

**On the Relationship between Criminal History and Racial Discrimination in Labor  
Markets: Evidence from the Field**

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## **Abstract**

It has been shown in the literature that any contact at all with the criminal justice system presents an individual with a significant challenge in obtaining employment. It has also been shown that African-Americans are more likely than any other demographic to have contact with the criminal justice system. The discrimination against African-Americans in labor markets has been well documented. This paper seeks to determine whether or not that discrimination is taste-based or statistical, since statistically African-Americans are more likely to be ex-convicts.

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## CHAPTER ONE

### INTRODUCTION

Over the past four decades the number of prison inmates in the United States has been increasing: during this time period incarceration rates have risen six-fold.<sup>1</sup> As a result, the United States has the highest rate of imprisonment in the world, and by a wide margin the highest rate among OCED countries.<sup>2</sup> One of the primary reasons for the increase in the U.S. prison population has been the fact that, according to Pager (2003), “incarceration has changed from a punishment reserved primarily for the most heinous offenders to one extended to a much greater range of crimes and a much larger segment of the population.”

One of the crimes in the “greater range of crimes” that now warrants incarceration is the transportation, sale and use of illegal narcotics. For the last two decades, the proportion of people in prison for non-violent, drug related crimes has risen from 7.5% to a staggering 24%.<sup>3</sup> It has been documented that the war on drugs is a major contributing factor to the growing number of Americans behind bars. Even though the overall prison population has been in slight decline over the last decade, the percentage of criminals who are in prison for non-violent drug related crimes has held steady.<sup>4</sup>

With an increase in the number of convicts in the U.S. there has also been, naturally, an increase in the number of ex-convicts. Over 95% of the current two million prison inmates will be released at some point in the future.<sup>5</sup> In 2011 over 800,000 inmates were released back into the general population.<sup>6</sup> This increase in the number of ex-convicts has led many to investigate

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<sup>1</sup> See Pager (2003)

<sup>2</sup> See U.S. Bureau of Justice Statistics: <http://bjs.ojp.usdoj.gov/index.cfm>

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

policy not only concerning the general rehabilitation of ex-convicts, but also the employment opportunities available to those with criminal records.

According to Pager (2003), roughly 8% of the working age population is comprised of ex-convicts. As the U.S. prison population continues to swell, and the number of ex-convicts increases with it, there is a growing debate regarding the use of appropriate policy to address the issue of ex-convict participation in the labor force. One of the major policy issues that arises from the large number of ex-convicts in the labor force is that of the overwhelming number of prisoners who originate from racial/ethnic groups already at the fringes of the labor market.

African-Americans are nine times more likely to be imprisoned when compared to Whites, and one-in-three African-American males are expected to be incarcerated at some point in their lifetime.<sup>7</sup> Since any contact at all with the criminal justice system has been known to hinder individuals in obtaining employment, and African-Americans are far more likely than Whites to have had past encounters with the criminal justice system, the problem of race and criminal history are inextricably linked.

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<sup>7</sup> Ibid.

## CHAPTER TWO

### THESIS

According to the current literature, there exists significant racial inequality in the labor market. African-Americans are twice as likely to be unemployed when compared to their White counterparts.<sup>8</sup> The fact that African-Americans face a higher unemployment rate compared to that of Whites is usually attributed to discrimination on the part of employers.<sup>9</sup> These statistics are only intensified during periods of recession. The annual unemployment rate for African-American males 20-25 years of age averaged 30% over the last decade and has increased during the current recession.<sup>10</sup> For African-American males even younger (18-19 years of age) unemployment rates of 50% or higher are not uncommon.<sup>11</sup> Not only is the African-American male unemployment rate higher compared to that of Whites, but research suggests that African-Americans also wait longer for callbacks to interviews and receive fewer interview requests than their White counterparts.

The purpose of this research is to analyze the level to which African-Americans are discriminated against in the labor market. More specifically, this research seeks to discover the underlying reasons for said discrimination, assuming it can be determined to exist at all. One of the major reasons for labor market discrimination against African-Americans may not be taste-based but statistical, as they are more likely than any other demographic to have a criminal record.<sup>12</sup> It is true that there are a number of factors such as broken families, poor neighborhoods and little social control that contribute to labor market discrimination against African-

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<sup>8</sup> See Bertrand and Mullainathan (2003)

<sup>9</sup> See Bertrand and Mullainathan (2003), Fryer (2011), Oreopoulos (2011)

<sup>10</sup> See U.S. Bureau of Labor Statistics <http://www.bls.gov/index.cfm>

<sup>11</sup> Ibid.

<sup>12</sup> Ibid.



Americans.<sup>13</sup> Primary among these factors however, “is evidence that any experience with the criminal justice system in itself has adverse consequences for employment opportunities (Pager, 2003).”

Ex-convicts are at a disadvantage when entering the labor force, and African-Americans are statistically more likely than any other racial demographic to find themselves in some stage of the criminal justice system. With a greater range of crimes like that of the transportation, sale and use of narcotics warranting incarceration, more and more African-Americans are finding themselves behind bars.<sup>14</sup> The question is: how much of the labor market discrimination that African-Americans face is a result of a criminal record? More specifically, how many African-Americans struggling to obtain employment are struggling as a result of a conviction stemming from a non-violent, drug related crime?

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<sup>13</sup> See Pager (2003)

<sup>14</sup> Ibid.

## CHAPTER THREE

### LITERATURE REVIEW

#### *A. Discrimination in Labor Markets*

There exists a substantial amount of literature on the topic of labor market discrimination. A good portion of this literature is devoted specifically to racial discrimination. The plight of African-American workers in labor markets has been well documented. In their famous paper on labor market discrimination, Bertrand and Mullainathan (2003) determined that there exists significant racial inequality in the U.S. labor market.

When conducting their study, Bertrand and Mullainathan discuss the fact that racial differences in the labor market could be a product of factors that are observed by the employer but unobserved by the researcher. To circumvent this, they conducted a field experiment that built on correspondence testing methodology.<sup>15</sup> They sent out pairs of resumes in Boston and Chicago, one set with White sounding names and the other set with African-American sounding names. They found significant differences in callback rates. Whites only needed to send out ten resumes for a callback; African-Americans needed to send out fifteen. A White sounding name was equivalent, according to Bertrand and Mullainathan, to eight additional years of experience. They also discovered a larger gap between Whites and African-Americans with regard to resume quality. A higher quality resume helped a White applicant, but did little to help an African-American applicant.

When applying for jobs, the large racial differences in callback rates that they discovered, according to their analysis, could have only resulted from taste-based discrimination.<sup>16</sup> The other statistics, like the fact that higher quality resumes or more education did little to help African-

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<sup>15</sup> See Bertrand and Mullainathan (2003)

<sup>16</sup> Ibid.

Americans on the job market, bolstered their case for inferring taste-based discrimination. Ultimately, the disparity in callback rates between Whites and African-Americans led Bertrand and Mullainathan (2003) to conclude, “Our results imply that employers use race as a factor when reviewing resumes, which matches the legal definition of discrimination.”

Other studies have produced similar results to that of Bertrand and Mullainathan.<sup>17</sup> Oreopoulos (2011) has demonstrated the existence of labor market discrimination against Canadian immigrants. His results are similar to that of Bertrand and Mullainathan. Oreopoulos discovered that Canadian-born individuals with English-sounding names are much more likely to receive a callback when compared to foreign born individuals. He noted that employers discriminated heavily with regard to an applicant’s name.<sup>18</sup> Like Bertrand and Mullainathan, the strengthening of resumes did little to help those applicants who were the target of discrimination.

Another study in line with that of Bertrand and Mullainathan (2003) and Oreopoulos (2011) was that of Lahey (2007) in her paper on age, women and hiring. There were two primary reasons Lahey engaged in this study. First, older workers may need to remain in the labor force for longer periods of time if benefits are cut. Second, even if benefits remain in place, older workers may not have the retirement savings to remain voluntarily unemployed. Economists typically assume that labor force non-participation is voluntary, so only supply side factors come into play. Lahey’s study analyzed the demand side barriers older women face when entering the labor force. Additionally, Lahey noted that firms who wish to discriminate are more likely to do so in the hiring stage, since, with the passage of the Age Discrimination in Employment Act, it is more difficult to fire an old person once they are working.<sup>19</sup>

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<sup>17</sup> See Lahey (2007), Neumark (2011) and Pager (2003)

<sup>18</sup> Even with a high level of skills and education, Oreopoulos (2011) noted that foreign-born applicants with foreign names struggle to get callbacks when compared to native Canadians with English names.

<sup>19</sup> See Lahey (2007)

Similar to previous studies, Lahey (2007) also discovered the existence of labor market discrimination. Her study was, unlike the previous two, not about racial discrimination but about age-based discrimination. She determined that, “A younger worker is more than forty percent more likely to be offered a job interview than is an older worker (Lahey, 2007).” Her results were fairly consistent. Applying to jobs in both Boston and St. Petersburg, she generated four thousand data points. Regardless of the city she applied in or the job she applied for, older workers struggled to receive callbacks when compared to younger applicants.<sup>20</sup>

While each of the above studies had its own unique strengths and weaknesses, there was one major weakness common among all three. The major weakness of these studies is the fact that callbacks are not necessarily indicative of a firm’s willingness to hire.<sup>21</sup> Although being selected for an interview is a prerequisite for obtaining a given job, it does not necessarily mean that said applicant will be hired or paid a wage comparable to their peers. It can certainly be expected that fewer callbacks would translate into fewer interview opportunities, but there is no guarantee that this is the case.<sup>22</sup> This can be a significant problem in determining whether or not discrimination is actually taking place in the hiring process.

### *B. Resume Audit Studies*

Many of the studies that have been conducted to study labor market discrimination are audit studies. The audit study is a type of natural field experiment. Early audit studies used pairs of trained auditors who were similar in all characteristics except for one: usually race.<sup>23</sup> These audit studies suffered from the problems of selection bias, especially on the part of the interviewers. Resume audits, also called correspondence, are used to circumnavigate this

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<sup>20</sup> See Lahey (2007)

<sup>21</sup> See Bertrand and Mullainathan (2003)

<sup>22</sup> Ibid.

<sup>23</sup> See Lahey (2007) and Neumark (2011)

problem. A resume audit avoids the problem of auditor bias by sending out resumes instead of people.<sup>24</sup> Even though the experimenter can only measure the interviewing stage with this type of audit, it is useful for several reasons.

First, they allow for more control over the experimental variables. The auditor has the power to randomize characteristics at will. This enables the auditor to control for a wide range of variables when applying for jobs. Second, they allow for generating large sets of data at a low cost. This allows the auditor the ability to generate a large number of data points without the need to worry about cost overruns. Third, large sample techniques can be used to analyze the data.

Finally, as previously mentioned, audit studies control for bias on the part of the auditors. One of the primary problems with the old audit studies was that the auditors themselves could exhibit behaviors that reinforced personal bias.<sup>25</sup> With the resume audit, there is no potential for auditor interference, since resumes and not people are being sent out.

Additionally, audit studies ensure that firms are unaware they are being tested, so the experimental pool remains pure. Even if, however, firms did know they were being tested, they would still have little incentive to change their behavior because the IRB ensures anonymity. IRBs generally approve resume audit studies because the unit of study is a firm and not a person.<sup>26</sup> There is little inconvenience to the firm, because their time commitment is usually less than a minute (per application) when evaluating job applications.<sup>27</sup>

Resume audits, like all other natural field experiments, are not without shortcomings. One of the primary drawbacks to modern audit studies is template bias. The limited ability of the

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<sup>24</sup> See List (2009)

<sup>25</sup> Ibid.

<sup>26</sup> See Lahey (2007)

<sup>27</sup> Ibid.

audit study to identify which individual characteristics best predict outcomes, due to the limited number of tester pairs typical of traditional audit studies.<sup>28</sup> These studies lack the capacity to provide accurate estimations of discrimination and can only predict the outcomes of bundles of characteristics and not the characteristics themselves.<sup>29</sup>

Experimenter bias is another potential problem when there are limited numbers of testing pairs. Within a resume audit, the problems of “template bias” and experimenter bias can be greatly mitigated with the use of a computer generated program in which the researcher can generate a databank of items to randomize.<sup>30</sup> Lahey and Beasley (2009) have developed such a program, and it has been used in past studies like that of Oreopoulos (2011).

First, there is a web-based meta-program that allows the researcher to define and input the general characteristics of the resume. Second, the resume-generator is created from the aforementioned program to generate and record resume information. Randomized computer generation of resumes is a vast improvement on previous practices. This technology allows the researcher to generate thousands of data points based on numerous characteristics, enabling him/her to use a multivariate regression framework as the tool of econometric analysis. The ability of the computer software greatly expands the scale and scope of correspondence technology.

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<sup>28</sup> See List (2009)

<sup>29</sup> See List and Levitt (2009)

<sup>30</sup> See Lahey (2007)

## CHAPTER FOUR

### METHODOLOGY

According to Lahey (2007), if a firm is going to discriminate against a potential employee, it is best for the firm to do so at the beginning of the hiring stage. Evidence from the field suggests this, as it has been demonstrated that firms usually practice discrimination before applicants are interviewed.<sup>31</sup> There are several reasons for potential discrimination at this stage of the hiring process. Lahey (2007) suggests that primary among them is the fact that that employers are aware of the potential difficulty in getting rid of an employee once they are working. For those employers looking to discriminate, it is better to discriminate during the hiring process by denying an interview altogether.<sup>32</sup>

Since employers are more likely to discriminate against potential employees at the beginning of the hiring process, this study built upon previous studies by developing a resume audit to determine callback rates for different job applicants. I structured my data collection after that of Bertrand and Mullainathan (2003), Lahey (2007) and Oreopoulos (2011). I developed a plan to send out matched sets of resumes, randomizing on race and criminal history, and measure callback rates.

#### *A. IRB Approval*

In conducting my study, approval from the IRB board was a necessary step. Since the applicants I used did not exist, except on the computer, there was some level of firm deception. Since this study involved firms and not actual individuals, the IRB approved of the initial study. Other similar studies have also met with approval from their respective IRB boards.

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<sup>31</sup> See Lahey (2007) and Oreopoulos (2011)

<sup>32</sup> Ibid.

One important thing to note is that, according to Lahey (2007), while there is a small amount of firm deception, it is almost negligible. The typical human resources manager or recruiter spends an average of 30 seconds scanning each job application they receive.<sup>33</sup> If a firm did choose to call an applicant back, then they simply left a message on a voicemail box that I had set up. Upon receiving the callback, I called the prospective employer back to inform them that the applicant has accepted another job. This is a standard practice in resume audit studies and the methodology has been used by Bertrand and Mullainathan (2004) and Lahey (2007) as well as others.

Before an applicant can receive a callback, they must first fill out an application. For the types of jobs we are applying to, the application process takes place entirely online. Most firms that request applicants to apply online require that the applicant remit sensitive information like address, phone number, birthday, and social security number. While disclosing this information online can pose risk, employers provide applicants with guarantees of confidentiality. All of the firms I applied to extend this guarantee to applicants, therefore, the risk to an applicant of a breach of confidentiality is minute. On the job application page of their website, every firm I applied to states that the consequences of such a breach lie solely with the firm, and that the firm bears the burden of any such breach of confidentiality. This is true of any individual that applies for a job with said firms.

### *B. Creating a Bank of Resumes*

To test for differences in callbacks by race, the first thing I did was create a bank of resumes. In order to create this resume bank, a set of names for applicants had to be selected.

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<sup>33</sup> Ibid.



Unlike previous studies, I chose to apply only with male applicants.<sup>34</sup> Four names were selected: two were obviously “White” sounding and two were obviously “African-American” sounding. I combined the two “White” first names with two “White” last names and the two “African-American” first names with two “African-American” last names.<sup>35</sup> In selecting the names I used U.S. birth certificate data from 1990. The reason for this was two-fold: first, it ensured that I had names that accurately reflected the individual’s race. Second, for this study I chose to block on age, and apply with applicants who were twenty-one at the time of their application.<sup>36</sup> The names chosen reflected the average name of a twenty-one year old of the given race.

After the applicant’s names and ages had been determined I continued building the resumes. The next step was creating an e-mail address for each of the applicants to list on their respective resumes.<sup>37</sup> After e-mail addresses had been established I set up online voicemail boxes through mynycooffice.com.<sup>38</sup> The phone numbers given from the voicemail service were used when applying for jobs and were linked to the applicant’s email address. Every time a given applicant received a voicemail message, an e-mail was sent to their inbox.

### *C. Randomizing on Resume Characteristics*

I chose to randomize three major characteristics in the resumes: criminal history, level of education and gaps in work history. All three of these characteristics were randomly assigned to applicants using resume randomizer software created by Lahey and Beasley (2009).

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<sup>34</sup> The reason for only applying with male applicants is due to the higher incidence of criminal history among males. Another reason for blocking on gender was to simplify the study.

<sup>35</sup> White names were assigned a 0; African-American names were assigned a 1.

<sup>36</sup> Previous resume audits have “blocked” on race and age when applying for jobs. The age of all applicants applying for jobs in this study was set at 21. This was to ensure uniformity in age across applicants and to reflect the average age of ex-convicts seeking employment in the types of jobs applied to in this study.

<sup>37</sup> Applicants were each given a Gmail account.

<sup>38</sup> I followed the same procedure as Lahey (2007). Once applications were sent out, voicemails were checked daily.

The crimes I chose to focus on, when applying for jobs with ex-convicts, were non-violent drug offences. Specifically, when assigning a crime to a given applicant I chose to assign possession of a controlled substance with intent to distribute. When applying a certain criminal history to an applicant's resume, there were three possible categories: no criminal history, conviction with probation and conviction with jail time.<sup>39</sup> These three categories of crime were selected because they would allow me to see not only the difference in callback rates between criminals and non-criminals but the difference in callback rates among those with different sentences. I wanted to test the difference between callback rates for applicants who served jail time vs. those who were only given probation.

As previously stated, criminal history was denoted by a drug-selling conviction. I provided this information in the space given in the job application. Employers asked if a job applicant had a criminal history. If an applicant was being assigned a criminal history they were required to provide a brief description of the crime and subsequent legal outcome. Two-thirds of my job applicants provided a criminal history, with half of the sub-group reporting 11 months and 29 days in a correctional facility and the other half reporting a suspended sentence with two years of probation.

The length of stay in jail—11 months and 29 days—was chosen because the sentence could either connote a misdemeanor or a felony conviction. The same logic was used for denoting the place of incarceration as a correctional facility, rather than federal or state prison.

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<sup>39</sup> Those applicants with no criminal history were assigned a 0, those with parole were assigned a 1, and those with jail were assigned a 2.

Below is an example of a typical firm's question about criminal history and our applicant's response.

*Have you ever been convicted of a felony or criminal offense not including misdemeanor traffic violations? If so, please explain below:*

In 2008, I was convicted of possession of a controlled substance with intent to distribute. I served 11 months and 29 days in a correctional facility.

There are several reasons why I chose the criminal description above. First, I have found out through various sources<sup>40</sup> that ex-convicts are instructed to reveal as little about their criminal history as possible. They are instructed to answer the criminal question on the application truthfully, but the voluntary withholding of specific information has proven beneficial in some cases and many ex-convicts are encouraged to honestly reveal as little as possible to prospective employers.

Most jobs require a background check in which the details of the criminal conviction will be revealed to the employer. Traditionally these background checks are generally not performed until the applicant has advanced through the first stages of the hiring process. Being vague about one's criminal past may allow them to make a personal impression on a potential employer before the prejudicial information concerning the specifics of criminal history were revealed.

Since I am applied to jobs online, and not through the mail, this option did not exist for my applicants. Many online employers require that applicants confess to any previous criminal

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<sup>40</sup>This information is listed under job-market advice on the web and on detention-center administration websites.

history before they are considered for an interview. This information, which in past audit studies was not revealed to employers, was revealed to the firms in my study.

It is well known that individuals who possess a criminal record are also less likely to have a high school diploma.<sup>41</sup> Many current convicts and ex-convicts alike only possess a GED, if anything at all.<sup>42</sup> A high school diploma is a proxy for skill, and employers take skill into consideration when analyzing prospective employees. Those workers who have not completed high school may be more likely to be out of work, since the lack of a diploma may be an indication of a lower marginal product. Due to the close relationship between criminal history and education, I chose to randomize on education when creating resumes. One third of my applicants received, at random, a high school diploma. One third received a GED and the final third were listed as having not completed high school.<sup>43</sup>

With crime and education addressed, I randomized on work gaps. Ex-convicts are guaranteed to have gaps in work history. Other individuals who are not ex-convicts are not guaranteed to have any work gaps. In order to make the control group identical to the treatment group, in all other aspects except criminal history, I assigned all applicants a gap in their work history. I randomized the date of the work gap they were assigned.

Everyone, criminal or not, received a one year gap in their work history. Half of the applicants were given a two year old gap. The other half were given a current gap in their work history, meaning they were unemployed at the time of their application.<sup>44</sup> In addition to keeping the control and treatment group uniform, the addition of gaps in work history was appropriate.

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<sup>41</sup> See Pager (2003)

<sup>42</sup> Ibid.

<sup>43</sup> Those applicants with no degree were assigned a 0, those with a GED were assigned a 1, and those with a high school diploma were assigned a 2.

<sup>44</sup> Those applicants with a two-year-old gap were assigned a 1; those applicants with a current gap were assigned a 0.

Normally one may expect there to be no gap in an applicant's work history, and the existence of a gap is cause for concern to a prospective employer. With the current recession however, there are many individuals who, not being ex-convicts themselves, have gaps in their work history. I was able to keep my control and treatment groups identical, and due to the recession, explain away any work gap in a non-ex-convict's application.

#### *D. Applying to Jobs*

Once the resumes were created, the next step was selecting the firms I would be applying to and developing a system by which I applied for jobs. I wanted to ensure that the jobs I applied for could be obtained by ex-convicts and had no degree requirements. Ensuring that all applicants were on equal footing, at least with regard to the minimum qualifications for the jobs being applied for, was important.

For this experiment the two industries I focused on were fast food and big box stores. Fast food restaurants and big box stores are places where ex-convicts are eligible to apply. Since big box stores and fast food restaurants usually require online applications, this study differs from those in the past. Instead of sending in resumes by mail, I was using the resumes generated to physically apply for jobs online.

Another way my research deviated from that of previous studies is that in this study I was able to apply for multiple jobs within each firm. That is to say, each applicant that applied for a job was actually applying to, in some cases, several jobs at each firm location. Past resume audits were conducted by applying for one job at a time. In this study I was able to apply to multiple jobs at once. Nearly all big box firms and fast food restaurants no longer accept paper applications, and instead have a system in place where individuals interested in employment apply online. When applying online, applicants have the option of applying for numerous

positions at once. With some firms, applicants can even apply to multiple locations at the same time.

The option of applying to multiple locations at once was not one that I used, since the applications needed to go out in a structured manner. Using Lahey and Beasley's software I randomized the order in which applications went out, and the resume characteristics for a given applicant would change based on the firm or job for which they were applying. Although I wasn't able to apply to multiple firm locations at once, I could apply to multiple positions within each firm.

Firms, especially big box stores, usually list all of the available positions on their websites. Applicants have the option of applying to all open positions at the same time, simply by checking boxes next to those positions. For stores where only one position was open, I applied to that position. If multiple positions were open, then I applied to all open positions for which my applicants were qualified. Since each firm received three applications, if one applicant applied to multiple positions then all three applicants applied to those same positions. I created a separate column in the data set and logged all of the specific positions I applied to at each location.

The city I chose to apply for jobs in was Atlanta, with several applications also going to firms in the Atlanta suburbs. Each firm I applied to received three applications: one from a non-convict, one from an ex-convict who was sentenced to parole, and one from an ex-convict who was sentenced to jail. All other characteristics were randomized.<sup>45</sup> The applications were spaced out, with each firm receiving three total. One application was sent every other day. I applied for jobs from Nov. 2011 to Feb. 2012.

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<sup>45</sup> Race, level of education and work gaps were all randomly assigned using software developed by Lahey and Beasley (2009)

### *E. Employee Questionnaires*

Previous resume audits were simple in that once resumes were generated they could be immediately mailed out. The data point was created once the resume sent out, and any responses generated by the resumes were logged. Applying for jobs online has complicated things. Studies conducted by Bertrand and Mullainathan (2003), Lahey (2007) and Oreoupoulus (2011) utilized the help wanted section of newspapers. This study, in applying for jobs at big-box retailers and fast food chains, generated data points by applying for jobs exclusively online.

Internet applications give employers more control over the initial information applicants are required to surrender. With resumes, the applicant (or in this case the auditor) has total control over what the firm sees on paper. Online applications not only allow employers to demand more information, but they allow them to pre-screen prospective employees by requiring them to jump through several hoops before submitting their application.

Online applications are typically divided into several sections. Each section must be completed in full before the application is submitted. One of the sections that every firm, regardless of whether they are a retailer or fast food restaurant, includes in their application is an employee questionnaire. These questionnaires are typically at the end of the application and range anywhere from thirty to eighty questions, depending on the firm. From the firm's perspective, the questionnaires are designed to evaluate an employee's potential before an interview is granted.<sup>46</sup> The questions are typically multiple choice and are hypothetical in nature. They ask questions about past work experience, past job performance, dealing with employee conflicts, dealing with customer conflicts, ethical and safety practices, etc.

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<sup>46</sup> This information was determined by calling several firms and speaking with their HR manager. It is also listed on some firm's websites.

Below are examples of typical questions firms might ask, with possible answers from which the applicant is allowed to choose.

*How many times in the last year have you been late to work?*

- A. Never
- B. Once
- C. Twice
- D. A few times
- E. Many times

*If we asked previous employers to rate your work ethic, how would they respond?*

- A. Very Positively
- B. Positively
- C. Negatively
- D. Very Negatively

*You notice that another employee is breaking company safety policy. How do you respond?*

- A. Ignore them. They probably had a good reason.
- B. Call a supervisor and complain.
- C. Tell another employee and ask them to confront the person.
- D. Confront the person and explain the importance of workplace safety.



Responding to the challenge initially posed by these questionnaires was difficult. I needed to develop a system by which employees responded to the questions, and I needed to ensure that responses were kept uniform. In some cases firms would change the questions and answers for each application. Firms would also vary the number of questions depending on the location at which the applicant was applying. No two applicants would see the same questions in the same order. Adding to the difficulty was the fact that some of the questions were, at times, ambiguous at best. There was no obvious right or wrong answer, and no way for me to determine how the firm reacted to certain responses.

To get around the challenge posed by the employee questionnaires, I simply decided to block on responses. Every individual, regardless of race or criminal history, responded the same exact way to questions asked. This required that I first go online and apply for jobs several times to each firm. At the end of the application I would copy down all questions asked and the answers to those questions. Once a bank of questions and responses had been created I determined which responses were best and used those in applying for jobs. Every person that applied gave the same response to the questions asked by each firm.

Applying for jobs over the internet complicates things in that employers have more control over the information they receive. They have the ability to demand more information up-front than would if they filled positions by accepting mailed-in resumes. They also have the ability to pre-screen prospective employees in ways not available in the pre-internet age. This is crucial to this study, and all resume audit studies moving forward into the future. More and more employers are moving their hiring process online, and the death of the newspaper is only expediting this process. Future studies will need to take the unique challenges of internet applications into consideration, as they present challenges not previously tackled in the literature.

### *F. Measuring Responses*

After resumes had been created and jobs had been applied to, I recorded callbacks. Each time an applicant received a callback, I marked it as a 1. The firm who called back was then informed that the applicant had accepted another position elsewhere. If an applicant did not receive a callback, I marked it as 0. I also recorded the amount of time it took an applicant to receive a callback. In total 177 data points were generated.

## CHAPTER FIVE

### FINDINGS

Models that exist in the current literature provided insight for several of the determinants of discrimination. I chose to analyze not only the effect of race on callbacks, but also the effects of criminal history, education and work gaps. These characteristics can potentially be correlated with race. The first model I ran was a basic OLS regression on all firms.<sup>47</sup>

#### *A. OLS Regression with All Firms*

My results, when running an OLS regression on all firms in the data set, indicated that race was the dominant characteristic in determining whether or not an applicant received a callback. In changing an applicant's race from White to African-American, the probability he received a callback fell by 5.71 percent. When changing the applicant's criminal status from no criminal history to probation or jail time, the probability he received a callback fell by 1.79 percent. An interesting find was education. While it didn't have the same size effect that race had, increases in education were negatively correlated with the probability that an applicant received a callback. If an applicant's education was increased from high-school dropout to a GED or diploma, the probability that they received a callback decreased by 3.21 percent. None of the results were statistically significant.

The last of the four characteristics analyzed in the initial regression was gaps in work history. More specifically, how does having a gap in work history affect an applicant's ability to get a callback for an interview? There were two options for work gaps: current or past. Each gap randomly assigned was a year in length. One of those gaps was two years old, and the applicant was currently employed at the time of their application. One of those gaps was current, and the applicant was currently unemployed at the time of their application. When assigning an applicant

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<sup>47</sup> See Table 1 on pg. 26

a past work gap, the probability that they received a callback increased by 2.85 percent. Like the previous independent variables, changes in work gaps were also not statistically significant.

In running a regression with all firms that I applied to, there were some issues. The data set that includes all firms is problematic due to the fact that some of the firms may not have actually received the application. A major problem that I ran into while collecting data was the abundant use of E-Verify software. E-Verify resulted in my inability to confirm whether or not a specific firm received an application.

### *B. Problems with Initial Data Collection*

As I have previously discussed, this study differs from those in the previous literature. Instead of sending out resumes by mail, I actually went in and applied for each job over the internet. Most big box stores and restaurants no longer accept mail-in resumes for job openings, and instead require that applicants apply online.

When a traditional resume is sent out, there is no way for a prospective employer to determine whether or not the individual applying has met the minimum standards for employment.<sup>48</sup> Usually job applicants, when applying by resume, are called in for an interview. During that process they are made to provide proof of their legal eligibility to work in the United States. When applying over the internet, this entire process is now done at the start of the application. The software that is used is called E-Verify, and it significantly changed the way I collected the data.

### *C. E-Verify*

On November 25, 2002, in response to the September 11 terrorist attacks on the United States, the Department of Homeland Security was created. In addition to protecting U.S. soil from terror attacks both foreign and domestic, the DHS is responsible for managing the

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<sup>48</sup> See Lahey (2007)

employment authorization of U.S. immigrants. The terrorist attacks on 9/11 were perpetrated by immigrants to the United States. In response, the DHS created the U.S. Citizenship and Immigration Service which runs the electronic E-Verify software.

E-verify software is a free internet-based program run by the DHS. It allows businesses to immediately compare information from an employee's Employment Eligibility Verification Form (I-9) to data from U.S. government records.<sup>49</sup> If the information matches, then that employee is considered eligible to work in the United States. If there is a mismatch, E-Verify will alert the employer. The employee is allowed to work while he or she resolves the problem, but they are required to contact the appropriate agency to resolve the discrepancy within eight federal government work days from the referral date. The program is operated by the Department of Homeland Security in partnership with Social Security Administration. Currently E-Verify software is used by more than 350,000 employers in the United States and roughly 1,500 businesses enroll in the program every week.<sup>50</sup>

Nearly all of the firms I applied to used the E-Verify software. This was problematic because of how the firms with E-Verify structure their hiring process. When applying online, firms required that each applicant create a “profile”. In creating this profile the applicant’s name and social security number were requested. At the time I was applying for jobs I was unaware, but firms using E-Verify match the applicants name with their social security number.<sup>51</sup> If they do not match then the application is discarded.

The first application I completed received a callback; however that was the only callback I received. After generating over two hundred data points from sixty-eight firms and receiving only one callback I began to suspect something was wrong. Although the weak economy could

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<sup>49</sup> See <http://www.uscis.gov/portal/site/uscis/menuitem.eb>

<sup>50</sup> Ibid.

<sup>51</sup> Ibid.

have been the culprit I decided to inquire further. After researching the problem and contacting several businesses, I discovered that all of the applications I had submitted had been rejected. Even though several firm's websites stated that the applications had been submitted successfully, they were not. Instead, whenever a name and social security number did not match, the application was rejected. Many of the data points I had generated were rendered useless, since none of the employers actually received the applications.

#### *D. OLS Regression with Firms No E-Verify*

Since the existence of e-verify made much of my data unusable, I decided to apply to firms that did not require e-verify. This also meant that applicants were not required to disclose their criminal history. It made it impossible to make any connection between crime and callback rates, but I could still test the effects of race, education and work gaps on callback rates. Before the E-Verify problem was discovered, I was applying exclusively to big box stores and fast food restaurants.

In choosing a new set of firms to apply to, I needed to keep some of the old requirements in mind. I had to apply for jobs that individuals with any level of education could obtain. The new firms I was applying to also had to be accepting of those with gaps in their work history. I chose to apply to pizza places, since none of the major chains use E-Verify software. They also don't require applicants to disclose their criminal history. When applying for these jobs I used the same criteria as before. The city I chose to apply for jobs in was Atlanta, with several applications also going to firms in the Atlanta suburbs. Each firm I applied to received three applications, but this time criminal history was not a variable. The applications were spaced out, with each firm receiving three total. One application was sent every other day. I applied for jobs from Feb. 2012 to Mar. 2012. In total 57 data points were generated.

My results, when running an OLS regression on just those firms in the data set that didn't require E-Verify, indicated that race was again the dominant characteristic in determining whether or not an applicant received a callback.<sup>52</sup> In changing an applicant's race from White to African-American, the probability he received a callback fell by 20 percent. This result was significant at the 95% level. Race was the only statistically significant variable. Compared to the mean, this was an interesting statistic. Fifty-six percent of the applicants in this sample were African-American.<sup>53</sup> Only forty-four percent of applicants were White.

Education was, again, an interesting variable. It didn't have the same size effect that race had, but increases in education were negatively correlated with the probability that an applicant received a callback. If an applicant's education was increased from high-school dropout to a GED or diploma, the probability that they received a callback decreased by 5.72 percent. When assigning an applicant a past work gap, the probability that they received a callback increased by 7.36 percent. This means that those job-seekers who were listed as being currently employed were more likely to get a callback than those who had been unemployed at the time of their application. None of the above variables were statistically significant.

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<sup>52</sup> See Table 2 on pg. 26

<sup>53</sup> This was determined by the resume randomizer software developed by Lahey and Beasley (2009).

## CHAPTER SIX

### CONCLUSION

One of the problems in attempting to infer causation is the fact that there are always variables that cannot be observed by the researcher.<sup>54</sup> I previously discussed one of the major problems of resume audits being the fact that callbacks are not necessarily indicative of whether or not an applicant will be hired. Another major problem with resume audits are those variables that are unobservable to the researcher but integral to the firm's hiring practices. While there are always unobserved variables in any economic research, this problem can be particularly frustrating for those conducting resume audits.<sup>55</sup>

An unobserved variable that was unknown through much of the data collection was the fact that firms using E-Verify resulted in the automatic rejecting of applicants. Because I applied to jobs with fake names and fake background information, many of the applications I sent out were rejected. The use of E-Verify is not something that past studies have been concerned with, since those studies were executed by sending out resumes. Matching names and social security numbers in a government data base is not an issue when paper resumes are physically mailed out. Due to the existence of E-Verify, conducting a resume audit on big-box retailers and fast food chains is much more difficult.

Ignoring the data for all firms and focusing on the results for firms that did not require matching names and social security numbers did nothing to provide any link between racial discrimination in labor markets and criminal history. The firms that did not use E-Verify also did

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<sup>54</sup> See Neumark (2011) and List (2009)

<sup>55</sup> See Bertrand and Mullainathan (2003). They discuss in detail the problem of unobservables from the perspective of the auditor. While their study and many like it (See Lahey, 2007) try to control for these unobservables, they are not always entirely successful.



not look at criminal history. Their discrimination against African-American applicants could, then, have nothing to do with any past crime the applicants had perpetrated.

The purpose of this research was to analyze the level to which African-Americans are discriminated against in the labor market. More specifically, I was attempting to analyze the underlying reasons for labor market discrimination against African-Americans. The literature is full of empirical support for the existence of racial discrimination and taste-based bias on the part of employers. Since there is no study that attempts to look at the issue of race and criminal history together in determining callback rates, I was hoping to add to the discussion with this research. Unfortunately E-Verify has made it difficult to do so, as anyone conducting a study such as this would need to apply using real individuals with real criminal histories. The question of how much of the labor market discrimination that African-Americans face is a result of a criminal record remains unanswered.

**Table 1: OLS with All Firms**

	Callback
Crime	-0.0102 (.0179)
Race	-0.0571 (.0291)
Education	-0.0321 (.0184)
Gap	0.0285 (.0298)
_cons	0.0968** (.0368)
<i>N</i>	177
<i>R</i> <sup>2</sup>	0.049
adj. <i>R</i> <sup>2</sup>	0.027

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ **Table 2: OLS with Firms Not Requiring Disclosure of Crime**

	Callback
Race	-0.200* (.0792)
Education	-0.0572 (.0498)
Gap	0.0736 (.079)
_cons	0.241* (.0934)
<i>N</i>	57
<i>R</i> <sup>2</sup>	0.168
adj. <i>R</i> <sup>2</sup>	0.104

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 3: Output File OLS with All Firms**

Source	SS	df	MS			
Model	.32874719	4	.082186798	Number of obs =	177	
Residual	6.39441665	172	.037176841	F( 4, 172) =	2.21	
Total	6.72316384	176	.038199795	Prob > F =	0.0698	
				R-squared =	0.0489	
				Adj R-squared =	0.0268	
				Root MSE =	.19281	

  

Callback	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Crime	-.0102248	.0178725	-0.57	0.568	-.0455026	.025053
Race	-.0570509	.0291441	-1.96	0.052	-.1145771	.0004753
Education	-.032097	.0184475	-1.74	0.084	-.0685097	.0043158
Gap	.0284838	.0298271	0.95	0.341	-.0303906	.0873581
_cons	.0968364	.0367561	2.63	0.009	.0242853	.1693875

**Table 4: Output File OLS with All Firms Not Requiring Disclosure of Crime**

Source	SS	df	MS			
Model	.904206316	4	.226051579	Number of obs =	57	
Residual	4.46421474	52	.085850283	F( 4, 52) =	2.63	
Total	5.36842105	56	.095864662	Prob > F =	0.0445	
				R-squared =	0.1684	
				Adj R-squared =	0.1045	
				Root MSE =	.293	

  

Callback	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Race	-.200136	.0791561	-2.53	0.015	-.3589743	-.0412977
Education	-.0571559	.0497704	-1.15	0.256	-.1570275	.0427156
Gap	.0736105	.078988	0.93	0.356	-.0848905	.2321115
_cons	.2408469	.0933554	2.58	0.013	.0535155	.4281783

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