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Does affirmative action reduce gender discrimination and enhance efficiency? New experimental evidence

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ABSTRACT

We investigate experimentally the impact of quota policies on gender discrimination in hiring decisions by testing whether affirmative action increases female employment. We also ask whether firm performance is affected by such policies. Our experiment consists of three treatments. In the baseline (*no quota*) treatment, groups of two employers and six potential job candidates are formed. Employers have to hire two workers based on information on candidate characteristics including gender and years and subject of study. The second, *low penalty*, treatment is identical to the baseline except there is a quota such that at least half of the employees hired must be women. If this quota is not respected, the firm has to pay a penalty. The last, *high penalty*, treatment is the same as the *low penalty* treatment except that the penalty is significantly higher. We find that women are ranked unfavorably in the absence of a quota, and the introduction of a quota significantly reduces gender discrimination. Firm performance is not affected by the introduction of quotas.

1. Introduction

While gender differences in education have disappeared in recent cohorts in most developed countries, there is still a persistent gender wage gap. This gap remains significant after controlling for occupation,[1] part-time work and work experience, and is often attributed to discrimination (Blau, 1998; Altonji and Blank, 1999; Goldin and Rouse, 2000).[2] Recent contributions in experimental economics have explored the role played by other (unobservable) factors such as gender differences in risk attitudes and/or competitiveness (Gneezy et al., 2003; Gneezy and Rustichini, 2004; Vandegrift and Brown, 2005; Eckel and Grossman, 2008; Bartling et al., 2009; Niederle and Vesterlund, 2007, 2010; Croson and Gneezy,

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[1] Differences in occupations may reflect both horizontal and vertical segregation. Horizontal segregation refers to women being more likely to hold lower-paying jobs like teaching, clerical, social work and nurturing jobs, which may partly explain the gender wage gap. These differences in occupation may reflect gender differences in the choice of college major: women are more likely to major in health, social sciences and humanities, whereas men are more likely to major in business, sciences and engineering (see e.g. Turner and Bowen (1999), Zafar (2009) and Beffy et al. (2012)). Vertical segregation reflects that relatively few women hold top positions (Bertrand and Hallock, 2001).

[2] A common way of estimating discrimination is to distinguish between the explained and unexplained components of wages via the 'Oaxaca–Blinder' decomposition. For instance, in France Meurs and Ponthieux (2006) report that after controlling for occupation, part-time work and work experience the initial gender gap of 25% falls to 6.9%, which latter figure the authors attribute to discrimination.

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2009; Reuben et al., 2012; Datta Gupta et al., 2013).[3] Gender differences in the labor market concern not only wages but also hiring decisions (Reuben et al., 2014). Audit experiments have produced clear evidence of hiring discrimination against women, with the gender difference in the probability of receiving a job offer ranging from 5% to 20% points *ceteris paribus* (e.g. Bendick et al. (1994), Fix and Struyk (1993), Kenney and Wissoker (1994), Neumark (1996) and Goldin and Rouse (2000)).[4]

Governments in many countries have devoted considerable resources to tackling hiring discrimination via anti-discrimination programs. Among these, the well-known affirmative action programs aims to increase female representation in different contexts such as firms, politics and education.[5] In practice, many European parliaments have introduced quotas on parliamentary seats that are reserved for women. Preferential treatments also exist in the selection of Ph.D. students in the United States in favor of women or minority groups (Attiyeh and Attiyeh, 1997).[6] Firms may also be targeted by such quotas. For instance, in Norway, a 2006 Law imposed a 40% gender quota for women as directors of listed companies.[7] A strong variant of the affirmative action programs implemented in firms requires that one out of two new hires be female.

We here contribute to the existing literature by investigating experimentally the effectiveness of affirmative action programs. We have two aims. First, we test whether affirmative-action programs increase female employment. The effects of affirmative-action programs have been extensively studied by economists (e.g. Ashenfelter and Heckman (1976), Goldstein and Smith (1976), Heckman and Wolpin (1976), Leonard (l984), Rodgers and Spriggs (1996) and Holzer and Neumark (1999)). Most work concludes that affirmative-action programs are successful in increasing minority and female employment. Other authors have pointed out the potential drawbacks of such affirmative-action programs, in particular in terms of possible reverse discrimination against men (Holzer and Neumark, 1999). Reverse discrimination is defined as the unfair treatment of members of the majority group (or men) resulting from affirmative action programs intended to remedy earlier discrimination against minorities (or women). For example, Holzer and Neumark (1999) found that while affirmative action increased the employment of white women and black men, the employment of white men in firms that practice affirmative action was reduced by roughly 10–15%. We here contribute to this literature by investigating experimentally how affirmative action programs affect the employment of both men and women.

Our second aim is to see whether firm performance is affected by affirmative action programs. There are at least two main channels here. The first is the nature of the discrimination. If discrimination against women is taste-based, then affirmative action programs may increase performance by leading the firm to a more efficient allocation of resources (Becker, 1957). In the Becker model, taste-based discrimination is not profitable for firms, as discriminatory firms act according to their 'feelings' and not purely to maximize profit. On the contrary, affirmative action may harm performance if discrimination is statistical and based on correct priors (Arrow, 1973). The effect of the quota is less clear when the discrimination is statistical but based on erroneous priors that women perform less well than do men.[8] The second channel refers to the way in which programs may change the behavior of both beneficiaries and non-beneficiaries. Non-beneficiaries may feel unfairly treated, which may negatively affect their performance (e.g. Shteynberg et al., 2011), while beneficiaries may suffer from stigma and/or a worse self-image, which may also reduce their performance (e.g. Heilman et al. (1987), Heilman (1994), Major and O'Brien (2005), Steele et al. (2002) and Kaplan et al. (2009)).[9]

The existing empirical work on the performance effect of affirmative action programs has yielded ambiguous results. Leonard (1984, 1989) estimates firm production functions using data from the Census of Manufacturers and the Annual Survey of Manufacturers in the l970s and finds no productivity effects of affirmative action. In contrast, Griffin (1992) suggests that the constraints imposed on contractors' labor demand raised their labor costs by around 6.5% relative to non-contractors. More recently Holzer and Neumark (1999) compare the performance ratings of white male and minority/female

[3] It should be noted that while gender differences in risk attitudes appear for binary-choice tasks, these tend to disappear in strategic-interaction contexts (e.g. Eckel and Grossman (2008) and Croson and Gneezy (2009)).

[4] Audit experiments consist in sending matched pairs of applicants who vary in only one characteristic (for example gender) to employers in response to job advertisements. These create controlled conditions to measure employers' responses to job-seekers' characteristics. Correspondence studies are based on CVs that are sent in response to job openings (without physically sending the applicants).

[5] Historically, the United States was the pioneer in implementing affirmative action programs. The idea of using affirmative action to reestablish equal opportunities emerged in 1961 with the *Kennedy Executive Order* 10925.

[6] In the United States, several States have introduced quotas for the recruitment of black people in municipal police departments (McCrary (2007); see also Holzer and Neumark (2000), for a survey).

[7] In January 2011, a similar Law was introduced in France to set up a progressive quota system in favor of women in boards of directors and supervisory boards for publicly-traded companies, as well as for public companies. The goal of this Law was to attain a 20% female share in these boards within three years, rising to 40% within six years.

[8] In this case, affirmative action programs may improve performance if women outperform men, or leave performance unchanged if there is no gender difference in performance. We thank an anonymous referee for this helpful remark.

[9] Some authors have also argued that affirmative action programs may raise labor costs as they are inefficient in assigning the best-available candidates to a particular job (Griffin, 1992; Fryer and Loury, 2005). It has also been shown that affirmative action in favor of women improves overall performance by increasing firm gender diversity (Carter et al., 2003; Adams and Ferreira, 2009; Terjesen et al., 2009; Weber and Zulehner, 2010; Dezsö and Ross, 2012). For instance, Carter et al. (2003) identify a positive relationship between gender diversity in corporate boards and firm value. Using a dataset of over 1900 firms, Adams and Ferreira (2009) consider gender diversity in the boardroom and board inputs – director attendance and committee assignments. Women exhibit fewer attendance problems than do men. We here evaluate neither the effect of diversity on overall performance nor on labor costs.