The Impact of “Soft” Affirmative Action Policies on Minority Hiring in Executive Leadership: The Case of the NFL’s Rooney Rule

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There is a dearth of affirmative action policies designed to impact executive level hiring. The National Football League’s (NFL) “Rooney Rule” is the exception. The Rooney Rule requires NFL teams to interview at least one minority candidate for any head coaching vacancy. Using a difference-in-differences approach, I present evidence that the Rooney Rule had a significant, positive impact on the likelihood that a minority candidate would fill an NFL head coaching vacancy. The Rooney Rule could serve as a case study for other types of firms wishing to enact “soft” affirmative action policies to impact executive hiring. (JEL: J710, J780, K310)

1. Introduction

Current statistics show a lack of diversity in corporate boardrooms—in 2012, only twenty-one Fortune 500 CEOs, a mere 4.2%, were minorities. In addition, there is a dearth of research that explores the impact of affirmative action policies on executive hiring, perhaps due to a lack of affirmative action policies that pertain to executive hiring. An affirmative action plan...
implemented by a public sector employer is subject to both Title VII of the Civil Rights Act of 1964 and the Equal Protection Clause of the U.S. Constitution (U.S. Equal Employment Opportunity Commission, 2006). Employers may implement voluntary affirmative action plans in appropriate circumstances, such as to eliminate a manifest imbalance in a traditionally segregated job category (United Steel Workers of America v. Weber, 1979; Johnson v. Transportation Agency, 1987). Title VII prohibits firms from establishing “hard” affirmative action policies that would require the direct consideration of minority status during the hiring process (e.g., quotas or inflexible goals). However, “soft” affirmative action policies that are designed to change the composition of the candidate pool, rather than criteria used during the hiring process, could be a viable option for firms seeking to increase diversity at the executive level.

In August 2014, U.S. Senator Tim Scott (R-South Carolina) introduced Senate Resolution 511, what could be one of the most significant pieces of civil rights legislation in recent years. Specifically, the bill seeks to create a version of the National Football League’s (NFL) “Rooney Rule” for corporate America. Established in 2003, the Rooney Rule requires NFL teams to interview at least one minority candidate for any head coaching vacancy. Senate Resolution 511 “encourages companies to voluntarily establish a best practices policy to identify minority candidates and minority vendors by implementing a plan to interview a minimum of two qualified minority candidates for managerial openings at the director level and above and to interview at least two qualified minority businesses before approving a vendor contract.” The bill has received bi-partisan congressional support, but there is little credible evidence as to whether the Rooney Rule has even impacted hiring practices in the NFL.

Using a difference-in-differences (DD) approach where NFL offensive and defensive coordinators as well as National Collegiate Athletic Association (NCAA) head coaches serve as comparison groups, I estimate the impact of the Rooney Rule on the probability that a minority candidate fills an NFL head coaching vacancy. Specifically, I compare the deviation from prior hiring trends among a “treatment group” that was subject to the Rooney Rule with the analogous deviation for a “comparison group” that was arguably less affected by implementation of the Rooney Rule, if at all. If the Rooney Rule was simply implemented at a time coincident
with changing social factors that would have increased the probability that a minority fills an NFL head coaching position regardless of any policy interventions, in the absence of a proper comparison group we would incorrectly attribute outcomes to the implementation of the Rooney Rule. However, the deviation from trend in the comparison group will reflect those hard-to-observe factors (e.g., changes in racial sentiment) that may have influenced hiring decisions in the absence of the Rooney Rule (Shadish et al., 2002).

Using data from the 1992 through 2014 seasons, my preferred model specification suggests that a minority candidate is a statistically significant 19–21% more likely, depending on the comparison group, to fill an NFL head coaching vacancy in the post-Rooney era than the pre-Rooney era. Estimates show surprising consistency across comparison groups as well as model specification and tend to be statistically significant at traditional levels of confidence.

The impact of the Rooney Rule could be attributed to a number of different mechanisms; however, I discuss three likely candidates. The first is simply a mechanical effect that is due to the interaction of a franchise’s capacity constraint (i.e., franchises can only interview a select number of candidates because of the competitive hiring timeline) and a reduction in noise. That is, if a franchise is operating under a capacity constraint and there is a lot of noise in the process of selecting candidates, the Rooney Rule reduces noise by requiring the franchise to take minority status into consideration when choosing candidates. A second potential mechanism is a public relations effect. In this scenario, the Rooney Rule actually represents social pressure to promote diversity in hiring, and the franchise takes this into consideration when selecting candidates and choosing a head coach. A third potential mechanism, and the one that is most often discussed in the popular media, is the overcoming bias effect. According to this mechanism, the franchise is biased, for whatever reason, against interviewing minority candidates. However, after being forced to interview a minority candidate, the franchise recognizes their bias and realizes that the minority candidate is best suited for the position.

This paper proceeds in the following manner: the first section provides an introduction to federal anti-discrimination legislation and affirmative action initiatives as well as a more thorough introduction of the Rooney Rule; the second section reviews the DD research design; the third section
outlines the baseline model specification; the fourth section lists robustness checks that will be employed; the fifth section provides an overview of the data; the sixth section presents results; and the seventh section delivers a discussion of potential mechanisms and concluding commentary.

2. Affirmative Action in the United States and the Rooney Rule

The United States has a storied history of anti-discrimination legislation and affirmative action initiatives at the federal level. The Civil Rights Act was passed in 1964. President John F. Kennedy signed Executive Order 10925, which mandated that government contractors “take affirmative action to ensure that applicants are employed, and employees are treated during employment, without regard to their race, creed, color, or national origin.” In 1965, President Lyndon B. Johnson affirmed the Federal government’s commitment to affirmative action with Executive Order 11246. In 1967, this was amended by Executive Order 11375, which added “sex” to the list of protected categories and established the Office of Federal Contract Compliance Programs (OFCCP), the branch of the Department of Labor in charge of affirmative action and non-discrimination enforcement.

Evidence suggests that this bundle of anti-discrimination and affirmative action initiatives had an impact on racial and gender gaps in labor market outcomes. Donohue and Heckman (1991) found that federal civil rights policy was the major contributor to the sustained improvement in African American economic status that began in 1965. Heckman and Payner (1989) assessed the contribution of federal anti-discrimination policy in regards to the dramatic improvement of African American economic status in manufacturing that occurred in South Carolina in the mid-1960s. They argued that human capital, supply shift, and tight labor market explanations all failed to account for this economic breakthrough, but that federal anti-discrimination programs had a significant contribution.

With the establishment of the OFCCP, federal contractors were required to submit annual affirmative action plans that identified the underutilization of women and minorities relative to their representation in the labor market from which they are hired and develop goals and timetables for their hiring. Using EEOC data, Ashenfelter and Heckman (1976), Goldstein and Smith (1976), and Smith and Welch (1984) found that federal
contractor status (i.e., firms subject to affirmative action) had a positive effect on increasing the employment of black males from 1966 to 1970, 1970 to 1972, and 1970 to 1980, respectively. Heckman and Wolpin (1976) found a similar result in their analysis of firms in the Chicago metropolitan area for the period 1970–73. Leonard (1984a, 1984b, 1986) found that affirmative action led to faster growth in the employment of minorities and women from 1974 to 1980.

This literature suggests that federal-level anti-discrimination policies have experienced a measure of success in changing the racial composition of the workforce. However, until Senate Resolution 511, the federal government has not concerned itself with hiring at the executive level. As we debate the efficacy of a federal affirmative action policy designed to impact executive hiring, it is important to investigate whether firm-level affirmative action policies can have an impact on the racial composition of executive leadership. The NFL’s Rooney Rule serves as a case study on the impact of affirmative action policies on minority hiring in executive leadership.

In 2002, two African American coaches were fired: Tony Dungy, by the Tampa Bay Buccaneers, and Dennis Green, by the Minnesota Vikings. Green had served 10 years as a head coach, and this was his first season with a losing record. Dungy became the first coach with a winning record to be fired by the Buccaneers. Later that year, high-profile discrimination lawyers, Cyrus Mehri and Johnnie Cochran, released the results of a study they had commissioned that demonstrated that even though black head coaches won a higher percentage of games, they were less likely to be hired and more likely to be fired than their white counterparts. Dan Rooney, the owner of the Pittsburgh Steelers and chairman of the NFL’s diversity committee, joined the movement, and in 2003 an anti-discrimination policy known as the Rooney Rule was established. As mentioned previously, the Rooney Rule requires NFL teams to interview at least one minority candidate for any head coaching vacancy. It was later expanded to include senior football operations personnel (e.g., general managers) in 2007.

The Rooney Rule is an example of a “soft” affirmative action policy in that no quota or preference is given to minorities in the hiring decision; teams are simply required to interview at least one minority candidate. If a team fails to interview a minority candidate for a vacant head coaching position they are subject to league-imposed sanctions. For example, in 2003
the Detroit Lions were fined $200,000 for failure to interview a minority candidate. However, other than the 2003 fine and reprimand levied on the Detroit Lions, no other NFL team has been found in violation of the Rooney Rule when hiring a head coach.

Given the national attention this rule has received, surprisingly little research has been conducted to measure its effectiveness. In the study commissioned by Mehri and Cochran, Madden (2004) examined the links between race and performance of NFL head coaches between 1990 and 2002 and found that African American head coaches exhibited better performance during the first year of their tenure, over the course of their tenure, and in the last year of their tenure than white coaches, on average. She concluded that, since African American NFL head coaches performed better than their white counterparts, but were hired at lower rates, African American coaching candidates must have been held to a higher standard during the hiring process. In a companion study, Madden and Ruther (2011) found that the racial differences in head coaching performance observed prior to 2003 were not present in the post-Rooney era. This led to the conclusion that the implementation of the Rooney Rule “likely eliminated” the racial disadvantage faced by African Americans during the hiring process. However, the main conclusions of both studies were based on simple mean comparisons, with little control for other possible confounding variables.

Fee et al. (2006) focused on the factors that affect internal versus external hiring of NFL head coaches. Using logit regression models with data from 1970 to 2001, the authors found little evidence that race affects either the promotion of assistant coaches to head coach positions or the dismissal of head coaches. These models controlled for coaches’ performance, age, experience with the team, and team performance; however, their sample ended before the Rooney Rule was implemented and therefore could not shed light on the relationship between the Rooney Rule and minority hiring.

Solow et al. (2011) extended the Fee et al. (2006) dataset through the 2009 season. Using logit and hazard models that controlled for age, experience, and performance, the authors concluded that conditional on an NFL coach reaching coordinator status there was no evidence that race influences head coaching hiring decisions. To examine the impact of the Rooney Rule, the authors split their data into pre-Rule (1990–2002) and post-Rule (2003–2009) periods and compared the effect of race across the two periods.
Using a logit model, they found that the estimated effect of race on an assistant coach being promoted to a head coaching position was negative prior to the Rooney Rule and positive after the Rooney Rule; however, in both cases the effect was small and statistically insignificant.

Both the Madden and Ruther (2011) and Solow et al. (2011) studies limited the time period of their analysis (1990–2009), focused on only a sub-sample of individuals potentially impacted by the Rooney Rule (only African American head coaches and minority offensive and defensive coordinators, respectively), and did not attempt to control for a number of relevant factors that could impact the hiring of minorities. Moreover, they came to fundamentally different policy conclusions. My study adds a new dimension to this research by including head coaches who were not promoted from offensive or defensive coordinator positions, adding an additional comparison group (NCAA head coaches), extending the time period of consideration to 2014, and employing a DD approach to account for hard-to-observe factors, such as changes in racial sentiment, that are concurrent with the implementation of the Rooney Rule and may have also influenced hiring decisions.

3. Research Design

Figure 1 presents the percent of minority NFL head coaches from 1992 to 2014. The solid horizontal line in 2003 visually identifies the year the Rooney Rule was implemented. Figure 2 presents the percentage of NFL head coaching vacancies filled by minorities from 1992 to 2014. Once again, the horizontal line indicates the year the Rooney Rule was implemented. There is a notable increase in minority hires around the time of the Rooney Rule’s implementation; however, societal changes over this period make it difficult to credibly identify causal inferences from these trends. For example, national and regional racial sentiment was changing over this time period, which could be expected to increase the probability that a minority is hired to coach an NFL team. If the Rooney Rule was simply implemented at a time coincident with changing social factors that would have increased the probability that a minority fills an NFL head coaching position regardless of any policy interventions, we would incorrectly attribute outcomes to the implementation of the Rooney Rule.
To circumvent these concerns, I rely on a DD approach. Specifically, I compare the deviation from prior hiring trends among a “treatment group” that was subject to the Rooney Rule with the analogous deviation for a “comparison group” that was arguably less affected by implementation of the Rooney Rule, if at all. The intuition is that the deviation from trend in the comparison group will reflect those hard-to-observe factors (e.g., changes...
in racial sentiment) that may have influenced hiring decisions in the absence of the Rooney Rule (Shadish et al., 2002).

The central challenge for the DD design is to identify plausible comparison groups that were not affected by the intervention that is being studied. I have identified two potential comparison groups: NFL offensive and defensive coordinators and NCAA head coaches in automatic qualifying (AQ) conferences (in the Appendix, I also pool NFL offensive and defensive coordinators and NCAA head coaches for a third comparison group). As explained earlier, the Rooney Rule was implemented in 2003 and applies only to the hiring of head coaches and senior football operations personnel. The rule does not apply to the hiring of offensive or defensive coordinators. As the name suggests, the offensive coordinator is the member of the coaching staff who is in charge of the offense. Likewise, the defensive coordinator is the member of the coaching staff who is in charge of the defense. Offensive and defensive coordinators represent the second level of the football command structure after the head coach. If the head coach is the CEO of the firm, then the offensive and defensive coordinators are the top-ranking vice-presidents. Offensive and defensive coordinators have the most responsibility after the head coach and are most likely to eventually be promoted to a head coaching position. Figure 3 compares the percentage of minority offensive and defensive coordinators to head coaches in the NFL.
Although the Rooney Rule was not designed to impact the hiring process of offensive and defensive coordinators in the NFL, it is conceivable that there were spillover effects of the rule. For example, teams may voluntarily interview more minority candidates for these positions because they were required to interview more minority candidates for head coaching positions. Given my identification strategy, a more concerning possibility is that the pool of minority coordinators is endogenously depleted because minority coordinators are being elevated to head coaching positions. The first example would increase the number of minorities in the comparison group, without directly changing the composition of the treatment group (thus attenuating the estimated impact of the Rooney Rule), while the second example would decrease the number of minorities in the comparison group by increasing the number of minorities in the treatment group (thus increasing the estimated impact of the Rooney Rule if minorities were not replenishing the comparison group at a higher rate). Although I have no evidence that suggests either of these scenarios occurs in the data, given these concerns I have identified a second comparison group, NCAA head coaches, to check the robustness of my results.

The NCAA’s Division I Football Bowl Subdivision (FBS), formerly known as Division I-A, is the top level of college football in the United States. Division I FBS is comprised of schools from six conferences. These schools compete in post-season bowl games, with the champions of six conferences (American Athletic Conference, Atlantic Coast Conference, Big 12 Conference, Big Ten Conference, Pacific-12 Conference, Southeastern Conference) receiving automatic bids to the Bowl Championship Series (BCS). These six conferences are the AQ conferences. Division I FBS

1. In 2014, the College Football Playoff replaced the BCS.
also has seven “independent” schools that have no conference affiliation. Of these seven schools, Notre Dame is the only independent that has guaranteed access to BCS bowl games when it meets certain defined performance criteria. Because football programs in AQ conferences (and Notre Dame) are the most comparable with the NFL, head coaches in these programs comprise the second comparison group. Figure 4 compares the percentage of minority NFL and NCAA head coaches.

Figure 4. Percent minority NFL and NCAA head coaches, by year.

It is much more challenging to develop a theory in which the Rooney Rule impacts the hiring process for college football head coaches. First, the NCAA has no analogous rule that requires member schools to interview minority candidates. Second, since the 1970 NFL/AFL merger, only one minority NCAA head coach has made the direct transition to NFL head coach.3 This fact attenuates concerns regarding the endogenous depletion of the comparison group. Therefore, if the Rooney Rule influenced the NCAA comparison group, the implied treatment contrast would be attenuated and the DD design would underestimate the impact of the Rooney Rule.

Given the small sample sizes for both comparison groups, I create a third comparison group that is a pooled sample of NFL offensive and defensive

3. Dennis Green served as Stanford University’s head football coach from 1989 to 1991 and served as the Minnesota Vikings head football coach from 1992 to 2001.
coordinators and NCAA head coaches. Given the similarity of estimates using the pooled comparison group in respect to the distinct comparison groups, tables and figures related to the pooled comparison can be found in the Appendix. Figure A1 compares the percentage of minority offensive and defensive coordinators as well as NCAA head coaches to head coaches in the NFL.

As mentioned previously, if the Rooney Rule was simply implemented at a time coincident with changing social factors that would have increased the probability that a minority fills an NFL head coaching position regardless of any policy interventions, we would incorrectly attribute outcomes to the implementation of the Rooney Rule. That said, the deviation from trend in both comparison groups should reflect any changing social mores that may have influenced hiring decisions in the absence of the Rooney Rule. But what if the Rooney Rule was implemented when the NFL owners (and not society generally) decided it was time to take action to improve minority hiring among head coaches? Since the NFL owners are a self-governing body, and adopted the Rooney Rule by a unanimous 32-0 margin, it seems likely that the rule was implemented in response to owner preferences. If owner preferences for minority hiring changed at the time the Rooney Rule was passed and those preferences only changed for hiring head coaches and not offensive and defensive coordinators, the estimated impact of the Rooney Rule will be biased when using NFL coordinators as a comparison group. However, as long as the preferences of NFL owners over hiring head coaches changed similarly for offensive and defensive coordinators, the estimated impact of the Rooney Rule will be unbiased. Revealed preferences would suggest that owners were equally inclined to hire minority coordinators (see Figure 3).

This is another reason for the inclusion of the NCAA comparison group. Any change in heart among NFL owners would had to have occurred concurrently among all administrators responsible for hiring at seventy-three schools in six different conferences to bias the estimated impact of the Rooney Rule when using NCAA head coaches as the comparison group. Therefore, if the estimated impacts of the Rooney Rule are substantively similar regardless of comparison group, we can feel more confident that the DD design is actually identifying the impact of the Rooney Rule.
4. Estimation

Following the intuition of the DD research design, I estimate the following ordinary least squares (OLS)\(^4\) regression model as a baseline specification:

\[
Y_{itf} = \beta_0 + \beta_1 HC_{itf} + \beta_2 (ROONEY_t \times HC_{itf}) \\
+ \beta_3 (YEAR_t \times HC_{itf}) + \mu_t + \alpha_f + \varepsilon_{itf}
\]  

where \(Y_{itf}\) is a binary variable equal to one if coaching vacancy \(i\) in year \(t\) in franchise \(f\) is filled by a minority candidate and zero otherwise, \(ROONEY_t\) is a binary variable equal to one for observations from the Rooney era (2003–14), \(HC_{itf}\) is a binary variable equal to one if coaching vacancy \(i\) in year \(t\) in franchise \(f\) is an NFL head coaching vacancy and zero otherwise, and \(YEAR_t\) is a linear time trend.\(^5\) \(YEAR_t \times HC_{itf}\) is an interaction term that allows the trend function for NFL head coaches and the comparison group to differ. The variables \(\mu_t\) and \(\alpha_f\) represent year and franchise\(^6\) fixed effects, respectively, and \(\varepsilon_{itf}\) is a mean-zero random error term. It is worth noting that \(ROONEY_t\) and \(YEAR_t\) main effects are not included in the baseline specification due to the inclusion of year fixed effects.

In this regression, specification \(\beta_2\) denotes the Rooney effect. In short, this estimate is the difference between the deviations from trend for the treatment and comparison groups. If the Rooney Rule is effective, the deviation from trend for NFL head coaches will be greater than that for the comparison group(s).

5. Robustness Checks

The most fundamental concern with inferences from the DD approach is the reliance on the assumption that deviations from prior trends within the comparison groups provide a valid counterfactual for what would have

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\(^4\) I also estimated the specification using a logit model. Results for all comparisons groups were significant and substantively similar to the OLS results.

\(^5\) I also conducted analyses that included a higher order trend term. Results can be found in Table 3.

\(^6\) Franchises (i.e., teams) are the firms of the NFL. The NFL is comprised of thirty-two franchises.
happened to NFL head coaches had the Rooney Rule not been implemented. The internal validity of this identification strategy would be violated if there were unobserved determinants of minority hiring that varied both contemporaneously with the onset of the Rooney Rule and differentially between NFL head coaches and either of the comparison groups. Two distinct comparison groups (NFL offensive and defensive coordinators and NCAA head coaches) were selected to assuage these concerns.

In addition to a comparison of effects based on two distinct comparison groups, I also assess the sensitivity of results to changes in the set of regression controls included. My preferred model includes a linear trend that is allowed to differ for the treatment and comparison groups. I also present results that include a higher order trend term and its interaction. These results are discussed in greater detail below.

6. Data

My dataset contains all NFL offensive coordinators, defensive coordinators, and head coaches for the 1970 (NFL/AFL merger\(^7\)) through 2014 seasons. The dataset was compiled by Fee et al. (2006) and extended through the 2009 season by Solow et al. (2011). I then extended it through the 2014 season. For my main analyses, I use data from the 1992–2014 seasons in an effort to create a more balanced panel; however, results are robust to inclusion of pre-1992 data (see Table A2). I denote coaching vacancy \(i\) to have occurred in franchise \(f\) in year \(t\) if the name of the offensive coordinator, defensive coordinator, or head coach in year \(t\) is different from that in year \(t - 1\). I then denote whether coaching vacancy \(i\) was filled by a minority candidate based on the race of the individual listed in year \(t\).

The Solow et al. (2011) dataset was missing a race indicator for 46 offensive and defensive coordinators. Photographs and biographical information were used to determine the racial minority status of these individuals. When racial minority status was in question, two independent coders reviewed the information and made a determination. The individual was coded only if both reviewers agreed on minority status. Using this process, I was able to

\(^7\) Prior to 1970, there were two major professional football leagues in the United States: the American Football League (AFL) and NFL. In 1970, the two leagues merged, retaining the name of the NFL.
Table 1. Summary statistics

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>NFL head coaches</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of vacancies</td>
<td>99</td>
<td>80</td>
</tr>
<tr>
<td>Total number of vacancies filled by minorities</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Percent of vacancies filled by minorities</td>
<td>7.1</td>
<td>20.0</td>
</tr>
<tr>
<td><strong>NFL offensive and defensive coordinators</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of vacancies</td>
<td>264</td>
<td>277</td>
</tr>
<tr>
<td>Total number of vacancies filled by minorities</td>
<td>36</td>
<td>55</td>
</tr>
<tr>
<td>Percent of vacancies filled by minorities</td>
<td>13.6</td>
<td>19.9</td>
</tr>
<tr>
<td><strong>NCAA head coaches</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of vacancies</td>
<td>181</td>
<td>141</td>
</tr>
<tr>
<td>Total number of vacancies filled by minorities</td>
<td>8</td>
<td>21</td>
</tr>
<tr>
<td>Percent of vacancies filled by minorities</td>
<td>4.4</td>
<td>14.9</td>
</tr>
</tbody>
</table>

determine the minority status of thirty-seven individuals, leaving nine with missing data. I was unable to identify a photograph for these nine individuals. This same process was used when extending the dataset through the 2014 season. I was unable to determine the minority status of three individuals during the extension process. They are not included in my analysis.

The dataset used for my primary analyses (1992–2014) contains 720 coaching vacancies. Offensive and defensive coordinator vacancies account for 541 of these observations, and head coaching vacancies account for 179 observations. Of the 541 offensive and defensive coordinator vacancies, minorities filled 91. Of the 179 NFL head coaching vacancies, minorities filled 23. Additional summary statistics can be found in Table 1.

For the second comparison group, I compiled a dataset that contains all NCAA head coaches for the 1970 through 2014 seasons in schools that were categorized as belonging to an AQ conference for the 2013–14 football season as well as AQ independent Notre Dame. If a coach was fired prior to the end of a season, and an interim coach completed that season but was not hired in the subsequent year, the interim coach is not included in the dataset. The intuition behind this decision is that interim coaches are almost always current assistant coaches that are promoted to fill the vacancy only for the remainder of the season. These interim coaches are often not subject to the same hiring criteria that accompany a normal job search. However, if the interim coach is hired as the head coach for the subsequent year, the individual is included in the dataset.
To determine the minority status of an NCAA head coach, I followed the same procedure that was outlined above for NFL offensive and defensive coordinators with missing data. That is, I reviewed photographs of the individual and biographical information. After reviewing this information, if I was unsure about the minority status of an individual, I would make my best approximation, and another reviewer would rate the individual. The individual was coded only if both reviewers agreed on minority status. Using this process, I was able to determine the minority status of all but six coaches for which I lacked an appropriate photograph. Only one of these individuals coached between 1992 and 2014. These data were then merged with the extended NFL head coaching data discussed above.

The NCAA/NFL head coach dataset used in my main analyses (1992–2014) contains 501 coaching vacancies. NCAA head coaching vacancies account for 322 of these observations, and NFL head coaching vacancies account for the remaining 179 observations. Of the 322 NCAA head coaching vacancies, minorities filled 29. Of the 179 NFL head coaching vacancies, minorities filled 23. Additional summary statistics can be found in Table 1.

To determine whether missing data could impact my results, I coded all individuals with a missing race indicator as minorities and ran all model specifications. I then coded the same individuals with a missing race indicator as non-minorities and ran all model specifications. Results retained the same magnitudes and significance levels in response to these changes. Given the robustness of estimates to these checks, individuals with missing race data are not included in the following analysis.

7. Results

Before conducting regression analyses according to my preferred model specification (Equation (1)), I computed unadjusted DD estimates for the probability that a minority candidate fills an NFL head coaching vacancy (Table 2). This “DD” estimate is computed according to the following model specification:

\[ Y_{itf} = \beta_0 + \beta_1 HC_{itf} + \beta_2 (ROONEY_t \times HC_{itf}) + \beta_3 ROONEY_t + \varepsilon_{ift} \]  

(2)
Table 2. Unadjusted DD estimates, probability that an NFL head coaching vacancy is filled by a minority (1992–2014)\textsuperscript{a}

<table>
<thead>
<tr>
<th>Comparison group</th>
<th>DD</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFL offensive and defensive coordinators</td>
<td>0.067 (0.061)</td>
</tr>
<tr>
<td>NCAA head coaches</td>
<td>0.025 (0.062)</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Each “DD” estimate is from an OLS regression outlined by Equation (2). Robust standard errors are included in parentheses.

where $Y_{itf}$ is a binary variable equal to one if coaching vacancy $i$ in year $t$ in franchise $f$ is filled by a minority candidate and zero otherwise, $ROONEY_t$ is a binary variable equal to one for observations from the Rooney era (2003–14), and $HC_{itf}$ is a binary variable equal to one if coaching vacancy $i$ in year $t$ in franchise $f$ is an NFL head coaching vacancy and zero otherwise. According to this model, a minority candidate was 6.7% more likely to fill an NFL head coaching vacancy in the post-Rooney era than the pre-Rooney era when NFL offensive and defensive coordinators served as the comparison group and 2.5% more likely when NCAA head coaches served as the comparison group. Neither estimate is statistically significant at traditional levels of confidence. It is important to note that these estimates do not take into account any differing trends in minority representation over time and, due to the exclusion of year and franchise fixed effects, fail to control for important omitted variables that could change over time and across franchises.

Table 3 shows baseline estimates of Equation (1) as well the inclusion of a higher order trend term and its interaction. The outcome measure in all cases is the probability that a minority candidate is hired to fill an NFL head coaching vacancy. All specifications in Table 3 contain franchise and year fixed effects. Year fixed effects control for unmeasured characteristics that are constant across franchises but evolve over time, while franchise fixed effects control for unmeasured characteristics that are constant across time but change within franchises. Because hiring decisions are contingent on the pool of candidates available in a given year it is important to cluster standard errors. Standard errors clustered by year are shown in parentheses. Each column contains estimates for an OLS linear probability model. Regressions (I) and (III) employ the model specification outlined in Equation (1). Regressions (II) and (IV) include a quadratic time trend.
Table 3. Effect of the Rooney Rule on the probability that an NFL head coaching vacancy is filled by a minority candidate, year and franchise fixed effects (1992–2014)\textsuperscript{a}

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Comparison group: NFL coordinators</th>
<th>Comparison group: NCAA head coaches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(I)</td>
<td>(II)</td>
</tr>
<tr>
<td>Rooney × HC</td>
<td>0.213*** (0.075)</td>
<td>0.211*** (0.078)</td>
</tr>
<tr>
<td>HC</td>
<td>0.279 (0.176)</td>
<td>0.470 (0.424)</td>
</tr>
<tr>
<td>Year × HC</td>
<td>−0.013* (0.007)</td>
<td>−0.025 (0.032)</td>
</tr>
<tr>
<td>Year\textsuperscript{2}</td>
<td>0.000*** (0.000)</td>
<td>0.000*** (0.000)</td>
</tr>
<tr>
<td>Year\textsuperscript{2} × HC</td>
<td>0.000 (0.001)</td>
<td>0.000 (0.001)</td>
</tr>
<tr>
<td>(R^2)</td>
<td>0.107</td>
<td>0.107</td>
</tr>
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<td>Sample size</td>
<td>720</td>
<td>720</td>
</tr>
<tr>
<td>Franchise FE</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Each column provides estimates from an OLS regression. Regressions (I) and (III) follow the baseline specification outlined in the “estimation” section. Regressions (II) and (IV) include a quadratic trend term and its interaction. NFL offensive and defensive coordinators serve as the comparison group for regressions (I) and (II). NCAA head coaches serve as the comparison group for regressions (III) and (IV). “Rooney × HC” estimates the impact of the Rooney Rule on the probability that a minority candidate fills an NFL head coaching vacancy. Standard errors in parentheses are clustered by year. Franchise and year fixed effects are included in each regression. “Rooney” and “Year” main effects are not included in the specification due to the inclusion of year fixed effects.

\(*** p \leq 0.01, ** p \leq 0.05, * p \leq 0.10\).

NFL offensive and defensive coordinators serve as the comparison group for regressions (I) and (II), while NCAA head coaches serve as the comparison group for regressions (III) and (IV). As mentioned previously, the main identifying assumption of the DD design is that deviations from prior trends within the comparison group provide a valid counterfactual for what would have happened to NFL head coaches had the Rooney Rule not been implemented. Employing two distinct comparison groups serves as a robustness check for my estimates.

According to my primary specification, a minority candidate is 21.3% more likely to fill an NFL head coaching vacancy in the post-Rooney era than the pre-Rooney era when NFL offensive and defensive coordinators are used as a comparison group (regression (I)) and 19.6% more likely when NCAA head coaches are used as a comparison group (regression (III)).\textsuperscript{8}

\textsuperscript{8} To determine if the estimates for the two comparisons were significantly different, I calculated the following statistic for each pair of estimates: \(z = (\hat{\beta}_1 - \hat{\beta}_2)/\sqrt{(\text{se}(\hat{\beta}_1)^2 + \text{se}(\hat{\beta}_2)^2)}\). For example, \(\hat{\beta}_1\) is the estimate of interest when NFL offensive and defensive coordinators are used as the comparison group and \(\hat{\beta}_2\) is the estimate of...
Both estimates are statistically significant, the first at the 99% confidence level and the second at the 90% confidence level.

A challenge of this design is to properly model the time trend. The likelihood of hiring a minority head coach is increasing over time and, if not properly controlled for, could bias results. That is, absent controls I would attribute any “natural” increases in the likelihood of a minority filling a head coaching vacancy to the implementation of the Rooney Rule even though the likelihood would have increased in the absence of the Rooney Rule. My main challenge in this regard is the yearly variability in the number of head coaching vacancies. Even if the theoretical propensity of a franchise to hire a minority head coach increases each year, the number of actual openings varies. This results in year-to-year fluctuations in the percentage of minorities filling head coaching vacancies (as is evident in Figure 2). To account for this characteristic of the data, regressions (II) and (IV) add a quadratic trend term and its interaction with the NFL head coach indicator to the specification outlined in Equation (1).

The inclusion of a quadratic trend term and its interaction (regressions (II) and (IV)) does little to change the magnitude and significance of the estimates reported in regressions (I) and (III). In fact, the point estimate for the NCAA comparison group increases slightly, while the standard error decreases, resulting in a more highly significant estimate.

In short, estimates of the impact of the Rooney Rule on the likelihood that a minority candidate fills an NFL head coaching vacancy show surprising consistency across comparison groups as well as model specifications. For my preferred specification (Equation 1), estimates range from 19.6 to 21.3% depending on the comparison group. That the NFL offensive and defensive coordinator comparison group estimate is so similar to the NCAA comparison group estimate should assuage some of the concerns outlined in the “research design” section in regards to the DD design. However, there is reason to believe that the NFL offensive and defensive coordinators are the more appropriate comparison group. Namely, there is a much higher rate of turnover for NFL coaching positions than NCAA head coaching positions, and the same franchises are conducting hiring for both NFL head coaches as interest when NCAA head coaches are used as the comparison group. No model specifications produced significantly different estimates.
8. Conclusions

Evidence suggests that federal affirmative action policies have had an impact on the workforce composition of firms subject to those policies. Moreover, the overall U.S. workforce has become more diverse over time. Unfortunately, this diversity has not spilled over into the boardroom, and there is a dearth of affirmative action policies designed to impact minority hiring at the executive level. The NFL's Rooney Rule is the exception. As a "soft" affirmative action policy, the Rooney Rule seeks to impact the composition of the candidate pool rather than restricting actual hiring criteria; the goal is to give minority candidates entrée into the interview process. Given that this employer-implemented, voluntary affirmative action policy does not involve quotas or inflexible goals and is flexible enough so that each candidate competes against all other qualified candidates, it could be a "soft" form of affirmative action that is both effective and does not seem likely to violate Title VII of the Civil Rights Act of 1964.

Using a DD design, where NFL offensive and defensive coordinators as well as NCAA head coaches serve as comparison groups, this study finds that a minority candidate is 19.6–21.3% more likely to fill an NFL head coaching vacancy in the post-Rooney era than the pre-Rooney era using my preferred model specification (Table 3). In Table A1, estimates for a pooled comparison group are presented using the sub-sample (1992–2014). These estimates are similar to those reported in Table 3 in that a minority candidate is a statistically significant 19.3–19.6% more likely to fill an NFL head coaching vacancy in the post-Rooney era than the pre-Rooney era. When the full sample is used (1970–2014), a minority candidate is 7.6–11.6% more likely to fill an NFL head coaching vacancy in the post-Rooney era than the pre-Rooney era (Table A2).

But why does changing the applicant pool, through a policy such as the Rooney Rule, affect the hiring decision? At this point, it is important to reiterate that the Rooney Rule does not impact hiring criteria but simply the racial composition of candidates interviewed. In a full information world of optimizing employers with no constraints, such a rule should have no
effect. First, a word on the NFL hiring cycle for head coaches. If performance is not satisfactory, NFL head coaches tend to be fired directly after the end of the regular season. Each franchise with a head coaching vacancy is then competing with other franchises in the same position to hire their next head coach from a relatively small pool of candidates. This results in a very short, competitive time frame for interviewing candidates and hiring a head coach. In fact, franchises that do not make the post-season and need to hire a new head coach often consider it a risk to wait to interview candidates who are currently employed by post-season participants (and therefore unable to interview until after their team is eliminated from post-season competition).

Given this frenetic timeline for interviewing candidates and hiring a head coach, one could certainly theorize that NFL teams are operating under capacity constraints during the hiring process. That is, a franchise can only interview a select number of candidates due to the hiring timeline. Additionally, there is a large amount of “noise” in the process of selecting candidates for the interview. That is, there is no agreed upon criteria for choosing candidates, and the true “quality” of a candidate is uncertain.

Given these capacity constraints a few mechanisms can be identified to potentially explain the efficacy of the Rooney Rule. The first is simply a mechanical effect that is due to the interaction of the capacity constraint and a reduction in noise. That is, if a franchise is operating under a capacity constraint and there is a lot of noise in the process of selecting candidates, the Rooney Rule reduces noise by requiring the franchise to take minority status into consideration when choosing candidates. In this case, the mechanical effect increases as noise increases during candidate selection and as the capacity constraint becomes more severe.

A second potential mechanism is a public relations effect. In this scenario, the Rooney Rule actually represents social pressure to promote diversity in hiring, and the franchise takes this into consideration when selecting candidates and choosing a head coach. In the past, fans have purchased billboards and other forms of advertisement to ensure that ownership knows their preferences in regards to player and personnel management.

A third potential mechanism, and the one that is most often discussed in the popular media, is the overcoming bias effect. According to this mechanism, the franchise is biased, for whatever reason, against interviewing
minority candidates. However, after being forced to interview a minority candidate, the franchise recognizes their bias and realizes that the minority candidate is best suited for the position. The argument is that, prior to the Rooney Rule, even to be considered for an interview, a minority candidate had to exhibit performance far exceeding their peers. The Madden and Ruther (2011) result that racial differences in head coaching performance observed prior to 2003 were not present in the post-Rooney era illustrates a form of the bias effect. The intuition is that, in the absence of bias, the franchise is filling a job vacancy and chooses the candidate who has the maximum expected productivity among those selected for an interview. If minorities and non-minorities are interviewing for the same set of positions, then the candidates who get hired should be above some threshold in productivity. In the absence of bias, this threshold would be the same for both minorities and non-minorities. In the presence of bias, this threshold would differ by race. One only observes the productivity of candidates that are hired, which are above the threshold. If the thresholds were the same for minority and non-minority candidates, average productivity, conditional on being above the threshold, would be the same. If the thresholds were different for minority and non-minority candidates, average productivity, conditional on being above the threshold, would differ. That African American head coaches no longer significantly outperformed their white counterparts in the post-Rooney era suggests that franchises established a productivity threshold that was the same for African Americans and non-African American head coaches during the hiring process.

Although we cannot know definitely which of these mechanisms is at work in the case of the Rooney Rule, it is important to understand their implications in the context of a broader policy such as Senate Resolution 511. If the Rooney Rule induces a simple mechanism effect, the impact of such a rule may be attenuated when less noise is present during the candidate selection process and the firm’s capacity constraint is less severe. If a public relations effect is driving results, a rule that applies to firms with less public presence may not be as effective. However, if a bias effect is indeed the catalyst for the impact of the Rooney Rule, a similarly designed policy could be effective in firms of different types.

A 2013 survey of Fortune 500 companies (Catalyst, 2013) found that women held only 16.9% of corporate board seats, indicating no significant
year-over-year increase for the eighth consecutive year, and only 14.6% (4.6%) of Executive Officer (Chief Executive Officer) positions were held by women, the fourth consecutive year of no year-over-year growth. Women of color continued to fare particularly poorly, holding just 3.2% of all board seats. Ten percent of companies had no women serving on their boards, and this is at a time when over 57% of Bachelor’s degree recipients, 62% of Master’s degree recipients, and 36% of MBA recipients are female. Minorities do not fare much better. In 2012, only 21 (4.2%) Fortune 500 CEOs were minorities (Center for American Progress, 2012). This case study provides evidence that “soft” affirmative action policies may be able to influence executive hiring decisions. However, further studies would need to be conducted to determine if policies like the Rooney Rule would impact the hiring of minorities in executive leadership positions in other types of firms.

Appendix

Figure A1. Percent minority NFL head coaches and offensive coordinators, defensive coordinators, and NCAA head coaches, by year.
Table A1. Effect of the Rooney Rule on the probability that an NFL head coaching vacancy is filled by a minority candidate, pooled comparison group (1992–2014)a

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Comparison group: NFL coordinators and NCAA head coaches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(I)</td>
</tr>
<tr>
<td>Rooney × HC</td>
<td>0.193*** (0.057)</td>
</tr>
<tr>
<td>HC</td>
<td>0.243* (0.143)</td>
</tr>
<tr>
<td>Year × HC</td>
<td>−0.011** (0.005)</td>
</tr>
<tr>
<td>Year² × HC</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.133</td>
</tr>
<tr>
<td>Sample size</td>
<td>1,042</td>
</tr>
<tr>
<td>Franchise FE</td>
<td>Yes</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
</tr>
</tbody>
</table>

aEach column provides estimates from an OLS regression. Regression (I) follows the baseline specification outlined in the “estimation” section. Regression (II) includes a quadratic trend term and its interaction. NFL offensive and defensive coordinators as well as NCAA head coaches serve as the comparison group for all regressions. “Rooney × HC” estimates the impact of the Rooney Rule on the probability that a minority candidate fills an NFL head coaching vacancy. Standard errors in parentheses are clustered by year. Franchise and year fixed effects are included in each regression. “Rooney” and “Year” main effects are not included in the specification due to the inclusion of year fixed effects. ***p ≤ 0.01, **p ≤ 0.05, *p ≤ 0.10.

Table A2. Effect of the Rooney Rule on the probability that an NFL head coaching vacancy is filled by a minority candidate, year and franchise fixed effects (1970–2014)a

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Comparison group: NFL coordinators</th>
<th>Comparison group: NCAA head coaches</th>
<th>Comparison group: pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(I)</td>
<td>(II)</td>
<td>(I)</td>
</tr>
<tr>
<td>Rooney × HC</td>
<td>0.116** (0.052)</td>
<td>0.076 (0.061)</td>
<td>0.088* (0.045)</td>
</tr>
<tr>
<td>HC</td>
<td>0.026 (0.019)</td>
<td>−0.080* (0.047)</td>
<td>−0.015 (0.017)</td>
</tr>
<tr>
<td>Year × HC</td>
<td>−0.004*** (0.001)</td>
<td>−0.001 (0.001)</td>
<td>−0.002* (0.001)</td>
</tr>
<tr>
<td>R²</td>
<td>0.130</td>
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<td>0.143</td>
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<td>Franchise FE</td>
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<td>Yes</td>
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<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

aEach column provides estimates from an OLS regression that follows the baseline specification outlined in the “estimation” section. Each regression uses a different comparison group, which is indicated in the top row of the table. “Rooney × HC” estimates the impact of the Rooney Rule on the probability that a minority candidate fills an NFL head coaching vacancy. Standard errors in parentheses are clustered by year. Franchise and year fixed effects are included in each regression. “Rooney” and “Year” main effects are not included in the specification due to the inclusion of year fixed effects. ***p ≤ 0.01, **p ≤ 0.05, *p ≤ 0.10.
The Case of the NFL’s Rooney Rule

References


