

Affirmative Action: What Do We Know?

Harry J. Holzer
Georgetown Public Policy Institute
Urban Institute

David Neumark
Public Policy Institute of California
University of California at Irvine
National Bureau of Economic Research
Institute for the Study of Labor (IZA)

February 2006

This paper has been prepared for the *Journal of Policy Analysis and Management*, at the invitation of the editor.

IRP Publications (discussion papers, special reports, and the newsletter *Focus*) are available on the Internet. The IRP Web site can be accessed at the following address: <http://www.irp.wisc.edu>

Abstract

In this paper we review the research evidence on the effects of affirmative action in employment, university admissions, and government procurement. We consider effects on both *equity* (or distribution) as well as *efficiency*. Overall, we find that affirmative action does redistribute jobs, university admissions, and government contracts away from white males toward minorities and females, though the overall magnitudes of these shifts are relatively modest. We also find that affirmative action shifts jobs and university admissions to minorities who have weaker credentials, but there is little solid evidence to date of weaker labor market performance among its beneficiaries. While those students admitted to universities under affirmative action have weaker grades and higher dropout rates than their white counterparts at selective schools, they seem to benefit overall in terms of higher graduation rates and later salaries. Affirmative action also generates positive externalities for minority and low-income communities (in terms of better medical services and labor market contacts), and perhaps for employers and universities as well. More research on a variety of these issues is also clearly needed.

Affirmative Action: What Do We Know?

INTRODUCTION

Affirmative action refers to a set of practices undertaken by employers, university admissions offices, and government agencies to go beyond nondiscrimination, with the goal of actively improving the economic status of minorities and women with regard to employment, education, and business ownership and growth. This additional activity can take the form of special recruitment efforts to draw more applicants in these areas from minorities and women, but might also include some additional consideration of (or preference for) these applicants, given that their credentials along certain dimensions might look weaker than those of their white male counterparts. In this paper, we examine the research evidence on the benefits and costs of affirmative action, both for its intended beneficiaries and for society more broadly.

The roots of affirmative action in employment lie in a set of Executive Orders issued by U.S. presidents since the 1960s. Executive Order 10925 (issued in 1961) introduced the phrase “affirmative action,” encouraging employers to take action to ensure nondiscrimination. Executive Order 11246 (1965) required federal contractors and subcontractors (currently, those with contracts of \$50,000 or more) to identify underutilized minorities, assess availability of minorities, and if available to set goals and timetables for reducing the underutilization. Executive Order 11375 (1967) extended this to women.

Federal contractors may be sued and barred from contracts if they are judged to be discriminating or not pursuing affirmative action, although this outcome is rare (Stephanopoulos and Edley, 1995). But affirmative action is not just limited to contractors; it can be imposed on noncontractor employers by courts as a remedy for past discrimination, and it can be undertaken voluntarily by employers.

While universities may be bound by affirmative action in employment in their role as federal contractors, there are no explicit federal policies regarding affirmative action in university admissions.

Rather, universities have voluntarily implemented affirmative action admissions policies that give preferential treatment to women and minority candidates.¹ Court decisions have shaped (and continue to shape) what public universities can and cannot do. Preferential admissions policies initially came under attack in the *Bakke v. University of California Regents* (1978), in which the Supreme Court declared that policies that set aside a specific number of places for minority students violated the 14th Amendment of the U.S. Constitution, which bars states from depriving citizens of equal protection of the laws. However, although this decision is viewed as declaring strict quotas illegal, it is also interpreted as ruling that race can be used as a flexible factor in university admissions.

Most recently, the Supreme Court in 2003 struck down the undergraduate admissions practices at the University of Michigan in the case of *Gratz v. Bollinger, et al.*, finding that the point system used by the university in its consideration of race (and other criteria) was too rigid. At the same time, in *Grutter v. Bollinger, et al.*, it upheld the university's law school admissions procedures, finding that the more flexible treatment of race in this case satisfied the state's compelling interest in expanding the pool of minority candidates admitted to this prestigious school. Affirmative action in state university admissions can also be limited by the actions of state courts, such as the ruling of a Texas appeals court in the case of *Hopwood v. State of Texas* in 1996, which eliminated racial preferences in admissions in state universities there. They can also be limited by popular referenda, as occurred under Proposition 209 in California in 1996, which barred the use of racial preferences in admissions in the University of California system (as well as in state employment and contracting).

Another major component of affirmative action is contracting and procurement programs. At the federal level, these have principally taken the form of preferential treatment in bidding for Small/Disadvantaged Businesses (SDBs), and Small Business Administration programs of technical

¹Throughout, we use the word "minority" to refer to groups that are typically underrepresented in universities and in better jobs in the contemporary economy. Most of the existing work considers blacks and sometimes Hispanics, but rarely Asians.

assistance. These contracting and procurement programs focus more on minorities than women (Stephanopoulos and Edley, 1995, Section 9). In addition to the federal level, numerous states and localities have used programs aimed at increasing the share of contracts awarded to minority-owned businesses.

As with affirmative action in education, court rulings in the last decade or so have challenged the legal standing of such programs. *City of Richmond v. J.A. Croson Co.* (1989) established that the legal standard of “strict scrutiny” for compelling state interests must be met for state programs to be legal under the 14th Amendment of the Constitution. In *Adarand Constructors, Inc. v. Peña* (1995), the Supreme Court ruled that strict scrutiny could apply to federal programs as well, invoking the 5th Amendment (which guarantees that citizens shall not “be deprived of life, liberty, or property, without due process of law”), instead of the 14th (which explicitly applies to states).

Affirmative action remains vastly more controversial than antidiscrimination activity, which is based on Equal Employment Opportunity (or EEO) laws and other legislation. But the distinctions between them are clearer in theory than in practice (Holzer and Neumark, 2000a). First, what has ostensibly targeted discrimination in the workplace has also led to affirmative action in practice. Title VII of the Civil Rights Act of 1964, which established Equal Employment Opportunity as law, allows for affirmative action as a means of remediation for past discrimination. While the main focus of this legislation is the prohibition of discrimination in employment, the act also allows the courts, when finding that an employer is engaging in an unlawful employment practice, to “order such affirmative action as may be appropriate, which may include reinstatement or hiring of employees ...”²

More generally, in practice the difference is muddied further. Many employment discrimination cases concern hiring and are based on evidence of “disparate impact,” according to which underrepresentation of women or minorities—relative to some suitably defined pool of job candidates—is

²This occurred, for example, in *Firefighters Local Union No. 1784 v. Stotts*, 1984.

sufficiently large to support an inference of discrimination. Much of the argument in such cases concerns the definition of the appropriate candidate pool (Epstein, 1992, Ch. 18). But regardless of how this issue is settled, employers concerned with a possible disparate impact discrimination claim might seek to ensure that women and minorities are adequately represented among their hires. Indeed, the Equal Employment Opportunity Commission guidelines for defining disparate impact essentially establish a system of numerical yardsticks, embodied in the “80 percent” or “four-fifths” rule, which states that “A selection rate for any race, sex, or ethnic group which is less than four-fifths ... of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact ...”³ This is easily monitored for many companies, as employers with 100 or more employees are required to file EEO-1 reports indicating the percentages of female and minority workers in broad occupational categories.

As a consequence, we believe that when analyzing affirmative action in the labor market, attention should not be limited solely to the effects associated with contractor status, but ought to focus as well on policies or actions that might encourage anything other than race- or sex-blind behavior. We can certainly examine the effects of a particular policy, as some of the research described in this paper does. But we do not think that the two policies can always be separated, or that one necessarily obtains a sharper picture from an exclusive focus on EEO or affirmative action.

Another point that this implies is the difficulty of interpreting suggestions of some critics of affirmative action that we can do away with affirmative action but maintain vigorous enforcement of antidiscrimination laws (or “color blindness”).⁴ Laws barring race- or sex-conscious behavior in hiring, promotions, and discharges are likely to undermine not only explicit forms of affirmative action, but also

³See *Code of Federal Regulations* (2001).

⁴For example, Steele (1990) writes, “I would ... like to see affirmative action go back to its original purpose of enforcing equal opportunity—a purpose that in itself disallows racial preferences” (p. 123). See also Stephen Carter (1991).

any prohibitions of discrimination that rely on disparate impact analyses for their enforcement. Perhaps this is why recent attempts to limit affirmative action have focused largely on university admissions and government procurement, where—unlike in the labor market—the effects of affirmative action are not confounded with the effects of EEO, and hence preferences afforded to minorities and women might be more apparent.

THE PROS AND CONS OF AFFIRMATIVE ACTION: DIFFERENT VIEWPOINTS

Before evaluating the evidence on affirmative action, it seems useful to list the various arguments used by its proponents and critics and to construct a framework through which the empirical evidence can be considered and used to assess these arguments.⁵

Supporters of affirmative action tend to argue that these policies are necessary to offset the systematic barriers that minorities and women continue to face in pursuing education and employment opportunities. In this view, discrimination and pernicious stereotypes have persisted into the present, while the cumulative effects of past discrimination also continue to hobble underrepresented groups in a variety of ways. Thus, affirmative action is needed to counter these barriers and to *equalize opportunity* in the areas of higher education, employment, and procurement of government contracts. Furthermore, the minorities and women who benefit from affirmative action are largely qualified to successfully perform the tasks required of them as employees, students, and contractors, even if their credentials on paper are somewhat weaker than those of white men whom they replace. And affirmative action benefits a wide range of individuals, both among minorities (through its effects on mentoring, role models, and the like) and whites (through positive effects on business performance, relations across racial groups, etc.). In this

⁵We previously reviewed evidence on the effects of affirmative action (2000a). This review focuses to a greater extent on affirmative action in education, which has become more prominent in public debate in the last few years, and on which there is the greatest amount of new research.

view, affirmative action is essential if the rewards of good jobs, university slots, and government contracts are to be distributed equitably and fairly (Stephanopoulos and Edley, 1995).

In contrast, the critics of affirmative action generally argue that discrimination—either present or past—now plays a relatively small role in the determination of educational and employment differences across race and gender groups. Instead, they point to weaknesses in early family and school environments that continue to generate low skills among underrepresented minorities, which in turn generate lower representation and poorer performance in highly paid jobs and university positions for these groups (Thernstrom and Thernstrom, 1997). To the extent that women continue to lag behind men in labor market outcomes, these gaps are largely attributable to individual choices made by women themselves—especially related to fertility and motherhood (Furchtgott-Roth and Stolber, 1999). As a consequence, the critics argue that affirmative action leads to the hiring or promotion in jobs, and to the admission to universities, of less-qualified minorities who perform poorly. It thus constitutes an attempt to *equalize results or outcomes*, rather than opportunity. Finally, the supposed beneficiaries of affirmative action are themselves hurt, as they find themselves in positions in which they ultimately fail. Affirmative action might also help perpetuate negative stigmas regarding the abilities of minorities (Sowell, 2005). In this view, affirmative action is grossly unfair—not only to white males and to employers, but also to the underrepresented groups whom these policies are intended to help.

Evaluating the Arguments

How can we make sense of these arguments and then empirically evaluate them? One way is to use the economists' framework, in which policies are evaluated according to their effects on both *equity* and *efficiency*.⁶ To the extent that a trade-off might exist between these two criteria of economic

⁶By “efficiency” we refer to something more akin to technical efficiency than to maximizing “social welfare.” For example, if a diverse student body improves educational quality, it might increase efficiency by leading to more educational “output” per “input.” The same would apply to affirmative action that reduces labor

performance, policies to promote equity through the *redistribution* of jobs, university positions, or contracts might be supported if they generate relatively little loss of efficiency. In some cases, promoting equity might also lead to greater efficiency, if there are market imperfections (such as discrimination, imperfect information, externalities, and the like) that generate inefficient use of resources—especially minority and female human resources—in the absence of corrective policies. And in the university setting, potential trade-offs between equity and efficiency might be viewed differently at public institutions—which are financed and therefore essentially “owned” by taxpayers, and should therefore serve their interests—and at private universities.

In this guise, the supporters of affirmative action generally regard it as highly equitable, and see either modest efficiency losses or even efficiency gains, as, for example, minorities and women accumulate more education (or “human capital”), which augments their productivity.⁷ In contrast, the critics of affirmative action see it as highly inefficient and also inequitable—as it treats those of different racial and gender groups inherently unequally in the education and labor markets, and may even hurt its intended beneficiaries.

Indeed, theoretical models have been generated by economists based on one or the other set of assumptions. For instance, Welch (1976) begins with a perfectly competitive labor market, and evaluates the consequences of affirmative action in which less-qualified minorities are hired or promoted. Not surprisingly, this model predicts that significant inefficiencies are generated by affirmative action. In contrast, models by Coate and Loury (1993), Lundberg (1991), and Athey, Avery, and Zemsky (2000) begin by assuming imperfect information, statistical discrimination, or potential externalities (associated with mentoring) respectively. Each model concludes that affirmative action can potentially (but may not

market discrimination by placing more qualified blacks in jobs previously held by less qualified whites. The reverse effects are also possible, of course.

⁷For example, in the model of Lundberg and Startz (1983) statistical discrimination leads to underinvestment in human capital by women or minorities, and this is alleviated by affirmative action.

always) improve labor market efficiency by improving the skills and mentoring available to minorities or women. But determining whether or not each set of assumptions is justified, and the success of affirmative action in offsetting the latter imperfections, requires empirical evidence.

In the end, it is impossible for economists (or any other social scientists) to definitively determine whether a set of policies is equitable or not—since equity ultimately depends not on greater equality per se, but on one’s value judgments regarding the equality of outcomes and the processes by which they are generated.⁸ Some supporters of affirmative action argue that the continuing disadvantages faced by minorities and women in the absence of affirmative action are so serious and unfair that any attempts to offset them are appropriate and necessary, while some opponents argue that any “race-consciousness” in these decisions is inherently discriminatory and even racist. Definitive answers to questions regarding the efficiency of affirmative action may also be hard to come by. But empirical answers to an important set of questions related to its equity and efficiency effects can certainly inform judgments about affirmative action—at least among those whose views are based in part on its likely effects, rather than philosophy or ideology alone.

On the equity side, we must first determine the extent of redistribution. Are large numbers of jobs, university positions, and contracts being redistributed from white males to minorities and women—and which ones are being redistributed to whom? Are the beneficiaries of these policies really less advantaged than the white males who bear the cost, or does affirmative action largely reward women and minorities from high-income backgrounds at the expense of lower-to-middle income white males? And, perhaps most importantly, do the intended beneficiaries of affirmative action truly benefit?

On the efficiency side, we need empirical evidence on the performance of affirmative action beneficiaries in universities, jobs, and as contractors—ideally, relative to the nonbeneficiaries of

⁸Indeed, economists contend that the value any of us places on equality depends on our own “social welfare functions.”

affirmative action whom they replace. Some distinction needs to be made between *qualifications* and *credentials*, in which affirmative action beneficiaries will lag behind by definition, and *performance* on the job, in the classroom, or on the contract, which may or may not be strongly predicted by the credentials of candidates.

There is a set of questions that bear on both equity and efficiency, asking whether the beneficiaries extend beyond those directly affected by affirmative action and whether some of the perceived benefits are real. In particular, does affirmative action confer a broader set of benefits for women and minorities—as well as other students, universities, and employers—beyond those who are directly assisted through employment, university admissions, and contract awards? Evidence on these issues provides indirect evidence regarding whether major labor or educational market imperfections exist in the absence of affirmative action, in which case affirmative action could be efficiency-enhancing, and also have additional distributional consequences.

Finally, there is the issue of “mismatch.” Specifically, are affirmative action “beneficiaries” actually hurt because they are “mismatched” with jobs or universities in which they cannot successfully perform, and ultimately bear the costs of failure—through dropping out of school, turnover from jobs, and the like? Such mismatches would point to inefficiencies generated by affirmative action, and suggest that some of the supposed distributional benefits to minorities are illusory.

Differences in Outcomes and the Role of Discrimination

Evidence on the magnitudes, nature, and sources of continuing gaps in higher education, employment, and contracting between white males and minorities or women can help answer the questions of the extent of barriers facing the latter groups, and how important current (or past) discrimination might be in generating these gaps. Before turning to a lengthy review of empirical evidence on the consequences of affirmative action, we briefly review the current state of evidence on the magnitudes and sources of persistent racial and gender gaps in education and employment outcomes.

Regarding the male-female wage gap, there is still, in the United States, evidence of wage gaps between men and women that are unexplained by observable characteristics such as education, age, experience, etc. A large share, but by no means all, of the difference is due to the different jobs (and business establishments) into which women are hired (Bayard et al., 2003). At the same time, a sizable share of the wage gap is associated with whether or not women have children (Waldfogel, 1998), which is also reflected in the important role played by differences in the amount and timing of labor market experience between women and men (Light and Ureta, 1995). Thus, wage differences between men and women likely reflect choices about jobs and hours worked among those caring for children.

At the same time, they also likely reflect discrimination. First, Bayard et al. find that even within narrowly defined occupations within establishments, in which workers are likely to be very similar (at least in terms of what matters on the job), there is a sex gap in wages. For example, in specifications with establishment-specific controls for 3-digit occupations, the gender wage gap is about 15 percent. And limited evidence from audit studies points to hiring discrimination against women (Goldin and Rouse, 2000), and in the case of the restaurant industry, against women in higher-paying businesses (Neumark, 1996). Of course, some of the apparently discriminatory behavior of employers toward women may reflect employer expectations of differences in women's behavior because of future childbearing, although such statistical discrimination is illegal.⁹ Differences in managerial pay within occupations also likely reflect a combination of current/past discrimination in promotion opportunities as well as choices of career tracks, with the exact mix not well understood.

In terms of educational attainment, young women are now more likely than young men to attend and graduate from college (Jacob, 2002). Important gender differences remain, however, in college

⁹For instance, employers might discriminate against hiring women whom they expect to switch to part-time work, or to take leave, for maternity reasons.

majors and in occupational concentrations, which might well reflect gender differences in career choices instead of (or in addition to) barriers to female advancement (Brown and Corcoran, 1997).

Regarding black-white earnings differences, educational attainment and test scores (as a proxy for cognitive skills) now account for a large majority of the racial gap in *wages*, but much less so in *employment* (Johnson and Neal, 1998).¹⁰ Given the large and still growing gaps in employment rates between black and white men (Holzer and Offner, 2005), a focus on wage gaps only is clearly inappropriate at this point. Evidence of discrimination in hiring against blacks and Hispanics can clearly be found in a variety of audit or “tester” studies of employer hiring of carefully matched pairs of job applicants (Fix and Struyk, 1994; Pager, 2003).¹¹ But earnings gaps between Hispanics and whites, especially involving immigrants, seem largely accounted for by differences in educational attainment and language ability (Borjas, 1996; Borjas and Katz, 2005).

Given the growing importance of educational attainment and cognitive ability in accounting for racial/ethnic differences in labor market outcomes and university attendance, understanding the origins of these differences is crucial as well. Differences in family income and background clearly contribute to differences in cognitive abilities, as well as in university attendance conditional on these abilities (Bowen, Kurzweil, and Tobin, 2005). Racial gaps in educational attainment (i.e., in years of schooling completed) are more than completely accounted for by differences between blacks and whites in family income and test scores (that is, conditional on these controls, predicted attainment is higher for blacks). However, large racial gaps in test scores remain after controlling for these differences. The test score (or

¹⁰In their paper, the black-white gap in the log of hourly wages among men declines by about two-thirds—from .28 to .10—after controlling for test scores, while among women it becomes mildly positive for black women. Looking at annual earnings rather than hourly wages, the gap for men declines by about half—from .65 to .32—though it remains large and significant even after including these controls. Of course, if test scores measure the right ability construct with error, then the test score coefficients may be biased toward zero and the race differences understated. There are also potential omitted variable biases, which could in principle be in either direction (a point emphasized by Darity and Mason, 1998).

¹¹But see Heckman (1998) for a criticism of some of this evidence.

“achievement”) gap also reflects racial segregation in schools (Hanushek, Kain, and Rivkin, 2002) and neighborhoods (Card and Rothstein, 2005); and Cutler and Glaeser (1997) tie education and employment gaps more broadly to residential segregation.¹²

These factors imply that ongoing housing discrimination and racially based housing and neighborhood preferences, by contributing to residential segregation (Yinger, 1998; Farley, 2001; Charles, 2001), help generate educational and employment gaps indirectly. Loury (2002) also argues that racial stereotypes and stigmas contribute to perceptions and expectations of student ability, and the self-perceptions of students, in ways that limit their achievement over time.¹³ He thus argues against looking only for narrowly-defined current discrimination in employment (that controls for skills which themselves reflect racial stigmas) to justify race-based remedies.

On the other hand, a large share of racial gaps in achievement appear to develop well before children enter kindergarten, suggesting that intervening even at early levels of schooling may not eliminate these gaps (Carneiro, Heckman, and Masterov, 2003). That school quality plays a role is suggested by evidence that racial gaps in achievement widen during the early years in school. But evidence on whether school quality is a major contributor to this widening gap is mixed, depending in part on the grade at which skills are measured and the tests that are used, and school quality may be less important for the skills that are more important to later future academic and labor market success (Fryer and Levitt, 2004a and 2004b). Whether these gaps that appear in the home themselves reflect the accumulated effects of past discrimination and racism is harder to evaluate.

¹²Card and Rothstein suggest that it is the socioeconomic characteristics of neighbors that segregation generates, rather than their race per se, that plays a larger role in the test score gap. But Cutler and Glaeser provide evidence that racial segregation has exogenous negative effects on a wide range of outcomes for blacks. The notion that segregation can adversely affect employment outcomes of blacks, independently of education and achievement, is also supported in the broad literature on “spatial mismatch” (Ihlanfeldt and Sjoquist, 1998).

¹³See also Bobo and Massagli (2001) for evidence on racial stereotypes, and Steele (1997) for evidence on how “stereotype threats” inhibit the performance of minority youth. See also Raphael (2002) for a review of Loury’s arguments and evidence.

Countering Discrimination and Racial Gaps without Affirmative Action

Given the large role played by the “achievement” gaps in accounting for differences in college attendance, some (e.g., Thernstrom and Thernstrom, 2003) argue that K-12 school reforms would be a much more effective way of improving educational attainment than affirmative action. Indeed, these reforms would also benefit lower-income minorities who gain very little from affirmative action in university admissions, as their rates of college attendance are quite low.

But large differences of opinion remain over whether we have sufficient understanding to implement reforms that would alleviate the test score gaps,¹⁴ and political barriers to their implementation make their adoption even less likely. Whether school funding at the K-12 level, or financial aid at the university level, are important contributors to educational gaps continue to be debated as well.¹⁵ Absent major (and successful) policy changes on these fronts, it seems unlikely that racial differences in preparation for higher education or employment would disappear anytime soon. Indeed, simulations by Krueger, Rothstein, and Turner (2004) suggest that large gaps in the admissions of blacks and Hispanics to selective universities will still exist 25 years from now—the point at which Justice O’Connor (in the Grutter decision) predicted that the need for affirmative action would disappear.¹⁶

Likewise, the critics of affirmative action would presumably prefer to deal with the persistence of housing and employment discrimination through more aggressive enforcement of existing EEO and other laws, directed against the perpetrators of discrimination, rather than through affirmative action

¹⁴See, for instance, Krueger (2003) for a critique of the evidence in favor of school choice and accountability schemes, and Neal (2002) for a more sympathetic review.

¹⁵For the issue of funding at the K-12 level, see Krueger (2003) and Hanushek (2002). For the effects of financial aid at the university level see Bowen et al. (2005).

¹⁶Krueger and his colleagues used estimates of the relationships between family incomes, test scores, and university attendance, along with projections of trends in the first two of these variables over the next 25 years to simulate trends in the third variable for whites and blacks over time.

requirements imposed on those who do not necessarily engage in discrimination themselves.¹⁷ But, once again, exactly how the enforcement of EEO laws can be improved is not clear; and, absent these policy changes, some need for active policy to offset the effects of persisting discrimination in the housing and labor markets overall might still be necessary if, as a society, we want to counter this discrimination.

Overall, then, it is clear that discrimination and discriminatory racial stereotypes and stigmas—both past and present, in housing and labor markets, and in schools and neighborhoods—contribute to ongoing racial gaps in achievement, education, and employment. Some of these gaps also derive from family backgrounds and especially parental characteristics and behaviors that are much less clearly driven by racial prejudices. But whether affirmative action is an appropriate and effective remedy for these problems requires more evidence on its effects, to which we now turn.

EMPIRICAL EVIDENCE ON AFFIRMATIVE ACTION: LABOR MARKET EFFECTS

At this point, there seems to be little doubt that racial or gender preferences redistribute certain jobs in the labor market away from white men toward minorities and women. The questions, instead, involve the magnitudes and nature of these shifts.

A wide range of studies have demonstrated that affirmative action has shifted employment within the contractor sector from white males to minorities and women. But the magnitudes of these shifts are not necessarily large. For instance, Leonard (1990) analyzed EEO-1 employment data for contractors and noncontractors.¹⁸ He found that employment of black males grew about 5 percent faster at contractor establishments in the critical period of 1974–80 (when affirmative action requirements on contractors

¹⁷In the labor market, those employers facing affirmative action requirements are not necessarily most likely to discriminate. For example, federal contractors tend to be much larger firms than average, while discrimination in hiring against blacks seems most rampant among very small employers (Holzer, 1998). On the other hand, these size-related differences may reflect the fact that EEO law does not apply to the smallest employers.

¹⁸EEO-1 forms that list the race and gender breakdown of all employees must be filed by virtually all federal contractors, as well as noncontractors with 100 or more employees.

were rigorously enforced for the first time) than did employment of white males, whereas for white females and black females the effects were somewhat more modest. To the extent that there is some redistribution of employment, Leonard found that it occurs across a wide range of occupational categories, implying that the benefits of affirmative action are widely spread among blacks and not just limited to more-educated professionals and administrators. Looking at cross-sectional differences across establishments that did and did not report the use of affirmative action in hiring (rather than using actual contractor status), Holzer and Neumark (1999) found that the share of total employment accounted for by white males was about 15–20 percent lower in establishments using affirmative action than in those that did not—which is broadly consistent with the findings of Leonard and others.¹⁹

Of course, this does not necessarily imply that employment of white males overall is reduced by affirmative action, but only that it is redistributed to the non-affirmative-action sector. Since wages and other benefits of employment are likely higher in the contractor than the noncontractor sector, this redistribution might reduce the relative wages of white males somewhat. But the overall magnitudes of any such effects appear fairly modest—given the limited sizes of the sectors using affirmative action, the fairly small shifts involved, and the small numbers of minorities relative to whites employed there.²⁰

As we noted above, it is fairly clear in theory that affirmative action could reduce efficiency in well-functioning labor markets if minorities or women are assigned to jobs for which they are not fully qualified, whereas it could increase efficiency if it opens up to minorities or women jobs from which they have been excluded in favor of less-qualified white males. What does the empirical evidence on the efficiency of affirmative action and the performance of affirmative action beneficiaries show?

¹⁹The Holzer and Neumark studies are based on analysis of a cross-sectional survey of roughly 3,000 employers in four large metropolitan areas (Atlanta, Boston, Detroit, and Los Angeles) administered by Holzer in 1992–94. See Holzer (1996).

²⁰Holzer and Neumark (2000b) report that affirmative action in hiring (as opposed to recruitment) is practiced by employers covering 42 percent of the workforce in their sample. So a decline in white male representation at these establishments of 15 percent amounts to 0.42×0.15 , or a 6 percent overall redistribution of white male employment between the affirmative action and non-affirmative-action sectors.

In labor markets, a variety of methods have been used to answer this question, differing on the critical issue of how to measure quality of output or performance. For instance, some studies have used actual data on production, costs, or stock values across companies or industries as measures of performance, and tried to relate them statistically to demographics in the workforce or companies' use of affirmative action. But these studies are either too aggregate to find any effect or have been flawed along a variety of dimensions.²¹

Another approach is to look at measures of individual employee credentials or performance, by race and/or sex, to see whether or not affirmative action generates major gaps in performance between white males and other groups. Using the cross-sectional employer data described above, Holzer and Neumark (1999) analyzed a variety of measures of employee credentials and performance for different demographic groups of employees. The measures of credentials include educational attainment in absolute levels or relative to job requirements, while the performance measures include wage/promotion outcomes as well as a subjective performance ranking by supervisors of these workers (on a scale of 0 to 100).²²

The study compared whether or not observed gaps in credentials and performance between white males and females or minorities are larger among establishments that practice affirmative action in hiring than among those that do not.²³ The results indicated virtually no evidence of weaker credentials or performance among females in the affirmative action sector relative to those of males within the same

²¹See the review of this work in our earlier paper (Holzer and Neumark, 2000a). The studies reviewed include papers by Leonard (1984), Griffin (1992), and Wright et al. (1995).

²²The more objective indicators of worker productivity, such as wages and promotions, are themselves affected by affirmative action and therefore are not independent indicators of worker performance. The subjective rankings used were measured in absolute terms, and also relative to the "typical employee" in that job. These may be measured with some statistical error, but errors in the dependent variable of the regression equations should not bias estimated effects.

²³These estimates are measured as "difference-in-differences," in which any gaps between minorities and whites in the affirmative action sector are compared to those in the non-affirmative-action sector. In this manner, any differences that exist in the absence of affirmative action are eliminated from these estimates.

racial groups. Comparing minorities to whites, there was clear evidence of weaker educational credentials among the former group, but relatively little evidence of weaker performance.

How could affirmative action result in minorities with weaker credentials but not weaker performance if educational credentials generally are meaningful predictors of performance? In a separate paper (Holzer and Neumark, 2000b), various mechanisms were considered by which firms engaging in affirmative action might offset the productivity shortfalls that would otherwise be expected among those hired from “protected groups.” The study found that firms engaging in affirmative action: (1) recruit more extensively (by using a larger number of recruitment methods per worker hired); (2) screen more intensively and pay less attention to characteristics such as welfare reciprocity or limited work experience that usually stigmatize candidates; (3) provide more training after hiring; and (4) evaluate worker performance more carefully.

Thus, these firms tend to cast a wider net with regard to job applicants, gather more information that might help uncover candidates whose productivity is not fully predicted by their educational credentials, and then invest more heavily in the productivity of those whom they have hired. This view is consistent with a variety of firm-level case studies of affirmative action (Hyer, 1985; Vernon-Gerstenfeld and Burke, 1985; and Badgett, 1995), and other work in the literature on employee selection in the field of human resource management (Silva and Jacobs, 1993; Campbell, 1996), which suggest that affirmative action works best if employers use a broad range of recruitment techniques and predictors of performance when hiring, and when they make a variety of efforts to enhance performance of those hired. In these studies, affirmative action need not just “lower the bar” on expected performance of employees hired, and generally does not appear to do so (though in some cases this no doubt happens). At the same time, it should be recognized that the greater recruitment efforts spurred by affirmative action likely entail some increased costs. Indeed, one interpretation of this evidence on affirmative action is that it encourages substitution away from cheap screens such as race or education toward more expensive screening efforts.

A variety of other studies have been done within specific sectors of the workforce, where it is easier to define employee performance. Among the sectors that have been so studied are police forces, university faculties, and physicians. The results of these studies generally show no evidence of weaker performance among women, and limited evidence of weaker performance among minorities.

For example, Lovrich and Steel (1983) provide credible evidence that crime rates have not worsened (in relative terms) in localities whose police departments increased hiring of minority and female officers, while Carter and Sapp (1991) show that the educational credentials of minority and female officers generally exceed those of their male counterparts (perhaps because they are younger). One study of police departments (Lott, 2000) claimed to show evidence of higher homicide rates because of affirmative action in police hiring, but we found the study to be seriously flawed.²⁴

The evidence on academic publication records appears in Elmore and Blackburn (1983), Barbezat (1989), and Kolpin and Singell (1996). Kolpin and Singell only study female representation in economics departments, and find positive correlations between *changes* in female hiring over time and the quality of faculty publications. Elmore and Blackburn fail to find major racial or gender differences in publications, although they incorporate no information on publication quality. On the other hand, Barbezat finds evidence of higher salaries for minority faculty, and especially black females, after controlling for publication records—which is consistent with a performance shortfall.

The medical evidence is presented in Keith, Bell, and Williams (1987), Cantor et al. (1996), and Davidson and Lewis (1997). These studies showed that minority physicians had greater difficulty passing board exams for certification and were more likely to have primary care rather than specialty practices, but showed little evidence of weaker actual performance within their chosen fields and after certification.

²⁴Lott uses the presence of a black mayor or a consent decree as an instrumental variable (IV) for hiring of minority police, to estimate the effects of affirmative action. But the list of metropolitan areas included in his study seems quite arbitrary, and the exogeneity of his IVs are quite questionable. Lott also mistakenly includes crime rates as independent variables in his first-stage equation when they are the dependent variables in his second-stage equation. When he reports one specification that does not include these crime rates in the first stage, his results dramatically weaken.

Moreover, these studies point to potential social benefits from affirmative action in the medical sector, as minority doctors appear more likely to locate in poor neighborhoods and treat minority/low-income patients. We interpret the latter evidence as indicating positive externalities from affirmative action in this sector.

Thus, the existing research finds clear evidence of weaker credentials but more limited evidence of weaker labor market performance among the beneficiaries of affirmative action, and evidence (at least in one important sector) consistent with positive externalities.

EMPIRICAL EVIDENCE ON AFFIRMATIVE ACTION: UNIVERSITY ADMISSIONS

The magnitude of the redistribution of university admissions from white males to minorities or women generated by affirmative action has been disputed. On the one hand, test scores of those admitted are considerably higher among whites than minorities across the full spectrum of colleges and institutions. For example, Datcher Loury and Garman (1995), using data on college attendees from the National Longitudinal Study of the High School Class of 1972, report that the gap in median SAT scores at colleges attended by whites relative to colleges attended by blacks was 83, while the gap between scores of the white and black students in the data set was 243. In other words, the gap in average school quality attended by whites and blacks is much smaller than the gap in their performance on these tests. And among whites attending colleges with median SAT scores of 1,000 or greater, 35 percent had scores of 1,000 or greater; but this percentage was only 10 among blacks.

Of course, part of these differences could be generated even with a common test score cutoff for blacks and whites, rather than a lower bar for blacks, given the racial gaps in test scores that exist in the population; but it is clear that this is not the whole explanation of the test score gap at selective schools. And, if test scores are worse predictors of subsequent performance among blacks than whites, as suggested by some empirical evidence, then it might be perfectly rational for schools to put less weight on them in the admissions process for blacks (Dickens and Kane, 1999).

The most persuasive papers on the impact of affirmative action on university admissions are by Kane (1998) and Long (2004). The former paper uses data from the High School and Beyond data set on the high school class of 1980; the latter uses data from the National Educational Longitudinal Survey (NELS) of 8th graders in 1988. Both analyze the probabilities of admissions to colleges and universities to which students had applied, thus controlling for differences in student applications by race to focus on university admissions practices.²⁵ Each study estimates racial and ethnic differences in admissions to measure the effects of affirmative action on admissions. Each uses extensive controls for individual characteristics and scholastic performance in high school (such as grade point averages and SAT scores), as well as university rankings (by average test scores), and estimates effects in each quintile of the university rankings.

Both papers find that the impacts of affirmative action—as measured by any positive effects on the probability of admission for being black or Hispanic, controlling for scholastic performance in high school and family background—are quite small for the majority of colleges and universities, but they rise with the quality of the school, and become quite substantial at elite schools. Kane finds no significant effect of affirmative action on admissions anywhere below the top quintile of schools; Long finds some positive effects on admissions in quintiles below the top, but they are small in both absolute and percentage terms (i.e., the shares of underrepresented minorities among those admitted in these schools rises by roughly a percentage point or less in absolute terms, and by 10 percent or less in percentage terms).

On the other hand, both studies find substantial effects of affirmative action on admissions of minorities at elite schools. Long, in particular, finds that affirmative action raises the share of minorities at schools in the top quintile by over 2 percentage points—or over 25 percent from a base share of 8

²⁵This is an oversimplification, because even if we knew the “admissions rule” at each university, truly isolating the effects of affirmative action on admissions policies requires knowing how applications would be distributed in the absence of affirmative action.

percent—and by over 3 percentage points (from 7.3 percent to 10.5 percent), or over 40 percent, in the top decile of schools. These findings confirm the estimates of Bowen and Bok (1998), who also found that the fractions of minorities admitted to elite schools (which they define as being among the top thirty or so in the United States) would fall dramatically in the absence of affirmative action. Large effects of affirmative action on admissions have also been found at graduate schools by Attiyeh and Attiyeh (1997) for Ph.D. programs, by Davidson and Lewis (1997) for medical schools, and by Sander for law schools (2004).

Thus, while the aggregate effect of affirmative action in university admissions seems quite small, its effect in generating the highly educated graduates of elite colleges and universities and graduate programs is quite substantial. But these findings also suggest that the displacement of white applicants by minorities, even at the elite schools, is not very large—since blacks and Hispanics still account for only 10–15 percent of all students at these schools, even with affirmative action. Furthermore, the elimination of affirmative action would not dramatically alter the average quality of students admitted, since the marginal white students admitted instead of blacks would be only moderately better in terms of academic preparation than those whom they replace, and their numbers relative to the entire student body would be low (Bowen and Bok, 1998).

Nonracial Approaches

A variety of recent studies (e.g., Carnevale and Rose, 2003; Bowen et al., 2005) show that individuals from lower-income families and poorer backgrounds are less likely to attend college, and especially more elite schools, than individuals with comparable grades and test scores from middle- and upper-income families. This seems mostly attributable to whether and where students apply to college (perhaps due to informational limits, lack of social supports, financial concerns, etc.), rather than lower college acceptance rates for lower-income students. But Bowen et al., show that these acceptance rates are not higher for lower-income applicants than for others, as they are for minority students (as well as athletes, “legacies” of alumni parents, and those from most Southern and Mountain-region states).

Some critics of affirmative action in its current form (e.g., Kahlenberg, 1996) have therefore suggested that fairness would be better served by affirmative action based on family background or income, rather than race and gender, so that disadvantaged individuals from all groups would benefit. This proposal creates some important procedural questions about how a university might implement such a policy, since measuring family background is much less straightforward than measuring an individual's race or gender.²⁶ But, even if implemented, there are questions about the extent to which minorities would disproportionately benefit from such an approach.

Kane (1998), Cancian (1998), and Carnevale and Rose (2003) have simulated the effects of affirmative action by income and/or parental background instead of race, using a variety of data sets. All find that relying only on parental income and background instead of race would substantially reduce the presence of minorities in elite schools, and for one reason: the presence of minorities among all low-income students in the United States, and especially among those graduating from high school with sufficient grades and test scores to be admitted to college, would be too small to generate a level of minority representation anywhere close to its current level.²⁷

On the other hand, Carnevale and Rose (using both High School and Beyond and the NELS data) consider a number of scenarios in which affirmative action is based on both family background and race, and find that the representation of both groups can be enhanced by such approaches (at the expense of middle- and upper-income whites). Indeed, both they and Bowen et al. argue for some version of this approach.

²⁶For instance, should such admissions be based only on parental income in the previous year, given that income can fluctuate a lot across years? If not, is it administratively possible to obtain and average incomes across multiple years, or to measure parental education instead? What if different parents have different education levels?

²⁷This is because, although poverty rates among minorities are considerably higher than those observed among whites, whites nonetheless make up a sizable fraction of the poor. For instance, there are roughly twice as many poor whites in the United States as poor blacks (U.S. Bureau of the Census, 2005). Including Hispanics raises the minority fraction of the poor to just over half.

The admission and graduation rates of both minorities and lower-income whites might also be enhanced by a greater use of need-based scholarships in higher education, as opposed to loans or merit-based aid. Indeed, the relative use of the former has declined in recent years while the latter have grown (Besharov and Brown, 2004). But some controversies remain over the extent to which financial issues really impede college attendance and graduation among these students (Cameron and Heckman, 2001; Bowen, et al., 2005), and the extent to which need-based aid would improve attendance and retention among minorities and low-income students (Kane, 1994; Dynarski, 2004).

Other approaches to maintaining diversity do not force officials to choose between race and family background. For example, after the *Hopwood* decision eliminated the consideration of race in Texas state universities during the 1990s, the state sought officially race-neutral practices that might still disproportionately admit minority (and lower-income) students to the state system. In particular, in the late 1990s it began admitting all students who had graduated in the top 10 percent of their high school classes. Similar approaches have now been adopted by California and Florida, whose voters have eliminated the use of race in state college and university admissions in popular referenda.

It has been widely noted (e.g., Tienda and Niu, forthcoming) that the greater the extent of racial segregation in high schools, the greater the potential benefits in college admissions to minorities that the 10 percent plans might provide, since minorities are more likely to finish among the top 10 percent of students at segregated schools. On the other hand, if racial segregation is associated with weaker academic preparation and credentials for blacks, then positive effects of the 10 percent plans could be mitigated. For example, minority students in less-segregated schools may be more qualified—perhaps because of the better education they receive—but may fall outside the top 10 percent and hence lose out to less-qualified minorities from segregated schools. This also suggests that 10 percent-type plans may create incentives for potentially mobile minority (or white) parents who currently live in weak school districts to keep their families there instead of moving them to better districts, which may increase their prospects of admission but reduce the quality of their high school education.

The empirical effects of the Texas 10 percent plan on admissions to the state university system have been analyzed by Tienda and Niu (forthcoming), using data from a large longitudinal survey of high school students in the state, and by Bucks (2005), using administrative data on K-12 students in Texas that were later linked to college admissions and attendance data. Both studies find that, while the 10 percent plan is associated with somewhat higher attendance of minorities in the Texas system relative to the years immediately after the *Hopwood* decision was implemented, the share of minorities at the elite schools (such as the University of Texas and Texas A&M) lags behind what would have been observed in the presence of affirmative action policies.²⁸ Long (2004) comes to a similar conclusion, using simulations based on national data from the NELS. And the presence of blacks and Hispanics at the elite schools in the University of California system have also not yet recovered from their decline in the aftermath of the passage and implementation of Proposition 209.²⁹

University Efficiency: The “Mismatch” Hypothesis

Analyzing the effects of affirmative action on the efficiency of university admissions is not a simple matter. Significant market imperfections are likely to impede university admissions for some groups—such as imperfect information among university officials about individual candidates (or vice versa), and capital market problems that limit the access of lower-income groups to financing. Furthermore, important externalities might exist in the education process, at least along certain dimensions. For instance, students might learn more from one another in more diverse settings; indeed, the value of being able to interact with those of other ethnicities or nationalities might be growing over

²⁸This is especially true since the presence of minorities in the population of Texas has grown over time, and thus minority representation would presumably have increased by more than it did in the presence of pre-Hopwood policies. See also Kain and O’Brien (2003). Some post-Hopwood improvements in minority representation may reflect university outreach in reaction to declining minority presence, or recovery in student applications (Card and Krueger, 2004).

²⁹See Conrad and Sharpe (1996) and Card and Krueger (2004) for evidence and discussion of these issues.

time, as product and labor markets become more diverse and more international. Alternatively, race-specific or gender-specific role models might be important for some individuals in the learning process.

More broadly, it is simply erroneous to believe that university admissions have ever operated as simple meritocracies, in which slots have been rationed according to grades and test scores alone. The preferences of university officials across types of students are complex and multidimensional, as are the preferences of student applicants across colleges and universities. Many elite schools have long favored a diverse student body in terms of geographic backgrounds and student talents. Preferences for certain groups of students, such as children of alumni, have long been part of the admissions process in some places.³⁰ Furthermore, in the case of public universities the preferences of voters or taxpayers should presumably take on greater importance, which may also imply that simple meritocratic rules are not optimal. Given these preferences, the “inefficiency” of the matching process at universities cannot be simply measured by observed gaps between whites and minorities in grades or test scores—even where those gaps are substantial, and even though they are at least partly attributable to affirmative action policy.

Inefficiency associated with affirmative action in universities might be inferred if the beneficiaries of these policies perform poorly in their jobs once they graduate and are hired. Alternatively, inefficiency might also be inferred if minority students fail to graduate in large numbers and fail to be certified in their chosen professions. In this case, affirmative action might actually hurt at least some minority students by admitting them to colleges and universities for which they are less qualified. If a poor “fit”—or “mismatch”—results between them and the colleges or universities that they attend, this may actually lead to worse educational and employment outcomes over time for these students.

³⁰*Wall Street Journal* reporter Daniel Golden has written a Pulitzer Prize-winning series of articles on college admissions policies for largely white and wealthy “legacies.” See, for instance, Golden (2003).

Kane (1998) and Datcher Lounsbury and Garman (1995) present analyses of educational “mismatch.” The two analyses are quite similar, with Kane using data from the 1980 High School and Beyond (HSB) longitudinal survey, and Datcher Lounsbury and Garman using data from the National Longitudinal Study of the High School Class of 1972 (NLS72) for their main analysis, though they also try replicating part of their results with the 1980 HSB data. In addition to the admissions analysis noted earlier, these papers analyze the impact of race and college selectivity (as measured by average SAT scores) on a variety of outcomes, including college grade point average, the probability of graduating, and earnings some time after leaving college. Both studies consider blacks and whites, but Kane also studies Hispanics. Datcher Lounsbury and Garman also consider the effects of having low SAT scores at more selective schools among whites and blacks. Presumably, if affirmative action in admissions is allowing less-qualified minorities to enter more selective schools, their grades relative to whites would drop as college selectivity rose, and their dropout rates would be higher at such schools, especially for minority students with the lowest relative SAT scores. And if, on net, minorities are ultimately worse off because of these policies—as the “mismatch” hypothesis predicts—their longer-term earnings would be lower as well when admitted with weaker credentials to elite universities.

Despite their similar analyses and data, the overall findings of the two papers differ quite a bit from one another. Both studies find modest negative effects of college selectivity on grade point averages. But Datcher Lounsbury and Garman find fairly strong overall negative effects of college selectivity on graduation rates and insignificant negative effects on the earnings of blacks, driven primarily by the poor performance of those with low SAT scores at selective schools. In contrast, Kane finds zero or positive effects of college selectivity on the graduation rates of blacks (close to zero overall, but positive outside of the historically black colleges and universities) and positive effects of selectivity on later earnings.

What might account for these differences? For one thing, Datcher Lounsbury and Garman do not analyze differences in outcomes for blacks and whites over the entire range of college quality; they merely compare schools with average SAT scores above and below 1,000. And, in their simulations

where the net effects of college selectivity on overall graduation and earnings outcomes are determined, they only compare schools having median scores of 900 and 1,000. But Kane, as well as Long (2004), have showed quite convincingly that the primary effects of affirmative action are in admission to the top quintile of schools, which are above these categories in quality. Thus, the analysis in Datcher Loury and Garman seems to miss the most relevant part of the college quality spectrum with regard to affirmative action.

In addition, the limited replication results they report using the HSB data are much closer to those of Kane (who also uses these data) than the results based on the NLS72 data. Specifically, they find considerably more positive overall effects of college selectivity on graduation rates in the HSB data, and smaller negative effects for blacks with lower SAT scores. Presumably, the net effects of higher admissions to elite schools for blacks in these data would be less negative (or more positive), as Kane found. Furthermore, Kane's more positive findings with regard to college selectivity are consistent with those of Bowen and Bok (who find much higher graduation rates for blacks at elite colleges and universities than elsewhere), and also with Alon and Tienda (2005) in their analysis of state universities in Texas.

Thus, the combined results of these studies support the notion that, on average, affirmative action in university admissions generates no harm, and probably some gains, in graduation rates and later earnings for minorities who attend more elite colleges and universities. This conclusion, though, might mask some potentially important variation in the distribution of effects of affirmative action. Kane's study doesn't estimate separate effects for those attending elite schools by SAT category; nor does he analyze earnings results for those who graduate and those who do not. We thus do not know whether those who drop out have higher earnings than they would have had they not attended these more selective schools. Nor do we know whether the dropouts re-enroll in other colleges after doing so. Issues involving dropouts versus graduates are critical to these discussions, as Besharov and Brown (2004) recently show much

lower rates of graduation (and more negative trends over time) among blacks attending college than among whites.³¹

More broadly, questions remain about whether the degree of affirmative action in university admissions in the United States today is optimal, given some potentially negative effects of “mismatch” on the least qualified minority admittees, even if not among most or all such admittees. Still, Kane’s results strongly suggest that, as a group, minorities benefit substantially from affirmative action in college admissions, contrary to the predictions of the “mismatch” hypothesis.

Do these results hold up at the most elite schools, and at graduate schools, where the impact of affirmative action on admissions is strongest? Bowen and Bok (1998) suggest that they do, showing that dropout rates of minorities from very elite undergraduate schools are quite low, and that the impacts of attending these schools on their earnings and career paths more broadly are quite positive. Other studies (e.g., Alon and Tienda, 2005) confirm that graduation rates of minorities rise significantly with the quality of the school.

On the other hand, evidence in favor of the “mismatch” hypothesis for minorities at law schools was recently presented by Sander (2004). Using administrative and survey data from law schools and law students nationally, he studies a number of outcomes paralleling those considered by Kane as well as Datcher Loury and Garman—namely, first-year grade point average, probability of graduation, probability of passing the bar exam, and earnings of those who become lawyers at private firms. Overall, Sander finds that blacks have lower grades in law schools than whites, primarily due to their lower college grades and LSAT scores, and that law school grades strongly predict probabilities of graduating from law school and of passing the bar, as well as future earnings. He then claims that the racial gap in grades associated with affirmative action has large negative effects on the probabilities of finishing law

³¹In Besharov and Brown, the trend over time in college completion rates among blacks is much less positive than that in college attendance. The gap in the trend between these two rates among whites is not as stark.

school and passing the bar, which outweigh the positive effects of school “eliteness” (or selectivity) on these outcomes. Thus, he concludes that the net impact of affirmative action on these outcomes for minority law students is negative; in other words, these students would be more likely to graduate and pass the bar if they attended less selective law schools.

What is most striking to us, as recently pointed out by Ayres and Brooks (2005), is that Sander never runs what seems to be the obvious regressions to test the mismatch hypothesis in a simple way—specifically, regressions with bar passage or graduation as the dependent variable, and college grades, LSAT scores, and law school quality as the independent variables. According to the mismatch hypothesis, attending higher-quality law schools (which Sander measures with a “tier” indicator) should be associated with lower probabilities of bar passage and graduation, conditional on qualifications, especially for blacks, because the higher grades a student will get at a lower-quality school will outweigh the effects of school quality.³² Ayres and Brooks effectively run these regressions (in a slightly more complicated fashion), and find that law school quality conditional on college grades and LSAT scores increases rather than decreases bar passage and graduation rates. There are clear issues of selectivity on unobservables among students admitted to different tiers, as well as quality differences across tiers (which are based on multiple characteristics), which require further work to sort out.³³ But the implicit argument underlying Sander’s claim is that because of the lower grades blacks get at better-tier law schools, affirmative action hurts them.

Finally, the evidence clearly indicates that those blacks who graduate and pass the bar gain from attending law schools, and especially more elite schools, in terms of higher earnings. More data on the educational trajectories and earnings of dropouts and of those failing the bar exam would be useful, then, in drawing comprehensive conclusions.

³²Note that this regression parallels what is done in the Datcher Loury and Garman’s paper as well as Kane’s, in studying mismatch at the undergraduate level.

³³See, for example, Sander’s reply (2005).

Thus, Sander presents interesting data and a provocative argument. But the empirical case for the mismatch hypothesis in law schools has not been made. Clearly, though, there is more work to be done to address issues of the impact of affirmative action on minority law students and graduate students more generally.

Externalities and Efficiency: The Educational Benefits of Diversity

If positive externalities can be demonstrated from the presence of more minority students on campus, a stronger case could be made that affirmative action has some positive effects on the efficiency with which universities operate. These positive effects could occur through positive impacts on the educational outcomes of the minority students themselves or of their white peers, and through mentoring or role model effects on future minority students.

The most complete review to date of studies that find links between student diversity and educational outcomes appears in Gurin (2004). She reviews a large body of work that she and various colleagues have generated, based on two longitudinal data sets of university students in the 1980s and 1990s—one national in scope and the other based on undergraduates at the University of Michigan.³⁴ These studies measure “diversity” at the level of the university, the classroom, and self-reported informal interactions among students. They measure both “learning” and “democracy” outcomes, where the former include “active thinking processes, self-reported growth in intellectual engagement and motivation, and growth in subjectively assessed intellectual and academic skills” (p. 119), and the latter include attitudes toward civic engagement and pluralistic political participation as well as self-reported motivation to understand those of other ethnicities and backgrounds. As the data are longitudinal, the studies mostly

³⁴The national data are from the Cooperative Institutional Research Program and the UCLA Higher Education Research Institute, and cover over 11,000 students at 1,894 colleges and universities between 1984 and 1989. The Michigan study covered over 1,500 students between 1990 and 1994.

report changes over time in the two sets of outcomes, rather than levels, and how these changes are related to the experience of diversity as defined above.

In most of the studies cited, changes in the various learning and democracy outcomes are positively associated with the experience of diversity in colleges and universities, and among all major race or ethnic groups. These studies were apparently quite influential in the thinking of Justice Sandra Day O'Connor as she voted to uphold the use of race in university admissions in the Grutter case (U.S. Supreme Court, 2003).

But some questions remain about what is measured by these self-reported, somewhat subjective outcomes, and especially regarding the direction of causality between changes in outcomes and experience of diversity. For instance, those who choose (or “self-select”) into diverse informal experiences, classrooms, and even universities might be those who are already growing the most intellectually, or in terms of cultural awareness. Classroom diversity might well be correlated with course content and curricula, so that observed correlations between diversity and outcome changes could reflect either student self-selection into such courses or causal changes induced by the curricula rather than diversity per se. On the other hand, it is certainly plausible that some kinds of outcomes—such as changes in the motivation to understand (or in the actual understanding of) individuals from other backgrounds and their perspectives—might rise as a direct function of experience with diversity in the classroom or more informally, as some of these studies suggest.

In an important study focusing more on learning, Antonio et al. (2004) use experimental data from over 350 undergraduates at three universities to study the impact of diversity. They analyze the impact of both racial- and opinion-minority presence in groups on the “integrative complexity” of group discussions and individual participation. By and large, they find positive effects of both kinds of diversity on these outcomes—but especially when the interactions occurred in small groups. Given its experimental design, the study avoids some of the potential flaws in the other statistical studies reviewed above, and lends further credence to the conclusions reached by Gurin and her colleagues.

Of course, this study provides evidence from one particular experiment in one setting. More experimental work of this type would be helpful in reaching firm conclusions about the educational beneficial effects of a diverse student body. And an important issue remains measurement of educational outcomes. Economists tend to focus on the economic returns to education, in which case we would ask whether diversity appears to lead to employees who are more valued in the labor market. This may be too narrow a view, but it is important to try to focus on objective measures of educational outcomes on which all sides can agree.³⁵

As for the effects of minority or female faculty “mentoring” and “role models,” the evidence is mixed. For instance, Rothstein (1995) finds that having female faculty members as an undergraduate raises the likelihood that women choose to enter graduate study; and Neumark and Gardecki (1998) find that having a female dissertation chair reduces the time taken to complete a Ph.D. among female doctoral candidates. But these and a few other studies (Canes and Rosen, 1995; Dynan and Rouse, 1997) fail to find evidence that having female faculty or mentors leads to more majors in a particular field or better job placements. We found little research on the effects of minority faculty mentoring within universities.

AFFIRMATIVE ACTION AND GOVERNMENT CONTRACTS

The quantity and quality of studies on affirmative action in government procurement are both lower than that for employment and education. For example, on the issue of redistribution of contracts from white-owned to minority- or female-owned businesses, we know of no study that has attempted to carefully measure the overall magnitude of this shift, though Chay and Fairlie (1998) present some data suggesting that the effects of local government set-aside programs might be substantial.

³⁵Two recent contributions along these lines are Arcidiacono and Vigdor (2004) and Daniel, Black, and Smith (2000).

The evidence on the efficiency or performance of female- or minority-owned businesses that obtain more contracts as a result of affirmative action rules is somewhat inconclusive. Amendments to Section 8(a) rules on federal contracting do not allow companies to receive contracts under these provisions for longer than nine years, and apparently those who “graduate” from the program seem to perform (at least in terms of staying in business) as well as firms more generally (Stephanopoulos and Edley, 1995). On the other hand, there is some evidence of higher failure rates among firms that currently receive a high percentage of their revenues from sales to local government (Bates and Williams, 1995). The higher failure rates may be attributable to the fact that a significant fraction of the latter are “front” companies that have formed or reorganized in an attempt to gain Section 8(a) contracts. There is also evidence that failure rates can be limited with the right kinds of certification and technical assistance, especially if the reliance of the companies on governmental revenues is limited as well.

In any event, this evidence suggests that failing companies are not being “propped up” by government contracts, as is commonly alleged. But stronger data and analysis are needed in this area before conclusions can be made with a greater degree of confidence on the issue of the efficiency of minority contracting programs.

CONCLUSIONS AND DISCUSSION

What does the empirical evidence on affirmative action show? In terms of equity, these programs clearly shift employment, university admissions, and government procurement away from white males towards minorities and females, as expected. On the other hand, the magnitudes of these shifts in employment and in most universities are generally not large. Affirmative action in admissions to elite colleges and universities, as well as many graduate programs, does have large relative effects on the representation of minorities in these programs, even if the overall numbers of positions redistributed to them remain modest.

The replacement of race-based affirmative action policies in university admissions with a different set of practices—such as those based on family income or class rank within high schools—

would likely reduce the presence of minorities on selective college campuses, in some cases quite substantially. At the same time, they would do little to improve the overall numbers of positions for whites, or the average quality of students.

On the more controversial issue of whether affirmative action lowers efficiency, our review of the evidence paints a more complex picture. In the labor market, there is virtually no evidence that the qualifications or performance of females lag behind those of males because of affirmative action. In contrast, the *credentials* of minorities often lag behind those of their white counterparts—in part because they lag behind in the population, and in part because of the preferential admissions and hiring policies generated by affirmative action. But evidence of weaker *performance* in the labor market on the part of minorities who benefit from affirmative action is much more limited. Apparently, many companies can offset most of the expected performance shortfalls of those whom they hire through a variety of practices that include improved recruitment and screening, greater training efforts, and better evaluation activity on the job. And there is also evidence of positive “externalities,” or external social benefits, from affirmative action in certain sectors—such as medical care, in which minority physicians are more likely to provide care to minorities and the poor than are white physicians.

In colleges and universities, the classroom performance of minorities in colleges and universities clearly lags behind that of whites, and their dropout rates are substantially higher. Again, these developments seem at most only partly attributable to affirmative action in admissions. Minority students still seem to benefit overall, in terms of higher subsequent earnings, from their higher rates of admission to better schools (though we know little about the distribution of benefits between graduates and dropouts). The quality of the evidence of positive educational benefits to all students due to diversity can be challenged; recent experimental evidence is a step in the right direction and seems to support benefits of diversity, but more research remains to be done. The evidence of positive effects from mentoring and role models in universities is mixed.

Finally, minority-led companies that receive government procurement contracts seem to have weaker performance than those that are white-led, but these difficulties can apparently be avoided with the proper credentialing and technical assistance. The evidence on this aspect of affirmative action policy has been fairly weak to date.

Overall, the evidence suggests that affirmative action improves both opportunities and outcomes for the minority students and employees who are its direct beneficiaries. In addition, affirmative action seems to generate positive external benefits to others—such as minority and poor communities more broadly, and even perhaps white students. Yet the magnitudes of the costs borne by whites (especially white males), in terms of lost jobs at contractor establishments or lost positions at elite colleges and universities, have not been terribly high; and the costs borne by employers in the form of lower productivity also appear quite limited.

One of the most provocative arguments against affirmative action, and one of the more difficult ones to pin down empirically, is the hypothesis that affirmative action harms minorities as a result of “mismatch”—between their skills, on the one hand, and what is expected of them in universities and in the labor market, on the other. In our view, the evidence has not supported the mismatch hypothesis, and tends instead to establish gains to minorities stemming from affirmative action. But there remain open questions regarding the mismatch hypothesis, and the answer may well differ in different contexts (e.g., professional or graduate schools *vs.* undergraduate institutions).

What does the future hold for affirmative action? While EEO laws and activity are widely accepted in the United States, affirmative action programs (particularly in college and university admissions) remain under challenge. The Grutter case appears to have protected certain types of university admissions programs for a while, but popular referenda at the state level will likely continue for years to come, and other court challenges may well arise—especially as the 25-year limit generated (arbitrarily) by Justice O’Connor draws near, if not earlier. To protect themselves from further lawsuits,

university administrators will continue to tinker with their admissions policies, perhaps decreasing their reliance on direct racial preferences in favor of broader measures of student disadvantage and talents.

In the end, whether or in what form affirmative action survives will depend on whether Americans think it is *fair* to give preference to minorities or women in some contexts, to overcome the barriers they continue to face from current discrimination, past discrimination, and a variety of other causes. Views on fairness are very subjective, and sometimes impervious to empirical evidence.

Political forces and the relative political power of different groups will no doubt play a large role in how these controversies are resolved in the future as well. The rising political power of the growing Hispanic community in the United States may be a factor in how these disputes are resolved. And the needs of employers to find skilled labor, in the face of baby boomer retirements and increasingly diverse pools of workers and customers, may impact the political debate as well—if employers perceive their affirmative action policies as a benefit in the recruitment process, rather than a burden imposed on them by the federal government.³⁶

Nevertheless, we believe that the empirical evidence on the effects of EEO policies and affirmative action should inform this debate and play a central role in the formulation of any alternative approaches to the problems of disparate outcomes for minorities and women. At the same time, we emphasize that the evidence is limited in some respects. In particular, we need more data and analysis of (1) the labor market performance of affirmative action beneficiaries, especially from sector-specific studies; (2) the educational and career trajectories of those who drop out of colleges and graduate

³⁶The challenges that employers will face in finding skilled workers to replace retiring baby boomers are highlighted in an Aspen Institute report (2002). Of course, if trends in foreign outsourcing of jobs accelerate over time, these difficulties in many sectors will be offset. Furthermore, one might argue that firms are free to choose affirmative action policies if they find them useful, as opposed to having them imposed on them by the federal government (unless affirmative action requirements help them deter charges of reverse discrimination). On the other hand, given imperfect information and institutional inertia, it is unlikely that many firms would have chosen to implement these policies on their own, even though many now claim to find them helpful. It is also noteworthy that many large companies filed amicus briefs on behalf of the University of Michigan during court deliberations on the Gratz and Grutter cases, claiming that they benefit from affirmative action admissions policies, which help generate minority job applicants with strong university credentials.

programs, and the determinants of these dropout rates; (3) the benefits to businesses of affirmative action in terms of their ability to recruit skilled workers in tight labor markets; (4) the impacts of other approaches to maintaining diversity in university admissions, including those that might rely on more mixed evidence of disadvantage; and (5) the performance of minority contractors more broadly.

And, even if affirmative action survives, it is also clear that these policies are not themselves sufficient to close the educational and employment gaps that plague U.S. minorities. Of course, immigration will continue to limit the relative skills and earnings of Hispanics and (to a lesser extent) Asians; but the continuing gaps in achievement and employment plaguing African Americans merit a policy response. Thus, pre-K programs and K-12 reforms that improve student achievement, and that link them more successfully to the labor market, should be viewed as important complements to, and not necessarily substitutes for, affirmative action policies. Reducing the dropout rates of blacks admitted to colleges and universities—whether through financial aid, academic remediation and tutoring, or various personal and social supports—should remain a priority. And broader efforts to improve employment outcomes of less-educated and lower-income minority groups—such as African American men—are urgently needed as well (Holzer, Offner, and Sorensen, 2005).

Selected Works/Bibliography

- Alon, Sigal, and Marta Tienda. 2005. "Assessing the Mismatch Hypothesis: Differentials in College Graduations Rates by Institutional Selectivity." *Sociology of Education* 78: 294–315.
- Antonio, Anthony Lising, et al. 2004. "Effects of Racial Diversity on Complex Thinking in College Students." *Psychological Science* 15: 507–510.
- Arcidiacono, Peter, and Jacob L. Vigdor. 2004. "Does the River Spill Over: Estimating the Economic Returns to Attending a Racially Diverse College." Unpublished paper, Duke University.
- Aspen Institute. 2002. *Growing Together, Growing Apart*. Boulder, CO: Domestic Strategies Group.
- Athey, Susan; Chris Avery, and Peter Zemsky. 2000. "Mentoring and Diversity." *American Economic Review* 90 (4, September): 765–786.
- Attiyeh, Gregory, and Richard Attiyeh. 1997. "Testing for Bias in Graduate School Admissions." *Journal of Human Resources* 32 (3): 524–548.
- Ayres, Ian, and Richard Brooks. 2005. "Does Affirmative Action Reduce the Number of Black Lawyers?" *Stanford Law Review* 57 (6): 1807–1854.
- Badgett, Lee. 1995. "Affirmative Action in a Changing Legal and Economic Environment." *Industrial Relations* 34 (4): 489–506.
- Barbezat, Debra. 1989. "Affirmative Action in Higher Education." *Research in Labor Economics* 10: 107–156.
- Bates, Timothy, and Darrell Williams. 1995. "Preferential Procurement Programs and Minority-Owned Businesses." *Journal of Urban Affairs* 17 (1): 1–17.
- Bayard, Kimberly, Judith Hellerstein, David Neumark, and Kenneth Troske. 2003. "New Evidence on Sex Segregation and Sex Differences in Wages from Matched Employee-Employer Data." *Journal of Labor Economics* 21 (4): 887–922.
- Besharov, Douglas, and Christopher Brown. 2004. "An Exploration of the African-American Middle Class." Discussion Draft, presented at the Joint Center for Political and Economic Studies, Washington, DC, July 18.
- Black, Daniel, and Jeffrey Smith. 2004. "How Robust is the Evidence on College Quality and Earnings?" *Journal of Econometrics* 121 (1): 99–124.
- Bloch, Farrell. 1994. *Antidiscrimination Law and Minority Employment*. Chicago, IL: University of Chicago Press.
- Bobo, Lawrence, and Michael Massagli. 2001. "Stereotyping and Urban Inequality." In *Urban Inequality: Evidence from Four Cities*, edited by A. O'Connor, C. Tilly, and L. Bobo. New York: Russell Sage Foundation.
- Borjas, George. 1996. *Labor Economics*. New York: McGraw-Hill.

- Borjas, George, and Lawrence Katz. 2005. "The Evolution of the Mexican-Born Workforce in the United States." National Bureau of Economic Research, Working Paper no. 11281, Cambridge, MA.
- Bowen, William G., and Derek Bok. 1998. *The Shape of the River*. Princeton, NJ: Princeton University Press.
- Bowen, William, Martin Kurzweil, and Eugene Tobin. 2005. *Equity and Excellence in American Higher Education*. Charlottesville, VA: University of Virginia Press.
- Brown, Charles, and Mary Corcoran. 1997. "Sex-Based Differences in School Content and the Male/Female Wage Gap." *Journal of Labor Economics* 15 (3, Pt. 1): 431–465.
- Bucks, Brian. 2005. "The Effects of Texas' Top Ten Percent Plan on College Choice." Unpublished paper, University of Wisconsin–Madison.
- Cameron, Stephen, and James Heckman. 2001. "The Dynamics of Educational Attainment for Blacks, Hispanics and Whites." *Journal of Political Economy* 109 (3): 455–499.
- Campbell, John. 1996. "Group Differences and Personnel Decisions: Validity, Fairness, and Affirmative Action." *Journal of Vocational Behavior* 49 (2): 122–158.
- Cancian, Maria. 1998. "Race-Based versus Class-Based Affirmative Action in College Admissions." *Journal of Policy Analysis and Management* 17 (1): 94–105.
- Canes, Brandice, and Harvey Rosen. 1995. "Following in Her Footsteps? Faculty Gender Composition and Women's Choices of College Majors." *Industrial and Labor Relations Review* 48 (3): 486–504.
- Cantor, Joel, Erika Miles, Laurence Baker, and Dianne Baker. 1996. "Physician Service to the Underserved: Implications of Affirmative Action in Medical Education." *Inquiry* 33 (2): 167–180.
- Card, David, and Alan Krueger. 2004. "Would the Elimination of Affirmative Action Affect Highly Qualified Minority Applicants? Evidence from California and Texas." National Bureau of Economic Research, Working Paper no. 10366, Cambridge, MA.
- Card, David, and Jesse Rothstein. 2005. "Racial Segregation and the Black-White Test Score Gap." National Bureau of Economic Research, paper presented at Labor Studies Program Meeting, March, Cambridge, MA.
- Carneiro, Pedro, James J. Heckman, and Dimitriy V. Masterov. 2003. "Labor Market Discrimination and Racial Differences in Premarket Factors." National Bureau of Economic Research, Working Paper no. 10068, Cambridge, MA.
- Carnevale, Anthony, and Stephen Rose. 2003. *Socioeconomic Status, Race/Ethnicity and Selective College Admissions*. Washington, DC: Century Foundation.
- Carter, David, and Allan Sapp. 1991. "Police Education and Minority Recruitment: The Impact of a College Requirement." Discussion Paper, Police Executive Research Forum.
- Carter, Stephen. 1991. *Reflections of an Affirmative Action Baby*. New York: Basic Books.

- Charles, Camille Zubrinsky. 2001. "Processes of Racial Residential Segregation." In *Urban Inequality: Evidence from Four Cities*, edited by A. O'Connor, C. Tilly, and L. Bobo. New York: Russell Sage Foundation.
- Chay, Kenneth, and Robert Fairlie. 1998. "Minority Business Set-Asides and Black Self-Employment." Unpublished paper, University of California, Berkeley.
- Coate, Stephen, and Glenn Loury. 1993. "Will Affirmative Action Policies Eliminate Negative Stereotypes?" *American Economic Review* 83 (5): 1220–1240.
- Code of Federal Regulations*. 2001. Title 28, Volume 2, Section 50.14.
- Conrad, Cecelia, and Rhonda Sharpe. 1996. "The Impact of the California Civil Rights Initiative (CCRI) on University and Professional School Admissions and the Implications for the California Economy." *Review of Black Political Economy* 25 (1): 13–59.
- Cutler, David, and Edward Glaeser. 1997. "Are Ghettos Good or Bad?" *Quarterly Journal of Economics* 107 (3): 827–872.
- Dale, Stacy Berg, and Alan Krueger. 2002. "Estimating the Payoff to Attending a More Selective College: An Application of Selection on Observables and Unobservables." *Quarterly Journal of Economics* 117 (4): 1491–1528.
- Daniel, Kermit, Dan Black, and Jeffrey Smith. 2000. "Racial Differences in the Effects of College Quality and Student Body Diversity on Wages." In *Diversity Challenged*, edited by G. Orfield. Cambridge, MA: Harvard Education Publishing Group.
- Darity, William A., and Patrick L. Mason. 1998. "Evidence on Discrimination in Employment: Codes of Color, Codes of Gender." *Journal of Economic Perspectives* 12 (2): 63–90.
- Datcher Loury, Linda, and Kenneth Garman. 1995. "College Selectivity and Earnings." *Journal of Labor Economics* 13 (2): 289–308.
- Davidson, Robert, and Ernest Lewis. 1997. "Affirmative Action and Other Special Considerations Admissions at the University of California, Davis, School of Medicine." *Journal of the American Medical Association* 278 (14): 1153–1158.
- Dickens, William, and Thomas Kane. 1999. "Racial Test Score Differences as Evidence of Reverse Discrimination: Less than Meets the Eye." *Industrial Relations* 28 (3): 331–363.
- Dynan, Karen, and Cecelia Rouse. 1997. "The Underrepresentation of Women in Economics: A Study of Undergraduate Economics Students." *Journal of Economic Education* 28 (45): 350–368.
- Dynarski, Susan. 2004. "The New Merit Aid." In *College Choices: The Economics of Where to Go, When to Go, and How to Pay for It*, edited by C. Hoxby. Chicago: University of Chicago Press.
- Elmore, Charles, and Robert Blackburn. 1983. "Black and White Faculty in White Research Universities." *Journal of Higher Education* 54 (1): 1–15.
- Epstein, Richard. 1992. *Forbidden Grounds: The Case against Employment Discrimination Laws*. Cambridge, MA: Harvard University Press.

- Farley, Reynolds. 2001. "Metropolises of the Multi-City Study of Urban Inequality: Social, Economic, Demographic and Racial Issues in Atlanta, Boston, Detroit and Los Angeles." In *Urban Inequality: Evidence from Four Cities*, edited by A. O'Connor, C. Tilly, and L. Bobo. New York: Russell Sage Foundation.
- Fix, Michael, and Raymond Struyk. 1994. *Clear and Convincing Evidence*. Washington, DC: Urban Institute Press.
- Furchtgott-Roth, Diana, and Christina Stolber. 1999. *Women's Figures: An Illustrated Guide to the Economic Progress of Women in America*. Washington DC: American Enterprise Institute.
- Fryer, Roland G., Jr., and Steven D. Levitt. 2004a. "Understanding the Black-White Test Score Gap in the First Two Years of School." *Review of Economics and Statistics* 86 (2): 447–464.
- Fryer, Roland G., Jr., and Steven D. Levitt. 2004b. "The Black-White Test Score Gap through Third Grade." Unpublished paper, Harvard University.
- Golden, Daniel. 2003. "Family Ties: Preference for Alumni Children in College Admission Draws Fire." *Wall Street Journal*, Jan. 15.
- Goldin, Claudia, and Cecilia Rouse. 2000. "Orchestrating Impartiality: The Impact of "Blind" Auditions on Female Musicians." *American Economic Review* 90 (4): 714–741.
- Griffin, Peter. 1992. "The Impact of Affirmative Action on Labor Demand: A Test of Some Implications of the LeChatelier Principle." *Review of Economics and Statistics* 74 (2): 251–260.
- Gurin, Patricia. 2004. "The Educational Value of Diversity." In *Defending Diversity: Affirmative Action at the University of Michigan*, edited by P. Gurin, J. Lehman, and E. Lewis. Ann Arbor, MI: University of Michigan Press.
- Hanushek, Eric. 2002. "The Failure of Input-Based Schooling Policies." National Bureau of Economic Research Working Paper no. 9040, Cambridge, MA.
- Hanushek, Eric, John Kain, and Steven Rivkin. 2002. "New Evidence on Brown v. Board of Education: The Complex Effects of School Racial Composition on Achievement." National Bureau of Economic Research Working Paper no. 8741, Cambridge, MA.
- Heckman, James J. 1998. "Detecting Discrimination." *Journal of Economic Perspectives* 12 (2): 101–116.
- Holzer, Harry. 1996. *What Employers Want: Job Prospects for Less-Educated Workers*. New York: Russell Sage Foundation.
- Holzer, Harry. 1998. "Why Do Small Establishments Hire Fewer Blacks than Larger Ones?" *Journal of Human Resources* 33 (4): 896–914.
- Holzer, Harry, and David Neumark. 1999. "Are Affirmative Action Hires Less Qualified?" *Journal of Labor Economics* 17 (3): 534–569.
- Holzer, Harry, and David Neumark. 2000a. "Assessing Affirmative Action." *Journal of Economic Literature* 38 (3): 483–568.

- Holzer, Harry, and David Neumark. 2000b. "What Does Affirmative Action Do?" *Industrial and Labor Relations Review* 53 (2): 240–271.
- Holzer, Harry, and Paul Offner. 2005. "Trends in Employment among Less-Educated Young Men." In *A Boat That Didn't Rise*, edited by R. Mincy. Washington, DC: Urban Institute Press.
- Holzer, Harry, Paul Offner, and Elaine Sorensen. 2005. "Declining Employment among Young Black Men: The Role of Incarceration and Child Support." *Journal of Policy Analysis and Management* 24 (2): 329–350.
- Hyer, Patricia. 1985. "Affirmative Action for Women Faculty: Case Studies of Three Successful Institutions." *Journal of Higher Education* 56 (3): 282–299.
- Ihlanfeldt, Keith, and David Sjoquist. 1998. "The Spatial Mismatch Hypothesis: A Review of Recent Studies and Their Implications for Welfare Reform." *Housing Policy Debate* 9 (4): 849–892.
- Jacob, Brian. 2002. "Where the Boys Aren't: Non-Cognitive Skills, Returns to School, and the Gender Gap in Higher Education." *Economics of Education Review* 21 (6): 589–598.
- Johnson, William, and Derek Neal. 1998. "Basic Skills and the Black-White Earnings Gap." In *The Black-White Test Score Gap*, edited by C. Jencks and M. Phillips. Washington, DC: Brookings Institution.
- Kahlenberg, Richard. 1996. *The Remedy: Class, Race and Affirmative Action*. New York: Basic Books.
- Kain, John, and Daniel O'Brien. 2003. "Hopwood and the Top 10 Percent Law: How They Have Affected the College Enrollment Decisions of Texas High School Graduates." Unpublished paper, University of Texas at Dallas.
- Kane, Thomas. 1994. "College Entry by Blacks since 1970: The Role of College Costs, Family Background, and the Returns to Education." *Journal of Political Economy* 102 (5): 878–911.
- Kane, Thomas. 1998. "Racial Preferences and Higher Education." In *The Black-White Test Score Gap*, edited by C. Jencks and M. Phillips. Washington, DC: Brookings Institution.
- Keith, Steven, Robert Bell, and Albert Williams. 1987. *Assessing the Outcome of Affirmative Action in Medical Schools*. Los Angeles: RAND.
- Kolpin, Van, and Larry Singell. 1996. "The Gender Composition and Scholarly Performance of Economics Departments: A Test for Employment Discrimination." *Industrial and Labor Relations Review* 49 (3): 408–423.
- Krueger, Alan. 2003. "Inequality: Too Much of a Good Thing?" In *Inequality in America: What Role for Human Capital Policies?*, edited by J. Heckman and A. Krueger. Cambridge, MA: MIT Press.
- Krueger, Alan, Jesse Rothstein, and Sarah Turner. 2004. "Race, Income and College in 25 Years: The Legacy of Separate and Unequal Schooling." Unpublished paper, Princeton University.
- Landes, William M. 1968. "The Economics of Fair Employment Laws." *Journal of Political Economy* 76 (4, July/August): 507–552.

- Leonard, Jonathan. 1984. "Anti-Discrimination or Reverse Discrimination? The Impact of Changing Demographics, Title VII, and Affirmative Action on Productivity." *Journal of Human Resources* 19 (2): 145–174.
- Leonard, Jonathan. 1990. "The Impact of Affirmative Action Regulation and Equal Opportunity Law on Employment." *Journal of Economic Perspectives* 4 (4): 47–63.
- Light, Audrey, and Manuelita Ureta. 1995. "Early-Career Work Experience and Gender Wage Differentials." *Journal of Labor Economics* 13 (1): 121–154.
- Long, Mark. 2004. "Race and College Admissions: An Alternative to Affirmative Action?" *Review of Economics and Statistics* 86 (4): 1020–1033.
- Lott, John. 2000. "Does a Helping Hand Put Others at Risk? Affirmative Action, Police Departments, and Crime." *Economic Inquiry* 38 (2): 239–277.
- Loury, Glenn. 2002. *The Anatomy of Racial Inequality*. Cambridge, MA: Harvard University Press.
- Lovrich, Nicholas, and Brent Steel. 1983. "Affirmative Action and Productivity in Law Enforcement Agencies." *Review of Public Personnel Administration* 4 (1): 55–66.
- Lundberg, Shelley. 1991. "The Enforcement of Equal Opportunity Laws under Imperfect Information: Affirmative Action and Alternatives." *Quarterly Journal of Economics* 106 (1): 309–326.
- Lundberg, Shelly, and Richard Startz. 1983. "Private Discrimination and Social Intervention in Competitive Labor Markets." *American Economic Review* 73 (3): 340–347.
- Neal, Derek. 2002. "How Vouchers Could Change the Market for Education." *Journal of Economic Perspectives* 16 (4): 25–44.
- Neumark, David. 1996. "Sex Discrimination in Restaurant Hiring: An Audit Study." *Quarterly Journal of Economics* 111 (3): 915–941.
- Neumark, David, and Rosella Gardecki. 1998. "Women Helping Women? Role Model and Mentoring Effects on Female Ph.D. Students in Economics." *Journal of Human Resources* 33 (1): 220–246.
- Pager, Devah. 2003. "The Mark of a Criminal Record." *American Journal of Sociology* 108 (5): 937–975.
- Raphael, Steven. 2002. "Anatomy of *The Anatomy of Racial Inequality*." *Journal of Economic Literature* 40 (4): 1202–1214.
- Rothstein, Donna. 1995. "Do Female Faculty Influence Female Students' Education and Labor Market Attainments?" *Industrial and Labor Relations Review* 48 (3): 515–530.
- Sander, Richard. 2004. "A Systematic Analysis of Affirmative Action in American Law Schools." *Stanford Law Review* 57 (4): 368–483.
- Sander, Richard. 2005. "Responses & Reply—A Reply to Critics." *Stanford Law Review* 57 (6): 1963–2016.

- Silva, Jay, and Rick Jacobs. 1993. "Performance as a Function of Increased Minority Hiring." *Journal of Applied Psychology* 78 (4): 591–601.
- Sowell, Thomas 2005. *Affirmative Action around the World: An Empirical Analysis*. New Haven, CT: Yale University Press.
- Stephanopoulos, George, and Christopher Edley. 1995. "Review of Federal Affirmative Action Programs." Unpublished White House Document, Washington, DC.
- Steele, Claude. 1997. "A Threat in the Air: How Stereotypes Shape Intellectual Identity and Performance." *American Psychologist* 52 (6, June): 613–629.
- Steele, Shelby. 1990. *The Content of Our Character*. New York: St. Martins Press.
- Thernstrom, Stephan, and Abigail Thernstrom. 1997. *America in Black and White: One Nation, Indivisible*. New York: Simon and Schuster.
- Thernstrom, Abigail, and Stephen Thernstrom. 2003. *No Excuses: Closing the Racial Gap in Learning*. New York: Simon and Schuster.
- Tienda, Marta, and Sunny Niu. Forthcoming. "Flagships, Feeders and the Texas Top 10% Plan." *Journal of Higher Education* 76.
- U.S. Bureau of the Census. 2005. *Income, Poverty and Health Insurance Coverage in the United States, 2004*. Series P-60, Washington, DC: GPO.
- U.S. Supreme Court. 2003. *Grutter v. Bollinger et al. Certiorari to the United States Court of Appeals for the Sixth Circuit*.
- Vernon-Gerstenfeld, Susan, and Edmund Burke. 1985. "Affirmative Action in Nine Large Companies: A Field Study." *Personnel* 62 (4): 54–60.
- Waldfogel, Jane. 1998. "Understanding the "Family Gap" in Pay for Women with Children." *Journal of Economic Perspectives* 12 (1): 137–156.
- Welch, Finis. 1976. "Employment Quotas for Minorities." *Journal of Political Economy* 84 (4, Pt. 2): S105–S139.
- Wright, Peter, Stephen Ferris, Janine Hiller, and Mark Kroll. 1995. "Competitiveness through Management of Diversity: Effects on Stock Market Valuation." *Academy of Management Journal* 38 (1): 272–287.
- Yinger, John. 1998. "Evidence on Discrimination in Consumer Markets." *Journal of Economic Perspectives* 12 (2): 23–40.