Setting Up the Gap?
Gender Differences in Initial Salary Offers

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Abstract

One common explanation for the gender wage gap is that women and men have different negotiation behaviors in labor markets. Yet, scholars also suggest that the gender wage gap reflects differences in initial salary offers provided to women and men that vary apart from negotiations. A challenge in parsing these explanations has been that salaries, not *salary offers*, have been studied previously by researchers. In this study we use proprietary data on nearly 300,000 initial salary offers from thousands of employers to job candidates in the U.S. from 2017 to 2020. We do so to provide the first wide-scale investigation of initial salary offers in the literature. Our analyses yield three main findings. First, we find a statistically significant female disadvantage with respect to initial salary offers from employers. Second, we find systematic gender differences in initial salary offers across occupations and job candidate characteristics such as their years of work experience. Third, using U.S. Census data and within the constraints we discuss, we find a positive relationship between the gender gap in initial salary offers and the documented gender gap in post-hire wages for most occupations. Our analyses reveal that during hiring a gender *offer gap* likely contributes to persistent salary differences between women and men.

Keywords: Negotiation, Compensation, Labor Markets, Diversity in Organizations, Occupations and Professions

Introduction

It is well-known that a gender wage gap exists despite many scholarly and policy-based interventions that have tried to remediate it. For example, leveraging 425,000 salaries on full-time employees from 2016 to 2018, the latest Glassdoor Economic Report by (Chamberlain et al., 2019) found a 4.9% gender wage gap after controlling for candidates' age, education, experience, industry, occupation, location, year, firm size and job title. One of the primary explanations for the gender wage gap, once differences in the industry, occupation, and firm characteristics are taken into account, is that negotiation behavior leads the salaries of women and men to diverge. Specifically, literature suggests that women negotiate less often and less successfully than men (Babcock and Laschever, 2004). This has generated a great deal of scholarly interest into why negotiation behavior may differ for women and men. Researchers have argued gendered norms (Sauer et al., 2021), socialization (Blair-Loy, 2005), social networks (Seidel et al., 2000), and organizational transparency regarding what is permissible to negotiate (for a recent review, see Sharkey et al., 2022) lead negotiation outcomes for women and men to vary.

As important as these findings have been to the literature on the gender wage gap, key questions continue to exist about how hiring and job candidates' behaviors influence gender inequality (Bowles et al., 2007; Säve-Söderbergh, 2019). Initial salaries that women and men receive may not (only) reflect gender differences in supply-side negotiation behavior but behavior on the part of the employer (the "demand-side"). Pointedly, employers make initial offers to job candidates, that may in turn affect how negotiations proceed. Initial offers from employers may be important in light of a long line of research on negotiations suggesting that initial prices offered for goods or services influence the eventual prices paid by buyers. These studies indicate that these initial prices might be more consequential to the eventual price paid for goods or services than subsequent behaviors because they act as an anchor in negotiations (Neale and Bazerman, 1992; Galinsky and Mussweiler, 2001; Galinsky et al., 2009)

Taken to the hiring context, employers' initial offers to job candidates may also be consequential for our understanding of the gender wage gap. For example, women and men might both successfully negotiate the same salary increase from an initial offer, e.g., a 7% increase. But, women's salaries would still lag men's if the initial offers they receive are less: they are negotiating from a lower starting point. Further, there may be other ways initial salary offers interact with negotiation behaviors to influence salary outcomes. In negotiation studies, starting prices have been shown to drive individuals to selectively focus on information consistent with, and make valuations similar to, the starting values of goods or services in an exchange, thereby influencing final prices of goods and services (Galinsky et al., 2009). Yet, if women are negotiating from a lower starting point than men, this initial disadvantage could lead to differences in negotiation success for women and men.

Given these complexities, the aim of this study is to examine *initial salary offers* made to women and men by employers. To make our terminology clear henceforth, salaries are what employers pay candidates in exchange for their labor after an employee is hired. Our primary focus herein is *initial salary offers*, or the first offer a candidate receives from an employer after an affirmative hiring decision has been made. To the best of our knowledge, there has been no wide-scale study of initial salary offers to date. All large scale studies using data to investigate possible differences across women and men (e.g. the Census data and PSID) have investigated wages. This is an important omission in the literature. Primarily, studies of wages alone confound an understanding of the origins of the gender wage gap from hiring for the following reason: women might make less than men because they negotiate less favorable compensation terms. But, women also might make less because they are given a lower offer upon which to negotiate than men. Succinctly, it is assumed in extant research that women and men start out with the same initial offers, and differ in negotiation propensity. Yet, whether or not this is the case remains unanswered to date.

In this study we investigate what employers offer candidates that have successfully made it past the evaluative stage and have received offers. To do so we use a large-scale, pro-

prietary data set on initial salary offers from PayScale Inc. PayScale is a compensation platform that has been collecting wage and career data for more than 20 years. Important for our research design and aims, PayScale's business model is based on candidates going to the PayScaleplatform to gather information prior to deciding whether to accept, reject, or negotiate with an employer. In this sense, the primary purpose of the PayScale platform is for a candidate to assess the strength of an offer and make decisions about whether and how to negotiate.

We use this setting to assess initial offers across gender and across a broad set of industries, occupations and worker characteristics. We begin by assessing initial salary offers and if there are differences by gender. Second, taking advantage of the large scope of our data in the U.S., we study if possible gender differences in initial salary offers are present across labor market segments, occupations, and career stages. We find differences in initial salary offers by gender, and that this gender gap in offers is present across a number of industries, labor market segments, and career tenures. Third, we conduct a post-hoc analysis of the relationship between initial offers and wages in the U.S. by combining the PayScale data with Census data. Within the limitations of our data, we find that the gender gap in salaries across occupations has a positive and statistically significant correlation (alpha = 0.61 on average) with the gender gap in those same occupations vis-a-vis initial offers.

This study makes several contributions to literature on gender and organizational inequality, labor markets, and negotiations. For the gender inequality and labor markets literature, although researchers have argued that demand-side behavior influences the gender gap in starting salaries, much of the focus on the demand-side has been on employers' selection and sorting decisions. For example, scholars have suggested employers may be less likely to offer high-paying jobs to women compared to their male counterparts, or if they do hire women into these jobs, they pay them less (Elvira and Town, 2001; Abraham, 2017; Sterling and Fernandez, 2018). Other studies suggest that perhaps employers redirect women into lower paying jobs after they apply, or engage in queuing behavior Fernandez and Mors (2008);

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Reskin and Roos (1990). Others have found they may penalize women with respect to pay after gender segregation into jobs has occurred (Camperon, 2021). Given data limitations, none of these existing studies have been able to parse differences in pay emanating from employers' initial offers to candidates. Overall, we find evidence for an *gender offer gap*, and suggest it is an under-diagnosed basis for gender inequality.

For the negotiation literature, researchers have taken up the importance of the influential effect of first offers on final agreements (Galinsky and Mussweiler, 2001; Northcraft and Neale, 1987; Galinsky et al., 2009). Yet questions about how initial offers may exhibit gender patterns in real-world labor markets outside of lab negotiation settings have been difficult to assess. If there are differences in initial offers from employers that are instead attributed to negotiation differences, this is problematic. As Kray (2023) note, "holding the belief that negotiation propensity can explain gender difference in pay may help to legitimize the pay gap as fair and just" (forthcoming, pg. 7) even when negotiation behaviors should not be blamed. To the degree that negotiation outcomes depend on initial offers, our study contributes to the negotiation literature by yielding additional insight into why gendered outcomes in compensation emerge.

The Gender Wage Gap

For the last several decades, a gender wage gap has been documented across numerous countries that has remained relatively robust (Blau and Kahn, 2003, 2017). The gender wage gap exists within industries and occupations (Bertrand et al., 2010) (Prokos and Padavic, 2005; Moss-Racusin, et al. 2012), as well as for workers even after taking into account human capital, including work experience and schooling, as well as employer (Smith-Doerr et al, 2019). While varying definitions of the gender wage gap have been used, one widely held definition is that it is the difference in wages women and men receive in comparable jobs (OECD 2021), and in ways not explained (controlled away) by their level of tenure or

job experience (Blau and Kahn, 2017).

To date scholars have studied a number of supply-side and demand-side explanations for the gender wage gap. Demand-side explanations center on how employers might be less willing to hire or promote women into high-paying jobs, thereby hindering women's career advancement and wage growth (Correll et al., 2007; Ridgeway, 2011; England et al., 2016). With respect to the supply-side, scholars argue that women are more apt to be subject to competing priorities (Budig and England, 2001; Stone, 2007; Percheski, 2008; Goldin, 2015), and this limits their wage growth (though see Padavic et al. (2020) for a discussion for how parenthood also influences men). Other scholars point out that returning to work once a person has taken a career break suppresses salaries (Weisshaar, 2018), as does deciding not to enter higher-paying, male-dominated fields (Barbulescu and Bidwell, 2012). Additionally, studies find even before competing priorities exist, employers and labor market intermediaries may behave in ways that may lower the salaries of women, a self-fulfilling prophecy due to their anticipation of womens' future behavior (Fernandez-Mateo and Fernandez, 2016; Rivera and Tilcsik, 2016).

In addition to these supply-side and demand-side explanations generally, some scholars recognized the importance of initial salaries in affecting the gender wage gap. By initial salaries, we refer to what a hired employee makes after they first enter a job and an employer. A main reason initial salaries are important is that they determine a baseline for future wage increases. Managers typically set salary increases based on an employee's prior salary (Society for Human Resource Management, 2022). In this way, the initial salaries that individuals receive as they are hired into jobs has path-dependent effects on what individuals earn over the course of their tenure at an employer (Babcock and Laschever, 2004; Diprete and Eirich, 2006).

Further, these wages are also related to wages individuals receive when they switch employers or move externally. Hall and Krueger (2012) find that about half of the workers in the U.S. are employed at places where their employer knew of their wages at another

employer, prior to making them an offer (also see Horton and Barach (2020)). This is why, for instance, an increasing number of states in the U.S. have enacted salary history bans, which forbid employers from asking about prior salaries. Such a policy is meant to break the relationship between past and future salaries and gender discrepancies (Adler, 2022; Wang, 2023). Overall, given the importance of initial salaries, our research question is, how may initial offers differ by gender?

Gender and Initial Salary Offers

To answer this question, we turn to the hiring setting, the context in which initial offers emerge for job candidates. In hiring processes, individuals apply for jobs. Employers then engage in a set of evaluative processes that can be segmented into stages. We show these stages stylistically in Figure 1.

In this stylized hiring process, after candidates have gone through the evaluative process and an affirmative hiring decision has been made, the employer then needs to make a decision about the terms of the offer (i.e., pay). Extant research suggests that this is an important step in the hiring process, and should be treated as distinct from the evaluation stage (i.e. whether a candidate is "at or above a bar" to perform a job) (Petersen et al., 2000; Fernandez and Sosa, 2005). Rather than jobs having one single salary attached to a job, jobs typically have a pay range giving hiring managers discretion about what to offer (SHRM, 2009; SHRM, 2010). In our stylized process, initial offers precede initial salaries. Initial salaries as they are defined here, are the final terms decided upon between two parties—the employer and job candidate, whereas initial offers are provided to job candidates that have been selected for jobs.

[INSERT Figure 1 ABOUT HERE]

The question we primarily consider is, does a gender difference in initial *offers* exist? If it does exist, we are also interested in the correspondence this might have with the gender

gap in salaries. To answer this question, we locate our study in existing literature on gender, negotiations, and labor markets. A good deal of theory on the gender wage gap has focused on how post-hire processes, from biased decision making (Castilla, 2008; Correll et. al, 2020), a lack of formal promotion processes (Cotter et. al, 2001; Castilla, 2015), and stunted career opportunities for women (Baron and Bielby, 1980; Merluzzi and Dobrev 2015), contribute to the gender wage gap. Our interest is in theorizing about the hiring stage and pay.

In the literature, a primary way of understanding how hiring affects the gender wage gap has been through studies of negotiation behavior. As described in Figure 1, there are a number of steps that might transpire across the initial salary offer stage, that precede candidates accepting offers. Most prominently, in the stylized hiring process model we show what is commonly known as a negotiation phase, where candidates with offers might ask for increases in their initial offers, or ask for adjustments in other employment terms.

In studies of negotiations, women and men are generally assumed to receive the same initial offers. If gender differences emerge in starting salaries, these differences are attributed to behaviors or outcomes with respect to the success of negotiations (refer back to Figure 1). As Exley et al. (2020) notes, "concern that women's negotiation decisions contribute to the wage gap has motivated a large academic literature on what factors influence women's negotiation decisions (pp: 817)." Similar statements about the widespread effects of negotiation behavior on the gender wage gap have also been made by scholars of negotiations (Mazei et. al, 2015; Kugler et al., 2018). Additionally, practitioners regularly advise about the significance of gaining skills in negotiation, and suggest that doing so might lower the gender wage gap (for example see NACE, 2016).

Yet, other scholars including organizational and gender researchers, have long argued that gender differences in salaries may emerge apart from candidate behavior. Gender may influence initial offers due to cultural schemas used in decision-making during the hiring process. Theory on gender frames (Ridgeway 2011) and status characteristic theory (Berger et al. 1972) suggest cultural beliefs on gender may influence the valuation of a person's worth

(England, 1992). Taken to the hiring setting, after assessing whether a candidate can do the job, employers must then decide how much to offer a candidate. Studies suggest that the limited information about candidates during the hiring stage may amplify the effect of gender status beliefs on the remittance of salary offers. For instance, even after making it across thresholds of competence for a job, there may still be stereotypical assumptions ensuing that suppress women's salary offers compared to men's (Fiske et al. 2002; Moss-Racusin et al. 2012; Correll et al. 2020). As a result, women may be offered lower salaries than men, apart from any behavioral differences that exist after those offers are received.

If women receive lower initial salary offers than men in comparable jobs, there are several consequences for our understanding of the gender wage gap and negotiation behavior. In the negotiations literature, first offers have been shown to account for a substantial amount of variance in final negotiated outcomes, with empirical evidence suggesting positive correlations ranging from 0.72 to 0.93 (; Galinsky and Mussweiler, 2001; see a review in Galinsky et al. 2009). Starting prices have also been shown to drive individuals to selectively focus on information consistent with, and make valuations similar to, the starting value, thereby influencing final prices (Galinsky et al., 2009). For example, in one of the first studies of its kind to do so, Northcraft and Neale (1987) demonstrated that estimates of the value of a house made by real-estate agents and students differed depending on information about the list prices. Both groups were equally affected by the anchor points.

Further, in the negotiations literature researchers are increasingly finding evidence that women's and men's negotiation propensities do not vary, at least not in ways that suggest women and men differ in negotiation skills (see Kray et al. in press). When women and men start off making different salaries, even when demonstrating similar negotiation rates and negotiation success, what explains this? It may be an important explanation is that women's and men's initial offers "set the stage" for this pay disparity.

Thus far, examining initial offers has been difficult to do to date. Almost all studies thus far have focused on gender differences in wages following, but not during, the hiring

process (e.g., starting salaries). One reason for this is that wages are the data available to researchers. For example, in the U.S. the most standard way of measuring the gender wage gap comes from two surveys: the Michigan Panel Study of Income Dynamics (PSID) and the Current Population Survey (CPS). These surveys give us data on wages but not initial offers.

Besides these data, organizational scholars have used personnel records and employer data to study the gender wage gap. These studies have led to the documentation of the gender pay gap in specific occupations (Obloj and Zenger, 2022), in firms (Castilla, 2015; Sharkey et al., 2022), and across platforms (Rousille, 2021). Organizational and labor market scholars have also used self-reported data from surveys of employed individuals (e.g., U.S. Census Bureau data), and self-reports of initial salaries (Baron and Newman, 1990; Fernandez and Mors, 2008; Castilla, 2012; Sterling and Fernandez, 2018). However, none of these studies have focused on initial offers. As a result, we have been limited in assessing gender gaps in initial offers, whether they exist, and what relationship they have, if at all, to the gender gap in wages. The purpose of this study is to examine these questions.

Methods

Data

In order to answer these questions, our primary data comes from PayScale (www.payscale.com). PayScale is a compensation platform that has been collecting and providing information about careers and compensation since 2002. The purpose of PayScale is to provide its users information about salaries and other forms of compensation. PayScale does so through its two salary surveys. One allows users to evaluate their current jobs; the other their current job offers. A primary reason that individuals go to PayScale is to compare their offers they have received to what others have received at similar jobs and employers. To observe this information, PayScale requires that platform users first provide information on their

own offer (see Figure 2 for an example below). Respondents are incentivized to provide as detailed and accurate information as possible on their own background as well as the job offer they have received, because doing so will optimize the estimation of their own market wage.

[INSERT Figure 2 ABOUT HERE]

The sample we use for this study is restricted to data from the salary survey that evaluates job offers. An assumption that we make, therefore, is that PayScale provides us data on initial salary offers. The main body of the PayScale salary survey is comprised of demographic information (e.g., age, ethnicity, degree obtained, educational institution), as well as other relevant worker characteristics (e.g., job title, years of work experience, skills, certifications, management responsibilities) and employer characteristics (e.g., location, industry, company size). Based on our informal interviews with company executives and users, we make an assumption that the vast majority of individuals going to the platform do so prior to the primary negotiations taking place, though anticipatory wage aspects are certainly possible. For example, it may be that an employer has already asked about a candidate's prior wages and has in mind a minimum threshold necessary for an initial offer. This is not inconsistent with what would be expected based on the extant literature and our arguments: this could very well contribute to an initial gap in salary offers given what we have discussed (e.g., gendered beliefs).

Variables

Initial salary offers

The primary dependent variable is initial salary offers, as reported on the PayScale platform. On PayScale, users are asked to provide their annual base salary of their offers. Additionally, users are asked to provide their expected annual bonus and expected annual profit share, if applicable. About 2% of our sample reported bonuses and profit sharing, in addition to base

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salary. We measure initial salary offers as the sum of the annualized base salary, bonuses, and profit sharing that job candidates receive. Our results hold when we exclude bonuses and profit sharing from the measure of initial salary offers as robustness checks.

Female

Our main independent variable is gender, which we measure as the sex of the platform user. *Female* is a dichotomous variable that takes a 1 when a respondent self-identified as female, and 0 otherwise.

Analyses

To examine whether a gender gap exists in initial salary offers we run the following regression:

$$\log(\text{Initial Salary Offers})_{ist} = \beta_0 + \beta_1 \cdot \text{female}_i + \gamma X_{ist} + \lambda_s + \lambda_t + \epsilon_{ist} \tag{1}$$

where X_{ist} is a set of relevant individual controls. A number of control variables are included in the regression models that would predict initial salary offers. We control for years of work experience, racial minority status (which equals 1 if someone identifies as Black, Hispanic, or Latino, and 0 otherwise), and the highest education achieved at the time of receiving an offer. We also include industry (based on 2-digit NAICS code), occupation (based on 2-digit SOC 2018 code), employer, job, state and year/month fixed effects. There are in total 19 industries, 22 occupations, and 8,477 job titles in the data set. Of interest for users of the platform is how individuals are paid with the same job titles with the same credentials in the same geographic area, which is why we were able to include this information in the models.

Summary statistics

The raw data set from PayScale contains over 1.36 million initial salary offers from April 2017 to May 2020 in the U.S. Of these, 817,349 initial salary offers have information on gender. The final data set used for our analysis has 294,650 initial salary offers, inclusive of observations without missing data on variables used for our analysis, such as various human capital and labor market characteristics. Table 1 reports the sample size of the final data set, which contains 294,650 unique initial salary offers, 284,075 user profiles, and 122,933 firms in the U.S., covering 695 industries and 8,477 job titles.

[INSERT Table 1 ABOUT HERE]

Table 2 reports the demographic characteristics of the job seekers in the final PayScale sample, in which 52% are women and 48% are men. In terms of race, 69% are White, 12% are Black or African American, 8% are Asian, 0.8% are American Indian and Alaska Native, and 0.4% are Native Hawaiian and Other Pacific Islander. In terms of ethnicity, 11% are self-identified as Hispanic or Latino. In terms of education, 4% have no degrees, 26% have a high school degree, 12% have an associate's degree, 41% have a bachelor's degree, 16% have a master's degree, 1.4% have a professional degree, and 1.2% have a doctoral degree. In terms of work experience, the average years of work experience is 8.6 years. Half of the job seekers in this sample have at least 5 years of experience and 75% of all respondents have 13 or fewer years of experience. Table 3 reports the demographic characteristics of the job seekers by gender.

[INSERT Table 2 ABOUT HERE]

[INSERT Table 3 ABOUT HERE]

Results

Does gender predict initial offers?

We first examine whether there are gender disparities in initial offers. To the extent that a gender gap is present in offers, we then examine how it varies by industry, occupation, and years of work experience.

To begin, we document the unadjusted gender differences in average initial salary offers, without taking into consideration any of the individual-level, employer-level, or industry-level variation. The kernel density of initial salaries by gender is shown in Figure 3. The average initial salary offer is $79,579.61 for men and $61,533.1 for women, or there is a 23% difference that is statistically significant in this data. A two-sample Kolmogorov-Smirnov test rejects the null hypothesis that the offer distribution between men and women is the same ($p < 0.001$).

[INSERT Figure 3 ABOUT HERE]

We now consider potential explanations for the gender gap observed in offers. One possibility is that there are underlying differences in women and men that we are currently not accounting for, which leads men to get higher initial offers than women. In order to address differences that lead to self selection into different industries, occupations, and jobs, we included fine-grained worker, job, and employer characteristics in our models.

Table 4 reports the effect of being female on initial salary offers across all model specifications. The coefficient of being female remains negative and significant at the 0.01 level throughout, as we add various controls and fixed effects. In Model 1, the marginal effect of being female on initial offers is -0.24, without including any controls or fixed effects. In Model 2, with the inclusion of years of experience, racial minority status, and highest level of education achieved, the marginal effect of being female on initial offers is -0.22. In Model 3, with the inclusion of industry dummies, occupation dummies, job, and employer fixed effects,

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the marginal effect of being female on initial offers is goes down significantly. Women receive 6 percent lower initial offers. Finally, in Model 4, with the inclusion of state and year/month fixed effects, the marginal effect of being female on offers remains the same. Looking across the models, the results suggest that a great deal of gender gap in offers comes from differences across industries and occupations. Nevertheless, a gender gap in offers remains for jobs with the same job titles and the same employers.

[INSERT Table 4 ABOUT HERE]

Initial offer by gender across industry, occupation, and work experience

Next we examine how gender differences in initial salary offers may vary across industries, occupations, jobs, and worker characteristics. To do so, we decompose the baseline estimate of the effect of gender on initial offers by 19 industries (based on 2-digit NAICS code), 22 occupations (based on 2-digit SOC code), and years of work experience. The adjusted gender gap in offers is estimated while controlling for human capital controls, with labor market, state, and month/year fixed effects.

Industry. Figure 4 plots the estimate for the gender gap in offers for 19 major industries with error bars representing the 95% confidence intervals. When controlling for race, education, years of experience, and including occupation, job, state, month/year fixed effects, the adjusted gender gap in offers is statistically significant at the 0.05 level across all industries, ranging from 4.8% to 16%. The industries with the largest gender gaps in offers are Agriculture (16%), Other Services (11%), and Construction (10%). The industries with the smallest gaps in offers are Education (4.8%), Health Care and Social Assistance (5%),and Professional and Technical Services (5.1%).

[INSERT Figure 4 ABOUT HERE]

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Occupation. Figure 5 plots the estimate for the gender gap in offers for 22 major groups (2-digit SOC code) with error bars representing the 95% confidence intervals. When controlling for race, education, years of experience, and including occupation, job, state, month/year fixed effects, the adjusted gender gap is statistically significant at the 0.05 level across all occupations, ranging from 1.9% to 12.9%. The occupations with the largest gender gaps in offers are Farming, Fishing, and Forestry (12.9%), Installation, Maintenance, and Repair (11.1%), and Sales (10.4%). The occupations with the smallest gaps in offers are Architecture and Engineering (1.9%), Arts, Design, and Entertainment (2.1%), and Computer and Mathematical (2.7%).

[INSERT Figure 5 ABOUT HERE]

Work Experience. To examine how the gap in offers may differ by individuals' years of work experience, we run a modification of the specification in Equation 1 for different years of experience, where we estimate the adjusted gender gap in offers while controlling for individual-level characteristics, occupations, industries, with job, employer, state and month/year fixed effects. Figure 6 plots the estimate for the gender gap in offers for different years of experience with error bars representing the 95% confidence intervals. The gender gap is statistically significant at the 0.05 level across all years of work experience. We find a wider gender gap in initial offers for those with more years of experience, after controlling for race and education, with industry, occupation, job, state, month/year fixed effects. The adjusted gender gap is 1.9% for those with no work experience, 4.5% for those with 5 or fewer years of experience, and it grows steadily to 13.1% for those with 26 to 30 years of experience, with all being statistically significant at the 0.05 level.

Robustness Checks

Taking stock of our findings, we have documented a significant female disadvantage in initial salary offers. Further, we find this result that is not localized to a given industry or occupa-

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tion, but prevalent across all industries, occupations, and years of work experience. We now subject our results to a number of robustness checks.

Examination of base pay vs. bonuses and profit-sharing

We first consider if our results are sensitive to using a specific measure of compensation. As mentioned previously, the measure of initial salary offers is constructed by combining the annual base salary with the expected bonuses and profit sharing, if they are provided by the platform users. About 2% of our sample reported expected annual bonuses and profit sharing, in addition to their annual base salary. We repeat the same set of regressions using only the annual base salary and find results consistent with the main analysis on the effect of gender on offers (results are available upon request).

Examination of Sample Selection

Additionally, we consider how our effects might be driven by sample selection. Despite comprising job seekers with a wide range of educational backgrounds, industries, and geographic locations, the PayScale sample is not a random nor a representative sample of the U.S. workforce. To investigate potential selection biases of the PayScale sample and their implications for our results, we obtained data on the U.S. labor force from the U.S. Census Bureau from 2019 and 2020. We compare the demographic characteristics of the respondents in the PayScale sample with those in the U.S. labor force. We focus on differences in state representation between the PayScale sample and the U.S. population, as well as differences in gender ratio, race composition, educational attainment, and age structure between the PayScale sample and the U.S. labor force. Finally, we examine the share of population by industry between the PayScale sample and the U.S. labor force.

First, for comparison of state representation, we use the latest Census data from 2019 that reports population by state. A paired two-sample t-test (p-value = 0.90) and a F-test (p-value = 0.97) are unable to reject the hypothesis that the PayScale sample share

of each state is equal to the population share in each state in the U.S. Next, we compare demographic characteristics between the PayScale sample and the U.S. labor force. Using data from the 2020 Current Population Survey, we find an overrepresentation of women in the PayScale sample compared to the U.S. labor force (51.6% versus 46.8%). We also find an overrepresentation of those with more education, specifically those with bachelor's and advanced degrees, in the PayScale sample compared to the U.S. labor force (59.4% versus 44.6%). At the same time, we find an underrepresentation of those with some college or an associate's degree in the PayScale sample compared to the U.S. labor force (11.5% versus 25.7%). In terms of age structure, the PayScale sample exhibits a younger population: half of the job seekers in the PayScale sample are aged between 20 to 35, compared to a third of the U.S. labor force that belongs to the same age group (detailed results available upon request).

Second, to test if these differences in demographic breakdown between the PayScale sample and the Current Population Survey are statistically significant, we conduct χ^2 tests "globally" for each of the broader categories of demographic characteristics: gender, race, ethnicity, education, and age. Results from the χ^2 test indicate that differences within gender, race, ethnicity, education, and age are insignificant at the 0.05 level between the two samples. We also conducted a two-tailed t-test for each of the demographic characteristics and found consistent results.

Third, we compare the population breakdown by industry between the PayScale sample and the U.S. labor force. Using the same data from the 2020 Current Population Survey, we find statistically insignificant differences in the share of population by industry between the PayScale data and the U.S. labor force, with the exception of one industry, Professional and Technical Services (results available upon request). In sum, as we mentioned previously, the PayScale sample is not nationally representative. When compared to the U.S. labor force, it consists of more women, more early career professionals, and more bachelor's and advanced degree holders.

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Evaluation of Missing Data

We also perform robustness checks with respect to missing data for the covariates used in our regressions. Of the 1.3 million initial salary offers we obtained from PayScale, 266,393 contain no missing values for any of the individual-level human capital and labor market variables used in our analysis. To assess if the missing values are "missing at random" (Rubin, 1983), we compare the distribution of the covariates in the subset of the PayScale sample with no missing values with the distribution of the covariates in the original PayScale sample. An unpaired two-sample t-test indicates that the difference is not significant at the 0.05 level. We fail to reject the null hypothesis that proportions of each of the variables are statistically significantly different between the two samples (results available upon request).

Additionally, we compare the population breakdown by industry between the subset of the PayScale sample with no missing values with those in the full PayScale sample. An unpaired two-sample t-test indicates that the difference is not significant at the 0.05 level. Again we fail to reject the null hypothesis that industry breakdown is statistically significantly different between the two samples (results available upon request). In sum, the robustness checks demonstrate that the final PayScale sample without missing values does not exhibit statistically significant differences from the original PayScale sample.

Initial Salary Offers and Wages: Exploratory Analyses

Taking stock of our findings, we find evidence, robust to inclusion of a number of controls and fixed effects, that there are differences in initial offers between women and men from employers. Due to the way candidates interact with the Payscale platform, our evidence is suggestive of there being a gender offer gap in the subcategories of the labor market (e.g., in white-collar jobs) that we discussed. Furthermore, we find the initial salary offer disadvantage that women sustain is widespread across all industries, occupations, and years of work experience in the white-collar job domain.

Taking our analyses one step further, we now explore the potential contributions of the initial salary offer gap to the gender wage gap. This is exploratory in the sense that we are able to compare initial offers in the Payscale data, to wages in the U.S. labor market. While the same individuals are not comprised of each data set, and thus these results should be examined with caution, we use them to further an understanding of how the initial offer gap and the gender wage gap might be related.

The first empirical pattern we might suspect is that there is a direct (1:1) relationship between the initial offer gap and the gender wage gap. This might occur for a few reasons. One is that in an attempt to close the gender wage gap, more companies have begun to prohibit salary negotiations for both candidates and existing employees (SHRM, 2015). If this is the case, than initial salary offers would just "carry foward" into the salaries and wages of employees.

The second empirical pattern we might expect to see is a greater *gender wage gap* than a *gender offer gap.* The widening of the gender wage gap might arise because initial offers might work in combination with negotiation behaviors to influence starting salaries as well as subsequent wages. The literature on negotiations, as outlined earlier, has demonstrated the influential effect of "anchors"—i.e.,the starting terms of a negotiation—on final prices (Galinsky et al. 2009; Galinsky and Mussweiler, 2001). This interactive effect between anchors and negotiation behaviors could continue to influence any subsequent position changes inside organizations. Further, any difference in offers or starting salaries may be compounded by organizational processes that continue to sort, evaluate, and promote workers, leading to a larger gender gap in wages than previously present in initial salary offers.

The final empirical pattern that may emerge is a smaller gender wage gap than a gender offer gap. One way through which a narrowing of the gender gap in pay may occur is women outperforming men in negotiations. While the majority of negotiation studies document a female disadvantage, recent studies suggest that the literature may have underestimated the likelihood and success of women's negotiation behavior. For example among a sample of

MBAs, Kray et al. (forthcoming) find that a greater number of women negotiate their salaries than men. If women outperform men in offer and salary negotiations, the initial gender gap in offers may reduce over time. Additionally, bureaucratic organizational processes might also lead women's and men's salaries to converge after they are hired (Abraham, 2017; Reskin and McBrier, 2000).

Given these potential relationships, we lay out here the relationship between the gender gap in offers and in wages observed in our data. One limitation of the PayScale data is that it does not have a way of tracking what individuals negotiate off of their initial offers or eventually earn within the organization. Stated differently, there is not a reason, after individuals go to the platform to decide whether or not to negotiate, for them to necessarily return. For this reason, we do not have data on the eventual salaries that individuals in our data set receive.

Instead, we combine data on initial salary offers from PayScale with data on wages from the Census. Specifically, we obtain data from the 2019 American Community Survey (ACS) (https://www.census.gov/programs-surveys/acs/), which reports data on the median earnings of full-time, year-round workers by occupation (the different levels of aggregation are 867 detailed occupations, 459 broad occupations, 98 minor groups, and 23 major groups). Although offers and wages are not attached to the same individuals, for offer-wage comparisons, they are indicative of broader patterns that exist between the two.

Combining data from PayScale and the U.S Census Bureau, we plot the relationship between the gender gap in initial salary offers and the gender gap in wages for 134 detailed occupations, as shown in Figure 7. Each data point represents the gender offer gap and the gender wage gap for a given occupation.

[INSERT Figure 7 ABOUT HERE]

The most noticeable pattern is that the relationship between the gender offer gap and the gender wage gap is positively correlated, at alpha = 0.61. Overall, the gender gap in wages

is 14.56 percent on average across all occupations while the gender gap is 7.59 percent on average for offers. The majority of the occupations exhibit a larger gender gap in wages than in offers, as indicated by the data points distributed to the right of the 45-degree diagonal line. A good number of occupations exhibit a nearly identical gender gap in offers and in wages, as indicated by the data points that lie near or on the 45-degree diagonal line. A few occupations exhibit a smaller gender gap in wages than in offers. These patterns between the gender gap in offers and in wages across occupations point to the theoretical possibility that the gender gap in offers does, to varying degrees, anchor and shape the gender gap in wages. We would expect that it does so particularly in the early stages of careers, wherein starting salaries act as an important baseline for future salary increases.

To more easily visualize how specific occupations correspond to these patterns, we also plot the same comparison, while collapsing the 134 detailed occupations into 22 major groups. This allows us to provide the specific names of these occupations for inspection, as shown in Figure 8. The same overall patterns hold. The relationship between the two–i.e. offers and wages–is again positively correlated, at alpha = 0.73. The gender gap in wages is uniformly greater than in offers across occupations, with the gender gap in wages being 21 percent on average across all occupations while the gap is 14 on average for offers. The two exceptions to this are Educational Instruction, and Library Occupations (a 28% gender gap in offers vs a 19% gender gap in wages) and Building and Grounds Cleaning and Maintenance Occupations (25% gender gap in offers vs a 24% gender gap in wages). To further quantify the relationship between the gender gap in offers and the gender gap in wages, of the 20 occupations that exhibit a larger gender gap in wages than in offers, the percentage of the gender gap in wages that could be explained by the gender gap in offers ranges from 13% to 100%. Of these, 17 occupations exhibit a gender offer gap that is at least half of the gender wage gap. Taken together, and within the data limitations we have discussed, these results provide support for the theoretical possibility that the gender gap in offers likely plays a role in contributing to the gender gap in wages.

Finally, though we consider our results exploratory, we also consider one alternative explanation for the positive correlation we find between offers and wages. One possibility is that reverse causality is influencing the relationship between wages and offers. Plausibly, employers might be making offers in ways that anticipate offers as only the starting point in negotiations. We might expect employers to be setting offers to extract the most value out of hired employees (i.e., providing "low ball" offers), because offers will increase and become wages. If this were the case, we might expect employers to offer lower salaries to those in weaker bargaining positions. For recent graduates and early career professionals, these job candidates may be the most unlikely to negotiate offers, especially because so many offers come from internships or tryouts in the early stage of careers (Sterling and Fernandez, 2018).

To explore the possibility of reverse causality between offers and wages, we restrict the analysis to a subset of the PayScale sample with 5 or fewer years of experience. Despite the likely weaker bargaining power faced by recent graduates and early-career professionals, we find that a gender gap is still present in initial salary offers, after controlling for race and education, with industry, occupation, and job, state, and month/year fixed effects. It is much more muted, however. For those with no work experience, we find a 1.9% gender gap in offers. For those with 1 to 5 years of experience, we find a 4.5% gender gap in offers (refer back to Figure 6).

Discussion

In this research we examine initial salary offers as a possible, overlooked juncture that gives rise to gender inequality in labor markets and organizations. Prior studies inform our understanding of how initial offers (i.e., starting prices) affect outcomes in labor markets and other contexts. Motivated by this prior work, we have argued that employers' initial offers to job candidates are consequential for our understanding of the gender wage gap in salaries.

Yet in prior literature, given data limitations, salary offers have proven difficult to examine.

Taking advantage of a proprietary data set of nearly 300,000 initial salary offers across a wide range of industries, firms, and jobs from April 2017 to May 2020 in the U.S., in our analyses we find an unexplained gender difference in initial salary offers during hiring processes. Specifically, our results show that women are offered 5.8% less than men, after adding controls and fixed effects for industry, occupation, job, employer, and location. We also find systematic gender differences in initial salary offers across industries, occupations, and years of experience. This suggests that the gender offer gap is not localized to a narrow set of fields or worker characteristics. Finally, within data limitations, we find a positive relationship between the gender gap in initial salary offers and the gender gap in wages across occupations. Our results suggest that where women and men start off—i.e.,prior to negotiations—may contribute to the gender wage gap.

This study makes a number of important contributions to literature on gender and organizational inequality, as well as negotiations. To the former, we contribute knowledge and evidence of a previously underdiagnosed "gender offer gap." Prior studies have long suggested that there are both supply and demand-side contributions to gender inequality. Yet, parsing out how each contributes to gender inequality has proved challenging (c.f. Fernandez and Weinberg, 1997; Fernandez and Fernandez-Mateo, 2016; Campbell and Hahl, 2022). Understanding what the demand-side in particular contributes to the gender wage gap is complicated by researchers lacking knowledge of what occurs across each of the stages of the hiring process, such as those conveyed in Figure 1.

A benefit of this study is that it uses a novel data set to overcome several of the challenges inherent in seeking to understand demand-side contributions to gender inequality. Rather than assuming the offers that are made to women and men are identical, our research examines whether or not this is the case. In so doing, our finding that not the same are not the same suggests a new mechanism by which employers are potentially affecting the gender wage gap.

For the negotiations literature, we also make a number of important contributions. Recent studies on negotiation suggest that the literature may have underestimated the likelihood and success of women's negotiation behaviors (Kray et al. 2023). If, despite women's greater propensity to negotiate than men in some circumstances, a gender wage gap is observed, this suggests it is even more important to study initial salary offers. In addition, the growing trend of refraining from negotiations in the hiring process (Wang, 2023) also suggests the importance of examining initial offers. Summarily, even with all the scholarly With all the attention on the ways negotiation behavior is argued to perhaps affect the gender wage gap, in line with other scholars questioning a lack of women's skills and negotiation success (Kray et al. 20203), our results suggest it may just be that women make less because they are given a lower offer upon which to negotiate.

In the negotiation literature, it is common to take the starting prices upon which women and men negotiate as a given. After this, researchers examine the effects of various skills, tactics, and behaviors on negotiation outcomes. Yet, negotiation researchers themselves have long acknowledged the importance of starting prices (Neale and Bazerman, 1991; Galinsky and Mussweiler, 2001; Galinsky and Mussweiler, 2009), because this may "set up" negotiation outcomes, or affect how they unfold. Our study suggests that this may indeed be the case, in that women receiving lower initial salaries may mean they are forced to make up these deficits to completely close the initial salary gap.

This study, of course, is not without limitations. In our exploration of the potential contribution of the initial offer gap to the gender wage gap, one deficiency is that these data do not come from the same individuals. While the positive relationship we find between the gender offer gap and the gender wage gap is indicative of potential path dependencies of gender inequality in pay, additional data is needed to substantiate this finding. Obtaining longitudinal data that captures the evolution of individuals' pay over time, for example, from their initial salary offers to their ending salaries at the same organization, would be a fruitful endeavor for future research on the origins of the gender wage gap in labor markets.

Future research should also continue to focus on the demand-size contributions to gender inequality, as well as its remediations. One policy aimed at reducing the gender wage gap that has been gaining popularity among mayors and governors in the U.S. is the salary history ban. Under the ban, employers are prohibited from soliciting past salary information when determining how much to pay job candidates for their new job. The effectiveness of the salary history ban has been well documented in recent studies of the salary history ban (McNichols, 2018; Sinha, 2019; Sherman et al., 2021; Agan et al., 2020; Bessen et al., 2020), but what remains to be more fully understood is the process during which pay decisions are made during the hiring process that may give rise to gender inequality. It may be that the salary history ban, while well-intended, has limited impact because of the complicated ways hiring unfolds. A reasonable next step is for scholars to further what transpires in the hiring process, with respect to how employers make salary offer decisions. Specifically, scholars should go beyond studying evaluation processes and explicitly attend to compensation (Alder, 2023). In closing, we think this study has important implications, not just for scholars but also for practitioners. In diagnosing the gender wage gap, it is common for practitioners to suggest that women improve their negotiating skills and abilities. As scholars have warned, such practices of "blaming" groups for their economic and social disparities may not be fruitful and may even go further and do harm (see discussion in England, 2016). Here, our study raises real questions beyond aspects of ethical and moral implications. Rather, our study raises real questions about the effectiveness of focusing on negotiations. It may be that especially the last few decades have led to strong improvements in women's negotiating ability (see Kray et al. 2023), and what is left to "solve" with respect to gender inequality is what employers are contributing to gender inequality in salaries

References

Abraham, M. (2017, 2). Pay formalization revisited: Considering the effects of manager gender and discretion on closing the gender wage gap. In *Academy of Management Journal*, Volume 60, pp. 29–54. Academy of ManagementBriarcliff Manor, NY.

Agan, A., B. Cowgill, and L. K. Gee (2020, 5). Do Workers Comply with Salary History Bans? A Survey on Voluntary Disclosure, Adverse Selection, and Unraveling. *AEA Papers and Proceedings 110*, 215–219.

Babcock, L. and S. Laschever (2004). *Women Don't Ask*. Princeton University Press.

Barbulescu, R. and M. Bidwell (2012). Do Women Choose Different Jobs from Men? Mechanisms of Application Segregation in the Market for Managerial Workers. *Organization Science 24*(3), 737–756.

Baron, J. N. and A. E. Newman (1990). For what it's worth: organizations, occupations, and the value of work done by women and nonwhites. *American Sociological Review 55*(2), 155–175.

Bertrand, M., C. Goldin, and L. F. Katz (2010). Dynamics of the gender gap for young professionals in the financial and corporate sectors. *American Economic Journal: Applied Economics*.

Bessen, J. E., C. Meng, and E. Denk (2020, 6). Perpetuating Inequality: What Salary History Bans Reveal About Wages. *SSRN Electronic Journal*.

Blair-Loy, M. (2005, 12). Competing Devotions. *Competing Devotions*.

Blau, F. D. and L. M. Kahn (2003). Understanding International Differences in the Gender Pay Gap. *Journal of Labor Economics 21*(1), 106–144.

Blau, F. D. and L. M. Kahn (2017). The gender wage gap: Extent, trends, & explanations. *Journal of Economic Literature 55*(3), 789–865.

Bowles, H. R., L. Babcock, and L. Lai (2007, 5). Social incentives for gender differences in the propensity to initiate negotiations: Sometimes it does hurt to ask. *Organizational Behavior and Human Decision Processes 103*(1), 84–103.

Budig, M. J. and P. England (2001). The wage penalty for motherhood. *American Sociological Review 66*(2), 204–225.

Castilla, E. J. (2012, 4). Gender, Race, and the New (Merit-Based) Employment Relationship. *Industrial Relations 51*(SUPPL. 1), 528–562.

Castilla, E. J. (2015). Accounting for the gap: A firm study manipulating organizational accountability and transparency in pay decisions. *Organization Science 26*(2), 311–333.

Chamberlain, A., D. Zhao, and A. Stansell (2019). Progress on the Gender Pay Gap: 2019 - Glassdoor Economic Research. *Glassdoor Economic Research*.

Correll, S. J., S. Benard, and I. Paik (2007). Getting a Job: Is There a Motherhood Penalty? *American Journal of Sociology 112*(5), 1297–1338.

Diprete, T. A. and G. M. Eirich (2006, 8). Cumulative advantage as a mechanism for inequality: A review of theoretical and empirical developments.

Elvira, M. and R. Town (2001, 10). The effects of race and worker productivity on performance evaluations. *Industrial Relations 40*(4), 571–590.

England, P., J. Bearak, M. J. Budig, and M. J. Hodges (2016, 12). Do Highly Paid, Highly Skilled Women Experience the Largest Motherhood Penalty? *American Sociological Review 81*(6), 1161–1189.

Exley, C. L., M. Niederle, and L. Vesterlund (2020, 3). Knowing when to ask: The cost of leaning in. *Journal of Political Economy 128*(3), 816–854.

Fernandez, R. M. and M. L. Mors (2008, 12). Competing for jobs: Labor queues and gender sorting in the hiring process. *Social Science Research 37*(4), 1061–1080.

Fernandez, R. M. and M. L. Sosa (2005). Gendering the Job: Networks and Recruitment at a Call Center. *American Journal of Sociology 111*(3), 859–904.

Fernandez-Mateo, I. and R. M. Fernandez (2016). Bending the Pipeline? Executive Search and Gender Inequality in Hiring for Top Management Jobs. *Management Science 62*(12), 3636–3655.

Galinsky, A. D., G. Ku, and T. Mussweiler (2009). To Start Low or To Start High? The Case of Auctions Versus Negotiations. *Psychological Science 18*(6), 357–361.

Galinsky, A. D. and T. Mussweiler (2001). First offers as anchors: The role of perspective-taking and negotiator focus. *Journal of Personality and Social Psychology 81*(4), 657–669.

Goldin, C. (2015). Hours Flexibility and the Gender Gap in Pay. Technical report, Center for American Progress.

Hall, R. E. and A. B. Krueger (2012). Evidence on the incidence of wage posting, wage bargaining, and on-the-job search. *American Economic Journal: Macroeconomics 4*(4), 56–67.

Horton, J. J. and M. Barach (2020, 4). How Do Employers Use Compensation History?: Evidence From a Field Experiment. *Journal of Labor Economics*.

Kray, Laura J.; Kennedy, J. A. L. M. (2023). NOW, WOMEN DO ASK: A CALL TO UPDATE BELIEFS ABOUT THE GENDER PAY GAP.

McNichols, D. (2018, 2). Information and the Persistence of the Gender Wage Gap; Early Evidence from California's Salary History Ban. *SSRN Electronic Journal*.

Neale, M. A. and M. H. Bazerman (1992, 3). Negotiator cognition and rationality: A behavioral decision theory perspective. *Organizational Behavior and Human Decision Processes 51*(2), 157–175.

Northcraft, G. B. and M. A. Neale (1987). Experts, amateurs, and real estate: An anchoring-and-adjustment perspective on property pricing decisions. *Organizational Behavior and Human Decision Processes 39*(1), 84–97.

Obloj, T. and T. R. Zenger (2022, 1). The influence of pay transparency on (gender) inequity, inequality, and the performance-basis of pay. *SSRN Electronic Journal*.

Padavic, I., R. J. Ely, and E. M. Reid (2020, 3). Explaining the Persistence of Gender Inequality: The Work–family Narrative as a Social Defense against the 24/7 Work Culture*. *Administrative Science Quarterly 65*(1), 61–111.

Percheski, C. (2008, 6). Opting out? Cohort differences in professional women's employment rates from 1960 to 2005. *American Sociological Review 73*(3), 497–517.

Petersen, T., I. Saporta, and M. L. Seidel (2000). Offering a Job: Meritocracy and Social Networks. *American Journal of Sociology 106*(3), 763–816.

Reskin, B. F. and P. A. Roos (1990). Job queues, gender queues : explaining women's inroads into male occupations. pp. 388.

Ridgeway, C. L. (2011). *Framed by gender: how gender inequality persists in the modern world.* Oxford University Press.

Rivera, L. A. and A. Tilcsik (2016, 12). Class Advantage, Commitment Penalty: The Gendered Effect of Social Class Signals in an Elite Labor Market. *American Sociological Review 81*(6), 1097–1131.

Sauer, C., P. Valet, S. Shams, and D. Tomaskovic-Devey (2021, 10). Categorical Distinctions and Claims-Making: Opportunity, Agency, and Returns from Wage Negotiations. *American Sociological Review 86*(5), 934–959.

Säve-Söderbergh, J. (2019, 5). Gender gaps in salary negotiations: Salary requests and starting salaries in the field. *Journal of Economic Behavior & Organization 161*, 35–51.

Seidel, M.-D. L., J. T. Polzer, and K. J. Stewart (2000). Friends in High Places: The Effects of Social Networks on Discrimination in Salary Negotiations. *Administrative Science Quarterly 45*(1), 1.

Sharkey, A., E. Pontikes, and G. Hsu (2022, 12). The Impact of Mandated Pay Gap Transparency on Firms' Reputations as Employers. *Administrative Science Quarterly*.

Sherman, E. L., R. A. Brands, and G. Ku (2021). Dropping Anchor: A Field Experiment Assessing a Salary History Ban With Archival Replication.

Sinha, S. (2019, 10). Salary History Ban: Gender Pay Gap and Spillover Effects. *SSRN Electronic Journal*.

Sterling, A. D. and R. M. Fernandez (2018, 11). Once in the Door: Gender, Tryouts, and the Initial Salaries of Managers. *Management Science 64*(11), 5444–5460.

Stone, P. (2007, 8). The Rhetoric and Reality of "Opting Out". *Contexts 6*(4), 14–19.

Weisshaar, K. (2018, 2). From Opt Out to Blocked Out: The Challenges for Labor Market Re-entry after Family-Related Employment Lapses. *American Sociological Review 83*(1), 34–60.

Tables and Figures

Figure 1: The wage-setting process

Table 1: Sample size of the final PayScale data set

Variable	Value
Number of offers	294,650
Number of users	284,075
Number of employers	122,933
Number of industries	695
Number of job titles	8,477
Date range	2017-04-26 to 2020-05-30

Note: The final data set used for this analysis has 294,650 initial salary offers evaluated by 284,075 job seekers, inclusive of observations without missing data on variables used for our analysis, including various human capital and labor market characteristics. These job seekers came to PayScale to evaluate an offer they had just received between April 2017 and May 2020 in all 50 states and the District of Columbia in the U.S.

Figure 2: PayScale Salary Survey

Note: PayScale requires that platform users provide information on their own offers. Respondents are incentivized to provide as detailed and accurate information as possible on their own background as well as the job offer they have received, because doing so will optimize the estimation of their own market wage.

Table 2: Demographics of the PayScale data

Variable	Percentage
Race	
White	68.98
Black or African American	11.50
Asian	7.93
Ethnicity	
Hispanic or Latino	11.17
Education	
No degree	3.53
High school degree	25.51
Associate degree	11.54
Bachelors degree	40.65
Masters degree	16.12
Professional degree	1.43
Doctoral degree	1.22
Experience	
Average years of work experience	8.58
Median years of work experience	5.00

Note: Demographic characteristics for all respondents in the final PayScale data set (N = 284,075 job seekers).

Table 3: Demographics of the PayScale data by gender

Variable	Female	Male
Race		
White	50.56	49.45
Black or African American	62.96	37.05
Asian	45.10	54.91
Ethnicity		
Hispanic or Latino	51.81	48.19
Education		
No degree	47.87	52.13
High school degree	48.87	51.14
Associate degree	59.10	40.92
Bachelors degree	50.15	49.87
Masters degree	51.99	48.05
Professional degree	57.48	42.57
Doctoral degree	42.23	57.80
Experience		
Average years of experience	8.35	8.83
Median years of experience	5.00	5.00

Note: Demographic characteristics for all respondents in the final PayScale data set (N = 284,075 job seekers).
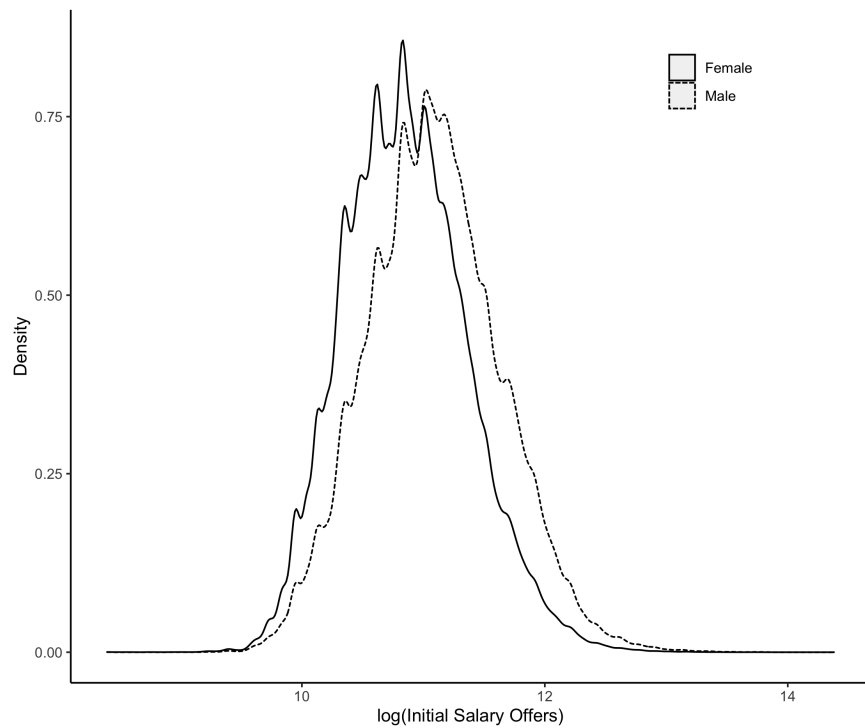
Figure 3: Kernel density of initial salary offers by gender

Note: There is a 23% unadjusted gender gap between female and male job seekers. A two-sample Kolmogorov-Smirnov test rejects the null hypothesis that the offer distribution between men and women is the same (p-value < 0.001).

Table 4: OLS regressions predicting initial salary offers by gender

	Dependent variable:			
	log(Initial Salary Offers)			
	(1)	(2)	(3)	(4)
Female	−0.235**	−0.220**	−0.055**	−0.056**
	(0.007)	(0.005)	(0.003)	(0.002)
Human capital controls		✓	✓	✓
Labor market FEs			✓	✓
State and month/year FEs				✓
Adjusted R^2	0.047	0.425	0.799	0.809
Residual Std. Error	0.530 (df = 294648)	0.411 (df = 294636)	0.243 (df = 163188)	0.237 (df = 163101)
Observations	294,650	294,650	294,650	294,650

*p<0.05; **p<0.01

Note: Human capital controls include racial minority status (1 = Yes, 0 = No), years of work experience (and experience squared), and highest educational level achieved. Fixed effects include industry (2-digit NAICS code), occupation (2-digit SOC code), job title, employer, state and month/year.
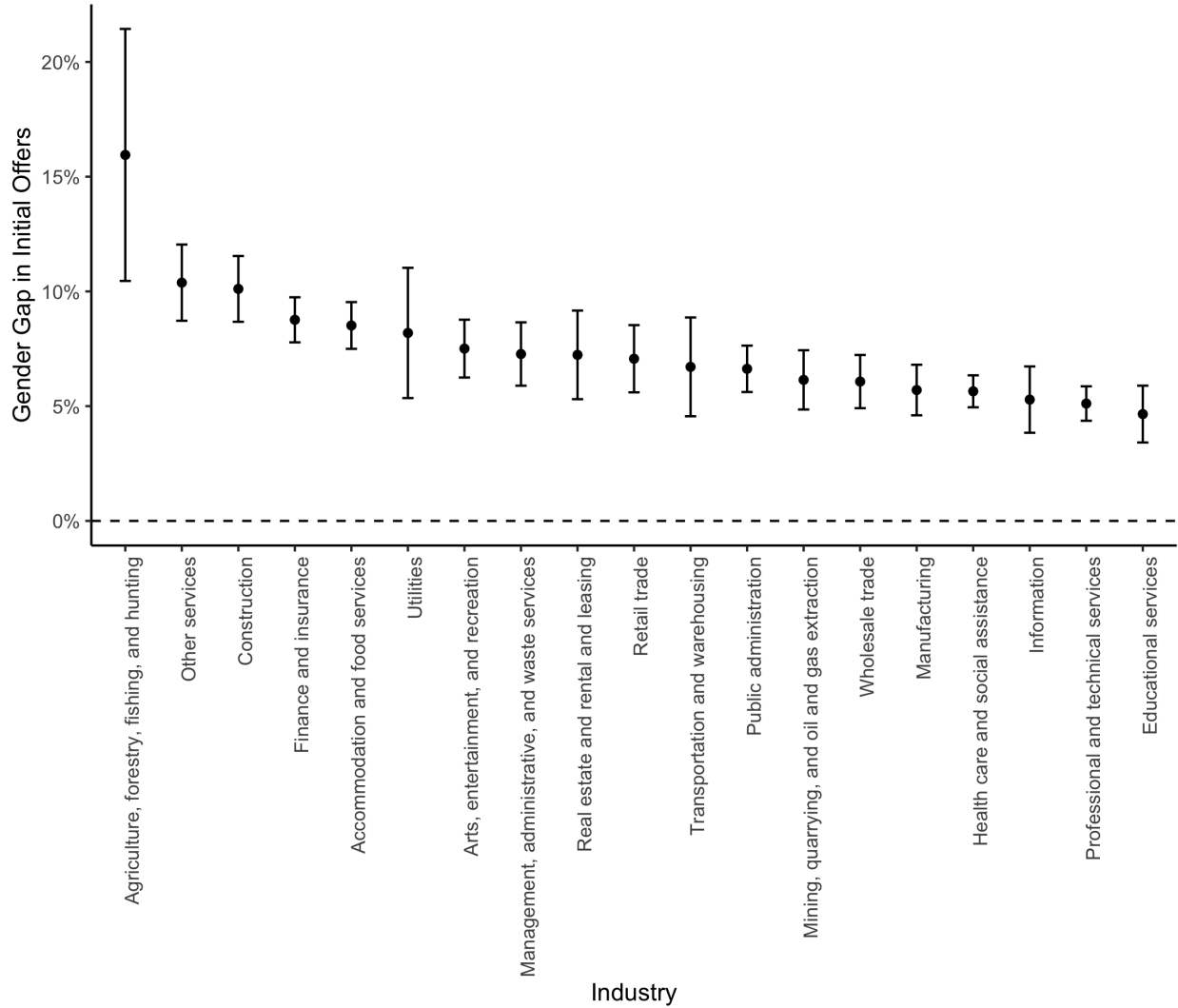
Figure 4: Adjusted gender gap in offer amount by industry

Note: Nested OLS regressions are used to estimate the adjusted gender gap in offers in 19 industries (based on 2-digit NAICS code). After controlling for race, education, years of experience, with occupation, job, state, month/year fixed effects, the adjusted gender gap in offers is statistically significant at the 0.05 level across all industries, ranging from 4.8% to 16%. Error bars represent the 95% confidence intervals for the coefficient estimate.
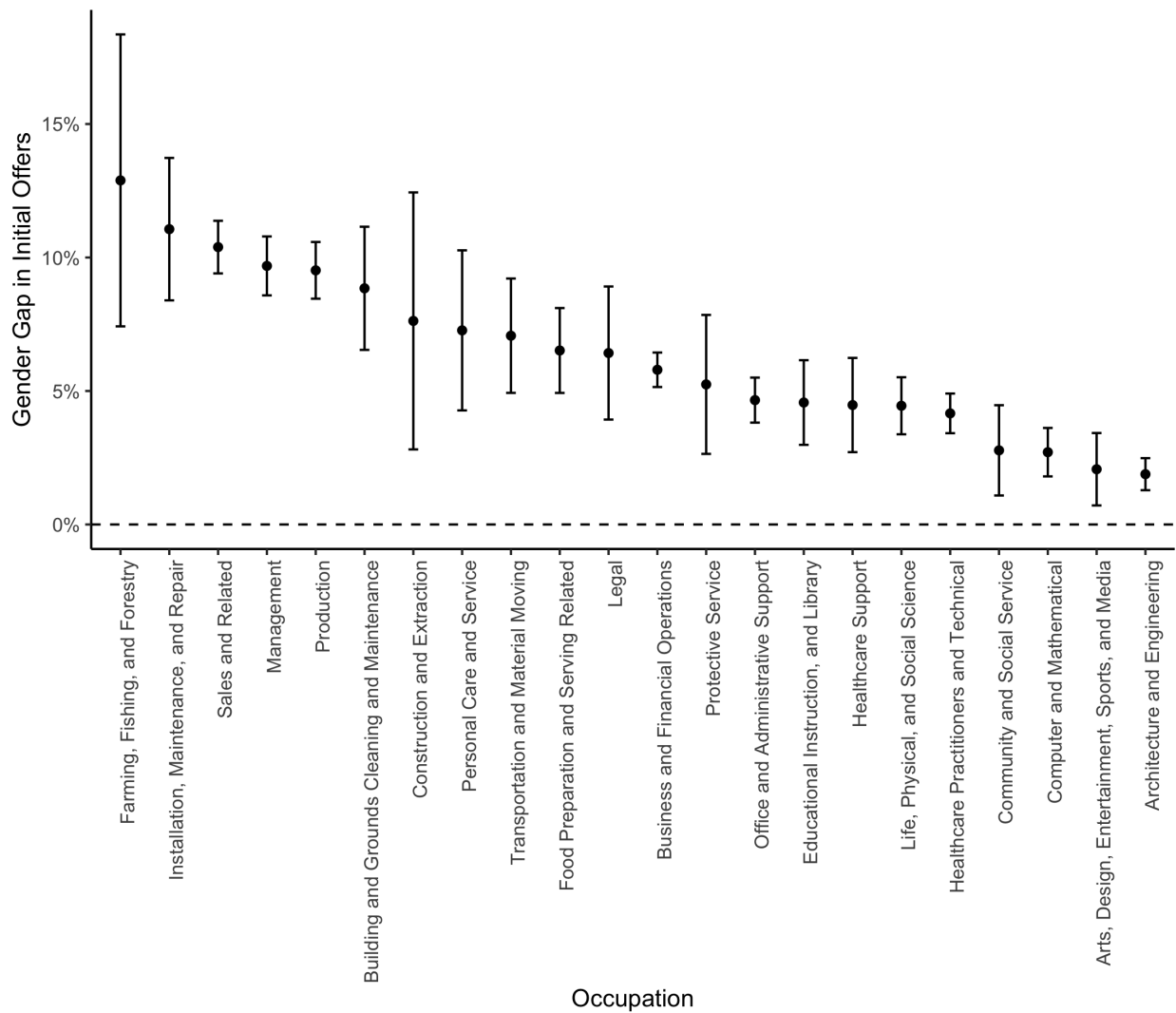
Figure 5: Adjusted gender gap in offer amount by occupation

Note: Nested OLS regressions are used to estimate the adjusted gender gap in offers in 22 industries (based on 2-digit NAICS code). After controlling for race, education, years of experience, with industry, job, state, month/year fixed effects, the adjusted gender gap is statistically significant at the 0.05 level across all occupations, ranging from 1.9% to 12.9%. Error bars represent the 95% confidence intervals for the coefficient estimate.
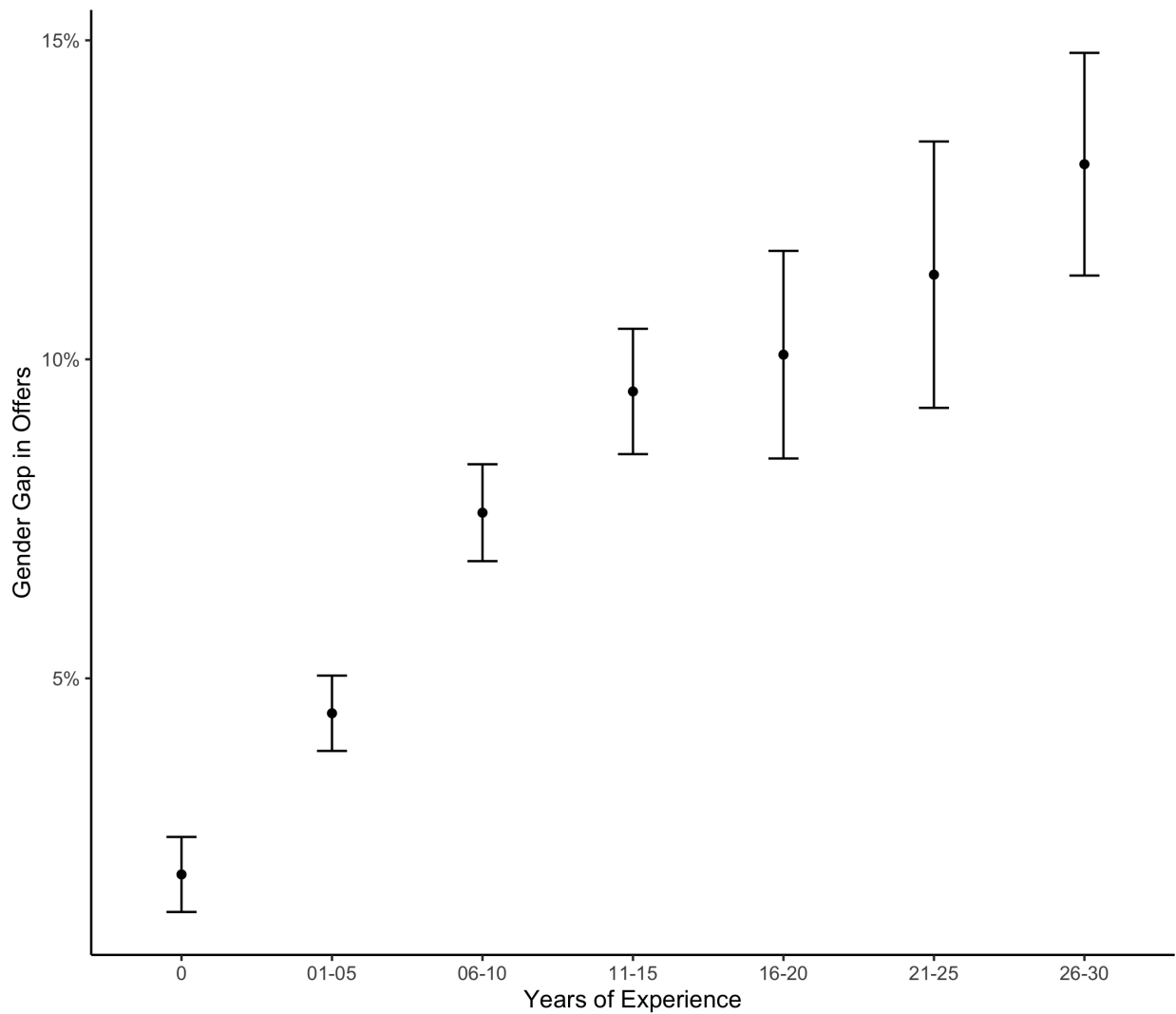
Figure 6: Adjusted gender gap in offer amount by years of work experience

Note: Nested OLS regressions are used to estimate the adjusted gender gap in offers across different years of work experience. After controlling for race and education, with industry, occupation, job, state, month/year fixed effects, the adjusted gender gap in offers is statistically significant at the 0.05 level across all years of work experience, ranging from 1.9% to 13.1%. Error bars represent the 95% confidence intervals for the coefficient estimate.
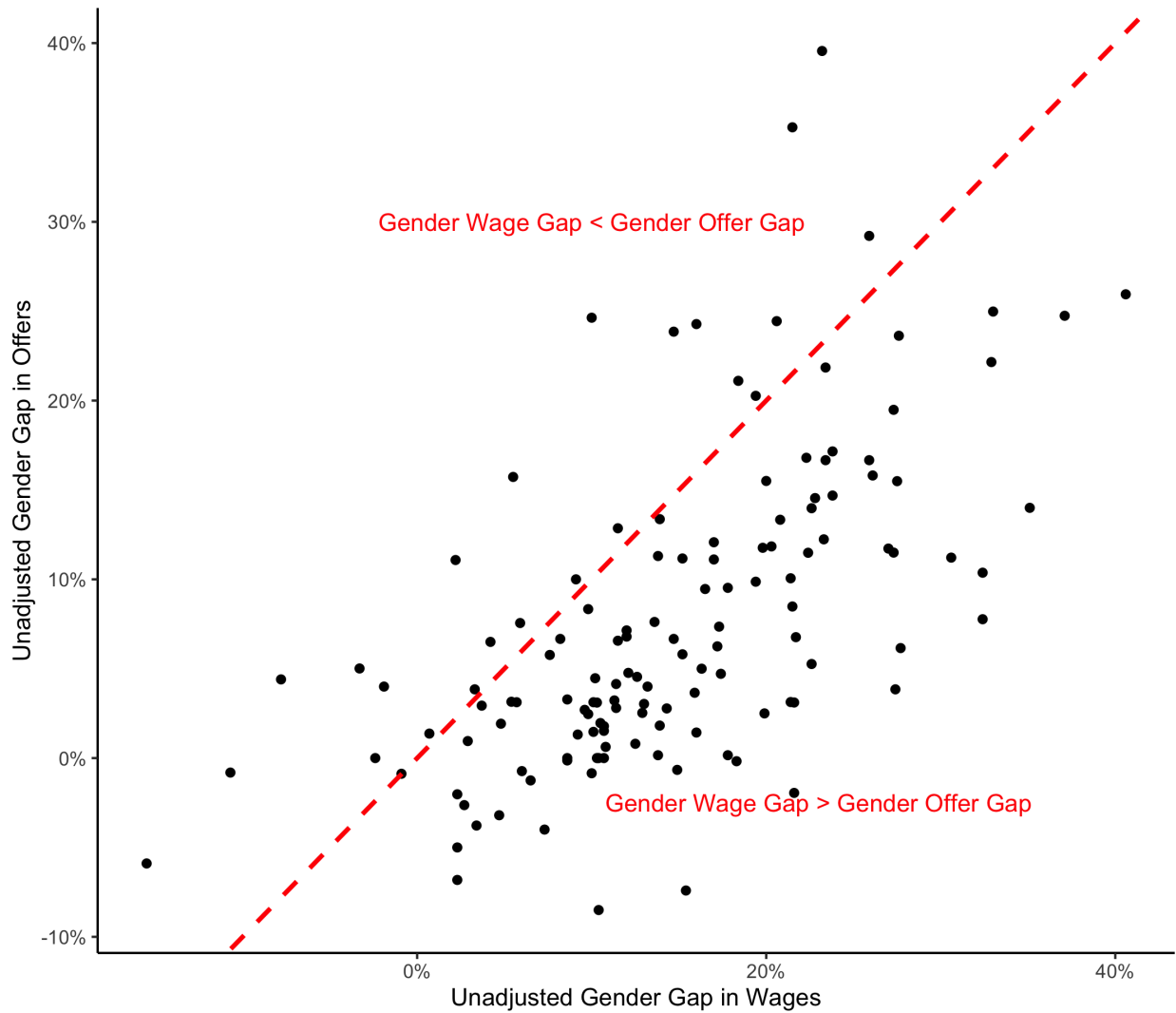
Figure 7: Unadjusted gender gap in wages and in offers by detailed occupations

Note: Data on median wages for 134 detailed occupations (based on 6-digit SOC code) are obtained from the latest report from the Bureau of Labor Statistics in 2019. The majority of the occupations exhibit a greater gender gap in wages than in offers, as indicated by the distribution of the majority of estimates on or to the right of the dashed 45-degree line.

Figure 8: Unadjusted gender gap in wages and in offers by major occupations

Note: Data on median wages for 22 major occupations (based on 2-digit SOC code) are obtained from the latest report from the Bureau of Labor Statistics in 2019. Almost all occupations exhibit a greater gender gap in wages than in offers, as indicated by the distribution of the majority of estimates on or to the right of the dashed 45-degree line.