Supplemental Appendix for "Potential" and the Gender Promotion Gap

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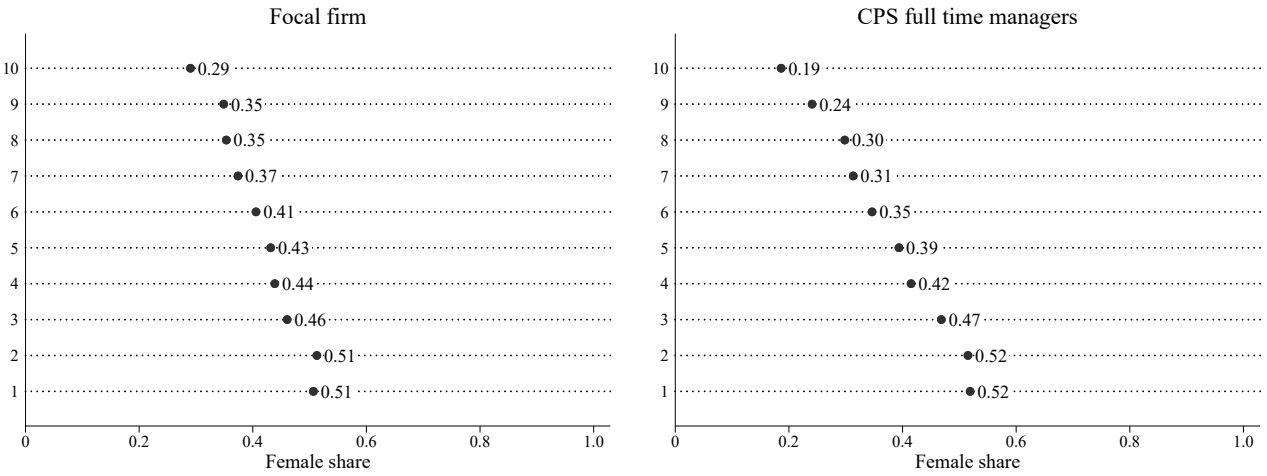
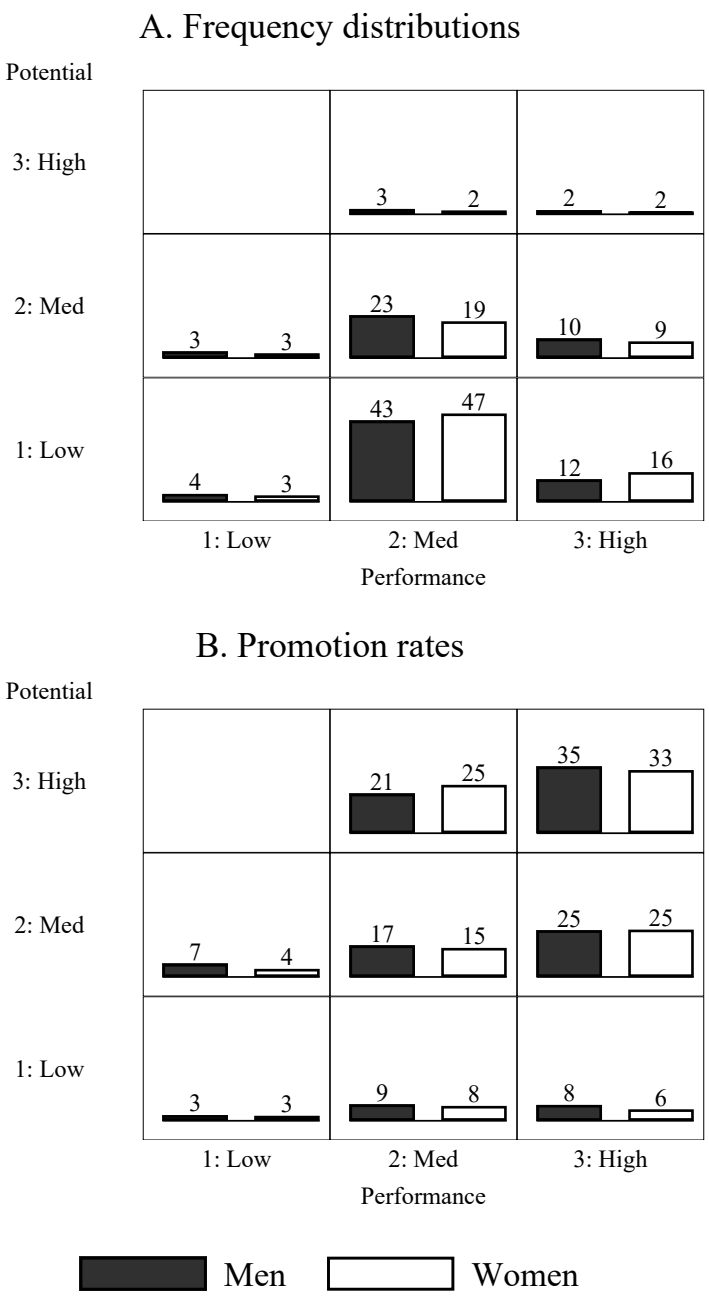
FIGURE A1: FEMALE SHARES BY PAY DECILE AMONG MANAGERS IN THE CPS



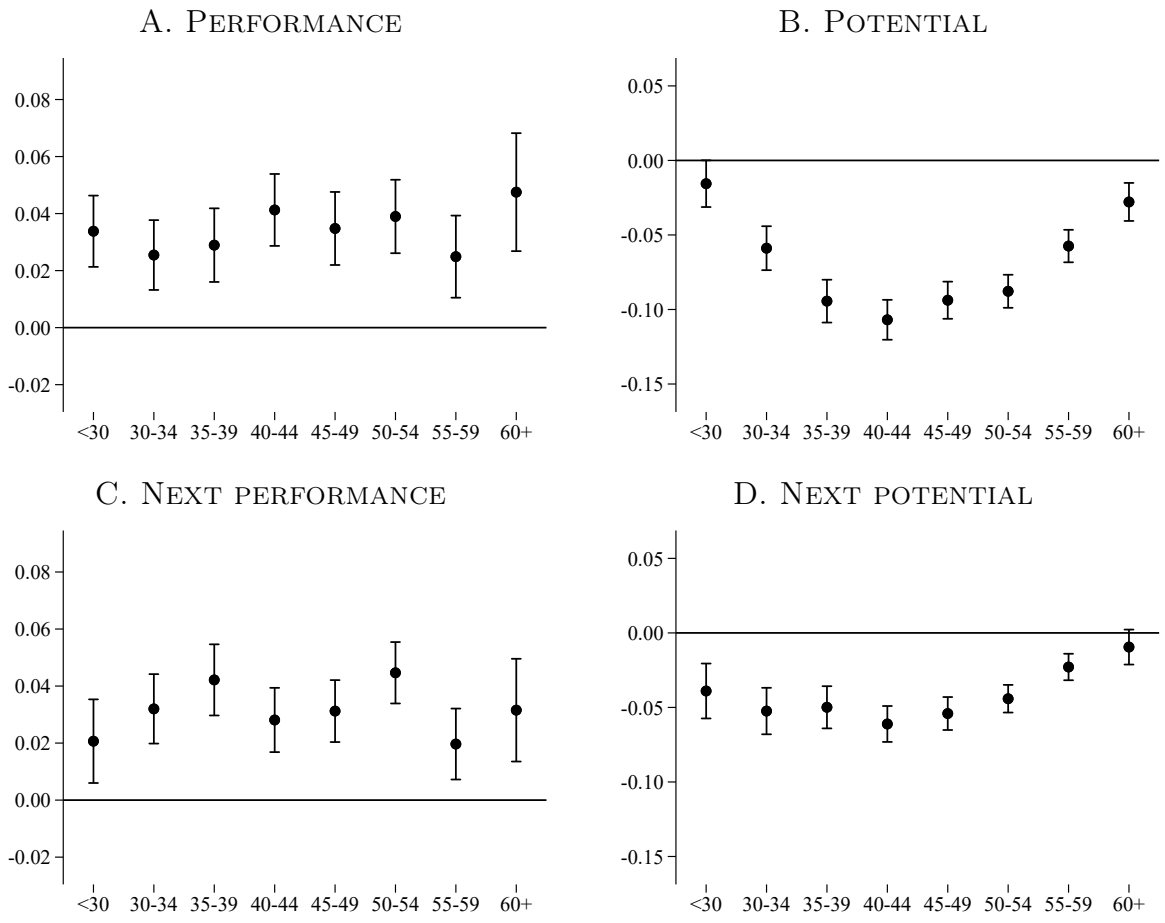
NOTES: The figure compares the female share by earnings decile in our focal firm and in the Current Population Survey Annual Social and Economic Supplement, for February 2011 to October 2015, among full time workers in management occupations.

FIGURE A2: DISTRIBUTION OF NINE BOX RATINGS AND PROMOTIONS



NOTES: The top panel provides the share of men and women receiving each Nine Box rating. The bottom panel provides the annual promotion rate conditional on receiving each Nine Box rating for men and women. We exclude observations rated a low performance and high potential (the top left box) from our sample, because that rating is reserved by our firm for new hires.

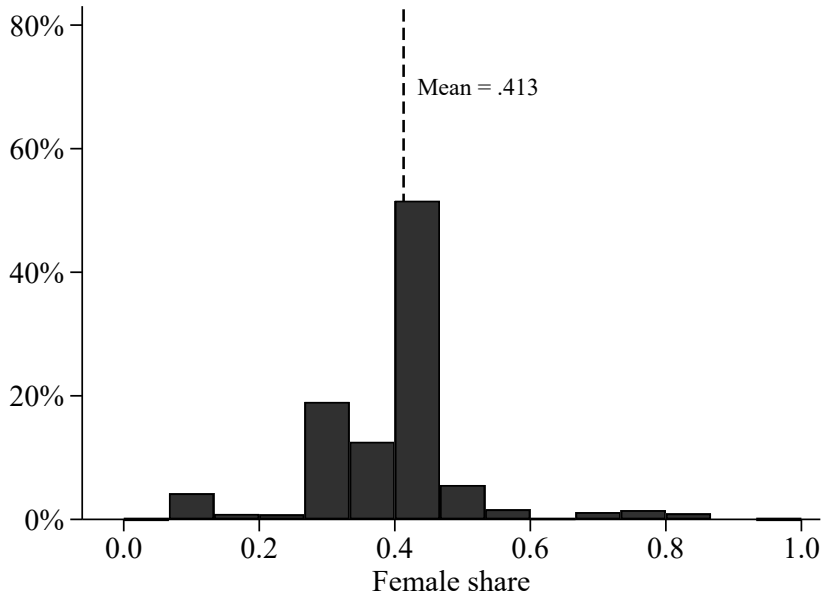
FIGURE A3: GENDER GAPS BY AGE



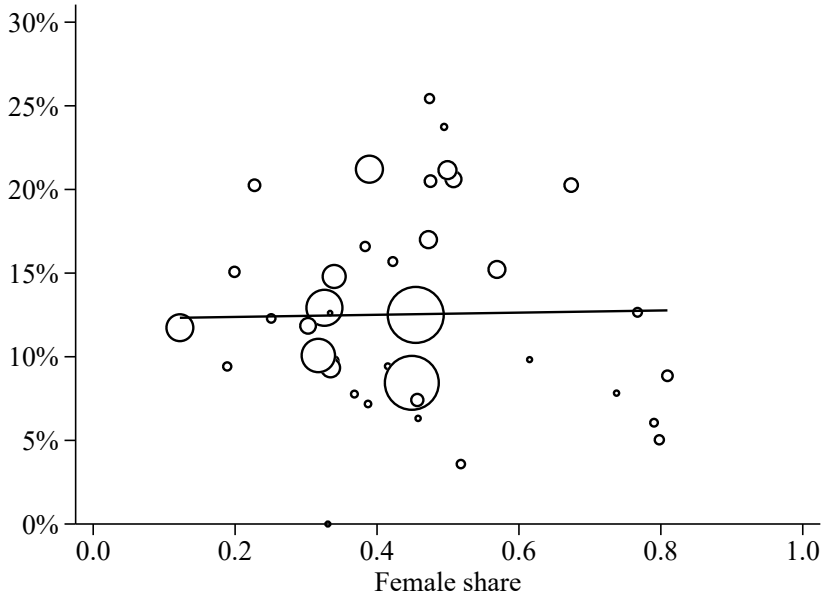
NOTES: This figure plots coefficients and standard errors from regressions of performance ratings (Panel A), potential ratings (Panel B), 12-month-ahead performance ratings (Panel C), and 12-month-ahead potential ratings (Panel D) on *Female* interacted with age category indicators. All regressions control for year fixed effects. Panel B includes controls for performance rating fixed effects, and Panels C and D include controls for current performance and potential rating fixed effects.

FIGURE A4: GENDER COMPOSITION AND PROMOTION RATES ACROSS BUSINESS UNITS

PANEL A: FEMALE SHARES ACROSS BUSINESS UNITS

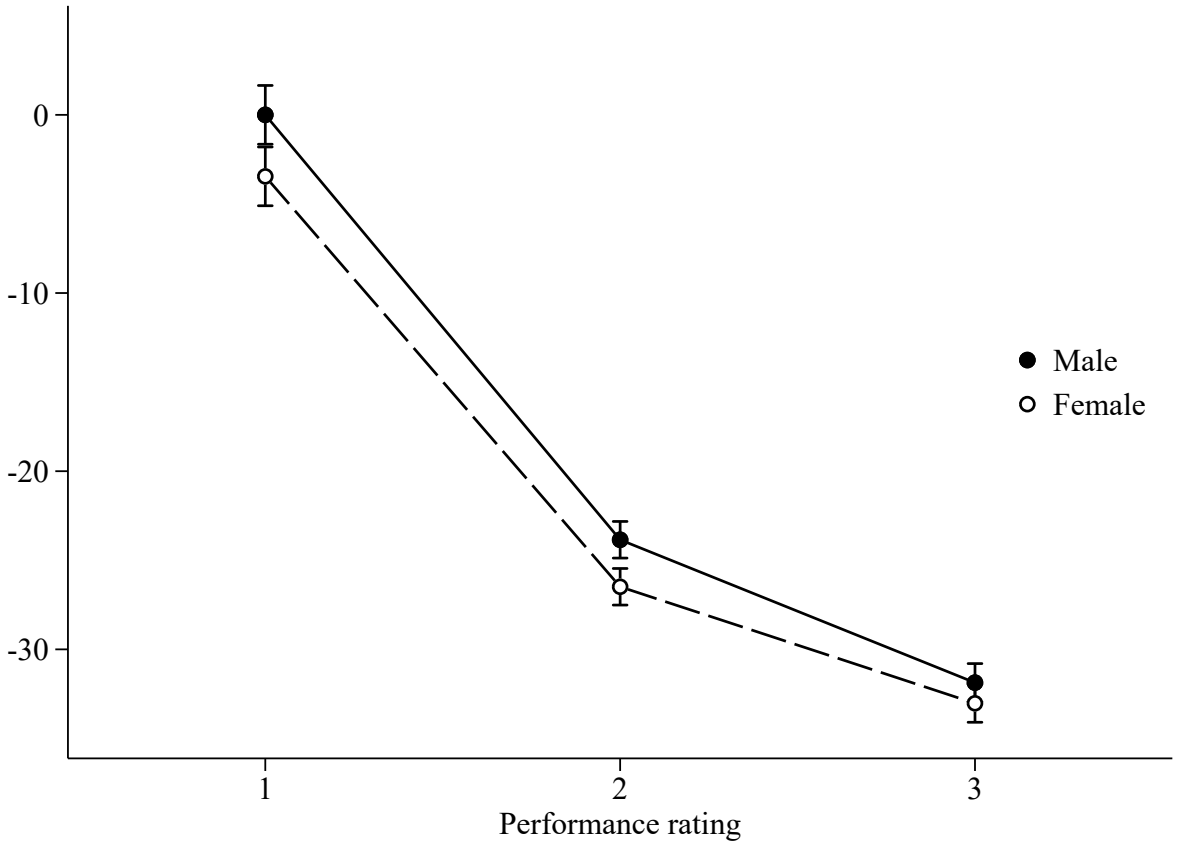


PANEL B: PROMOTION RATES BY BUSINESS UNIT FEMALE SHARE



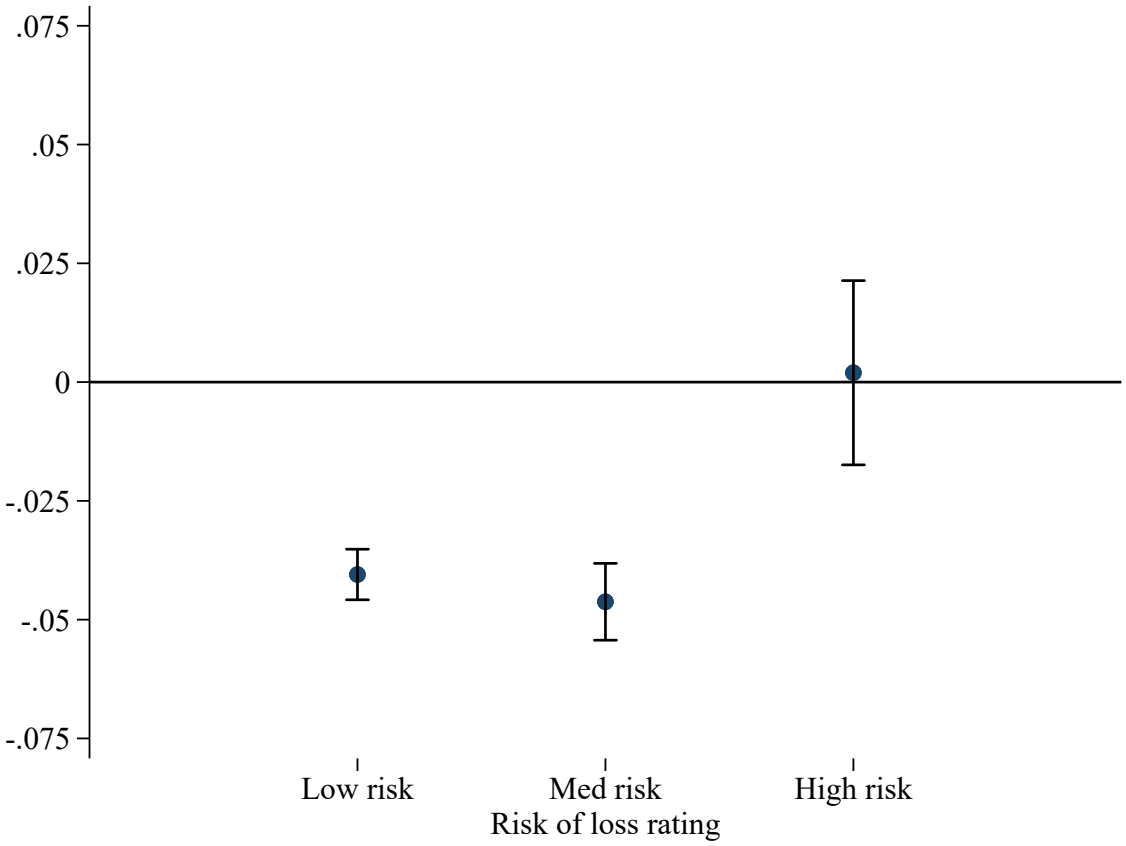
NOTES: Panel A presents a histogram of the female share across business units in our sample, weighted by business unit size. Panel B presents a scatterplot and OLS fit line of monthly average business unit promotion rates by business unit female share, weighted by business unit size.

FIGURE A5: ATTRITION BY PERFORMANCE RATING



NOTES: This figure shows coefficient estimates from Table A10, which uses a linear probability model to estimate turnover by gender and performance rating. Point estimates are relative to men who receive as performance rating of 1; these men have an annualized attrition rate of 63.9%, versus 42.1% in the full sample, and 35.8% for high performing women (for whom attrition rates are lowest). Vertical brackets represent standard errors clustered by worker.

FIGURE A6: POTENTIAL BY RISK OF LOSS RATING



NOTES: This figure shows the gender potential gap relative to the mean potential rating within that risk of loss. Standard errors are in brackets.

Appendix Table A1: Decomposing the effect of ratings on the promotion gap

Panel A Interacted model	Coefficient	Standard error
Female	-1.382**	(.618)
Potential rating = 2	10.294***	(.375)
Potential rating = 3	18.306***	(1.038)
Female × Potential rating = 2	.508	(.595)
Female × Potential rating = 3	3.327*	(1.86)
Performance rating = 2	6.613***	(.435)
Performance rating =3	10.652***	(.56)
Female × Performance rating = 2	.626	(.658)
Female × Performance rating = 3	-1.238	(.822)
Panel B Decomposition	**Coefficient**	**Standard error**
Overall		
Men's promotion rate	12.623***	(.175)
Women's promotion rate	10.988***	(.196)
Gap	1.635***	(.263)
Gap explained by endowments		
Potential rating	.9***	(.07)
Performance rating	-.159***	(.022)
Gap explained by coefficients		
Potential rating	-.286	(.199)
Performance rating	-.144	(.606)

Notes: This table reports results from a Kitagawa-Oaxaca-Blinder decomposition. Panel A presents a pooled regression model for promotion where the female indicator is interacted with indicators for performance and potential ratings. Panel B reports the decomposition results. The regression also includes control variables for fiscal year fixed effects, which is why the fraction of the gap explained by differences in the endowments and coefficients on potential and performance ratings do not add to 1. Standard errors are clustered by worker.

TABLE A2: SUMMARY OF MAIN RESULTS: GENDER BALANCED BUSINESS UNITS ONLY

	(1) Potential rating	(2) Performance rating	(3) Promoted	(4) Next performance	(5) Next potential
Female	-0.0978	0.0194	-0.649	0.0258	-0.0562
	(0.00601)	(0.00559)	(0.274)	(0.00483)	(0.00492)
Performance rating					
2=Med			6.992	0.361	0.217
			(0.349)	(0.0117)	(0.00948)
3=High			10.42	0.760	0.317
			(0.447)	(0.0128)	(0.0104)
Potential rating					
2=Med			11.33	0.0884	0.423
			(0.318)	(0.00514)	(0.00586)
3=High			19.68	0.175	0.746
			(0.933)	(0.0124)	(0.0178)
Fiscal year FEs	Yes	Yes	Yes	Yes	Yes
Observations	792321	792321	792321	525563	525563

NOTES: This table restricts the sample to observations associated with business units with female share between 30% and 50%.

Appendix Table A3: Robustness check using manager fixed effects

	(1) Potential rating	(2) Performance rating	(3) Promotion	(4) Next performance	(5) Next potential
Female	-0.0658	0.0388	-2.226	0.0294	-0.0508
	(0.00530)	(0.00509)	(0.288)	(0.00505)	(0.00510)
Performance rating					
2=Med			6.352	0.291	0.196
			(0.373)	(0.0115)	(0.00950)
3=High			10.92	0.589	0.307
			(0.475)	(0.0125)	(0.0105)
Potential rating					
2=Med			9.543	0.102	0.323
			(0.319)	(0.00513)	(0.00601)
3=High			18.08	0.178	0.581
			(0.875)	(0.0117)	(0.0163)
Fiscal year FEs	Yes	Yes	Yes	Yes	Yes
Manager FEs	Yes	Yes	Yes	Yes	Yes
Observations	899581	899581	899581	586014	586014
DV mean	1.429	2.18	11.673	2.211	1.383

Notes: This table reproduces the main results, but includes fixed effects for the direct manager who provides the initial ratings.

Appendix Table A4: Robustness check using job level fixed effects

	(1) Potential rating	(2) Performance rating	(3) Promotion	(4) Next performance	(5) Next potential
Female	-0.0588	0.0489	-1.936	0.0346	-0.0428
	(0.00548)	(0.00525)	(0.275)	(0.00467)	(0.00481)
Performance rating					
2=Med			5.104	0.354	0.189
			(0.341)	(0.0112)	(0.00908)
3=High			8.548	0.749	0.287
			(0.426)	(0.0121)	(0.00991)
Potential rating					
2=Med			8.714	0.0828	0.397
			(0.295)	(0.00491)	(0.00557)
3=High			18.48	0.152	0.695
			(0.840)	(0.0117)	(0.0164)
Fiscal year FEs	Yes	Yes	Yes	Yes	Yes
Job level FEs	Yes	Yes	Yes	Yes	Yes
Observations	900209	900209	900209	586338	586338
DV mean	1.429	2.18	11.949	2.21	1.383

Notes: This table reproduces main results, but includes controls for 22 job level fixed effects.

Appendix Table A5: Robustness check using pay decile fixed effects

	(1) Potential rating	(2) Performance rating	(3) Promotion	(4) Next performance	(5) Next potential
Female	-0.0556	0.0644	-1.467	0.0466	-0.0374
	(0.00550)	(0.00506)	(0.263)	(0.00460)	(0.00477)
Performance rating					
2=Med			7.558	0.346	0.201
			(0.345)	(0.0111)	(0.00914)
3=High			11.75	0.730	0.288
			(0.443)	(0.0121)	(0.0100)
Potential rating					
2=Med			11.04	0.0760	0.412
			(0.298)	(0.00487)	(0.00556)
3=High			20.42	0.142	0.709
			(0.869)	(0.0115)	(0.0165)
Fiscal year FEs	Yes	Yes	Yes	Yes	Yes
Pay decile FEs	Yes	Yes	Yes	Yes	Yes
Observations	899023	899023	899023	585960	585960
DV mean	1.429	2.18	11.885	2.211	1.383

Notes: This table reproduces main results, but includes controls for 10 pay decile fixed effects.

TABLE A6: ROBUSTNESS OF MAIN RESULTS TO CONTROLLING FOR INITIAL BUSINESS UNIT × ENTRY YEAR

	(1) Potential rating	(2) Performance rating	(3) Promoted	(4) Next performance	(5) Next potential
Female	-0.076	0.023	-1.496	0.029	-0.053
	(0.007)	(0.006)	(0.419)	(0.007)	(0.007)
Performance rating					
2=Med			8.804	0.288	0.223
			(0.566)	(0.018)	(0.016)
3=High			13.030	0.595	0.326
			(0.700)	(0.019)	(0.017)
Potential rating					
2=Med			9.607	0.112	0.350
			(0.470)	(0.007)	(0.008)
3=High			17.175	0.195	0.652
			(1.166)	(0.015)	(0.021)
First BU × Entry year	Yes	Yes	Yes	Yes	Yes
Observations	443756	443756	443756	260293	260293

NOTES: This table estimates our main results controlling for the worker's initial business unit and year of entry. The sample is restricted to workers who enter the firm during our data sample period.

TABLE A7: ROBUSTNESS OF MAIN RESULTS: CONTROLLING FOR INITIAL PAY DECILE × INITIAL ENTRY YEAR

	(1) Potential rating	(2) Performance rating	(3) Promoted	(4) Next performance	(5) Next potential
Female	-0.048	0.057	-2.007	0.049	-0.041
	(0.007)	(0.006)	(0.408)	(0.007)	(0.007)
Performance rating					
2=Med			8.681	0.293	0.231
			(0.570)	(0.018)	(0.016)
3=High			13.620	0.607	0.315
			(0.713)	(0.019)	(0.017)
Potential rating					
2=Med			10.169	0.091	0.385
			(0.450)	(0.007)	(0.008)
3=High			18.637	0.160	0.696
			(1.150)	(0.015)	(0.022)
Fiscal year FEs	Yes	Yes	Yes	Yes	Yes
Initial pay decile × Initial entry year FEs	Yes	Yes	Yes	Yes	Yes
Observations	442241	442241	442241	259501	259501

NOTES: This table estimates our main results controlling for the worker's initial pay decile and year of entry. The sample is restricted to workers who enter the firm during our data sample period.

Appendix Table A8: Sales performance and Nine Box ratings

	(1) Sales performance	(2) Performance rating	(3) Potential rating
Female	0.094	0.095	-0.116
	(0.035)	(0.032)	(0.045)
Constant	1.178	1.828	1.641
	(0.013)	(0.016)	(0.024)
Observations	1062	1062	1062

Notes: The table reports average objective sales performance and average subjective ratings by gender, among workers who have ever received both measures of performance. Data are at the person level and outcomes are averaged over the worker's full observable tenure. Column 1 regresses objective sales performance on gender. Sales performance is measured as the logarithm of sales-per-hour divided by the sales-per-hour goal, winsorized at 1%. Goals are set centrally based on factors such as location, month, and precise shifts. Column 2 regresses the Nine Box performance rating on gender, and Column 3 regresses the Nine Box potential rating on gender.

Appendix Table A9: Simultaneous sales performance and Nine Box ratings

	(1) Sales performance	(2) Performance rating	(3) Potential rating
Female	0.554	0.240	-0.077
	(0.255)	(0.187)	(0.288)
Constant	1.097	1.493	1.925
	(0.048)	(0.073)	(0.114)
Observations	241	241	241

Notes: The table reports objective sales performance and subjective ratings by gender, among workers who *receive both in the same month*. Data are at the person-month level. Column 1 regresses objective sales performance on gender. Sales performance is measured as the logarithm of sales-per-hour divided by the sales-per-hour goal, winsorized at 1%. Goals are set centrally based on factors such as location, month, and precise shifts. Column 2 regresses the Nine Box performance rating on gender, and Column 3 regresses the Nine Box potential ratings on gender. Note that standard errors are larger than worker-aggregated results because the former averages idiosyncratic monthly variation over a worker's full tenure.

Appendix Table A10: Test of selection effects due to attrition of high performers

Attrition	(1)		(2)	
Female	-3.452	(1.649)	-2.080	(1.638)
Potential rating				
2=Med	-1.329	(0.439)	-2.810	(0.448)
3=High	0.286	(0.926)	-2.123	(0.942)
Performance rating				
2=Med	-23.85	(0.985)	-21.52	(0.981)
3=High	-31.87	(1.019)	-27.50	(1.027)
Female × Potential rating				
Female × 2=Med	1.220	(0.688)	0.999	(0.681)
Female × 3=High	2.048	(1.545)	2.005	(1.538)
Female × Performance rating				
Female × 2=Med	0.815	(1.667)	0.158	(1.649)
Female × 3=High	2.295	(1.710)	1.040	(1.695)
Fiscal year FEs	Yes		Yes	
Demographic controls			Yes	
Location FEs			Yes	
Observations	900209		900209	
DV mean	42.125		42.122	

Notes: This table presents results from a regression of attrition on gender, ratings, and their interaction. Attrition takes values of 0 or 1,200 so that coefficients can be interpreted as annual percents. Standard errors are clustered by worker.

Appendix Table A11: Robustness check using annual observations

	(1) Potential rating	(2) Performance rating	(3) Promotion	(4) Next performance	(5) Next potential
Female	-0.0813***	0.0355***	-0.923***	0.0327***	-0.0482***
	(0.00558)	(0.00520)	(0.216)	(0.00458)	(0.00471)
Performance rating					
2=Med			6.036***	0.363***	0.213***
			(0.291)	(0.0111)	(0.00916)
3=High			8.488***	0.766***	0.314***
			(0.357)	(0.0121)	(0.00997)
Potential rating					
2=Med			9.098***	0.0910***	0.424***
			(0.247)	(0.00484)	(0.00551)
3=High			16.89***	0.167***	0.730***
			(0.716)	(0.0117)	(0.0167)
Fiscal year FEs	Yes	Yes	Yes	Yes	Yes
Observations	79829	79829	79829	48920	48920

Notes: This table reproduces main results, but each observation represents a worker × fiscal year rather a worker × month. Standard errors are clustered by worker.

Appendix Table A12: Robustness check using manager-clustered errors

	(1) Potential rating	(2) Performance rating	(3) Promotion	(4) Next potential	(5) Next performance
Female	-0.0830	0.0342	-0.954	-0.0482	0.0327
	(0.00530)	(0.00492)	(0.270)	(0.00450)	(0.00441)
Potential rating					
2=Med			10.51	0.424	0.0913
			(0.326)	(0.00547)	(0.00460)
3=High			19.43	0.730	0.168
			(0.913)	(0.0162)	(0.0107)
Performance rating					
2=Med			6.887	0.213	0.364
			(0.353)	(0.00850)	(0.0102)
3=High			10.14	0.315	0.767
			(0.450)	(0.00941)	(0.0115)
Fiscal year FEs	Yes	Yes	Yes	Yes	Yes
Observations	899581	899581	899581	586014	586014
DV mean	1.429	2.18	11.899	1.383	2.211

Notes: This table reproduces main results, but standard errors are clustered by the manager who is rating the worker.

Appendix Table A13: Robustness check using combinations of potential and performance

	(1) Promotion	(2) Next performance	(3) Next potential
Female	-0.849	0.0314	-0.0454
	(0.255)	(0.00454)	(0.00463)
Potential=1, Performance=2	4.805	0.342	0.0774
	(0.351)	(0.0154)	(0.0107)
Potential=1, Performance=3	3.702	0.802	0.100
	(0.426)	(0.0167)	(0.0117)
Potential=2, Performance=1	4.032	0.0775	0.132
	(0.611)	(0.0210)	(0.0168)
Potential=2, Performance=2	13.26	0.470	0.469
	(0.441)	(0.0158)	(0.0118)
Potential=2, Performance=3	21.66	0.808	0.665
	(0.650)	(0.0169)	(0.0132)
Potential=3, Performance=2	19.82	0.585	0.731
	(1.081)	(0.0210)	(0.0232)
Potential=3, Performance=3	31.52	0.851	0.974
	(1.475)	(0.0234)	(0.0262)
Fiscal year FEs	Yes	Yes	Yes
Observations	900209	586338	586338

Notes: This table reproduces main results, but interacts potential and performance. The reference is Performance=1, Potential=1.

Appendix Table A14: Attrition by risk of loss

	Attrition rate	SE
Low rated risk of loss	20.5%	(0.213%)
Moderate rated risk of loss	24.9%	(0.234%)
High rated risk of loss	34.7%	(0.275%)

Notes: This table shows mean and standard errors for one-year actual attrition rates by the prior year's risk of loss ratings.

Appendix Table A15: Attrition in management occupations

	All ages			Age $\leq$ 35		
	Attrition	Switch	NILF	Attrition	Switch	NILF
Female	-0.0555	-0.430	0.374	-1.473	-1.912	0.439
	(0.630)	(0.601)	(0.191)	(1.440)	(1.379)	(0.409)
Workers	81865	81865	81865	19487	19487	19487
Observations	244123	244123	244123	50859	50859	50859
DV mean	14.432	13.174	1.258	16.941	15.643	1.298

Notes: This table presents linear probability models for attrition among full time managers from the monthly Current Population Survey for February 2011 to October 2015. Dependent variables are 1200 in the case of attrition corresponding to annual percentages. "Attrition" includes both employer switchers and labor force exits. "Switch" denotes workers who reported that they worked for a different employer in the previous survey month. "NILF" denotes that the worker was in the labor force the previous month and not in the labor force in the current month.

Appendix Table A16: Attrition and risk of loss by manager gender

	Panel A: Female managers					
	(1) Attrition	(2) Risk of loss (1-3)	(3) Next potential	(4) Promotion	(5) Next log salary	(6) Next performance
Female	-3.0613	-.0417	-.0384	-1.755	-.076	.0428
	(.8665)	(.012)	(.0104)	(.602)	(.0129)	(.0101)
Risk of loss						
2=Med			.0759	.8257	.0595	.0048
			(.0119)	(.6937)	(.0151)	(.0112)
3=High			.0994	2.7901	.083	-.0189
			(.0243)	(1.4129)	(.0264)	(.0231)
Fiscal year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Ratings FEs	Yes	Yes	Yes	Yes	Yes	
Workers	10461	10461	7748	10461	3990	7748
Observations	142411	142411	109660	142411	35599	109660
DV mean	24.243	1.422	1.401	10.937	11.028	2.193
	Panel B: Male managers					
	(7) Attrition	(8) Risk of loss (1-3)	(9) Next potential	(10) Promotion	(11) Next log salary	(12) Next performance
Female	-2.3018	-.0618	-.0493	-.8216	-.1644	.0269
	(.5076)	(.0079)	(.0065)	(.3727)	(.0079)	(.0066)
Risk of loss						
2=Med			.0862	.5228	.0634	.0106
			(.0074)	(.4202)	(.009)	(.0071)
3=High			.0883	4.2951	.1068	-.0029
			(.0157)	(.9107)	(.0188)	(.0146)
Fiscal year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Ratings FEs		Yes	Yes	Yes	Yes	Yes
Workers	20578	20578	15447	20578	9346	15447
Observations	383950	383950	300721	383950	99333	300721
DV mean	21.715	1.419	1.375	10.601	11.06	2.188

Notes: The dependent variables for attrition and promotion takes a value of 1200 if the worker leaves or is promoted in the following month, and zero otherwise, so that coefficients represent annualized percents. Column 1 reports regressions of actual attrition in the next month on the female indicator. Column 2 adds controls for "risk of loss" ratings assigned by the firm (the omitted category is 1, low risk of loss). Column 3-6 examine the relationship between risk of loss, gender, 12-month-ahead potential rating, whether a worker is promoted in the following month, and 12-month-ahead salary and performance ratings. The sample omits the last month that a worker's location is in our sample to allow for observations of future behavior. Panels A and B respectively split the samples by the gender of rated worker's manager. Standard errors are clustered by worker.

Appendix Table A17: Potential and risk of loss

	(1) Potential rating	(2) Potential rating	(3) Potential rating	(4) Potential rating
Female	-0.0804***	-0.0688***	-0.0490***	-0.0432***
	(0.00642)	(0.00627)	(0.00601)	(0.00595)
Risk of loss				
Moderate		0.183***		0.119***
		(0.00659)		(0.00632)
High risk		0.261***		0.172***
		(0.0137)		(0.0126)
Fiscal year FEs	Yes	Yes	Yes	Yes
Demographic FEs			Yes	Yes
Location FEs			Yes	Yes
Business unit FEs			Yes	Yes
Observations	535417	535417	535417	535417
Implied percent of female effect explained by risk of loss		14.3%		11.9%

Notes: This table estimates the gender gap in potential ratings and how the gender gap changes after controlling for risk of loss ratings. Columns 3 and 4 include additional control variables for worker and job characteristics. By comparing the coefficients on the female indicator in Columns 1 and 2, and in Columns 3 and 4, we can estimate the percent of the gender gap in potential ratings that can be explained by risk of loss ratings. Standard errors are clustered by worker.

Appendix Table A18: Potential and the within-unit share promoted to the same manager

Potential rating	(1)	(2)
Female	-0.111	-0.106
	(0.015)	(0.011)
Share	0.317	0.221
	(0.023)	(0.017)
Female × Share	0.064	0.076
	(0.034)	(0.025)
This model's *Share* definition	Business unit same manager promotion share	BU × job level same manager promotion share
Fiscal year FEs	Yes	Yes
Observations	899425	886866

Notes: In this table, we consider whether managers give higher potential ratings to subordinates when managers are less likely to lose the subordinate as a team member after promotion. The dependent variable in all models is the potential rating. *Share* in Column 1 is defined as the share of promotions within a business unit that do not involve a change in manager after the worker is promoted. *Share* in Column 2 is defined as the share of promotions within a business unit x joblevel that do not involve a change in manager after the worker is promoted. Standard errors are clustered by worker.

Appendix Table A19: OLS and IV estimates for future potential and performance

	Next potential		Next performance	
Model	Beta	S.E.	Beta	S.E.
a. Year and performance controls				
OLS female sample	.0312**	(.0123)	.0472***	(.0114)
OLS male sample	.0991***	(.0107)	.0384***	(.0089)
IV Female sample	-.0529**	(.0253)	.0337	(.0271)
IV Male sample	-.0231	(.0229)	-.0181	(.021)
b. Full controls				
OLS Female sample	.0313**	(.0124)	.0466***	(.0114)
OLS Male sample	.1003***	(.0107)	.0393***	(.0089)
IV Female sample	-.0587**	(.0263)	.0294	(.0275)
IV Male sample	-.0295	(.0237)	-.017	(.0212)

Notes: This table presents the coefficients on promotion for sixteen separate regressions described by equations 2 and 3. The regressions represent combinations of two outcomes (next potential and next performance), two models (OLS and 2SLS), subsamples for two genders (female and male), and two sets of controls (fiscal year and past performance, then a full set of controls that adds demographics and location fixed effects). The eight models for women and men have 228,680 and 315,104 observations, respectively. Standard errors are clustered by worker.

Data appendix: County-level labor market gender inequality measures

We construct labor market gender inequality measures for US counties based on the methodology in United Nations Human Development Reports Gender Inequality Index (GII) (2021). The county level variables were collected from the 2019 US Census Bureau five year estimates from the American Community Survey (2019). In the Human Development Reports GII, gender-based inequality is measured using fifteen variables in three dimensions, including many measures focused on health, fertility, and mortality. We focus on three variables tied to labor market outcomes with a focus on upper level management: *County management gap* is the fraction of men among workers with management standard occupational classification (SOC) codes. *County pay gap* is men's median earnings divided by women's median earnings. *County female educational* attainment is the fraction of women over the age of 18 with at least some college education.

References

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