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Gender Promotion Gaps: Career Aspirations and Workplace Discrimination

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Abstract

Using a representative survey of U.S. lawyers, we document a sizeable gender gap in early partnership aspirations, which explains half of the later gender promotion gap. We further document that the correlation between aspirations and effort provides a ‘mechanical’ link between aspirations and promotion. To understand these gaps, we show that aspirations are malleable and can be influenced by professional experiences, such as discrimination. Facing harassment or demeaning comments in the workplace at an early career stage affects later promotion, mediated via a change in aspirations. Our study highlights that measuring aspirations and adapting the corporate culture that shapes them, is a key component for firms to improve workplace environments.

JEL Classification: J16, J44, K40, M51

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1 Introduction

Reducing professional gender gaps is becoming increasingly relevant to firms and organizations. However, such gaps are persistent despite the efforts to decrease them. While a large share of academic and corporate attention has focused on the existence of gender wage gaps, gender differentials continue to exist in many other professional dimensions. In particular, there are sizeable gender promotion gaps that contribute to a glass ceiling in organizations. That is, a lower representation of women in top positions among high-skilled professionals. For instance, among S&P500 companies, women account for only 5% of CEOs, 21% of board members and 26% of managers.¹ In other professions, women account for 20% of law firm partners;² and 32% of university professors.³ Gender promotion gaps can have important personal consequences in terms of pay, but also in terms of status and power within the firm. Relatedly, they are also linked to the firms objectives in terms of diversity and representation, but also in terms of the ability to attract and retain skilled women.

In this paper, we highlight the importance of early career aspirations in understanding later gender promotion gaps. We study this in the context of the legal profession in the U.S., using a nationally representative sample of lawyers who are tracked during their professional careers. We document that, among those lawyers who enter private law, when asked early in their career, there is a sizeable difference between men and women in their aspirations to eventually become a partner. While approximately two-thirds of male lawyers have high career aspirations, this is the case for only one-third of female lawyers. This aspiration gap helps explain a large fraction (approximately 50%) of the gender promotion gap in the profession – a gap that is explained neither by detailed entry-level characteristics that are broadly similar for men and women nor by self-declared expectations of being promoted. We explore these key stylized facts, as well as discuss possible interpretations of these results and their implications.

Legal companies are particularly well suited to understanding the determinants of promotion gaps for several reasons. First, like many other sectors with highly skilled professionals, it exhibits persistent gender promotion gaps. However, unlike in many other sectors, the process of promotion to partner in the legal profession is well defined and has a similar structure across firms, with the division between partners and non-partners reflecting most of the relevant hierarchy in a firm. Second, the legal profession traditionally evaluates performance using measures that are transparent and homogeneous across firms (hours billed) and effort

¹Catalyst, Women CEOs of the S&P500 (2017)

²A current Glance at Women in the Law, American Bar Association (2016)

³National Center for Education Statistics, IPEDS Data Center, Fall Staff 2015 Survey (2016)

measures (hours worked). Third, in recent years, male and female lawyers entering private law firms after completing law school are similar on most observable variables (for instance, performing equally well in law school, equally entering top law school programs, similarly obtaining positions in leading law firms), which raises the question of why promotion gaps persist among the younger cohorts.

Using a nationally representative cohort of lawyers who are tracked over twelve years from law school completion, we begin by documenting a significant gender gap in promotions. Twelve years after joining a law firm, women are 12% less likely to become partners than men. This is a sizeable gap when we consider that there is gender equality at the entry level into the partnership track and that the unconditional probability for men to become partners is 54%. The gender promotion gap is virtually unaffected when controlling for other pre-existing demographic, educational, and firm traits, consistent with the finding that these characteristics, when entering the law profession, are very similar between men and women for a given cohort.

The sizeable gender gap in promotion mirrors a different gap between men and women in terms of career aspirations. We document that, when asked at an early stage of their careers (approximately 6-7 years after taking the bar exam) about their aspiration to eventually make partner, while 60% of men report having high career aspirations (eight or more) to become partners, only 32% of women report similar aspirations. Similarly, while only 13% of men have low career aspirations (three or less), this is the case for 31% of women. These gender differences in career aspirations explain more than 50% of the gender promotion gap. We then present stylized facts showing the correlation between aspirations and effort, thus providing a ‘mechanical’ link between aspirations and promotion. We show that early career aspirations are correlated with factors that are relevant to determining eventual promotion for lawyers – for example, high-aspiring individuals work longer (regular and weekend) hours, and bill more hours to clients early in their career.

We propose three broad types of explanations for the link between aspirations and promotion. Aspirations are commonly defined as *a hope or ambition of achieving something*.⁴ The idea of hope or ambition suggests that some utility is at stake if an aspiration is achieved. A simple way to classify the modeling of aspirations is according to whether they are determined exogenously or endogenously to the individual. The first type of explanation views aspirations as exogenously determined by, for example, culture or peers. Aspirations in this setting are a driver of effort that increases the chance of promotion. The second type of explanation corresponds to a setting in which aspirations are endogenously chosen by

⁴As defined in the Oxford English dictionary.

the individuals and thus aspirations, effort and promotion are co-determined. Finally, the third type views aspirations as a manifestation of other factors (such as, expectations of promotion), but with no direct impact on behavior.

We highlight that these three classes of explanations offer different perspectives on our stylized facts and can suggest distinguishing empirical implications. The first type suggests that the correlations we present reflect a causal relationship between career aspirations and the likelihood to make partnership. The second class of explanation shows that aspirations, effort, and expectations of success are co-determined and thus trying to establish a relation of causality is challenging. Finally, the third suggests that although no causal link exists, aspirations can still be used as useful early indicators of future successes in promotion.

While the different classes of explanations suggest different interpretations of the relationship between career aspirations and promotion, they all suggest that aspirations are somewhat malleable (or changeable). As we show in our context, at the entry stage, male and female lawyers are highly similar in terms of performance and observable characteristics when they finish law school. At the entry level (approximately 1-2 years after taking the bar exam) into their career, professional aspirations do not appear to be different between male and female lawyers. As with education or initial firm choices, there are no significant differences in the desire by men and women to be powerful in the profession or to change profession, suggesting that aspirations evolve after some exposure to the profession and gender gaps in career aspirations appear. After around 6 years of work experience, we see striking differences between men and women. The large gap in aspirations contrasts with the lack of pre-existing differences across men and women when they join the firm, suggesting that aspirations evolve differently for men and women while working.

In the last part of the paper, we further explore the potential of aspirations to change and, in particular, why they may change differently for male and female lawyers. We focus on the role of early work experiences to help better understand the evolution of promotion aspirations and, in particular, experiences of workplace discrimination and the promotion expectations.⁵

There are various forms of discrimination, which we classify as “organizational” and “social” discrimination. Organizational discrimination, in its simplest form, would assign different pay for the same work. In the case of lawyers, it could also be attributed to a

⁵Fertility choices can also play an important role in influencing aspiration and promotion gaps. In the Appendix, we show some results linking aspirations to children and promotions. A potentially stronger trade-off between family and work faced by female lawyers compared with their male counterparts can help explain why some female lawyers may strategically set lower career aspirations on average

senior partner assigning a differential caseload assignment to some (equivalently able) lawyers compared with others based on other characteristics, such as gender. Social discrimination, on the other hand, can be thought of as the interaction with colleagues and the corporate culture of the firm. It may, for instance, include experiencing harassment and derogatory comments by virtue of one's characteristics. It might also be reflected, more generally, in the workplace environment.

We find little evidence that promotions are influenced by explicit or implicit organizational discrimination in pay, tasks or case assignment. We do, however, find that social discrimination matters. In particular, experiencing demeaning comments or other types of harassment is linked to lower professional aspirations. Among young lawyers, 25% of the women in our sample experience social discrimination at the start of their careers, compared with only approximately 5% of men. We show that early experiences of discrimination by colleagues strongly affect one's career aspiration to become a partner and, ultimately, are linked to actual future promotion outcomes, consistent with the mechanism suggested by the model. This is a central result, as it shows that small changes in one's labor experiences can have strong and persistent effects. We also show that these comments, which are gender specific, are unrelated to the ex ante characteristics of the lawyer targeted. In this sense, they can be considered as the consequence of a negative shock of being paired with discriminatory colleagues.

Finally, we explore the role played by promotion expectations and how they are linked to aspirations. We show that career aspirations are connected to the contemporaneous self-reported probability of becoming a partner in a law firm (i.e., the expectation of becoming a partner). However, while career goals and the expectations of success are indeed linked, promotion aspirations contain additional information about the actual probability of promotion over and above their expectations. We show that aspirations explain the observable covariate-adjusted difference in the gender promotion gap approximately 1.5 times more than expectations.

Our paper contributes to a growing literature that studies the underrepresentation of women in senior high-skilled positions, frequently referred to as the glass ceiling (e.g., Bertrand and Hallock, 2001; Adams and Funk, 2011; Bertrand, 2013; Blau and Kahn, 2017; Bertrand et al., 2019). While there is growing literature on gender gaps in wages and the dynamics of the gender wage gap among the high-skilled (Manning and Swaffield, 2008; Bertrand, Goldin and Katz, 2010; Azmat and Ferrer, 2017), there has been relatively less focus on promotions (see Altonji and Blank, 1999, and Bertrand, 2011, for reviews of the literature). Although the two are highly linked, promotions entail a broader set of implications

beyond pay. While studies have shown that women are promoted less than men (Cobb-Clark, 2001; Blau and DeVaro, 2007; Benson, Li and Shue, 2021), recent studies (Bosquet, Combes and Garcia-Penalosa, 2018; and Hospido, Laeven and Lamo, 2020) find that a gender gap in promotion is no longer significant when accounting for gender differences in applying for promotions. Our study documents a gender gap in promotion that is largely explained by differences in career aspirations, suggesting a mechanism for differential promotion seeking.

In the context of the legal profession, when analyzing the performance of young lawyers early in their career, Azmat and Ferrer (2017) show that male lawyers perform better in terms of hours billed and the generation of new client revenue, which, in turn, explains a sizeable part of the gender wage gap. In this paper, we focus on a different labor market outcome: promotion to law-firm partner. We document a promotion gap and show how it mirrors a previously undocumented career aspirations gap. We highlight the relevance of aspirations to making partner and explore various interpretation of these results depending on how aspirations are modeled. An important goal of our paper is to show how career aspirations are linked to “inputs”, such as hours worked, and performance, such as hours billed, which are important determinants of later career outcomes. Irrespective of how aspirations are modeled, aspirations are malleable, such that they can also be affected by early workplace experiences.

Another important explanation for gender differences in promotions is often attributed to gender-based discrimination. Goldin and Rouse (2000), for instance, show that women are more likely to be selected in gender-blind contests. Even within the workplace, due to firm culture, men might benefit from socialization in ways that women cannot. It is argued that the “old boys’ club” persists in the workplace and generates lower promotion rates for women who are, de facto, excluded (Cullen and Perez-Truglia, 2019). Similarly, harassment is a firm culture-related issue predominantly affecting women, especially in male-dominated environments (Folke et al., 2020), which are likely to discourage women from seeking leadership positions and prompt women to exit male-dominated sectors (Folke and Rickne, 2022). Luo and Zhang, (2021) also show that gender discrimination can be shaped by changes in social norms. In our paper, we explore in detail the importance of gender-based discrimination on promotion. Focusing on early employment experiences, including both organizational and social discrimination, we find that experiencing sexual harassment or derogatory comments by virtue of one’s gender has a crucial impact on shaping career aspirations and, subsequently, promotion.

Our paper also relates to the theoretical literature on aspiration formation (Ray, 1998; Ray, 2006; Genicot and Ray, 2017) and adaptation (Simon, 1957; Selten, 1998; Karandilur et

al., 1998), which highlights, mostly in the context of poverty traps, the importance of aspiration gaps. Several studies have empirically examined the effect of educational interventions on the educational aspirations of children from disadvantaged backgrounds (Heckman et al., 2013; Guyon and Huillery, 2021; and Rizzica, 2019). In our study, we elicit aspirations in a very different context of high-achieving young professionals, focusing on gender differences in aspirations. Similar to the existing literature on poverty and education, our results suggest that early interventions in the workplace (either driven by firm policies or public programs) could have a major and long-lasting impact in narrowing gender gaps in promotions.

Our study focuses on a cohort of similar individuals simultaneously starting homogeneous jobs. Moreover, both the definition of promotion and the procedures to achieve a promotion are well defined within the profession. We observe detailed information on initial conditions (e.g., educational background, proxies for ability, and aspirations) and lawyers' on-the-job performance, and we follow each individual in their new position for ten years, including if they decide to leave private law or the legal profession completely. While the findings are highly relevant for other high-skilled professions and sectors, the structure allows us to overcome issues that arise when more broadly examining a population of individuals who may be affected by composition effects and by the lack of comparability of promotions across roles and industries.

Our paper highlights the key role played by the aspirations gap, suggesting two important facts from the point of view of the corporation. First, aspirations are a good way to aggregate information about individual preferences, expectations and goals. This suggests that firms should pay attention to the evolution of the aspirations of their employees as predictive of future promotion outcomes. Changes in aspirations should also be used for the early evaluation of firm policies that aim at long-term outcomes. Second, aspirations can be influenced and shaped. In particular, the corporate culture that determines for example how acceptable small discriminatory comments are, can be key for aspirations and retention and is something that the firm can shape (either through training or enforcement). More broadly, understanding what aspirations capture, and how they are formed, is key to understanding the "glass ceiling". Arguably, our results are externally valid for other high-skilled professions, as well as for understanding other promotion gaps. Policies that shape aspirations can, potentially, have a persistent influence on promotion gaps, for instance, by the adoption of family-friendly policies aimed at better equalizing the demands associated with parenthood across gender or through the design of policies and schemes that target firm culture.

2 Institutional Setting and Data Description

The legal profession is among the highest-paid professions in the U.S., along with physicians and CEOs (National Cross-Industry wage estimates, U.S. Bureau of Labor Statistics), and it constitutes a substantial share of U.S. GDP. Legal expenses account for more than 200 billion dollars, which represented 1.5% of U.S. GDP (Bureau of Economic Analysis, U.S. Department of Commerce, 2008).

There was a dramatic expansion of the legal profession in the 1980s that attracted a large number of women. Women now comprise 50% of law graduates, compared with only 22% in 1980. On entry into the labor market, women constitute approximately 45% of large law firms' associates. Associate lawyers are employees of the firm with the prospect of becoming a partner; they enter the firm on the partnership track. Law firm partners are joint owners and business directors of the legal operation. As such, partners share the risks and the decision-making of the firm and expect to have, on average, higher earnings than salaried lawyers. Partners also have higher levels of responsibility and are expected to manage the firm and bring business to it. The process of making partner is highly prestigious and often very competitive. In many firms, the associate-to-partner ratio is approximately 2:1. Bound by the "up-or-out policy", associates who do not make partner are often required to resign from the firm. The up or out policy, mechanically links promotion gaps to retention gaps.

As in many high-skilled professions, there is a growing concern about gender earnings and promotion gaps in the legal profession. The gender earnings gap among lawyers persists at approximately 33% (Bureau of Labor Statistics, 2016), with little progress observed over the past two decades. In terms of promotion, across cohorts, currently only 20% of partners are female. However, although these gaps are smaller when we restrict attention to those who graduated in an era with gender equality in law school graduation (as in our data), we continue to observe important and persistent gaps. Within our sample, men have an approximately 14% greater likelihood than women of making partner twelve years after graduation.

Our analysis is conducted using data from *After the JD*, a nationally representative, longitudinal survey of lawyers in the U.S. The *After the JD* study is a project of the American Bar Foundation and other legal associations. Lawyers in the sample are representative of all lawyers first admitted to the bar in the year 2000 and are subsequently followed at five-year intervals. The survey was first conducted in 2002, and the same lawyers were interviewed again in 2007 and then in 2012.⁶ The data include information on relevant

⁶The response rate in 2002 was approximately 70 percent. Among those responding in 2002, around 85

job characteristics, employment history, education, family background and family status. Importantly, the survey also includes objective measures of performance and hours of work (both regular and additional), as well as detailed information on workplace experiences, career goals and perceptions, and satisfaction.⁷

At entry in the law profession, participants are primarily employed in private practice (54%), as well as in government jobs and nonprofit organizations (25%), private industries other than law firms (18%), and academic institutions (3%). We primarily focus on those who enter into private law since these are the lawyers who will follow the “partnership track”. We can, however, explore mobility across firms and sectors (within or out of the legal profession), as well as movement out of the labor market (into unemployment or inactivity).

We restrict our analysis to individuals who are observed billing at least one hour over the sample period. In Table 1, we report the pre-labor-market and early-labor-market descriptive statistics among the lawyers, using responses to the 2002 survey, separately by men and women. Overall, we find that men and women have observably similar individual characteristics, educational achievement, and early work-related characteristics and experiences. Female lawyers tend to be slightly younger and are less likely to be married. They also have considerably fewer children. With respect to educational achievement (undergraduate college, rank of law school, one’s own rank within law school year, amount of student debt), there is no significant difference. Similarly, with respect to measures linked to initial professional aspiration, we do not find significant gender differences (whether they considered other careers during law school, the goal to become powerful in the profession, the desire to practice law after school, and the desire to stay a lawyer). Moreover, with respect to firm characteristics (size of firm, type of organization, proportion of women in the firm), and the types of tasks (and their degree of responsibility), there is no significant difference. However, one striking difference emerges: women receive significantly more demeaning comments than their male counterparts—an important difference that we will explore, in detail, later in the paper.

percent also responded in 2007, and in 2012, there was a response rate of approximately 80 percent. The response rate is similar across male and female lawyers. To check for differences in attrition across waves, in Table A.7 we present the descriptive statistics for the (larger) sample in earlier waves, showing that men and women are also broadly comparable on characteristics at the end of law school and similar to the later sample shown in Table 1.

⁷We provide a detailed dictionary of variables in Online Appendix B.

3 Gender Promotion and Aspiration Gaps

3.1 Gender Promotion Gap

We begin our analysis by documenting a sizeable gender promotion gap among lawyers 12 years after law school completion (i.e., 12 years after joining the law profession), which is enough time to measure the standard partnership track in most firms.⁸ From column (1) of Table 2, we see that the unconditional gender promotion gap is on the order of 12.2 percentage points. This is relative to a baseline probability to make partner of 54% for a male associate lawyer, indicating that women who have been working in law firms have a substantially lower chance than men of making partner. Within a cohort of lawyers on a partnership track, in which around 45% are women, this implies that among those who eventually make partner, 38% will be female, and 62% male.

While our focus is on individuals within the same profession and sector, carrying similar educational requirements, there may still be heterogeneity within the profession, such that the gap in promotions could potentially be due to ex-ante differences in the characteristics of men and women. These differences could be, for instance, the quality of the undergraduate university or law school or differences in sorting across firms. In columns (2) to (5) of Table 2, we control for individual characteristics, pre-labor-market educational characteristics, and entry-level firm characteristics (Table A.1 presents the full set of coefficients).

In column (2), when controlling for age and race, we find that the gender promotion gap remains on the order of 12%. When controlling for educational background (university and law school rank, ones' own class rank in law school, the number of job offers, the amount of debt at law school completion) in column (3); marital status, the presence (and age) of children in column (4); and job characteristics (size of firm, type of organization, proportion of women at the firm, the types of tasks) in column (5), the promotion gap continues to hold.⁹ In terms of magnitude, the gap actually increases to 13.2% after controlling for job characteristics, suggesting that female lawyers are matched to firms and tasks with a higher probability of promotion.

In column (6), we report the gender gap using an entropy matching reweighting procedure

⁸Partnership decisions at law firms are typically made around 10 years after doing the bar exam, "The Legal Industry Report," Leopard Solutions, 2020

⁹With respect to individual and firm characteristics, we control for entry-level characteristics (in 2002), rather than current characteristics, since decisions reflected in the current characteristics could be endogenous to the outcome. We discuss some of these decisions, like fertility, later in the paper.

(Hainmueller 2012). We reweight observations to minimize the first-, second- and third-order moment differences across men and women for all the observable variables in column (5). The results are very similar to those in column (5). The matching estimator is more robust to nonlinear interactions and indicates that the ex ante observables across men and women are also largely balanced in higher-order moments. If anything, the point estimate of the gender promotion gap actually grows to 14.5% (although, it is not statistically different from the other point estimates). Throughout the rest of the paper, we include the same broad set of controls as in column (5) in all regressions.

3.2 Gender (Promotion) Aspirations Gap

Next, we document another striking gap between male and female lawyers: a gap in the lawyers' partnership "aspirations," earlier in their career. In Figure 1, we plot lawyers' career aspirations by gender. When asked to rate their aspirations to eventually become a partner in their firm in 2007, on a scale from 1 to 10, we see that 60% of male lawyers answered 8 or higher, compared to only 32% of female lawyers. Similarly, while 13% of men have low aspirations (3 or less), 31% of women report low aspirations. On this metric, women have on average 50% lower aspirations to be promoted than men; a figure comparable to the actual, eventual promotion gap in 2012.

These graphical results are confirmed in Table 3, which echoes the analysis for the promotion gap from Table 2. In column (1), we show that the average baseline gender difference in aspirations is 1.7 points (where the average is 7.3). When controlling for age and race (in column (2)), we find that the gender gap remains unchanged. Controlling for educational background in column (3); marital status, the presence (and age) of children in column (4); and job characteristics in column (5), the gap falls only slightly to 1.6 points. Table A.2 presents the full set of coefficients.

The same aspiration question is not asked in the first survey, however, there are several questions that are closely connected to lawyers' professional aspiration levels at the end of law school. For instance, they are asked about the extent to which, after finishing law school, they had the goal to become powerful in the profession, as well as their desire to practice law and their desire to stay in the profession. Table 1, shows that, at the entry level (approximately 1-2 years after taking the bar exam) into their career, professional aspirations do not appear to be different between male and female lawyers. As with education or initial firm choices, there are no significant differences in the desire by men and women to be powerful in the profession or to change profession, suggesting that gender gaps in aspirations

evolve after some exposure to the profession.

3.3 Linking the Gender Aspirations and Promotion Gaps

Do gender differences in career aspirations by lawyers contribute to differences in eventual promotion? In Figure 2, we present the correlation between early promotion aspirations and actual eventual promotion. We bin career aspirations into three categories (low for aspirations between 1 and 3, medium for aspirations between 4 and 7 and high for aspirations between 8 and 10).¹⁰ When we link aspirations to later partnership outcome, there is a strong, monotonic, correlation. Among those who have high promotion aspirations, there is a 36% higher likelihood of promotion than among those with low promotion aspiration.

As a next step, we will look more closely at this relationship. Specifically, whether the inclusion of aspirations in the regression of promotion can explain part of the large gender promotion gap. In column (2) of Table 4, we include career aspirations as a continuous variable and in column (3) as a categorical variable in three aspiration bins (low, medium, and high) as a determinant of promotion. We show that the inclusion of career aspirations reduces the point estimate of the gender promotion gap by 55%. Differences in early aspirations explain a sizeable fraction of the gender promotion gap, reducing it by more than half to 6.5%, which is not significantly different from zero. As aspirations increase, the likelihood of promotion also increases linearly (from column (3)). Relative to the lowest aspiration group, those in the middle (highest) aspiration group have a 16% (36%) greater likelihood of promotion.

By examining promotions, we capture whether the lawyer was eventually promoted at any firm and not necessarily the firm where she worked when reporting her aspirations. In columns (4) to (6) of Table 4, we therefore consider promotions at the same firm or a better (larger) firm as the dependent variable. Men and women might differ in how they revise their expectations, and in particular, high aspiration individuals might be more willing to seek a promotion at a worse firm if obtaining a promotion at their current workplace is unlikely.¹¹ We show that the promotion gap continues to be sizeable and highly correlated with the aspirations gap. However, the gender promotion gap is smaller, on the order of 8.5% (column (4)), suggesting that men are more likely than women to move to a “worse” firm to be promoted. When controlling for aspirations as a continuous variable in column

¹⁰This figure is reproduced in the Online Appendix Figure A.1 using the 10 categories rather than 3 bins.

¹¹See Bidwell and Mollick (2015) for an empirical study on the pay and promotion impact of internal and external moves among high skilled individuals.

(5) or as a categorical variable in column (6), the gap falls to 2%, confirming again that the promotion gap is well explained by the aspirations gap.

In Table A.3 of the online appendix, we study whether women and men with similar aspiration levels have the same probability of promotion. Column (1), where we interact aspirations with gender using as dependent variable the probability of eventual promotion, shows that there is a significant difference between genders with regard to aspirations: women with medium aspirations have a lower chance of promotion than men with similar levels of aspirations. However, this effect is driven by the fact, as unveiled in Table 4, that men are more likely than women to move to a “worse” firm to be promoted. As a result, when we consider, in column (2), promotions at the same firm or a better firm as the dependent variable, we find that men and women, for a given level of aspirations, have the same chances of promotion.

3.4 Promotion (Effort) Determinants and Aspirations

We examine next the links between aspirations and important labor market “inputs” or performance outcomes in early or mid-career that are relevant to determining eventual promotion and are related to the lawyer’s effort. Factors such as the number of hours worked, the number of hours billed, and the likelihood of changing firms early in one’s career are likely to be important determinants of receiving a promotion. We can consider these inputs as part of the effort exerted to achieve a promotion.

In Figure 3, we graphically show that professional aspirations are closely linked to early inputs (hours billed, hours worked, remaining at the same firm). We group aspirations into three bins (low, medium, and high), and show that aspirations are monotonically and strongly positively correlated with the hours worked and hours billed, and negatively correlated with the probability of changing firms. This graphical evidence is confirmed in Table 5. In column (1), we show that individuals with high aspirations work significantly more hours. The effect is large—those in the highest-aspiration group work 300 more hours per year than those in the lowest-aspiration group.¹² The effect is also monotonic, with those reporting mid-level aspirations working 100 hours more than low-aspiration individuals. Similarly, individuals with higher aspirations are significantly more likely to bill more hours, as shown in column (2), an effect of similar magnitude. There is also a large effect, visible in column (3), on the hours worked over weekends, especially among those with the highest aspirations. Finally, higher aspirations make it less likely that individuals will leave their current firm.

¹²This represents six hours more per week, for an average workweek of 50 hours.

Column (5) shows that all these “inputs” contribute to receiving a promotion. We show that an increase in hours billed per week by 1 (an increase of 2% relative to the mean) increases on average the probability of promotion by 5%. The other measures of hours worked have less power in explaining partnership; however, there is a strong correlation between hours billed and worked. Early moves from a firm reduce the chances of ending up a partner by 17%.

Overall, we show that higher early career aspirations are indeed correlated with early “inputs” that determine promotion. High-aspiring individuals work longer (regular and weekend) hours, bill more hours, and are less likely to switch firms in their early or mid-career. All of these factors are directly related to the likelihood of later promotion.

4 Possible Mechanisms and Interpretation of Results

To better understand career aspirations, and the potential mechanisms through which that can influence promotion, in this section, we investigate mechanisms that might suggest different interpretations of our main results.

We propose three broad types of explanations for the link between aspirations and promotion. The first type of explanation views aspirations as exogenously determined (by, for example, culture or peers). The other two types views aspirations as endogenously determined. Endogenous aspirations can themselves be thought of as a commitment device to achieve certain objectives or as a simple rationalization of an ex-post outcome. In particular, the latter views aspirations as a manifestation of primitives with no direct impact on behavior, while the former corresponds to a setting in which aspirations, effort and promotion are co-determined.¹³

The aim of this part of the paper is to highlight that these three classes of explanations shed a different light on our stylized facts and can suggest distinguishing empirical implications. The first type suggests that the correlations we presented in the previous section reflect a causal relationship between career aspirations and the likelihood to make partnership. The second suggests that, although no causal link exists, aspirations can be still used as useful early indicators of future successes in promotion. Finally, the third class of explanation shows that aspirations, effort, and expectations of success are co-determined and thus trying to look for random shocks in aspirations is challenging. In Section C of the Online

¹³We abstract from the case in which aspirations are exogenously determined and do not matter for utility as it would imply that they are unrelated to any real outcomes.

Appendix, we propose a model that encompasses the three sets of explanations.¹⁴

Exogenously determined aspirations.

A common way to consider aspirations in the literature has been as a kink (or a threshold) in utility that is determined by the individual's environment (see, for example, Genicot and Ray, 2017). Under this view, if the realized outcome crosses the threshold, the individual obtains an additional payoff, which increases in the extent to which the goal has been surpassed. From this perspective, factors such as culture, peers, and social norms determine aspirations. Given that aspirations are utility-relevant, if they are achievable, individuals will exert effort to accomplish them. That is, whenever an aspiration is determined within a social environment where the goal is within reach, the individual will exert effort to make that aspiration more likely to happen.

Within our context, under this view, lawyers' aspiration to become partner could be shaped by the norms of their environment, or more specifically, the corporate culture of the firm. Gender gaps in aspirations may emerge because of differences in the social norms for male and female lawyers within the firm. These social norms could pre-date joining a law firm or could be part of the corporate culture. In Section 5 we provide some evidence that male and female lawyers have similar aspirations when they join the firm and that specific experiences within the firm are correlated with the gender aspiration gap.

The implications of these differences in treatment of male and female lawyers would suggest that part of the gender aspiration gap is determined during the early years of employment history as a lawyer. As we formally show in the model in the Online Appendix, these exogenously set aspirations would induce lawyers to exert more effort, which is consistent with the empirical results. Note that under this interpretation, given that aspirations are exogenously determined, the correlation between aspirations and outcomes would reflect a causal relationship.

Endogenously determined aspirations, as a commitment device.

Another way to model aspirations is to treat them as endogenously determined. In the spirit of goal-setting or sophisticated behavioral agents, one could think of aspirations as a bet with oneself that helps to overcome some cognitive obstacle. In this sense, it is natural to think that the aspirations for promotion and the effort to obtain it are co-determined and that they are both a function of preferences and cost of effort. In the Online Appendix, we

¹⁴The model considers two types of aspirations, fundamental aspirations that are a kink in the utility function and reported aspirations, that serves as a rationalization device. The fundamental aspirations can be either exogenously determined by the environment or endogenously set to encourage effort.

present a model in which a time inconsistent agent sets aspirations as a way to commit effort to be promoted. The model serves as an illustration of a broader class of models in which aspirations are optimally set to overcome behavioral biases.

Relative to the first view in which aspirations are exogenous, there are several differences in how one should interpret the results when considered in this way. Under this view, aspirations, effort and all other outcomes are all co-determined. In our setting, male and female lawyers might set different aspirations if they differ in the initial distribution of the disutility of labor. For example, if early workplace experiences of discrimination (that are more prevalent for women than men) increase the disutility of exerting effort toward achieving promotion, they would induce those discriminated against to exert less effort and this will lead to a lower inclination to strategically set high aspirations. This implies that factors that affect effort directly, may also affect it indirectly through the setting of aspirations, with potential amplification effects. For example, if a lawyer undergoes a negative professional experience, it will affect their disutility of effort directly, but also indirectly, through an adjustment of aspirations.

The implications of considering aspiration in this way is that the correlations that we report between aspiration and promotion outcomes should be seen as endogenous relationships. Importantly, note that under this view of endogenously set aspirations, it is, in general, not possible to have the kind of exogenous variation in aspirations that would allow to measure their direct causal effect. For example, a controlled experiment that intended to change aspirations would have to do so by altering the disutility of effort or the discount rates of the agents, factors that also affect the outcome variables directly.

Endogenously determined aspirations, as a rationalization of an outcome.

Another possibility is that aspirations reflect the rationalization of an outcome. The aspirations would then be set typically low to justify potential failures. Under this view, aspirations would be a manifestation of the fundamental preferences of the agent as well as the environment, but they would have no direct impact on effort or outcomes. However, aspirations would still have predictive power on effort and promotion outcomes as they reflect the agents' expectations. In Section 5, we show that aspirations are, in fact, a better predictor of promotion than expectations.

Under this view, our empirical analysis would not reflect a causal link between aspirations and outcomes. However, our analysis would instead reflect that aspirations can be used as useful early indicators of future successes in promotion

5 Early Professional Experiences and Expectations

In this section, we investigate the relationship between promotion aspirations and workplace experiences to gain a deeper understanding of how aspirations are formed. As previously discussed in Section 4, the environment, personal experiences, and expectations of success, may play a role in shaping goals. Moreover, the descriptive analysis presented in Panel B of Table 1 shows that men and women have similar aspirations at the start of their careers, suggesting that the aspirational gender gap develop during the first years of professional experience. Here, start by focusing on experiences of workplace discrimination. We examine how discriminatory workplace experiences contribute to the documented gap in promotion aspirations later in the lawyer’s careers. We then, more broadly, explore the link between promotion aspirations and the expectation to be promoted. While promotion expectations summarize promotion relevant experiences and factors, we show, nevertheless, that aspirations can predict promotions, beyond what can be inferred from self-reported expectations. This implies that the measurement of promotion aspirations is important on its own, and can be used, for example, for an early assessment of the evolution of gender promotion gaps (e.g., after a new corporate policy is introduced).

5.1 Early Professional Experiences (Discrimination)

Here we focus our attention on early experience of discrimination in the workplace. Whether aspirations are exogenously set or endogenously determined (to induce effort or rationalize outcomes), (early) experiences in the workplace have the potential to change aspirations. Female lawyers might, for example, experience more negative (discriminatory) shocks than male lawyers in their early career, which, in turn, reduce their promotion aspirations and can be a key driver of later promotion gaps.

There are various forms of discrimination that can be measured in our data. We classify discrimination into “organizational” and “social” discrimination. Organizational (employer) discrimination, in its simplest form, would assign different pay for the same work. Social discrimination, on the other hand, can be thought of as the interactions with colleagues and the corporate culture of the firm. While it is often difficult to measure and categorize discrimination, our data allow us to study these separately. Overall, we find that while there is little evidence for organizational discrimination affecting aspirations or promotion outcomes, social discrimination plays an important role.

Social discrimination may come in many forms. It might be related to the workplace

environment and involve subtle interactions with colleagues or clients. We measure social discriminatory experiences in 2002, five years before lawyers report their professional aspirations and ten years before promotions are measured. Early in their careers, lawyers are asked about whether they have experienced demeaning comments or harassment in the workplace by virtue of their demographics. By 2002, 25% of women reported having such experiences, compared with only 6% of men. In principle, social discrimination could be partially driven by employee's characteristics. However, in Table A.4 Column (1), we show that these experiences are not strongly correlated with other characteristics of the lawyer that we observe, with the exception of gender and race. Important characteristics, such as university rank, grades or the number of job offers, do not appear closely linked to experiencing social discrimination.

In Table 6, we explore the effects of demeaning comments and harassment, restricting the analysis to the subset of female lawyers. Columns (1) and (2) show that the experience of social discrimination leads to lower aspirations of being promoted and a lower probability of being effectively promoted ten years after the discriminatory experience. Moreover, in column (3), we show that most of the effect of demeaning comments and harassment on promotion is incorporated into the change in aspirations induced by them. Once we control for professional aspirations, the direct effect of demeaning comments and harassment on promotions is not statistically significant. While we cannot make formal claims of causality, these experiences of harassment can reasonably be considered random adverse shocks, as they are uncorrelated with a comprehensive set of ex ante characteristics of the lawyers (as shown in Table A.4).

Next, we turn to measures of organizational discrimination in Table 7. We explore various measures of potential organizational discrimination. First, we focus on the most straightforward measure of whether male and female lawyers have a different return on the same performance. In column (1), we show that the number of hours billed (performance) is positively correlated with the probability of promotion. However, there is no differential impact by gender, suggesting that men and women are not rewarded differently for a given hour billed in terms of being promoted. Similarly, we do not see a gender differential for returns on hours worked. That is, *ceteris paribus*, the promotion impact of higher productivity appears to be the same for men and women. Second, we examine several other explicit or implicit ways in which an employer might discriminate against a lawyer. At an early stage in their career, junior lawyers are supervised by more senior lawyers. These senior lawyers could potentially "interfere" with the number of hours that associate lawyers bill, such that there could be scope for discrimination. Moreover, lawyers could receive more or fewer case assignments at the discretion of their more senior colleagues. We investigate the importance of

case assignment for promotion and whether receiving enough assignments differs by gender. We also investigate whether seniors “write-down” hours billed (i.e., not awarding associate lawyers full credit for the hours that they bill) differently by gender. Overall, we do not find gender differences in either of these measures on promotion (as shown in columns (3) to (6)). These results suggest that law firms are not perceived to formally discriminate women on observable policies.¹⁵

Taken together, these results indicate that the direct effect of explicit organizational discrimination on promotion probabilities is perceived by lawyers to be small. The impact of social discrimination on aspirations and promotions is, however, quite large. This suggests that the indirect effect of discrimination on promotions via changing aspirations may be an important one.

Note that, as shown in the last five variables of Panel B of Table 1, at the start of their careers, male and female lawyers do not seem to have different professional aspirations. Both genders have similar desires for power and influence within the profession, as well as similar likelihoods of wanting to change professions. They also seem equally satisfied with the decision to become a lawyer. This is indicative of professional aspirations potentially changing due to early professional experiences.

Overall, the results in this section show that aspirations can be affected by early workplace experiences and, in particular, by early experiences of social discrimination in the form of harassment or demeaning comments by colleagues. These early experiences lead to a reduction in promotion aspirations and can be a key driver of aspirational and subsequent promotion gaps.

5.2 Promotion Expectations

We now focus on the potential role played by ones’ expectations of promotion. We show that while career aspirations and expectations are actually linked, they do not reflect the same information. This is an important result. Even if it was the case that aspirations were fully an endogenous response to the environment, they would still be useful to predict future outcomes beyond self-reported expectations. For example, one could conjecture that the gender gap in aspirations may be largely a rationalization of different fertility paths

¹⁵Note that this does not exclude that firms may discriminate against employees in the process of promotion when it entails other, less-observable dimensions. For example, firms could be under-estimating their future potential, as shown in a different context by Benson, Li and Shue (2021).

across men and women and a differential impact of fertility across men and women.¹⁶ Even under this view, in which aspirations are a pure consequence of other factors, with no direct impact on promotions, our results show that the analysis of aspirations is still an interesting one; as they are a good summary statistic of the promotion implications of the factors that determine promotions.

As well as being asked about their aspirations, lawyers are asked about how they rate their chances of making partner within their firm. The top-left panel of Figure 4 illustrates the strong correlation between aspirations and expectations in our data. The expectations question asks lawyers to report a probability from 0 to 100% in a continuous way. For parts of the analysis, we recode the answers in 10% bins from 1 to 10. We further define low (30% or below), medium (40% to 70%), and high (80% and above) expectations. Figure 4 shows that the average reported expectation is approximately 72% for those with high promotion aspirations, compared with 23% for those with low promotion aspirations.

In Table 8, we measure how much of the gender promotion gap is explained by gender differences in expectations, measured contemporaneously with aspirations. We perform the equivalent exercise to the one performed in Table 4, showing that gender differences in expectations explain an important part of the gender promotion gap. The gap falls from 13% to 9% (column (3)). However, when examining aspirations separately (column (2)) or doing so jointly with expectations (column (4)), we see that aspirations explain the gender promotion gap over and above the effect of the expectations gap. In column (4), when controlling for both expectations and aspirations, the gap falls to 5.9%, suggesting that expectations provide little additional information to explain the promotion gap beyond that explained by differences in aspirations (where the gap is reduced to 6.5% and not statistically significant). Overall, aspirations retain explanatory power even when saturating the model by including expectations and a wide array of observable characteristics.

To formally quantify how much of the observable covariate-adjusted difference in the gender promotion gap is due to aspirations relative to expectations and other covariates, we apply a decomposition proposed by Gelbach (2016) that provides an order-invariant account-

¹⁶In Appendix A, we explore the role played by children and how family and work trade-offs may differ for female and male lawyers. First, in Table A.5, we show a positive selection of those lawyers with a higher ex-ante probability of promotion into having children and both women and men exhibit an equally positive selection of having children. Second, in Table A.6 we show the differential link of fertility to promotion aspirations across men and women. While the aspirations of female lawyers do not affect their choice to have children, for male lawyers, aspirations are strongly (positively) correlated with having children. This suggests that, given their level of aspirations, if men and women have a similar desire for children, the trade-off between children and career aspirations is more negative for women – consistent with a differential professional cost of fertility across men and women – although it does not explain a significant part of the gap in promotion aspirations.

ing of the effect of each set of control variables. We calculate the contribution to explaining the gender promotion gap of three groups: the role of aspirations, the role of expectations, and the contribution from all other covariates (the specification in column (4)). The total change in the coefficient between the baseline and the full specification is statistically significant for the gender promotion gap (6.2%). In percentage terms, we find that relative to the other groups, the gender difference induced by differences in career aspirations is the most relevant, explaining more than 70% of the coefficient change. Overall, these results highlight that tracking individual aspirations can be valuable in predicting future outcomes. While career goals and the expectations of success are indeed linked, promotion aspirations contain additional information about the actual probability of promotion over and above their expectations.

6 Conclusions

We highlight the importance of early career aspirations in explaining gender promotion gaps. We document that, among those lawyers who enter private law, when asked early in their career, there is a sizeable difference between men and women in their aspirations to eventually become a partner. This aspirational gap is correlated with their actions to become partner (hours billed, hours worked, probability to stay in the firm) and eventually explains an important fraction of the gender promotion gap in the legal profession (approximately 55%). We analyze the results in light of different approaches to representing and interpreting aspirations. We additionally show that facing sexual harassment or demeaning comments early in the career can affect the setting of aspirations and, ultimately, have a large impact on promotion. Finally, we show that promotion aspirations predict promotions over and beyond the predictive power of self-reported expectations.

Overall, our results highlight that studying aspirational gaps is crucial to understanding the gender “glass ceiling”. The study is equally important in bringing together the traditional demand- and supply-side drivers of gender career gaps. While aspirations are, strictly speaking, preferences, we show that they are sensitive to the workplace environment. Aspirations may also be important determinants of the effort to be promoted. This amplification mechanism implies that small changes in how firms deal with their employees early in their careers can have large and long-lasting effects on their performance and promotion chances. Moreover, measuring the impact of different policies on aspirations can serve as a good predictor of the efficacy of such policies.

While, in our setting, we do not find evidence of systematic discrimination in the procedures that firms use to assign cases or workloads, we do see that early experiences of social discrimination in the workplace affect aspirations. This issue poses a challenge for the internal policies of firms that attempt to eliminate gender discrimination and improve the aspirations of young professional women. The forms of social discrimination that are more harmful to women’s aspirations are precisely those for which information is “softer” and more difficult to obtain, in contrast with organizational discrimination, for which “hard” information is easier to obtain and on which firm policies are more likely to have an impact. Policies aimed at changing the corporate culture could, therefore, help overcome professional gender gaps.

From the perspective of external validity, we propose a parsimonious theoretical framework that is broadly applicable to study differences in aspirations and achievements of various groups. While our empirical focus is on gender gaps in the legal sector, our results can help shed light on gender gaps in other high-skilled environments, as well as on other sociodemographic differences. As an example, we show that the link between the promotion and aspiration gap can also be found when performing the same analysis based on race. In Table 9, we see that there is a promotion gap of 14% (after controlling for other characteristics) between white and nonwhite lawyers. As in the case of gender, controlling for aspirations significantly decreases the promotion gap, explaining approximately 32% of the gap.

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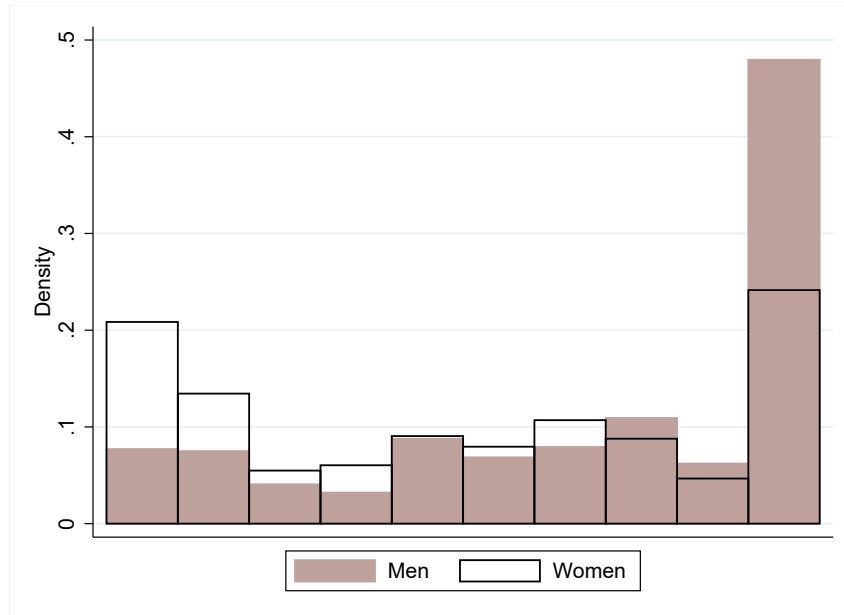
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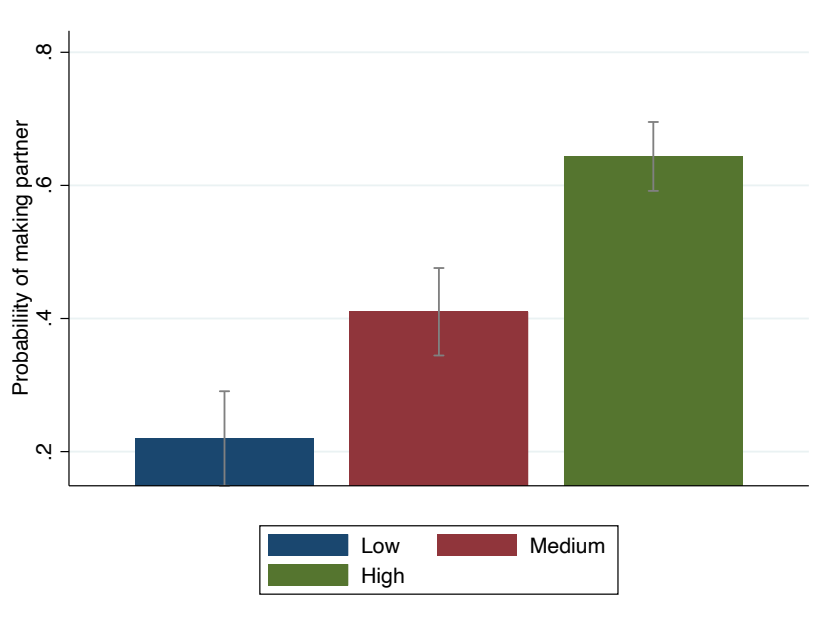
7 Tables and Figures

Figure 1: Career (Partnership) Aspirations (by gender)



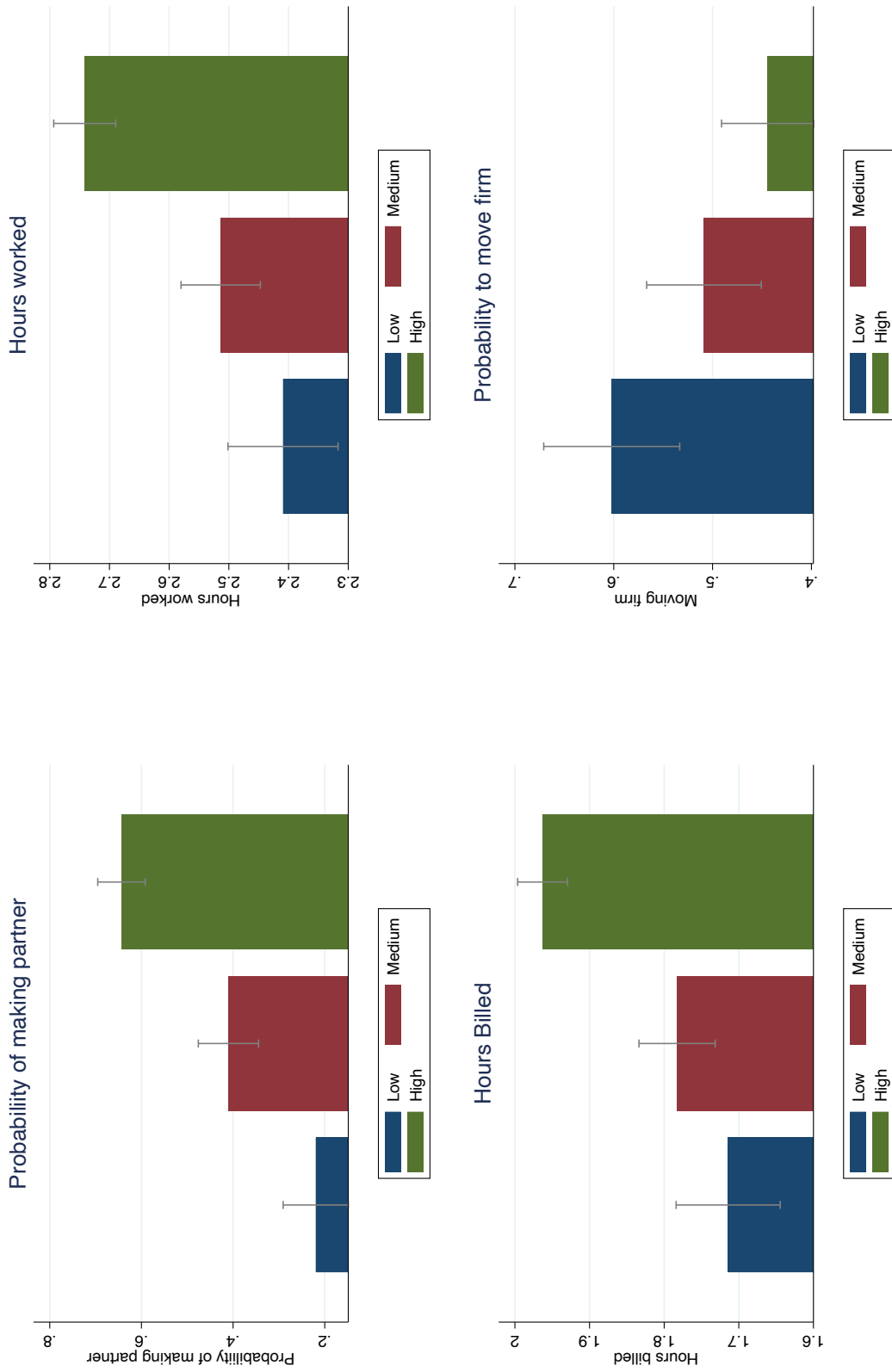
Note: The figure plots, by gender, the responses to the question: “How strongly do you aspire to attain an equity partner position within your firm?” measured in 2007. This is measured on a 10-point Likert scale (from 1 (Not at all) to 10 (Very high)). We restrict the data to individuals who are observed billing at least one hour in our data. The figure compares the responses for men and women.

Figure 2: Career Aspirations and Actual Promotion



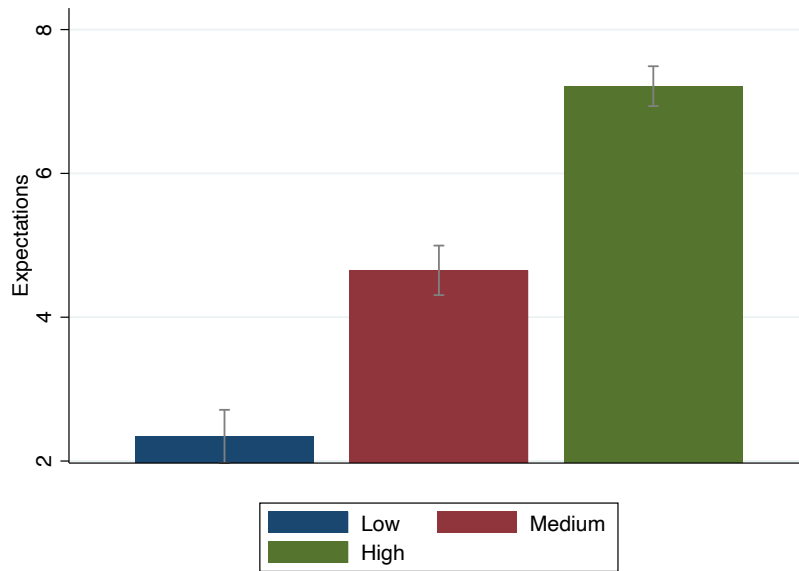
Note: The figure plots, by career aspiration groups (low (1), medium(2), high (3)), measured in 2007, the proportion of individuals who are promoted to partner in 2012.

Figure 3: Aspirations and Effort



Note: The figure plots, by career aspiration groups (low (1), medium(2), high (3)), the following: in the top-left panel, we plot the proportion of individuals who are promoted to partner in 2012. In the top right, we plot the number of annual hours worked (expressed in thousands of hours), measured in 2007. In the bottom left, we plot the number of annual hours billed (expressed in thousands of hours), measured in 2007. In the bottom right, we plot the probability of changing firms within the first five years, measured in 2007. We restrict the data to individuals who are observed billing at least one hour over the sample period.

Figure 4: Aspirations and Expectations



Note: The figure plots, by career aspiration groups (low (1), medium(2), high(3)), the expectations of being promoted to partner (“How would you rate your chances, as a percentage ranging from 0 to 100, of attaining each of the following positions in your firm?”). We bin the responses into deciles), measured in 2007. We restrict the data to individuals who are observed billing at least one hour over the sample period.

Table 1: Descriptive Statistics

Panel A: Socio-economic characteristics						
	Women		Men		Difference	
	mean	sd	mean	sd	b	t
Age	30.11	4.52	31.07	4.50	0.96	(2.17)
White	0.82	0.38	0.88	0.33	0.06	(1.58)
Married	0.57	0.50	0.65	0.48	0.08	(1.58)
No. Children	0.26	0.64	0.55	0.94	0.29	(3.84)
Child under 4 yrs	0.08	0.28	0.20	0.40	0.12	(3.71)
Observations	303		376		679	

Panel B: Pre workplace variables						
	Women		Men		Difference	
	mean	sd	mean	sd	b	t
Rank UG Uni.	12.86	3.71	12.50	3.49	-0.37	(-1.03)
Rank Law School	4.95	0.99	4.90	0.98	-0.05	(-0.52)
Rank in LS Class	2.22	0.98	2.36	1.09	0.15	(1.46)
Job Offers	2.78	2.36	2.73	2.67	-0.05	(-0.21)
Debt after LS	4.69	2.25	4.83	2.28	0.14	(0.62)
Decision Lawyer	3.88	1.02	4.01	0.92	0.13	(1.30)
Stay Lawyer	3.57	1.37	3.66	1.37	0.09	(0.69)
Practice Law	1.14	0.34	1.14	0.35	0.01	(0.24)
Other Career	0.81	0.39	0.83	0.38	0.02	(0.50)
Goal Power	2.99	1.26	3.00	1.20	0.01	(0.05)
Observations	303		376		679	

Panel C: Workplace variables						
	Women		Men		Difference	
	mean	sd	mean	sd	b	t
Size Firm	278.30	527.45	239.62	336.46	-38.68	(-0.84)
Private Firm	0.96	0.20	0.95	0.22	-0.01	(-0.38)
Av High Resp. Tasks	2.37	0.86	2.50	0.85	0.12	(1.47)
Av Low Resp. Tasks	1.95	0.63	1.99	0.56	0.04	(0.66)
Share Women firm	33.56	17.13	27.86	19.67	-5.69	(-3.19)
Comments	0.24	0.43	0.06	0.25	-0.18	(-4.94)
Observations	303		376		679	

Note: We restrict the data to individuals who are observed billing at least one hour over the sample period. *White* takes value one if the lawyer is Caucasian and zero if the lawyer is a member of a minority group (Black, Hispanic, Native American and Asian). *Married* takes value one if the lawyer is married in 2002, remarried after a divorce or in a domestic partnership and zero if single, divorced or separated, widowed, or other. *No. Children* and *Child under 4 yrs* refers to the lawyer's number of children and if they have a child under age 4 in 2002, respectively. *Rank undergrad uni* and *Rank law school* are bracketed rankings based on the 1996 and 2003 U.S. News reports for undergraduate and law school studies, respectively. Both variables are redefined such that the higher the value is, the more prestigious the educational institution. *Rank in class* is the lawyer's rank among the own cohort in law school. *Job offer* represents the number of job offers received after graduating and before taking the current position. *Debt after LS* is the amount of debt accumulated by the lawyer as of 2002. *Decision Lawyer* is

how satisfied the lawyer is with their decision to become a lawyer in 2002. *Stay Lawyer* measure how much longer the lawyer plans to stay with your current employer (measured in 2002). *Practice Law* asks lawyer when they entered law school, if they intended to practice law (measured in 2002). *Other Career* is whether lawyer considered other careers instead of or in addition to law (measured in 2002). *Goal Power* is the importance of the goal when entering law school of becoming influential in a powerful profession. *Size of Firm* is the number of individuals employed in the organization in 2002. *Private Firm* takes value one if the lawyer works in a private law firm and zero if the lawyer works for another organization in 2002. *Av High Resp Tasks* is the average score on high-responsibility tasks in 2002. *Av Low Resp Tasks* is the average score on high-responsibility tasks in 2002. *Share of women firm* is the proportion of women in the firm in 2002. *Comments* refers to whether, in the last two years (as measured in 2002), the lawyer experienced demeaning comments or other types of harassment by virtue of his or her race, religion, ethnicity, gender, disability, or sexual orientation.

Table 2: Gender Promotion Gap

	Promoted to Partner					
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.122*** (0.038)	-0.120*** (0.039)	-0.124*** (0.039)	-0.124*** (0.039)	-0.132*** (0.040)	-0.145*** (0.038)
Constant	0.541*** (0.026)	0.812*** (0.141)	1.297*** (0.216)	1.286*** (0.219)	0.772 (0.511)	0.564*** (0.027)
Individual controls	No	Yes	Yes	Yes	Yes	Yes
Education controls	No	No	Yes	Yes	Yes	Yes
Family controls	No	No	No	Yes	Yes	Yes
Firm controls	No	No	No	No	Yes	Yes
Reweighting	No	No	No	No	No	Yes
Observations	679	679	679	679	679	679
Adjusted R^2	0.013	0.022	0.042	0.038	0.044	0.020

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. In all columns, the dependent variable takes value 1 if the individual made partner by 2012 and 0 otherwise. Individual controls include *Female*, *Age* and race dummies (*White (omitted category)*, *Black*, *Hispanic*, *Indian*, *Asian*, *Others*). Education controls include *Rank UG Uni.*, *Rank Law School*, *Rank in LS Class*, *Job Offers*, and *Debt after LS*. Family controls include *Married*, *Children*, and *Child Aged 4*. Firm controls include *Share of women firm*, separate dummies for *Types of organization* (solo practice, private law firm, federal government, state or local government, legal services or public defender, public interest organization, educational institution, professional service firm, other Fortune 1000 industry/service, other business/industry, labor union, trade association, others), separate dummies for *Size of firm* (size of the organization, in bins, 0-5, 6-10, 11-25, 25-50, 51-100, 101-150, 151-200, 201-250, 251-500, 501-1000, and 1000+), separate dummies for *Types of tasks* (for each of the following, lawyers are asked about their involvement on a scale from 1 (None) to 5 (All): keeping the client updated, being involved in formulating strategy, traveling to make court appearances or to meet clients, or holding face-to-face meetings with clients, and *Tenure at firm*). For further definitions of the variables, see Table 1. See Table A1 for the full set of coefficients.

Table 3: Gender Aspirations Gap

	Career Aspirations				
	(1)	(2)	(3)	(4)	(5)
Female	-1.699*** (0.245)	-1.642*** (0.248)	-1.614*** (0.249)	-1.524*** (0.251)	-1.586*** (0.254)
Constant	7.366*** (0.164)	7.402*** (0.905)	10.202*** (1.387)	10.521*** (1.403)	5.548* (3.218)
Individual controls	No	Yes	Yes	Yes	Yes
Education controls	No	No	Yes	Yes	Yes
Family controls	No	No	No	Yes	Yes
Firm controls	No	No	No	No	Yes
Observations	679	679	679	679	679
Adjusted R^2	0.065	0.067	0.084	0.088	0.120

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. *Career Asp.* refer to how strongly the lawyer aspires to obtain partnership, measured in 2007. The variable takes values from 1 to 10, where 1 represents not at all and 10 represents very high. This table reproduces columns (1) to (5) of Table 2 using career aspirations as the dependent variable. For definitions of the variables, see Table 2. See Table A2 for the full set of coefficients.

Table 4: Gender Promotion Gap and Aspirations

	Promoted to Partner			Promoted in Same or Better Firm		
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.132*** (0.040)	-0.065 (0.040)	-0.065 (0.040)	-0.085** (0.038)	-0.023 (0.038)	-0.024 (0.038)
Career Asp.		0.043*** (0.006)			0.039*** (0.006)	
Mid Aspirations			0.161*** (0.055)			0.149*** (0.052)
High Aspirations			0.361*** (0.053)			0.327*** (0.050)
Constant	1.425*** (0.427)	0.983** (0.416)	1.046** (0.415)	0.443 (0.400)	0.043 (0.391)	0.099 (0.390)
Observations	679	679	679	679	679	679
Adjusted R^2	0.044	0.112	0.114	0.035	0.098	0.100

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. In columns (1)-(3), the dependent variable takes value 1 if the individual made partner by 2012 and 0 otherwise. In column (4) to (6) the dependent variable takes value 1 if the individual made partner by 2012 at the firm where he or she was employed in 2007 or at a firm that is larger, and 0 otherwise. *Career Asp.* refer to how strongly the lawyer aspires to attain partnership within his or her firm, measured in 2007. The variable takes values from 1 to 10, where 1 represents not at all and 10 represents very high. *Mid aspirations* takes aspiration values from 3 to 7, and *High aspirations* takes aspiration values of 8 or more. The omitted category is *Low aspirations*, which takes aspiration values of less than 3. All columns include *Individual, Education, Family* and *Firm* controls. For definitions of the variables, see Table 2.

Table 5: Aspirations and Effort

	Hours Worked (1)	Hours Billed (2)	Hours Weekend (3)	Move Firm (4)	Promoted to Partner (5)
Mid Aspirations	0.186*** (0.064)	0.090* (0.047)	0.397 (0.399)	0.007 (0.056)	
High Aspirations	0.347*** (0.062)	0.239*** (0.045)	0.683* (0.393)	-0.104* (0.054)	
Hours Worked					0.003 (0.002)
Hours Billed					0.184*** (0.055)
Hours Weekend					-0.000 (0.007)
Move Firm					-0.174*** (0.043)
Constant	3.234*** (0.481)	1.914*** (0.367)	4.939 (3.065)	0.113 (0.420)	0.518 (0.449)
Observations	677	641	636	679	600
Adjusted R^2	0.132	0.188	0.031	0.092	0.084

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. *Hours worked* is the annual is the number of hours worked (expressed in thousands of hours), measured in 2007. *Hours Billed* is the annual number of hours billed (expressed in thousands of hours), measured in 2007. *Hours worked weekends* is the annual number of hours worked on weekends (expressed in thousands of hours), measured in 2007. *Move firm* is a dummy variable taking value 1 if the individual moved firm before 2007. *Promoted Partner* is a dummy variable taking value 1 if the individual made partner by 2012. All columns include *Individual, Education, Family* and *Firm* controls. All columns include *Individual, Education, Family* and *Firm* controls. For definitions of variables, see Tables 2 and 4.

Table 6: Social Discrimination (Female Lawyers Only)

	Career Asp. (1)	Promoted to Partner (2)	Promoted to Partner (3)
Comments	-1.084** (0.538)	-0.182** (0.079)	-0.122 (0.075)
Mid Aspirations			0.270*** (0.080)
High Aspirations			0.438*** (0.083)
Constant	0.621 (5.331)	1.083 (0.786)	1.098 (0.747)
Observations	251	251	251
Adjusted R^2	0.099	0.107	0.209

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. *Comments* refer to whether the lawyer experienced demeaning comments or other types of harassment in the last two years (as measured in 2002) by virtue of their race, religion, ethnicity, gender, disability, or sexual orientation. All columns include *Individual*, *Education*, *Family* and *Firm* controls. For definitions of the variables, see Tables 2 and 4.

Table 7: Organizational Discrimination

	Promoted to Partner					
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.095** (0.042)	-0.148 (0.186)	-0.123*** (0.040)	-0.112** (0.046)	-0.135*** (0.040)	-0.144*** (0.043)
Hours Billed	0.208*** (0.051)	0.195*** (0.067)				
Hours Billed*Female		0.029 (0.099)				
Not Enough Assignments			-0.208*** (0.046)	-0.188*** (0.062)		
Not Enough*Female				-0.042 (0.090)		
Hours Discounted					-0.152*** (0.058)	-0.179** (0.076)
Hours Discounted*Female						0.062 (0.113)
Constant	0.566 (0.523)	0.586 (0.527)	0.978* (0.513)	0.991* (0.514)	0.872* (0.517)	0.850 (0.519)
Observations	641	641	679	679	679	679
Adjusted R^2	0.059	0.057	0.073	0.072	0.053	0.052

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. *Not Enough Assignments* takes value 1 if the lawyer reports that not enough assignments are the reason that why he or she had difficulty meeting billables and 0 otherwise, measured in 2007. *Partner Discounted Hours* takes value 1 if the lawyer reports that partner-discounted hours (or a lack of full credit) is the reason that he or she had difficulty meeting billables and 0 otherwise, measured in 2007. All columns include *Individual*, *Education*, *Family* and *Firm* controls. For definitions of the variables, see Tables 2 and 4.

Table 8: Aspirations and Expectations

	Promoted to Partner			
	(1)	(2)	(3)	(4)
Female	-0.132*** (0.040)	-0.065 (0.040)	-0.090** (0.039)	-0.059 (0.040)
Mid Aspirations		0.161*** (0.055)		0.102* (0.057)
High Aspirations		0.361*** (0.053)		0.236*** (0.060)
Mid Expectations			0.173*** (0.049)	0.119** (0.052)
High Expectations			0.344*** (0.048)	0.232*** (0.054)
Constant	0.820 (0.520)	0.691 (0.503)	0.716 (0.501)	0.667 (0.497)
Observations	679	679	679	679
Adjusted R^2	0.044	0.114	0.115	0.136

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. In all columns, the dependent variable takes value 1 if the individual made partner by 2012. *Expectations* refer to the lawyers' perceived probability of obtaining partnership (they are asked how they rate their chances, as a percentage ranging from 0 to 100, of attaining partnership at their firm. We bin the responses into 10 bins), measured in 2007. *Mid expectations* takes expectations values from 3 to 7, and *High expectations* takes expectations values of 8 or more. The omitted category is *Low expectations*, which takes expectations values of less than 3. All columns include *Individual*, *Education*, *Family* and *Firm* controls. For definitions of the variables, see Tables 2 and 4.

Table 9: Race Promotion Gaps

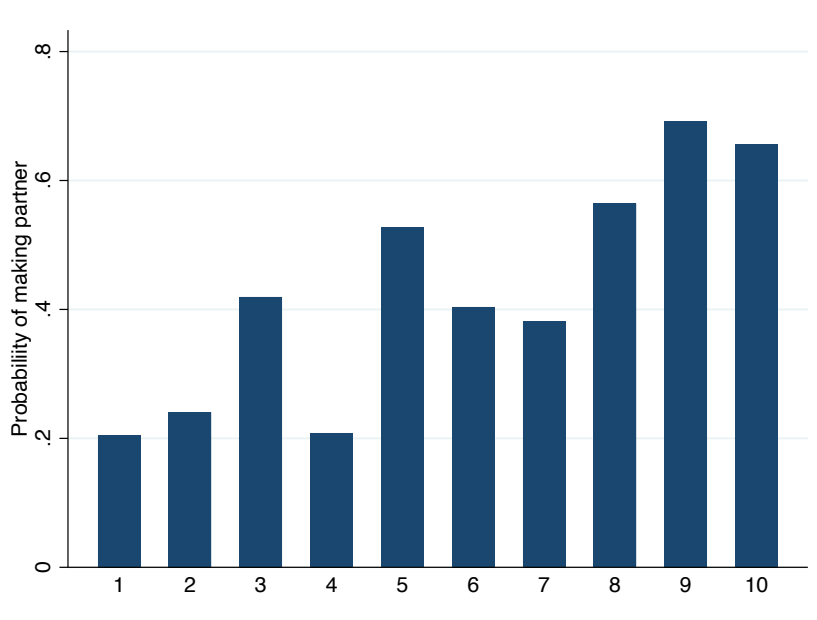
	Promoted to Partner		
	(1)	(2)	(3)
White	0.140*** (0.051)	0.101** (0.049)	0.105** (0.049)
Career Asp.		0.042*** (0.006)	
Mid Aspirations			0.152*** (0.055)
High Aspirations			0.352*** (0.053)
Constant	0.683 (0.519)	0.479 (0.502)	0.589 (0.503)
Observations	679	679	679
Adjusted R^2	0.052	0.117	0.119

*Note:** denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. This table reproduces Table 4 columns (1) to (3) where the gap is defined on race rather than gender. All columns include *Individual*, *Education*, *Family* and *Firm* controls. For definitions of the variables, see Tables 2 and 4.

Online Appendix

A Additional Empirical Results

Figure A.1: Career Aspirations and Actual Promotion



Note: The figure reproduces Figure 2, using the full support of the aspirations variables, rather than 3 bins as in Figure 2.

Table A.1: Gender Promotion Gap (full set of coefficients)

	Promoted to Partner				
	(1)	(2)	(3)	(4)	(5)
Female	-0.122*** (0.038)	-0.120*** (0.039)	-0.124*** (0.039)	-0.124*** (0.039)	-0.132*** (0.040)
Age		-0.008* (0.005)	-0.011** (0.005)	-0.011** (0.005)	-0.010* (0.005)
Black		-0.105 (0.084)	-0.087 (0.085)	-0.082 (0.086)	-0.093 (0.090)
Hispanic		-0.177** (0.075)	-0.137* (0.078)	-0.132* (0.078)	-0.151* (0.082)
Indian		-0.004 (0.203)	0.014 (0.203)	0.010 (0.203)	0.020 (0.209)
Asian		-0.080 (0.074)	-0.086 (0.075)	-0.083 (0.075)	-0.096 (0.078)
Rank UG Uni.			-0.007 (0.006)	-0.007 (0.006)	-0.005 (0.006)
Rank Law School			-0.011 (0.020)	-0.011 (0.021)	-0.019 (0.023)
Rank in LS Class			-0.090*** (0.027)	-0.089*** (0.027)	-0.066** (0.029)
Job Offers			0.004 (0.008)	0.003 (0.008)	0.001 (0.009)
Debt after LS			-0.002 (0.009)	-0.002 (0.009)	-0.004 (0.009)
Married				0.024 (0.045)	-0.006 (0.047)
No. Children				-0.006 (0.035)	-0.000 (0.036)
Child Aged ≥ 4				0.004 (0.088)	0.011 (0.090)
Constant	0.541*** (0.026)	0.812*** (0.141)	1.297*** (0.216)	1.286*** (0.219)	0.772 (0.511)
Observations	679	679	679	679	679
Adjusted R^2	0.013	0.022	0.042	0.038	0.044

Note: This table reproduces Table 2 showing the full set of coefficients. * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. For definitions of the variables, see Table 2.

Table A.2: Gender Aspiration Gap (full set of coefficients)

	Career Asp.				
	(1)	(2)	(3)	(4)	(5)
Female	-1.699*** (0.245)	-1.642*** (0.248)	-1.614*** (0.249)	-1.524*** (0.251)	-1.586*** (0.254)
Age		0.002 (0.029)	-0.014 (0.030)	-0.042 (0.032)	-0.023 (0.032)
Black		-1.025* (0.542)	-0.956* (0.549)	-0.953* (0.552)	-0.912 (0.564)
Hispanic		-0.792 (0.483)	-0.834* (0.498)	-0.817 (0.502)	-0.693 (0.516)
Indian		-1.094 (1.304)	-0.781 (1.302)	-0.709 (1.301)	0.115 (1.317)
Asian		-0.258 (0.478)	-0.320 (0.480)	-0.325 (0.481)	-0.135 (0.489)
Rank UG Uni.			-0.018 (0.039)	-0.018 (0.039)	-0.004 (0.040)
Rank Law School			-0.411*** (0.131)	-0.383*** (0.132)	-0.361** (0.143)
Rank in LS Class			-0.194 (0.174)	-0.135 (0.176)	-0.033 (0.185)
Job Offers			0.136*** (0.052)	0.137*** (0.052)	0.137** (0.054)
Debt after LS			0.046 (0.058)	0.041 (0.058)	0.032 (0.058)
Married				0.077 (0.289)	0.039 (0.295)
No. Children				0.329 (0.225)	0.356 (0.229)
Child Aged j4				0.352 (0.562)	0.373 (0.570)
Constant	7.366*** (0.164)	7.402*** (0.905)	10.202*** (1.387)	10.521*** (1.403)	5.548* (3.218)
Observations	679	679	679	679	679
Adjusted R^2	0.065	0.067	0.084	0.088	0.120

Note: This table reproduces Table3 showing the full set of coefficients. * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. For definitions of the variables, see Table 2.

Table A.3: Gender Promotion Gap and Aspirations

	(1)	(2)
	Promoted to Partner	Promoted to Partner in Same Firm
Female	-0.231** (0.091)	-0.047 (0.086)
Mid Aspirations	0.043 (0.087)	0.112 (0.082)
High Aspirations	0.238*** (0.079)	0.316*** (0.075)
Female \times Mid. Asp	0.181 (0.112)	0.064 (0.106)
Female \times High. Asp	0.224** (0.107)	0.010 (0.101)
Constant	0.962** (0.394)	-0.076 (0.372)
Observations	679	679
Adjusted R^2	0.116	0.094

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. In column (1), the dependent variable takes value 1 if the individual made partner by 2012 and 0 otherwise. In column (2) the dependent variable takes value 1 if the individual made partner by 2012 at the firm where he or she was employed in 2007 or at a firm that is larger, and 0 otherwise. All columns include *Individual*, *Education*, *Family* and *Firm* controls. For definitions of the variables, see Table 2.

Table A.4: Demeaning Comments and Harassment

	(1) Comments
Female	0.165*** (0.031)
Age	-0.000 (0.004)
Black	0.045 (0.063)
Hispanic	0.115* (0.060)
Indian	0.219 (0.146)
Asian	-0.012 (0.055)
Rank UG Uni.	-0.003 (0.005)
Rank Law School	0.014 (0.016)
Rank in LS Class	-0.011 (0.021)
Job Offers	-0.009 (0.006)
Debt after LS	0.012* (0.007)
Married	0.003 (0.033)
No. Children	-0.009 (0.026)
Child Aged under 4	-0.056 (0.064)
Constant	0.014 (0.360)
Observations	570
Adjusted R^2	0.077

*Note:** denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. For definitions of the variables, see Table 2.

Table A.5: Fertility and Promotion

	Predicted (Promoted to Partner)
Female without child	0.001 (0.012)
Female with child	0.047*** (0.013)
Male with child	0.043*** (0.011)
Constant	0.462*** (0.009)
Observations	679
Adjusted R^2	0.034

*Note:** denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. We follow the methodology in Bertrand, 2013 to assess the link between the ex-ante probability of being promoted and fertility outcomes. The dependent variables, Predicted (Promotion to Partner) is constructed by regressing controls for characteristics prior to entering the legal profession (Undergraduate Uni Ranking, Law School Ranking, Judicial Clerk, Moot Court, General Journal, Specific Journal, Undergraduate GPA, a dummy for missing Undergraduate GPA, Law School GPA, a dummy for missing Law School GPA), as well as age and its higher order term. *Female without child* is a dummy variable that equals one if the respondent is a female who reports having no children at the time of the survey. *Female with child* (*Male with child*) is a dummy variable that equals one if the respondent is a female (male) who reports having at least one child at the time of the 2012 survey. The omitted category *Men without children* is a dummy variable reflecting that the respondent is a male who reports having no children at the time of the survey. The results show that there is positive selection into having children. Lawyers with a higher ex-ante probability of being promoted end up having children more often, on average.

Table A.6: Aspirations and Children

	Children (1)	Children (2)	Promoted (3)	Promoted (4)
Mid Aspirations	0.106** (0.047)	0.166** (0.074)	0.153*** (0.055)	0.153*** (0.055)
High Aspirations	0.131*** (0.045)	0.230*** (0.068)	0.351*** (0.053)	0.351*** (0.054)
Female	-0.010 (0.034)	0.109 (0.077)	-0.062 (0.040)	-0.069 (0.075)
FemalexMid. Asp		-0.087 (0.096)		
FemalexHigh. Asp		-0.191** (0.092)		
FemalexChildren			0.057 (0.047)	0.052 (0.062)
FemalexChildren				0.010 (0.087)
Constant	1.222*** (0.351)	1.110*** (0.356)	1.001** (0.416)	1.002** (0.416)
Observations	679	679	679	679
Adjusted R^2	0.148	0.152	0.117	0.115

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. *Children* refers to whether the lawyer has children by 2012. *Promoted Partner* is a dummy variable taking value 1 if the individual made partner by 2012. All columns include *Individual*, *Education*, *Family* and *Firm* controls. For definitions of variables, see Tables 2 and 4. The results show that higher aspirations are positively related to children for men, but unrelated or negatively correlated for women (Columns (1) and (2)). Children are uncorrelated with the probability of promotion for both men and women (Columns (3) and (4)). The results in this table and Table A.5 highlight that the endogenous decision of having children (due to aspirations) may mask the impact of fertility decisions on promotions.

Table A.7: Descriptive Statistics: Survey wave 1, conditional on response in survey wave 2

Panel A: Socio-economic characteristics						
	Women		Men		Difference	
	mean	sd	mean	sd	b	t
Age	30.23	4.65	30.95	4.17	0.72	(1.47)
White	0.84	0.37	0.88	0.33	0.04	(1.03)
Married	0.52	0.50	0.64	0.48	0.11	(2.07)
No. Children	0.29	0.66	0.51	0.89	0.22	(2.61)
Child Aged under 4	0.08	0.27	0.20	0.40	0.12	(3.27)
Observations	488		574		1062	

Panel B: Pre workplace variables						
	Women		Men		Difference	
	mean	sd	mean	sd	b	t
Rank UG Uni.	13.11	3.44	13.09	3.10	-0.04	(-0.12)
Rank Law School	5.00	0.94	5.00	1.03	0.12	(1.03)
Rank in LS Class	2.23	0.89	2.36	1.09	0.09	(0.77)
Job Offers	2.90	2.42	2.71	2.51	-0.12	(-0.44)
Debt after LS	4.83	2.20	4.82	2.27	0.01	(0.03)
Decision Lawyer	3.92	1.03	3.99	0.94	0.09	(0.77)
Stay Lawyer	3.54	1.42	3.53	1.36	0.01	(0.08)
Practice Law	1.13	0.34	1.14	0.35	0.00	(0.10)
Other Career	0.82	0.39	0.81	0.40	-0.00	(-0.05)
Goal Power	2.98	1.26	2.99	1.20	0.04	(0.32)
Observations	488		574		1062	

Panel C: Workplace variables						
	Women		Men		Difference	
	mean	sd	mean	sd	b	t
Size Firm	287.40	556.37	266.47	342.54	-20.93	(-0.39)
Private Firm	0.96	0.20	0.95	0.21	-0.01	(-0.32)
Av High Resp. Tasks	2.36	0.96	2.40	0.79	0.04	(0.42)
Av Low Resp. Tasks	1.91	0.70	1.95	0.46	0.04	(0.61)
Share Women firm	33.01	16.85	29.32	19.80	-3.69	(-1.84)
Comments	0.23	0.42	0.06	0.24	-0.17	(-4.33)
Observations	488		574		1062	

Note: This table reproduces Table 1 using wave 1 (2002), restricted to those individuals who are observed billing at least one hour in wave 2 (2007). For definitions of variables, see Table 1.

B Appendix: Dictionary of variables

Table B.1: Variable Definitions

Variable Name	Question Description	Values	Year
Rank UG Uni.	Bracketed Rankings based on the 1996 and 2003 U.S. News reports for undergraduate	1 (lowest) to 17 (highest)	2002
Rank Law School	Bracketed Rankings based on the 1996 and 2003 U.S. News reports for Law School	1 (lowest) to 7 (highest)	2002
Rank in LS Class	Lawyer's rank among the own cohort in law school	1 (Top 10%) 2 (Top 25%), 3 (Second quarter), 4 (Third quarter), 5 (Fourth quarter)	2002
Job Offers	Number of job offers received after graduating and before taking the current position	Total number	2002
Debt after LS	Debt after LS is the amount of debt accumulated by the lawyer (as of 2002)	US Dollars (binned 8 categories)	2002
Decision Lawyer	How satisfied are you with your decision to become a lawyer?	1 (highest) to 6 (lowest)	2002
Stay Lawyer	If the decision were up to you, approximately how much longer would you like to stay with your current employer?	1 (already looking for another position), 2 (less than 1 year), 3 (1-2 years), 4 (3-5 years), 5 (more than 5 years))	2002
Practice Law	When you entered law school, did you intend to practice law?	1 (Yes), 2 (No), 3 (Unsure)	2002
Other Career	Did you consider any of the following other careers in addition to or instead of law?	No. of other careers	2002
Goal Power	How important was the goal of becoming influential in a powerful profession in your decision to attend law school?	1 (irrelevant) to 5 (very important)	2002
Size Firm	Number of individuals employed in the organization	Total number	2002
Private Firm	Type of organization	1 (private firm) 0 (other type of organization)	2002
Av High Resp. Tasks	Proportion of time spent on high responsibility tasks	1 (none) - 5 (all)	2002
Av Low Resp. Tasks	Proportion of time spent on low responsibility tasks	1 (none) - 5 (all)	2002
Share Women firm	Approximately what proportion of the lawyers in your workplace are women?	0-100%	2002
Comments	Have you experienced demeaning comments or other types of harassment in your place of work by virtue of your race, religion, ethnicity, gender, disability, or sexual orientation?	1 (Yes), 2 (No)	2002
Hours Worked	Annual number of hours worked	1000s of hours	2007
Hours Billed	Annual number of hours billed	1000s of hours	2007
Hours Weekend	Annual number of hours worked on weekends	1000s of hours	2007
Move Firm	If individual moved firm before 2007	1 (Yes), 2 (No)	2007
Career Aspiration	How strongly do you aspire to make (equity/non equity) partner within your firm?	1 (lowest) to 10 (highest)	2007
Career Expectations	How would you rate your chances, as a percentage ranging from 0 to 100, of attaining (equity/non equity) partner within your firm?	0-100%	2007

C Appendix: Understanding Aspirations, an Analytical Framework

In this appendix, we propose a model that embeds the three main categories of interpretations proposed in the main text, where aspirations can either act as goals or as rationalization of outcomes.

An aspiration can be defined as a desire to attain a feasible goal. In that spirit, a common way to model aspirations in the literature is to define them as reference points or thresholds over some continuous outcome space (Genicot and Ray, 2017; Dalton et al., 2014). If the realized outcome crosses the threshold, the individual obtains an additional payoff, increasing in the extent to which the goal has been surpassed. This modeling strategy accords well with the conventional definition of aspirations. The key novelty of our analytical framework is that we introduce this formalization of aspirations in a multiperiod model. We consider separately the case where aspirations are exogenously determined versus set endogenously to encourage effort in further periods. Moreover, we allow for the reported aspirations to differ from true underlying aspirations and thus serve as rationalization of outcomes.

C.1 Analytical Framework

We consider a lawyer who experiences shocks in the work environment at period 0 and has aspirations a (either exogenously determined or endogenously set). This determines how much effort h (standing for hours) she exerts in period 1. Finally, these choices determine the outcome in period 2, denoted $z \in (0, +\infty)$, a continuous outcome variable that represents how successful the lawyer is later on in her career. z can be viewed as a composite index of the salary, position and firm where the lawyer works when promotion is decided.

The lawyer has the following period utility at the end of the game:

$$u(z) = v(z) + \eta v(\max(z - a, 0))$$

where a represents the level of aspiration. Aspirations are thus reference points or thresholds as in Genicot and Ray (2017) over some continuous outcome space. If the realized outcome crosses the threshold, the individual obtains an additional payoff, increasing by the extent to which the goal has been surpassed. We impose more structure on this indirect utility and

assume that $v(z) = (1 - e^{-z})$, an increasing concave function.¹ We illustrate the impact of aspirations on utility in Figure C.1 where we draw the baseline utility without considering aspirations ($v(z)$) and the total utility ($v(z) + v(\max(z - a, 0))$) for two distinct levels of aspirations.

The final success z is stochastically determined as a function of the level of effort exerted by the lawyer. Specifically, we assume that z follows an exponential distribution $f(z) = \lambda e^{-\lambda z}$ of parameter $\lambda = 1/h$. The expected value of z is thus naturally increasing in the effort h (number of hours). Effort is, however, costly, where the cost function is given by $c(h) = \frac{\alpha}{2}h^2$.

We allow for a gap between actual aspirations a and beliefs on aspirations \tilde{a} . Following the literature on motivated beliefs, individuals derive direct utility from their beliefs. We assume that $V(\tilde{a})$, the utility derived from belief \tilde{a} , is a decreasing function. The underlying idea is that having lower beliefs makes it easier to justify potential failures in obtaining partner status.² As is standard in these models, \tilde{a} can however not be freely chosen, there is a cost from deviating from the real level of aspirations a , that is assumed quadratic. Overall the additional utility from holding beliefs \tilde{a} is $V(\tilde{a}) - \gamma(a - \tilde{a})^2$. We suppose that \tilde{a} is chosen after effort choices, thus as an ex post rationalization tool.

The parameter that determines the disutility of effort α is drawn at the start of the game from a distribution F . It may differ across individuals because of inherent differences or because of early experiences in the workplace. For instance, derogatory comments experienced early on in the career will increase the disutility of labor.³

The timing of the game is the following:

- Period 0: the disutility of effort α is drawn from distribution F . After observing α , the individual either observes (subsection C.2) or chooses (subsection C.3) aspiration level a .
- Period 1a: the individual chooses the level of effort h .
- Period 1b: the individual chooses beliefs on aspirations \tilde{a}

¹This choice of preferences keeps the analysis tractable, but the results naturally extend to more general preferences.

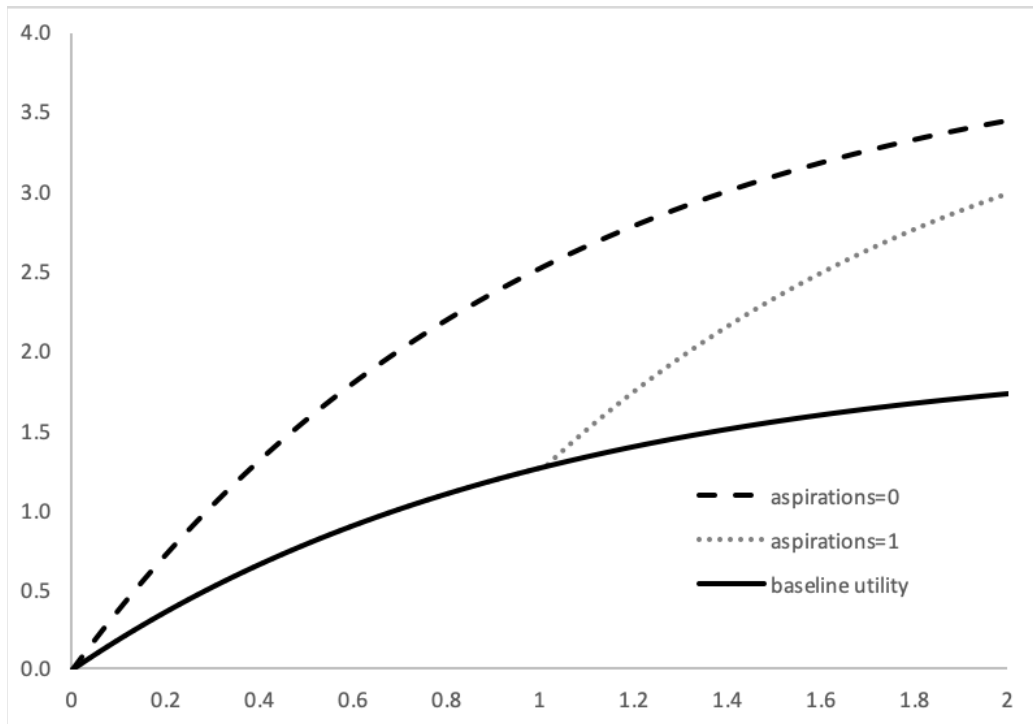
²This function could be micro-founded, building on the idea that low aspirations can be justification for later failures.

³Similarly, experiencing discrimination may change the perceived mapping between effort and promotion probabilities. This alternative modeling strategy is isomorphic to a change in α and would yield the same results.

- Period 2: z is realized and utility collected.

We assume that the lawyer exhibits present bias. Specifically, she has beta-delta preferences, with $\delta = 1$ and $\beta \leq 1$. These preferences are such that for a stream of consumption $(c_t, c_{t+1}, \dots, c_T)$, the utility at time t is given by $U^t(c_t, c_{t+1}, \dots, c_T) = c_t + \beta \sum_{k=1}^{T-t} u(c_{t+k})$. Any payoff received in the future will be discounted by a factor β . This model implies a time-inconsistency problem. From the perspective of period 0, the costs of effort in period 1 and the benefits in period 2 are both discounted by a factor β . However, when the effort decision is made in period 1, costs are not discounted, while benefits are discounted at rate β .⁴

Figure C.1: Representation of the utility function



Note: The solid black line plots the baseline utility without aspirations. The dashed line plots total utility when aspirations are set at a low level $a = 0$. The dotted line plots total utility when aspirations are set at a high level $a = 1$. All plots are performed for $\gamma = 2$.

⁴There is a very large theoretical literature proposing models of discounting that account for behavioral aspects of intertemporal choice. Prominent among them is the model of hyperbolic discounting (Laibson 1997, O'Donoghue and Rabin 1999, 2001), which we use in this paper. The existence of present bias has been extensively documented in the laboratory (see Frederick, Loewenstein and O'Donoghue 2002) and more recently in the field (DellaVigna and Malmendier, 2006, Meier and Sprenger, 2010, Augenblick et al., 2015). In particular, Augenblick et al. (2015) document that present bias is particularly relevant for effort allocation, which is also the object of the current paper.

C.2 Exogenously determined aspirations

We start by deriving the link in period 2 between aspirations and utility:

Lemma 1 *For a given level of effort h , the lawyer's period 2 utility is decreasing in aspirations a .*

Proof: See Section C.5.

Higher aspirations render the additional payoff $v(\max(z - a, 0))$ more difficult to attain. This property is illustrated in Figure C.1, where the utility function for aspirations set at 1 is below the utility function for aspirations set at 0 for all realizations of z . We show in Proposition 1 below that as long as aspirations are not excessively high, the level of effort (or number of hours worked) chosen in period 1 by the lawyer is increasing in aspirations. The idea being that if aspirations set goals that appear reasonable, they offer the promise of an additional payoff for better outcomes, and this encourages more effort. However, the opposite is also true; if aspirations are too high, such that the goal appears unrealistic, higher aspirations would discourage effort.

Proposition 1 *There exists \bar{a} such that, in period 1, effort h is increasing in a if and only if $a \leq \bar{a}$. Furthermore, for $a \leq \bar{a}$, the expected value of z is increasing in aspirations.*

Proof: See Section C.5.

Proposition 1 shows that there is a positive correlation between aspirations and expectations, understood here as the expected value of z . Indeed, $E[z] = \frac{1}{\lambda} = h$. Thus, when $a \leq \bar{a}$, increasing aspirations increases effort and, as a consequence, increases expectations. However, as we discuss in detail in Section C.6, aspirations and expectations are distinct concepts in our framework, and aspirations can be useful to predict final promotion outcomes, even when expectations are known. We provide in Section C.6 an example where two individuals have the same expectations of success but different aspirations.

C.3 Endogenously determined aspirations as a commitment device

In the previous section, we assumed that aspirations were determined by the direct environment (contextual or cultural) of the individual.⁵ In this section we consider the other polar case where aspirations are a choice variable. The model could easily accommodate situations where aspirations have both an exogenous and endogenous component.

According to Lemma 1, if effort is given, lawyers would always prefer to have low aspirations. However, aspirations may still play a role by creating incentives to exert effort, i.e. serve as a commitment device in period 0.

Proposition 2 *There exists $\bar{\beta}$ such that, in period 0, aspirations are set strictly positive $a^* > 0$ if and only if $\beta \leq \bar{\beta}$. Furthermore, if $\beta \leq \bar{\beta}$, aspirations are decreasing in the disutility of work α .*

Proof: See Section C.5.

The intuition for this result is the following. If the individual is not present biased, she will make an optimal choice of effort in the second period, and aspirations are, therefore, initially set at their lowest level since higher aspirations just decrease payoffs according to Lemma 1. However, with present bias, from an ex ante perspective, the lawyer anticipates that she will work an insufficient number of hours in period 1 because effort will involve an immediate cost for a delayed benefit. Thus, for a sufficiently high level of present bias, aspirations, even though they are indirectly costly, become useful to encourage future effort. They serve as a commitment device used by a sophisticated agent to overcome her time-inconsistency problem.⁶

⁵For instance, Genicot and Ray (2017) discuss how parents affect the aspirations of their children. Similarly, Azmat and Kaufmann (2021) show how the political environment may change the aspiration to enroll in higher education. Lant (1992) proposes a model in which aspirations slowly adapt to the individual's perceived self-performance. More broadly, Ray (2006) introduces the idea of an aspirations window as formed from similar "attainable" individuals.

⁶The literature has distinguished naïve individuals (unaware of their dynamic inconsistency) from sophisticated individuals (O'Donoghue and Rabin 2001). The latter type of person searches for commitment devices to overcome time inconsistency. For instance, there is literature showing that commitment devices are effective in encouraging savings and reducing loan defaults (Ashraf et al. 2006). In a different domain, DellaVigna and Malmendier (2006) show how gym memberships can work as a commitment to exercise, an activity that is underperformed due to present bias. Alan and Ertac (2015) show that children also use commitment devices. They show that there is no significant difference in the use of commitment devices between boys and girls.

The endogenous setting of aspirations also generates an amplification mechanism; small initial shocks in workplace conditions that affect the disutility of effort, may have large impacts on final outcomes. When a higher disutility of effort is drawn, the direct effect is that the lawyer exerts less effort since it is more costly. There is also an indirect effect because a higher expected disutility of effort induces lower aspirations (Proposition 2) creating a further reduction in effort (Proposition 1). This second reduction in effort does not occur if aspirations are exogenous or if they are set before learning about the disutility of effort.

C.4 Endogenously determined aspirations as a rationalization of outcomes

In the previous sections, all the results were expressed as a function of aspirations level a . However what could be reported in surveys might be \tilde{a} . In our setting, the belief \tilde{a} is always set lower than actual aspirations a . The idea is that having low beliefs is valuable since it can justify failures and thus has direct value in terms of utility. However, as discussed above, since there is a cost from deviation too much from the true value, \tilde{a} is increasing in a . A direct consequence is that results in Propositions 1 and 2 can be alternatively be expressed as a function of \tilde{a} .

C.5 Proofs

We derive the proofs of our main results. We begin by deriving a formulation for the expected utility.

Given a value of λ (i.e., holding effort fixed), the second-period utility of the individual is given by

$$\begin{aligned} & \int_0^a (1 - e^{-z}) \lambda e^{-\lambda z} dz + \int_a^{+\infty} (1 - e^{-z} + 1 - e^{-(z-a)}) \lambda e^{-\lambda z} dz \\ = & \int_0^{+\infty} (1 - e^{-z}) \lambda e^{-\lambda z} dz + \int_a^{+\infty} (1 - e^{-(z-a)}) \lambda e^{-\lambda z} dz. \end{aligned}$$

We have

$$\int_0^{+\infty} (1 - e^{-z}) \lambda e^{-\lambda z} dz = \frac{1}{1 + \lambda}$$

Furthermore, using the change of variables $y = z - a$, we have

$$\int_a^{+\infty} (1 - e^{-(z-a)}) \lambda e^{-\lambda z} dz = \int_0^{+\infty} (1 - e^{-y}) \lambda e^{-\lambda(y+a)} dy = \frac{1}{1 + \lambda} e^{-\lambda a}$$

Overall, the expected utility in the second period for a given level of aspirations a can be written as:

$$U = \frac{1}{1 + \lambda} [1 + e^{-\lambda a}].$$

The result stated in Lemma 1 directly follows.

Proof of Proposition 1

Effort is set in period 1 to maximize the expected utility, which involves an immediate cost of effort and the utility collected in period 2 (and thus discounted by β):

$$\begin{aligned} & \beta \frac{1}{1 + \lambda} [1 + e^{-\lambda a}] - \frac{\alpha}{2} h^2 \\ &= \beta \frac{h}{1 + h} [1 + e^{-a/h}] - \frac{\alpha}{2} h^2 \end{aligned} \tag{C.1}$$

The FOC of the maximization problem is given by:

$$\beta \frac{1}{(1 + h)^2} [1 + e^{-a/h}] + \beta \frac{a}{h^2} \frac{h}{1 + h} e^{-a/h} - \alpha h = 0$$

Below, we use the notation

$$F(a, h) = \beta \frac{1}{(1 + h)^2} [1 + e^{-a/h}] + \beta \frac{a}{h^2} \frac{h}{1 + h} e^{-a/h} - \alpha h$$

We have

$$\frac{\partial F}{\partial h} = \beta \left[-\frac{2}{(1 + h)^3} + e^{-a/h} \left(-\frac{2}{(1 + h)^3} + \frac{h}{1 + h} \frac{a}{h^3} \left(-2 + \frac{a}{h} \right) \right) \right] - \alpha$$

We can show that the second-order condition is satisfied.

$$\frac{\partial F}{\partial h} < 0$$

The implicit function theorem implies that

$$\frac{\partial h}{\partial a} = -\frac{\frac{\partial F}{\partial a}}{\frac{\partial F}{\partial h}}$$

We have

$$\begin{aligned} \frac{\partial F}{\partial a} &= \beta e^{-a/h} \left[-\frac{1}{h} \frac{1}{(1+h)^2} + \frac{1}{h^2} \frac{h}{1+h} - \frac{a}{h^2} \frac{1}{1+h} \right] \\ &= \beta e^{-a/h} \frac{a}{h^2} \frac{1}{(1+h)^2} [h^2 - a(1+h)] \end{aligned}$$

Defining $\bar{a} = \frac{h^2}{1+h}$, we see that $\frac{\partial F}{\partial a} > 0$ if and only if $a \leq \bar{a}$. We thus obtain the result of Proposition 1.

The second part of the proposition directly follows from the expression for the expected value of an exponential distribution.

Proof of Proposition 2

The player chooses a in period 0 to maximize:

$$\beta \left[\frac{h}{1+h} [1 + e^{-a/h}] - \frac{\alpha}{2} h^2 \right] \quad (\text{C.2})$$

which corresponds to expression (C.1) but where present bias parameter β applies both to costs of effort and future benefits. The equilibrium level of aspirations is characterized in the following result.

Use the notation

$$G(a, h) = \frac{h}{1+h} [1 + e^{-a/h}] - \frac{\alpha}{2} h^2$$

The FOC with respect to a is given by:

$$\frac{\partial G(a, h)}{\partial h} \frac{\partial h}{\partial a} - \frac{1}{1+h} e^{-a/h} = 0$$

We have

$$F = \beta \frac{\partial G(a, h)}{\partial h} - (1 - \beta) \alpha h$$

Given that $F = 0$, we can rewrite the FOC above

$$\frac{(1 - \beta)}{\beta} \alpha h \frac{\partial h}{\partial a} - \frac{1}{1 + h} e^{-a/h}$$

For β sufficiently small, the FOC is positive at $a = 0$, so that the lawyer will optimally set aspirations to be strictly positive.

Result (1) naturally follows. The player will only set strictly positive aspirations if doing so can increase effort levels. Thus, when aspirations are endogenously chosen, they will always be set at a value less than \bar{a} .

We now prove result (2).

Let

$$H = \frac{(1 - \beta)}{\beta} \alpha h \frac{\partial h}{\partial a} - \frac{1}{1 + h} e^{-a/h}$$

The equilibrium level of aspirations is implicitly defined by $H = 0$.

The implicit function theorem yields

$$\frac{\partial a}{\partial \beta} = - \frac{\frac{\partial H}{\partial \beta}}{\frac{\partial H}{\partial a}}$$

For an interior solution, the second-order condition applies, and thus $\frac{\partial H}{\partial a} < 0$. Furthermore, we have

$$\frac{\partial H}{\partial \beta} = - \frac{1}{\beta^2} \alpha h \frac{\partial h}{\partial a} < 0.$$

Thus, overall a^* is decreasing in β , i.e., more present-biased individuals (with lower β) will set higher aspirations.

We have:

$$\frac{\partial a}{\partial \alpha} = - \frac{\frac{\partial H}{\partial \alpha}}{\frac{\partial H}{\partial a}}$$

The term $\frac{\partial H}{\partial \alpha}$ is more difficult to sign since h is a function of α . However, when β is small

enough, only the left-hand side of the expression above matters, and since both h and $\frac{\partial h}{\partial a}$ are decreasing in α , we have $\frac{\partial H}{\partial \alpha} < 0$. Overall, this implies that a^* is decreasing in α if β is small enough.

C.6 Aspirations and expectations

Proposition 1 shows that there is a positive correlation between aspirations and expectations. However, they are distinct constructs in our analytical framework. To understand this, consider two individuals who differ both in their disutility of effort α_i and in their level of present bias β_i . It is possible that both individuals choose the same level of effort, and thus have the same expectations of success, but have different levels of aspirations. This requires that the agent with low disutility of effort also has the bigger time inconsistency problem, and thus a lower β_i . This individual will set higher aspirations to encourage effort, but might end up exerting the same level of effort as the other in spite of her lower disutility of effort, since the time inconsistency problem dissipates her advantage.

The results in the main text not only show that expectations and aspirations are different constructs, they also show that they both have predictive power in terms of promotion, and that aspirations is in fact a better predictor. We conclude this section, by arguing informally that this may be the case in our framework as well, as long as there exists several dimensions of heterogeneity across individuals. Consider in particular the two types of heterogeneity discussed above (disutility of effort and present bias). Suppose, for illustrative purposes, that in the survey, when participants answer the question on expectations, it is an instinctive reaction that ignores the time inconsistency problem and they therefore overestimate effort and chances of success. On the contrary, aspirations are set strategically and purposefully, taking into account the self-control problem. In such a setting, aspirations bring extra information on the future rate of success compared to expectations since they captures the effect of β_i , the self control parameter.

Specifically, when you instinctively calculate expectations, you believe that effort is determined by the following FOC (as in proofs above):

$$\frac{1}{(1+h)^2} [1 + e^{-a/h}] + \frac{a}{h^2} \frac{h}{1+h} e^{-a/h} - \alpha h = 0$$

whereas actual effort will be set according to:

$$\beta_i \frac{1}{(1+h)^2} [1 + e^{-a/h}] + \beta_i \frac{a}{h^2} \frac{h}{1+h} e^{-a/h} - \alpha h = 0$$