employment practices have a negligible effect on all other firms, or that as a firm increases its black employment it draws from the unemployed or from firms with an abundance of blacks. Suppose, instead, that blacks may be most easily bid away from small discriminatory firms that believe there is little chance of their being reviewed for compliance. In this case it is possible that VARW will not improve as blacks' employment share at large firms increases. To derive this futility condition totally differentiate VARW:

$$d\sigma^2 = \sum [(P_i - \pi)^2 dE_i + 2E_i (P_i - \pi) dP_i] \tag{19}$$

Holding firm size fixed, and assuming for simplicity that $dP_i = 0$ except at the large firm j which is targeted and the small firm k from which it bids away blacks, we find enforcement will leave VARW unchanged if

$$E_j(\bar{P}_j - \pi) dP_j = -E_k(P_k - \pi) dP_k \quad (20)$$

the weighted variance will be unaffected by increasing blacks' representation at firm j if firm j in turn bids black labor away from small firm k at which blacks are already underrepresented. If blacks perceive only the unweighted variance, they will now in fact be displaced by the results of affirmative action pressure.

There is another situation in which the market undoes what the regulator achieves in a single firm. Even integrating an all white firm need not reduce the level of segregation. To illustrate this, consider an extreme case of tipping in a market with a technologically fixed number of firms and homogeneous workers. If all workers refuse to work in integrated firms, then absent government interference all firms will be segregated. If the government forces the employment of a black at an all white firm, it will induce complete turnover resulting in a segregated black firm. This may increase black earnings, but such extreme discriminatory taste will prevent integration. If the displaced whites then regroup in another firm, VARW need not change.

Some would argue that as long as this reshuffling raises relative black earnings, affirmative action should be considered a success. Their underlying premise is that affirmative action

is a program to redistribute income, not to fight discrimination.

Finally, it is important to realize that Executive Order 11246 only applies to federal contractors. Some have argued, though less vigorously in the past two decades, that the best cure for discrimination is integration. Because of its restricted coverage, the DFCCP might successfully increase black's employment share and reduce VARW in the contractor sector, but cause an increase in overall VARW at the same time.

A common variance decomposition is:

$$\sigma^2 = \sum_i \sum_l (P_l - \bar{P}_i)^2 + \sum_i E_i (\bar{P}_i - \pi)^2 \quad (21)$$

The first term is the sum of the within group variances, and the second term is the between group variance. In this case there are only two groups of firms: contractors (c) and non-contractors (nc), so this reduces to:

$$\sigma^2 = \sigma_c^2 + \sigma_{nc}^2 + E_c (P_c - \pi)^2 + E_{nc} (P_{nc} - \pi)^2 \quad (22)$$

Now it is clear that reducing VARC or increasing P_c are neither necessary nor sufficient conditions for reducing σ^2 . VARNC might increase, or the between group variance might increase if the contractor sector was already black intensive. In the extreme, affirmative action replaces discrimination with nepotism or reverse discrimination in the contractor sector, resulting in perfect segregation: a black contractor sector and a white non-contractor sector.

In reality the DFCCP cannot know for sure if a firm

discriminates. In setting enforcement thresholds, it should tradeoff the cost of falsely accusing the innocent against that of letting the guilty go free. Statistical evidence is more powerful in large firms, so they should be held to higher standards. For a given threshold, however, large firms have a greater liability of falling the statistical standard of the courts. Perhaps the DFCCP should concentrate on smaller firms in which the evidence is not up to court standards. Given the indeterminacy of statistically determining compliance with goals, there is some justification for the DFCCP's emphasis on compliance with procedures.

When discrimination is known with certainty, I have derived the tradeoff between firm size and extent of discrimination that should be used in targetting, and shown how reshuffling across firms can undo the regulator's attempts at intervention. In fighting discrimination in one firm or sector, the DFCCP must take care that it does not worsen it elsewhere.

Section 4. Targetting to Redistribute Income

To think of affirmative action solely as policy against discrimination is to mistake the essence of affirmative action. Affirmative action does not in practice promote blindness toward race or sex. As its common name indicates, Executive Order 11246 in practice requires contractors to take affirmative action to increase employment opportunities for people chosen on the basis of race and sex, irrespective of whether or not the firm has been discriminating.

In the words of then Under Secretary of Labor, Laurence Silberman: "One of the interesting things about the affirmative action concept, it is not antidiscrimination. It goes beyond that . . . He and the compliance agencies put pressure on contractors to come up with commitments even though these contracts are not guilty of any discrimination, but because we think they are required under the Executive order to go beyond, to provide affirmative action." [1]

Speculate a moment on the sources of political support for affirmative action. Why should a politician support affirmative action? Who will support him if he does? Obviously blacks and women are the largest direct beneficiaries of affirmative action, absent civil disorder, and among these the politician will respond to the wishes of those most likely to support him with votes and money. This suggests a very different conception of how DFCCP regulatory pressure may be targetted.

How does an individual gain from affirmative action? If affirmative action is viewed as a policy of anti-discrimination, he gains from a broader choice set, a feeling of justice and equal protection under the law, and indirectly from increased earnings. A broader choice of employment only makes the individual better off in effect if he ends up in a better job. Increasing the choice set does not by itself necessarily increase utility. While feelings of justice may promote the authority of the state, they do not put bread on the table. The premise of this section is that political support for affirmative action depends on individual gain in the form of increased earnings.

Relating this in more formal economic terms, political support is proportional to workers' surplus: the area above the supply curve and beneath the wage in figure 6.4. Executive Order 11246 imposes employment goals, not wage goals. For a given induced shift in employment, workers surplus will be greater the more inelastic is the supply and will depend not at all on the elasticity of demand. Graphically, for the linear supply in Figure 6.4, the increase in worker surplus is $.5\Delta W\Delta N + N_0\Delta W$, where ΔW is the increase in wages, ΔN is the fixed increase in employment, and N_0 is initial employment. This surplus increases with ΔW which increases with the inelasticity of supply.

If political support is proportional to rents, then the OFCCP will elicit more support from minorities and females by targetting enforcement pressure where supply is inelastic. So affirmative action pressure should be stronger in occupations

requiring high skills and high education, in which people are also more likely to be politically active, and which are after all, in my opinion, the true battlefield of affirmative action. It is a battlefield because it is these same cases of inelastic supply that provoke the most political backlash. Firms are more sensitive to quality differentials, have more difficulty meeting employment goals, and are under pressure to raise wages to do so. As their relative wage declines, white males are seized by concern with inequity.

The premise of the above discussion was that no political support would be forthcoming from markets with elastic supply because no workers surplus could be generated. If supply is perfectly elastic at wage W_0 , then workers are indifferent between a given occupation and other pursuits, so they derive no net benefit from employment in the given occupation. This interpretation depends critically on the assumption of perfect labor markets. In reality this assumption is violated by the functioning of labor unions, by government regulations such as minimum wage and occupational licensing laws, and by the presence of unemployment. In any of these cases an excess notional labor supply may exist, either because wages are artificially maintained above the market clearing level, or employment is constrained below that level by institutional restrictions or by firms' output constraints. If observed wages do not clear markets, an unchanging wage in response to a shifting demand (elastic effective supply) cannot be taken as evidence of elastic notional supply. For example, in Figure 6.5, a minimum wage is imposed at w , so effective supply

S_e differs from notional supply S_n , and demand can shift from D up to D' without increasing wages. The argument that political support is strongest where supply is inelastic refers to notional, not effective supply, and goes through even in the presence of wage floors imposed by unions or the government.

Highly skilled minorities and females have a strong incentive to use the government to increase the demand for their services. This makes an interesting contrast with unions, which restrict supply, depend for their effectiveness on the elasticity of demand, are more prevalent and at least as important among the low-skilled as among the high-skilled, and which must face a tradeoff between higher wages or more jobs. In terms of redistributing income, the DFCCP acts as an ideal union: it increases wages without decreasing employment for its members; a history of discrimination pays the dues for the group.

Section 5: Targetting by Bureaucratic Inertia

In trying to make sense of how the DFCCP has actually targetted enforcement, it is useful to recognize that the DFCCP, like any other manmade bureaucracy, is imperfect. Even if the head knew exactly what it wanted to do, the feet often have their own interests and sometimes are stuck in the mud.

In practice, targetting at the DFCCP has for the most part done on an ad hoc decentralized basis, with field officers exercising considerable discretion. Field officers tend to be evaluated on fulfilling goals for compliance reviews, rather than on successfully bringing discriminators to heel. Indeed to do otherwise might well invite undesirable headhunting. The fastest way to fill a production goal for compliance reviews is to review firms with good records and good behavior. In practice these will usually be large firms with well-established systematic record keeping for internal personnel bureaucracies. They will also tend to be the good corporate citizens who have been reviewed before and found in compliance. If this were in fact the internal incentive system for field officers, it would not be surprising to find that compliance reviews are concentrated on the largest firms that have already been reviewed in the past, and that already employ the most females and minorities.

Figure 1

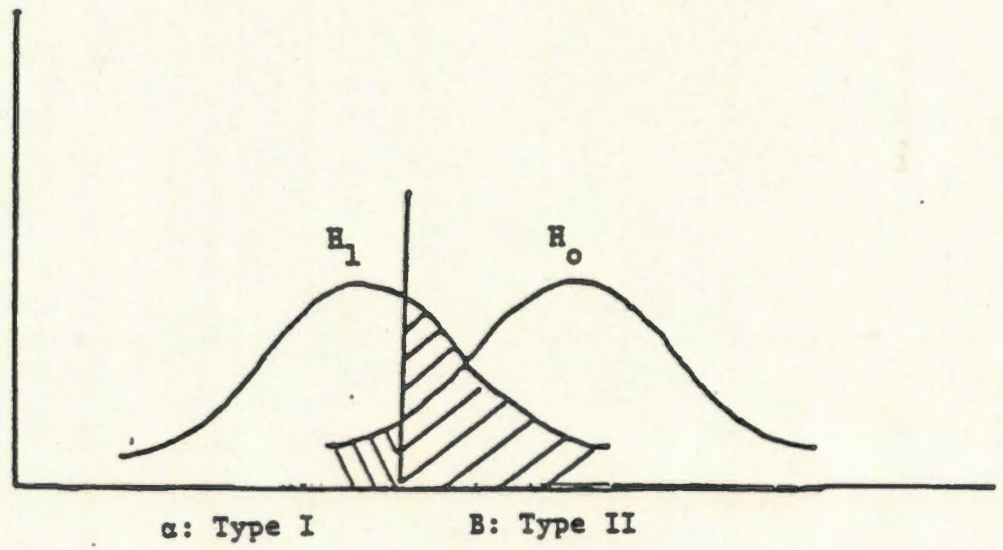


Figure 2

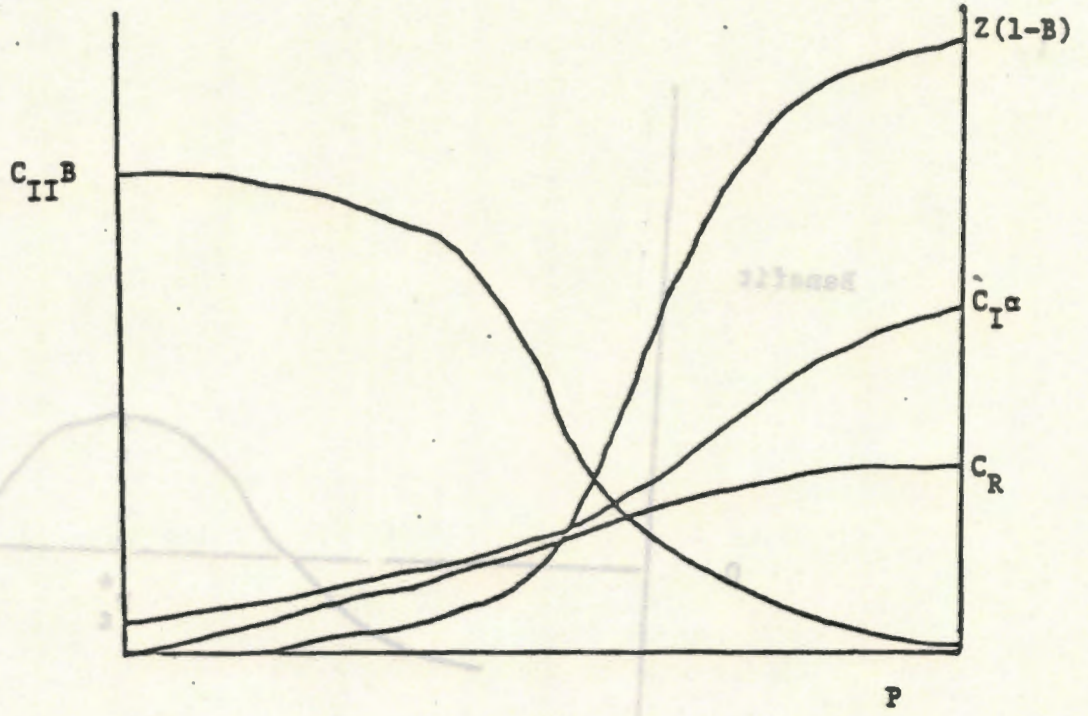


Figure 3

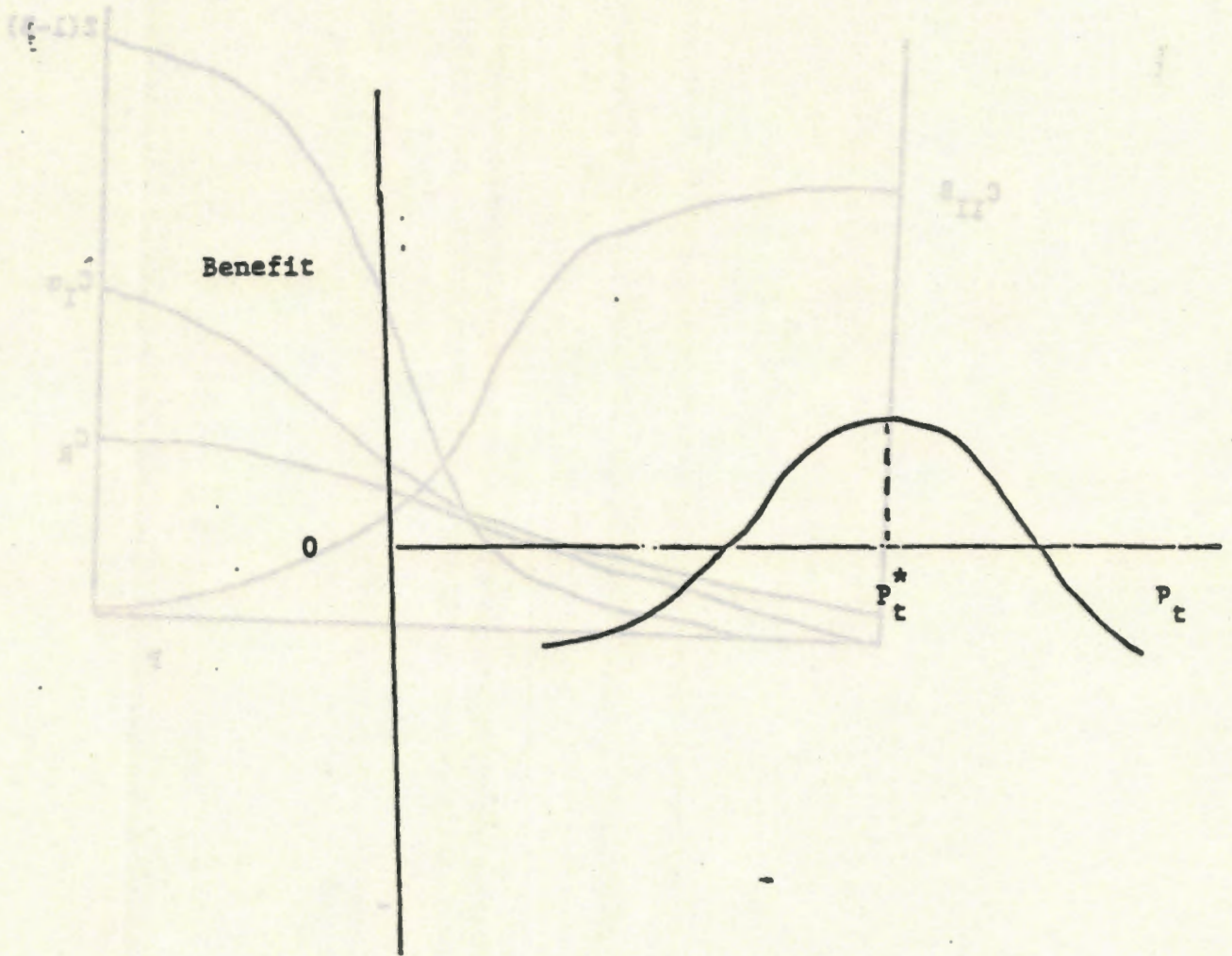


Figure 4

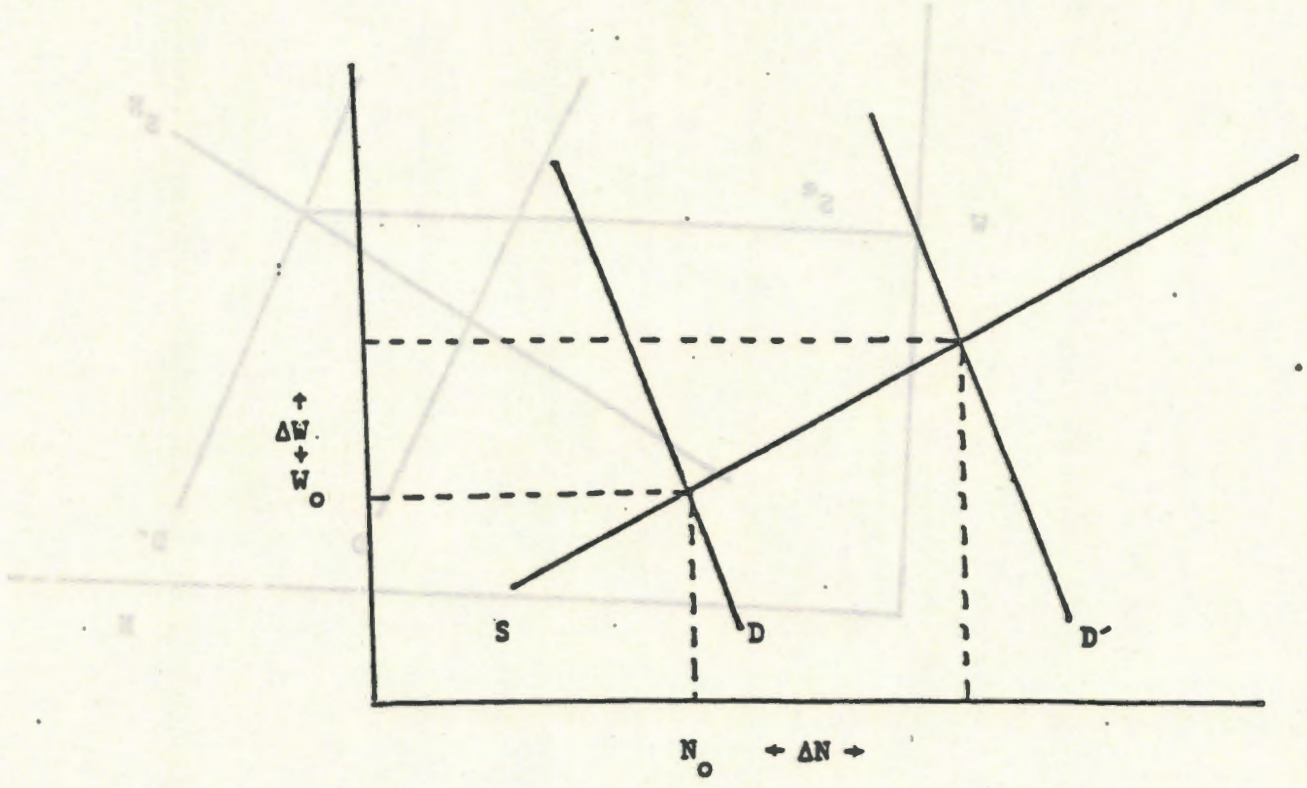
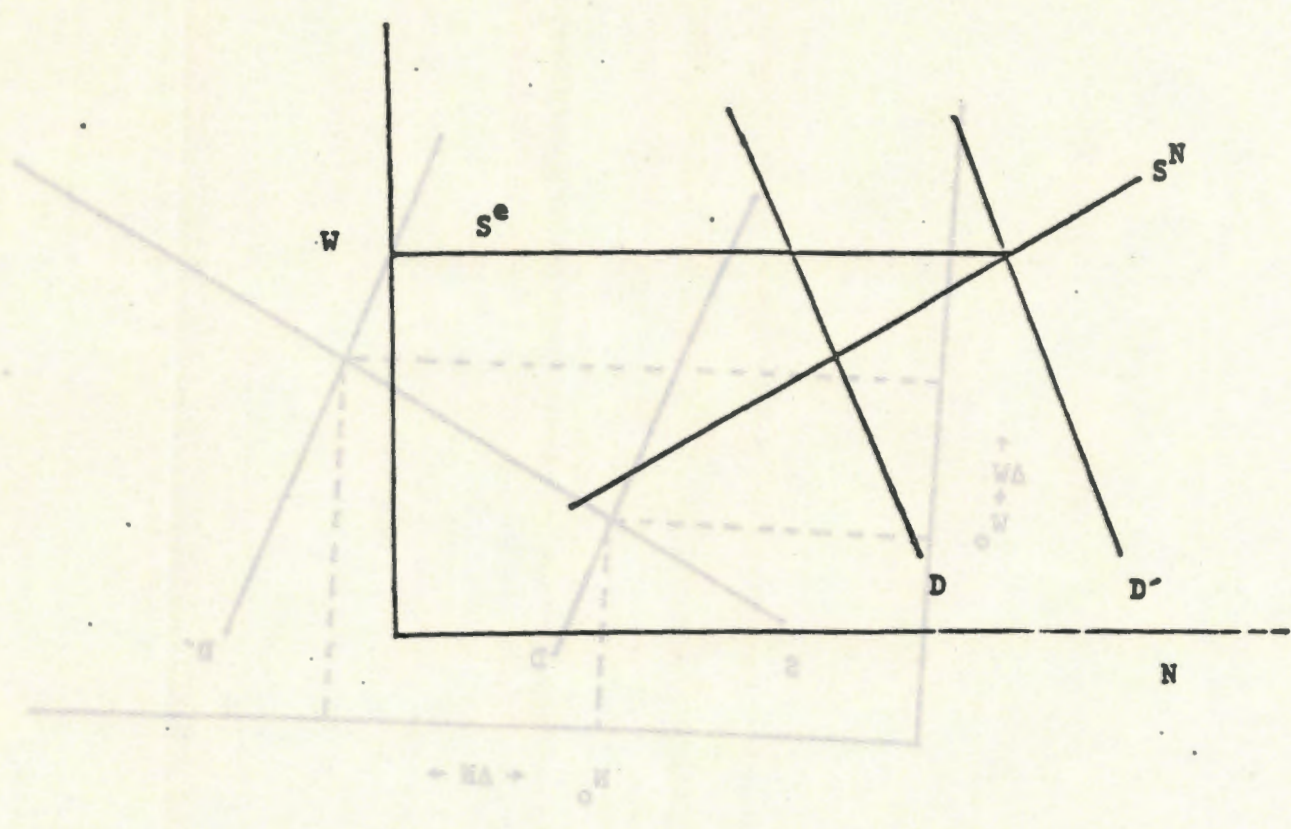


Figure 5



NOTES

1. Laurence H. Silberman, Testimony at Hearings of the Senate Subcommittee on Labor of the Committee on Labor and Public Welfare, 92nd Congress, 1st Session, p.88 (1971).

Chapter 2: Patterns of Enforcement

Which establishments does the OFCCP actually choose to review? Can we judge its motives from its targetting policy, and do the goals so revealed conform to those mandated in the Executive Order? The OFCCP has had, on paper, formal targetting systems such as the Revised McKersie System or the later EISFN system. These systems generally target in a sensible fashion against discrimination by selecting for review those establishments with a low proportion of minorities or females relative to other establishments in the same area and industry. But interviews with OFCCP officials in Washington and in the field suggest that these formal targetting systems were never really used. Instead of targetting on the basis of an establishment's past demographic record, compliance officers claim they simply reviewed the firms with the most employees, and the growing firms. This chapter will show which types of establishments were actually reviewed between 1974 and 1980 primarily by the Department of Defense. As such, the patterns shown here should not be considered indicative of current policies or practices of the OFCCP. In particular, since the reviews considered here are primarily those conducted by DOD, they may not be indicative of past practices of other compliance agencies.

All of the results in this chapter are subject to revision, and must be interpreted with more than the usual caution. The tests here have not fully corrected yet for the fact that most of

the reviews studied here are DOD reviews, and so may reflect the characteristics of establishments subject to DOD review rather than the characteristics of reviewed establishments in general.

The official DFCCP policy on compliance reviews may be briefly stated. Before DFCCP consolidation, agencies were generally advised to select for review those contractor establishments that offered the greatest opportunities for employment and advancement of minorities and women, taking into consideration such factors as size, location with regard to centers of minority population, turnover rate and EEO profile. Also, regulations required the performance of compliance reviews prior to the awarding of contracts of \$1 million or more regardless of the relative size of the establishment. Thus, a wide mix of large and small contractors was reviewed. Some agencies endeavored to schedule for review establishments that had relatively poor EEO profiles or were the subjects of numerous complaints from the communities in which they were situated. After consolidation, DFCCP directed special efforts to accomplishing reviews in various industries which had not experienced much review activity before, or which were believed likely to contain numerous affected classes of persons of the protected groups.

The historical review patterns studied in this chapter are based on DFCCP administrative records. The records I had access to were not a complete record of all reviews. Rather, these consisted primarily of reviews conducted by the Department of Defense, which accounted for nearly half of all pre-consolidation

reviews. For example, while the U.S.C.C.R. reports that 10,647 compliance reviews were conducted in 1976, I have records of about 4300, of which about half cannot be matched with EEO-1 records because they lack identifying numbers. Conversations with OGCOP officials lead me to believe the remaining under-reporting of reviews is largely random.

From the sample of 68690 establishments with matched EEO-1 files in 1974 and 1980, I selected all of the 41281 establishments that were contractors in 1974. I matched this file with the file of compliance reviews. 6.36% of the establishments that were contractors in 1974 had completed at least one compliance review in the five years from 1975 to 1979.

Bivariate Results

There are some surprising results in the cross-tabulations presented in tables 7.1 to 7.5, which are not obviously coherent with an efficient targetting strategy. Completely segregated firms--those with either no females or no black males--are the least likely to be reviewed. Shrinking establishments are slightly more likely to be reviewed than growing ones, and large establishments are reviewed with much greater frequency than small ones.

Thirty percent of the 41281 contractor establishments reported that they employed no black males in 1974. Of these, only 2.1% were reviewed in the subsequent years 1975 to 1979. In contrast, 5.3% of the establishments that were 70 to 100 percent

black male were reviewed. Table 7.1 reveals no consistent pattern of reviews as a function of percent black male. In the range from one percent black male to fifty percent black male the probability of review fluctuates from a low of 7.2 percent to a high of 8.3 percent. The establishments most likely to be reviewed in table 7.1 are those with between ten and twenty percent black male, well above the mean black male representation of six percent.

Comparing review frequency by female share, Table 7.2 demonstrates a similar inconsistency. Of establishments without any females, only .4% were reviewed. More likely to be reviewed were establishments at the other end of the scale. 5.3% of the establishments that were 70% or more female were reviewed. The highest incidence of review, 8.3%, occurred among establishments that were 35 to 40 percent female, above the mean female share of 32 percent.

The strongest single predictor of reviews is establishment size. The more employees an establishment has the more likely it is to be reviewed, as table 7.3 indicates. Only .4% of the quarter of establishments with fewer than 50 employees in 1974 were reviewed in subsequent years. New regulations proposed early in the Reagan administration but withdrawn under political pressure would have reduced the regulative burden of affirmative action for establishments with less than 250 employees. My results suggest the political turmoil over the issue turned, for the most part, on its symbolic, rather than its practical, importance,

since less than six percent of such contractor establishments had been reviewed. In this regard, the new proposals would have largely amounted to rewriting the regulations to conform to how affirmative action has actually been enforced. Large establishments have been heavily reviewed. Among those with 750 or more employees, more than 23% have been reviewed. This seems sensible in light of the economies of scale in enforcement.

In conversations OFCCP officials have said they also try to target growing establishments that will have greater opportunities to hire minorities and females without directly displacing white males. This does not appear to be the case in table 7.4. Establishments that experienced a 30 percent or greater reduction in their work force between 1974 and 1980 were slightly more likely to be reviewed than those that grew by 30 percent or more. However, fluctuations at small establishments may be obscuring the underlying patterns within size classes.

The intensity of review does differ greatly across sectors, as table 7.5 demonstrates. Fewer than one percent of all contractors were reviewed in agriculture, public utilities and retail trade. In agriculture and retail trade, where large establishment workforces are rare, this is probably a function of size. At the other extreme, more than a quarter of the contractor establishments have been reviewed in textiles, apparel, electrical equipment, and transportation equipment. These patterns are largely an artifact of the sample which consists primarily of reviews conducted by DOD. DOD's territory was essen-

tially the durable manufacturing industries, which is reflected in the table.

Multivariate Results

This section expands upon the previous results by controlling for variation along a number of dimensions. The 41281 observations on individual contractor establishments are aggregated into 3587 cells, cross-tabulating by industry, size, growth rate, region, percent black male, and percent female. Table 7.6 presents estimates of review incidence from a weighted log-odds model, weighting by the square root of npq . In general, the results in table 7.6 with multivariate controls confirm the findings of the previous section.

Establishments near the mean with three to ten percent black male employees are more likely to be reviewed than those at the extremes, even when other variables such as size, growth rate, industry, region and percent female are controlled for. Part of the relatively low probability of review of all white establishments may be explained by the high within region variance in black population share, especially outside the South, which is not directly controlled for here. However, this type of argument is unlikely to account for the inconsistent pattern among females, because females are far more homogeneously distributed within regions. There is no consistent pattern by percent female, although those with 25 to 50 percent female are more likely to be reviewed than those with fewer than 25 but more than zero percent. Sensibly, those with no female employees are more

likely to be reviewed. A clear, strong and sensible pattern of reviews appears across establishment size: the more employees an establishment has, the more likely it is to be reviewed. By growth rate, shrinking establishments are more likely to be reviewed than those that grew. Reviews are much more common in manufacturing, particularly in the durable goods sector, than in the trade or service sectors, but again this is simply a reflection of DOD's assigned industries. Finally, Table 7.6 shows that establishments in the South and the Northeast are more likely to be reviewed.

If one thought of the UFCCP's primary concern as fighting discrimination directly in the workplace, one might then expect reviews to be concentrated at establishments with a relatively small proportion of females and black males, controlling for size, industry and region. There is no significant evidence of this in the past, subject to the provisos at the beginning of this chapter. Nor is there significant evidence here that growing establishments with greater opportunities to accommodate affirmative action were targeted. The dominant targeting practice as stated in interviews and as confirmed in Table 7.6, is to review large establishments.

How can the lack of a consistent targeting pattern by race or sex be explained? The larger establishments often employ a greater proportion of minorities and females. In interviews, field officers of the UFCCP have stated that they do not generally look at an establishment's past demographic record in tar-

Table 1: Proportion of Government Establishments That Were Reviewed from 1972 to 1974 by 1974 Black Male Employment Share

getting reviews. Reviewing large establishments with little regard for their past record of minority or female employment is consistent with an affirmative action effort that is primarily concerned with redistributing jobs towards minorities and women.

1974 Black Male Employment Share	Number of Establishments	Percentage of Reviewed Establishments	Rank
0.00-0.09	1237	50.10	1
0.10-0.19	682	40.04	2
0.20-0.29	3104	60.40	3
0.30-0.39	2272	68.08	4
0.40-0.49	1772	61.20	5
0.50-0.59	1222	65.10	6
0.60-0.69	522	62.20	7
0.70-0.79	242	67.70	8
0.80-0.89	22	70.10	9
0.90-0.99	2	70.10	10

Table 1: Proportion of Contractor Establishments That Were Reviewed from 1975 to 1979, by 1974 Black Male Employment Share.

N = 41281 Establishments.

Mean Black Male Share = .061

<u>Line</u>	<u>Black Male Employment Share, 1974</u>	<u>N</u>	<u>Proportion Reviewed</u>
1.	.00	12269	.021
2.	.01-.02	7237	.087
3.	.02-.04	6856	.074
4.	.04-.06	3704	.080
5.	.06-.08	2575	.072
6.	.08-.10	1775	.082
7.	.10-.20	3852	.093
8.	.20-.50	2593	.083
9.	.50-.70	345	.041
10.	.70-1.00	75	.053

Table 2: Proportion of Contractor Establishments That Were Reviewed from 1975 to 1979, by 1974 Female Employment Share.
 N = 41281 Establishments.
 Mean Female Share = .317

Line	Female Employment Share	N	Proportion Reviewed
1.	.00	919	.003
2.	.00-.05	5152	.051
3.	.05-.15	8464	.081
4.	.15-.25	5921	.070
5.	.25-.30	2235	.066
6.	.30-.35	1972	.078
7.	.35-.40	1871	.083
8.	.40-.50	3499	.073
9.	.50-.70	6768	.044
10.	.70-1.00	4480	.053

Table 3: Proportion of Contractor Establishments That Were Reviewed from 1975 to 1979, by 1974 Total Number of Employees.
 N = 41281 Establishments.

Line	Size	N	Proportion Reviewed
1.	1-50	10126	.004
2.	50-100	10034	.017
3.	100-250	11196	.058
4.	250-500	5264	.136
5.	500-750	1900	.192
6.	750-1000	960	.230
7.	1000-2000	1109	.230
8.	2000-5000	527	.260
9.	5000-8000	106	.260
10.	8000+	59	.280

Table 2: Proportion of Contractor Establishments That Were Reviewed from 1975 to 1979 by Industry

Table 4: Proportion of Contractor Establishments That Were Reviewed from 1975 to 1979, by Growth Rate of Total Employment from 1974 to 1980.
 N = 41281 Establishments.

Line	Growth Rate	N	Proportion Reviewed
1.	less than or equal to -0.3	5414	.069
2.	-0.3 to 0.3	26173	.061
3.	greater than or equal to 0.3	9694	.068

Table 5: Proportion of Contractor Establishments That Were Reviewed from 1975 to 1979 by Industry.

N = 41281 Establishments.

Line	Sector	SIC	N	Proportion Reviewed
1	Agriculture	1-9	121	.008
2	Mining	10-14	778	.012
3	Construction	15-17	808	.021
4	Food & kindred	20	1964	.040
5	Tobacco	21	76	.092
6	Textiles	22	597	.424
7	Apparel	23	364	.393
8	Lumber	24	541	.013
9	Furniture	25	190	.047
10	Paper	26	958	.025
11	Printing	27	478	.115
12	Chemicals	28	1309	.027
13	Petroleum	29	232	.047
14	Rubber	30	578	.040
15	Leather	31	137	.117
16	Stone, Clay, Glass	32	759	.026
17	Primary Metal	33	805	.190
18	Fabricated Metal	34	1327	.171
19	Machinery	35	1491	.231
20	Electrical Equip.	36	1279	.322
21	Transport. Equip.	37	855	.257
22	Instruments	38	479	.106
23	Miscellaneous	39	211	.190
24	Transportation	40-47	2403	.011
25	Utilities	48-49	2327	.002
26	Wholesale Trade	50-51	3759	.055
27	Retail Trade	52-59	8503	.005
28	Finance, Ins.	60-69	3979	.007
29	Services	70-89	3973	.047

Table 6: Review Incidence Among Contractors
Log-Odds Model
41281 Establishments Aggregated into 3587 Cells.

	<u>MEAN</u>	<u>COEFFICIENT</u>
Percent Black Male		
0+ to 3	.251	.32 (.052)
3 to 6	.217	.53 (.056)
6 to 10	.181	.64 (.060)
10+	.178	.36 (.057)
Percent Female		
0+ to 25	.290	-1.48 (.095)
25 to 39	.223	-.90 (.099)
39 to 50	.192	-.75 (.102)
50+	.227	-1.18 (.099)
Establishment Size		
100 to 500	.317	.86 (.042)
500 to 1000	.182	1.72 (.054)
1000 to 3000	.127	1.93 (.065)
3000+	.047	2.09 (.103)
Growth Rate		
-.3 to +.3	.411	-.45 (.042)
.3+	.294	-.05 (.048)
Industry		
Non-durable Mfg.	.206	.58 (.061)
Durable Manufacturing	.236	1.01 (.057)
Trade	.180	-.05 (.066)
Services	.190	.20 (.066)
Region		
North-Central	.260	-.78 (.047)
South	.275	.01 (.042)
West	.215	-.03 (.048)
Weight	.759	-1.79 (.11)
MSE	.662	

Note: The means pertain to the distribution of cells, not underlying establishments.

Chapter 10: The Impact of Goals and Timetables

The goals and timetables for the employment of minorities and females drawn from federal contractors under affirmative action stand accused on two mutually inconsistent charges. The first is that "goal" is really just an expedient and polite word for quota. Affirmative action has really imposed inflexible quotas for minority and female employment. The second is that these goals are worth less than the paper they are written on. Affirmative action is a game played for paper stakes, and has never been enforced stringently enough to produce significant results. This chapter attempts to bring fresh empirical evidence to bear on the controversial question of the actual impact of affirmative action goals.

Under Executive Order 11246, federal contractors are required to take affirmative action not to discriminate. Detailed regulations, including numerical goals were not introduced until 1969 after the Comptroller General ruled that the affirmative action obligation was too vague to satisfy the requirement that minimum contract standards be made clear to prospective bidders. Such numerical goals were first embodied in the manning tables of the Cleveland and Philadelphia Plans for construction contractors. These measurable standards against which to monitor compliance were extended to non-construction contractors in 1970, and have since won the tacit approval of Congress and the Courts. The regulations require that every con-

tractor maintain an affirmative action plan (AAP) consisting in part of a utilization analysis indicating areas of minority and female employment in which the employer is deficient, along with goals and timetables for good-faith efforts to correct deficiencies. The goal of this chapter is to measure good-faith, to determine what affirmative action promises are worth. Is negotiation over affirmative action goals an empty charade played with properly penciled forms, or does it in fact lead to more jobs for minorities and females in the contractor sector? If the latter is the case, are these goals so strictly adhered to as to constitute quotas?

This chapter proceeds in four stages. First, the institutional setting of affirmative action is established. The second section then discusses the characteristics of the data underlying this study. Section 3 presents our central empirical findings, and argues that affirmative action promises have in fact prompted increases in minority and female employment. The role played by particular enforcement tools in eliciting promises and in promoting their achievement is tested in Section 4, which is followed by our conclusions.

Section 1: The Regulatory Setting

While no one has ever studied the usefulness of affirmative action promises as a regulatory tool, the impact of the contract compliance program as a whole has been analyzed five times in the past. For black males, Burman, Ashenfelter and Heckman, Heckman and Wolpin, and Chapter 4 of this work all conclude that

employment increases faster at establishments that are federal contractors. For females, a positive impact has not been clearly established. Heckman and Wolpin, and Goldstein and Smith find the program ineffective, while Chapter 4 finds mixed evidence. Considering the marginal impact of compliance reviews, Burman, and Heckman and Wolpin both find them ineffective in the late 60's and early 70's, while Chapter 4 finds a positive impact on both minority and female employment between 1974 and 1980, and suggests that the expanded supply of skilled minorities and females, as well as more aggressive enforcement helped account for the improvement in effectiveness over time. Since the reviews examined here have already been shown to be useful, the question here is not "Are reviews effective?", but rather "Do promises extracted during the review process contribute to the impact of reviews?".

It is not beyond reason to suppose that they do not. Neither the penalties for inflating promises to hasten the departure of federal inspectors nor the prospects of being apprehended seem great. The ultimate sanction available to the government in the case of affirmative action is debarment, in which a firm is barred from holding federal contracts. The first debarment of a non-construction contractor did not take place until 1974, and in total only 26 firms have ever been debarred. If the OFCCP finds the establishment's affirmative action plan unacceptable, it may issue a show cause notice as a preliminary step to higher sanctions. This step has been taken in only 1 to 4 percent of all reviews. (USDCR, 1974, p.297). If these, one-third to one-half

involve basic and blatant paperwork deficiencies such as the failure to prepare or update an AAP. (USGAD, 1975, p.26).

The other major sanction used by the DFCCP is backpay awarded as part of a conciliation agreement. In 1973 and 1974, \$54 million was awarded in 91 settlements, averaging \$63 per beneficiary. (USGAD, 1975, p.46). In 1980, in an even more skewed distribution, \$9.2 million was awarded to 4336 employees in 743 conciliation agreements. (USCCP, 1982, p.47). These beneficiaries represented less than two tenths of one percent of all protected group employees at just the reviewed establishments. On the other hand, firms may perceive the substantial penalties of Title VII litigation hanging over their heads while under affirmative action review.

While these affirmative action sanctions have not been heavily employed, in many cases regulatory sanctions, like weapons of war, are judged most successful just when they are used the least. That does not seem to be the case here. The US Civil Rights Commission, the General Accounting Office, committees of both houses of Congress, and the Courts, have all concurred in the judgement that the contract compliance agencies have not made full and effective use of the sanctions at their disposal.

The low penalties if caught are compounded by the low probability of apprehension. First, reviews are not common, although the Department of Defense (DOD), upon whose reviews this chapter concentrates, had one of the most vigorous programs. In 1976,

DUI reviewed 24 percent of its identified contractors, compared to an average for all compliance agencies of 11 percent. (USCCR, 1977, p.113). In 1977, DUI had a ratio of 42 contractor facilities per staff member, and a total budget of \$345 per contractor. (USCCR, 1977, p.107). Moreover, compliance reviews have not typically been targeted directly against discrimination. An establishment's history of employment demographics has typically not played a role in the incidence of compliance reviews, for a reason as procedurally obvious as it is logically obscure: compliance officers have not generally looked at an establishment's past AAP's or EEO-1 forms in targeting reviews. Heckman and Wolpin report that reviews are essentially random with respect to the level or growth rates of an establishment's demographics. The last chapter found some evidence suggesting that in some cases establishments with more blacks or females are actually more likely to be reviewed.

In this light, the expected penalties for making promises to the government with little regard for the likelihood of fulfilling those promises do not seem overwhelming. In such circumstances, affirmative action promises may contain little if any information about the establishment's future employment. On the other hand, the USCCR may use more subtle and less easily observed pressures. Firms may care about their reputations, not only with the USCCR but also with their own employees and the public, and so strive to set reasonable goals.

Section 2: Data

This study relies on information reported to the UFCCP during compliance reviews. As part of this enforcement process, the UFCCP maintains a record of the past, current, and projected employment by occupation, race, and sex at each establishment. Of the roughly 27000 centrally documented reviews, 19351 are identifiable. For the period before consolidation of enforcement activities into the UFCCP in 1978, records are available primarily of reviews conducted by DOD. Fortunately DOD accounted for roughly half of all pre-consolidation reviews. For example, in 1976 10,647 reviews were conducted, of which 5050 were performed by DOD, (USCCR, 1977, p.113), and of which about 4300 were centrally reported in detail.

Among the numerous contract compliance agencies prior to 1978, DOD enjoyed one of the better reputations for strict enforcement, so by examining a sample of primarily DOD reviews we start with one of the more rigorous enforcement efforts. To the extent that defense contractors are heavily dependent on the federal government, and more so than the reverse, we may be looking at a situation in which the government stands in a relatively strong bargaining position.

Multiple compliance reviews at the same establishment are not rare. Of the 19351 reviews at identifiable establishments, 13125 represented multiple reviews. Of these, 10768 were conducted in consecutive years, at 4479 establishments. These 5384 pairs of reviews provide the data for this study. Some

establishments experienced more than one set of consecutive reviews.

The work-force analysis in these reports includes past, current, and projected employment by occupation, race, and sex. The employment totals used here are the summations across occupations. The projections are typically one-year ahead forecasts, so by using data from reviews in consecutive years we can compare year ahead projections with consequent realizations.

While this research design allows the use of one consistent set of data, it depends on repeatedly reviewed establishments which may differ from the average contractor establishment, or even from the average reviewed contractor. In particular, the large defense contractors who have been reviewed a number of times may expect to be reviewed frequently, and so conform more carefully to regulations and adhere more closely to promises. If so, this study may overstate the average impact of affirmative action promises. This question could be answered empirically in future work by matching the compliance review records with data on consequent realizations from EEO-1 reports. While the use of a sample of multiply reviewed defense contractors may overstate the impact of affirmative action, I believe this is unlikely to significantly bias the results reported here.

Statistical Specification

The statistical model used here to test the information content of employer's affirmative action projections is analogous to...

that used to test for rational expectations, although the prior is nearly reversed. The basic test equation estimated across a sample of establishments is:

$$Y_t = a + b_1 Y_{t-1} + b_2 Y_{t-1} + b_3 Y_{t-2} + \sum b_i Z_i + e_t$$

where:

Y_t is the employment share by demographic group in year t .

Y_{t-1}

$t-1$ is the year $t-1$ projection of year t employment share.

Z_i is a vector of affirmative action pressure and performance variables.

This test specification, used in table 3, regresses the current employment share on the share that had been projected, and on two years of lagged actual shares, which implicitly controls for the past growth rate of share, and on a vector of variables indicating past affirmative action compliance and pressure. Since there are six demographic groups, there are only five independent share equations to be estimated. The reported employment patterns are thought of a sample statistic for the establishment's true employment propensities, so the regressions are weighted by initial year establishment size to correct for heteroskedasticity. If there were no systematic information in the projections, then b_1 would be insignificantly different from zero.

Section 3: The more they promise, the more they do

The employment goals that firms agree to under affirmative action are not vacuous; neither are they adhered to as strictly as quotas. This section will show that while affirmative action promises are inflated, they are not hollow.

The sample means of absolute employment by demographic group by year are shown in table 1. The base year for which projections are made is 1976. The first finding in table 1 is that establishments on average overestimate the growth of total employment. They project one percent employment growth one year ahead, but employment consequently falls by three percent. From a macroeconomic perspective this is striking for two reasons. First, 1976, the year for which most projections are made, was a year in which real GNP grew by 5.4 percent coming out of a recession, and total employment grew by 3.4 percent. Peculiarly, these reviewed contractor establishments were not only left behind by the rising tide, they continued to sink. This is consistent with previous evidence that reviewed contractors shrank between 1974 and 1980, and may in part be due to the concentration of these sampled reviews in the durable goods manufacturing sector (see Chapter 4).

Second, this observed overestimation of employment growth conflicts with a previous finding that during the past two decades firms tended to underestimate wage increases in part because they underestimated growth in labor demand (Leonard 1982). Part of the discrepancy may easily arise because in the context of a compliance review firms inflate minority and female

employment well beyond their true expectations. However, this cannot be the full explanation because even white male employment falls more than projected. If the projections were being manipulated to result in the greatest projected increase in minority and female share, then we would not expect to see, as we do, firms underestimate the decline in white male employment.

The second finding of interest in table 1 is that neither absolute minority nor female employment increased, but that both minority and female employment shares did increase. This is because the contraction in employment that did occur was almost 100% white and predominantly male. Most of the total employment decline of 27 was accounted for by white males, whose employment fell by 21. Put another way, while white males averaged 57 percent of initial employment, they accounted for 78 percent of the employment decline. Since females and minorities typically have lower seniority, they are usually found to suffer disproportionately more during a downturn. In this perspective, the finding here that white males accounted for most of the employment decline is itself striking evidence of the impact of affirmative action.

These establishments are projecting swift and substantial increases in black male employment. If the one year projections in table 1 are extrapolated for ten years, then fully 14 percent of the workforce at these plants would be black males.

Table 2 expresses the projections and actualizations as shares of total employment. Over time, minority and female

employment shares are indeed growing, but not nearly so fast as projected. The firms project growth in minority and female employment share far in excess of their own past history, and far in excess of what what they will actually fulfill. Is there then any information at all in their projections, or is the entire procedure an exercise in futility?

Table 3 indicates that while establishments promise more than they deliver, the ones that promise more do deliver more, even conditioning on the past level and growth rate of employment. In regressions weighting by initial size, of consequent actualizations on the past two years' actualizations and on last year's projection, the projection is significant in every case. The central finding of this chapter is that there is significant information in the projection over and above what could have been predicted on the basis of past history. (On the other hand, the coefficient is far from one; the projection falls far short of perfect information. For example, on average a projected ten percentage point increase in black male employment share results in an actual increase of one percentage point, conditional on past employment shares. For black females, the analogous ratio is four to one. Similar results are obtained with regressions using growth rates of employment by group, rather than shares.

The coefficients on past actualizations in table 3 are significantly positive, but sum to less than one in every case. This is taken simply as evidence of regression to the mean. Minority and female employment shares grow faster at establish-

ments with high past growth rates, but at less than an equiproportionate rate.

Comparing results across demographic groups, the value of the projections is weaker and less significant for black males. The line might expect promises for females to be less costly to fulfill because of the concurrent increase in female labor supply, but it is not clear why employers should appear less prescient in forecasting the share of black males than that of other groups.

Establishments not only overpromise minority and female employment, they also overpromise white male employment. This reveals something of their strategy in formulating promises. They do not promise direct substitution of minority and female workers for white males, instead they promise more for all. More accurately, they promise to make room for more minority and female employees by increasing the size of the total employment pie. The first step in bringing these projections down to earth may simply be to ask the establishment whether the projected growth in total employment is reasonable.

Growth and Accommodation

We know that minority and female employment shares increase in growing establishments, so errors in projecting total growth will reduce the accuracy of share projections. To insulate from this effect, the regressions in table 3 were repeated for the sub-sample of 1300 establishments that grew by at least 10 percent during the projection year. The power and significance of

the share projections are much greater once the possibly confounding errors in projecting total growth are reduced in this fashion. There are two factors at work here. First, it is far easier to increase minority and female employment in establishments that grow. Secondly, we expect establishments that are surprised by a recession to overstate the workforce openings they will have for minorities and females. Among the growing establishments, a promised four percentage point increase in black male share resulted in a subsequent one percentage point gain, conditional on past actual share. For other groups, the ratio of projected to actual changes in share estimated in the regressions ranged from 2.3 to 2.5. Establishments that grow stick far more closely to their projections for minority and female employment share than do stagnant or shrinking establishments.

Table 4 also presents evidence on the accuracy of projections of total employment. While establishments do overpredict one year ahead, the coefficient on the projection is stronger and more significant than the coefficients on past actualizations. The surprising finding is that the projection is actually a better predictor of the future than is past history.

Section 4: The Impact of Regulatory Pressure

This section makes use of the richly detailed data available in UFLFP records to ask two questions. The first is whether greater regulatory pressure results directly in better actual performance. The second question concerns the affirmative action bargaining process itself, and asks what types and levels of

regulatory pressure elicit better promised performance. Since we have already seen that promises are at least partially redeemed, pressure that extracts greater promises will tend to result in greater performance.

The UFCCP spent an average of 55 man-hours in conducting the reviews in this sample, with a range between 5 and 2640 hours. 24 percent of these reviews were pre-award compliance reviews, conducted while the award of a federal contract is pending. These are supposedly the cases in which the government's leverage is greatest since the carrot is dangling so close to the nose. Compliance officers formally noted deficiencies in the establishments' AAPs in more than half the cases. In 53 percent of the reviews deficiencies were noted concerning the goals and timetables included in the AAP, deficiencies that nearly always must be resolved to the inspector's satisfaction before the review can be completed. 3.6 percent of the reviews included a formal conciliation process, and 1.1 percent witnessed the UFCCP issuing a show cause notice to the firm threatening debarment. By completion of the review, only .002 of the establishments were still found to be not in compliance. Each of these mileposts in the bargaining process reflect both the establishment's resistance to bureaucratic pressure, and at the same time increasing levels of bureaucratic pressure itself. If establishment resistance can be controlled for, then these may be taken roughly as inputs into a regulatory production function. This is the method adopted here to deal with the simultaneity problem. We make the restrictive assumption that corporate resistance is controlled for by the

past growth rates and levels of protected group employment share, so we can then ask what the marginal impact is of factors of regulatory production such as conciliation agreements and show cause notices.

The regulatory variables in table 3 may be divided into two classes: those that indicate initial deficiencies or non-compliance in affirmative action plans, and those that indicate further levels of regulatory pressure. For both classes the results are mixed. As expected, black male share does not increase as fast at establishments that are found to be not in compliance, that have deficiencies in workforce composition or goals and timetables, or that have not resolved deficiencies in workforce composition. On the other hand, black male share increased faster in establishments that had deficient EEO policies and failed to resolve them, that failed to resolve deficiencies in goals and timetables, or that were not subject to pre-award leverage. Concerning regulatory pressure, show cause notices, conciliation agreements, and additional hours spent by the compliance agencies on the review all had positive but insignificant impacts on black male share. Establishments from whom interim progress reports were required lived down to their expectations and did significantly worse in terms of black male employment. Curiously, conciliation agreements had a significantly negative impact on white female employment. Notifications of deficiencies in affirmative action plans may have such mixed results because they are so common: roughly half of all the sample establishments received at least one such warning. We find

no consistent pattern of significant positive impact of enforcement tools on growth in protected group employment share. Caution must be exercised in interpreting this result, since it may reflect the weakness of the identifying assumption rather than the weakness of enforcement tools.

Some insight into the force of regulatory tools in the bargaining process may be gained by examining which tools elicit greater promises. In regressions of projected employment shares on past employment shares and on the vector of enforcement tools, both show cause notices and the notification of deficiencies in goals and timetables have a significant positive impact on the projected growth of black female employment share, but no significant impact on other groups. In the case of black females, these enforcement tools may indirectly improve employment at reviewed establishments by eliciting greater promises.

Finally, table 3 also indicates the importance of healthy macroeconomic growth in accommodating minority and female employment. We estimate separate intercepts for each year, with 1974 omitted. White males' employment share growth is greater during the recession years of 1975 and 1980. Correspondingly, females' and blacks' shares are substantially lower.

Section 5: Conclusions

Goals for the employment of minorities and females are an important product of affirmative action bargaining. [This process costs at least \$51 million and perhaps more than one billion a

*
Cost
of
PROCESS

year in administrative costs alone. In 1980, the OFCCP's authorized budget was \$51 million. Past studies, some politically motivated, have estimated direct costs of affirmative action on the order of \$50 to \$80 per employee. (see Chapter 5). Cumulating very roughly results in more than a billion dollars in direct compliance costs for all non-construction contractors. Concerning just the direct costs of compliance reviews, a 1981 survey of 42 companies with an average workforce of 50,000 found that 80% of the reviewed were requested to submit data in addition to the AAF, at an average cost of \$3000.11) A similar survey by Senator Hatch's Labor Committee of 245 contractors with an average workforce of 2584 in 1981 reported that 60% were asked to submit additional data beyond the AAF, at an average cost of \$24,000.

Summary The major finding here is that goals set in these costly negotiations do have a measurable and significant impact in improving the employment of minorities and females at reviewed establishments. At the same time, these goals are not being fulfilled with the rigidity one would expect of quotas. While the projections of future employment of members of protected groups are inflated, the establishments that promise to employ more do actually employ more.

Can we then infer that extracting greater promises will result in greater achievement? Alternatively, do our results indicate only that establishment's projections reflect variations in supply known to them, rather than induced variations in demand? The critical evidence here is that in the same industry

and region labor markets, reviewed contractors do better than non-reviewed (see Chapter 4). There is an overall response to pressure, and as shown here, the extraction of promises plays a valuable role in the process.

The study of the inner workings of the affirmative action negotiation process would amount to futility compounded if that process were shown to be without substance and of theatrical value only. Given that this chapter has shown that affirmative action promises do affect employment patterns, the next step is to explore in more detail the nature of the bargaining process from which this results.

One expects lofty goals to be accompanied by loftier promises. The surprising finding here is that in the case of affirmative action, rosy promises have actually carried significant weight in the process of changing the face of the workplace.

Notes

(1) Letter from Brenda McChristian-Brooks, National Association of Manufacturers, December 2, 1981.

f.

Table 1: Means of Projected and Actual Employment Levels by Demographic Group.
N=5240.

Mode Year	1974	1975	1976	1976
	Lagged 2 Years	Lagged One Year	Projection	Actualization
Black Male	54	55	61	54
Minority Non-Black Male	39	40	42	40
White Male	628	623	615	602
Total Male	720	718	718	696
Black Female	34	35	39	35
Minority Non-Black Female	20	21	23	22
White Female	218	216	222	210
Total Female	272	272	294	267
Total	992	990	1011	963

N=5240
Means of Projected and Actual Employment Levels by Demographic Group

**Table 2: Means of Projected and Actual Employment Shares.
N=5240.**

Mode Year	1974 Lagged 2 Years	1975 Lagged One Year	1976 Projection	1976 Actualization
Black Male	6.13	6.34	7.14	6.38
Minority Non-Black Male	4.17	4.39	4.58	4.54
White Male	57.49	56.73	54.83	56.29
Total Male	67.79	67.47	66.55	67.21
Black Female	4.17	4.45	5.06	4.64
Minority Non-Black Female	2.69	2.87	2.95	2.98
White Female	25.36	25.22	25.44	25.18
Total Female	32.22	32.54	33.45	32.80

Note: These are the means of ratios, not the ratio of means from the previous table.

N=5240*

by demographic group*

of projected and actual employment

Table 3: The Impact of Projections and Regulatory Pressure on Consequent Employment
N = 5240

Dependent Variable:	Employment Share of:					Total Employment
	Black Males	Other Males	White Males	Black Females	White Females	
Equation:	1	2	3	4	5	6
Projection	.098 (.021)	.178 (.022)	.256 (.024)	.257 (.025)	.197 (.025)	.50 (.047)
Intercept	.0076 (.0011)	.0016 (.0007)	.024 (.0034)	.0018 (.0010)	.0080 (.0024)	233 (38)
Lagged One Year	.630 (.029)	.601 (.026)	.443 (.027)	.636 (.030)	.489 (.028)	.29 (.05)
Lagged Two Years	.217 (.022)	.215 (.016)	.261 (.020)	.055 (.020)	.253 (.020)	.03 (.03)
Preaward Review	-0.0008 (.0007)	.000037 (.00042)	-.0015 (.0016)	.00017 (.00059)	-.00082 (.0014)	
Non-Compliance	-.015 (.0050)	-.0046 (.0031)	.020 (.012)	.0019 (.0045)	-.0047 (.011)	
Conciliation Initiated	.0017 (.0015)	.0030 (.0009)	.0069 (.0037)	-.0012 (.0013)	-.011 (.003)	
Show-Cause Notice Issued	.0044 (.0033)	-.0014 (.0021)	-.0094 (.0082)	.00094 (.0030)	.003 (.007)	
Progress Reports Required	-.0032 (.0006)	-.000009 (.00041)	.0032 (.0016)	-.00092 (.00059)	.0014 (.0014)	
EEO Policies-Deficient	.0020 (.0008)	-.0012 (.0005)	.0060 (.0019)	-.0016 (.0007)	-.0035 (.0017)	
EEO Policies-Not Resolved	.018 (.006)	.0029 (.0039)	.045 (.015)	-.0079 (.0055)	-.056 (.013)	
Workforce Composition Deficient	-.0014 (.0007)	.00074 (.00044)	-.00035 (.0017)	.00034 (.00063)	.0014 (.0015)	
Workforce Composition Not Resolved	-.012 (.005)	-.000089 (.0030)	.047 (.012)	-.0038 (.0043)	-.027 (.010)	
Goals & Timetables Deficient	-.0013 (.0007)	.00073 (.00045)	-.0023 (.0018)	-.00071 (.00065)	.0037 (.0015)	
Goals & Timetables Not Resolved	.012 (.005)	-.00073 (.0032)	-.077 (.012)	.0069 (.0045)	.053 (.010)	
Hours Expended	.0000032 (.0000032)	-.0000032 (.0000020)	-.000024 (.0000079)	.0000060 (.0000029)	.000014 (.0000067)	
Year 1975	-.0065 (.0011)	-.000097 (.00067)	.0064 (.0026)	-.0013 (.00095)	.0026 (.0022)	
Year 1976	-.0038 (.0011)	-.00067 (.00071)	-.00015 (.0028)	.0015 (.0010)	.0037 (.0024)	
Year 1977	-.0015 (.0012)	-.00048 (.00073)	-.0040 (.0029)	.0023 (.0010)	.0045 (.0025)	
Year 1978	-.00018 (.0014)	-.0012 (.00091)	-.018 (.0036)	.0013 (.0013)	.015 (.003)	
Year 1979	.0015 (.0021)	.00090 (.0013)	-.012 (.0052)	.00087 (.0019)	.0067 (.0044)	
Year 1980	-.015 (.004)	-.013 (.0026)	.036 (.010)	-.0023 (.0037)	-.010 (.0086)	
M.S.E.	.423	.189	2.875	.382	2.117	804116

Chapter 11: Summary and Conclusion

This study has analyzed the impact of federal anti-discrimination and affirmative action policy on employment, turnover, and productivity in a comprehensive, unified and detailed manner. It is the first evaluation of the employment impact of affirmative action in the period after the substantial reorganization of the HECP in the late seventies, and the first to study affirmative action for women after affirmative action regulations by sex were put into operation. It includes detailed tests by occupation, and robustness tests of results across specifications. It also examines in detail the targetting and impact of compliance reviews. This study breaks new ground in examining the employment and productivity effects of litigation under title VII of the Civil Rights Act of 1964 alongside the effects of affirmative action. This research has attempted to bring fresh evidence to bear on the question of the impact of title VII litigation and of affirmative action on the labor market.

This study began by placing current affirmative action regulation within its historical framework, and by detailing the existing regulatory structure and resources. The few past studies of affirmative action were also reviewed. While these past studies contain mixed evidence on the success of affirmative action, they do generally show that in its early years affirmative action prompted increased black male employment.

Chapter 3 framed theories of the employment impact of

affirmative action in terms of both tax and information models, emphasizing the fundamental differences between these two types of models. It also showed the theoretical possibility in a two-sector general equilibrium tax model that an effective affirmative action program with large scale effects can actually reduce minority or female representation in both sectors. This chapter also examined fully the serious and complex measurement problems involved in analyzing affirmative action.

The heart of this work was presented in Chapter 4. The major findings of this chapter were:

- ✓ (1) Black male employment share increased relatively more in contractor establishments under the affirmative action obligation than in non-contractor establishments between 1974 and 1980. This holds true in a number of specifications, and it holds true controlling for establishment size, growth industry, region, occupational structure, corporate structure, and past employment share. This appears to reflect changed establishment behavior, rather than the selection into contractor status of establishments with high or growing black male employment share.
- ✓ (2) This positive employment impact has been relatively greater in the more highly skilled occupations, and has resulted in net occupational upgrading for black males.
- ✓ (3) Compliance reviews have been an effective tool in promoting the employment of male and female blacks.

- ✓ (4) The impact of contractor and review status on non-black minorities and on white females has been mixed, and is sensitive to the specification of the statistical tests.
- ✓ (5) Turnover rates can affect the evaluation of affirmative action. Females and black males at a sample of reviewed establishments had a lower share of terminations relative to hires than other workers. The employment gains engendered by affirmative action do not seem to be transient.

The finding of an effective affirmative action program led us to ask whether this had reduced discrimination or led to reverse discrimination. Chapter 5 attempted to open this question for research by exploring the productivity effects of regulation and changing demographics. The results from this chapter are more tentative than those from other chapters because they are based on more highly aggregated data with fewer controls. The major findings in Chapter 5 were that:

- ✓ (6) Class action litigation under Title VII of the Civil Rights Act of 1964 has played a significant role in increasing black employment, and has had a relatively greater impact than affirmative action.
- ✓ (7) The relative productivity of females and minority males has not significantly declined as their employment share has increased.

The success of affirmative action in the manufacturing sector may be influenced by the policies and practices of unions.

Chapter 6 studied the mediating role played by unions in California and found that:

(8) Black employment share grew faster in the union sector than in the non-union sector, suggesting that at least in the case of California manufacturing, industrial unions have not been a substantial barrier to equal employment opportunity.

Minorities have been subject to discrimination in housing as well as in employment, and the two are not independent. Their interaction was analyzed in Chapter 7, which found that:

(9) While growth in black employment share decreases with distance from the ghetto, affirmative action is still effective in integrating the workplace once residential segregation is taken account of.

Chapter 8 developed models of efficient enforcement of affirmative action regulations, and Chapter 9 examined actual enforcement patterns, suggesting the job-redistribution nature of affirmative action. In particular, Chapter 9 found that:

(10) Conditioning on establishment size, growth rate, industry, percent female, and region, the compliance review process could be improved by targetting with greater frequency the establishments with the fewest minorities.

Chapter 10 examined the impact of goals and timetables among a sample of contractors who had been reviewed more than once, and showed that:

(1) While the projections of minority and female employment given by establishments under affirmative action are inflated, they are significant. Establishments that set higher goals subsequently achieve more.

The policy of affirmative action has had a short and turbulent history in this country. Of all the social programs that grew during the sixties, it has perhaps enjoyed the least measure of consensus. Its bureaucratic organization and regulation have undergone change at frequent intervals since its inception. While the targeting of enforcement could be improved, and while the impact of affirmative action on other groups is still unclear, the evidence in this study is that affirmative action has been successful in prompting the integration of black men into the American workplace.

(ii) While the projections of minority and female employment given by establishments under affirmative action are limited, they are significant. Establishments that set higher goals subsequently achieve more.

The policy of affirmative action has had a short but important history in this country. By all the social programs that grew during the sixties, it has perhaps enjoyed the least measure of consensus. Its bureaucratic organization and regulation have undergone change at frequent intervals since its inception. While the targeting of enforcement could be improved, and while the impact of affirmative action on other groups is still unclear, the evidence in this study is that affirmative action

has been successful in promoting the integration of black men

into the American workplace.

BIBLIOGRAPHY

Ahant, Gregory J. "A Process Evaluation of the Contract Compliance Program in Nonconstruction Industry," *Industrial and Labor Relations Review*, vol. 29, no. 4, July 1976, pp. 656-671.

Agner, Dennis and Cain, Glen. "Statistical Theories of Discrimination in Labor Markets," *Industrial and Labor Relations Review*, vol. 30, no. 1, January, 1977, pp. 175-187.

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*, (New York: 1979).

Arrow, Kenneth. "Some Mathematical Models of Race Discrimination in the Labor Market," in Anthony Pascal, ed., *Racial Discrimination in Economic Life*, (Lexington: Lexington Books, 1972).

Ashenfelter, Orley. "Comment," (on Symposium papers), *Industrial and Labor Relations Review*, vol. 29, no. 4, July 1976, pp. 577-580.

Ashenfelter, Orley, "Racial Discrimination and Trade Unionism," *The Journal of Political Economy*, 80(May/June 1972), pp. 435-464.

Ashenfelter, Orley, "Discrimination and Trade Unions," in

Discrimination in Labor Markets, Orley Ashenfelter and Albert Kees, eds., (Princeton, N.J.: Princeton University Press, 1974), pp. 88-117.

Ashenfelter, Orley, "Union Relative Wage Effects: New Evidence and a Survey of their Implications for Wage Inflation", in *Econometric Contributions to Public Policy*, K. Stone and W. Peterson, eds., (New York: St. Martins, 1979).

Ashenfelter, Orley and Heckman, James. "Measuring the Effect of an Anti-discrimination Program" in Orley Ashenfelter and James Blum, eds., *Evaluating the Labor Market Effects of Social Programs*, (Princeton: Industrial Relations Section, Princeton University, 1976), pp. 46-84.

Becker, Gary. *The Economics of Discrimination*, 2nd edition, (Chicago: University of Chicago Press, 1971).

Beller, Andrea. "The Impact of Equal Employment Opportunity Laws on the Male/Female Earnings Differential," in Cynthia Lloyd, Emily Andrews, and Curtis Gilroy, eds., *Women in the Labor Market* (New York: Columbia University Press, 1979) pp. 304-330.

Benokraitis, Nijole V., and Feagin, Joe. *Affirmative Action and Equal Opportunity: Action, Inaction and Reaction*, (Boulder: Wintergreen Press, 1978).

Block, Richard N. "The Impact of Seniority Provisions on the Manufacturing Quit Rate", *Industrial and Labor Relations*

Review, 33(July 1978), pp. 474-481.

Brown, Charles. "Black/White Earnings Ratios Since the Civil Rights Act of 1964: The Importance of Labor Market Dropouts," National Bureau of Economic Research, Working Paper [no. 617, January, 1981.

Brown, Charles. "The Federal Attack on Labor Market Discrimination: The Mouse That Roared?" National Bureau of Economic Research, working paper, 1981.

Brown, Charles, and Medoff, James. "Trade Unions in the Production Process", Journal of Political Economy, vol. 86, no. 3, June, 1978.

Bureau of National Affairs, "Personnel Policies Forum Survey #1128, Equal Employment Opportunity Programs and Results", March 1976.

Bureau of National Affairs, "Personnel Policies Forum Survey #1114, Selection Procedures and Personnel Records", September 1976.

Burman, George. The Economics of Discrimination: The Impact of Public Policy, unpublished Ph.D. thesis, Graduate School of Business, University of Chicago, 1973.

Cain, Glen B. "Comment" (on Symposium papers), Industrial and Labor Relations Review, vol. 29, no. 4, July 1976, pp. 572-576.

Farber, Henry and Daniel H. Saks, "Why Workers Want Unions: The Role of Relative Wages and Job Characteristics", *Journal of Political Economy*, (April 1980), pp. 347-69.

Fiss, Owen M. "A Theory of Fair Employment Laws," 39 *University of Chicago Law Review*, 1971, pp. 235-313.

Flanagan, Robert J. "Actual Versus Potential Impact of Government Anti-discrimination Programs," *Industrial and Labor Relations Review*, vol. 29, no. 4, July 1976, pp. 486-507.

Freeman, Richard B. "Changes in the Labor Market for Black Americans, 1948-1972," *Brookings Papers on Economic Activity*, 1973, pp. 67-131.

Freeman, Richard B. *Black Elite*. (New York: McGraw-Hill, 1977).

Freeman, Richard B. "Time Series Evidence on Black Economic Progress: Shifts in Demand or in Supply," unpublished paper, May 1978.

Freeman, Richard B. "Black Economic Progress After 1964: Who Has Gained and Why?" *National Bureau of Economic Research*, working paper, June 1978.

Freeman, Richard B., "The Effect of Unionism on Worker Attachment to Firms", *Journal of Labor Research*, 1(Spring 1980), pp. 27-62.

Freeman, Richard B., and James Medoff, "New Estimates of Private Sector Unionism" *Industrial and Labor Relations Review*.

32 (January 1979), pp. 147-174.

Freeman, Richard B., and James Meadoff, What Do Unions Do? (New York: Basic Books, forthcoming).

Froyel, Walter A., The Negro in the Meat Industry, (Philadelphia: University of Pennsylvania Wharton School of Finance and Commerce, 1970)

Glazer, Nathan. Affirmative Discrimination: Ethnic Inequality and Public Policy, (New York: Basic Books, 1975).

Hastworth and Haber. "Defining the Labor Market for Equal Employment Standards," 99 Monthly Labor Review No. 3, 1976, p. 32.

Holdstein, Barry. "The Importance of the Contract Compliance Program: Historical Perspective," NAACP Legal Defense Fund, unpublished paper, May 1981.

Holdstein, Morris and Smith, Robert S. "The Estimated Impact of the Anti-discrimination Program Aimed at Federal Contractors," Industrial and Labor Relations Review, vol. 29, no. 4, July 1976, pp. 523-543.

Hould, William B., Black Workers in White Unions, (Ithaca: Cornell University Press, 1977).

Gregory, Charles and Katz, Harold. Labor and the Law, 3rd edition, (New York: W. W. Norton, 1979).

Hutches, Zvi. "Distributed Lags: A Survey," Econometrica

vol. 35, no. 1, January 1967, pp. 16-49.

Holmes, W. "Production Functions in Manufacturing: Some Preliminary Results", in Murray Brown, ed., *The Theory and Empirical Analysis of Production*, (New York: National Bureau of Economic Research, 1967).

Hatch, Orrin. "Loading the Economy", *Policy Review*, no. 12, Spring, 1980, pp. 23-38.

Harvard Law Review, 842b, March 1971, pp. 1126-1130.

Heckman, James J. and Butler, Richard. "The Government's Impact on the Labor Market Status of Black Americans: A Critical Review," in Leonard Hausman et. al. ed., *Equal Rights and Industrial Relations*, (Madison: Industrial Relations Research Association, 1977).

Heckman, James J. and Wolpin, Kenneth J. "Does the Contract Compliance Program Work? An Analysis of Chicago Data," *Industrial and Labor Relations Review*, vol. 29, no. 4, July 1976, pp. 544-564.

Holzer, Harry. *Recent Trends in Labor Union Membership for Blacks*, unpublished thesis, Harvard College, 1978.

Howard, Ann and Bray, Douglas. "Today's Young Managers: They Can Do It, But Will They?" *Wharton Magazine*, vol. 5, no. 4, Summer 1981, pp. 23-38.

Hulten, Charles K. and Wykoff, Frank. "The Measurement of

Economic Depreciation," unpublished paper, 1981.

Johniowski, Casey, "Have Angels Done More? The Steel Industry Consent Decree," *Industrial and Labor Relations Review*, 36 (January 1983), pp. 182-198.

Kochan, Thomas, "How American Workers View Labor Unions," *Monthly Labor Review*, (April 1979), pp. 23-31.

Johnson, George and Welch, Finis, "The Labor Market Implications of an Economy-wide Affirmative Action Program," *Industrial and Labor Relations Review*, vol. 29, no. 4, pp. 508-522.

Johnson, Harry B. and Mieszkowski, Peter, "The Effect of Unionization on the Distribution of Income: A General Equilibrium Approach," *Quarterly Journal of Economics*, vol. 84, no. 4, November, 1970, pp. 539-561.

Katz, Harry, Thomas Kochan and Kenneth Hobeille, "Industrial Relations Performance, Economic Performance, and the Effects of Quality of Working Life Efforts: An Inter-Plant Analysis," unpublished paper, M.I.T., 1982.

Lee, Lung-ter, "Unionism and Relative Wage Rates: A Simultaneous Equations Model with Qualitative and Limited Dependent Variables," *International Economic Review*, 19 (June 1978), pp. 415-433.

Leigh, Duane P., "Racial Differences in Union Relative Wage Effects: A Simultaneous Equations Approach," *Journal of*

Labor Research, 1(Spring, 1980), pp. 95-114.

Leonard, Jonathan S. "The Social Security Disability Program and Labor Force Participation," National Bureau of Economic Research, Working Paper no. 392, August, 1979.

Leonard, Jonathan, "Wage Expectations in the Labor Market: Survey Evidence on Rationality," Review of Economics and Statistics, vol. 64, no. 1, February 1982, pp. 157-161.

Lewis, H. Gregg, Unionism and Relative Wages in the United States, (Chicago: University of Chicago Press, 1963).

Marshall, Kay, The Negro and Unorganized Labor, (New York: Wiley, 1965).

Marshall, Kay et al., Employment Discrimination: The Impact of Legal and Administrative Remedies (New York: Praeger, 1978).

Medoff, James, "Layoffs and Alternatives Under Trade Unions in United States Manufacturing," American Economic Review, 69(June 1979) pp. 380-395.

Nathan, Richard P., Jobs and Civil Rights: The Role of the Federal Government in Promoting Equal Opportunity in Employment and Training, (Washington: Government Printing Office, 1969).

Norgren, Paul and Hill, Samuel, Toward Fair Employment, (New York: Columbia University Press, 1964).

Northrop, Herbert K. and Larson, John A., The Impact of the

Anti-LEO Consent Decree; (Philadelphia, Pennsylvania: Indus-
trial Research Unit, University of Pennsylvania, 1979).

Koss, Malcolm. All Manner of Men, (New York: Reynal and
Hitchcock, 1948).

Kotischko, Michael. "Social Effects of Ability Testing,"
unpublished paper, June, 1979.

Kuchames, I. Race, Jobs and Politics - The Story of LEO (New
York: Columbia University Press, 1953).

Smith, Arthur S., Jr., Employment Discrimination Law. (Indianap-
olis: Bobbs-Merrill, 1978).

Spence, A. Michael. "Job Market Signalling," Quarterly Journal
of Economics, vol. 87, no. 3, August, 1973, pp. 355-374.

U.S. Bureau of the Census, Annual Survey of Manufactures, (Wash-
ington: Government Printing Office, various years).

U.S. Bureau of the Census, Census of Manufactures, 1972, (Wash-
ington: Government Printing Office, 1975).

U.S. Commission on Civil Rights, 1961 Report: Employment, Book 3,
(Washington: Government Printing Office, 1962).

U.S. Commission on Civil Rights, The Federal Civil Rights
Enforcement Budget - 1983, (Washington: Government Printing
Office, 1982).

U.S. Commission on Civil Rights, The Federal Civil Rights

Enforcement Effort - 1974, volume 5, "To Eliminate Employment Discrimination" (Washington: Government Printing Office, July 1975).

Civil Rights Commission, The Federal Civil Rights Enforcement Effort - 1977, "To Eliminate Employment Discrimination: A Sequel" (Washington: Government Printing Office, December, 1977).

U.S. Department of Labor, Bureau of Labor Statistics, Capital Stock Estimates for Input-Output Industries: Methods and Data, Bulletin 2034, (Washington: Government Printing Office, September, 1979).

U.S. Department of Labor, Bureau of Labor Statistics, Handbook of Labor Statistics, 1979, Bulletin 2070, (Washington: Government Printing Office, December, 1980).

U.S. Department of Labor, Office of Federal Contract Compliance Programs, Freedom of Information Act Index, June 1980 and April 1981.

U.S. Equal Employment Opportunity Commission. EEOC Report: Minorities and Women in Private Industry, Annual Volumes.

U.S. General Accounting Office, "The Equal Employment Opportunity Program for Federal Nonconstruction Contractors Can Be Improved," April 29, 1975, p. 30.

U.S. General Accounting Office, "Further Improvements Needed in EEOC Enforcement Activities," April 9, 1981.

-Do Not Cite or Quote-

Employment and Occupational Advance under Affirmative Action

Jonathan S. Leonard
School of Business Administration
University of California, Berkeley
January, 1983

I thank Mr. J. Griffen Crump of the Director's Office, OFCCP, for his assistance in the use of the data used in this study, which was provided by the OFCCP's Division of Program Analysis. This project was funded under purchase order No. B9M12517 from the Office of the Assistant Secretary for Policy, Evaluation and Research. Points of view or opinions stated in this document do not necessarily represent the official position or policy of the Department of Labor.

sk/83
209

To protest employment discrimination at the beginning of World War II, A. Philip Randolph, President of the Sleeping Car Porters Union, threatened to disrupt the defense effort by a mass demonstration of blacks in Washington D.C. on July 1, 1941. Less than one week before the planned rally, President Roosevelt issued Executive Order 8802 barring discrimination by federal contractors and the demonstration was called off. The partial accommodation reached in the atmosphere of discord and crisis of that Executive Order established the roots of a policy that I shall argue is today bearing fruit; that policy is affirmative action.

One of the major affirmative action battlefields lies in the white-collar and craft occupations. It is in these skilled positions that employers are most sensitive to productivity differences and have complained the most about the burden of goals for minority and female employment. It is also in this region of relatively inelastic supply that the potential wage gains to members of protected groups are the greatest. The handful of past studies in this area have unanimously concluded that affirmative action has been ineffective in occupational upgrading and that the employment gains it has engendered for minorities have been concentrated in low skill positions. For the late nineteen-seventies this paper shall argue the opposite, using a new detailed set of data on changes in establishment level demographics covering more than 16 million employees between 1974 and 1980.

Four previous studies of affirmative action between 1966 and 1973 are reviewed in Section 1, which then develops a model of affirmative action as a tax on white male employment. Section 2 presents evidence of the impact of the contract compliance program on total employment by race and sex. The third section discusses the main findings on occupational advance under affirmative action. To show the impact of affirmative action on occupational upgrading, three tests are presented in section 3. First, a summary measure of occupational status, an occupational index, is constructed for each demographic group and its growth compared across contractor and non-contractor establishments. If affirmative action is effective, the relative occupational index for minorities and females should increase faster at the contractor establishments that bear the affirmative action obligation. Second, to support the summary evidence on occupational status, employment changes within detailed occupations are analyzed. Third, to show the impact of occupational upgrading on earnings, wage equations are

estimated as a function of affirmative action pressure. The conclusions of this study are presented in the final section, and the data underlying this research are discussed in the appendix.

Section 1: The Framework for Analysis

Past Studies

(1) All past studies of the impact of affirmative action on occupational advance- and there have only been four- have found that while affirmative action increases total black male employment among federal contractors, it does not increase their employment share in the skilled occupations. The first work on this subject, a study of 1186 establishments in 1967 and 1970 by Burman, found the employment impact of affirmative action to be largest in clerical and operative occupations, and negative, though insignificant, for managers. He also found that affirmative action had an insignificant impact on an index of occupational status. A careful and extensive analysis of 40455 establishments in 1966 and (2) 1970 by Ashenfelter and Heckman confirmed Burman's results. Affirmative action led to increases in black males' employment share, but this was largest and most significant among operatives. At the tops of occupational ladders, black males share was estimated to fall relative to that of white males in the contractor sector. Among officials and managers, and professionals, as well as among service workers, this decline was significant. Overall, Ashenfelter and Heckman found no significant impact of contractor status on the relative occupational position of black workers. Similarly, for a sample of 74563 estab- (3) lishments between 1970 and 1972, Goldstein and Smith found no strong evidence of changes in occupational status under affirmative action. The most recent of the past studies, and in many ways the most sophisticated econometrically, by Heckman and Wolpin of 3677 Chicago area establishments (4) between 1972 and 1973, found that black male employment gains were concentrated in blue-collar occupations. They also found that contractors utilized a greater proportion of white males, and fewer blacks and females than did non-contractors in some white-collar occupations.

These four studies, all based on a comparison of EEO-1 forms at contractor and non-contractor establishments in the early years of affirmative action, all agree that affirmative action was ineffective in increasing the employment of black males in skilled occupations. I shall present evidence that this had

changed by the late seventies. This difference may reflect the increasing supply of highly educated blacks, as well as a more aggressive enforcement program.

Tax Models

Affirmative action may be thought of as a tax on the employment of white males in the contractor sector. If they are immobile, white male workers bear the tax burden and their relative wages fall.

Assume the owner of the firm maximizes utility:

$$MAX U = T(F(m)) - T(W_M)m - T(W_F)(1-m) - t(m - \bar{m}) - d(1-m) \quad (1)$$

where

T = total employment

m = proportion of white males in T

\bar{m} = average proportion of white males employed in given industry and geographic area

W_M = wage of white males

W_F = wage of other workers

t = tax on proportion male employment

d = taste for discrimination against females and non-whites

F(.) = a production function with $F' > 0, F'' < 0$.

Abstracting from the scale effect by fixing $T=1$, the first order condition is:

$$F' = W_M - W_F + t - d \quad (2)$$

from which we find:

$$m = g(W_M, W_F, t, d) \quad (3)$$

Intuitively, an increase in the affirmative action 'tax' shifts the demand curve for white male labor down.

I assume fixed tastes for discrimination and fixed technology, or less restrictively, technological

change that is neither male nor female saving so that the change in demand is a function only of wages and the tax. All firms are assumed to be wage takers in the same labor market, with the wage elasticity of labor demand the same in the contractor and non-contractor sectors. Empirically, contractor and non-contractor establishments show similar growth rates, so scale effects are likely to be similar. The difference between the change in the employment of white males at contractor firms, Δm_C , and at non-contractor firms, Δm_{NC} , is then simply a function of affirmative action pressure.

$$\Delta m_C - \Delta m_{NC} = g(t) \quad (4)$$

This is the central equation to be tested, comparing shifts in the proportional employment of members of protected groups across contractor and non-contractor establishments across time. If affirmative action has been effective, these employment shifts will be greater among contractors. This measures the differential impact of affirmative action over and above the effects of general policies, or changes in tastes. Also, since any general supply shift will affect contractors and non-contractors alike, this isolates the impact of affirmative action on labor demand by comparing changes in employment across contractors and non-contractors.

Section 2: The Employment Effect of Affirmative Action

Before examining the impact of affirmative action on occupational advance, it is helpful to analyze changes in total employment by demographic group. This section presents the results of linear probability equations of total employment by demographic group as a function of contractor status, review status, establishment size, growth rate, corporate structure, percent non-clerical white-collar, industry, region, and initial period demographics. These equations are estimated on a longitudinal sample of 68690 establishments in 1974 and 1980 which is discussed in the appendix. The sample means of these control variables, and the abbreviations by which they shall be referred in the following tables, are indicated in Table 4.1.

The results from linear probability models in Table 4.2 show that blacks' share of employment at contractor establishments grew significantly more than at non-contractor establishments. In 1980, black males' employment share was significantly .2 percentage points higher in establishments that were contractors in 1974. This is an increase of 2.7 percent of black males' initial 1974 employment share of 7.3

→ 5. Is that all?

percent, after six years under affirmative action. For black females, contractor status was associated with a significant .15 percentage point increase in employment share, or 3.9 percent of their initial 3.8 percent share of employment. Contractor establishments did not increase their employment of other minorities or females significantly faster than non-contractors. White females and non-black minority males actually did significantly worse at contractor establishments, while white males were not significantly affected. On this evidence, affirmative action for blacks appears to be working better than affirmative action for females. This does not mean that female employment is not improving in the contractor sector, but rather that it is improving faster among non-contractors.¹ In any case, a weaker result for females than for minorities is consistent with an affirmative action program that asks for more than last year, rather than more than average, during a period of rapidly increasing female labor supply.

Table 4.2 also indicates that the impact of affirmative action grows over time. The coefficient on P74, the lagged dependent variable is always between .82 and .92, suggesting long run effects five to twelve times greater than the estimated short run effects. There is some reason to believe these long run effects may be overstated, and the short-run effects understated. While my 2 years of data do not allow a test of serial correlation, Heckman and Wolpin report significant evidence of positive serial correlation of errors on the order of .9 in a similar data set. Such positive serial correlation will bias the coefficient on the lagged dependent upwards, overstating the lags in adjustment. In the case of black males, this will in turn bias downwards the short run impact of contractor status, since the respective coefficients are negatively correlated.

The linear probability equations in Table 4.2 also measure the impact of compliance reviews, conditional on contractor status. Compliance reviews contributed to a significant .26 percentage point increase in black female employment share, and significantly retarded the growth in white male and white female representation, but had an insignificant positive impact on minority males. Judging by the significant relative decline in white males' employment share at reviewed establishments, compliance reviews have been effective in promoting blacks and minority males, though at the same time they appear to have reduced white females' share of employment.

Controlling for whether or not the establishment was part of a multi-establishment corporation — corporate status — reduces the difference between contractor and non-contractor establishments. Establishments that were part of larger corporations had significantly larger increases in female and black male employment. Establishment size itself works in the opposite direction, black males experienced significantly slower growth in representation at larger establishments. Establishments that are growing and so have many job openings showed significant increases in minority and female representation. White females, but not other groups, experienced significantly and substantially greater employment growth at establishments that were white-collar intensive.

To determine the within industry, within region impact of affirmative action all of the equations in Table 4.5 include 27 industry dummy variables and 4 region dummy variables. The omitted groups were the retail trade sector and New England. Some of these variables had significant and large effects. Controlling for white male employment share in 1974 and other variables, establishments in the South employed 2.5 percentage points fewer white males in 1980, while those in the West employed 4.7 percentage points fewer. For white females the respective numbers are both 2.3. The South employed about 1.5 percentage points more blacks. Note again, that since these regressions control for the establishment's initial demographic position, these estimates imply that black employment is growing faster in the South, and that racial discrimination is not obviously worse there.

There is also significant variation in the growth of minority and female representation across industries. White males' employment share, a summary measure, is significantly three or more percentage points higher in mining, construction, lumber, paper, stone, clay and glass, primary and fabricated metals, non-electrical machinery, transportation equipment, transportation, and public utilities. Many of these industries with significantly higher levels of white male representation also have low incidences of compliance reviews, although the evidence of spillover here is not conclusive. Black males' share is significantly 2.6 percentage points higher in the tobacco industry, which is concentrated in heavily black Southern states. It is significantly lower by .5 percentage points or more in apparel, non-electrical machinery, and miscellaneous manufacturing. White females employment share is significantly 2.6 percentage points higher in leather, and significantly lower by 2 or more percentage points in agriculture,

construction, paper, primary metals, and transportation. Since initial demographic position, region, growth rate, and percent non-clerical white collar are controlled for, these appear to reflect real differences across sectors in the growth of minority and female representation.

Other specifications not shown here tested for interactions of contractor and review status with size, growth and initial minority or female representation. There are few recurrent patterns. The data give no clear answer to the question of how the impact of contractor status varies by the establishment's initial employment of minorities and females. For black males, the contractor and review variables have significantly greater effects the larger the initial employment share, suggesting a tipping effect. For black females, and non-black minority males the same holds true for reviews, but the opposite for contractor status. For minority men and black women then, compliance reviews have a greater impact at establishments with relatively good initial positions. The interactions with size are not generally significant.² Contractor establishments that are growing showed significantly slower growth in female and black male representation, but faster growth in non-black male representation.

The linear probability estimates presented here show an affirmative action program that works for blacks, more so than for other protected groups. Both male and female black employment shares have increased faster at contractor establishments than at non-contractors, and faster at contractors that have completed a compliance review than at non-reviewed contractors.

Section 3: Occupational Detail

Under Executive Order 11246, federal contractors have an obligation "to take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such actions shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship." [41 C.F.R. 169 202(1) (1974)]. The goal of affirmative action is not merely to increase the employment of members of protected groups, but to promote their advancement up the job ladder. A full evaluation of affirmative action requires an examination not only of its effect on total employment, but also of its impact across occupations.

Previous studies suggest that contractors have been able, in practice, to fulfill their affirmative action obligations by hiring more blacks and females in relatively unskilled positions. On this evidence, affirmative action before 1974 appeared to have been more effective in increasing employment than in promoting occupational advancement. Some might argue that such a result is only to be expected given the short supply of skilled minorities and females. The presumption behind affirmative action however, is that trainable members of protected groups will be considered for skilled employment. Even in the case of a small fixed supply, in its initial years affirmative action should induce a reshuffling of skilled blacks and women from noncontractor to contractor firms, without any upgrading of individuals necessary.

In Table 4.3 the distribution of minorities and females across occupations is summarized with an index of occupational status. This index weights the proportion of members of a given demographic group in an occupation by the 1969 mean earnings by occupation of full-year employed males from the 1970 Census of Population. If the within occupation variance of wages is small then changes in the occupational index should explain a good deal of overall wage changes. If affirmative action has led to blacks or females being employed in higher paying jobs, then this index should increase faster at contractor firms, under conditions derived below.

The advance of black males under affirmative action does show up in net occupational upgrading.

In Table 4.3, black males' occupational index increases 2 percent more in contractor establishments and an additional 1 percent in reviewed establishments.³ Relative to white males, black males' occupational index has increased 1 percent during six years of affirmative action. Remember that this does not include within occupation promotions, which are substantial within such broadly defined occupations. It also refers to the changing net position of black males at the average establishment, not to the average career transition of the average black male. In particular, since our unit of observation is the establishment, no individual black male need move to a higher occupation for the index at the average contractor establishment to increase, if many highly skilled blacks migrate into the contractor sector. Of course, it is very unlikely that all of the increase in the occupational index is due to such cross-sector migration. In the equations for occupational index, employment growth by demographic group is con-

↓
an unknown

trolled for, along with establishment size, corporate structure, industry, region, and lagged employment share. As expected, the higher the employment growth, the lower the rate of occupational advance since many new entrants are at the bottom of occupational ladders.

Between 1974 and 1980, the ratio of black male to white male mean employment income for full-time, full-year workers increased by 2.3 percent, from .684 to .700.⁴ Since 69 percent of all employment in the study sample is in contractor establishments, our results imply that about thirty percent of the increase in the relative economic position of black males may be due to occupational advance induced by affirmative action. While this does not include the effect of promotion within the broad occupational categories used here, it is still likely to be an overestimate both because the study sample probably overstates the proportion of total employment that is in the contractor sector, and because part of the increase in the relative occupational index is probably due to the movement of skilled blacks into the contractor sector, rather than to the advance of blacks within the sector.

Occupational Detail and Occupational Indexes

While an occupational index provides a dramatic and succinct summary measure, it can be misleading in isolation. For example, the occupational index would increase if firms laid off unskilled blacks or women. This is related to the occupational twist Welch argues affirmative action or anti-discrimination law might induce. To guard against such misinterpretations, the occupational index should be used in conjunction with employment data.

This potential false positive is balanced by a false negative. Any practical occupational index has only a finite level of detail. Much promotion could take place within even detailed occupations. The broader the job classifications, the more upgrading will take place within occupations and so be unobservable. At the extreme, affirmative action could cause massive promotions, but only within job classifications, causing no change at all in an index of occupational status. Even within detailed job classifications, the initial effect of affirmative action could be to lower the occupational index. New hires are typically hired into jobs at the bottoms of the job ladders which exist even within detailed occupations. For this reason, even if affirmative action induced new hires in proportion to current employment across occupations, the occupational index would drop.

Even if affirmative action induces a proportionately greater increase in the employment of minorities and females at the top of the job ladder, the occupational index may still decline due to a composition effect. Since 64% of minority males are employed as operatives and laborers, and 83% of females are employed as operatives, laborers and office workers, even small proportional employment increases in these occupations will account for a large share of total employment.

To clarify these issues consider the following formalization of the relationship between an occupational index and growth rates within occupations. An occupational index is:

$$Z_t = \sum_i W_i \alpha_{it} \tag{14}$$

where

Z_t is the occupational index in year t

W_i is earnings in occupation i in a given fixed year

α_{it} is the proportion of all workers of a given demographic group j who are employed in occupation i in year t , $\sum_i \alpha_{it} = 1$.

Taking the derivative with respect to time:

$$\frac{dZ_t}{dt} = \sum_i W_i \frac{d\alpha_{it}}{dt} \tag{15}$$

But the side condition on the shares is that:

$$\sum_i \frac{d\alpha_{it}}{dt} = 0 \tag{16}$$

So the occupational index can only increase over time if α_{it} increases in high wage occupations. However, the occupational index of blacks can decline even though black representation is growing in every occupation, and even if the growth rate is highest in the high wage occupations. An example helps provide the intuition for the formal proof. In Table 4.4 the occupational indexes in periods 1 and 2 are identical because α , the distribution of blacks across occupations, is unchanged. At the same time, however, the percent of white collar workers who are black, P , has increased from .2 to .3, a 100 percent increase, twice as great as their growth rate in blue-collar jobs. Formally:

$$Z = \sum_i W_i \frac{N_{ij}}{N_j} \tag{17}$$

and

$$P_i = \frac{N_{ij}}{N_i}$$

(18)

where

N_{ij} - number of demographic group j employed in occupation i

N_j - number of employees in demographic group j

N_i - number of employees in occupation i

$$\alpha_i = N_{ij}/N_j$$

Expressing Z in terms of P_i :

$$Z_i = \frac{1}{N_j} \sum_i N_i W_i P_i$$

(19)

To see how Z_i changes with changes in P_i , first totally differentiate:

$$dZ_i = \sum W_i d\alpha_i$$

(20)

Now

$$\ln \alpha_i = \ln N_{ij} - \ln N_j$$

(21)

So

$$d \ln \alpha_i = d \ln N_{ij} - d \ln N_j$$

(22)

or

$$d\alpha_i = \alpha_i [d \ln N_{ij} - d \ln N_j]$$

(23)

So

$$dZ_i = \sum W_i \alpha_i [d \ln N_{ij} - d \ln N_j]$$

(24)

To put this in terms of P_i , note that:

$$\ln N_{ij} = \ln N_i + \ln P_i$$

(25)

so

$$d \ln N_{ij} = d \ln N_i + d \ln P_i$$

(26)

This gives us:

$$dZ_i = \sum_j W_j \alpha_j [d \ln N_j + d \ln P_j - d \ln N_i] \tag{27}$$

The condition for no change in the occupational index is then that:

$$\sum_j W_j \alpha_j [d \ln N_j + d \ln P_j] - Z_i d \ln N_i \tag{28}$$

If $d \ln P_i > 0$ across all occupations, then this condition is more likely to hold if:

- (1) $d \ln N_i$ is negative.
- (2) The covariances of W_j and α_j with $d \ln P_j$ are negative.
- (3) $d \ln N_j$ is large and positive.

In words, the occupational index is more likely to remain unchanged even though minority representation is increasing in all occupations if (1) total employment is declining; (2) earnings and share of minority employment are low where the greatest proportional increases in minority share of employment are high (composition effect); and (3) total employment of minorities is increasing.

What to make of all this? The lesson is not that the occupational index is not useful; but that like any simplifying tool, its use without knowledge of its limitations is potentially misleading. The occupational index is a dramatic and easily understood summary measure, but the full story of the impact of affirmative action requires an analysis of employment data within disaggregated occupations.

Employment Shifts Within Occupations

To test the impact of affirmative action within detailed occupations I control for establishment size, corporate structure, industry, region, growth of total employment for the given demographic group, and lagged dependent in samples of establishments reporting employment in nine occupations and two trainee positions. The key results from this mass of information are condensed in a set of summary tables by demographic group, Tables 4.5 to 4.8. In these tables the coefficients on contractor and review status are expressed as a percent of initial 1974 employment share. The evidence is most striking in the case of black males in Table 4.5. In every occupation except laborers, black males' share of employment has increased significantly faster in contractor than in non-contractor establishments. This is true whether we consider the proportionate change in black males' share of total employment,

or the proportionate change in the ratio of black male to white male share. The proportionate change in black male employment share due to contractor status is greatest among professionals, technicians, and blue-collar trainees: .38, .22, and .24 respectively.

The marginal impact of a compliance review, conditional on contractor status is also shown. The relative importance of being a contractor and of being a reviewed contractor is mixed across occupations, but in every case, except blue-collar trainees, reviewed establishments have increased black males' employment share more than non-reviewed contractors. This effect is largest and most significant in the technical and clerical occupations: .31 and .44 respectively.

The total impact of the contract compliance program, the weighted sum of contractor and review effects, shows some evidence of a twist in demand toward more highly skilled black males. Since 17.4 percent of all contractor employment is in reviewed establishments, the total impact is calculated as the sum of the contractor effect and .174 times the review effect. The contract compliance program has not reduced the demand for black males in low skilled occupations. It has raised the demand for black males more in the highly skilled professional and technical occupations and in white-collar clerical jobs than in the blue-collar operative and laborer occupations. While this may help explain why highly skilled black males have been better off than their less skilled brethren, it does not help explain why low skilled black males should be having greater difficulty over the years in finding and holding jobs.

Affirmative action has also helped non-black minority males, although to a lesser extent. Table 4.6 shows evidence of a twist in demand toward Hispanic, Asian, and American Indian males in white-collar occupations, particularly in sales and clerical positions, and significantly away from this group in operative and laborer positions. Compliance reviews have had a strong and significant additional impact in the professional and clerical occupations. The total impact of the contract compliance program on non-black minority males is positive in the white-collar occupations and in training programs. This impact is strongest in the sales and clerical occupations. It is negative in blue-collar occupations, with the exception of service workers. Relative to white males, affirmative action has increased the occupational status of non-black minority males by 2 percent.

The evidence in Table 4.7 suggests that the contract compliance program has had a mixed, but

generally negative impact on white females. With the exceptions of officials and managers, operatives, laborers, and white-collar trainees, contractor status is associated with a significant decline in white females employment share. Where compliance reviews have a significant impact, this too is negative. While both contracts and reviews produce a significant one percent increase in white females' occupational status, this positive impact disappears when changes in white females' occupational status are compared to the relatively greater gains of white males.

Black females in contractor establishments have increased their employment share in all occupations except the crafts, as seen in Table 4.8. This increase has been strongest among officials and managers, sales workers, clericals, laborers, and white-collar trainees. Where compliance reviews have had a significant impact, they have increased black female employment share. The positive impact of the contract compliance program is even more marked when the position of black females is compared with that of white females. Overall, black females' index of occupational status has increased 1 percent relative to that of white females under affirmative action. With the same qualifications as in the male case, this net movement across broad occupations may account for twenty percent of the 3.2 percent increase from .917 in 1974 to .946 in 1980 in the ratio of black female to white female earnings observed in Bureau of the Census data.

The conclusion drawn from this detailed analysis of employment by occupation is that with the exception of white females, affirmative action appears to have contributed to the occupational advance of members of protected groups. In particular, for non-white males affirmative action has increased demand relatively more in the more highly skilled occupations. The finding here that affirmative action has helped move minorities up as well as in stands in contrast to past studies of the early years of affirmative action which found no significant evidence of occupational upgrading.

The Impact on Racial Inequality in Earnings

As affirmative action has increased the demand for minorities it has increased their earnings as well as their employment and occupational status. To directly measure wage effects I estimate log-linear wage equations using the May 1978 Current Population Survey sample matched with data on the proportion of employment by industry by SMSA that was in contractor establishments in 1980. The

CPS sample is limited to males in non-agricultural employment in the 43 largest SMSA's who reported weekly earnings, hours, and industry of employment. The log-wage equations are estimated separately for white and non-white males, and control for the following personal characteristics: age and its square, years of schooling completed and its square, marital and veteran status, and class of worker. Dummy variables for SMSA, SMSA size, and residence in the central city are also included. Occupation is not controlled for because we are interested not in within occupation wage variation, but in changes across occupations.

As the contractor sector's employment share increases by one standard deviation, non-white male wages increase by eight percent compared to six percent for white males. Both effects are significant, and the impact on non-white males is significantly greater than that on white males according to an F-test across equations. If the occupational upgrading estimated in this paper was due simply to occupational reclassification in name only -title inflation-, then no such wage effect would be expected. This cross-section evidence indicates that occupational advance under affirmative action has contributed to the decline in racial earnings inequality. Black male wages increase relatively more than those of white males in contractor intensive industries. After 1974, affirmative action appears to have increased the employment of non-white males in the more skilled and remunerative occupations.

Section 4: Conclusion

This paper has shown that affirmative action under Executive Order 11246 has promoted the occupational advance of minorities of both sexes, as well as increasing their employment among government contractors. For white females, the impact of the program appears mixed, and more difficult to separate from concurrent supply shifts. The finding of occupational advance for black males is reinforced by evidence that affirmative action has narrowed the difference in earnings between the races.

If minorities and females do not share the skills and interests of white males, then perhaps the best one can expect from an affirmative action program is to increase their employment. But to the extent that minorities and females share the qualifications and interests of white males, an effective affirmative action program should improve their chances of sharing the same occupations too.

In the end, this is really a story about a reform that works despite generating considerable resistance. But just as no policy works in isolation, so no policy can be evaluated in isolation. Our major finding here is that affirmative action has increased the demand for minorities in skilled jobs in the contractor sector. The relative demand shift has been greater for skilled than unskilled workers. The success of this program in skilled occupations after 1974, where none had been observed before, is probably due in part to the increasing supply of skilled minorities in many fields, as well as to the more aggressive use of sanctions after the early 1970's. The weaker results for white females must be considered in light of the massive increase in female labor supply that has led to increased female employment throughout the economy, and which may have obscured the contractor effect. We have also seen minorities and females enjoying the greatest gains at growing establishments, both contractor and non-contractor. The lesson drawn is that affirmative action programs work best when they are vigorously enforced, when they work with other policies that augment the skills of members of protected groups, and when they work with growing employers.

Section 4: Conclusion

This paper has shown that affirmative action under Executive Order 11246 has promoted the occupational advancement of minorities in both sexes, as well as increasing their employment among government contractors. For white females, the impact of the program appears mixed, and more difficult to separate from concurrent supply shifts. The finding of occupational advance for black males is reinforced by evidence that affirmative action has narrowed the difference in earnings between the sexes. If minorities and females do not share the skills and interests of white males, then perhaps the best one can expect from an affirmative action program is to increase their employment. But to the extent that minorities and females share the qualifications and interests of white males, an effective affirmative action program should improve their chances of sharing the same occupations too.

NOTES

BIBLIOGRAPHY

1. In other specifications that account for non-linearities stronger and more significant results are estimated for females.
2. There is evidence of a stronger affirmative action effect in smaller establishments in non-linear specifications. It also appears that affirmative action for black males has been more effective at male intensive establishments.
3. The coefficients of interest here, on contractor and review status, do not change significantly when the equations for black and white males are reestimated on a larger sample of 41660 establishments with just the restrictions that black male and white male employment be positive.
4. Earnings of full-time workers employed 50-52 weeks from U.S. Bureau of the Census, Current Population Reports, Series P-60, "Money Income in 1974 of Families and Persons in the U.S.", no. 101, January, 1976, Table 61, p.127. and from U.S. Bureau of the Census, Current Population Reports, Series P-60, "Money Income in 1974 of Households, Families, and Persons in the U.S.", no. 132, July, 1982, Table 59, p.213,214.

BIBLIOGRAPHY

NOTES

2 Ashenfelter, Orley and Heckman, James. "Measuring the Effect of an Anti-discrimination Program"

in Orley Ashenfelter and James Blum, eds., *Evaluating the Labor Market Effects of Social Programs*, (Princeton: Industrial Relations Section, Princeton University, 1976), pp. 46-84.

1 Burman, George. *The Economics of Discrimination: The Impact of Public Policy*, unpublished Ph.D. thesis, Graduate School of Business, University of Chicago, 1973.

Flanagan, Robert J. "Actual Versus Potential Impact of Government Anti-discrimination Programs," *Industrial and Labor Relations Review*, vol. 29, no. 4, July 1976, pp. 486-507.

3 Goldstein, Morris and Smith, Robert S. "The Estimated Impact of the Anti-discrimination Program Aimed at Federal Contractors," *Industrial and Labor Relations Review*, vol. 29, no. 4, July 1976, pp. 523-543.

Heckman, James J. and Butler, Richard. "The Government's Impact on the Labor Market Status of Black Americans: A Critical Review," in Leonard Hausman et. al. ed., *Equal Rights and Industrial Relations*, (Madison: Industrial Relations Research Association, 1977).

4 Heckman, James J. and Wolpin, Kenneth I. "Does the Contract Compliance Program Work? An Analysis of Chicago Data," *Industrial and Labor Relations Review*, vol. 29, no. 4, July 1976, pp. 544-564.

Johnson, George and Welch, Finis. "The Labor Market Implications of an Economy-wide Affirmative Action Program" *Industrial and Labor Relations Review*, vol. 29, no. 4, pp. 508-522.

U.S. Commission on Civil Rights, *The Federal Civil Rights Enforcement Effort - 1974*, volume 5, "To Eliminate Employment Discrimination" (Washington: Government Printing Office, July 1975).

U.S. Civil Rights Commission, *The Federal Civil Rights Enforcement Effort - 1977*, "To Eliminate Employment Discrimination: A Sequel" (Washington: Government Printing Office, December, 1977).

U.S. Department of Labor, Office of Federal Contract Compliance Programs, *Freedom of Information Act Index*, June 1980 and April 1981.

U.S. Equal Employment Opportunity Commission. *EEOC Report: Minorities and Women in Private Industry, Annual Volumes.*

U.S. General Accounting Office, "The Equal Employment Opportunity Program for Federal Nonconstruction Contractors Can Be Improved," April 29, 1975, p. 30.

From samples of roughly 160,000 establishments in 1980 and 100,000 establishments in 1974 I found 62,690 establishments that filed identifiable reports in both years. The empirical tests comparing contractors with non-contractors are based on these 62,690 establishments with more than sixteen non-contractors from the matched sample. The detailed occupational tests are based on subsamples reporting positive employment within the occupation.

An establishment is considered a contractor if the company or any of its establishments are prime government contractor or first-tier subcontractors with a contract, subcontract or purchase order of \$20,000 or more. Any such establishment is identified as a contractor, whether or not the establishment so identified itself.

To the extent that contractors may have selectively reclassified upwards black and female intensive detailed occupations at a faster rate than did non-contractors, this study and its procedures will overcome the actual occupational advance due to affirmative action. Of course pure reclassification would cause black forces in the lower occupations, which is not observed.

Contractors appear to have become better labeled over time. Twenty-seven percent of all 1974 non-contractors were identified as contractors in 1980, constituting seventeen percent of all 1980 contractors. Whether these status changes are true, or just an artifact of more accurate reporting, my

Appendix: Data

Title VII of the Civil Rights Act of 1964 requires annual reports on workforce demographics from all private employers with 100 or more employees, or 50 or more employees and a federal contract or first-tier subcontract worth \$50,000 or more. In the case of multi-plant employers, all establishments with more than 24 employees that belong to firms fulfilling the above conditions must report individually. In 1978, 39,000 employers with more than 165,000 establishments filed reports covering 36 million employees, more than half of all private non-farm employees. The sample is extensive, covering three-quarters of all manufacturing employment as reported by the B.L.S. Employers with small workforce establishments such as construction, trade and agriculture are underrepresented. Construction and agriculture are also underrepresented because temporary or casual employees are not counted as employees for the purposes of reporting requirements.

From samples of roughly 160,000 establishments in 1980 and 100,000 establishments in 1974 I found 68,690 establishments that filed identifiable reports in both years. The empirical tests comparing contractors with non-contractors are based on these 68,690 establishments with more than sixteen million employees from the matched sample. The detailed occupational tests are based on subsamples reporting positive employment within the occupation.

An establishment is considered a contractor if the company or any of its establishments are prime government contractors or first-tier subcontractors with a contract, subcontract or purchase order of \$50,000 or more. Any such establishment is identified as a contractor, whether or not the establishment so identified itself.

To the extent that contractors may have selectively reclassified upwards black and female intensive detailed occupations at a faster rate than did non-contractors, this study and its predecessors will overstate the actual occupational advance due to affirmative action. Of course pure reclassification would cause black losses in the lower occupations, which is not observed.

Contractors appear to have become better labeled over time. Twenty-seven percent of all 1974 non-contractors were identified as contractors in 1980, constituting seventeen percent of all 1980 contractors. Whether these status changes are true, or just an artifact of more accurate reporting, my

results will be biased against finding any affirmative action effect when I test according to 1974 status only. In other words, I underestimate the effect of being a contractor because I include among the non-contractors some establishments that became or really were contractors, and I include among the contractors some establishments that became or really were non-contractors.

To compare demographic changes across reviewed and non-reviewed establishments I merged the matched 1974 and 1980 EEO-1 establishment demographic data with data on OFCCP compliance reviews. OFCCP administrative records contain data on 27,000 compliance reviews across 13,000 identifiable establishments, between 1973 and 1981. These are almost exclusively Department of Defense compliance reviews, which account for nearly half of all reviews. Reviews completed prior to 1973 or after 1979 are underrepresented, and due to general under-reporting some establishments that were reviewed will be included among the non-reviewed, biasing my tests against finding an impact of compliance reviews. I labeled as reviewed any establishments that had a record of at least one compliance review between 1975 and 1979 inclusive. Multiple reviews are not rare, but are not controlled for in my tests. Since I expect decreasing returns to multiple reviews, this will bias against finding any review effect in the case of establishments reviewed prior to 1974. In other cases I will simply be measuring the cumulative effect of reviews. Since the mode year of review completion in the sample is 1975, while demographic changes are measured between 1974 and 1980, there is little potential for underestimating review effects due to lags in response.

Table 4.1: Variable Definitions, Means, and Standard Deviations

N = 60690

<u>Variable Name</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Definition</u>
C74	.601	.49	= 1 if establishment was part of a contractor company in 1974
R	.041	.20	= 1 if establishment completed a compliance review between 1974 and 1980 exclusive.
SIZE	237	594	Total number of employees in 1974.
GROWTH	.197	1.67	Rate of growth of total employment from 1974 to 1980.
SINGLE	.183	.39	= 1 if establishment was not part of a multi-establishment company.
PWC	.381	.31	Proportion of all employees who are officials, managers, professionals, technicians and sales people.

Table 4.2: Linear Probability Equations of the Effect of Contractor and Review Status on Percent Employed by Demographic Group.
N = 68690

Demographic Group:	White Males	Black Males	Other Males	White Females	Black Females
Equation:	1	2	3	4	5
C74	-.024 (.081)	.198 (.040)	-.101 (.042)	-.464 (.079)	.154 (.040)
R	-.432 .194	.071 (.095)	.047 (.100)	-.388 (.188)	.261 (.095)
P74*	.868 (.0016)	.840 (.0019)	.901 (.0023)	.870 (.0017)	.921 (.0023)
SIZE	.0012 (.000062)	-.000068 (.000031)	-.00025 (.000033)	-.00011 (.000061)	-.000046 (.000031)
GROWTH	-.382 (.021)	.097 (.010)	.083 (.011)	.104 (.021)	.065 (.010)
SINGLE	.073 (.109)	-.342 (.053)	.150 (.056)	-.505 (.105)	-.450 (.053)
PWC	-1.637 (.146)	-.381 (.072)	-.299 (.075)	3.49 (.141)	-5.02 (.072)
R ²	.876	.784	.743	.868	.751
MSE	86.14	20.87	34.20	81.45	20.87

Note: All equations include 27 Industry and 4 Region Dummies.

* P74 is the lagged dependent variable; the index of occupational status for the given demographic group in 1974.
 ** G is the rate of growth of total employment of the given Demographic Group between 1974 and 1980.

Table 4.3: Index of Occupational Status.

Linear Probability Equations of the Effect of Contractor and Review Status on Occupational Index by Demographic Group.
N = 13936

Demographic Group: Equation:	White Males 1	Black Males 2	Other Males 3	White Females 4	Black Females 5
C74	50.9 (12.8)	120.6 (18.6)	204.4 (24.1)	41.3 (11.5)	84.3 (15.7)
R	60.4 (19.0)	98.9 (27.6)	102.1 (35.9)	54.6 (17.1)	26.5 (23.3)
O74*	.82 (.005)	.62 (.006)	.60 (.06)	.83 (.006)	.63 (.007)
SIZE	.0011 (.005)	-.010 (.007)	.022 (.009)	.006 (.004)	.005 (.005)
G**	-8.50 (1.40)	-16.9 (2.0)	-21.3 (2.5)	-26.5 (2.5)	-6.90 (1.3)
SINGLE	30.88 (14.40)	-150.7 (21.0)	-42.9 (27.2)	12.8 (13.0)	-53.4 (17.7)
R ²	.71	.50	.47	.69	.49
MSE	338,731	713,418	1,203,759	273,348	509,357
mean of the dependent variable	9258	8152	8663	8510	7977

Note: All equations include 27 Industry and 4 Regional Dummies. Sample limited to establishments with at least one employee in each Demographic Group. Standard Errors in Parentheses.

* O74 is the lagged dependent variable: the index of occupational status for the given demographic group in 1974.

** G is the rate of growth of total employment of the given Demographic Group between 1974 and 1980.

Table 4.3: Summary of the Impact of Contractor and Review Status on Black Male Employment by Occupation

Table 4.4: Occupational Index Example

Occupation	Period	# Blacks	α	# Whites	P	% ΔP	# of all Black males in Occupation in 1974	Occupation
White-collar	1	20	.20	80	.20	100		
	2	30	.20	70	.30			
Blue-collar	1	80	.80	120	.40	50		1. Officers and Managers
	2	120	.80	80	.60			2. Professionals
								3. Technicians
								4. Sales
								5. Clerical
								6. Craft
								7. Operatives
								8. Laborers
								9. Service
								10. Trainees - White Collar
								11. Trainees - Blue Collar
								12. Occupational Index

* - significant at the .05 level.
 ** - significant at the .01 level.
 Significance levels indicated only for elasticity of black male's share.

Table 4.5: Summary of the Impact of Contractor and Review Status on Black Male Employment by Occupation.

Occupation	% of all Black Males in Occupation in 1974	Elasticity of Black Males' Share With Respect to:		Total	Elasticity of Ratio of Black Male to White Male Share with Respect to:		Total
		Contractor Status	Review Status		Contractor Status	Review Status	
1. Officials and Managers	.030	.09**	.17*	.12	.10	.16	.13
2. Professionals	.015	.38**	.10	.40	.35	.12	.37
3. Technicians	.020	.22**	.31**	.27	.18	.34	.24
4. Sales	.032	.16**	.03	.17	.13	.03	.14
5. Clerical	.032	.17**	.44**	.25	.20	.33	.26
6. Craft	.119	.18**	.04	.19	.17	.03	.18
7. Operatives	.418	.10**	.05	.11	.11	.08	.12
8. Laborers	.198	.02	.07*	.03	.09	.05	.10
9. Service	.137	.05**	.05	.06	.05	.06	.06
10. Trainees— White Collar	.003	.17	.28	.22	.31	.30	.36
11. Trainees— Blue Collar	.106	.24*	-.03	.23	.28	-.03	.27
12. Occupational Index	—	.02**	.01**	.02	.01	.006	.01

* — significant at the .05 level.

** — significant at the .01 level.

Significance levels indicated only for elasticity of black male's share.

Table 4.6: Summary of the Impact of Contractor and Review Status on Non-Black Minority Male Employment by Occupation.

Occupation	% of all Other Males in Occupation in 1974	Elasticity of Other Males' Share With Respect to:			Elasticity of Ratio of Other Male to White Male Share with Respect to:			Total
		Contractor Status	Review Status	Total	Contractor Status	Review Status	Total	
1. Officials and Managers	.048	.07*	.06	.08	.08	.06	.09	
2. Professionals	.057	.06	.25**	.10	.04	.28	.09	
3. Technicians	.035	.03	.16	.06	.00	.18	.03	
4. Sales	.052	.21**	.01	.21	.18	.00	.18	
5. Clerical	.044	.09	.47**	.17	.11	.44	.19	
6. Craft	.159	-.05	.08	-.04	-.06	.08	-.05	
7. Operatives	.300	-.06**	-.00	-.06	-.05	.03	-.04	
8. Laborers	.193	-.10**	.02	-.10	-.09	.05	-.08	
9. Service	.110	.09**	.14	.11	.09	.16	.12	
10. Trainees—White Collar	.002	.25	.59	.35	.39	-.59	.29	
11. Trainees—Blue Collar	.006	.22	-.00	.22	.26	-.00	.26	
12. Occupational Index	—	.02**	.01**	.02	.02	.01	.02	

* = significant at the .05 level.

** = significant at the .01 level.

Significance levels indicated only for elasticity of other male's share.

Table 4.7: Summary of the Impact of Contractor and Review Status on White Female Employment by Occupation.

Occupation	% of all White Females in Occupation in 1974	Elasticity of White Females' Share With Respect to:		Total	Elasticity of Ratio of White Female to White Male Share with Respect to:		Total
		Contractor Status	Review Status		Contractor Status	Review Status	
1. Officials and Managers	.037	.01	-.03	.00	.01	-.03	.00
2. Professionals	.083	-.00**	.03	-.09	-.10	.05	-.09
3. Technicians	.049	-.10**	.01	-.10	-.13	.03	-.12
4. Sales	.133	-.09**	.00	-.09	-.11	.00	-.11
5. Clerical	.299	-.01**	-.03**	-.02	.01	-.05	.00
6. Craft	.024	-.20**	-.18**	-.23	-.20	-.18	-.23
7. Operatives	.195	.00	-.03	-.01	.01	.00	.01
8. Laborers	.069	.04	-.05	.03	.05	-.02	.05
9. Service	.111	-.04**	-.03	-.05	-.04	-.02	-.04
10. Trainees— White Collar	.002	.20**	.10	.22	.34	.12	.36
11. Trainees— Blue Collar	.002	-.16	-.01	-.16	-.13	-.01	-.13
12. Occupational Index	—	.01**	.01**	.01	-.00	.00	-.00

* = significant at the .05 level.

** = significant at the .01 level.

Significance levels indicated only for elasticity of white female's share.

Table 4.8: Summary of the Impact of Contractor and Review Status on Black Female Employment by Occupation.

Occupation	% of all Black Females in Occupation in 1974	Elasticity of Black Females' Share With Respect to:			Elasticity of Ratio of Black Female to White Female Share with Respect to:		
		Contractor Status	Review Status	Total	Contractor Status	Review Status	Total
1. Officials and Managers	.015	.14**	-.10	.12	.14	-.08	.13
2. Professionals	.026	.01	.12	.03	.10	.09	.12
3. Technicians	.051	.06	.04	.07	.18	.03	.19
4. Sales	.061	.13**	-.14	.11	.24	-.14	.22
5. Clerical	.190	.19**	.19**	.22	.20	.26	.25
6. Craft	.024	-.34**	.05	-.33	-.18	.27	-.13
7. Operatives	.276	.01	.31**	.06	.01	.47	.09
8. Laborers	.112	.24**	.24**	.28	.19	.30	.24
9. Service	.245	.07**	.01	.07	.11	.05	.12
10. Trainees— White Collar	.003	.72**	-.08	.71	.43	-.17	.40
11. Trainees— Blue Collar	.004	.08	-.13	.06	.29	-.12	.27
12. Occupational Index	—	.01**	.00	.01	.01	-.00	.01

* = significant at the .05 level.

** = significant at the .01 level.

Significance levels indicated only for elasticity of black female's share.

Table 4.8: Summary of the Impact of Contractor and Review Status on Black Female Employment by Occupation

Occupation	# of all Black Females in 1974	Elasticity of Black Female's Status With Respect to:		Elasticity of Ratio of Black Females to White Females Status with Respect to:	
		Contractor Status	Review Status	Contractor Status	Review Status
1. Officials and Managers	.012	.14**	-.10	.14	-.08
2. Professionals	.026	.01	.12	.10	.09
3. Technicians	.051	.06	.04	.18	.03
4. Sales	.061	.12**	-.14	.24	-.14
5. Clerical	.190	.19**	.19**	.20	.26
6. Craft	.024	-.24**	.02	-.18	.27
7. Operatives	.176	.01	.21**	.01	.47
8. Laborers	.112	.24**	.24**	.19	.20
9. Service	.242	.07**	.01	.11	.02
10. Trades - White Collar	.003	.72**	-.08	.43	-.17
11. Trades - Blue Collar	.004	.08	-.13	.29	-.12
12. Occupational Index	-	.01**	.00	.01	-.00

* - significant at the .05 level.
 ** - significant at the .01 level.
 Significance levels indicated only for elasticity of black female's share.