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Perceived Criminality, Criminal Background Checks, and the Racial Hiring Practices of Employers

Harry J. Holzer
Georgetown Public Policy Institute
Georgetown University
E-mail: hjh4@gunet.georgetown.edu

Steven Raphael
Goldman School of Public Policy
University of California, Berkeley
E-mail: raphael@socrates.berkeley.edu

Michael A. Stoll
School of Public Policy and Social Research
University of California, Los Angeles
E-mail: mstoll@ucla.edu

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Abstract

In this paper, we analyze the effect of employer-initiated criminal background checks on the likelihood that employers hire African-Americans. We find that employers who check criminal backgrounds are more like to hire African-American workers, especially among men. This effect is stronger among those employers who report an aversion to hiring those with criminal records than among those who do not. We also find similar effects of employer aversion to ex-offenders and their tendency to check backgrounds on their willingness to hire other stigmatized workers, such as those with gaps in their employment history. These results suggest that, in the absence of criminal background checks, employers discriminate statistically against black men and/or those with weak employment records. Such discrimination appears to contribute substantially to observed employment and earnings gaps between white and black young men.

1. Introduction

At current incarceration rates, the Bureau of Justice Statistics (BJS) estimates that approximately 9 percent of all men will serve some in state or federal prisons. These projections differ significantly by race and ethnicity, with figures of 28 percent for black males, 16 percent for Hispanic males, and 4 percent for white males (U.S. Bureau of Justice Statistics 1997).[1] The BJS also estimates that the median time served for prisoners released during the late 1990s was less than two years. In combination, these two pieces of information suggest that at any point in time a large minority of non-institutionalized men have served prison sentences. Moreover, for certain sub-groups of the population, African-Americans in particular, the proportion with past criminal convictions who have served time may be quite large.[2]

The labor market prospects of ex-offenders are likely to be impacted by whether employers have access to their criminal history records. Employers may be reluctant to hire job applicants with criminal histories for fear that such applicants may harm a customer or be more likely to steal. If employers can and do review criminal history records, individuals with past convictions are likely to be excluded from consideration.[3] Given the high proportion of blacks who have served time, one might argue that such exclusion should have particularly adverse consequences for African-Americans.

What is less obvious is that whether employers review criminal history records may also impact the labor market prospects of individuals without criminal records. If accessibility to criminal history information is limited (due to cost, state prohibitions, or the incompleteness of state and federal records), employers may infer the likelihood of past criminal activity from such

[1]We report figures for men only since the overwhelming majority of federal and state prison inmates are male (92 and 95 percent, respectively).

[2] We use the terms black and African American interchangeably to refer to people of African descent.

[3]In addition, individuals who serve time fail to accumulate work experience, sever ties with potential employers, and may experience an erosion of skills while incarcerated, all factors that are likely to harm one's employment prospects. For discussion of these issues, see Freeman (1992), Grogger (1995), and Kling (1999), as well as a review by Holzer et. al. (2002) .

traits as gender, race, or age. Such statistical discrimination would adversely affect the employment outcomes of individuals with clean histories that belong to demographic groups with high conviction rates. Again, this negative effect is likely to disproportionately impact African-Americans, though the segment of the black population affected by such discrimination is distinct from the segment that is excluded from employment opportunities by employer-initiated criminal background checks.

These arguments suggest that the net effect of employer-initiated criminal background checks on the employment prospects of African-Americans is theoretically ambiguous. Employers who review criminal history records will be more likely to eliminate black applicants based on information revealed through the search while employers who do not run background checks may eliminate black applicants based on perceived criminality. Moreover, it is unclear which of these effects, if either, should predominate. In this paper, we analyze the effect of employer-initiated criminal background checks on the hiring of African-Americans. Using establishment level data for four metropolitan areas, we assess whether the race of the most recently hired employee is impacted by whether the employer investigates the criminal backgrounds of job applicants. In addition, we investigate whether the impact of criminal background checks varies with the intensity of the employer's aversion to workers with criminal histories. One would expect such heterogeneity if employers who are more averse to hiring ex-offenders are more likely to statistically discriminate on the basis of race.

We find that employers who check criminal backgrounds are more likely to hire African-American workers, especially among men. This effect is stronger among those employers who report an aversion to hiring those with criminal records than among those who do not. We also find similar effects of employer aversion to ex-offenders and their tendency to check backgrounds on their willingness to hire other stigmatized workers, such as those with gaps in their employment history. These results suggest that, in the absence of criminal background checks, employers discriminate statistically against black men and/or those with weak employment records. Such discrimination appears to contribute substantially to observed

employment and earnings gaps between young white and black men.

2. Criminal History Records and Black Hiring Outcomes

A. Employer preferences and access to criminal justice information

There are several reasons why employers may consider information from criminal history records in screening potential employees. To start, certain occupation are closed to individuals with felony conviction under state and in some cases, federal law (Hahn 1991). Examples include jobs requiring contact with children, certain health services occupations, and employment with firms providing security services. In addition, in many states employers can be held liable for the criminal actions of their employees. As articulated by Bushway (1996), "..employers who know, or should have known, that an employee has had a history of criminal behavior may be liable for the employee's criminal or tortuous acts." Under the theory of negligent hiring, employers may be exposed to punitive damages as well as liability for loss, pain, and suffering (Craig 1987).[4] Finally, employers who need to fill positions where employee monitoring is imperfect may place a premium on trustworthiness. To the extent that past criminal activity signals a lack of trustworthiness, employers may take such information into account when screening applicants.[5]

Employer aversion to applicants with criminal history records is clearly evident in the

[4]Craig (1987) cites several examples where employers were held responsible for the criminal acts of their employees under the theory of negligent hiring, including judgement against the owner of a taxi company and a security services firm for sexual assaults committed by employees. In one cited instance involving a sexual assault committed by an apartment manager, the owner of an apartment complex was found negligent for not taking into account gaps in the manager's work history in the hiring decision.

[5]Whether the employer can legally access and consider such information in making hiring decisions is another matter. A 1976 Supreme Court decision ruled arrest and prior conviction records are public given that the initial source of information was public records (Bushway 1996). Hence, non-criminal justice employees accessing criminal history records does not violate a privacy right. Moreover, who can access records and the extent of information available (for example, arrests and prior convictions vs prior conviction only) is determined by individual states (U.S. Department of Justice 1999). The extent to which employers can consider criminal history records is subject to both federal and state guidelines. The Equal Employment Opportunities Commission guidelines prohibit "blanket exclusions" of applicants with criminal records. However, employers can consider criminal histories so long as the severity of the offense is related to the applicant's ability to effectively perform the job and so long as the employer considers the time lapsed since offending in coming to a decision (Bushway 1996).

establishment level data that we analyze. Figure 1 presents the distribution of employer responses to a question inquiring about the likelihood that the employer would be willing to accept an applicant with a criminal record.[6] Over 60 percent of employers indicate that they would "probably not" or "definitely not" be willing to hire such an applicant, with "probably not" being the modal response.[7] Since these data pertain to employers who have recently hired low-skilled workers (employers who are perhaps the most likely to employ ex-offenders), these results imply that the large majority of employers are unwilling to hire ex-offenders.

Moreover, employer aversion to hiring applicants with criminal backgrounds is stronger on average than employer aversion to hiring other groups of commonly stigmatized workers. Figure 2 presents the distribution of employer responses to similarly-worded questions inquiring about employer willingness to hire welfare recipients, applicants with a GED, applicants who present employment histories with large unaccounted for gaps, and applicants who have been unemployed for a year or more. In all instances, employers are considerably less averse to hiring these groups. Employers exhibit the most aversion to hiring applicants with spotty work histories (a characteristics that one might interpret as indirectly signaling past incarceration), with roughly 41 percent indicating that they probably or definitely would not hire such applicants. Even for this group, however, the proportion unwilling to hire such workers is roughly 75 percent of the proportion of employers that are unwilling to hire ex-offenders. Hence, Figures 1 and 2 indicate that the demand for ex-offenders is particularly low absolutely and relative to the demand for other low-skilled and potentially stigmatized groups of applicants.

The ability of employers to act on this aversion, and the nature of the action in terms of hiring and screening behavior, will depend on employers' accessibility to criminal history record information. Acquiring information on arrest, conviction, and time served for non-federal

[6]The data were collected in the early 1990s and cover establishments in the Atlanta, Boston, Detroit, and Los Angeles metropolitan areas that hire workers without college degrees. The data source and sampling frame will be discussed in detail below.

[7]These distributions are similar across the four metropolitan areas covered by the survey.

offenses, requires querying central state repositories. Each state and the District of Columbia maintain a central repository where information on offenses occurring within the state is housed and from which criminal history information is disseminated. All law enforcement agencies within a state are required to report arrest and disposition information to the central repository for all serious offenses (U.S. Department of Justice 1999).[8]

In its most recent review of state privacy and security legislation, the U.S. Department of Justice concludes that criminal history record information is increasingly becoming more available to non-criminal justice users (US Department of Justice 1999). Nearly all states make a distinction between arrest records and conviction records. In general states are less likely to freely disseminate information on arrests, especially arrests for cases that are still open or have occurred within the previous year. States tend to place fewer restrictions on non-criminal justice access to conviction records. Currently, 23 states have some form of public access or freedom of information statutes that pertain to some aspect of criminal history record information.[9]

In the data that we analyze, a sizable minority of employers use criminal background checks to screen potential employees. Figure 3 presents the distribution of employer responses to a question concerning the frequency with which employers check the criminal background of job applicants. Approximately 32 percent of employers in our sample say that they always check, 17 percent indicate that they check sometimes, while 51 percent indicate that they never check criminal backgrounds. Evaluating the Justice Department's conclusion regarding the greater accessibility of criminal history records would require comparing the distribution presented in Figure 3 at two points in time.[10] Since the data used to construct Figure 3 pertain to

[8]These repositories are the sources used to generate rap sheets for law enforcement officials.

[9]In addition to the greater openness of state repositories, several services have emerged that perform nationwide criminal history record reviews for small fees. An internet search of the term "criminal history record" will turn up several companies who will perform nation-wide criminal background checks (allegedly accounting for offenses in all 50states) for as little as $15. In addition, well-known security services firms such as Pinkerton offer basic and extensive background checks for employers as well as other non-criminal justice clients. However, some concerns have been raised about potential inaccuracies in the data provided by these private services, and especially on the extent to which they distinguish arrest from conviction information (U.S. Department of Labor, 2001).

[10]To be sure, easier employer access to criminal history records is a necessary but not sufficient condition for an

the early 1990s, a more recent employer survey for the same set of metropolitan areas would be needed. While we do not have such data for all of the areas included in this early survey, we have conducted a more recent survey of employers in Los Angeles (one of the metropolitan areas in the earlier sample) that can be used to assess whether, for this area at least, the use of this screening tool has changes over time.

Figure 4 presents the distribution of employer responses to the question concerning their use of criminal background checks for employers located in Los Angeles that were surveyed during the years 1993/1994 and during the year 2001. There is a sizable increase in the proportion of employers that indicate that they always use criminal background checks (from 0.32 to 0.46), a slight increase in the proportion indicating that they sometimes check (from 0.16 to 0.18), and a notable decline in the proportion indicating that they never check criminal backgrounds (from 0.52 to 0.37). Hence, the noted trend towards greater accessibility to criminal history records is supported by changes in employer screening behavior observed for the Los Angeles metropolitan area.

B. The availability of criminal history records and employer hiring decisions

The effect of employer-initiated criminal background checks on the employment outcomes of African-Americans will depend in part on the manner in which employers make use of such information. Some employers may view the potentially lower productivity of ex-offenders as the equivalent of a payroll tax that effectively reduces marginal product. If this is the case, employers may offer ex-offenders employment, but at reduced wages.

An alternative, and perhaps more likely, response is that many employers will perceive the potential downside of employing ex-offenders as so large that marginal wage reductions would not constitute sufficient compensation. Such employers will avoid hiring ex-offenders all together.[11] Given the overwhelmingly negative response of employers to the question regarding

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increase in employer use of this screening device.

[11] This likelihood becomes greater when minimum wages and other sources of rigidity in a firm's occupational wage structure reduce the employer's ability to offer employment at lower wages.

their willingness to hire workers with criminal histories, such a quantity response seems to be the more likely margin of adjustment. Based on this reasoning, we focus on hiring decisions in our theoretical discussion and the empirical work below.

The impact of an employer-initiated criminal background check on the likelihood that the employer hires African-American applicants is theoretically ambiguous. On the one hand, given that blacks are more likely to have a prior felony conviction, employers that remove applicants from consideration based on the results of background checks should be more likely to exclude African-Americans from consideration. Holding all else constant, this would surely reduce the probability of hiring a black applicant.

On the other hand, in the absence of a criminal background check, an employer may infer the likelihood of past criminal activity via visible markers such as race or age. If the tendency of employers is to over-estimate the likelihood that black applicants have prior felony convictions, the information infusion associated with a systematic background check may actually increase the likelihood that an African-American applicant is hired. Of course, this information effect from a background check (which essentially eliminates the impact of statistical discrimination) would counter the exclusionary effect associated with the higher incidence of previous felonies among African-American applicants. *A priori*, one cannot sign the net impact on the likelihood of hiring a black worker.

To illustrate this point more formally, we employ a simplified version of the statistical discrimination model presented by Altonji and Pierret (2001). Let v_i be the productivity of a job applicant *i* which is determined by the equation

$$v_i = \beta_0 + \beta_1 S_i + \beta_2 C_i + \beta_3 B_i + \eta_i, \tag{1}$$

where S_i is educational attainment, C_i is a measure of "criminality" which increases with the applicant's propensity to offend, B_i is an indicator variable for black applicants, η_i is a mean-zero random error term which is un-correlated with race, criminality, and schooling, and β_0 through

β_3 are parameters. Assume that employers hire all applicants with positive productivity (–i.e, $v_i>0$) and that criminality negatively affects worker productivity ($\beta_2<0$). Criminality is determined by educational attainment, race, and a mean zero random component according to the equation

$$C_i = \alpha_0 + \alpha_1 S_i + \alpha_2 B_i + \varepsilon_i, \tag{2}$$

where α_0 through α_2 are parameters, ε_i is a mean-zero random disturbance which is uncorrelated with schooling and race, and all other variables are defined as above. The parameter α_2 provides the mean difference in the tendency to engage in criminality between blacks and non-blacks, which is assumed to be positive. As written, the difference does not vary with educational attainment.[12]

We begin with the case where employers have full access to the criminal history records of applicants. The difference between the likelihood that the employer will hire a non-black applicant and the likelihood of hiring a black applicant will be an increasing function of the average productivity difference between the two groups of applicants. This follows from the employer's hiring rule. The difference in the expected value of productivity is given by

$$E(v_i|S,B=0) - E(v_i|S,B=1) = -\beta_3 + \beta_2[E(C|S,B=0) - E(C|S,B=1)]. \tag{3}$$

Since the difference between the conditional expectation of *C* on the right hand side of this equation is equal to the negative of the coefficient on *B* in equation (2), the difference in expected productivity can be written as

$$E(v_i|S,B=0) - E(v_i|S,B=1) = -\beta_3 - \beta_2\alpha_2. \tag{4}$$

[12] The fact that, controlling for education, blacks are more likely to engage in criminal behavior is well-established (e.g., Freeman, *op. cit.*), and likely reflects lower labor market opportunities and higher rates of growing up in poor and/or female-headed families, among other factors.

Since employers are assumed to hire all workers with positive productivity, this mean productivity difference will lower the relative likelihood that the firm hires black workers. Moreover, the higher average criminality among blacks contributes to the relatively lower likelihood that a black applicant is hired. Note, in this instance, employers observe the true value of C_i, a fact which is more likely to harm the employment prospects of blacks on average.

Now suppose that employers cannot review criminal history records. One possibility would be that employers ignore the relationships in equation (2) and make hiring decisions based only on the direct observable effects of schooling and race on productivity given by equation (1). This would involve ignoring the relationship between race and criminality and would eliminate the expected difference in productivity between black and non-black job applicants operating through this relationship. Alternatively stated, employers would not statistically discriminate on the basis of race in order to avoid workers with criminal history records. If this were an accurate description of employer behavior, then limiting access to criminal history records would unambiguously increase the relative hiring rates of African-American applicants.

However, if employers are able to formulate expectations of the effects of race and schooling on criminality, one might expect that employers would take these expectations into account when making hiring decisions. One manner of modeling the process by which employers "estimate" the criminality of job applicants is to assume that employers know the parameters of the criminality equation (2). Such an estimate might be considered "rational" in the sense that employers do not systematically under-estimate the criminality of minorities (as in the previous example) or over-estimate the relationship (as discussed below). Under these assumption, employers estimate criminality based on schooling and race according to the equation

(5)
$$E(C|S,B) = \alpha_0 + \alpha_1 S_i + \alpha_2 B_i .$$

Substituting this conditional expectation into equation (1), an employer's estimate of a given applicant's productivity in the absence of perfect information on criminal history records is given by

(6) $$E(v|S,B) = \beta_0 + \beta_2\alpha_0 + (\beta_1 + \beta_2\alpha_1)S_i + (\beta_3 + \beta_2\alpha_2)B_i.$$

Equation (6) illustrates a common feature of models of statistical discrimination. Since the employer cannot observe criminality, C_i, the employer will place extra weight on the correlates of criminality (race and schooling, in this example) in formulating expectation about the likely productivity of the job applicant.[13]

In this instance, the difference between the likelihood of hiring a non-black applicant and the likelihood of hiring a black applicant will again be an increasing function of the difference in the expected productivity between the two groups, or

(7) $$E(v_i|S,B=0) - E(v_i|S,B=1) = -\beta_3 - \beta_2\alpha_2,$$

which is equivalent to the expected productivity differential when criminal history records are perfectly accessible. *Hence, if employers accurately estimate the relationship between race and criminality, increasing access to criminal history records will not affect the relative hiring rates of blacks.*[14]

Of course, this result depends critically on the assumption that employers accurately estimate the relationship between criminality and race. If employers systematically over-estimate the racial difference in criminality (i.e., perceived α_2 is more negative than actual α_2), then the expected difference in productivity given by equation (7) will be larger than the actual difference. When this is the case, increasing employer access to criminal history records would actually increase the likelihood that establishments hire African-Americans, since the positive hiring effect of eliminating statistical discrimination would swamp the proportion of applicants

[13]Hence, if employers set wages according to expected productivity, a regression of wages on schooling and education that omitted criminality from the regression specification would yield a more negative coefficient on the black dummy variable than a regression that included criminality in the specification directly.

[14]Of course, the composition of the pools of who is hired and who is not will change. Statistical discrimination will clearly harm some applicants with positive productivity while benefiting others with negative productivity.

that are excluded due to revelation of a criminal past.[15]

In many economic models of statistical discrimination, it is often assumed that the pursuit of profits will eventually cause an alignment between expectations and reality (see Aigner and Cain 1977, Altonji and Pierret 2001, Lundberg and Startz 1983). The basic argument is that firms who consistently under or over-estimate the relationship between a signal and an unobservable factor that affects labor productivity (such as race and criminality) will suffer as a consequence. In the example analyzed here, however, the underlying relationship employers would need to assess has changed considerably over the past two decades. Moreover, the sharp increase in prison incarceration rates among young black males may easily lead to a period of over-estimated criminality that only time and experience will undo.[16] Regardless, the model illustrates how the net effect of increasing or restricting access to criminal history records on the hiring rates of African-Americans is an empirical issue.

To date, there is little empirical research on the effects of employer-initiated criminal background checks on establishment-level hiring outcomes. However, there is one study that uses microdata to investigate whether state policy regarding the openness of criminal history records impacts African-American average earnings and unemployment rates. Bushway (1996) finds some evidence the labor market outcomes of African-Americans are better in states where employers can more easily access criminal history records.

3. Empirical Strategy and Description of the Data

The theoretical discussion presented above indicates that the impact of employer access

[15]The opposite case where employers under-estimate the racial difference in criminality was discussed in it's extreme form above (where employers ignore the relationship between criminality and race, altogether). Under such conditions increasing employer accessibility to criminal history records would reduce the relative hiring rates of African-Americans.

[16]Moreover, it is not particularly clear that time and experience will undo employer mis-perceptions. In fact, the response of black job applicants to such mis-perceptions could potentially create a negative feedback loop whereby erroneous employer beliefs are eventually made correct. For example, suppose that some black applicants, tired of being labeled as a potentially problematic employee, withdraw from the legitimate labor force and devote more efforts to illegitimate pursuits. Eventually, this may increase the proportion of blacks with criminal history records, dragging reality into line with employer mis-perceptions, rather than the other way around. For a thorough discussion of such processes, see Loury (2002).

to criminal history records on black hiring rates depends on the extent to which employers statistically discriminate in the absence of such information. Moreover, the accuracy with which employers estimate the relationship between race and criminality will impact the net effect of criminal background checks. Since this net effect is theoretically ambiguous, this question is inherently empirical. In this section we outline a strategy for assessing the consequences of employer-initiated criminal background checks on firm hiring outcomes.

We estimate the effect of employer-initiated criminal background checks on the likelihood that an employer's most recently hired employee is African-American. Using a sample of establishments, we estimate a series of linear probability models where the dependent variable is a dummy variable indicating that the most recent hire is black and the key explanatory variable is an indicator variable set to one if the employer uses criminal background checks in screening applicants for the recently-filled position. The principal identification problem encountered concerns the possibility that whether employers check criminal backgrounds is likely to be endogenously determined by the criminal background of their typical applicant. Employers that rely heavily on black workers may be more likely to check criminal backgrounds as a result of the higher past conviction rates of black applicants. Omitting the composition of the applicant pool from the analysis would thus create a spurious positive correlation between employer use of criminal background checks and the likelihood of hiring black workers.

There is considerable evidence suggesting that certain employers draw quite heavily on minority labor supplies. For example, there is ample evidence demonstrating that black-owned businesses as well as establishments with African-American management are considerably more likely to hire black workers (Bates 1993; Turner 1997; Carrington and Troske 1998; Raphael, Stoll, and Holzer 2000). Moreover, several studies show that urban space racially segregates racial employment and search distributions.[17] Hence, one might contend that variation in

[17]Holzer (1996), Ihlanfeldt and Young (1996), and Raphael, Stoll, and Holzer (2000) all show large geographic differences in the likelihood that employers hire African-Americans, with employers located nearer to black communities and nearer to public transit stops more likely to hire black workers and having a higher proportion of applicants black. Stoll and Raphael (2000) show that black and white workers search for jobs in different areas of the metropolitan area, with much of the difference explained by racial housing segregation.

whether employers check criminal history records would occur along such dimensions.

Our first strategy for addressing this identification problem is to control extensively for characteristics of the establishment that are likely to impact the racial composition of the firm's labor supply. Specifically, in our models of firm hiring outcomes we include extensive controls for the firm's spatial proximity to black and white residential communities. In addition, we control directly for employer self-reports concerning the proportion of the applicant pool that is black. Finally, we make use of the extensive information on employer skill needs and screening methods collected in the survey to adjust the estimates for inter-establishment variation in the demands placed on new employees.

Our second strategy exploits the imperfect association between whether employers check criminal backgrounds and the employers' self-reported aversion to hiring workers with criminal histories. Figure 5 graphically presents employers' reported use of criminal background checks by employer willingness to hire applicants with criminal records. There is a strong association between unwillingness to hire and the use of criminal background checks, although this correlation is far from perfect.

Variation in the use of this screening device within these sub-samples permits a more precise assessment of the likely impacts of increasing employer access to criminal history records. One might hypothesize that employers with a strong stated aversion to hiring applicants with criminal history records are more likely to statistically discriminate in the absence of a formal criminal background check. Moreover, if there is a systematic tendency of employers to over-estimate the strength of the relationship between race and criminality, one might expect that employers least willing to hire ex-offenders (perhaps, the employers with the most to lose if they make a false-negative inference) will be the most likely to commit such an error. These arguments suggest that the net effect of employer-initiated background checks will be heterogeneous, with more positive effects for those employers least willing to hire ex-offenders. In other words, there should be a positive interaction effect between criminal background checks

and employer unwillingness to hire.[18]

We employ this strategy in an attempt to detect statistical discrimination aimed at weeding out applicants with criminal records. We first stratify the sample into two groups defined by employer unwillingness to hire ex-offenders. Next, we calculate within-group differences in the likelihood of hiring black applicants between employers who check and employers who do not. We then test whether the effect of background checks is larger for the least willing employers by calculating the relevant difference-in-difference and testing its significance. We present difference-in-difference estimates that are both unadjusted and regression-adjusted for observable variables.

We use an establishment survey collected through the Multi-City Study of Urban Inequality (MSCUI). The survey includes slightly over 3,000 establishments and was conducted between June 1992 and May 1994 in the Atlanta, Boston, Detroit, and Los Angeles metropolitan areas. The sample of firms is drawn from two sources: from the employers of the respondents to a household survey conducted in conjunction with the survey of establishments that provided approximately 30 percent of the observations, and from a sample of establishments generated by Survey Sampling Incorporated (SSI). The SSI sample is a random-stratified sample where the initial lists are stratified by establishment size, and firms are sampled according to the proportion of metropolitan area employment accounted for by their respective size categories. Hence, the SSI sample is representative of the set of establishments faced by a job seeker in any of the four metropolitan areas. We use sample weights in all calculations and model estimations to account for the non-representative portion of the sample from the household survey. Establishment were screened according to whether they had hired an employee into a position not requiring a college degree within the previous year. The response rate for firms that passed the initial screen is 67

[18]This idea is conceptually similar to the estimation strategy employed by Holzer and Ihlanfeldt (1998) in their assessment of the importance of customer discrimination in determining the race of recent hires. The authors reason that the effect of customer discrimination on the likelihood that blacks are hired should matter most for positions involving direct customer contact. Based on this proposition, they test for an interaction effect between a dummy indicating a customer contact job and the racial composition of the establishment's customers in regression models where the dependent variable is a dummy indicating that the most recent hire is black.

percent. This compares favorably with other establishment surveys (Kling 1995).[19]

Telephone surveys were conducted with individuals in charge of hiring at the firm. Our chief dependent variable is the race of the most recent hire into a position not requiring a college degree. The survey includes two question vital to the current analysis: a question on employer preferences with respect to workers with criminal histories, and a question on whether employers use criminal background checks.[20] These three variables provide our key dependent and explanatory variables for the analysis below.

4. Empirical Results

Table 1 presents average values for a dummy variable indicating that the last worker hired is black (Panel A) and for the proportion of applicants to the establishment that are from African-Americans (Panel B). Figures are presented for the sample overall, stratified by whether the firm checks criminal backgrounds, stratified by whether the employer is willing to hire, and for the four categories defined by the cross of these two variables. The final column of the table presents the differences in means between unwilling and willing employers, while the final row presents differences in means between establishments that check criminal backgrounds and establishments that do not.

There is no overall difference in the likelihood of hiring a black worker between unwilling and willing employers. There is a large significant difference, however, between employers that do background checks and employers that do not. Employers that check are 8.4 percentage points more likely to have hired an African-American applicant into the most recently filled position. Among employers willing to hire ex-offenders this difference is 4.8 percentage

[19]Holzer (1996) provides detailed comparisons of response rates by industry, location, and establishment size and finds no substantial differences in response rates.

[20]For criminal background checks, the question reads "For the last position hired into, how often do you check the applicant's criminal records? always, sometimes, or never?" The question on employer preferences reads "Would you accept for this position an applicant who had a criminal record? definitely will, probably will, probably not, absolutely not?"

points and is marginally significant. Among employers who are unwilling to hire ex-offenders, this difference is 10.7 percentage points and is highly significant. Moreover, the difference between these two-differences (5.8 percentage points) is significant at the 8 percent level. Hence, the relatively larger positive effect of background checks for employers that are unwilling to hire ex-offenders is larger and statistically distinguishable from that for willing employers.

The patterns in Panel B, however, indicate that these findings may be driven by differences in the application rates of blacks across establishments. The percent of applicants from African-American at firms that check is nearly 13 percentage points greater than the comparable percent at establishments that do not. While this may reflect a response on the part of black applicants (who apply where they are most likely to be hired – see Holzer and Reaser, 2000), the strong association between the racial composition of the applicant pool and checking qualifies the interpretation of the patterns in Panel A. However, the relationship between checking and the proportion of applicants from blacks is not relatively stronger among unwilling employers (what one would expect if application behavior drives the patterns in Panel A). While the point estimate for unwilling firms is slightly higher, the relative difference is small and only half the size of its standard error.

One might suspect that the various potential effects of background checks should be more likely to impact the hiring outcomes of African-American men than those of black women. While black women are incarcerated at a higher rate than other groups of women, the population of incarcerated African-Americans is overwhelmingly male (over 90 percent). To explore potential gender differences, Table 2 reproduces the conditional averages presented in Table 1 using gender specific outcome variables: an indicator variable for whether the most recent hire is a black male (Panel A), and an indicator variable for whether the most recent hire is a black woman (Panel B).

Relative to unwilling employers, willing employers are more likely to have recently hired a black male (a 2.1 percentage point difference that is significant at the 10 percent level), as are employers that check relative to those that do not (3.6 percentage points, significant at the one

percent level). When establishments are stratified by their willingness to hire ex-offenders, we again see a large, significant, and positive impact of checking on the likelihood of recently hiring a black male (5.6 percentage points, significant at the one percent level) among unwilling employers, and a negligible and insignificant effect of checking among willing employers. Consequently, the relative impact of checking criminal backgrounds for unwilling firms relative to willing firms (the difference-in-difference estimate) is positive (4.4 percentage points) and significant at the 10 percent level.

The results for the black-female hiring outcome yield some very interesting differences. While we still observe an overall positive and significant difference between employers that check and employers that do not (4.8 percentage points), unwilling employers are more likely to have recently hired a black woman than willing employers (a difference of 3 percentage points that is significant at the 5 percent level). This contrasts with an overall negative effect of employer aversion on the likelihood of hiring a black man. Indeed, the results suggest the possibility that employers with such an aversion substitute black women for black men, especially if they draw large numbers of black applicants.

Stratifying the sample by willingness to hire ex-offenders, the differences in the proportion of recent hires that are black females between checking employers and non-checking employers are comparable for willing employers (3.7 percentage points) and unwilling employers (5 percentage points). Moreover, the difference in these differences is small and insignificant. Hence, the relative pattern observed for the black male hiring outcomes that is consistent with a dominating impact of statistical discrimination by employers is not observed for the outcome measuring the hiring of African-American women.

To be sure, the patterns observed in Tables 1 and 2 may be driven by factors correlated with checking criminal backgrounds, employer aversion to ex-offenders, and the interaction between the two. Fortunately, we are able observe several establishment characteristics. Appendix Tables A1 and A2 present means of observable variables for the sample stratified by employer aversion to hiring ex-offenders (Table A1) and by employer use criminal background

checks in screening applicants (Table A2).[21] These tables do indeed reveal several noticeable differences across establishments. For example, smaller, non-manufacturing firms whose employees interact with customers are the most averse to hiring ex-offenders. In addition, averse employers are less likely to use informal recruiting techniques (walk-ins, for example) and are less likely to hire workers with gaps in their employment history. Table A2 reveals that small employers are least likely to use criminal backgrounds checks, as are employers in the manufacturing sector. Moreover, employers that check criminal backgrounds are more likely to use informal recruiting methods (accepting walk-ins and posting help-wanted signs), are more likely to accept referrals from state and community agencies, and are more likely to use affirmative action in recruiting.

To probe whether the results in Tables 1 and 2 are sensitive to the inter-establishment differences demonstrated in the appendix tables, Tables 3 and 4 present regression-adjusted estimates of the impact of criminal background checks after adjusting for the observable variables listed in the appendix tables. Table 3 estimates the partial overall effect of checking on the likelihood of recently hiring an African-American using several specifications. Regression (1) controls for criminal background checks only. Regression (2) adds a dummy indicating that the firm is unwilling to hire ex-offenders, three metropolitan area dummies, a variable measuring the physical distance of the establishment's location from blacks, [22] a comparable variable

[21]Each table provides conditional averages for a common set of variables. Establishment characteristics include size and industrial distributions, the percent of workers union, dummy variables indicating that the hiring agent is black and that the firm is located in the central city, a variable measuring the average distance to blacks in the metropolitan area, and a variable measuring the average distance to whites. Next, we present means for dummy variables equal to one if the employer regularly uses the described recruiting and screening methods, and background checks in filling jobs comparable to the most recently filled position. Next are sets of dummy variables indicating job tasks that are performed regularly, required job qualifications, and employee characteristics that the employer believes are very important. Finally, we present means for a set of dummy variables indicating types of applicants that the employer would not consider for the recently filled position.

[22]The average distance from blacks is calculated using linear distances (in miles) between the centroid of the employer's census tract and the centroids of all other census tracts in the area. The variable for each employer is the weighted average of distance to all other census tracts where the weights are the black population counts in the destination tract. See Holzer and Ihlanfeldt (1996) and Raphael, Stoll, and Holzer (2000) for a more detailed discussion of these indexes.

measuring physical distance from whites, and six interaction terms between the three metropolitan area dummies and the two distance dummies. The third regression adds the proportion of applications for the most recently filled position from African-Americans. Finally, specification (4) adds all of the other covariates listed in Appendix Tables A1 and A2.[23]

Adding the distance, metropolitan area, and unwilling-to-hire variables causes a decline in the coefficient on criminal background checks from 0.085 to 0.043. Nonetheless, the effect is statistically significant at the one percent level. Adding the proportion of applications from blacks causes a slight decline in the point estimate to 0.039 (significant at the 3 percent level of confidence). Adding all of the other control variables in regression (4) eliminates the effect of background checks on the likelihood that the most recently hired employee is black. Sensitivity analysis revealed that the variables that are particularly important in knocking out the effect include the dummies for firm size and industry, and the variables indicating the types of employees that the employer will not consider.

Table 4 presents regression models comparable to those in Table 3 that add an interaction term between the dummies indicating employers that check and unwilling-to-hire employers. In these models, the effect of criminal background checks for willing employers is given by the coefficient on the criminal background checks variable. The effect of background checks for unwilling employers is given by the sum of the coefficients on the background checks variable and the interaction term. The interaction term coefficient measures the difference in the effect of checking between employers that are unwilling and employers that are willing. The significance of this coefficient provides a test for whether the effect for unwilling employers is distinguishable from the effect for willing employers.

The results in regression (1) reproduce the patterns observed in Table 1. There are significant effects of checking criminal backgrounds on the likelihood of hiring an African-

[23]The sample size changes across regression specifications due to the fact that several of the observations have missing values for one or more of the added explanatory variables. We also estimated separate models constraining the sample to observations with complete information on all explanatory variables. These results are qualitatively similar to those presented here.

American for both willing and unwilling employers. The larger effect for unwilling employers is statistically distinguishable from the effect for willing employers. Adding the distance variables and the metropolitan area dummies in regression (2) eliminates the base effect of criminal background checks for willing employers and reduces the effect for unwilling employers. The relative difference, however, is unaffected and remains significant at the 10 percent level of confidence. Directly controlling for the applicant pool racial composition (regression (3)) does not affect the base coefficient on the background checks dummy and slightly diminishes the coefficient on the interaction term (which is now statistically insignificant with a p-value-0.166). Finally, adding all covariates (regression (4)) causes a large decline in the base effect of background checks (the coefficient is -0.059 with a p-value of 0.076) and slightly increases the coefficient on the interaction term (which is again significant at the 7 percent level of confidence). The results in the final regression indicate that among willing firms, employer access to criminal history records decreases the likelihood of hiring African-Americans. On the other hand, among unwilling employers, the final regression indicates that employer access to criminal history records leads to a slight increase in the likelihood of hiring African-Americans.

Table 5 presents comparable results for the gender-specific hiring outcomes analyzed in Table 2. Panel A presents results for the black male outcome while Panel B presents those for black females. The model specifications parallel those used in Tables 3 and 4 (though we suppress most of the output to conserve space). For each specification and each outcome, we present the results from two regressions: a regression excluding the interaction term between checking and employer unwillingness to hire ex-offenders, and a regression including the interaction term.

Beginning with Panel A, the models omitting the interaction term for males generally indicate a positive overall effect of checking criminal backgrounds on the likelihood of hiring a black male. These effects are marginally significant in specifications (1) through (3) and insignificant in specification (4). Moreover, in all of the models excluding the interaction terms, employer aversion to hiring ex-offenders has a negative and significant effect on the likelihood

of hiring black males. In the models that allow the effect of checking to vary by employer willingness, the point estimates consistently indicate that checking has a larger effect on the likelihood of hiring black men for unwilling firms relative to willing firms (as is evidenced by the positive coefficient on the interaction term). This effect, however, is significant in the first two specifications only.

The results for the outcome indicating that the recent hire is a black women parallel the unadjusted results presented in Table 2. In the specifications omitting the interaction term, the checking dummy variable is significant in the first two specifications and insignificant in specifications (3) and (4). When included, employer unwillingness to hire ex-offenders exerts a positive significant effect on the outcome in all specifications. In the difference-in-difference models, the coefficient on the interaction term is small and statistically insignificant in all specifications.

How large are the estimated effects for black men that appear in Table 5? The data in Figures 1 and 5 imply that about 30% of employers do not want to hire ex-offenders but do not check criminal records. For these employers, the employment of black men is reduced by 3.4-4.4 percentage points, for a total employment reduction of 1.0-1.3 percentage points on a base of roughly 10 percent (Table 2). These data imply that statistical discrimination of this type reduces the demand for labor among black men by 10-13 percent, which can be regarded as a lower bound to the true effect.[24] The extent to which this reduced demand translates into wage and employment reductions then depend, of course, on the relevant labor demand and supply elasticities for this group; but, under reasonable assumptions, the reductions appear quite sizable and likely contribute significantly to observed gaps in employment and earnings between young white and black men.[25]

[24] These calculations assume, for instance, no statistical discrimination on the part of those employers who check backgrounds or are willing to hire ex-offenders. However, even those employers who check may do so infrequently, and those willing to hire ex-offenders may find blacks with criminal records more threatening than comparable whites (Pager, 2002).

[25] For instance, following Katz (1998) in assuming labor demand and supply elasticities of –0.5 and 0.4 respectively, we generate implied wage and employment reductions in equilibrium of 11-14% and 4-6% respectively for black

To summarize, we find strong patterns in both the unadjusted means and regression-adjusted estimates of the impact of criminal background checks. Firms that check are in general more likely to have recently hired an African-American worker. This holds for both black men and women, though this result is stronger for black men. When we stratify the sample by employer self-reported willingness to hire ex-offenders, we find a strong positive effect of criminal background checks for unwilling employers, which is larger and statistically distinguishable from the comparable effect for willing employers. This relative pattern holds for the hiring of African-American overall, the hiring of black men, but not for the hiring of black women.

5. Effects on Other Groups of Commonly Stigmatized Applicants?

The results in the previous section are consistent with the proposition that in the absence of a criminal background check, employers use race to infer past criminal activity, especially employers with a strong stated aversion to hiring ex-offenders. The results also suggest that the impact of such statistical discrimination on the likelihood that the most recently hired employee is black is of sufficient magnitude to swamp any negative effect of a criminal background check on black hiring rates. While in our theoretical and empirical discussion presented above, we have couched the discussion of statistical discrimination in terms of employers making use of the physical markers of race to infer past criminality, the same argument can be applied to any external signal that a job applicant may convey (intentionally or unintentionally) when applying for a job. For example, employers may cue in on such signals as gaps in employment history, levels of education, or receipt of public assistance. Demonstrating empirically that the patterns observed for African-Americans hiring outcomes hold more generally for other stigmatized groups would surely buttress confidence in the empirical results presented above and the interpretation that we are offering.

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men. Labor market rigidities that limit wage reductions would imply somewhat smaller effects on wages and larger ones on employment. The wages and employment of young less-educated black men lag behind those of whites by about 15% and 25% respectively among those aged 16-34 (Holzer and Offner, 2002).

In this section, we explore whether employer-initiated criminal background checks and the interaction between such checks and employer aversion to hiring ex-offenders impact employer demand for other groups of potentially stigmatized workers. While in the previous section, we were able to analyze the race of the most recently hired employees (an actual outcome), here we must really on employer responses to questions about the likelihood that they would hire applicants from a set of potentially stigmatized groups. In addition to the question concerning the likelihood that employers would hire ex-offenders, employers were also queried about the likelihood that they would hire welfare recipients, workers with gaps in their employment histories, workers who have been unemployed for a year or more, and workers with a GED instead of a high school diploma. For each of these questions we coded a dummy variable equal to one if the employer responded that they would either definitely or probably hire such applicants, and to zero if they probably or definitely would not hire such applicants. These dummy variables referring to the four types of applicants are our dependent variables in this section.

Table 6 presents model results for employer willingness to hire welfare recipients (Panel A), applicants with a spotty work history (Panel B), applicants who have been unemployed for a year or more (Panel C), and applicants with a GED rather than a high school diploma (Panel D). The structure of the presentation of results and the model specifications are identical to the presentation and specification of results for the gender-specific hiring outcomes analyzed in Table 5.[26]

We begin by summarizing the model results where the interaction term is omitted. In general, criminal background checks positively affect employer willingness to hire workers from these applicant pools. These positive effects are statistically significant at reasonable levels for the spotty-work-history and the unemployed-for-a-year outcomes for specifications (1) through

[26]The one difference between the specification in Table 5 and Table 6 occurs in specification (4). In Table 6 specification (4), we do not control for the types of workers that employer would be unwilling to hire, since the inversely coded dummy variables for these controls are our dependent variables in this section.

(3), but not the final specification. For the welfare-recipient and GED outcomes, the coefficients on background checks are small and statistically insignificant. One strong pattern in all of the models is that the dummy variable indicating that employers are unwilling to hire ex-offenders exerts strong negative and significant effects on employer willingness to hire from these specific applicant pools.[27] Hence, in addition to some evidence of a positive impact of checking on employer willingness to hire applicants from stigmatized groups, the consistent negative effects of unwillingness to hire ex-offenders hint at the possibility that employers infer that these characteristics signal previous criminal activity.

Turning to the difference-in-difference models containing the interaction terms, all of the point estimates on the interaction terms are positive, suggesting that the positive effects of a criminal background check on employer willingness to hire these workers is greatest among employers that are least willing to hire ex-offenders. However, the relative effects are significant only for specifications (1) and (2) in the welfare recipient models, and all specifications of the spotty-work-history models. The latter results are quite strong and merit further discussion.

In all four models containing interactions terms for the spotty-work-history outcomes (Panel B), we observe a rather strong pattern that is unaffected by the inclusion of additional control variables. First, employers that are unwilling to hire ex-offenders are considerably less likely to indicate that they are willing to hire applicants with gaps in their employment history. Second, this large negative effect of unwillingness to hire ex-offenders is countered in large part by whether such firms check criminal backgrounds. Hence, among firms that do not check criminal backgrounds, the impact of unwillingness to hire ex-offenders on the willingness to hire an applicant with a spotty work history ranges from 20 to 24 percentage points (all statistically significant at the one percent level of confidence). On the other hand, among firms that do check criminal backgrounds, the comparable effects of a stated unwillingness to hire ex-offenders ranges from 8 to 13 percentage points. These patterns suggest a great degree of substitution

[27]These effects are all negative and statistically significant save for the coefficient on unwilling-to-hire in specification (4) of the GED models.

between using formal criminal background checks and looking for gaps in employment history to screen out potential felons.

Note, of the four outcomes analyzed in Table 6, the outcome indicating employer willingness to hire applicants with gaps in their employment history is perhaps the one which is arguably conveying the strongest signal of previous criminality. Of course, if the spotty work history applicant is also a black male, this potential signal is likely even stronger. Given the strong findings for this particular outcome, and the general results for the other three outcomes, we conclude that these findings lend support to the racial hiring outcomes analyzed above.

6. Conclusion

The findings of this study are several. To begin, the empirical estimates indicate that employers who use criminal background checks are more likely to hire black applicants than employers who do not. This positive association remains even after adjusting for an establishment's spatial proximity to black residential areas and for the proportion of applications to the firms that come from African-Americans. In the context of the theoretical arguments discussed above, this positive net effect indicates that the adverse consequence of employer-initiated background checks on the likelihood of hiring African-Americans is more than offset by the positive effect of eliminating statistical discrimination. To be sure, the group of workers who are excluded by a background check are surely different than the group of workers who are harmed by incorrect perceptions regarding their criminal histories in the absence of checks. In other words, behind the net changes are two offsetting gross effects that impact the welfare of alternative groups of African-American workers.

In addition, we find that the positive effect of criminal background checks on the likelihood that an employer hires a black applicant is larger among firms that are unwilling to hire ex-offenders. This pattern is consistent with the proposition that employers with a particularly strong aversion to ex-offenders may be more likely to over-estimate the relationship between criminality and race, and hence, hire too few African-Americans as a result. Moreover,

these relative results are observed for the likelihood that the most recent hire is a black male but not in models where the outcome measures whether the most recent hire is a black female. The estimates suggest that such statistical discrimination against black men reduces the demand for their labor by at least 10-13%, with large implied effects on their wage and employment rates. Finally, the results for black hiring outcomes are generally supported by comparable results for models analyzing employer willingness to hire workers from other potentially stigmatized groups of applicants, and suggest especially that employers discriminate statistically against those with gaps in their employment histories, whom they may also suspect of having criminal records.

What do these findings suggest for the future? The growing accessibility of criminal background records is apparently leading employers to perform them in greater numbers. All else equal, this would imply a reduction in statistical discrimination against black men and perhaps improvements in their employment and earnings. On the other hand, the increases in incarceration rates of young black men during the 1980's and 1990's imply that larger numbers of them will be excluded from employment on the basis of these checks in the future. Furthermore, the positive effects of the greater dissemination of information on criminal backgrounds might also be more limited if concerns about the accuracy of records that are accessed through the services of private agencies are well-founded.

While these findings are suggestive, more evidence concerning the effects of more open access to criminal history records is needed before one can draw implications for public policy. Given the likely collateral consequences of more open records policies for ex-offenders attempting to re-integrate into society, one would want more complete and precise information on the magnitudes of the positive and negative effects of employer access before making a recommendation. One research approach that would be quite helpful in sorting the alternative manners in which background checks affect hiring outcomes would be to conduct audit studies of employers. By matching auditors on observable characteristics, varying race, and varying the scripted criminal histories that could be reported on applications, one could assess which

employers are more likely to exclude ex-offenders, which are more likely to ask about criminal histories, and how race and criminal histories interact to impact employer hiring behavior.[28]

[28] One such attempt among a sample of employers in Wisconsin was recently conducted by Pager (2002).

References

Aigner, Dennis J. and Glen G. Cain (1977), "Statistical Theories of Discrimination in Labor Markets," *Industrial and Labor Relations Review*, 30: 175-187.

Altonji and Pierret (2001), "Employer Learning and Statistical Discrimination," *Quarterly Journal of Economics*, 116(1): 313-350.

Bates, Timothy (1993), *Banking on Black Enterprise: The Potential of Emerging Firms for Revitalizing Urban Economies*, The Joint Center for Political and Economics Studies: Washington, D.C.

Bushway, Shawn D. (1998), "Labor Market Effects of Permitting Employer Access to Criminal History Records," Working Paper, University of Maryland.

Carrington, William J. and Kenneth R. Troske (1998), "Interfirm Segregation and the Black-White Wage Gap," *Journal of Labor Economics*, 16(2): 231-260.

Craig, Scott R. (1987). "Negligent Hiring: Guilt by Association," *Personnel Administrator*, October 32-34.

Freeman, Richard (1992), "Crime and the Employment of Disadvantaged Youth," in Peterson, George and Wayne Vroman (eds.) *Urban Labor Markets and Job Opportunity*, Urban Institute: Washington D.C., pp. 171-192.

Grogger, Jeffrey (1995), "The Effects of Arrest on the Employment and Earnings of Young Men," *Quarterly Journal of Economics*, 110 (1): 51-71.

Hahn, JM (1991), "Pre-Employment Information Services: Employers Beware," *Employee Relations Law Journal*, 17(1): 45-69.

Holzer, Harry J. (1996), *What Employers Want: Job Prospects for Less Educated Workers*, Russell Sage Foundation: New York.

Holzer, Harry J. and Keith R. Ihlanfeldt (1996), "Spatial Factors and the Employment of Blacks at the Firm Level," *New England Economic Review: Federal Reserve Bank of Boston*, May/June: 65-68.

Holzer, Harry J. and Keith R. Ihlanfeldt (1998), "Customer Discrimination and Employment Outcomes for Minority Workers," *Quarterly Journal of Economics*, 113: 835-868.

Holzer, Harry J. and Paul Offner (2002), "Employment Trends among Less-Skilled Young Men, 1979-2000", forthcoming in volume edited by Ronald Mincy.

Holzer, Harry J.; Steven Raphael and Michael Stoll (2002), "How Do Crime and Incarceration Affect the Employment Prospects of Less-Educated Young Black Men?" Forthcoming in volume

edited by Ronald Mincy.

Holzer, Harry J. and Jess Reaser (2000), "Black Applicants, Black Employees, and Urban Labor Market Policy." *Journal of Urban Economics,* 48:365-387.

Ihlanfeldt, Keith R. and Madelyn V. Young (1996), "The Spatial Distribution of Black Employment Between the Central City and the Suburbs," *Economic Inquiry*, 34: 693-707.
Kling, Jeffrey (1995), "High Performance Workplaces,"*Monthly Labor Review*, August.

Katz, Lawrence (1998), "Wage Subsidies for Disadvantaged Workers," in R. Freeman and P. Gottschalk eds. *Generating Jobs: How to Increase Demand for Less-Skilled Workers*. New York: Russell Sage Foundation.

Kling, Jeffrey (1999), "The Effect of Prison Sentence Length on the Subsequent Employment and Earnings of Criminal Defendant," Woodrow Wilson School Economics Discussion Paper 208, February

Loury, Glen C. (2002), *The Anatomy of Racial Inequality*, Harvard University Press: Cambridge.

Lundberg, Shelly and Richard Startz (1983), "Private Discrimination and Social Intervention in Competitive Labor Markets," *American Economic Review*, June: 340-347.

Pager, Devah (2001), "The Mark of a Criminal Record." Unpublished manuscript, University of Wisconsin-Madison.

Raphael, Steven; Stoll, Michael A. and Harry J. Holzer (2000), "Are Suburban Firms More Likely to Discrimination Against African-Americans?" *Journal of Urban Economics,* 48: 485-508.

Stoll, Michael A. and Steven Raphael "Racial Differences in Spatial Job Search Patterns: Exploring the Causes and Consequences," *Economic Geography*, 76(3): 201-223.

Turner, Susan C. (1997), "Barriers to a Better Break: Employer Discrimination and Spatial Mismatch in Metropolitan Detroit," *Journal of Urban Affairs,* 19: 123-141.

U.S. Bureau of Justice Statistics (1997), "Lifetime Likelihood of Going to State or Federal Prison," Bureau of Justice Statistics Special Report, NCJ-160092.

U.S. Department of Justice (1999), *Compendium of State Privacy and Security Legislation: 1999 Overview,* Washington, D.C.

U.S. Department of Labor (2001), *From Hard Time to Full Time: Strategies to Help Move Ex-Offenders from Welfare to Work.* Employment and Training Administration, Washington D.C.

Figure 1

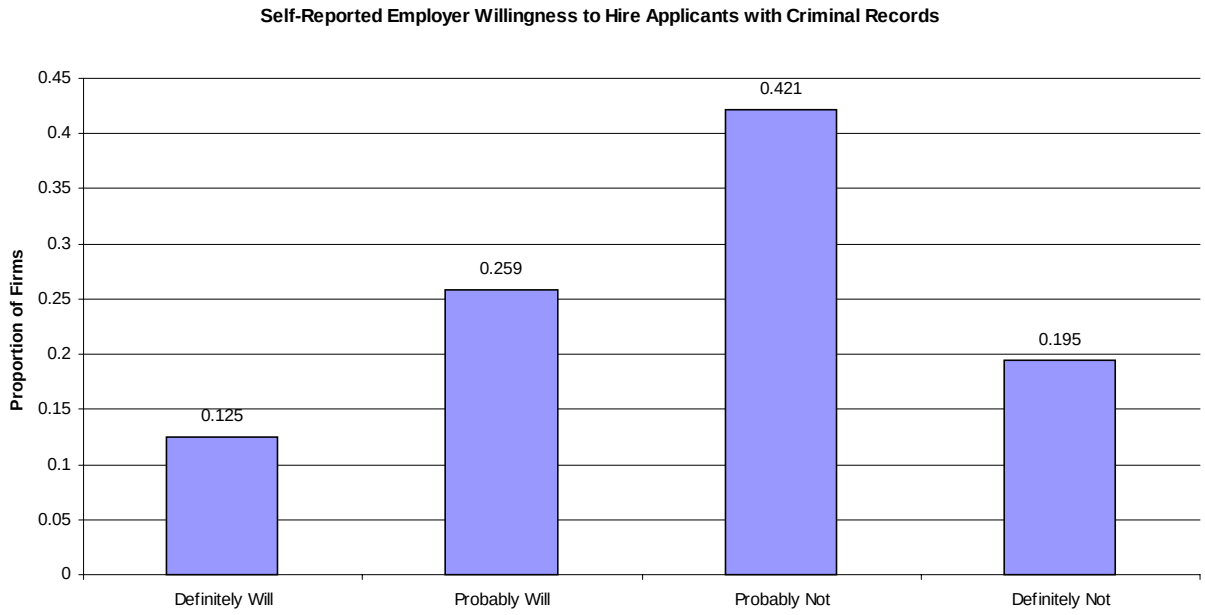

Figure 2

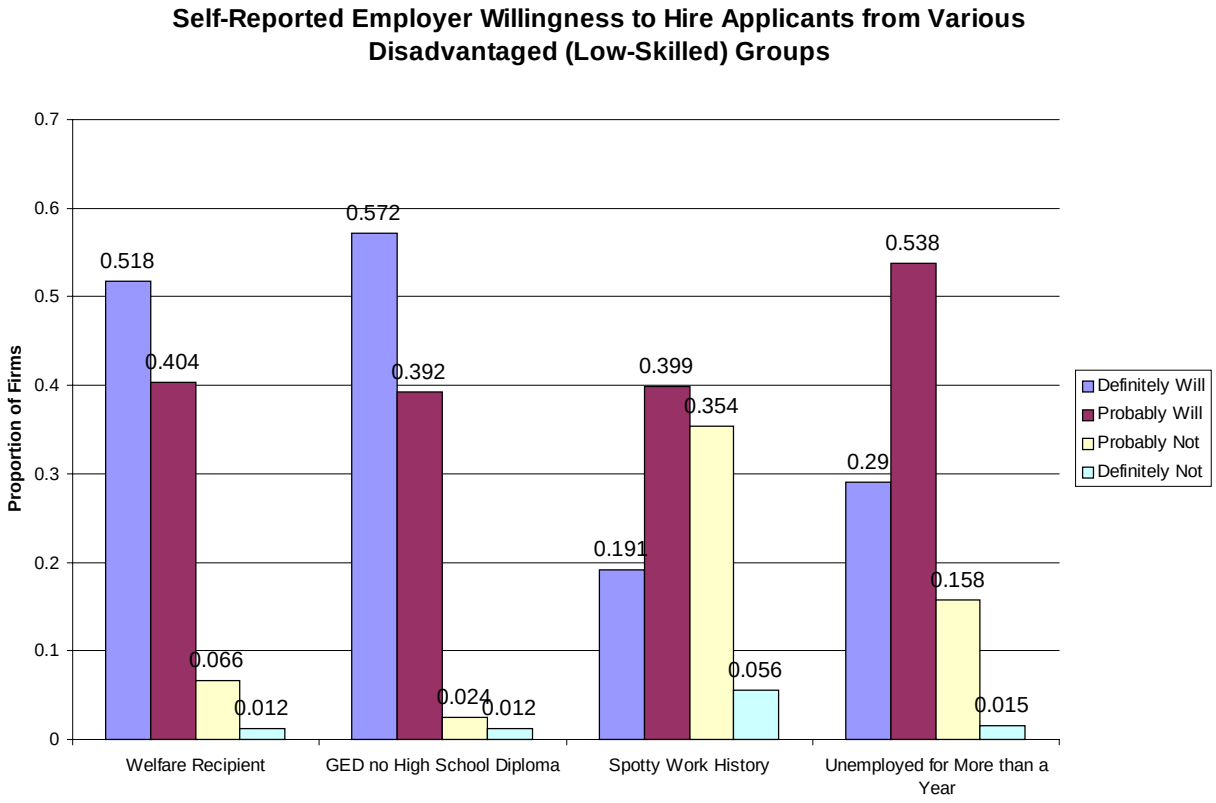

Figure 3

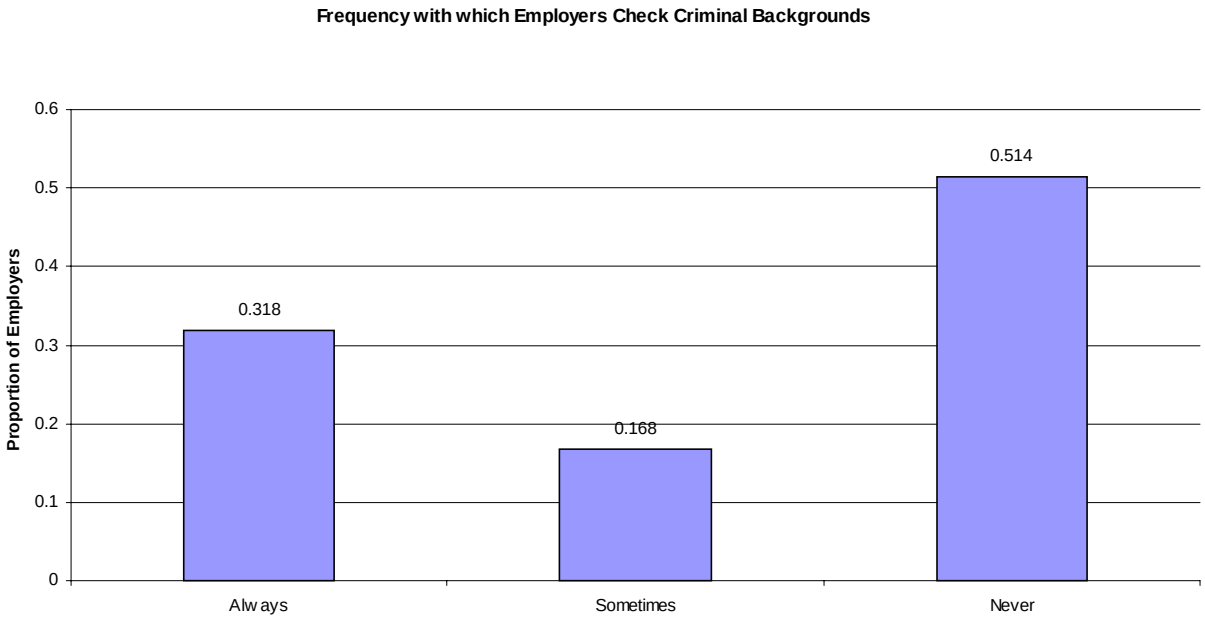

Figure 4

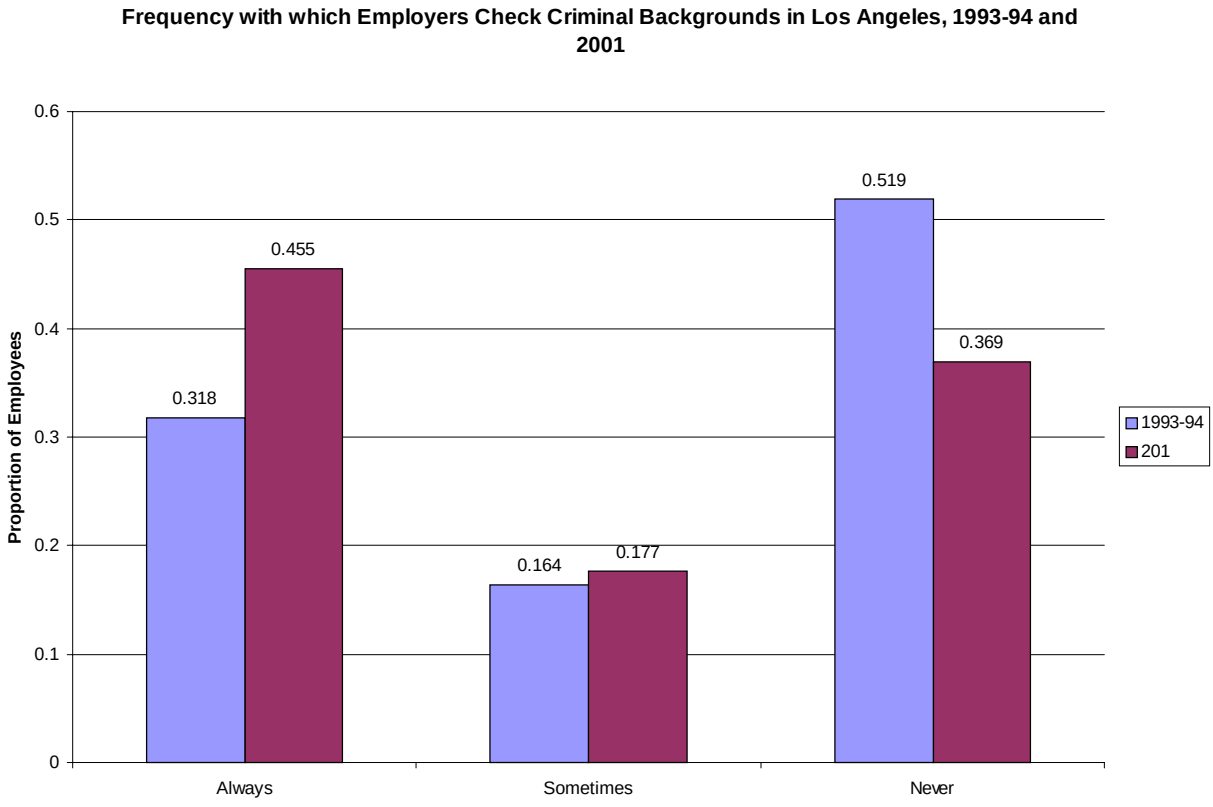

Figure 5

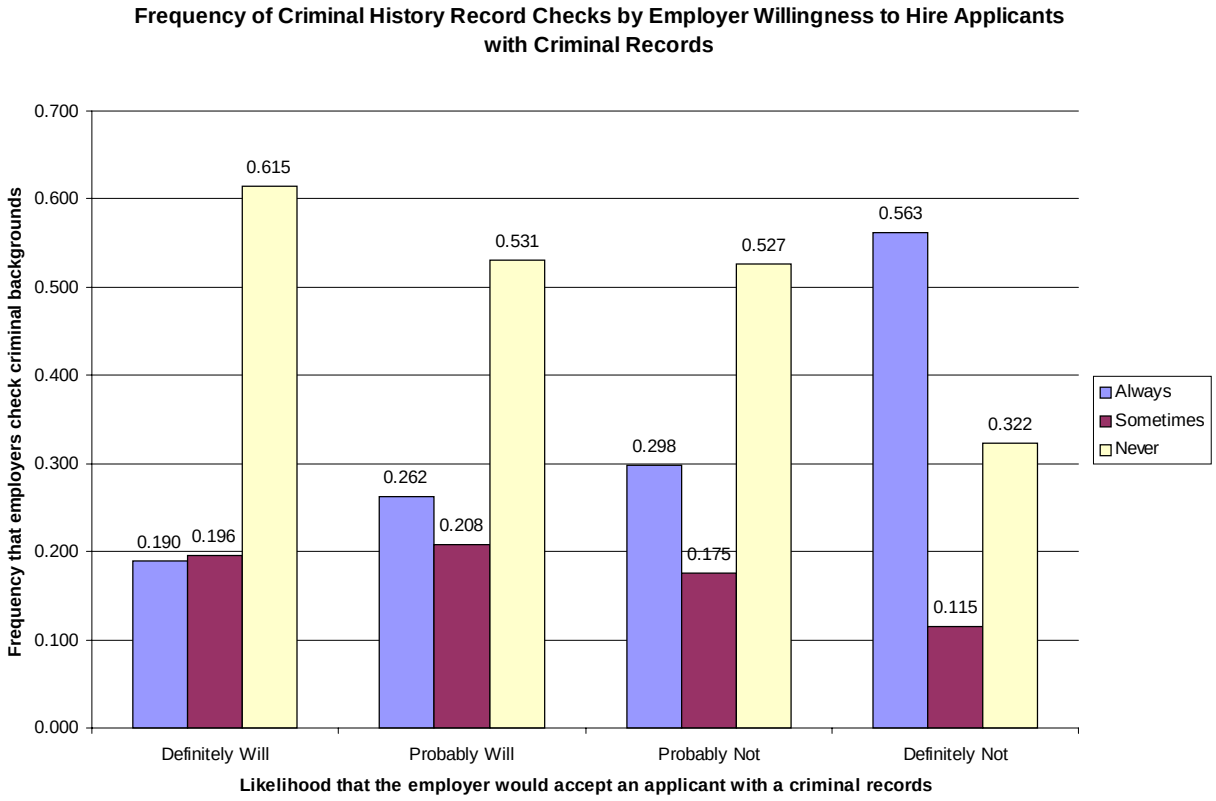
Frequency of Criminal History Record Checks by Employer Willingness to Hire Applicants with Criminal Records
Frequency that employers check criminal backgrounds
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
0.190
0.196
0.615
0.262
0.208
0.531
0.298
0.175
0.527
0.563
0.115
0.322
Definitely Will
Probably Will
Probably Not
Definitely Not
Likelihood that the employer would accept an applicant with a criminal records
Always
Sometimes
Never

Table 1
Hiring Outcomes for Last Worker Hired and Applicant Racial Composition by Whether the Firm Checks the Criminal Background of Applicants and by the Willingness of the Employer to Hire Applicants with Criminal Backgrounds

Panel A: Last Worker Hired is Black

	All firms	Willing to hire	Not willing to hire	Δ (Not willing - willing)
All Firms	0.199 (0.008)	0.193 (0.013)	0.203 (0.010)	0.010 (0.017)
Checks	0.244 (0.012)	0.223 (0.021)	0.254 (0.015)	0.031 (0.026)
Does not check	0.159 (0.010)	0.175 (0.016)	0.148 (0.013)	-0.027 (0.021)
Δ (Checks - Doesn't)	0.084 (0.016)***	0.048 (0.026)*	0.107 (0.021)***	0.058 (0.033)*

Panel B: Proportion of Applicants that are Black

	All firms	Willing to hire	Not willing to hire	Δ (Not willing - willing)
All Firms	0.300 (0.008)	0.295 (0.014)	0.304 (0.011)	0.008 (0.017)
Checks	0.370 (0.012)	0.369 (0.023)	0.370 (0.016)	0.001 (0.028)
Does not check	0.242 (0.010)	0.250 (0.017)	0.236 (0.014)	-0.014 (0.021)
Δ (Checks - Doesn't)	0.128 (0.016)***	0.120 (0.028)***	0.134 (0.021)***	0.015 (0.034)

Standard errors are in parentheses. Firms that always check or sometimes check criminal backgrounds are coded as checking. Firms that state that they "definitely will" or "probably will" hire a worker with a criminal background are coded as willing to hire, while firms stating "probably not" or "absolutely not" are coded as unwilling to hire.
* Difference significant at the ten percent level of confidence.
** Difference significant at the five percent level of confidence.
*** Difference significant at the one percent level of confidence.

Table 2
Racial/Gender Composition of the Last Worker Hired by Whether the Firm Checks the Criminal Background of Applicants and by the Willingness of the Employer to Hire Applicants with Criminal Backgrounds

Panel A: Last Worker Hired is a Black Male

	All firms	Willing to hire	Not willing to hire	Δ (Not willing - willing)
All Firms	0.097 (0.006)	0.110 (0.010)	0.089 (0.007)	-0.021 (0.012)*
Checks	0.117 (0.009)	0.118 (0.016)	0.116 (0.011)	-0.001 (0.019)
Does not check	0.080 (0.007)	0.107 (0.013)	0.061 (0.009)	-0.045 (0.016)***
Δ (Checks - Doesn't)	0.036 (0.012)***	0.011 (0.021)	0.056 (0.015)***	0.044 (0.024)*

Panel B: Last Workers Hired is a Black Female

	All firms	Willing to hire	Not willing to hire	Δ (Not willing - willing)
All Firms	0.102 (0.006)	0.083 (0.009)	0.114 (0.008)	0.030 (0.013)**
Checks	0.127 (0.010)	0.106 (0.015)	0.137 (0.012)	0.031 (0.020)
Does not check	0.078 (0.008)	0.069 (0.011)	0.087 (0.011)	0.018 (0.015)
Δ (Checks - Doesn't)	0.048 (0.012)***	0.037 (0.018)**	0.050 (0.016)***	0.013 (0.025)

Standard errors are in parentheses. Firms that always check or sometimes check criminal backgrounds are coded as checking. Firms that state that they "definitely will" or "probably will" hire a worker with a criminal background are coded as willing to hire, while firms stating "probably not" or "absolutely not" are coded as unwilling to hire.
* Difference significant at the ten percent level of confidence.
** Difference significant at the five percent level of confidence.
*** Difference significant at the one percent level of confidence.

Table 3
Linear Regression Models of the Dummy Variable Indicating that the Last Workers Hired is Black on Whether Establishments Conduct Background Checks and Other Establishment Characteristics

	(1)	(2)	(3)	(4)
Checks Criminal	0.085	0.043	0.039	-0.015
Backgrounds	(0.016)	(0.016)	(0.018)	(0.022)
Unwilling to Hire	-	-0.001	-0.015	-0.008
Ex-Offenders		(0.016)	(0.018)	(0.021)
Distance Black	-	-0.028	-0.009	-0.004
		(0.005)	(0.006)	(0.007)
Distance Black*	-	0.007	-0.005	-0.004
Atlanta		(0.006)	(0.007)	(0.009)
Distance Black*	-	0.0123	0.004	-0.001
Boston		(0.008)	(0.009)	(0.010)
Distance Black*	-	0.017	0.004	-0.001
Los Angeles		(0.008)	(0.009)	(0.010)
Distance White	-	0.017	-0.007	-0.008
		(0.008)	(0.010)	(0.011)
Distance White*	-	-0.001	0.018	0.016
Atlanta		(0.009)	(0.011)	(0.013)
Distance White*	-	-0.003	0.015	0.021
Boston		(0.011)	(0.013)	(0.015)
Distance White*	-	-0.005	0.013	0.020
Los Angeles		(0.011)	(0.013)	(0.016)
Atlanta	-	0.026	-0.258	-0.243
		(0.121)	(0.151)	(0.171)
Boston	-	-0.321	-0.497	-0.517
		(0.139)	(0.169)	(0.193)
Los Angeles	-	-0.328	-0.435	-0.512
		(0.146)	(0.174)	(0.205)
% Applicants Black	-	-	0.005	0.004
			(0.0002)	(0.0003)
Other Covariates[a]	No	No	No	Yes
R^2	0.011	0.124	0.312	0.367
N	2,441	2,212	1,505	1,210

All regressions include a constant. Standard errors are in parentheses.
a. This includes all other variables listed in Tables 1 through 3.

Table 4
Linear Regression Models Testing for an Interaction Effect Between Checking Criminal Backgrounds and Unwillingness to Hire Ex-Offenders

	(1)	(2)	(3)	(4)
Checks Criminal	0.048	0.008	0.005	-0.059
Backgrounds	(0.026)	(0.027)	(0.030)	(0.033)
Unwilling to Hire	-0.027	-0.027	-0.037	-0.041
Ex-Offenders	(0.022)	(0.023)	(0.025)	(0.028)
Checks*Unwilling	0.058	0.057	0.052	0.074
	(0.033)	(0.033)	(0.037)	(0.041)
Distance Black	-	-0.028	-0.010	-0.004
		(0.005)	(0.006)	(0.007)
Distance Black*	-	0.007	-0.005	-0.003
Atlanta		(0.006)	(0.007)	(0.008)
Distance Black*	-	0.013	0.004	-0.001
Boston		(0.007)	(0.009)	(0.010)
Distance Black*	-	0.017	0.004	-0.000
Los Angeles		(0.007)	(0.009)	(0.010)
Distance White	-	0.017	-0.006	-0.007
		(0.007)	(0.010)	(0.011)
Distance White*	-	-0.001	0.018	0.015
Atlanta		(0.009)	(0.011)	(0.013)
Distance White*	-	-0.003	0.015	0.019
Boston		(0.011)	(0.013)	(0.015)
Distance White*	-	-0.005	0.012	0.018
Los Angeles		(0.011)	(0.013)	(0.016)
Atlanta	-	0.025	-0.254	-0.229
		(0.122)	(0.151)	(0.172)
Boston	-	-0.321	-0.492	-0.503
		(0.139)	(0.169)	(0.193)
Los Angeles	-	-0.328	-0.429	-0.494
		(0.147)	(0.174)	(0.205)
% Applicants Black	-	-	0.005	0.004
			(0.0003)	(0.0003)
Other Covariates[a]	No	No	No	Yes
R^2	0.012	0.125	0.313	0.367
N	2,441	2,212	1,505	1,210

All regressions include a constant. Standard errors are in parentheses.
a. Other covariates are all other variables listed in Tables 1 through 3.

Table 5
Unadjusted and Regression-Adjusted First-Difference and Difference-in-Differences Estimates of the Impact of Criminal Background Checks on the Likelihood that the Most Recent Hire is a Black Male and a Black Female

Panel A: Last Workers Hired is a Black Male

	Specification (1)		Specification (2)		Specification (3)		Specification (4)	
Check Criminal	0.036	0.011	0.022	-0.003	0.025	0.004	0.004	-0.021
Backgrounds	(0.012)	(0.020)	(0.013)	(0.020)	(0.015)	(0.025)	(0.019)	(0.028)
Unwilling to Hire	-	-0.046	-0.026	-0.045	-0.050	-0.065	-0.042	-0.061
Ex-Offenders		(0.016)	(0.013)	(0.018)	(0.015)	(0.021)	(0.018)	(0.024)
Checks*Unwilling	-	0.044	-	0.041	-	0.034	-	0.042
		(0.024)		(0.025)		(0.031)		(0.035)

Panel B: Last Workers Hired is a Black Female

	Specification (1)		Specification (2)		Specification (3)		Specification (4)	
Check Criminal	0.048	0.037	0.021	0.011	0.014	0.001	-0.019	-0.038
Backgrounds	(0.012)	(0.020)	(0.013)	(0.021)	(0.015)	(0.025)	(0.019)	(0.027)
Unwilling to Hire	-	0.018	0.025	0.018	0.036	0.027	0.034	0.020
Ex-Offenders		(0.017)	(0.013)	(0.018)	(0.016)	(0.021)	(0.018)	(0.023)
Checks*Unwilling	-	0.013	-	0.015	-	0.019	-	0.031
		(0.025)		(0.026)		(0.031)		(0.034)

Standard errors are in parentheses. The remainder of the model specifications (the results of which are not reported in the table) correspond to the model specifications used in Tables 3 and 4.

Table 6
Unadjusted and Regression-Adjusted First-Difference and Difference-in-Differences Estimates of the Impact of Criminal Background Checks on the Willingness of Employers to Hire Other Stigmatized Groups of Applicants

Panel A: Employer would definitely or probably hire an applicant who is a welfare recipient

	Specification (1)		Specification (2)		Specification (3)		Specification (4)	
Check Criminal	0.012	-0.009	0.018	-0.007	0.021	0.011	-0.008	-0.006
Backgrounds	(0.011)	(0.018)	(0.012)	(0.019)	(0.016)	(0.026)	(0.018)	(0.028)
Unwilling to Hire	-	-0.117	-0.092	-0.111	-0.113	-0.120	-0.096	-0.095
Ex-Offenders		(0.016)	(0.012)	(0.017)	(0.016)	(0.021)	(0.018)	(0.023)
Checks*Unwilling	-	0.050	-	0.041	-	0.016	-	-0.003
		(0.023)		(0.025)		(0.032)		(0.035)

Panel B: Employer would definitely or probably an applicant with a spotty work history

	Specification (1)		Specification (2)		Specification (3)		Specification (4)	
Check Criminal	0.031	-0.021	0.039	-0.032	0.041	-0.038	-0.032	-0.096
Backgrounds	(0.020)	(0.032)	(0.022)	(0.034)	(0.026)	(0.042)	(0.030)	(0.046)
Unwilling to Hire	-	-0.242	-0.187	-0.239	-0.148	-0.202	-0.157	-0.202
Ex-Offenders		(0.027)	(0.022)	(0.029)	(0.026)	(0.035)	(0.029)	(0.037)
Checks*Unwilling	-	0.114	-	0.114	-	0.124	-	0.105
		(0.041)		(0.043)		(0.053)		(0.056)

Panel C: Employer would definitely or probably hire an applicant who has been unemployed for a year or more

	Specification (1)		Specification (2)		Specification (3)		Specification (4)	
Check Criminal	0.038	0.021	0.056	0.034	0.054	0.042	0.013	-0.001
Backgrounds	(0.016)	(0.025)	(0.017)	(0.027)	(0.021)	(0.034)	(0.024)	(0.037)
Unwilling to Hire	-	-0.140	-0.116	-0.132	-0.115	-0.123	-0.117	-0.127
Ex-Offenders		(0.021)	(0.017)	(0.023)	(0.021)	(0.027)	(0.024)	(0.030)
Checks*Unwilling	-	0.048	-	0.037	-	0.019	-	0.023
		(0.032)		(0.034)		(0.042)		(0.046)

Panel D: Employer would definitely or probably hire an applicant with a GED instead of a high school diploma

	Specification (1)		Specification (2)		Specification (3)		Specification (4)	
Check Criminal	0.010	-0.004	0.007	-0.009	-0.007	-0.025	-0.005	-0.027
Backgrounds	(0.008)	(0.012)	(0.008)	(0.013)	(0.009)	(0.016)	(0.011)	(0.017)
Unwilling to Hire	-	-0.054	-0.039	-0.051	-0.034	-0.047	-0.014	-0.029
Ex-Offenders		(0.011)	(0.008)	(0.011)	(0.010)	(0.013)	(0.010)	(0.014)
Checks*Unwilling	-	0.029	-	0.027	-	0.028	-	0.035
		(0.016)		(0.017)		(0.020)		(0.021)

Standard errors are in parentheses. The remainder of the model specifications (the results of which are not reported in the table) correspond to the model specifications used in Tables 3 and 4.

Appendix Table A1
Establishment Characteristics by Employer Self-Reported Likelihood of Hiring Applicants with Criminal Backgrounds

	Definitely Will	Probably Will	Probably Not	Definitely Not
Size, Industry, Spatial Location, and Race of hiring Agent				
Size				
< 20 employees	**0.26**	**0.31**	**0.37**	**0.36**
20-99 employees	**0.29**	**0.33**	**0.32**	**0.33**
100-499 employees	**0.31**	**0.27**	**0.23**	**0.20**
500-999 employees	**0.06**	**0.04**	**0.04**	**0.03**
1000+ employees	**0.08**	**0.05**	**0.04**	**0.07**
Industry				
Mining	**0.00**	**0.00**	**0.00**	**0.00**
Construction	**0.02**	**0.03**	**0.03**	**0.01**
Manufacturing	**0.32**	**0.29**	**0.18**	**0.12**
TCU	**0.05**	**0.05**	**0.06**	**0.06**
Wholesale Trade	**0.05**	**0.10**	**0.09**	**0.04**
Retail Trade	**0.20**	**0.15**	**0.19**	**0.17**
FIRE	**0.02**	**0.05**	**0.11**	**0.16**
Services	**0.30**	**0.31**	**0.32**	**0.36**
%Union	**15.94**	**13.17**	**12.48**	**17.67**
Central City	**0.33**	**0.27**	**0.27**	**0.28**
Black Hiring Agent	**0.05**	**0.07**	**0.06**	**0.06**
Distance Black	**17.35**	**17.97**	**17.80**	**17.19**
Distance White	**22.57**	**22.63**	**22.58**	**22.26**
Recruitment Methods Used				
Help Wanted Signs	**0.31**	**0.28**	**0.24**	**0.27**
Newspaper Ads	**0.45**	**0.46**	**0.48**	**0.50**
Walk-ins	**0.78**	**0.74**	**0.67**	**0.66**
Referrals from				
Current Employees	**0.84**	**0.84**	**0.83**	**0.81**
State Agency	**0.46**	**0.40**	**0.31**	**0.30**
Private Agency	**0.23**	**0.21**	**0.21**	**0.17**
Community Agency	**0.33**	**0.26**	**0.24**	**0.25**
School	**0.40**	**0.34**	**0.34**	**0.38**
Union	**0.08**	**0.06**	**0.06**	**0.06**
Uses affirmative action to Recruit	**0.61**	**0.55**	**0.50**	**0.56**

	Definitely Will	Probably Will	Probably Not	Definitely Not
Screening Methods				
Drug Test/Physical Exam	**0.20**	**0.15**	**0.15**	**0.19**
Aptitude Test	**0.09**	**0.09**	**0.14**	**0.14**
Knowledge Test	**0.16**	**0.17**	**0.16**	**0.15**
Personality Test	**0.03**	**0.05**	**0.07**	**0.09**
Background Checks				
Criminal Background	**0.39**	**0.45**	**0.47**	**0.67**
Education	**0.66**	**0.69**	**0.68**	**0.70**
References	**0.92**	**0.95**	**0.96**	**0.97**
Daily Job Tasks				
Customer Contact	**0.52**	**0.49**	**0.60**	**0.71**
Phone Conversations	**0.48**	**0.49**	**0.55**	**0.55**
Reading	**0.53**	**0.56**	**0.52**	**0.58**
Writing	**0.28**	**0.29**	**0.30**	**0.34**
Math/computations	**0.63**	**0.66**	**0.67**	**0.64**
Computer Work	**0.48**	**0.47**	**0.54**	**0.51**
Job Qualifications				
High School Diploma	**0.57**	**0.68**	**0.74**	**0.79**
Recent Work Experience	**0.63**	**0.68**	**0.70**	**0.69**
Specific Experience	**0.55**	**0.60**	**0.60**	**0.62**
References	**0.69**	**0.67**	**0.74**	**0.78**
Vocational Education	**0.34**	**0.40**	**0.38**	**0.39**
Very Important Requirement of New Employees				
Physically Attractive	**0.09**	**0.10**	**0.11**	**0.17**
Physical Neatness	**0.44**	**0.45**	**0.56**	**0.62**
Polite	**0.71**	**0.70**	**0.80**	**0.83**
Verbal Skills	**0.54**	**0.54**	**0.64**	**0.72**
Motivation	**0.71**	**0.70**	**0.76**	**0.76**
Speaks English	**0.44**	**0.47**	**0.59**	**0.65**
Type of Applicants that Would Probably Not Be Hired				
On Welfare	**0.01**	**0.04**	**0.10**	**0.18**
With GED	**0.01**	**0.02**	**0.03**	**0.11**
Spotty Work History	**0.21**	**0.36**	**0.51**	**0.46**
Unemployed for a Year	**0.06**	**0.13**	**0.21**	**0.26**

All figures use sample weights.

Appendix Table A2
Establishment Characteristics by Employer by the Frequency with Which Employers Check the Criminal Backgrounds of Applicants

	Always	Sometimes	Never
Size, Industry, Spatial Location, and Race of hiring Agent			
Size			
< 20 employees	0.24	0.28	0.38
20-99 employees	0.31	0.31	0.32
100-499 employees	0.28	0.27	0.24
500-999 employees	0.08	0.06	0.03
1000+ employees	0.10	0.09	0.04
Industry			
Mining	0.00	0.00	0.00
Construction	0.02	0.03	0.02
Manufacturing	0.10	0.20	0.27
TCU	0.08	0.04	0.05
Wholesale Trade	0.04	0.10	0.09
Retail Trade	0.15	0.19	0.17
FIRE	0.14	0.08	0.06
Services	0.40	0.34	0.33
%Union	23.65	13.23	11.23
Central City	0.28	0.31	0.26
Black Hiring Agent	0.09	0.07	0.04
Distance Black	17.36	17.59	17.78
Distance White	22.42	22.55	22.42
Recruitment Methods Used			
Help Wanted Signs	0.29	0.30	0.23
Newspaper Ads	0.51	0.50	0.46
Walk-ins	0.72	0.73	0.66
Referrals from			
Current Employees	0.85	0.85	0.80
State Agency	0.40	0.40	0.29
Private Agency	0.22	0.23	0.20
Community Agency	0.32	0.30	0.22
School	0.47	0.35	0.32
Union	0.10	0.08	0.04
Uses affirmative action to Recruit	0.69	0.57	0.48

Screening Methods			
Drug Test/PhysicalExam	0.24	0.18	0.11
Aptitude Test	0.15	0.13	0.10
Knowledge Test	0.18	0.18	0.15
Personality Test	0.09	0.05	0.06
Background Checks			
Criminal Background	1.00	1.00	0.00
Education	0.83	0.83	0.58
References	0.98	0.98	0.93
Daily Job Tasks			
Customer Contact	0.69	0.62	0.52
Phone Conversations	0.55	0.54	0.54
Reading	0.62	0.56	0.54
Writing	0.38	0.29	0.34
Math/computations	0.65	0.62	0.68
Computer Work	0.54	0.52	0.54
Job Qualifications			
High School Diploma	0.76	0.74	0.68
Recent Work Experience	0.70	0.72	0.69
Specific Experience	0.63	0.60	0.63
References	0.80	0.75	0.69
Vocational Education	0.40	0.42	0.39
Very Important Requirement of New Employees			
Physically Attractive	0.14	0.10	0.10
Physical Neatness	0.55	0.54	0.52
Polite	0.81	0.74	0.77
Verbal Skills	0.70	0.56	0.63
Motivation	0.76	0.73	0.76
Speaks English	0.60	0.53	0.56
Type of Applicants that Would Probably Not Be Hired			
On Welfare	0.09	0.07	0.09
With GED	0.04	0.02	0.04
Spotty Work History	0.40	0.41	0.43
Unemployed for a Year	0.15	0.16	0.20

All figures use the sample weights.