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## Chapter 2: Background

Our Constitution of 1787 was not a perfect instrument; it is not perfect yet. But it provided a firm base upon which all manner of men, of all races and creeds and colors, could build our solid structure of democracy.

-- Franklin D. Roosevelt, 1941

### Section 1: What is Affirmative Action?

Affirmative action has become so well known that more people use the words than know what they mean. In this study, affirmative action will refer to the provisions related to race, color and sex of Executive Order 11246 as amended by Executive Order 11375 [3 C.F.R. 169 (1974)]. This is distinct from affirmative action required as a remedy by judicial decision, which shall not be discussed here. Executive Order 11246, issued in 1965, was the sixth in a series of executive orders barring discrimination by federal contractors going back to Franklin Roosevelt's executive Order 8802 issued on June 25, 1941 and hailed at the time as a second Emancipation Proclamation.

The purpose and development of affirmative action cannot be fully understood outside of history, a history that includes most saliently the institution of slavery in the 18th and 19th centuries, and the Civil Rights movement of the mid 20th century. The

In the framework of the Civil Rights Act of 1964, the President could act to combat employment discrimination. In light of this country's troubled history of group relations, the most noble goal of affirmative action can only be to help integrate our society and ensure that all have a stake in its success.

Prior to Executive Order 10925, issued March 6, 1961 by President Kennedy, the anti-discrimination program for federal contractors lacked any real teeth. In a detailed study of the presidential Fair Employment Practice Committees, Norgren and Hill state: "One can only conclude that the twenty years of intermittent activity by presidential committees has had little effect on traditional patterns of Negro employment.", and that "It is evident that the non-discrimination clause in government contracts was virtually unenforced by the contracting agencies during the years preceeding 1961." [4] Compliance programs, such as Plans for Progress and its predecessors, were voluntary. The 1961 Executive Order was the first to go beyond anti-discrimination and to require contractors to take affirmative action, and the first to establish specific sanctions including termination of contract and debarment. Coming on the heels of Title VII of the Civil Rights Act of 1964, Executive Order 11246, which made the Secretary of Labor rather than a presidential committee responsible for administering enforcement, was the first to be enforced stringently enough to provoke serious conflict and debate. On October 13, 1967, Executive Order 11375 amended 10246 to expand its coverage to women, although effective regulation against sex discrimination did not reach full stride until after

that 'the committee has taken no position on the question of segregation of industrial workers', he emphasized that 'Executive Order 8802 is a war order, and not a social document', that it did not require the elimination of segregation, and that had it done so, he would have considered it 'against the general peace and welfare . . . in the Nazi dictatorial pattern rather than in the slower, more painful, but sounder pattern of the democratic process.' [3]

Of course, the delicate question of how to swiftly remedy the harm done by discrimination without distorting the democratic process is still with us, as is the question of whether the democratic process can function well outside an integrated society. Democratic society requires a consensus for change, but it depends upon the full participation of its members. The last forty years have witnessed a slow and at times painful process of confrontation and accommodation, developing a consensus that provides the foundation for a lasting change in attitudes towards discrimination.

The Executive Orders establishing affirmative action have shifted in emphasis and in legal foundation. The Roosevelt and Truman Orders had the stated goal of increasing the labor supply for defense production, and referred specifically to National Defense Acts. Under the Federal Procurement Act, the President could act to ensure the government's access to cheaper goods and services through the full and efficient use of human resources.

Title VII and other laws.

In 1978 an attempt was made to remedy these perceived deficiencies in administration. First, as directed by Executive Order 12086 on October 5, 1978, all enforcement activities were consolidated from the contracting agencies into the UFCCP. Second, the Uniform Employee Selection Standards were issued, reflecting the consensus of the Department of Labor, the Department of Justice, the Equal Employment Opportunity Commission (EEOC) and the Civil Service in a consistent set of guidelines. As a final note to this still developing history, the UFCCP under President Reagan has proposed revised regulations. Affirmative action regulations are not carved in stone.

The Executive Order has been the responsibility of the Secretary of Labor since 1965. By regulation, the Department of Labor has legally exempted from the order's provisions contractors whose contracts in any year aggregate to less than \$10,000 [41 C.F.R. 60-1.5]. All other contractors, prime-contractors, and first-tier sub-contractors with 50 or more employees and a contract, subcontract or purchase order of \$50,000 or more must annually file EEO-1 forms revealing establishment demographics for any pay period between January and March and must develop a written affirmative plan for each of its establishments [41 C.F.R. 60-1.40(a)]. Affirmative action encompasses a larger group of establishments than is apparent at first sight for two reasons. First, the subcontractor clause regresses infinitely. Subcontractors of subcontractors ad infinitum must write the

the Equal Employment Act of 1972 was enacted.

The Office of Federal Contract Compliance (DFCC) was established in 1965 to enforce the order. In 1968, the Office of Federal Contract Compliance Programs (DFCCP) within the Department of Labor issued regulations requiring written affirmative action plans (AAPs) containing goals and timetables to correct deficiencies in equal employment opportunity. These regulations have been expanded from time to time. In 1970, Order Number 4, applicable to federal contractors with 50 or more employees and a contract of \$50,000 or more, required (1) a utilization study of minorities by job category, (2) goals and timetables to correct deficiencies, and (3) data collection and reporting systems to report progress towards goals. On December 4, 1971, Revised Order 4, applicable to non-construction contractors, for the first time expanded the regulations to require affirmative action plans for women. It was not until mid-1972 that detailed, standardized procedures were established for compliance with Revised Order 4.

Prior to 1978, while the Secretary of Labor directed affirmative action, enforcement was scattered among more than a dozen contracting agencies. Each agency ran its own contract compliance program, with a broad range of rigor and effectiveness. For example, while the Department of Defense developed a reputation for strict enforcement, compliance reviews at other agencies consisted of a single telephone call. Enforcement was hampered not only by dispersion across agencies, but also by conflict with

The affirmative action obligations imposed by the Contract Compliance Program are separate and distinct from non-discrimination obligations and are not based on proof of individual acts of discrimination. At the logical extreme, affirmative action and non-discrimination obligations can be viewed as mutually exclusive and inconsistent . . . in practice, the non-discrimination and affirmative action obligations may be incompatible when, for example, a less qualified, less senior female or black is granted a job preference that disadvantages a male or white solely on the basis of sex or race to achieve an affirmative action commitment.[6]

Others have criticized the affirmative action obligation as being vague.[7] In its earlier days, the program did rely more on decentralized decisions than on explicitly detailed procedures.[8]

Detailed regulations, including numerical goals, were introduced in 1969, after the Comptroller General ruled that the affirmative action obligation was too vague to fulfill the requirement that minimum contract standards be made clear to prospective bidders. [46 Comp. Gen. 326 (1965)]. Numerical goals were first introduced in the manning tables embodied in the Cleveland and Philadelphia plans for construction contractors. These measurable standards to monitor compliance were extended to non-construction contractors in 1970. These regulations won the

affirmative action obligation into their contracts, though only first-tier subcontractors must file EEO-1 forms. Second, Labor Department regulations require all establishments of more than 25 employees within a firm to file EEO-1 forms and develop written affirmative action plans if any part of the firm is obligated under the executive order. In 1978 this meant that 74% of all manufacturing employees reported in the Bureau of Labor Statistics Employment Earnings Surveys were also reported on EEO-1 forms[5].

Under the executive order, federal contractors agree to "not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin, and 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 action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or terminations; rates of pay or other forms of compensation; and selection for training including apprenticeship." [3 C.F.R. 169 202(1) (1974)]. The language of the order imposes two obligations: first, not to discriminate; second, whether or not there is any evidence of discrimination, to take affirmative action not to discriminate. To say that this second obligation as it has been developed in the regulations, has provoked a good deal of debate would be a considerable understatement. In the words of one legal expert:

second factor suggests the availability of unemployed people is what counts--the excess supply of workers. The third factor changes the emphasis from absolute to relative population. Population is exchanged for availability and skills are brought into the picture in factors four and five, but five adds the terminology: "area in which the contractor can reasonably recruit". Setting aside the external market, factor six suggests internal promotions and transfers must also be considered. Factor seven suggests taking into account external training institutions and factor eight suggests internal training to make jobs available to minorities and females.

While not affirmed by Congress and the Courts, these detailed and growing regulations have won the tacit approval of not being negated. As the Ninth Circuit court said in the case of Legal Aid Society of Alameda County vs. Brennan: "there can be no doubt that the essential feature of the Affirmative Action Program reflected in the regulations promulgated in Revised Order No 4, were effectively ratified by Congress in adopting the Equal Employment Opportunity Act of 1972." (606 f.2d. 1319, 1325-30 n.14(1979), cert. denied, 445 U.S. 946 (1980)).

Past studies of government job-training and placement programs have generally shown them to have only weak success, performing better when closely tied to private industry. This study will suggest that one of the largest federally mandated job placement and training programs--though it is not usually thought of those terms--with the most intimate relation with the private

tacit approval of the Congress and the Courts.[9] The regulations require an affirmative action program consisting in part of a utilization analysis of the work force indicating areas in which the employer is deficient, and goals and time tables for good-faith efforts to correct deficiencies. [41 C.F.R. 60-2.10(1977)] The workforce analysis lists, for each job title by line of progression, the wage rate and the total number of incumbents by sex and number of incumbents who are Black, Spanish-surnamed, American Indian, and Oriental.

What is underutilization? That is a question that has kept many lawyers, economists, and statisticians employed, and given birth to a whole new breed: affirmative action professionals.

Underutilization is defined in the regulation as "having fewer minorities or women in a particular job group than would reasonably be expected by their availability. In making the utilization analysis, the contractor shall conduct such analysis separately for minorities and women."

The eight factor test for underutilization was first issued in the OFCCP's Revised Order Number 4 of 1974. The first factor suggests that a determination of employment underutilization be based on a comparison with the local population, regardless of skills. Note also that defining the local labor area is itself a fitting subject for litigation, as in the debarment contesting case of Timken Co. v. Vaughan. [413 F. Supp. 1183 (N.D. Ohio 1976)] in which the court slogged through the details of travel time and distance and traditional commuting practice.[10] The

(1970)].

The regulation that employee selection and promotion tests be validated to ensure that they are related to job performance and are not merely a pretext for discrimination stems directly from the celebrated 1971 Supreme Court decision in *Griggs v. Duke Power Company*. Since discriminators are unlikely to confess intent, a *prima facie* case of discrimination can be made by showing the disparate impact across race or sex of personnel procedures. If all employee selection were made objectively, there could, by definition, be no discrimination. Tests appear at first sight more objective than interviews or other means of employee selection, so one might suppose that federal anti-discrimination policy would promote a meritocracy based on tests. However, since tests are imperfect and validation costly, employers have dropped tests and standards that they previously found useful. Even if the contractor successfully validates a test, under EEOC guidelines [29 C.F.R. 1607.3(b) (1974)], he must also show that there are no other less discriminatory tests available that also predict job performance. In the words of the *Harvard Law Review* "the validation and alternative showing requirement embodied in EEOC requirements and enforced by the OFCCP, if stringently applied, would raise the cost of testing for many employers beyond tolerable limits, forcing the abandonment of testing programs, which, although they may be valid, cannot be validated at any cost. . . . The guidelines if applied as strictly as their language allows, would encourage many employers to use a quota system of hiring." [11]

sector has been surprisingly successful. That program, undertaken in part to remedy the legacy of past societal discrimination, is affirmative action.

If the utilization analysis required by the regulations reveals that women or minorities are underrepresented in an establishment, then the contractor is required to submit numerical goals for the prompt and full utilization of members of protected groups, and timetables for the achievement of those goals. According to the regulations "these goals may not be rigid and inflexible quotas which must be met, but must be targets reasonably attainable by means of applying every good faith effort to make all aspects of the entire affirmative action program work." [41 C.F.R. 60-2.13(f) & (i) (1975)].

Over and above these efforts to ensure full utilization, Revised Order Number 4 also required contractors to provide "relief, including back pay when appropriate, for members of an affected class who by virtue of past discrimination continue to suffer the present effects of that discrimination." [41 C.F.R. 50-2.11 (1975)]. This relief is to be formalized in a conciliation agreement, but guidelines for affected class identification and remedies have not been issued.

Contractors are also required to "validate worker specifications . . . by job title using job performance criteria. Special attention should be given to academic experience, and skill requirements to insure that the requirements themselves do not constitute inadvertent discrimination." [41 C.F.R. 50-2.240

screening. This is a drastic drop from the 90% of firms that used such psychological test in a comparable 1963 survey.[15] Most companies in 1976 considered interviews the most important aspect of the selection procedures.[16] The concrete, measurable qualities that are the essence of tests also made them a relatively easy target for law suits. Under the pressure of Title VII law, employee selection now largely takes place through interviews rather than tests. Title VII has prompted a more formally documented selection process, but not necessarily a more objective or more efficient process.

How does the government see to it that firms meet their affirmative action obligations? In a later chapter, I will show details of the actual recent enforcement effort. Now consider how the OFCCP and its predecessor's claim they target enforcement, and the sanctions they may apply toward that end. The principal tool of enforcement is the compliance review, in which the contractor's affirmative action plans and performance are audited. While the OFCCP has investigated employee complaints, compliance reviews have affected 400 times more employees than complaint investigations have. [17] How have these reviews been targeted? In the past, a significant fraction of reviews had absolutely no relation to an establishment's affirmative action or antidiscrimination policies, or to its employment practices generally. According to regulations, pre-award reviews were automatically triggered at establishments that were about to receive federal contracts of a million dollars or more. Many establishments in the defense industry were reviewed semiannually

The view is echoed by Supreme Court Justice Blackmun in a 1975 dissent: "I fear that too rigid application of the EEOC Guidelines will leave the employer too little choice, save an impossibly expensive and complex validation study, but to engage in a subjective quota system of employment selection. This, of course, is far from the intent of Title VII." [12] The implications for productivity are drawn by a representative of a prominent, though partisan, labor law firm: ". . . the incentive and ability of managers and supervisors to manage is threatened when random or quota selection replaces their right to evaluate and select employees based upon merit. . . . the statistical parity theory invariably results in the abandonment of the 'most qualified' standard for the 'basically qualified' or 'lowest common denominator' standard or, in some cases, no selection standard at all. When projected across our entire economy, this pressure to substitute numbers and the 'lowest common denominator' standard for merit selection results in immense costs in lost efficiency, productivity, and quality." [13] I shall present evidence on the extent of this productivity loss in Chapter 5.

Recent surveys of personnel executives by the Bureau of National Affairs show that the use of tests in employee selection has in fact declined. In 1976, 60% of the 160 companies surveyed reported that they had changed their selection procedures for equal employment opportunity reasons. Thirty-nine percent changed testing procedures and 31% revised job qualifications. [14] Of 196 companies also surveyed in 1976, only 42% used ability, intelligence or personality tests in preemployment

reviews.[22] Field officers stated in interviews that in targeting reviews they typically do not refer to an establishment's demographic record contained in EEO-1 forms or to its past affirmative action records.

A compliance officer, finding a contractor in violation, must attempt conciliation and obtain a conciliation agreement or letters of commitment to correct deficiencies. Back-pay awards have been obtained through such conciliation agreements. If conciliation fails, a show-cause notice is issued. If no conciliation agreement is forthcoming after 30 days, the Director of the OFCCP may approve enforcement procedures. In case of major violations, injunctive relief to enforce contract compliance provisions may be sought in the courts [41 C.F.R. 60-1.26(a) (1975)]. In other cases, administrative hearings are held, which may result in public castigation and an administrative order enjoining violations and requiring remedies such as back pay. The OFCC has been obtaining back-pay for workers since 1967, although the term did not appear in regulations until 1977. The legality of this retrospective remedy has been questioned. Failing all else, a firm's current federal contracts may be terminated, it may be debarred from holding future government contracts, and judicial proceedings may ensue.

Complementing these enforcement sticks is a carrot: set-asides. As upheld by the Supreme Court in its 1980 decision in the Fullilove case, Congress, at least in the case of public works contracts, may require that part of the federal funds be

under this provision. One would expect decreasing returns from such multiple reviews. Around 1973, about seven percent of all reviews were pre-award reviews.[18] Between April 1975 and March 1976, 17.8 percent of the 13,752 compliance reviews were pre-award reviews.[19] Conversations with DFCCP officials indicate that pre-award reviews as a proportion of all reviews peaked in the late seventies at about thirty percent.

How were the remainder of the reviews supposed to be targeted? In the early seventies, industry targetting was supposedly done using the revised McKersie System. This system compares the participation level of females and minorities in each major SMSA workforce with the participation level in a given industry workforce within the SMSA. In addition, the median wage for minorities is compared with the median wage of all employees in that industry to form an occupation ratio.[20] In the late seventies, this system was updated on paper with the EISEN system, which targetted by comparing an establishment with the mean demographics of other establishments in the same SMSA in the same industry. While details of the EISEN system were only made public after litigation under the Freedom of Information Act, officials of the DFCCP claimed in interviews that the EISEN system was never really used, and that targetting has been done on an ad hoc basis, with much discretion left to field officers. This is consistent with earlier evidence that several compliance agencies including the largest, D.D.D., selected contractors for review on the basis of the size of their work force[21], and with USCCR criticisms that adherence to AAPs is not considered in targetting



set aside for procurement from minority businesses. In other words, the contract can be let to a minority business even if it is not low bidder. The extent to which such set-asides have been used is unknown, but their potential may have contributed to changes in employers' behavior.

The House Committee on Labor and Human Resources conducted a study to determine the extent to which set-asides have been used in the construction industry. The study found that set-asides have been used in a number of cases, but that the extent of their use is still limited. The study also found that set-asides have had a positive impact on the construction industry, particularly in the area of minority business participation.

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empirically supported, arguments. Its pessimistic appraisal of affirmative action echoes earlier criticisms by congressional oversight committees and by the G.A.O. In 1971 the House Committee on Labor and Public Welfare stated: "Despite the increasingly strong presidential commitment to the goals of equal employment opportunity, despite the strength of the sanctions available to secure this goal, and despite the potential effectiveness of the Federal monitoring mechanism, the contract compliance program has not been successful." [H. R. Rep. No. 92-239, 92nd Cong. 1st Sess. 15 (1971)]

The Senate Committee on Labor and Public Welfare concurred: "The rights of minorities and women are too important to continue this important function in an agency that has not really been able to achieve the promised results." [S. Rep. No. 92-415, 1st Sess. 92nd Cong. 31 (1971)] The committees blamed weak enforcement efforts and reluctance to apply sanctions.

In its 1975 appraisal of the contract compliance program the G. A. O. agreed: "The almost nonexistence of enforcement actions taken could imply to contractors that the compliance agencies do not intend to enforce the program." [24]

In 1977 the Civil Rights Commission applauded the changed political direction at the top, noting that within three weeks of taking office, President Carter publicly stated his resolve to give priority to improving civil rights enforcement, and that he had appointed serious minded officials to implement this. "Indeed, the summer of 1977 may go on record as the period of

## Section 2: Past Studies of Affirmative Action

The first part of this chapter described in detail what the affirmative action obligation is and how it may be enforced. Now we turn to the question of what the UFCCP has actually done. Past studies fall into two categories: process and result. The former, generated by the U.S. Commission on Civil Rights and other bureaucracies focuses, naturally enough, on the functioning of the bureaucratic process that is the UFCCP. The latter, written by economists, concentrate on the bottom-line impact on minority and female employment.

### Process Evaluation

The problems the government is trying to solve, however, are difficult and persistent. In its 1974 report, this Commission reported that the Federal effort to end employment discrimination had 'not been equal to the task', and in the year and one half between the publication of that volume and the end of 1976, Federal enforcement of equal opportunity laws had not measurably improved. [23]

So wrote the U.S. Commission on Civil Rights, formally charged with oversight of the Federal civil rights effort, in concluding its 1977 report. Working within the government, the Commission has access to information unavailable to outside researchers. The Commission's reports, while reflecting its own priorities, go beyond rhetoric and often present detailed,

7. The information system is deficient.
8. There is duplication of effort and wide disparity in enforcement across compliance agencies.
9. Although regular compliance reviews were first required in 1971, final guidelines for these reviews were not issued until 1974.
10. The DFCC does not exercise proper oversight over compliance agencies.
11. Sanctions are not used.

A list so long might leave one with the impression that a process so flawed could not be effective. Consider some of the criticisms of the regulatory process in greater detail as they relate to targetting and sanctions. To develop a historical perspective on the growth of the enforcement effort, consider that in 1966 the DFCC had a professional staff of 12, and until May of that year had never initiated a debarment. The largest compliance agencies were the General Services Administration (GSA) with a staff of 13 to supervise \$1,350,400,000 in contracts nationally, and the Department of Defense (D.D.D.) which in the Southeast had a staff of 11 to monitor 6,000 contract facilities.[27] In total, only 226 full time professionals excluding those coordinating activities at the DFCC were reported to be overseeing contract compliance at roughly 225,000 contractor facilities in 1969.[28] In the two and one half years prior to May 1968, D.D.D. had reviewed less than 5% of all contractors it

greatest activity by civil rights agencies and offices since the government established mechanisms to combat employee discrimination." [25]

But despite this renewed vigor at the top, the USCCR still believes the DFCCP's enforcement effort is seriously flawed and unequal to the task. I will first summarize some of the many criticisms that concluded the 1975 report [26], and then go into detail on a few directly concerned with the enforcement of existing regulations.

1. The budget and staff of the DFCCP are too small, and the DFCCP itself is too far down the department hierarchy.
2. Regulations exempt small contractors and much of state and local government.
3. Revised Order Number 4 is too vague about the development of goals and does not required separate analyses and goals for different minority groups or by sex within minority group.
4. There is not enough pressure for affected class relief.
5. Outside the 70 geographic areas covered by voluntary or compulsory hometown plans, affirmative action in the construction industry is not enforced. Revised Order Number 4 does not apply to the construction sector, the hometown plans do not regulate sex discrimination.
6. Sex discrimination is allowed if it is a bona fide Occupational Qualification.

contractors even once in twenty years. [31]

The absolute budget and staff levels are given in Table 2.2, which shows that D.O.D., G.S.A., and H.E.W. were the largest compliance agencies, with D.O.D. alone accounting for a third of personnel and more than a quarter of the budget. Between 1974 and 1977 the staff declined by roughly ten percent, as did the budget in real terms. By 1980 actual staffing had been reduced to 1304, out of 1462 authorized full-time permanent employees, and the authorized budget was \$50,962,000, with substantial future cuts projected through 1983.[32] In 1977, 73% of budget and staff were allocated to the non-construction sector, a slight decrease for 1974.[33] For comparison, the DFCCP estimates 85% of contractors are non-construction. These agencies were responsible for monitoring compliance by an estimated 325,000 contractors employing 30 million workers under more than \$50 billion in Federal contracts annually.[34] This amounts to an average of 207 contractors per compliance agency person per year, and \$112 per contractor per year.

Administrative problems have left the DFCCP open to a number of legal charges. In 1974 the Department of Labor, along with the H.E.W. as the compliance agency, was sued by the Women's Equity Action League for failure to enforce affirmative action on the basis of sex, in a case settled in a 1977 consent decree requiring improved information and enforcement. Also in 1974, in the case of Legal Aid Society of Alameda County v. Brennan, a federal district court in California decided that one compliance

was responsible for. More than 85% were found to be not in compliance, but less than 10% were followed up. The compliance agencies relied on EEO-1 forms that were two years out of date, and the G.S.A. estimated that it had access to only a third of EEO-1 forms it should have from contractor establishments. Concerning pre-award reviews, D.O.D. estimated that nearly half out of these were made only after the contract had been awarded. [29]

Staff and budget grew tremendously after 1969, but problems with identifying contractors, and establishing credible threats of reviews and sanctions remained.

First, employers themselves are responsible for indicating to the DFCCP whether they are federal contractors. While some provisions exist for pooling information from contracting agencies to define the universe of federal contractors, the primary formal source of information is self-identification on EEO-1 forms. In 1974, the Labor Department estimated that of about 275,000 nonconstruction contractors subject to affirmative action, it had records of EEO-1 forms for only 92,000, or about one third.[30] This is not as bad as it seems, since in practice field officers typically assume that every large firm is a government contractor.

Second, there are wide disparities across compliance agencies in the size of budget and staff allocated to compliance. As Table 2.1 shows, the resources available for compliance review varied greatly across agencies. The USCCR interprets the last column to say that the VA and the USDA could not review all their

percent of the cases.[37] In a pre-award review, the contracting agency may delay award until an affirmative action plan is accepted. This leverage was applied to no more than a dozen firms between 1965 and 1971.[38] The withholding of progress payments had not been used in the two years after its authorization in 1973. [39]

What sanctions then does the OFCCP actually wield in enforcement? The principal financial sanction used is the award of back pay for members of affected classes as part of a conciliation agreement or administrative order. In fiscal years 1973 and 1974 alone, \$54 million in back pay was obtained in 91 settlements.[40] These two years account for almost all of the \$60 million obtained between 1969 and 1976, and so indicate a substantially more aggressive enforcement stance. As broken down in Table 2.4, D.O.D. accounted for half this total, for an average of \$63 per employee beneficiary. In fiscal year 1980, \$9.2 million in backpay for 4336 employees was obtained in 743 conciliation agreements, for an average of \$2122 per employee.[41] While the per-employee penalty has increased, less than two-tenths of one percent of protected group employees at only the reviewed establishments were beneficiaries of such back pay awards in 1980.

If a compliance agency finds an affirmative action plan unacceptable, it issues a show-cause notice giving the contractor 30 days to resolve deficiencies or show cause why administration proceedings should not begin. This initial step in higher sanc-

agency, the U.S.D.A., had been approving AAP's that did not fulfill regulated standards. [361 F. Supp. 125(N. D. Cal. (1974)]. In the 1977 case of Washington Area Construction Industry Task Force v. Marshall, the DFCCP was charged with failure to enforce affirmative action in construction. In a consent decree, the DFCCP agreed to develop a better information system for targeting compliance reviews among construction contractors.

Review intensity has fluctuated over the years, and more widely across agencies. In fiscal year 1973, about 15 percent of all contractor facilities were reviewed. At the extremes, NASA reviewed all of its 260 contractors while the VA reviewed only one percent of its 12,480.[35] In 1976 the DFCCP estimates that agencies conducted only 59% of scheduled reviews and reviewed 10.7% of non-construction contractors as shown in Table 2.3. If reviews were randomly allocated across contractors, each contractor could expect to be reviewed once every nine or ten years.

The thoroughness and consistency of the review process is questionable. The GAO analyzed a random sample of 120 AAP's that had been approved by DOD and GSA in the first 9 months of 1974. According to the GAO, 70% of the plans approved by GSA and 20% of those approved by DOD did not meet the standards of Revised Order No. 4.[36] In other words, compliance agencies were approving reports that did not meet Labor Department guidelines. In a sample of 84 contracts exceeding \$1 million awarded during 1974, the GAO found that contracting or compliance agencies did not request or perform the required pre-award compliance reviews in about 30

the contract compliance agencies had become more aggressive in using sanctions to enforce affirmative action.

### Past Studies of Impact

The process studies cited in the last section uniformly find weak and haphazard enforcement of Executive Order 11246, particularly before 1974. It is all the more surprising then that the few studies of the pre-1974 impact of the Executive Order find some significant evidence that the program has been effective.

There have been four major previous studies of the impact of the DFCC. They have all used data from EEO-1 forms to determine the impact of contractor status on the relative position of minorities for different periods between 1966 and 1973.

The first of these studies, an outstanding unpublished Ph.D. thesis by George Burman, is based on a nationally distributed sample between 1967 and 1970. Burman estimates that government contractor status is associated with a significant .9% increase among males in blacks' employment share in a sample of 1,186 establishments. [47] Dividing by 3, this is a yearly increase of .3%. Unionization and local unemployment rates have no significant effect. Among females, he finds no significant increase in blacks' employment share. For Spanish-Americans, he finds the compliance program had no significant impact. While Burman does find that contractor status has a significant positive impact on black males, he finds no evidence of occupational upgrading. An index of black occupational status does not significantly

tions proceedings was taken in roughly 2 percent of all compliance reviews in 1971 and 1972.[42] Between July, 1971 and March, 1974, about 45,400 non-construction compliance reviews were conducted. Of these, only 535, or 1.2 percent, resulted in the issuance of a show cause notice.[43] In 1974, show cause notices were issued to 3.6 percent of the 12,247 contractors reviewed. [44] Between a third and a half of these involved basic paperwork, citing the contractor's failure to prepare or update an affirmative action plan. [45]

It is rare that a contractor is debarred. Many that are are quickly reinstated by court injunction. The first contractor was debarred in 1971, six years after Executive Order 11246 was issued. In the first ten years, only nine companies were debarred, six of which were small specialty contractors.[46] It was not until August 1974 that the first non-construction contractor was debarred. Table 2.5 gives a chronological list of all debarments through April, 1981. Of the 26 debarments, 20 took place between 1974 and 1980 inclusive. This reflects a significant increase in aggressiveness on the part of the UFCCP. Eight of the 20 debarred contractors were located in Pennsylvania, suggesting one particularly active district office. Twelve of the 26 had been reinstated by April, 1981, usually within a few months of their debarment.

While the evidence presented here suggests that affirmative action has not always been efficiently or firmly administered or enforced, it does appear that by the mid-seventies the UFCCP and

and of .129 in the long run, controlling for establishment size, growth, and geographic region.[52] However, when this was disaggregated by occupation the largest and most significant impact of contractor status was on the employment of black males as operatives. At the tops of the occupational status 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 relative decline in black representation was significant. Overall, A & H found no significant impact of contractor status on the relative occupational position of black workers.

A&H also observed that black workers' relative employment increased more in the North Central region than elsewhere, that establishment size had no significant effect, that growing firms showed less improvement in black employment, and that firms that started out with the highest black representation had the slowest growth rate in representation. A&H did not analyze directly the impact of compliance reviews, or the impact on other minorities or females.

Goldstein and Smith (G&S) analyzed EEO-1 forms from 74,563 establishments from 1970 to 1972. First, and most disturbing, upon replicating the A&S specification in the new sample G&S found that the "male, black-white employment ratio grew -.49 percent slower in contractor firms on a yearly basis" if the sample is restricted to previously integrated firms, and that the ratio grew by .64 percent if firms that initially employed no

Increase in contractor establishments.[48] The employment impact of a contract is largest and most significant in clerical and operative occupations, while it is actually negative, though insignificant, for managers.[49] In ordinary least squares regressions, Burman finds compliance enforcement activity has no significant impact. Simultaneous estimates on a sample of 400 indicate a .8% yearly increase in blacks employment share due to compliance enforcement between 1967 and 1970, but this is insignificant. [50]

Ashenfelter and Heckman (A & H) followed Burman with a study of a larger sample of 40,445 establishment EEO-1 forms from 1966 and 1970. Starting with more than 100,000 establishment forms in each year, they succeeded in matching about 40% of the establishments across years, accounting for 65% of the employment. With a careful followup study in one New Jersey county, they attributed the non-matches to largely random causes including the natural birth and death of firms, the growth and decline of firms' employment across the EEO-1 reporting threshold, and to lost and mis-numbered forms. For example, the Social Security Administration, which assigns firm identifying numbers, has issued about 12 thousand more numbers than there are firms.[51] The net result is that A & H found large establishments and contractor establishments more likely to match.

Limiting their sample to integrated plants, A & H found that contractor status was associated with a significant increase in the ratio of black male to white male employed of .0086 per year

contract compliance program were small.

The strongest evidence G&S find of a positive affirmative action impact is for black males' employment share, which is estimated to increase by .036 percentage points per year in response to contractor status.[55] However, since white males share increases proportionately more, G&S's results actually imply that black males' share of male employment falls in contractor establishments. Compliance reviews had a stronger differential impact on black males relative to white males, so that G&S's results do imply a significant positive increase in black male share of total, and male, employment in reviewed establishments.

The most recent of the four previous studies, by Heckman and Wolpin, used EEO-1 forms from 1972-1975, still before the contract compliance program reached full stride. H&W first concern themselves with the econometric problems of serial correlation and sample selection. In logistic equations on a sample of 1645 Chicago area firms, they find that no individual indicator of a firm's demographic composition appears to significantly influence the award of a governmental contract in a sensible direction. In particular, the percent black male, the change in percent black male, and the percent white-collar black-male, individually have no significant impact on contract award. While not significant, H&W also find that firms with more black females, white females, or other minorities, or with higher growth rates in these categories, are actually less likely to receive government con-

blacks were included.[53] While there are problems of changing functional forms, one would have expected selection bias to produce the opposite result. One possible interpretation is that affirmative action is more successful in all-white than in integrated firms, which is surprising if one assumes that all-white firms discriminate more and so are more resistant to affirmative action pressure. On the other hand, an index of occupational status increased by .25 percent in the first restricted sample, but decreased by .01% in the second full sample.

Regressing the change in employment share on lagged employment share, contractor and review status, establishment size and growth, and geographic region, G&S find positive and significant contractor and review effects for black males, and surprisingly for white males also. Contractor and review status have insignificant effects on black females, but significant negative impact on white females.[54] Taken together, it is difficult to form a consistent story of affirmative action, except to say males have advanced at the expense of white females. That females did not advance is not surprising, recognizing that the period analyzed by G&S is prior to the enforcement of affirmative action regulations for females. That white males did increase their employment share is difficult to explain in the context of effective affirmative action. Also puzzling is G&S's finding that the relative occupational position of black males and white females fell in the contractor sector, while that of white males and black females increased. As was the case with A&H, and with Surman, the changes in occupational status associated with the

firms. Other minorities, including Spanish-surnamed, American Indians, and Orientals do benefit, and white males do experience a decline in employment share in the contractor sector. Concerning occupational detail, H&W find that contractors utilize a greater proportion of white males, and fewer blacks and females than do non-contractors in some white collar-occupations. The black-male employment gains are concentrated in blue-collar occupations. Finally, H&W find that compliance reviews had little impact on female or minority employment.

*All studies*  
The results discussed here are summarized in Table 2.6. With the exception of the Goldstein-Smith study which finds only small effects, the increase in relative employment of black males was found to be greater by a sizeable, significant amount in the contractor sector. There is no significant evidence of an increase in the relative occupational status of minorities or females, or of any positive impact of the contract compliance program on females. Aside from Goldstein-Smith, there is no significant evidence that compliance reviews were effective.

Affirmative action under the contract compliance program has been a growing institution. This chapter first detailed the growth of affirmative action regulation and enforcement. The process evaluations showed that while enforcement was weak and inconsistent in the early years of affirmative action, it became more aggressive by the mid-seventies, particularly in the use of debarment and back-pay awards. The econometric studies of the early years of affirmative action reviewed here in general found

tracts.[56] The conclusion I draw from this--although it is apparently not one shared by H&W--is that there is no significant evidence here of bias introduced by the award of government contracts to firms with high or growing proportions of females and minorities.

In a logit analysis of 1185 contractor firms, H&W find that the probability of being reviewed for compliance is not affected by establishment size, minority employment or change in minority employment. Once again, there is no evidence here of a selection bias. However, such a random review program is unlikely to be an efficient policy.

Correcting for high positive serial correlation in a sample of 3677 Chicago area establishments, H&W find that contractor status leads to a significant .007 one-year increase in black males' share of employment, evaluated at sample means. This is equivalent to an 8.4% increase in share of total employment. It also corresponds to a .011 increase in black males' share of male employment. H&W find slightly greater long-run effects, but since they control for serial correlation they find much shorter lags in response than A&H, which did not correct for serial correlation.

H&W also control for establishment size and growth, industry, and percent white-collar. They find large and growing firms that are heavily blue-collar increase their employment of black males more. Females, either black or white, are not found to experience increases in their employment proportion in contractor



of occupational upgrading under affirmative action on the impact of compliance reviews. Despite weak enforcement in its early years, affirmative action has been generally concluded that affirmative action compliance program did lead to significant increases in employment share in contractor firms. Finding of a positive result is all the more convincing of the consistently negative appraisal of the regulatory mechanism by Congress, the courts, the UAG,

Compliance Agencies.

Agency	Ratio of Number of Violations to Number of Staff Members** 1977
Department of Defense	19
Environmental Protection Agency	42
Energy Resources Development Administration	30
General Services Administration	74
Health, Education and Welfare	266
Housing and Urban Development	4
Department of the Interior	
Department of Justice	
National Aeronautics and Space Administration	
Small Business Administration	
Commerce Policy Authority	
Department of Transportation	
Department of Treasury	
Various Administrations	
<b>Total</b>	<b>743</b>

Source: Office of Federal Contract Compliance Programs, Program Compliance Measurement for Fiscal Year 1977, Report issued from USOCR, 1977, p. 38.

**Table 2.2: Contract Compliance Resources, Fiscal Year 1977.**

<u>Compliance Agency</u>	<u>Person Years</u>	<u>Budget Authority \$ (000)</u>
Department of Agriculture	52	1,078
Department of Commerce	25.5	626
Department of Defense	548	10,978
Environmental Protection Agency	37	787
Energy Resources Development Administration	105	2,998
General Services Administration	214	4,680
Department of Health, Education and Welfare	154	4,543
Housing and Urban Development	135	3,223
Department of the Interior	70	1,790
Department of Justice	4	75
National Aeronautics and Space Administration	9	211
Small Business Administration	14	342
Tennessee Valley Authority	3	65
Department of Transportation	94	2,358
Department of Treasury	43	1,332
Veterans Administration	56	1,244
<u>Total</u>	<u>1,563.5</u>	<u>36,330</u>

*Source:* Office of Federal Contract Compliance Programs, Program Guidance Memorandum for Fiscal Year 1977, reproduced from USCCR, 1977, p. 94.

Table 2.3: Compliance Reviews, Supply and Services, Fiscal Year 1976.

<u>Compliance Agency</u>	<u>Percent of Scheduled Reviews Conducted</u>	<u>Percent of Contractor Universe Reviewed*</u>	<u>Number of Compliance Reviews Scheduled</u>	<u>Number of Compliance Reviews Conducted</u>
VA	76.3	2.3	380	290
DOT	74.7	16.6	186	139
ERDA	69.0	20.7	1,253	864
COMMERCE	65.6	53.2	308	202
GSA	63.5	11.6	4,454	2,828
DOD	58.9	23.5	8,560	5,050
TREASURY	56.0	3.5	375	210
USDA	55.5	2.3	926	514
INTERIOR	52.9	1.8	945	500
HEW	6.4	1.5	785	50
<b>TOTAL</b>	<b>58.6</b>	<b>10.7</b>	<b>18,172</b>	<b>10,647</b>

*Source:* Office of Federal Contract Compliance Programs, Program Compliance Memorandum for Fiscal Year 1976. Reproduced from USCCR, 1977, p. 113.

*Note:* These percentages are based on OFCCP data on the size of the contractor universe. Some agencies dispute OFCCP's computation of the contractor universe.

**Table 2.4: Compliance Agencies Responsible for Back Pay Awards, 1969-1976.**

<b>Agency</b>	<b>Amount</b>
Department of Defense	\$31,639,897
General Services Administration	16,385,833
Department of the Treasury	8,622,225
Energy Research and Development Administration	1,685,984
Department of Commerce	1,169,618
Veterans Administration	638,770
Department of the Interior	591,672
Department of Health, Education, and Welfare	376,783
Atomic Energy Commission	233,088
Department of Agriculture	56,060
Department of Transportation	1,118

*Source:* DOL, Office of the Solicitor, reproduced from USCCR, 1977, p. 124.

Table 2.5: Debarments in Chronological Order.

<u>Date</u>	<u>Contractor</u>
9/71	Edgeley Air Products, Inc.
3/72	Randeb, Inc.
7/72	Edward McGuire
8/72	Russel Associates
3/73	McNicol-Martin Co.
4/73	Dial Electric
3/74	Harry Myrhe, Inc.
9/74	Hesse Envelope Co.
12/74	Blue Bell, Inc.
12/74	Dibert, Bancroft & Ross
2/75	Stillwater, Inc.
3/76	Timken Roller Bearing Co.
8/76	Power Therm Co.
8/77	Ansastasi Bros. Co.
8/77	Hahn & Clay, Inc.
8/77	Ingersoll Milling Machine Co.
11/77	Feature Ring
6/78	American Sanitary Labs
6/78	Painting Corp. of Detroit, Inc.
4/79	Loffland Bros.
7/79	Uniroyal, Inc.
6/80	SIC Construction
6/80	PFG & Son, Builders & Contractors
7/80	Firestone Tire
7/80	Prudential Insurance
9/80	University of California

Source: OFCCP, Freedom of Information Act Indexes, June, 1980, p. 123, April, 1981, p.146.

**Table 2.6: Previous Estimates of the Short-run Impact of Contractor Status on Relative Black Male Employment.**

	<u>Burman</u>	<u>Ashenfelter- Heckman</u>	<u>Goldstein- Smith</u>	<u>Heckman- Wolpin</u>
Sample Size	1186	40445	74563	3677
Period	1967,1970	1966,1970	1970-72	1972-73
$\Delta(BM/T)$	—	—	.0004	.007
$\Delta(BM/M)$	.003	—	negative	.011
$\Delta(BM/WM)$	—	.009	negative	—
Occupational Upgrading?	No	No	No	No
Reviews Effective?	No	—	Yes	No
Improved Female Employment?	—	—	No	No

**NOTES**

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### Chapter 3: Framework

This chapter develops the framework I will use for testing the impact of affirmative action. Section 1 develops two types of models for analyzing affirmative action. The first type is a two sector general equilibrium tax model that underlies most of my empirical work. The second type is an information model used to develop the argument that a temporary affirmative action program can have permanent effects. Section 2 discusses the ambiguities that must be resolved to make these models operational. Section 3 introduces the data to be used in determining the impact of affirmative action. A new, rich, highly-disaggregated set of panel data on the demographics of nearly 70,000 establishments in 1974 and 1980 is used, along with a new detailed data set on affirmative action enforcement. This new data provides an unprecedented opportunity to evaluate affirmative action.

#### Section 1: Models

##### Tax Models

I model affirmative action as a tax on the employment of white males in the contractor sector. If these workers are immobile, they bear the tax burden and relative white male wages fall.

Assume the owner of the firm maximizes utility:

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

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  
 $F(\cdot)$  = a production function with  $F_1, F_2, F_{12} > 0, F_{11}, F_{22} < 0$ .

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

$$F_1 - F_2 = W_M - W_F + t - d \quad (2)$$

from which we find:

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

Taxes in this model of affirmative action are symmetrical with tastes for discrimination in Becker's model. 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. Under these conditions, the change in demand is a function only of wages and the tax. The contractor firms that are liable for the tax are distributed throughout the economy, so all firms are assumed to be wage takers in the same labor market. I also assume that the wage elasticity of labor demand is the same in the contractor and non-contractor sectors. The difference between the change in the employment of white males at contractor firms,  $\Delta m_C$ , and at non-contractor firms,  $\Delta m_{NC}$ , is then simply a function of affirmative action pressure.

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

This is the central equation I will be testing. I will compare shifts in the proportional employment of members of protected groups across contractor and non-contractor establishments across time. The hypothesis is that if affirmative action has been ineffective, these employment shifts will not differ according to contractor status.

The impact of affirmative action on employment in the contractor and non-contractor sectors may be seen in figure 3.1. The demand curve for blacks in the contractor sector shifts to the right, driving black wages up, increasing black employment in the contractor sector and decreasing it in the non-contractor sector. In reality, there are other policies, such as Title VII,

promoting the employment of blacks in the non-contractor sector, so I will only measure the differential impact of affirmative action over and above the effects of general policies, or changes in tastes.

While this model has straightforward implications for changes in the employment of males and females, one cannot make inferences concerning changes in relative wages without considering supply shifts. As in figure 3.2, a finding that affirmative action has been effective in increasing female employment is consistent with an unchanging ratio of female to male wages if female labor supply has increased at the same time. Since any such supply shift will affect contractors and non-contractors alike, I isolate the impact of affirmative action on labor demand by comparing changes in employment across contractors and non-contractors.

In the above analysis I abstracted from scale effects, and as we shall see, these are usually unimportant. However, scale effects may lead to a striking reversal of changes in relative employment, obscuring the impact of affirmative action. The analysis in this case is similar to that in 2-sector general equilibrium models of taxation or unionization. Consider the case in which the affirmative action tax is levied on the employment of males only in the contractor sector, which is male intensive. Absent any scale effect, this leads to the substitution of females for males in the contractor sector. At the same time though, this tax increases costs in the contractor sector, depending upon the elasticity of substitution, and leads to a decline in the size of the contractor sector, depending on product demand elasticities. As the contractor sector shrinks it becomes even more male intensive, under the usual assumptions. If this scale effect is large, we may observe an increase in the ratio of males to females in both the contractor and non-contractor sectors because affirmative action has been effective in taxing male employment. This is an important paradox to consider in theory, but as we shall see, the observed scale effects are in general negligibly different, so we may draw inferences concerning the effect of affirmative action by comparing what are in practice substitution effects.

### Information Models

Throughout this study, one of the chief concerns is what the labor market for minorities and females would have been in the absence of Executive Order 11246. A distinct question is: what would happen in the future if affirmative action were abolished? The tax models of regulation just presented are suitable for the first question, but pre-judge the answer to the second. In the absence of the regulatory tax the model assumes the demand for minorities and females will resume its former level. A more complex model is needed, that allows for learning and changes in discriminatory behavior. Afterall, one of the goals of affirmative action is to break down prejudice. If employers have falsely pre-judged minorities and women to be less capable than white males, a temporary affirmative action program might have permanent effects by shocking them into correcting their mistake faster. This section presents some information models of statistical discrimination.

Typically, employers cannot know exactly the prospective productivity of an employee or potential employee. In a hiring decision the employer must rely on tests that are an imperfect measure of productivity. Often it is expensive to update and validate tests, so it is plausible to assume the employer infrequently updates his priors on the relationship of test scores and on the job productivity.

Suppose the employer in the first period validates his test by regressing productivity  $P$  on the test score  $T$ , and an index such as race  $R$ , finding:

$$P = b_1T + b_2R + e \quad (5)$$

The true relationship of productivity on the job to ability is:

$$P = \lambda A + \epsilon \quad (6)$$

The true relation of ability to the test score and race initially is:

$$A = \delta_1T + \delta_2R + \epsilon \quad (7)$$

Race enters this equation under the assumption that it is correlated with some part of ability that is not picked up by the test and so is not directly observable. Substituting (7) into (6) yields:

$$E(b_1) = \lambda \delta_1 \quad (8)$$

$$E(b_2) = \lambda \delta_2 \quad (9)$$

Suppose black ability has been increasing over time in ways that are not correlated with test scores. An employer would only discover this by chance. While an employer would benefit from being able to identify more productive blacks, a test for many entry level occupations is like a public good and is also usually expensive to develop, so many employers will continue to rely on the old test, and on the initial period validation result. Affirmative action may now have permanent effects by 1) forcing employers to develop tests that predict performance more closely, and 2) forcing firms to revalidate their tests, new or old, and update their priors. In the second case, we have assumed that  $\delta_2$  increased over time. Affirmative action forces employers to invest the fixed cost in discovering this sooner than they might have otherwise.

The first case corresponds to the problem of differential validation. Suppose the old test predicted white productivity well but black productivity poorly. A risk averse employer using this test would employ blacks at a discount. Affirmative action may prompt the employer to develop tests that are homoskedastic across races in predicting performance, reducing the relative risk discount on black labor. While the previous case turned on updating means, this case turns on reducing the relative variance. Of course, any model that depends on the use of better tests must contend with the observation that Title VII and E.O. 11246 have led employers to abandon formal testing because of the high cost of validation.

A temporary affirmative action program can also have a permanent impact by a process I call variance tipping. I will outline the process informally here as a problem of discriminant analysis. An employer is trying to decide whether blacks and whites come from the same population. His prior is that they do not: blacks have a lower mean productivity and a higher variance. This prejudice results in less demand for black labor. Since blacks are a minority group, the employer may never draw a large enough sample to convince him to overturn his prior. Now affirmative action induces the employer to hire more blacks. The information generated from this larger sample will be more precise. If blacks and whites are from the same population, as sample size increases, the sample data carries greater weight relative to the prior until

the discriminant analysis rejects the null hypothesis of different populations and overturns the old prior.

## **Section 2: Methodology: Lies and Ambiguities**

To count up the number of minorities and females who owe their improved employment opportunities to affirmative action might seem a trivial measurement. It is not. There are a multitude of methods of measuring the multi-faceted impact of affirmative action. Some are obviously flawed, others reflect endlessly, ensnaring in infinite subtlety. There are also a number of practical techniques well suited for approaching a particular issue, but partial and potentially misleading for an encompassing evaluation. The answers depend very much on the questions. This part of the study develops the properties of a number of ways of skinning the affirmative action cat. The first group of sections deal with the choice of functional form of the dependent variable. The next set are related to choice of unit of analysis and aggregation across occupations, corporate units, demographic groups, and time. The third set delves into definitions of contractor status and regulatory pressure, and the final section discusses appropriate historical counterfactuals. Judging affirmative action turns out not to be a black and white issue.

### **Absolute or Relative Employment**

When AT&T hires an additional one-thousand female technicians, it may represent only a small change in the behavior of the corporation, but it may also have a large effect on the wages and employment of female technicians. To answer questions about the affirmative action behavior of firms, the relevant measure is the proportion of a firm's employment that is female or minority. To answer questions about the impact of government affirmative action policy on the employment and earnings of females and minorities, the relevant concept is the induced shift in demand.

Legal pressure under Title VII and administrative obligations under Executive Order 11246 have typically been couched in relative terms. Since the firm is itself judged on employment share of minorities and females within the firm, it is appropriate to judge the impact of affirmative action on firms in these same terms. Odds ratios and log-odds are monotonic transformations of the proportion. Since rankings are preserved, choices among these measures

are normally of secondary importance. However, rankings are not preserved under differencing, so the choice is a significant one.

If the primary concern is with the impact of policy on the labor market prospects for members of protected groups, then the focus should be not on the average firm, but rather on the average person. Rather than asking what a black's chances of being hired at the average firm are, the question is what are his chances of being hired at the average job. We might then ask the absolute question whether black employment is growing, or the relative question whether it is growing relative to that of whites.

Models of discrimination have been developed in both absolute (Becker) and relative (Arrow) terms. With weak priors about discriminatory tastes, the choice between these models turns on the empirical question: at the establishment level are relative wages better described by variation in the absolute or relative number of blacks? The answer will depend in part on the elasticity of substitution between blacks and whites. The same holds true at the aggregate level.

The number of blacks employed is given by:

$$N^B = \sum N_i^T P_i^B \quad (10)$$

where

$N_i^T$  is total employment at firm  $i$

$P_i^B$  is percent black at firm  $i$

The aggregate percent black is simply  $N_B / N_T$ . This is identical to the weighted percent black across firms, with weights equal to percent of total employment accounted for by each firm. If total employment changes little, then the issue of choosing between  $N_B$  and  $P_B$  is of little practical matter. Totally differentiating  $P_B$  yields:

$$N^T dP^B + P^B dN^T = \sum (N_i^T dP_i^B + P_i^B dN_i^T) \quad (11)$$

Since

$$dN^B = \sum (N_i^T dP_i^B + P_i^B dN_i^T) \quad (12)$$

this is more simply expressed:

$$dP^B = (dN^B - P^B dN^T) / N^T \quad (13)$$

If total employment changes little, or if the initial percent black is small, the change in percent black is approximately a scalar multiple of the change in black employment. In theory the choice between absolute employment and the weighted percentage employment depends on the particular model or application. In practice in this study I typically use percentage rather than absolute employment. Since I find firm size varies little over time in my sample with a fixed number of firms, this is not a crucial choice.

Between 1974 and 1980 the proportion of employees weighted by establishment size who were black males increased by .003, from .044 to .047 in noncontractor establishments, and by .005, from .084 to .089 in contractor establishments. This change in employment share is significantly higher in the contractor sector. This result is reversed if expressed as a percentage change in proportion rather than as a change in proportion. Between 1974 and 1980, the proportion of employees who were Black males increased by 79% in noncontractor firms, but by only 69% in contractor firms, in terms of the percentage change in means. Adding another level of complexity, this reversal is itself reversed if the relevant proportionate change is considered to be not the percentage change in means, but the mean percentage change. In the latter case, the mean proportionate increase was .28 in non-contractor establishments, but .43 in contractor establishments. Have contractors increased their demand for black males more than have noncontractors? That depends in part on whether we care about absolute or proportionate shifts in demand. Viewed from the framework of changing firm behavior, a demand shift relative to the original position seems more persuasive. But if we are more concerned with the impact on aggregate relative black wages and employment, then the absolute shift in proportion employed is more pertinent, weighted as above by total firm employment.

For example, we judge a 10 person firm that hires its first black to have changed its behavior more than an identical firm that hires its sixth black, although both will have identical effects on the aggregate level of black wages and employment. To make the same point, consider two firms of equal size. Blacks' share of employment increases from .10 to .11 in the first, and from .90 to .99 in the second. Since the proportionate change in proportions is ten

percent in both cases, we may judge them to have changed their behavior in comparable fashion. But the second firm has increased aggregate demand for black labor more. There is no single simple answer—it depends on whether one judges the impact of affirmative action in terms of changing firm behavior or in terms of changing the position of minorities and females.

### Weighted vs. Unweighted

Should we judge the impact of the OFCCP by comparing across contractors and non-contractors the average change in percent minority or female, or the weighted average? If  $P_i$  is the proportional change in percent black at firm  $i$ , and  $E_i$  is total employment at firm  $i$ , then the average change  $\bar{P}$  is equal to  $(\sum P_i) / N$ , and the weighted average change  $\bar{P}_w$  is  $(\sum E_i P_i) / \sum E_i$ . The choice turns on whether we are interested in the OFCCP's effect on the average firm or on the average worker. If we ask the behavioral question, how has the typical establishment responded to affirmative action, then the unweighted  $\bar{P}$ , that weights each establishment equally, is the appropriate measure. However, it seems unlikely that this measure of absolute justice (all discriminators are equally bad, whether they employ 2 or 20,000) is of principal concern to those involved in the affirmative action debate. That debate focuses more intently on the question of how people, not firms, are affected. How have the employment and earning of minorities, females, and white males changed in response to affirmative action? To this question, the answer must be in terms of  $\bar{P}_w$ , the average shift in minority or female employment, weighted by firm size.

Suppose small firms have been relatively unresponsive to affirmative action. Now using  $\bar{P}$  where  $\bar{P}_w$  is the appropriate statistic will understate the impact of affirmative action on the employment status of members of protected groups. Conversely, using  $\bar{P}_w$  where  $\bar{P}$  is appropriate will overstate the impact of affirmative action on firm behavior. In cross-tabulations, I shall present both types of measures.

### Sampling Bias and Choice of Control Group

We compare contractors with noncontractors using data from EEO-1 reports on workplace

demographics. But establishments below a certain size do not file EEO-1 reports. What is the likely impact of this sample selection rule?

It is plausible that small firms have relatively poor records of minority and female employment. If this is the case, and if noncontractors are overrepresented among the small, then by comparing contractors only with those noncontractors who are large enough to file EEO-1 reports we will understate the impact of affirmative action, because the better noncontractors will be systematically overrepresented.

The only other comprehensive source of employment demographic data is the decennial census. Although contractors are not identified, we could subtract the aggregate demographic of the EEO-1 contractor sector from national Census of Population totals, and compare the remainder with aggregate EEO-1 non-contractor totals. If the percent minority or female in the Census residual is much lower than in the EEO-1 noncontractor sector, then we should be alert to two possibilities. First, the contractors have exaggerated their employment of minorities and females. Second, firms that do not file EEO-1 forms have fewer minorities and females. If noncontractors are overrepresented among these firms, we underestimate the difference between contractor and noncontractor firms. If contractors are overrepresented among these firms because they are small, the effect of affirmative action will still be correctly inferred on the basis of the EEO-1 sample because the affirmative action obligation is only borne by large contractors.

In addition, contractor firms with poor affirmative action records have an obvious incentive not to file required EEO-1 reports. This will cause us to overstate the impact of the OFCCP by comparing contractors and noncontractors, because the worst contractors will be missing from the sample.

### **Occupational Detail and Occupational Indexes**

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.

One method of determining which end of the job ladder affirmative action has hit with the most force is to compare shifts in employment across contractors and noncontractors within detailed occupations. If contractors have been able, in practice, to fulfill their affirmative action obligations by hiring more blacks and females in relatively unskilled positions, then affirmative action has 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.

The problem with such a detailed examination within occupations is that it threatens to be too detailed for presentation and comprehension. A more immediately comprehensible summary measure would be useful, in this case, an index of occupational status. This occupational index weights the distribution of blacks or females across occupations by median earnings within occupations for a fixed year. In other words, using earnings by occupation as weights, this index indicates average occupational status. If affirmative action has led to blacks or females being employed in higher paying jobs, then this index should increase faster at contractor firms. Note that since skilled blacks and females can be hired from outside the contractor sector, this index can increase without any black or female being promoted in the contractor

sector.

The occupational index would also increase if firms laid off unskilled blacks or women. This is related to the occupational twist Sowell argues affirmative action or anti-discrimination law might induce. To guard against this misinterpretation, 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<sup>1</sup>, 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:

$$Z_t = \sum_i W_i a_{it} \quad (14)$$

where

$Z_t$  is the occupational index in year  $t$

$W_i$  is earnings in occupation  $i$  in a given fixed year

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

Taking the derivative with respect to time:

$$\frac{dZ_i}{dt} = \sum_j W_j \frac{d\alpha_{ij}}{dt} \quad (15)$$

But the side condition on the shares is that:

$$\sum_i \frac{d\alpha_{ij}}{dt} = 0 \quad (16)$$

So the occupational index can only increase over time if  $\alpha_{ij}$  increases in high wage occupations.

The occupational index of females can decline even though female 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 3.1 the occupational indexes in periods 1 and 2 are identical because  $\alpha$ , the distribution of blacks across occupations, is unchanged. At the same time, however, the percent of white collar workers who are black,  $P_i$ , has increased from .2 to .3, a 100 percent increase, twice as great as their growth rate in blue-collar jobs. Formally:

$$Z = \sum_j W_j \frac{N_{ij}}{N_j} \quad (17)$$

and

$$P_i = \frac{N_{ij}}{N_i} \quad (18)$$

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  $i$

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

Expressing  $Z$  in terms of  $P_i$ :

$$Z_i = \frac{1}{N_j} \sum_i N_i W_i P_i \quad (19)$$

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

$$dZ_i = \sum W_i d\alpha_i \quad (20)$$

Now

$$\ln \alpha_i = \ln N_{ij} - \ln N_j \quad (21)$$

So

$$d \ln \alpha_i = d \ln N_{ij} - d \ln N_j \quad (22)$$

or

$$d\alpha_i = \alpha_i [d \ln N_{ij} - d \ln N_j] \quad (23)$$

So

$$dZ_i = \sum W_i \alpha_i [d \ln N_{ij} - d \ln N_j] \quad (24)$$

To put this in terms of  $P_i$ , note that:

$$\ln N_{ij} = \ln N_i + \ln P_i \quad (25)$$

so

$$d \ln N_{ij} = d \ln N_i + d \ln P_i \quad (26)$$

This gives us:

$$dZ_i = \sum_i W_i \alpha_i [d \ln N_i + d \ln P_i - d \ln N_j] \quad (27)$$

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

$$\sum_i W_i \alpha_i [d \ln N_i + d \ln P_i] = Z_i d \ln N_j \quad (28)$$

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  $W_i$  and  $\alpha_i$  with  $d \ln P_i$  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) earn-

ings 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. I shall present both types of measures.

#### **Aggregation: Establishments or Firms**

The legal application of affirmative action is to corporations. This is most obvious in the contagion clause: if any establishment within a corporation holds a federal contract, the entire corporation and all establishments within it are considered to be contractors with the obligation to implement affirmative action. Similarly, at the extreme of administrative sanctions, it has been typical to debar entire firms, not single establishments within multi-establishment firms. In terms of incurring the legal obligation to pursue affirmative action, and of bearing the risk of the ultimate penalty of debarment, the firm rather than the establishment would appear to be the natural unit of analysis.

Arguing against this proposition, establishments, not firms, are reviewed for compliance with affirmative action, and this is as it should be. In general, personnel policy is implemented with considerable discretion at the plant level, subject only to general corporate fiat. Such plant-level autonomy reflects the fact that plants within the same corporation operate in different regions in different industries with different skill requirements, facing different labor markets. Some are unionized, some are not. Some have stable, highly skilled labor forces, others do not. The diversity of labor market settings and institutions across plants within firms is large.

With the exception of taxes, the regulation of corporate behavior has not treated corporations as bubbles. Like OSHA and the EPA, the OFCCP does not impose a certain standard on

a corporation, and allow the corporation to efficiently meet that goal by varying its response across constituent plants. Rather, each plant is individually obligated to pursue the regulatory goals.

The OFCCP recognizes that personnel administration takes place at the plant level, and so should any analysis. At the same time, the plant is administratively and legally part of the corporation, so the analyst should be alert to spillovers across plants within a corporation from OFCCP pressure on a particular plant within the corporation.

### **Demographic Aggregation**

As long as the impact of affirmative action across demographic groups is not uniform, the level of demographic aggregation one chooses can distort the apparent impact of the program. For example, in many cases affirmative action has had a stronger impact on black males than on other minority males, and a stronger impact on minority males than on minority females. In such a situation, affirmative action would be judged powerful if we looked at black-males, marginally effective if we aggregated all minority males and ineffective if we aggregated all minorities. The danger is in trying to summarize and simplify the detailed and disparate effects by aggregation. On the other hand, to fail to move above detail is to fail to provide useful generalizations. The results to be presented in this study will usually be tabulated by sex separately for whites, blacks, and other non-whites.

### **Proportion of What?**

The denominator makes a difference. The absolute number of black males at a firm usually tells us less about the firm's response to government pressure than does the proportion of the firm's employees that are black. If we are to compare the progress of females and black males, it is natural to express their employment as a fraction of total employment. The advantage of this scaling is that it uses a common denominator for all groups and that that denominator is itself a large aggregate likely to average out countervailing disaggregated changes and measurement errors. The disadvantage is best shown by an example. In 1974, non-white

males comprised six percent of the employed. Five years later this percentage was unchanged. Over the same period the percent of the employed who were female rose from 39 to 42. Females have certainly advanced into the workforce, but have nonwhite males really stood still? Not at all. They too have advanced, but not as swiftly as the females, and so they appear to be standing still. As a percent of all males, nonwhite males increased their share of employment from 10.9 to 11.5, but this is swamped in the total figure by the massive influx of females and corresponding reduction in males' share of employment. On the other hand, the use of a sex-specific denominator is useless for measuring the advance of females, and makes it difficult to summarize total black progress. I shall usually express my results as ratios to total employment, but for comparison some ratios to total male or total female will be presented in Chapter 4.

#### Time Unit of Analysis

What is the proper time frame for judging the impact of the OFCCP? With a long perspective one might compare the years before the proclamation of Executive Order 11246 in 1965 with the years after, hoping to control for concurrent changes and isolate affirmative action. Given the concurrent enactment of Title VII, the changed political environment it reveals, and the poorly understood changes in female labor supply over the same period, this approach is likely to be difficult. If the position of blacks improved after 1965, a broad inspection of historical aggregates will be incapable of distinguishing the effects of Title VII from those of E.O. 11246. If females were advancing as swiftly before 1965 as after, that might hide the true impact of affirmative action. If the most skilled females entered the labor force first, then the positive marginal effect of affirmative action might be swamped by autonomous supply shifts. Any simple comparison of historical periods is fraught with the danger of not controlling for, or not being able to isolate, concurrent forces. If we then restrict ourselves to the periods since 1965, should the analysis be based on a single cross-section or on longitudinal data? Since the cross-section is a subset of the longitudinal data, the latter is clearly superior. One could easily understate the impact of affirmative action by comparing contractors with non-

contractors in an early cross-section, before firms had fully adjusted to affirmative action. Looking at the change over time in panel data is likely to be more powerful, for a number of reasons. First, we can difference out unchanging and possibly unobserved variables, such as firm tastes, or fine industrial occupational structure, or fixed regional supply. Second, stocks only change by flows. The change in stocks in panel data will be a more sensitive indicator of policy impacts than would the level of stock in a cross-section. Finally, by spanning a longer time-frame, panel data is more likely to pick up lagged enforcement and responses.

Suppose the panel data starts in year T1 and ends in year T2. The longer the time span the better. Affirmative action could easily be made to appear ineffective by looking at its impact between 1965 and 1968, before the program became well-established. There are inside and outside lags in policy. The inside lag in this case is the time between the proclamation of Executive Order 11246 and the promulgation and enforcement of operational regulations. In the case of females, such regulations were not enforced until about 1973. The outside lag is the time it takes firms to respond to regulation and adjust their behavior. While this outside lag is in part endogenous to regulatory pressure, few would consider it fair to judge the impact of affirmative action by changes in employment between 1965 and 1967, for example. On the other hand, once a regulatory program matures, a new long-run steady-state is reached. At this point the meaningful difference between contractors and non-contractors is largely clear in a cross-section, and the impact of affirmative action is hidden by focusing on changes over time during the new steady state.

In longitudinal data the impact of a change in regulations can usefully be thought of as following an adjustment path which is likely to be S-shaped. The impact of regulation can be understated by examining only the tails of the S. The first tail is too early, before the regulatory bureaucracy is in place and before firms can respond. The second tail is too late, after firms have completed most of their adjustment. This is equivalent to choosing a late base year. Focusing on either tail is misleading. I shall compare changes between 1974 and 1980. As Chapter 2 suggested, 1974 is near the beginning of a period of more aggressive enforcement of

affirmative action regulations.

### Stock/Flow: Share of Employment or Share of Turnover

Shall we judge affirmative action to be a success if it increases blacks' and females' share of hires and decreases their share of terminations? Rather than looking at these turnover statistics, we could concentrate on employment shares. But if blacks' share of new hires increases and their share of terminations decreases, doesn't it follow that their share of employment must go up? No—and that is why the choice between stock and flow statistics is a real choice.

The change in stock within an occupation is equal to hires less terminations, assuming no promotions across occupations, and that all separations are terminations. This identity is:

$$B_t = B_{t-1} + B^H - B^T \quad (29)$$

where

$B_t$  = stock of blacks in year  $t$

$B^H$  = total number of blacks hired between  $t-1$  and  $t$

$B^T$  = total number of blacks terminated between  $t-1$  and  $t$

This may also be expressed as:

$$P_t N_t = P_t N_{t-1} + I H - O T \quad (30)$$

where

$P_t$  = blacks' share of employment stock in year  $t$

$N_t$  = total employment stock in year  $t$

$H$  = blacks' share of hires

$I$  = total hires

$T$  = blacks' share of terminations

$O$  = total terminations

Dividing through by  $N_t$  gives the identity in share form:

$$P_t = \lambda P_{t-1} + \alpha H - bT \quad (31)$$

where

$\alpha$  = the ratio of total hires to total end of year stock

$b$  = the ratio of total terminations to total end of year stock

$$\lambda = 1 - \alpha + b = \frac{N_{t-1}}{N_t}$$

The annual change in share of stock is:

$$P_t - P_{t-1} = (\lambda - 1) P_{t-1} + \alpha H - bT \quad (32)$$

with derivatives

$$\frac{dP}{dH} = \alpha$$

$$\frac{dP}{dT} = -b$$

An increase in black's share of hires or terminations has a greater impact on black's share of stock the greater is the hire or termination rate respectively.

Affirmative action might be successful in increasing blacks' share of hires,  $H$ , and reducing their share of terminations,  $T$ , at contractor establishments. But if these establishments exogenously had lower turnover rates  $\alpha$  and  $b$  than non-contractors, or if their turnover rates fell, then the change in stock  $\Delta P_t$  could be lower, or decreasing, in the contractor sector, masking the impact of affirmative action. To complete the analysis of affirmative action turnover rates across contractor and non-contractor establishments should be compared. If these differ little, then the flow data and the change in stock data will contain roughly the same information.

Some industries, public utilities for example, have very low turnover rates. They are characterized by stable work forces of long tenure. Unless long-tenure jobs are themselves the product of an intention to discriminate, which is unlikely, it is appropriate to judge affirmative

action in such stable industries by its impact on minorities' and females' share of new hires and terminations rather than their share of employment. Since the workforces are frozen as an exogenous characteristic of the industry, a positive change in flow shares will have to cumulate for years before it has a significant effect on employment stock shares. Substituting recursively into the difference equation yields:

$$P_t = \lambda^n P_{t-n} + \frac{\lambda^n - 1}{\lambda - 1} (\alpha H - bT) \quad (33)$$

with derivatives of the expected sign:

$$\frac{dP}{dH} = \frac{\alpha(\lambda^n - 1)}{b - \alpha} \geq 0 \quad (34)$$

$$\frac{dP}{dT} = \frac{-b(\lambda^n - 1)}{b - \alpha} \leq 0 \quad (35)$$

In long-run steady state:

$$P_t = \frac{\alpha H - bT}{\alpha - b} \quad (36)$$

For stock to be constant in a steady state the hire and termination rates must be equal. Then in the long run if black's share of hires is greater than their share of terminations, their share of stock will go to 1.

In theory the impact of affirmative action on protected groups' share of flows and stock could be hidden by disparate turnover rates between contractors and non-contractors. Alternatively, the observed increase in rate of change of protected groups' employment share in the contractor sector might, in theory, be an artifact of exogenously higher turnover rates in that sector.

If  $\alpha$  and  $b$  are both small (or of similar magnitude), then  $\lambda$  is close to 1 and  $\lambda^n$  is close to 1. In this case  $P_t$  changes only slowly from  $P_{t-n}$ . By the same token, industries characterized by high turnover rates can show large improvements in minorities' and females' employment share without large changes in firms' hiring and firing policy. If affirmative action requires equal effort from all industries, rather than equal results, then high turnover industries should be held to higher employment goals along an adjustment path. In other words, firms with higher turnover should be expected to adjust faster to their affirmative action goals.

### What is a Contractor?

Is a contractor a contractor if it doesn't think it is a contractor? The issue arises primarily in the case of multi-plant corporations. Legally, if any establishment within the firm holds a federal contract or first-tier sub-contract, all establishments within the firm are considered federal contractors with an obligation to pursue affirmative action. In practice, many establishments that are contractors under this criterion do not so identify themselves.

In my data 28% of all establishments identified by the OFCCP as contractors in 1974 because they were part of a contractor company, did not so identify themselves. In 1980, they constituted 27% of all contractors. This rate of underreporting is practically identical with an earlier OFCCP estimate that in 1971, 28% of all contractor establishments were self-listed as non-contractors on their EEO-1 forms.

Since these establishments are legally within the domain of the OFCCP it is proper to compare them to non-contractors in judging the overall impact of the agency. On the other hand, this lumps together two kinds of ineffectivenesses: the OFCCP countenances the sin of ignorance and the greater sin of willful volition. We cannot expect establishments to comply with affirmative action regulations if they do not realize they bear the obligation. By grouping such establishments with self-identified contractors, we underestimate the impact of the OFCCP on self-identified contractors.

Turn to a distinct question. If an establishment is a contractor in 1980 but not in 1974, is it a contractor? Remember, our goal is to judge the impact of the OFCCP by comparing changes in contractor and non-contractor employment between 1974 and 1980. If we label as contractors only those which were contractors in 1980 then we will include among the contractors many which became contractors since 1974. One might speculate that they have poor records with regard to minority and female employment because they only recently began affirmative action programs. On the other hand, one might speculate that self-selection occurs so that only firms with good records become contractors. I consider this last proposition improbable, given the levels of enforcement and penalties. At the same time, use of end of

period contractor status to classify establishments will include among the non-contractors some which had been contractors. Again we have two parallel lines of speculation: random assortment versus self-selection. If the change in status is random, which includes reporting error, we will understate the difference between long-term contractors and non-contractors. If self-selection dominates, we may overstate the impact of policy on employment within establishments.

Suppose instead that we classify establishments on the basis of initial 1974 contractor status, as we shall do in the results that follow. Now we label many as non-contractors which will actually be contractors by 1980, and we label some as contractors which will be non-contractors by 1980. If the change in status is random, this will bias our results against finding any difference between contractors and non-contractors. More importantly, note that the bias of self-selection now works in the same direction. We will classify as non-contractors establishments that behave like contractors because that is what they expect to become. We bias against finding any distinction between contractors and non-contractors if we classify on the basis of initial status, whether changes in status are random or self-selecting.

What if we label as contractors only those who maintained that status in 1974 and in 1980. This solves less than half the problem. We label as non-contractors some establishments that were contractors only in 1974, or only in 1980. In the first case the implications for bias depend on the sorting procedure. In the second they do not. On net, the bias result is similar to that with the use of end of period labels.

Note that we can make inferences about the randomness of status changes by comparing results using initial and terminal period status labels. This is identical to analyzing the previous behavior of those who changed status.

#### **What is Regulatory Pressure?**

Imagine two scenarios. In the first, we observe that contractors differ little from non-contractors, but that the reviewed have performed better than the non-reviewed contractors. In the second, contractors perform better than non-contractors, but among the contractors the

reviewed and non-reviewed are indistinguishable. In each case, what can we infer about the power of the OFCCP?

In light of the fact that few firms are reviewed, we might infer in the first case that yes, compliance reviews are an effective policy tool, but they have little demonstration effect, and have been used too sparingly to show up in changed contractor sector behavior over and above the common response to Title VII. The policy tool is effective but has not been used broadly enough to effectuate the policy.

The puzzle of the second case is unlocked by considering demonstration effects. If the threat of a review carries the same weight with firms as the review itself, then we expect no difference in behavior across reviewed and non-reviewed contractors. If that weight is positive, then contractors will perform better than non-contractors despite the deceptively apparent futility of reviews.

Should we then judge the OFCCP by classifying by contractor status, or by reviewed status conditional on being a contractor, or on some higher level of regulatory pressure? These are simply more detailed questions. Comparing historical periods aggregates all cross-sectional spillovers. Comparing the contractor and non-contractor sectors gives us a summary measure of OFCCP impact, collecting all within sector spillovers. Classifying by reviewed status conditional on being a contractor yields insights into the power of a particular regulatory tool, but only into the direct effects. If spillover is a significant force, then a more accurate view of the impact of reviews demands comparing contractors and non-contractors. One cannot simply peel the onion to determine where the smell is coming from.

### **Supply or Demand**

Anti-discrimination policy has been broadly applied in the U.S. Applied to educational institutions receiving federal funds, it has promoted the higher education of minorities and females by altering college admissions procedures. This has increased the supply of highly educated minorities and females. It is important to distinguish the direct impact of anti-discrimination policies in increasing the supply of skilled minorities from what is meant by

affirmative action in this study. This study is concerned with affirmative action solely in employment. Chapter 4 tests only for the effectiveness of affirmative action programs mandated under Executive Order 11246 in the private sector. It tests this in terms of increasing employment opportunities for minorities and females in contractor firms. Note that, even though the more broadly conceived range of antidiscrimination pressures that increase the supply of skilled minorities and females may have been quite successful, this need not show up in our results. In particular, if anti-discrimination policy has been successful in education but impotent in employment, for the purposes of this study affirmative action will be judged a failure. The important policy issues of the interplay between anti-discrimination policy in education and affirmative action in employment will only be addressed tangentially in this work. It should be borne in mind that whatever employment effects are found occurred within a broader anti-bias context. If this study finds that contractors made great strides in increasing their employment of skilled blacks, remember that a large part of this increase was made possible by the increased supply of skilled blacks due to anti-discrimination policy in education. To control for these broad supply shifts, this study compares contractors and non-contractors and focuses on differential behavior.

#### Historical Counterfactuals: What if There Had Been No OFCCP?

One way of framing the question of the role that affirmative action has played in advancing the employment of females and minorities is to ask what position females and minorities would be in today without Executive Order 11246. What is the baseline of behavior over time?

To be more concrete, between 1974 and 1980 black males' share of employment increased .005 from .084 to .089 in contractor establishments, but by only .003 from .044 to .047 in non-contractor establishments. For our purposes here, set aside the fact that affirmative action existed prior to 1974. It is clearly wrong to claim that absent affirmative action black males' employment share in the contractor sector would have remained stuck at .084, because even in the non-contractor sector this share was growing. At first glance then, the contractor sector might be assumed to mirror the growth in the non-contractor sector, which was .003, or 6.8

percent of the 1974 share. Even at this first step we have two answers, applying absolute or proportional growth. In the first case, in the absence of affirmative action black males' share grows by .003, from .084 to .087. In the second, it grows by 6.8%, to .090. In both cases we have assumed not only that the demand shift is identical in both sectors, but also that both sectors face the same supply with identical demand elasticities, as in Figure 3.3.

If the demand elasticity is non-zero, then the net employment changes above are underestimates. This can be seen in Figure 3.3. As contractor sector demand shifts up under affirmative action from C to C', aggregate demand also shifts up from  $\Sigma$  to  $\Sigma'$ , and relative wages are bid up from  $w$  to  $w'$ . This causes a movement back along the demand curves in both sectors. In the absence of affirmative action then, black males' share of employment in the non-contractor sector would have increased more, because their wages would not have been bid up as high. Rather than imputing a net employment change equal to A in Figure 3.3, as we did above, we should impute the larger change equal to B. So taking the wage elasticity of demand into account leads us to believe the change in black males' employment share would have been greater than .003 in both sectors. How much greater depends on the elasticity of supply. Suppose the supply of black male labor were fixed and perfectly inelastic. In this situation affirmative action is purely a reshuffling and has no impact on the aggregate share of black males, although that share may increase due to other factors. In the absence of affirmative action then, the aggregate growth of black males' share will remain unchanged, but will be identical across sectors. This aggregate growth weighted by number of establishments per sector was  $(27432 \cdot .003 + 41258 \cdot .005)/68690$ , or .004.

Now what has been the impact of affirmative action under this extreme assumption of pure reshuffling? It has raised the relative wages of blacks, else why would any black move from a non-contractor to a contractor firm? But it has increased black males' employment share by only .001 in the contractor sector, an increase cancelled out, by assumption, in the non-contractor sector. Obviously, the choice of baseline behavior and assumptions about the elasticity of supply can alter the interpretation of the impact of affirmative action. Affirmative

action can have a positive demonstration effect as well as the negative spillover through the labor market discussed above. Suppose employers have limited information about prospective employees and cannot determine their true productivity. Spence has shown conditions under which signalling equilibria exist in which blacks, for example, appear to be discriminated against. In such a framework, affirmative action can act as a shock. By forcing the employment of blacks, it gives employers an opportunity to discover blacks' true productivity. Minorities and females might perform beyond the expectations of contractor employers. In time non-contractor firms will discover this pleasant surprise, and increase their employment of minorities and females, reducing the differential between contractors and non-contractors. In this case affirmative action is so effective in breaking down prejudice and reducing statistical discrimination that it appears ineffective. Once again, the inference drawn from a comparison of contractors and non-contractors for the impact of affirmative action will depend on assumptions about spillover. In chapter 5, I will examine some empirical evidence of spillover.

### Section 3: Data

Two rich, detailed and disaggregated data sets are used in the empirical tests: establishment level EEO-1 reports on more than sixteen million employees for 1974 and 1980, and establishment level affirmative action compliance review reports for the period 1973 to 1981.

Under Title VII of the Civil Rights Act of 1964, the Equal Employment Opportunity Commission 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. (see Table 3.2). 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.<sup>2</sup>

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.

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. The EEOC identified any such establishment as a contractor, whether or not the establishment so identified itself. Note that the sub-contractor clause vastly extends the compass of affirmative action regulation.

Contractor status changers, particularly entrants, between 1974 and 1980 are surprisingly common. Eleven percent of all 1974 contractor establishments were non-contractors in 1980,

while twenty-seven percent of all 1974 non-contractors were identified as contractors in 1980, constituting seventeen percent of all 1980 contractors. This suggests contractors have become better labelled over time. 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 OFFCP compliance reviews. OFCCP administrative records contain data on 27,000 compliance reviews across 11,000 identifiable establishments, between 1973 and 1981. 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 labelled 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. Finally, turnover data comes from a sample of 2240 establishments that completed compliance reviews in 1978.

Figure 3.1

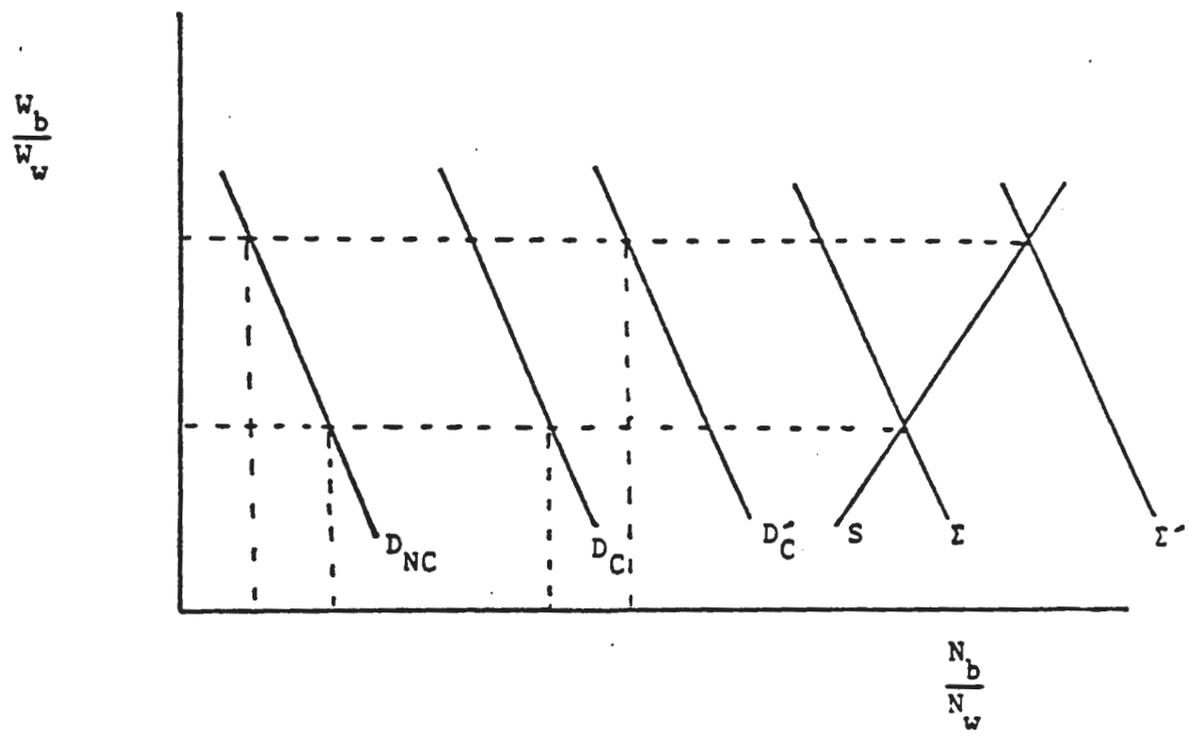


Figure 3.2

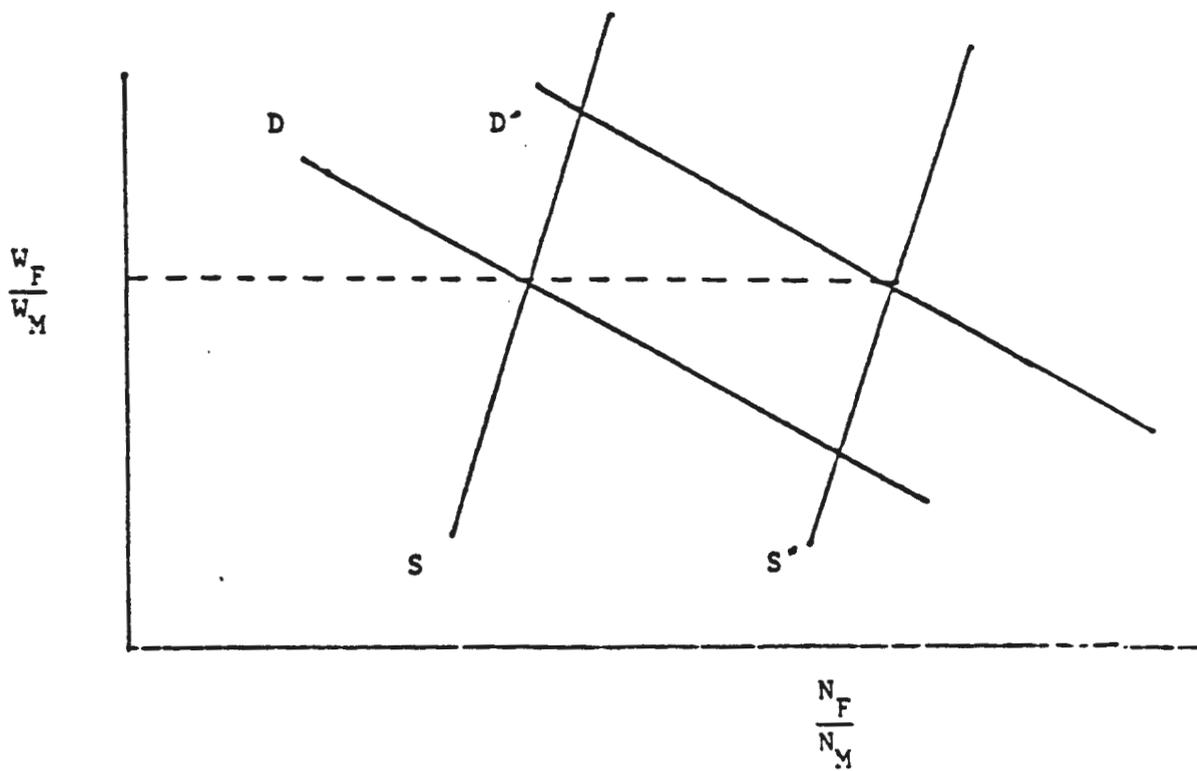


Figure 3.3

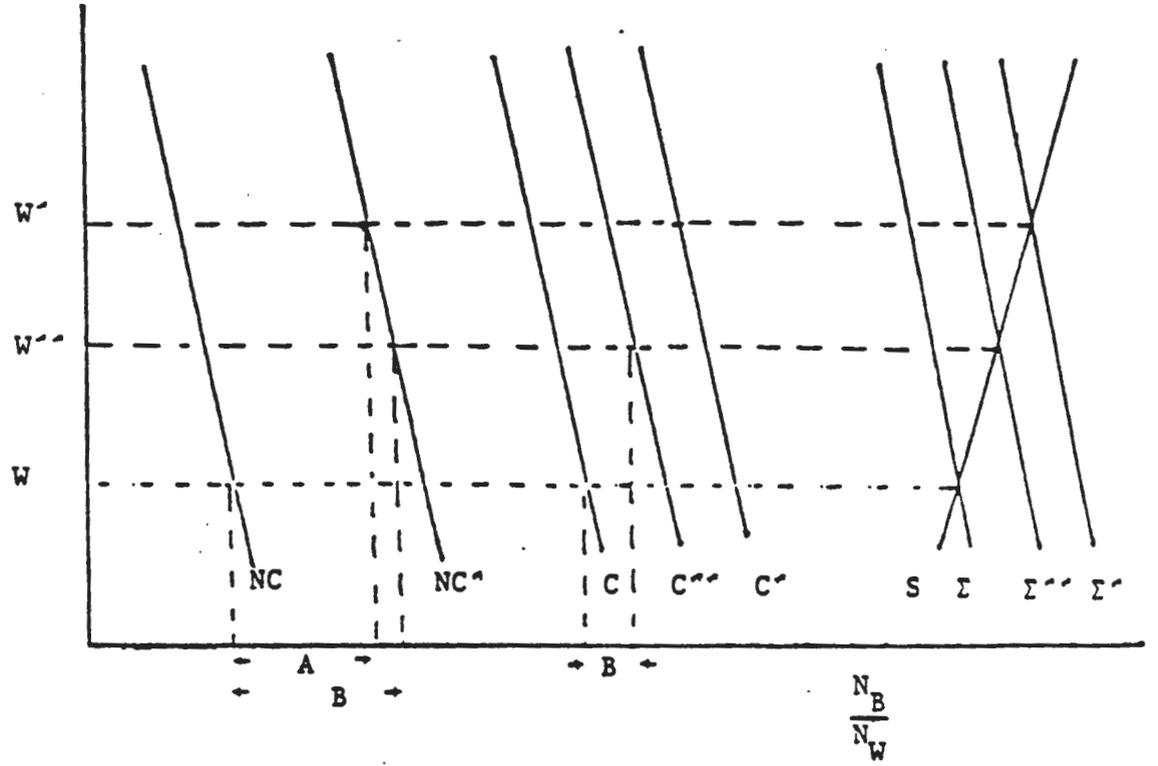




Table 3.2: Comparison of EEO-1 and BLS<sup>3</sup> Employment 1974<sup>4</sup>, and My Sample<sup>5</sup> 1980.

Industry	Employment (000)			My Sample as a Percent of BLS	EEO-1 as a Percent of BLS
	My Sample	EEO-1	BLS <sup>1</sup>		
Total	16,411	32,708	NA <sup>2</sup>	NA	NA
Private, nonagricultural	16,342	32,565	70,287	23.3	46.3
Mining	254	529	837	30.3	63.2
Construction	262	517	4,212	6.2	12.3
Manufacturing	7,663	15,076	20,332	37.7	74.1
Durable goods	4,505	9,270	12,160	37.0	76.2
Nondurable goods	3,158	5,806	8,172	38.6	71.0
Transportation, Communications and public utilities	1,492	3,260	4,859	30.7	67.1
Trade	2,644	5,794	19,394	13.6	29.9
Wholesale	648	1,239	4,898	13.2	25.3
Retail	1,996	4,555	14,496	13.8	31.4
Finance, insurance, and real estate	749	2,344	4,676	16.0	50.1
Services	3,278	5,045	15,979	20.5	31.6
Agriculture	69	142	NA	NA	NA

<sup>1</sup>Data are annual average of 12 monthly data reports.

<sup>2</sup>NA = Not Available

<sup>3</sup>B.L.S. data from Employment and Earnings, March 1978.

<sup>4</sup>1978 data reproduced from 1980 EEOC Report.

<sup>5</sup>My sample is 68,690 establishments with matching EEO-1 records in 1974 and 1980.

**NOTES**

1. 1978 EEOC Report, Table 1, pp. 1-9, 1-10.
2. 1978 EEOC Report, p. xi.

#### Chapter 4: Results: The Impact of the Contract Compliance Program on Workplace Demographics

This chapter presents our central empirical findings on the question of the impact of Executive Order 11246 on the employment and occupational status of minorities and females. The previous chapter argued that there were a number of plausible ways of measuring the impact of the OFCCP and that different methods could produce different results. The statistical results here should be interpreted in light of the qualifications and ambiguities detailed previously. The predominant evidence to be presented here suggests that affirmative action under the contract compliance program has led to improved employment opportunities for blacks. To show this I compare the change in demographics between 1974 and 1980 across contractor and non-contractor establishments, and across reviewed and non-reviewed contractors. Tests are made by detailed demographic group of changes in total employment and occupational status, and of occupational advance across 9 occupations and 2 trainee positions. Cross-tabulations are presented in Section 2. Section 3 presents linear probability and log-odds equations with multiple control variables. Section 4 discusses certain qualifications of these results, and tests of simultaneity.

Have compliance reviews been a useful tool in the affirmative action effort? Many in private business and in advocacy groups argue that compliance reviews generate a lot of paper, but little real change. To determine the efficacy of compliance reviews I compare changes in the representation of minorities and females across reviewed and non-reviewed contractor establishments.

Has affirmative action helped minorities and females move up as well as in? Has it only helped minority and female employment in low-skill jobs, or alternatively, has it caused a twist in demand toward high-skilled labor? Section 5 examines these questions of occupational detail.

What have been the channels of adjustment to affirmative action? Have employers been most successful in changing hiring, termination or promotion policies? Some would argue that

affirmative action has caused excessive churning in labor markets, with few permanent employment gains for members of protected groups. In Section 6 I examine previously unavailable data on turnover at more than 2000 establishments. I develop flow/stock models of employment change to judge the consistency of this new independently derived turnover data with observed stock change data. Using this stock/flow model I also show that affirmative action may be successful in increasing the shares of minorities and females in hires in the contractor sector, and decreasing their shares in terminations, without producing any corresponding increase in the growth rate of their employment in the contractor sector. The final section presents the conclusions of this research.

### Section 1: Background

The male share of employment has fallen steadily since 1960 as females have flooded into the labor force, as Table 4.1 shows. In 1974, .389 of the employed were female. By 1980 this had increased by 7.2% to .417. While the proportion of non-white males in total employment remained stable over this same period at .060, their proportion among males rose by 5%, from .098 to .103. On their face, these growth rates in representation are not strikingly higher after 1970 than before. At the same time, both females and non-white males share of unemployment has been growing, along with their employment shares. The period between 1974 and 1980 witnessed growth in females' share of employment, and in non-white males share of male employment. What part has affirmative action played in these increases?

If affirmative action is effective, I expect the rate of change of protected groups' employment share to be higher in contractor establishments than in non-contractor establishments, *ceterus paribus*. Since affirmative action goals are similar within industry within region, I also expect the variance of employment share to fall more and remain lower at contractor firms, controlling for industry and region, or controlling only for industry in professional occupations with national labor pools. In the long run, I expect the levels of the employment shares of pro-

tected groups to be higher in contractor firms, controlling for industry and region. Industry and region, which determine skill requirements and local labor supply, are not controlled for in the following cross-tabulations. The crucial tests are those on changes in levels of employment shares which difference out unchanging variables. Since stocks are only susceptible to policy through changes in flows, I expect the flows, or in other words the change in stocks to be a more sensitive indicator of the impact of policy. This specification is also more resistant to simultaneity problems. For example, one might argue that an observed correlation between contractor status and an increase in black's share of employment reflects simultaneity bias rather than the impact of policy on employment, because only firms whose tastes or skill requirements allowed them to increase their employment of blacks became contractors, or because contractor firms were located in areas where black relative labor supply was exogenously increasing. In the multivariate models, I do control for industry and region. It is worth recalling that the Heckman-Wolpin estimates imply that individually the level or growth of black male employment share had an insignificant effect on the probability of being a federal contractor, and that establishments with high or growing female or non-black minority employment shares were actually less likely to be contractors, though insignificantly so.<sup>1</sup> I shall present in Section 4 empirical evidence calling into question the practical importance of simultaneity of the sort just mentioned.

It should also be noted that 1974 is an early year in the history of affirmative action, especially for females. While affirmative action became effective in 1965, the provisions pertaining to females were a later addition, first enforced about 1974. For both non-whites and females, the adjustment process was by no means over by 1974.

## Section 2: Cross-tabulations

Table 4.2 shows that between 1974 and 1980 the increases in employment share of blacks and females were both significantly greater in contractor establishments than in non-contractor establishments. T-tests in Table 4.2 reject the equality of changes in means in all cases except non-black minorities, which are the smallest group. There is no striking evidence in the changes in variances in representation over time, but the variance in the contractor sector is always significantly less than in the non-contractor sector. Contractor establishments start with proportionately more non-white males but fewer females in 1974, which in itself casts doubt on the simultaneity argument for females. The most compelling evidence of the impact of affirmative action in Table 4.2 is the significantly greater increases in female and black male employment shares in contractor firms.

I pointed out above that the interpretation of tests of affirmative action would be less straightforward if scale effects were large in the contractor sector. We see in Table 4.2 that there is only a small difference in the growth rates of contractor and non-contractor firms; both are growing at between 2 to 3 percent per year, so differences in scale effects across sectors are likely to be negligible. On net in these establishments members of protected groups are, in part, being substituted for white males over time. This also suggests that contractor firms are not growing fat on government largesse, allowing them to expand total employment to take on relatively unproductive minorities and females. This is consistent with evidence to be presented in Chapter 5 that the productivity of members of protected groups relative to that of white males did not fall as their relative employment share increased.

Table 4.2 tells us that affirmative action has been effective at the average establishment. To draw inferences about the average employee, or the likely wage effect, we must weight by establishment size. These weighted results, in Table 4.3, in general show less of a difference between sectors, suggesting by comparison with Table 4.2 that affirmative action has been more effective at smaller establishments. Note also that the weighted black share among contractors is much greater than the unweighted share: blacks are heavily represented at large contractors.

### **Reviewed vs. Non-Reviewed**

Given that contractor establishments have increased their employment of non-whites and females more than non-contractor firms have, what administrative tools have been useful? Do compliance reviews matter? One alternative is that the threat of a compliance review is sufficient to obtain the desired behavior, so that reviewed establishments do not differ significantly from non-reviewed contractor establishments. This would be plausible if the threatened penalty if caught were severe enough to outweigh the small probability of being caught. This is unlikely, because both the probability of review and the penalties imposed are not great. Between 1973 and 1981 the OFCCP has records of roughly 27,000 reviews on 11,000 different identifiable establishments. In 1980, roughly 115,000 establishments were government contractors, so at least ten percent of all contractor establishments had been reviewed between 1973 and 1981. About two dozen of these reviews resulted in the ultimate penalty of debarment. Between 1969 and 1976, compliance reviews produced 331 conciliation agreements according to a Department of Justice memorandum. These agreements awarded \$61,279,000 in back pay, or \$185,133 per company in a heavily skewed distribution. Short of debarment or backpay awards, affirmative action extracts only promises, though as we have seen, these promises are not empty.

Compliance reviews have been targeted at large establishments that already employ proportionately more non-whites. The economics of targetting enforcement, and detailed empirical tests of actual enforcement patterns will be analyzed in Chapters 6 and 7. Here we shall only note that while there are obvious advantages in terms of economies of scale and signalling to reviewing large establishments first, there seems little to be gained in terms of reducing discrimination by enforcing affirmative action primarily at establishments that already have the highest representation of non-whites, conditional on size. Table 4.4 shows that among the 41258 establishments that were contractors in 1974, the establishments that were reviewed between 1975 and 1979, inclusive, employed an average of 745 workers in 1974, far more than the average of 239 employed by non-reviewed contractors. In addition, the employment share

of non-whites was 24% greater at reviewed contractors than at non-reviewed contractors in 1974, before review. This helps explain why we previously observed no decline in the variance of representation among contractors. If one thought of the growth of non-white representation as following a logistic growth curve, then squeezing further gains from establishments in the upper tail of the distribution would be difficult.<sup>2</sup> If reviewed contractors start out above the mean in protected group employment, compliance reviews that prompt them to increase their employment of minorities further may actually increase the variance in representation in the contractor sector. Compliance reviews, targetted at the wrong end of the minority representation distribution, appear in these basic cross-tabulations not to have been an effective tool in promoting protected group employment. In the next section, using a more stringent set of controls, we shall see that on the question of review effectiveness, this simple cross-tabulation can be misleading.

Establishments that were reviewed expanded in size, though not significantly more than the non-reviewed. Since the reviewed establishments were relatively non-white intensive, the likely scale effect would work against an increase in non-white employment share among the reviewed.

It is also interesting to note that contractor establishments that were reviewed at all underwent an average of 1.8 reviews between 1975 and 1979 inclusive, and that these reviewed contractors were more likely to maintain contractor status than were the non-reviewed contractors. Only 3.4 percent of the reviewed contractors were no longer contractors by 1980. In contrast, 11.8% of the non-reviewed contractors ceased being contractors. While not controlling for other variables, this comparison does not in itself suggest that the compliance review process is so burdensome as to lead firms to eschew federal contracts.

The observed impact of compliance reviews should be interpreted in view of a plausible simultaneity argument: the OFCCP tends to review those establishments with the lowest growth rates of female and minority employment. This is indeed among the things the OFCCP claims to do. If so, this simultaneity would bias against finding a higher growth rate for female or

**minority representation among reviewed establishments.**



### Section 3: Multivariate Linear and Log-Odds Models

How robust are these results? Do compliance reviews and contractor status have the same impact if other variables are controlled for? For example, the size of the establishment could be a crucial variable. Large plants might tend to be good corporate citizens, or they may be more likely to have formalized and rationalized personnel systems. Or simply by being large they may escape the familial or tribal tendencies of small workforces. For any of these reasons, one might expect larger firms to have better affirmative action records. At the same time, one might expect contractor status to be positively correlated with establishment size. In this case, the previous finding in cross-tabulations of a positive relationship between contractor status and growth rates of female and minority employment share might be spurious; it might be picking up the correlation between protected group share and the omitted establishment size. Similar arguments of a more tenuous nature may be made about industry and region.

In this section I present the results of linear probability and log-odds equations that correct for establishment size, growth rate, corporate structure, percent non-clerical white-collar, industry, region, and initial period demographics. The sample means of these control variables, and the abbreviations by which they shall be referred in the following tables, are indicated in Table 4.5.

The results from linear probability models in Table 4.6 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 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. This suggests that the advances made by blacks in the contractor sector have come not at the expense of white males, but of other minorities and females. 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 even faster among non-contractors. As we shall see, this result for females is sensitive to functional form, and is overturned in a log-odds specification shown at the end of this section.

The impact of affirmative action grows over time. The coefficient on P74, the lagged dependent variable in Table 4.6 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 4.6 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 4.6 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. We shall take a closer look at these regional differences later.

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. As we shall see in Chapter 7, 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 employ-

ment 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.

Table 4.7 tests the effect of status-changers, those establishments which entered or exited contractor status between 1974 and 1980. The establishments which remained classified as non-contractors in 1974 and 1980 are the omitted group. The expected pattern, among protected groups is  $STAYC > LEAVEC > ENTERC > \text{zero}$ . Those establishments which remain government contractors should employ more females and minorities than those who left contractor status, which in turn should do better than new entrants, which should still do better than non-contractors. I do not expect the coefficients on  $LEAVEC$  and  $ENTERC$  to be symmetric, because I expect a good deal of state dependence. Affirmative action programs change personnel policies and they change employment stocks, both of which have long lasting effects. The data show that correcting for status changers can be important, but the results are not always consistent. In equation 1, the impact of contractor status on white males becomes stronger and more significant when status changers are controlled for, although white males fare worse at status changers than at establishments which remained contractors. Establishments that were contractors in 1974 improved black employment whether or not they were contractors in 1980. Establishments that left contractor status actually had better employment records for blacks than those which stayed, although the difference is slight and insignificant in the case of black males. There is no obvious explanation for the observation that establishments which entered contractor status did significantly worse in terms of black male employment than those which remained non-contractors. However, this certainly lends no support to the argument that only those establishments which can easily augment their minority employment become federal contractors.

Table 4.8 delves into 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. Contractor establishments that are growing showed significantly slower growth in female and black male representation, but faster growth in non-black male representation.

#### Log-Odds Equations

The linear probability equations estimated above have well known drawbacks. This section presents log-odds equations that for the most part greatly strengthen the previous results. As throughout this study, functional form makes a great difference.

Table 4.9 presents the primary log-odds results. These equations are estimated over the same sample and with the same independent variables as Table 4.6. While the linear probability results showed a divergent impact of affirmative action across protected groups, a far more consistent pattern emerges in the log-odds specification. Establishments that were contractors in 1974 significantly increased the employment share of black males, other males, white females and black females. According to Table 4.9, compliance reviews also played a significant role in advancing black males, white females and black females, and in retarding the employment of non-black males.

Table 4.9 also indicates that minorities and females experienced significantly greater increases in representation in establishments that were growing. For every percentage point increase in the growth rate of establishment employment, white males' employment share drops by about half a percentage point, suggesting that members of protected groups dominate the net

incoming flows. Establishment size has only a small impact, but establishments that are not part of multi-plant corporations have significantly lower growth rates of employment for members of protected groups. Corporate size matters rather than establishment size, with larger corporations showing greater increases in minority and female employment. Except for black males, members of protected groups also do far better at establishments that are non-clerical white-collar intensive.

The estimate in equation 2 is that black males' share of employment increased .82 percentage points more in contractor establishments, not counting the direct effect of reviews. Since 6.8 percent of all contractor establishments accounting for 17.4 percent of all contractor employment were reviewed in subsequent years, the additional impact of compliance reviews is to increase black males share by  $.174 \times 1.03$ , or .18 percentage points. The total impact of the contract compliance program is then to raise black males' share by one percentage point in the contractor sector over the six years between 1974 and 1980. Dividing by six, yields a rough annual impact of .17. This is about the geometric mean of previous estimates: a fourth of Heckman-Wolpin's estimated .7 percentage point annual impact, but four times greater than Goldstein-Smith's .036. This shift over six years is not small. It is equivalent to 14 percent of black males' initial weighted employment share in the contractor sector, not an insubstantial demand shift.

These demand shifts, the central results of Table 4.9, are summarized in Table 4.10. With the exception of the residual and smallest group, non-black minority females, members of protected groups have enjoyed improved employment opportunities at contractor establishments. In particular this also holds true for white females in this log-odds specification, although the effect is of marginal significance. In row 2, compliance reviews appear to have been an effective tool in changing employment patterns. The impact of compliance reviews is greater than the impact of simply being a federal contractor in every case except non-black minority males.

The evidence here is that a process that has been frequently criticized as largely an exer-