Peer Effects and the Gender Gap in Corporate Leadership: Evidence from MBA Students

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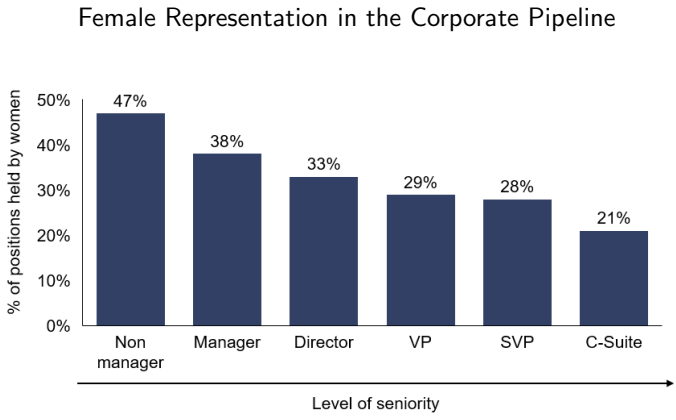
Women underrepresented in corporate leadership positions



Source: LeanIn.Org and McKinsey & Company, 2020

Role of Social Connections

- Social connections play key role for career outcomes
- Limited evidence on effect on gender gap in leadership positions

Role of Social Connections

- Social connections play key role for career outcomes
- Limited evidence on effect on gender gap in leadership positions
- Ambiguous effect of **gender composition of social connections** on women's outcomes:
  - (+) Information and support from same-gender peers may be beneficial
  - (−) Social connections with men may be beneficial since men have larger networks and more powerful positions

Research Question

What is the role of female social connections for women's career advancement?

- Female peers in business school

This Paper

Sample: MBA graduates from a top U.S. business school for cohorts 2000-2018

Strategy: Exposure to female peers from quasi-random assignment to sections

Data: School administrative data + detailed CV data with work history up to 2019 + firm-level data

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Findings:

1. Female MBAs **24%** less likely to hold senior leadership
2. 1SD (4pp) $\uparrow$ in female share $\Rightarrow$ **8.4%** $\uparrow$ **in likelihood of being senior manager**
3. Results driven by **female-friendly firms**

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Mechanisms: In progress qualitative analysis

Outline

Setting

Data

Descriptive Analysis

Empirical Strategy

Results

Role of Female-Friendly Firms

Mechanisms

Conclusions

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Setting and MBA Section Assignment

- Full-time 2-year MBA graduates
- Each year MBA students quasi-randomly assigned to 8 sections of 60 students
- Students in same sections take core classes together
  - Core classes: almost 50% of MBA curriculum in first year
  - Close social ties
    (Yang, Chawla, and Uzzi 2019; Lerner and Malmendier 2013)

Share of Female Peers across Sections

Treatment: share of female students in section

1. Meaningful variation across sections within classes Female Share Variation
2. Distribution of female share across sections as good as random Simulation Tests

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Individual and Section Level Data

1. **School Administrative Data**
   - 2000-2018: Aggregate stats on number of students by section, gender, and race
     - **Treatment variable** - share of female students per section

Individual and Section Level Data

1. School Administrative Data

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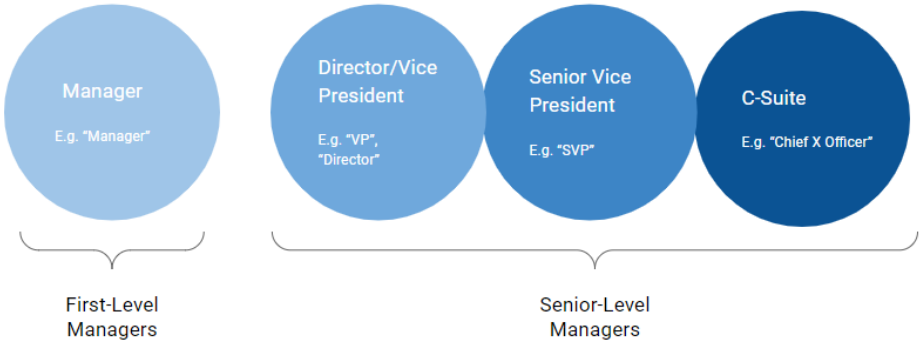
2. Public LinkedIn Profiles

- Sample: MBAs from classes of 2000-2018 currently in U.S.
- Public LinkedIn profiles for 77% of the full-time MBAs Alumni Directory Matching Match Statistics
- Complete self-reported education and employment history up to 2019
  - Employers, start and end dates, job titles, schools attended, degrees received

Identification of Management Positions

Based on keywords in job titles listed on CVs Job Titles Responsibilities Survey



Notes: Definitions from LeanIn.Org and McKinsey & Company, 2020

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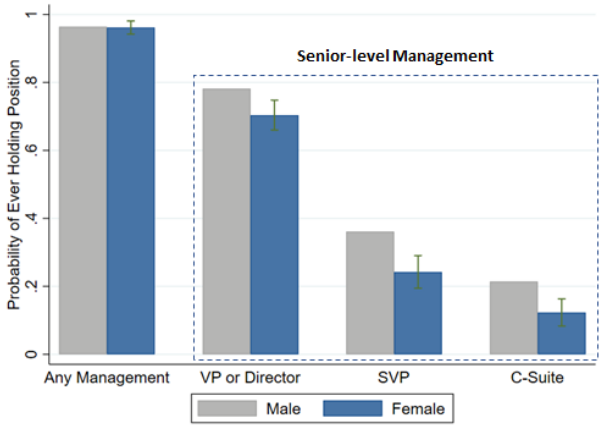
Descriptive Analysis

Gender Gap in Senior Management

Probability of Ever Entering Management Positions at 15 Years Post MBA by Gender



- 96% of graduates become managers
- No gender gap in overall management positions, but gap in senior management

Gender Gap | Over Time | Transitiona Rates

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Empirical Specification

$$y_{ikct} = \alpha_1 \overline{FemaleShare}_{-i,kc} \times Male_i + \alpha_2 \overline{FemaleShare}_{-i,kc} \times Female_i + \\ + \alpha_3 Female_i + \sum_{j=0,1} (\delta_c + \phi_t + \omega_{ct}) \times I(Female_i = j) + X_{ikct}\gamma' + \epsilon_{ikct} \quad (1)$$

- $\overline{FemaleShare}_{-i,kct}$: share of section female peers of i
- Class FE, Year FE, Female FE, and their interactions
- X_{ikct}: vector of individual and section-level controls Full List
- SE clustered at the section level

Identification

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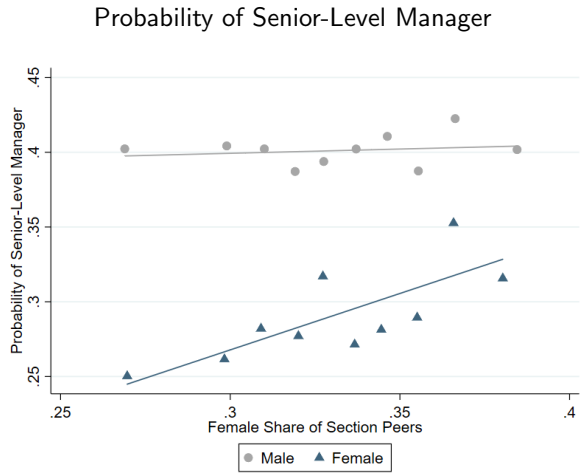
Probability of Holding a Senior Management Position



- Positive effect of female peers on women but no effect on men

Probability of Holding a Senior Management Position

Effect on Senior Management

	(1) Senior-Level Manager
Female share × Male	0.0315
	(0.115)
Female share × Female	0.822***
	(0.204)
p-value Male vs. Female	0.000
Female Mean	0.391
Male Mean	0.534
R^2	0.173
N	51440
Class x Year x Female FE	Yes
Stratification Controls	Yes
Pre-MBA Characteristics Controls	Yes
Section-level Controls	Yes

- 1SD (4pp) increase in female share $\approx$ 2.5 additional women per section $\Rightarrow$ 8.4% increase in probability of becoming senior manager

Controls | Section Controls | Number of Years | Years to First Position | External-Internal Promotions | Quality | Robustness | Compensation (Imputed) | Over Time

Additional Results

1. Academic Outcomes
2. Initial Placement
3. Attachment to the corporate pipeline
4. Industries

Additional Results

1. Academic Outcomes
   - No effect of female peers on MBA academic performance and finance classes
     GPA and Finance
2. Initial Placement
3. Attachment to the corporate pipeline
4. Industries

Additional Results

1. Academic Outcomes
2. Initial Placement
   - No effects on firm and industry characteristics of first position First Job
3. Attachment to the corporate pipeline
4. Industries

Additional Results

1. Academic Outcomes
2. Initial Placement
3. Attachment to the corporate pipeline Attachment
   - Limited evidence of a change in:
     - Entrepreneurship (e.g., Bertrand, Goldin, and Katz (2010)) Entrepreneurs
     - Entries in managerial pipeline Any Manager
     - Labor supply (suggestive) Labor Market Attachment
4. Industries

Additional Results

1. Academic Outcomes
2. Initial Placement
3. Attachment to the corporate pipeline
4. Industries
   - No change in industry entries Industries

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Role of Female-Friendly Firms

What drives the increase in female senior managers?

Role of **firm characteristics**

- Data:
  1. Firm size and industry (*Linkedin Company Profiles*)
  2. Total and base annual compensation by gender and job title (*Glassdoor*)
  3. 18 metrics + overall rating (1-5) of firm female-friendliness (*InHerSight.com*)
- Women not moving to smaller or lower-paying firms Manager and Size Manager and Comp
- However, firms may differ along other dimensions beneficial for women's career advancement
- Growing literature on importance of **female-friendly workplaces** for women (Goldin2014; Goldin and Katz 2016; Hotz et al. 2018)

Industries

Results driven by female-friendly firms

Female-friendly firms: above-median overall rating on InHerSight.com Components

	Senior Manager	
	(1) Female-Friendly Firms	(2) Non Female-Friendly Firms
Female share × Female	1.243***	-0.468
	(0.394)	(0.402)
Female Mean	0.161	0.118
Male Mean	0.238	0.186
R^2	0.167	0.242
N	28505	28505
Class x Year x Female FE	Yes	Yes

- Women shift towards more female-friendly firms Components Above Median Components Overall
- Effect concentrated when female MBA graduates have young children and gender wage gap increases Entries - Descriptives Senior Manager Conditional

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Mechanisms: Qualitative Approach

Goal: Identify relevant mechanisms and inform larger quantitative survey in Winter 2023 Same-firm Evidence

Method: Interviews using an in-depth narrative approach (Bergman et al. 2019) by sociology Ph.D. student

Sample: 45 MBA alumnae

Content: Career trajectories, challenges, role of MBA peers and female network

Preliminary Evidence: Challenges

1. **Discrimination**
2. **Lack of family-friendly policies**
3. **Lack of flexibility / high time demand**

Preliminary Evidence: Challenges

1. **Discrimination**
   - "I didn't feel like I had a fair shot to be promoted." (MBA 2011)
   - "Top clique", "in-crowd" were men
   - "A lot of the males who were less qualified [...] were getting promotions faster." (MBA 2015)
2. **Lack of family-friendly policies**
3. **Lack of flexibility / high time demand**

Preliminary Evidence: Challenges

1. **Discrimination**
2. **Lack of family-friendly policies**
   - "I got pregnant [...] and there was no official maternity leave policy." (MBA 2015)
3. **Lack of flexibility / high time demand**

Preliminary Evidence: Challenges

1. **Discrimination**
2. **Lack of family-friendly policies**
3. **Lack of flexibility / high time demand**
   - "They were expecting me to work 14 hours a day and I just couldn't do it with the baby"
   - "We've been out of school for seven years. People have had their kids and are really starting to have the conversation of how to stay involved in working [...] but increasing flexibility."

Preliminary Evidence: Role of Female Peer Networks

90% interviewees said they rely more on women in their network Importance FFF

1. **Emotional support**
2. **Information**

Preliminary Evidence: Role of Female Peer Networks

90% interviewees said they rely more on women in their network Importance FFF

1. **Emotional support**
   - "[Women] create this organic community and [...] share stories"
   - "Female [network] is about balancing household tasks and thriving marriage with work."
2. **Information**

Preliminary Evidence: Role of Female Peer Networks

90% interviewees said they rely more on women in their network Importance FFF

1. **Emotional support**
2. **Information**
   - i. Firm Benefits and Culture Firm Info
   - ii. Work-life Balance and Related Policies General Info

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Conclusion

- Female MBAs 24% less likely to hold senior leadership position
- 1SD (4pp) $\uparrow$ in female MBA share $\Rightarrow$ 8.4% $\uparrow$ in probability of being senior managers
- Effect driven by female-friendly firms
- From qualitative analysis (so far):
  - Emotional support
  - Information
- Gender composition of MBA peers can reduce gender gap in corporate leadership positions Counterfactual

THANK YOU

Feedback and comments are much appreciated:

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Robustness

- Missing data Missing Data
- Placebo tests:
  - Random re-assignment of sections Re-assignment
  - Pre-MBA years Pre-MBA
- Alternative definitions and sample restrictions Alternative Sample
- Alternative specifications:
  - Event-study design Event Study
  - Clustering at the class level Class Clustering
  - Logistic model Logit

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Effect Concentrated in Male-Dominated Industries

Results concentrated in male-dominated **industries**

- Stronger effects in settings where women underrepresented Male-Dom
- No evidence of shift across industries, higher *promotion* rates

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Role of Female Peers in Male-Dominated Industries

Are these peer effects magnified in settings where women are underrepresented?

For example, **male-dominated industries**: finance, tech, consulting Male Dom. Industries

Women face more barriers in access to informal networks (Cullen and Perez-Truglia 2019)

- Female peers may represent substitutes for these networks

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Role of Female Peers in Male-Dominated Industries

	Senior Manager	
	(1) Male Dominated Industries	(2) Female Dominated Industries
Female share × Female	**0.605****	-0.0269
	(0.243)	(0.107)
Female Mean	0.201	0.074
Male Mean	0.344	0.072
R^2	0.097	0.033
N	45389	45389
Class x Year x Female FE	Yes	Yes

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

- Effects are stronger in **male-dominated industries**
- Effects driven by higher **promotion rates**, not entries Entries Conditional Industries

Back

Alumni Directory Records

- Contains full name, year of graduation and current employment
- Importantly, includes MBA section identifier which allows us to assign students to peer groups
- 96% of graduates are represented in the alumni directory Coverage

Matching Back

Matching

Matching to MBAs Graduates: 77% of the full-time MBAs to public LinkedIn profiles

- 2011-2018: matched to administrative records by administrative personnel
- 2000-2010: matched to alumni directory by researchers Alumni Directory
  - We manually matched based on the following variables:
    - Name and surname: For people who may have changed names after marriage, we searched for them online
    - Business school name listed on the social media profile
    - Employment history
- 2009 excluded because 80% of profiles are private

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Coverage Rate of Alumni Directory

Coverage Rate of Alumni Directory, 2000-2010 Records

	Overall		Male		Female	
	N	Non-Missing Share	N	Non-Missing Share	N	Non-Missing Share
Admin Data	4720	1.000	3210	1.000	1503	1.000
Alumni Directory	4532	0.960	3132	0.976	1380	0.918

Notes: Sample includes graduating classes 2000-2010, excluding 2009.

Data: Female-Friendly Rating

- Overall rating (1-5) - summary measure of firms' female-friendliness
- Women anonymously rate their firms on 18 topics such as flexibility, parental leave, female leadership

1. Gender Equal Opportunities
2. Work Schedule Flexibility
3. Professional Enrichment
4. Fair Compensation
5. Family Friendliness
6. Workplace Culture

Back - Data Back - Results

Data: Female-Friendly Rating

- Overall rating (1-5) - summary measure of firms' female-friendliness
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1. Gender Equal Opportunities
   - Equal Opportunities for Women and Men
   - Management Opportunities
   - Women in Leadership
2. Work Schedule Flexibility
3. Professional Enrichment
4. Fair Compensation
5. Family Friendliness
6. Workplace Culture

Back - Data Back - Results

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- Overall rating (1-5) - summary measure of firms' female-friendliness
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1. Gender Equal Opportunities
2. Work Schedule Flexibility
   - Paid Time Off
   - Flexible Work Hours
   - Ability to Telecommute
3. Professional Enrichment
4. Fair Compensation
5. Family Friendliness
6. Workplace Culture

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Data: Female-Friendly Rating

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1. Gender Equal Opportunities
2. Work Schedule Flexibility
3. Professional Enrichment
   - Wellness Initiatives
   - Learning Opportunities
   - Sponsorship or Mentorship Program
   - Do you feel your growth and success are (or were) priorities for your manager(s) at this company?
   - Do you feel you receive(d) the necessary feedback to succeed at your job and achieve your goals?
4. Fair Compensation
5. Family Friendliness
6. Workplace Culture

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1. Gender Equal Opportunities
2. Work Schedule Flexibility
3. Professional Enrichment
4. Fair Compensation
   - Salary Satisfaction
   - When reflecting on your pay when you were first hired at this firm, do you feel you were paid fairly?
5. Family Friendliness
6. Workplace Culture

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5. Family Friendliness
   - Maternity and Adoptive Leave
   - Family Growth Support
   - Does this firm support employees caring for other members of their family other than children?
6. Workplace Culture

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1. Gender Equal Opportunities
2. Work Schedule Flexibility
3. Professional Enrichment
4. Fair Compensation
5. Family Friendliness
6. Workplace Culture
   - The People You Work With
   - Social Activities and Environment
   - Support for Diversity
   - Sense of Belonging
   - Employer Responsiveness

Back - Data Back - Results

4. Survey Data

- Distributed by alumni relations office to 10% of graduates
- 30% response rate
- Compensation, labor supply, referrals, information transmission, family background

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Data Firm Level - Additional

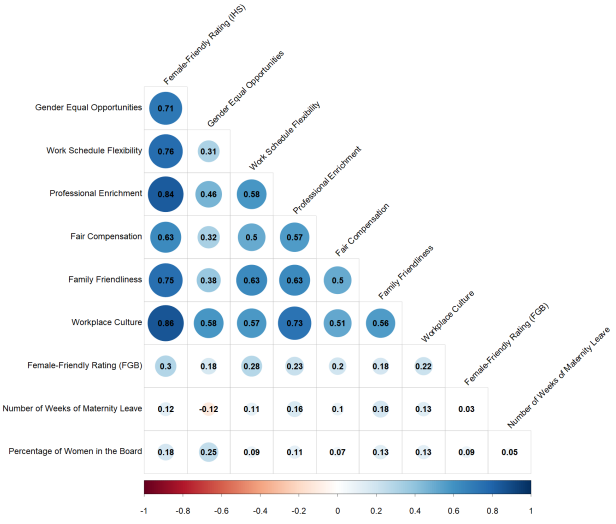
1. **FairyGodBoss.com**: Crowdsourced data (7% firms - 35% sample)
   - Overall firm rating and weeks of paid maternity leave

2. **5050 Women On Boards**: Female board members data for companies in the Russell 3000 Index (9% firms - 30% sample)
   - Any female board member as of 2020

Correlation Back

Data: Data Firm Level - Correlation Across Female-Friendliness Measures

Back



Match Statistics

Data Source	Units	Unit Match Rate	Unit-Year Observations	Unit-Year Match Rate
A. Individuals – Cohorts 2000-2008, 2010-2018				
All 2-Year Full-Time MBAs	8509	1.000		
LinkedIn Profiles	6556	0.770	66514	1.000
LinkedIn Profiles (US Locality Only)	5098	0.599	52160	0.784
B. Firms – Cohorts 2000-2008, 2010-2018				
All Firms Listed on LinkedIn Profiles	6590	1.000	52160	1.000
LinkedIn Company Profiles	4397	0.667	44742	0.858
Glassdoor	2868	0.435	35493	0.680
InHerSight	1399	0.212	28168	0.540
FairyGodBoss	434	0.066	19305	0.370
Women On Board	587	0.089	16531	0.317
C. Administrative Data – Cohorts 2011-2018				
All 2-Year Full-Time MBAs	3425	1.000		
LinkedIn Profiles	2783	0.813	14875	1.000
LinkedIn Profiles (US Locality Only)	2097	0.612	10992	0.739
D. Survey Data – Cohorts 2000-2008, 2010-2015				
Full Sample	328	1.000	4246	1.000
2-Year Full-Time MBA	160	0.488	2195	0.517

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Summary Statistics – Demographics and Pre-MBA Background

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	All	Male	Female	Difference p-value in par.
A. Demographics				
Female	0.36			
	(0.48)			
Age	29.88	30.20	29.35	0.85**
	(1.98)	(2.06)	(1.73)	(0.00)
U.S. Citizen	0.65	0.62	0.70	-0.08**
	(0.48)	(0.49)	(0.46)	(0.00)
Race				
White	0.65	0.69	0.59	0.11**
	(0.48)	(0.46)	(0.49)	(0.00)
Asian	0.20	0.17	0.25	-0.07**
	(0.40)	(0.38)	(0.43)	(0.00)
Black / Hispanic	0.13	0.12	0.14	-0.03*
	(0.33)	(0.32)	(0.35)	(0.06)
Other	0.02	0.01	0.02	-0.01
	(0.13)	(0.12)	(0.15)	(0.12)
GMAT	716.45	720.76	709.04	11.72**
	(35.70)	(33.84)	(37.57)	(0.00)
B. Pre-MBA Background				
Pre-MBA Years of Experience	5.00	5.10	4.80	0.30**
	(1.95)	(1.98)	(1.87)	(0.00)
Any Management Experience	0.39	0.38	0.41	-0.02
	(0.49)	(0.49)	(0.49)	(0.13)
Any Senior-Level Management Experience	0.13	0.14	0.12	0.02*
	(0.34)	(0.35)	(0.32)	(0.05)
Average Total Compensation (Imp.) ('000s)	123.35	132.85	106.97	25.89**
	(120.74)	(134.42)	(90.29)	(0.00)

Summary Statistics – Academic and Career Outcomes

Back

	All	Male	Female	Difference p-value in par.
A. Academic Outcomes (Person Level)				
Overall GPA	3.52	3.54	3.48	0.06**
	(0.27)	(0.28)	(0.27)	(0.00)
Fraction Finance Classes	0.15	0.17	0.12	0.05**
	(0.11)	(0.11)	(0.08)	(0.00)
B. Career Outcomes (Person-Year Level)				
Any Management Role	0.75	0.75	0.75	0.00
	(0.43)	(0.43)	(0.44)	(0.47)
Senior-Level Manager	0.43	0.47	0.34	0.14**
	(0.50)	(0.50)	(0.47)	(0.00)
Employed	0.99	0.99	0.99	0.01**
	(0.09)	(0.07)	(0.12)	(0.00)
Cumulative Months of Nonemployment	0.57	0.40	0.91	-0.51**
	(3.56)	(2.77)	(4.76)	(0.00)
Base Compensation (Imp.) (000's)	133.00	141.53	117.37	24.16**
	(52.00)	(53.18)	(45.82)	(0.00)
Total Compensation (Imp.) (000's)	223.31	253.25	168.42	84.83**
	(315.35)	(371.37)	(155.85)	(0.00)
Male-Dominated Industry	0.59	0.64	0.48	0.15**
	(0.49)	(0.48)	(0.50)	(0.00)
Firm Size	5888.06	5706.69	6261.87	-555.18**
	(4453.50)	(4475.86)	(4383.98)	(0.00)
Female-Friendly Firm	0.74	0.74	0.74	0.00
	(0.44)	(0.44)	(0.44)	(0.90)
Top 100 MBA Firm	0.34	0.32	0.38	-0.06**
	(0.47)	(0.47)	(0.48)	(0.00)
P&L Role	0.60	0.60	0.60	0.00

Definition of Managers

Identify management positions based on keywords in job titles listed on CVs

Senior-Level Management Roles:[1]:

- **C-Suite**: Executives such as CEO, CFO, COO, responsible for company operations and profitability ("Chief X Officer", "President")
  - Avg 8.6 years post grad
- **Senior Vice Presidents**: Senior leaders with significant business unit or functional oversight ("SVP", "General Manager", "Managing Director")
  - Avg 7.8 years post grad
- **Vice President and Director**: Leaders responsible for activities/initiatives within a sub-business unit, or who report directly to SVP ("VP", "Director", "Regional Managers")
  - Avg 5.4 years post grad

Low-Level Management Roles:

- **Managers**: Leaders responsible for teams and discrete functions or operating units ("Manager", "Senior Product Manager")
  - Avg 3.8 years post grad

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[1] Definitions adapted from LeanIn.org and McKinsey & Company, 2020

Manager Responsibilities (Survey Data)

Summary Statistics by Job Title

	(1) Manager	(2) Director	(3) VP	(4) SVP	(5) C-Level
Firm Hierarchy (1=Lowest,5=Highest)	2.74	3.28	3.62	4.01	4.61
	(0.73)	(0.58)	(0.62)	(0.61)	(0.57)
Total Reports	14.40	26.77	137.78	296.06	554.73
	(42.57)	(66.08)	(355.20)	(986.17)	(1508.10)
Weekly Hours	53.43	51.93	59.31	55.87	56.04
	(11.74)	(11.73)	(10.83)	(14.09)	(10.30)
Total Compensation	185314.86	242184.96	344097.26	392922.02	345059.71
	(86019.66)	(96963.00)	(134468.00)	(132811.37)	(147157.58)
Observations	683	820	915	536	495

Notes: Sample includes graduating classes 2000-2015, excluding 2009.

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Explaining the Gender Differences in Senior Management

Gender Gap in Senior Management: Pooled Sample

	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.128***	-0.126***	-0.122***	-0.120***	-0.111***	-0.0959***
	(0.0138)	(0.0138)	(0.0138)	(0.0138)	(0.0136)	(0.0137)
Class x Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Pre-MBA Characteristics		Yes	Yes	Yes	Yes	Yes
Pre-MBA Industry FE			Yes	Yes	Yes	Yes
Cummulative Months of Career Break				Yes	Yes	Yes
Post-MBA Characteristics					Yes	Yes
Post-MBA Industry FE						Yes
Mean	0.490	0.490	0.490	0.490	0.490	0.490
Mean (Male)	0.543	0.543	0.543	0.543	0.543	0.543
R^2	0.219	0.224	0.229	0.230	0.251	0.272
N	27309	27309	27309	27309	27309	27309

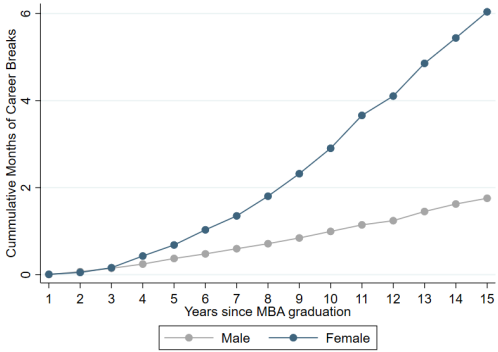
Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Gender Differences | Gender Differences - Survey | Additional Controls | 2011-2018 | Survey Data | Employment/Gap | Back

Gender Differences in Employment and Career Breaks

Employment

Total Months of Career Breaks



OLS Back

Gender Differences in Firm Characteristics (Senior Managers Only)

Back

	Males	Females	Difference
Female-Friendly Firm	0.70	0.73	-0.03**
	(0.46)	(0.44)	(0.00)
Male Dominated Industry	0.83	0.73	0.10**
	(0.38)	(0.44)	(0.00)
Firm Size	4903.25	4998.76	-95.51
	(4514.14)	(4465.30)	(0.17)
Total Employee Reviews	1491.55	1598.67	-107.12*
	(3596.17)	(3589.31)	(0.09)
Female Share of Employee Reviews	0.38	0.47	-0.08**
	(0.22)	(0.22)	(0.00)
Female Sr. Manager Share	0.30	0.37	-0.07**
	(0.21)	(0.23)	(0.00)
Average Firm Total Compensation (000's)	195.80	161.97	33.83
	(1785.55)	(569.85)	(0.22)
Average Firm Total Compensation for Senior Managers (000's)	961.81	321.62	640.20
	(26197.71)	(442.71)	(0.14)
Gender Gap in Firm Total Compensation (%)	0.15	0.10	0.06**
	(0.41)	(0.58)	(0.00)
Gender Gap in Firm Total Compensation for Senior Managers (%)	0.09	0.03	0.07**
	(1.20)	(0.71)	(0.00)
P&L Responsibilities	0.65	0.65	-0.00
	(0.48)	(0.48)	(1.00)
Observations	18333	6376	24709

Notes: Sample includes senior managers from graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Gender Differences in Manager Characteristics (Senior Managers Only – Survey Sample) Back

	Males	Females	Difference
Total Compensation	357466.80	279613.67	77853.12**
	(128130.32)	(128939.32)	(0.00)
Weekly Hours	56.99	54.02	2.98**
	(12.15)	(15.43)	(0.00)
Total Reports	164.42	35.65	128.77**
	(770.14)	(85.43)	(0.00)
Firm Size	18477.98	21300.13	-2822.14*
	(20510.81)	(19482.12)	(0.03)
P & L Responsibilties	0.53	0.29	0.25**
	(0.50)	(0.45)	(0.00)
Ambition to be CEO in 5 Years	0.45	0.12	0.34**
	(0.50)	(0.32)	(0.00)
Asked for Raise	0.43	0.44	-0.01
	(0.49)	(0.50)	(0.68)
Asked for Raise Successfully	1.00	0.93	0.07**
	(0.05)	(0.26)	(0.00)
Asked for Promotion	0.39	0.40	-0.01
	(0.49)	(0.49)	(0.77)
Asked for Promotion Successfully	0.93	0.99	-0.06**
	(0.26)	(0.09)	(0.01)
Observations	888	312	1200

Notes: Sample includes senior managers from graduating classes 2000-2015, excluding 2009. * $p < 0.10$, ** $p < 0.05$

Gender Gap in Senior Management: Pooled Sample (Includes Additional Firm Characteristics)

	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.114***	-0.111***	-0.110***	-0.110***	-0.118***	-0.110***
	(0.0249)	(0.0246)	(0.0245)	(0.0245)	(0.0240)	(0.0239)
Class x Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Pre-MBA Characteristics		Yes	Yes	Yes	Yes	Yes
Pre-MBA Industry FE			Yes	Yes	Yes	Yes
Cummulative Months of Career Break				Yes	Yes	Yes
Post-MBA Characteristics					Yes	Yes
Post-MBA Industry FE						Yes
Mean	0.419	0.419	0.419	0.419	0.419	0.419
Mean (Male)	0.473	0.473	0.473	0.473	0.473	0.473
R^2	0.314	0.329	0.335	0.335	0.382	0.395
N	6625	6625	6625	6625	6625	6625

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Gender Gap in Senior Management: Linked Administrative Sample, 2011-2018

	(1)	(2)	(3)	(4)	(5)	(6)	
Female	-0.0932***	-0.0867***	-0.0747***	-0.0758***	-0.0571**	-0.0473*	-0.
	(0.0254)	(0.0255)	(0.0256)	(0.0257)	(0.0242)	(0.0249)	(0.
Class x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Y
Pre-MBA Characteristics		Yes	Yes	Yes	Yes	Yes	Y
Pre-MBA Industry FE			Yes	Yes	Yes	Yes	Y
Cumulative Months of Career Break				Yes	Yes	Yes	Y
Post-MBA Characteristics					Yes	Yes	Y
Post-MBA Industry FE						Yes	Y
GMAT, % Finance Classes, Kellogg GPA							Y
Mean	0.316	0.316	0.316	0.316	0.316	0.316	0.
R^2	0.171	0.191	0.214	0.214	0.288	0.317	0.
N	4669	4669	4669	4669	4669	4669	4

Notes: Sample includes graduating classes 2011-2018. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Gender Gap in Senior Management: Pooled Sample (Survey Data)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Female	-0.132**	-0.133**	-0.126**	-0.109*	-0.123*	-0.118*	-0.104
	(0.0536)	(0.0536)	(0.0551)	(0.0582)	(0.0653)	(0.0656)	(0.0644)
Weekly Hours		0.000373	0.000323	0.000247	0.000294	-0.0000968	-0.000150
		(0.00214)	(0.00215)	(0.00213)	(0.00213)	(0.00211)	(0.00210)
Children			0.0130	0.0205	0.0188	0.0147	0.00477
			(0.0227)	(0.0241)	(0.0242)	(0.0246)	(0.0244)
Pre-School Child Care Responsibilities (%)				-0.00156	-0.00184	-0.00189	-0.00126
				(0.00161)	(0.00178)	(0.00179)	(0.00174)
Employment Gap after First Child (Weeks)					0.00171	0.00245	0.00166
					(0.00381)	(0.00384)	(0.00375)
Ambition to be CEO in 5 Years						0.0764	0.0773
						(0.0494)	(0.0491)
Class x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Experience and Industry Controls	No	No	No	No	No	No	Yes
Mean	0.693	0.693	0.693	0.693	0.693	0.693	0.693
R^2	0.108	0.108	0.109	0.111	0.112	0.117	0.144
N	3025	3025	3025	3025	3025	3025	3025

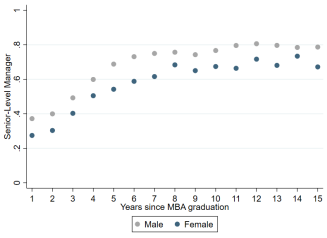
Notes: Sample includes graduating classes 2000-2015, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

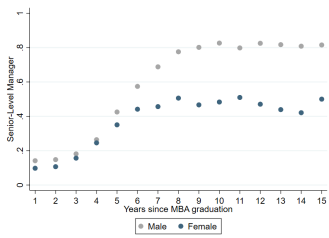
Senior-Level Management Positions by Industry

Back

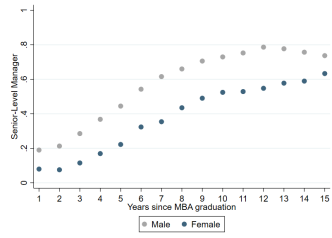
Finance



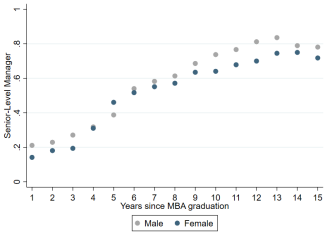
Consulting



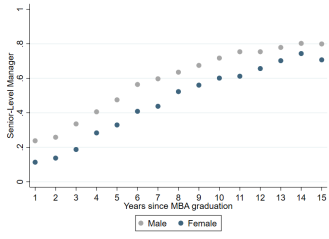
Consumer Goods



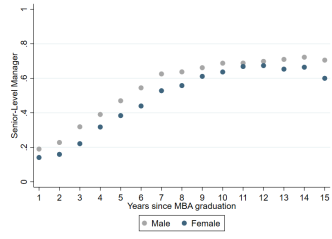
Healthcare



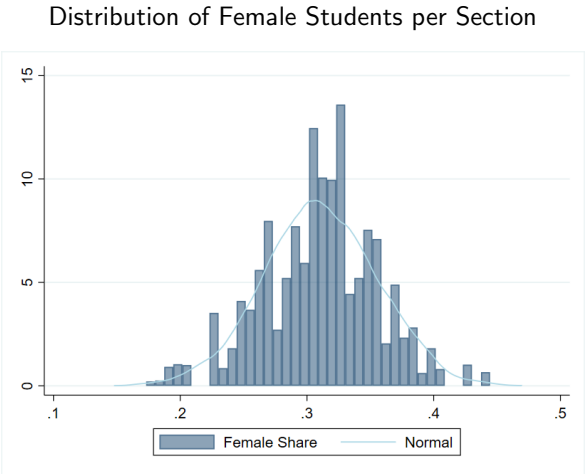
Tech



Other

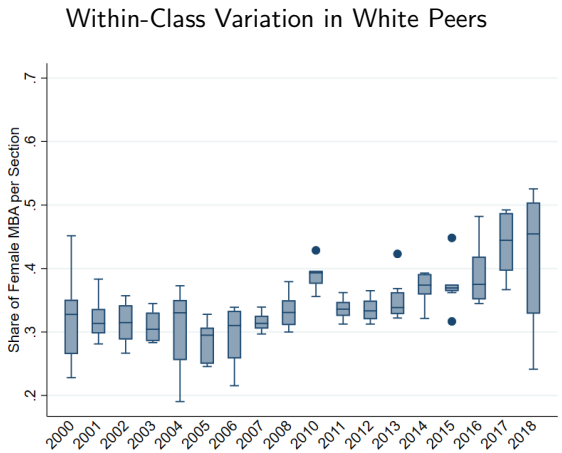


Female Share Distribution



Back - Setting Back - Identification

Share of Female Students



Back

List of Controls

We control for:

- Stratification variables
  - Attended top 20 US undergraduate university based on US News Ranking
- Individual-level characteristics that predict the probability of senior manager
  - Having any senior management experience
  - Having worked in finance
- Section-level characteristics that are correlated with female share
  - Share of section with management experience
  - Share of section with senior-level management experience
  - Share of section that worked in finance
  - Share of section that worked in consulting
  - Share of section that worked in other industries
  - Share of section that worked in a P&L role
  - Share of white students
  - Share of foreign students

Back

Identification of Peer Effects

Three main identification challenges in estimating the causal effect of peers (Manski 1993; Sacerdote 2001; Brock and Durlauf 2001; Moffitt 2001; de Paula 2017; Charles, Hurst, and Notowidigdo 2018; Caeyers and Fafchamps 2021):

- Selection bias: endogenous selection of peers
  - Exogenous variation in female share across MBA sections
- Unobserved correlated effects: contemporaneous shocks
  - Inclusion of class fixed effect
  - Treatment is a function of predetermined characteristics
- Reflection bias: individuals in the same peer group affect each other
  - Outcome as a function of individuals background characteristics and peers average background characteristics

Back

Identification Assumption and Randomization Test

- Distribution of female share across section as good as random
- Natural first test: correlation between student's gender and section female share
- Exclusion bias: systematic negative correlation between individual's characteristic and her peers
- Two randomization tests that account for this:
  - Guryan, Kroft, and Notowidigdo (2009) Test
  - Caeyers and Fafchamps (2021) Test

Back - Setting Back - Identification

Randomization Test

Back - Setting | Back - Identification | Additional

Following Guryan, Kroft, and Notowidigdo (2009):

$$x_{ikc} = \pi_1 + \pi_2 \bar{x}_{-i,k} + \pi_3 \bar{x}_{-i,c} + \delta_c + X_{ikc}\gamma' + u_{ikc} \quad (2)$$

Dependent variable: female dummy

	2000-2018	
	(1) No Controls	(2) With Controls
Section Female Share	0.00172	0.00158
	(0.0155)	(0.0155)
Class Female Share	-278.0***	-278.0***
	(2.750)	(2.752)
R^2	.9868657	.986868
N	5087	5087
Class FE	Yes	Yes

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Randomization Test

Back - Setting | Back - Identification | Additional

- No bias correction term in the estimating equation as in Guryan, Kroft, and Notowidigdo (2009)
- Caeyers and Fafchamps (2021) net out the asymptotic exclusion bias

$$\tilde{x}_{ikc} = \phi_1 + \phi_2 \bar{x}_{-ikc} + \delta_c + u_{ikc} \tag{3}$$

- $\tilde{x}_{ikc} = x_{ikc} - \rho \bar{x}_{-ikc}$
- ρ is the asymptotic limit of the bias

	2000-2018	
	(1) No Controls	(2) With Controls
Female share	-0.866	-0.931
	(0.635)	(0.655)
R^2	0.0188	0.00756
N	5087	4367
Class FE	Yes	Yes

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Randomization Test

Back - Setting Back - Identification

- Caeyers and Fafchamps (2021) net out the asymptotic exclusion bias

$$\tilde{x}_{ikc} = \phi_1 + \phi_2 \bar{x}_{-ikc} + \delta_c + u_{ikc} \tag{4}$$

- $\tilde{x}_{ikc} = x_{ikc} - \rho \bar{x}_{-ikc}$
- ρ is the asymptotic limit of the bias

	(1) Female Top 20 Undergrad	(2) Female Senior Manager	(3) Female Finance
Female share	0.211	0.142	-0.333
	(0.236)	(0.132)	(0.282)
R^2	0.0297	0.0124	0.0157
N	1758	1640	1546
Class FE	Yes	Yes	Yes

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Joint F-Test

Back - Setting Back - Identification

	(1) Female Share
Female	-0.00169 (0.0104)
Female & Attended Top-20 Undergrad	0.000905 (0.00250)
Female & Worked as Senior Manager	0.00118 (0.00276)
Female & Worked in Finance	-0.00321 (0.00224)
R^2	0.519
N	4365
F-test	0.559
Class FE	Yes

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Randomization Test

Back

Following Guryan, Kroft, and Notowidigdo (2009):

$$x_{ikc} = \pi_1 + \pi_2 \bar{x}_{-i,k} + \pi_3 \bar{x}_{-i,c} + \delta_c + X_{ikc}\gamma' + u_{ikc} \quad (5)$$

Dependent variable: female dummy

	2000-2018		2011-2018	
	(1) No Controls	(2) With Controls	(3) No Controls	(4) With Controls
Average(X), Section Peers	-0.554	-0.556	-0.385	-0.382
	(0.420)	(0.420)	(0.693)	(0.694)
Average(X), Class Peers	1.130***	1.098***	0.897*	0.864*
	(0.288)	(0.294)	(0.461)	(0.455)
R^2	.0072721	.008816	.0046117	.0071015
N	5087	5087	2090	2090
Class FE	Yes	Yes	Yes	Yes

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Randomization Test

Back

- No bias correction term in the estimating equation as in Guryan, Kroft, and Notowidigdo (2009)
- Caeyers and Fafchamps (2021) net out the asymptotic exclusion bias

$$\tilde{x}_{ikc} = \phi_1 + \phi_2 \bar{x}_{-ikc} + \delta_c + u_{ikc} \tag{6}$$

- $\tilde{x}_{ikc} = x_{ikc} - \rho \bar{x}_{-ikc}$
- ρ is the asymptotic limit of the bias

	2000-2018		2011-2018	
	(1) No Controls	(2) With Controls	(3) No Controls	(4) With Controls
Female share	-0.866	-0.931	-0.574	-0.587
	(0.635)	(0.655)	(0.917)	(0.875)
R^2	0.0188	0.00756	0.0145	0.00359
N	5087	4367	2090	1989
Class FE	Yes	Yes	Yes	Yes

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Probability of Holding a Senior Management Position

Back

Effect of Female Peers on Senior Management: Pooled Sample

	(1) Senior-Level Manager	(2) Senior-Level Manager	(3) Senior-Level Manager	(4) Senior-Level Manager
Female share × Male	0.0315	-0.0885	-0.0903	-0.102
	(0.115)	(0.0916)	(0.0917)	(0.0937)
Female share × Female	0.822***	0.674***	0.673***	0.681***
	(0.204)	(0.182)	(0.182)	(0.183)
p-value Male vs. Female	0.000	0.000	0.000	0.000
Female Mean	0.391	0.391	0.391	0.391
Male Mean	0.534	0.534	0.534	0.534
R^2	0.173	0.166	0.166	0.172
N	51440	51440	51440	51440
Class x Year x Female FE	Yes	Yes	Yes	Yes
Stratification Controls	Yes	No	Yes	Yes
Pre-MBA Characteristics Controls	Yes	No	No	Yes
Section-level Controls	Yes	No	No	No

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Section-Level Characteristics Correlated with Proportion of Female Peers

Section Characteristics	(1) Full Sample	(2) Mean for Above Median Female Share Sections	(3) Mean for Below Median Female Share Sections	(4) Coefficient	(5) *p*-value
Share of Section with ...					
Pre-MBA Years of Experience	5.024	5.062	4.982	0.001	0.975
Any Management Experience	0.405	0.413	0.396	0.114	0.015**
Any Senior-Level Management Experience	0.131	0.135	0.126	0.196	0.021**
Entrepreneur	0.024	0.024	0.024	-0.199	0.275
Finance	0.338	0.318	0.361	-0.145	0.021**
Consulting	0.173	0.178	0.168	-0.128	0.043**
Consumer Goods	0.117	0.125	0.109	0.141	0.063*
Healthcare	0.056	0.051	0.061	-0.062	0.582
Tech	0.201	0.193	0.209	-0.031	0.551
Other Industries	0.374	0.388	0.360	0.120	0.027**
Less than 200 Employees	0.223	0.220	0.226	-0.038	0.508
200-4,999 Employees	0.220	0.217	0.223	0.064	0.292
5000+ Employees	0.727	0.728	0.726	-0.108	0.062*
Worked in Female-Friendly Firm	0.746	0.736	0.757	-0.025	0.631
Worked in a P&L Role	0.429	0.446	0.410	0.148	0.003***
US Locality	0.772	0.775	0.770	0.157	0.034**
Top 20 Undergrad	0.249	0.251	0.247	0.098	0.227
White	0.433	0.439	0.427	0.267	0.007***
Foreign	0.308	0.295	0.321	-0.486	0.000***
Observations	148	77	71	148	148

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Number of Years in Senior Management Positions

Back

Effect of Female Peers on Number of Years in Senior Management Positions

	(1) Total Number of Years as Senior Manager Positions
Female share × Female	10.84***
	(2.880)
Female Mean	4.968
Male Mean	7.040
R^2	0.306
N	52094
Class x Year x Female FE	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Number of Years to First Senior Management Position

Back

Effect of Female Peers on Years to First Senior Management Position

	(1) Years to First Senior Manager Position	(2) Total Positions as Senior Manager
Female share × Female	-8.375***	1.362*
	(2.871)	(0.766)
Female Mean	4.940	1.126
Male Mean	4.359	1.562
R^2	0.088	0.314
N	3313	5087
Class x Year x Female FE	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Effect of Female Peers on External vs Internal Promotions

Back

Effect of Female Peers on External vs Internal Promotions

	Senior Manager	
	(1) External Promotion	(2) Internal Promotion
Female share × Female	0.591***	0.303**
	(0.153)	(0.152)
Female Mean	0.269	0.132
Male Mean	0.343	0.197
R^2	0.212	0.037
N	50506	50506
Class x Year x Female FE	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Probability of Becoming a Senior Manager – One Knot Linear Spline

$$y_{ikct} = \beta_0 + \beta_1 \overline{FemaleShare}_{-i,kct} + \beta_2 \overline{FemaleShare}_{-i,kct} \times I(\overline{FemaleShare}_{-i,kct} > Median) + + \sum_{j=0,1} (\delta_c + \phi_t + \omega_{ct}) \times I(Female_i = j) + X_{ikct}\gamma' + \epsilon_{ikct} \quad (7)$$

	(1) Senior-Level Manager
Female Share Below Median	0.939***
	(0.284)
Female Share Above Median	0.603
	(0.375)
p-value Below Median vs. Above Median	0.514
Female Mean	0.391
Male Mean	0.534
N	51440
Class x Year x Female FE	Yes

Back - Results Back - Conclusions

Probability of Becoming a Senior Manager – One Knot Linear Spline

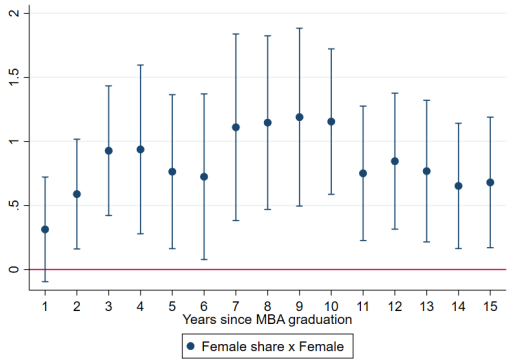
Back

$$y_{ikct} = \beta_0 + \beta_1 \overline{FemaleShare}_{-i,kct} + \beta_2 \overline{FemaleShare}_{-i,kct} \times I(\overline{FemaleShare}_{-i,kct} > Cutoff) + + \sum_{j=0,1} (\delta_c + \phi_t + \omega_{ct}) \times I(Female_i = j) + X_{ikct}\gamma' + \epsilon_{ikct} \quad (8)$$

	(1) Senior-Level Manager (Cutoff: 25th)	(2) Senior-Level Manager (Cutoff: Median)	(3) Senior-Level Manager (Cutoff: 75th)
Female Share Below Cutoff	0.913***	0.938***	0.926***
	(0.317)	(0.285)	(0.256)
Female Share Above Cutoff	0.781**	0.608	0.348
	(0.310)	(0.374)	(0.495)
p-value Below Cutoff vs. Above Cutoff	0.779	0.520	0.341
Female Mean	0.391	0.391	0.391
Male Mean	0.534	0.534	0.534
N	51440	51440	51440
Class x Year x Female FE	Yes	Yes	Yes

Probability of Ever Becoming a Senior Manager by Year Since Graduation

Effect of Female Peers on Ever Holding Senior-Level Management Positions



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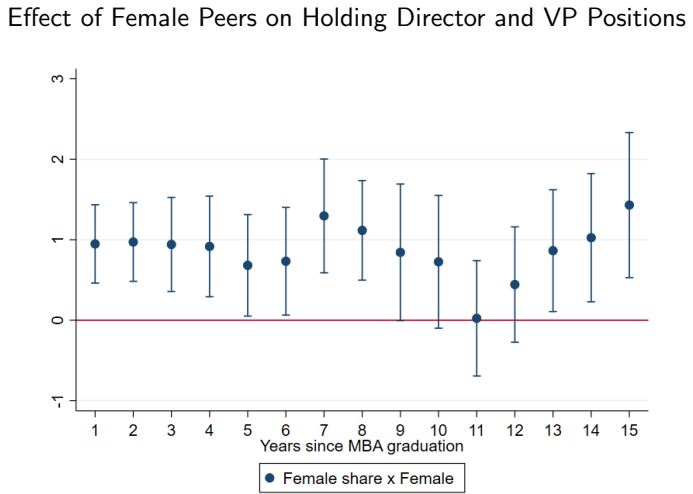
Probability of Holding a Director or VP Position by Year Since Graduation



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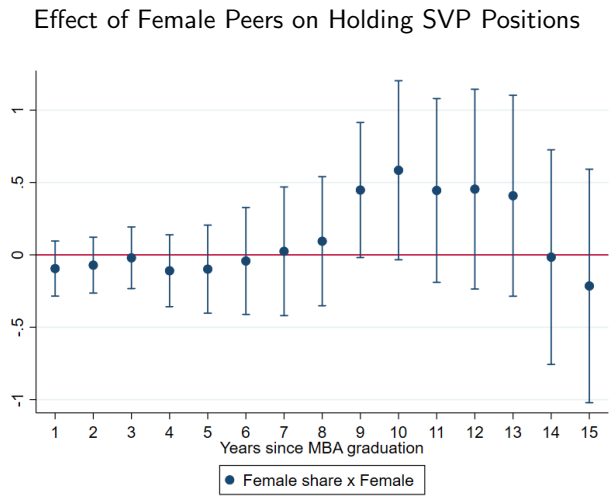
Probability of Holding an SVP Position by Year Since Graduation



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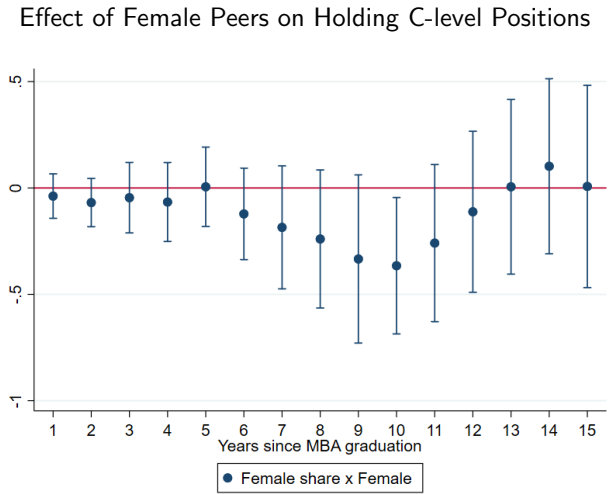
Probability of Holding an C-level Position by Year Since Graduation



Back

Robustness

Missing Data

	(1) Matched to LinkedIn Profile 2000-2010	(2) Matched to LinkedIn Profile (US Sample Only) 2000-2010	(3) Matched to LinkedIn Profile 2011-2018	(4) Matched to LinkedIn Profile (US Sample Only) 2011-2018	(5) Matched to LinkedIn Company Profile	(6) Matched to Glassdoor	(7) Matched to InHerSight
Female share × Female	-0.166	0.0976	-0.171	-0.0644	-0.135	-0.126	-0.215
	(0.227)	(0.344)	(0.128)	(0.109)	(0.0937)	(0.135)	(0.162)
R^2	0.0228	0.0104	0.553	0.342	0.256	0.121	0.0936
N	4512	4512	2888	2888	55984	55984	55984
Class FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	Yes	Yes	Yes
Class x Year x Female FE	No	No	No	No	Yes	Yes	Yes
Level of Observations	Person	Person	Person	Person	Person-Year	Person-Year	Person-Year

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

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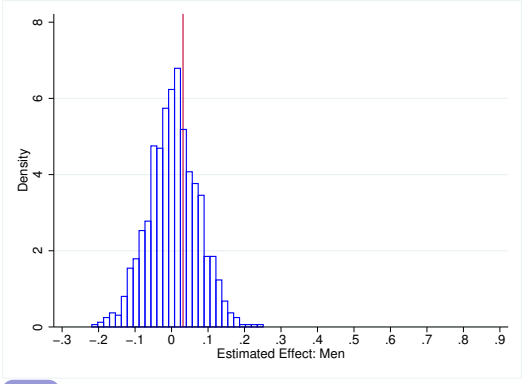
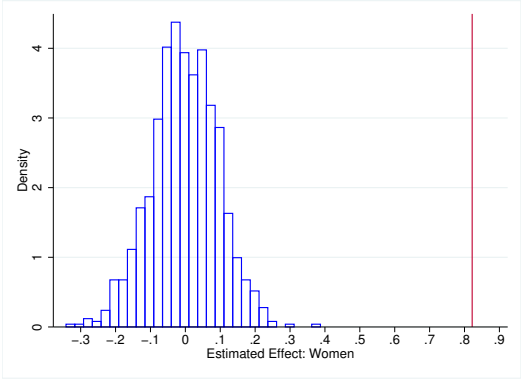
Robustness

Men



Women



Back

Robustness

Effect of Female Peers on Senior Management: Robustness

	(1) Year -4	(2) Year -3	(3) Year -2
Female share × Female	0.0616	-0.0902	0.0218
	(0.102)	(0.0831)	(0.0855)
Female Mean	0.075	0.095	0.106
Male Mean	0.083	0.110	0.123
R^2	0.572	0.764	0.868
N	4669	4710	4716

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

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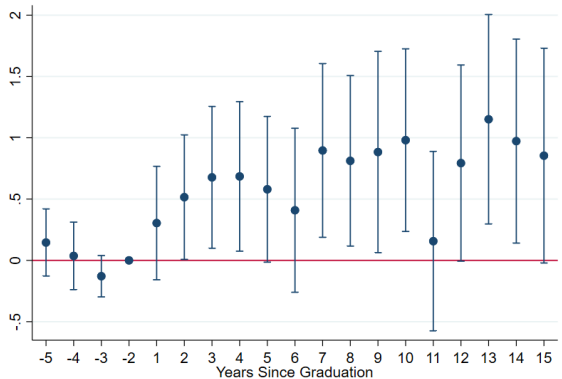
Robustness

Probability of Senior-Level Manager: Event Study



Notes:

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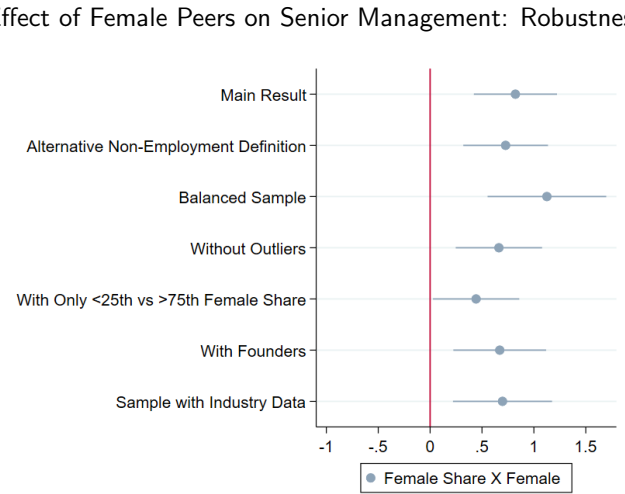
Robustness



Back Table

Robustness

Effect of Female Peers on Senior Management: Robustness

	Senior Manager							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Main Result	Alternative Non-Employment Definition	Balanced Sample	Without Outliers	With Only $\leq 25^{th}$ vs $\geq 75^{th}$ Female Share	With Founders	Sample with Industry Data	Sample with Female-Friend Firm Data
Female share × Female	0.822***	0.728***	1.125***	0.663**	0.443*	0.671***	0.698***	0.535*
	(0.204)	(0.208)	(0.292)	(0.260)	(0.244)	(0.228)	(0.244)	(0.295)
Female Mean	0.391	0.382	0.462	0.393	0.380	0.391	0.394	0.350
Male Mean	0.534	0.531	0.606	0.535	0.505	0.534	0.533	0.488
R^2	0.173	0.169	0.129	0.173	0.184	0.189	0.193	0.247
N	51440	52083	24340	50400	26054	51440	45389	28093
Class x Year x Female FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Robustness

Back

Effect of Female Peers on Senior Management: Clustering at Alternative Levels

	Senior Manager		
	(1) Clustered at Section Level (Main Result)	(2) Clustered at Class Level	(3) Two Way Clustering at Individual and Year Level
Female share × Female	0.822***	0.822***	0.822***
	(0.204)	(0.195)	(0.254)
Female Mean	0.391	0.391	0.391
Male Mean	0.534	0.534	0.534
R^2	0.173	0.173	0.173
N	51440	51440	51440
Class x Year x Female FE	Yes	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Robustness

Effect of Female Peers on Senior Management: Logit

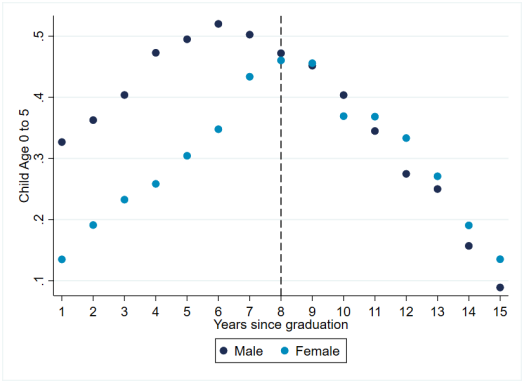
	(1) Senior-Level Manager (Linear)	(2) Senior-Level Manager (Logit)
Female share × Male	0.0315	0.831
	(0.115)	(1.408)
Female share × Female	0.822***	5.328**
	(0.204)	(2.504)
p-value Male vs. Female	0.000	0.088
Female Mean	0.391	0.391
Male Female	0.534	0.534
R^2	0.173	
N	51440	51429
Class x Year x Female FE	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

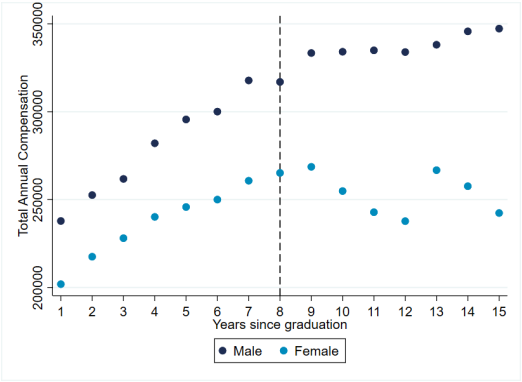
Back

Role of Female Peers in Female-Friendly Firms

Having a Young Child 0-5 (Survey Data)



Total Annual Compensation (Survey Data)



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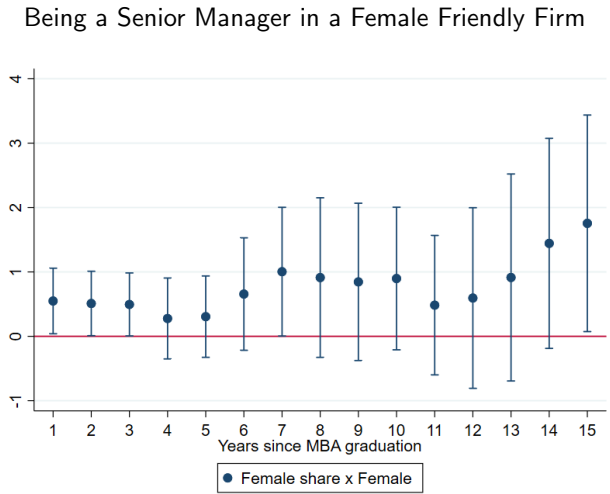
Role of Female Peers in Female-Friendly Firms



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MBA Academic Performance and Finance Classes

Effect of Female Peers on GPA during MBA

	(1) Overall GPA	(2) Fraction Finance Classes
Female share × Female	-0.103	-0.0246
	(0.112)	(0.0443)
Mean	3.519	0.154
SD	0.273	0.105
R^2	0.0666	0.156
N	3425	3425

Notes: Sample includes graduating classes 2011-2018. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Elective Classes

	(1) Accounting	(2) Finance	(3) Management	(4) Marketing	(5) Operations	(6) Strategy
Female share × Female	-0.0146	-0.0519	0.0410	0.0539	-0.0682	-0.0263
	(0.0192)	(0.0561)	(0.0431)	(0.0521)	(0.0473)	(0.0236)
Female Mean	0.033	0.129	0.057	0.198	0.053	0.041
Male Mean	0.044	0.203	0.070	0.142	0.061	0.032
R^2	0.096	0.182	0.335	0.133	0.047	0.532
N	3425	3425	3425	3425	3425	3425
Class x Year x Female FE	Yes	Yes	Yes	Yes	Yes	Yes

Back

Senior Managers and Labor Market Attachment

Senior Managers and Labor Force

	(1) Employed	(2) Cumulative Months In Non-Employment	(3) Senior-Level Manager (Unconditional)	(4) Senior-Level Manager (Conditional)
Female share × Female	-0.0154	4.502	0.822***	0.841***
	(0.0487)	(4.795)	(0.204)	(0.206)
Female Mean	0.985	1.707	0.391	0.403
Male Mean	0.995	0.633	0.534	0.542
R^2	0.025	0.077	0.173	0.183
N	49991	51482	51440	50428
Class x Year x Female FE	Yes	Yes	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back Labor Market Attachment

Entrepreneurship

Effect of Female Peers on Entrepreneurship

	(1) Entrepreneurs
Female share × Female	-0.184
	(0.111)
Female Mean	0.035
Male Mean	0.040
R^2	0.019
N	51451
Class x Year x Female FE	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Senior Managers and Any Manager

Senior Managers and Any Manager

	(1) Any-Level Manager
Female share × Female	0.229
	(0.182)
Female Mean	0.744
Male Mean	0.767
R^2	0.058
N	51440
Class x Year x Female FE	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Senior Manager and Firm Size

Effect of Female Peers on Senior Manager and Firm Size

	Senior Manager		
	(1) Firm with Less than 200 Employees	(2) Firm with 200 to 4,999 Employees	(3) Firm with More than 5,000 Employees
Female share × Female	0.171*	0.0258	0.495**
	(0.0878)	(0.161)	(0.219)
Female Mean	0.064	0.089	0.240
Male Mean	0.106	0.115	0.313
R^2	0.035	0.037	0.089
N	45169	45169	45169
Class x Year x Female FE	Yes	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Size Back

Firm Size

Effect of Female Peers on Firm Size

	(1) Number of Employees	(2) Less than 200 Employees	(3) 200 to 4,999 Employees	(4) More than 5,000 Employees
Female share × Female	-1673.1	-0.0449	-0.0246	0.0589
	(2178.0)	(0.164)	(0.176)	(0.246)
Female Mean	5975.751	0.158	0.147	0.678
Male Mean	5484.606	0.183	0.171	0.641
R^2	0.051	0.024	0.023	0.043
N	44759	45171	45171	45171
Class x Year x Female FE	Yes	Yes	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Senior Manager and Firm Compensation

Effect of Female Peers on Senior Manager and Firm Compensation

	Senior Manager			
	(1) Firm with Total Compensation Above Median	(2) Firm with Total Compensation Below Median	(3) Firm with Senior Total Compensation Above Median	(4) Firm with Senior Total Compensatio Below Median
Female share × Female	0.541	0.244	0.454	0.331*
	(0.494)	(0.286)	(0.442)	(0.195)
Female Mean	0.178	0.061	0.189	0.049
Male Mean	0.309	0.081	0.334	0.057
R^2	0.239	0.127	0.276	0.083
N	34459	34459	27582	27582
Class x Year x Female FE	Yes	Yes	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Compensation Back

Firm Compensation

Effect of Female Peers on Firm Compensation

	(1)	(2)	(3)	(4)	(5)	(6)
	Base Annual Compensation	Senior Manager Base Annual Compensation	Total Annual Compensation	Senior Manager Total Annual Compensation	Gender Gap in Total Annual Compensation	Gender Gap in Senior Manager Total Annual Compensation
Female share × Female	941.2	-38378.5	-609965.6	-8728249.4	0.0226	-0.868
	(13616.8)	(33415.0)	(417954.9)	(5688277.1)	(0.133)	(0.694)
Mean	99202.9	178602.9	229065.3	1129945.9	0.152	0.0619
SD	32366.5	47720.9	6779868.3	43643042.0	0.426	1.324
R^2	0.600	0.407	0.0146	0.0153	0.179	0.0498
N	34457	27584	34457	27584	28091	23074
Class x Year x Female FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE						

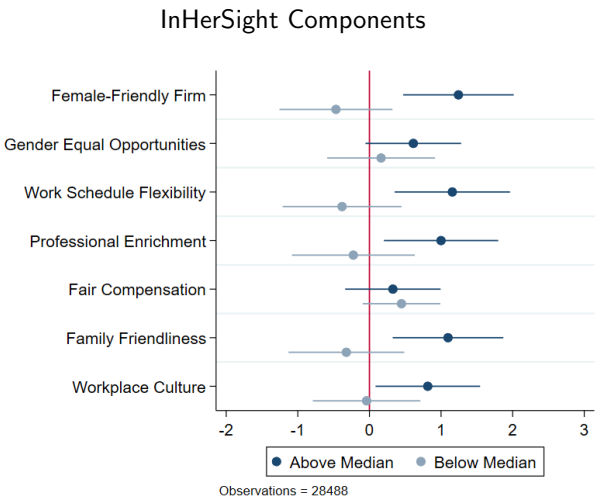
Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Role of Female Peers in Female-Friendly Firms

Components Overall Back

Role of Female Peers in Female-Friendly Firms



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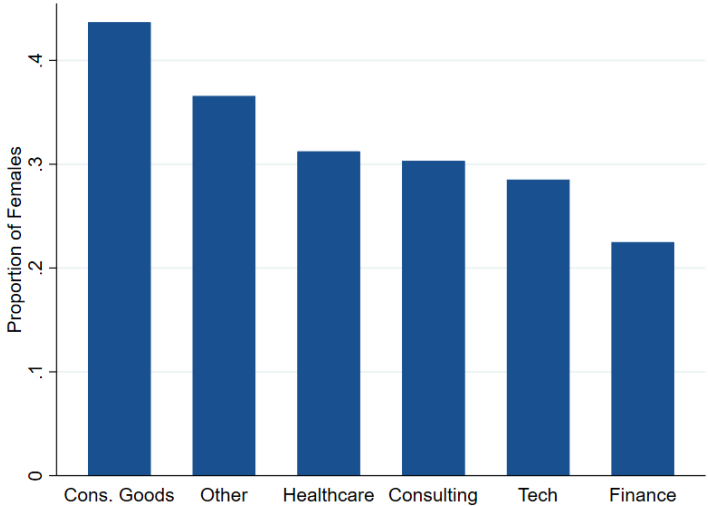
Female Representation by Industry



Back

Role of Female Peers in Male-Dominated Industries

Effect of Female Peers on Probability of Senior Management in Male and Female Dominated Industries

	Senior Manager		
	(1) Male Dominated Industries	(2) Female Dominated Industries	(3) Male Dominated Industries
Female share × Female	0.605**	-0.0269	0.243
	(0.243)	(0.107)	(0.260)
Female Mean	0.201	0.074	0.483
Male Mean	0.344	0.072	0.626
R^2	0.097	0.033	0.037
N	45389	45389	45391
Class x Year x Female FE	Yes	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

- Effects driven by higher **promotion rates**, not entries Back

Role of Female Peers in Male-Dominated Industries

Effect of Female Peers on Probability of Senior Management in Male and Female Dominated Industries

	Senior Manager	
	(1) Restricted to Male Dominated Industries	(2) Restricted to Female Dominated Industries
Female share × Female	0.821**	0.0821
	(0.373)	(0.371)
Female Mean	0.415	0.303
Male Mean	0.549	0.476
R^2	0.219	0.248
N	26339	8199
Class x Year x Female FE	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Heterogeneity by Male-Dominated Industries

	Industries					
	(1)	(2)	(3)	(4)	(5)	(6)
	Finance	Consulting	Consumer Goods	Healthcare	Technology	Other
Female share × Female	0.285	-0.215	-0.120	0.329**	0.0555	-0.175
	(0.208)	(0.159)	(0.191)	(0.146)	(0.261)	(0.254)
Female Mean	0.162	0.125	0.192	0.077	0.208	0.273
Male Mean	0.276	0.136	0.117	0.078	0.247	0.223
R^2	0.062	0.057	0.025	0.016	0.027	0.021
N	45391	45391	45391	45391	45391	45391
Class x Year x Female FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Role of Female Peers in Female-Friendly Firms

Effect of Female Peers on Probability of Senior Management in Female-Friendly Firms

	Senior Manager	
	(1) Female-Friendly Firms	(2) Non Female-Friendly Firms
Female share × Female	1.190***	-0.418
	(0.418)	(0.831)
Female Mean	0.303	0.252
Male Mean	0.439	0.407
R^2	0.314	0.504
N	20893	7612
Class x Year x Female FE	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Female-Friendly Firms and Male-Dominated Industries

Back

	Senior Manager (Restricted to Male Dominated Industries)	
	(1) Female-Friendly Firms	(2) Non Female-Friendly Firms
Female share × Female	1.407**	0.0990
	(0.562)	(0.405)
Female Mean	0.239	0.089
Male Mean	0.294	0.136
R^2	0.205	0.248
N	16887	16887
Class x Year x Female FE	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Role of Female Peers in Female-Friendly Firms

Working in a Female Friendly Firm (Restricted to Male Dominated Industries)

Back

Effect of Female Peers on Compensation

Imputed individual compensation using Glassdoor average compensation by firm, gender, and management level (senior manager, first-level manager, non-manager)

Effect of Female Peers on Compensation

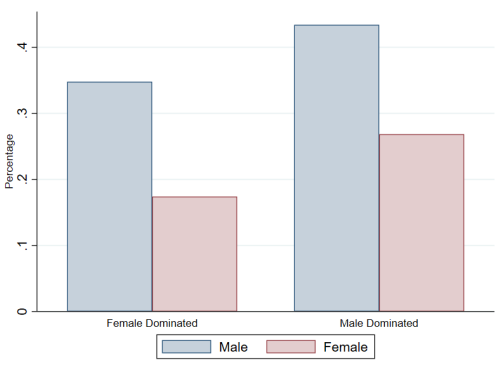
	(1) Total Annual Compensation (Imp.)	(2) Base Annual Compensation (Imp.)	(3) Non-Base Annual Compensation (Imp.)
Female share × Female	75.26	-11.32	86.57**
	(69.89)	(33.10)	(42.66)
Female Mean	117.482	90.861	26.621
Male Mean	178.865	117.206	61.658
R^2	0.173	0.263	0.105
N	26567	26567	26567
Class x Year x Female FE	Yes	Yes	Yes

Notes: Sample includes graduating classes 2000-2018, excluding 2009. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

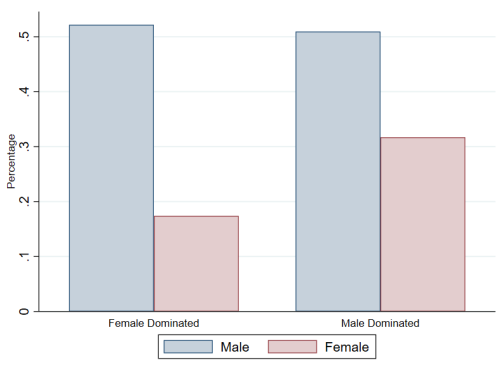
Back

Gender Differences in Ambition and Self-Confidence

Ambition to Become a CEO in 5 Years

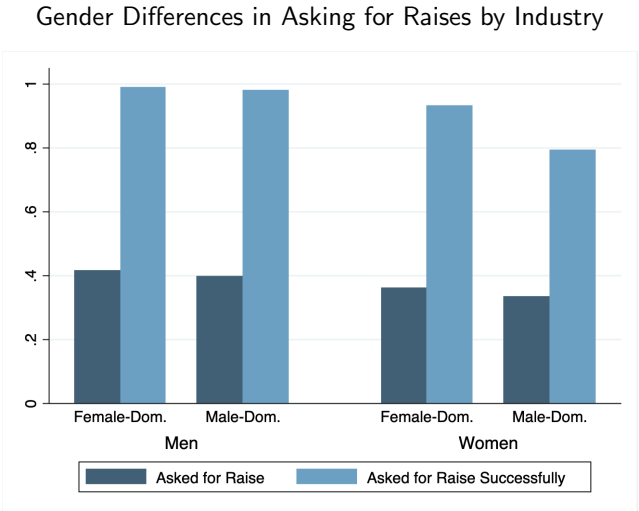


Ambition to Become a CEO in 10 Years



Back

Gender Differences in Asking for Raises



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Female-friendly Firms' Characteristics

Female-Friendly Firms versus Non-Female Friendly Firms

	Female-Friendly	Non-Female-Friendly	Difference
Number of Employees	4660.63	4813.23	152.61
	(4185.63)	(4159.29)	
Total Annual Compensation	147309.33	261589.84	114280.51
	(559259.52)	(3533693.33)	
Paid Maternity Leave	11.84	11.39	-0.45
	(6.31)	(7.57)	
% Female Board Members	30.68	26.16	-4.53**
	(10.36)	(10.28)	
Observations	786	601	1387

Back

Female-Friendly Firms: Examples

Female-Friendly

It is a company with a culture and benefits that fully support women [...] From industry leading family support benefits, strong women in leadership, [...] flexible culture.

- InHerSight.com overall rating: 3.8
- Maternity leave policy: 4.1
- Flexible work schedule: 3.8

Non Female-Friendly

Benefits and perks are decent. Culture is strange. [...] the 'good old boys' club with lots of ancient technology and attitudes prevails in some areas.

- InHerSight.com overall rating: 3
- Maternity leave policy: 3.4
- Flexible work schedule: 2.4

Back

First Post-MBA Placement

First Post-MBA Placement

	(1) Senior-Level Manager	(2) Male Dominated Industries	(3) Female-Friendly Firms	(4) Number of Employees	(5) Total Annula Compensation
Female share × Female	0.300	-0.132	0.458	38.34	-12191.2
	(0.211)	(0.257)	(0.810)	(3580.8)	(136151.1)
Female Mean	0.137	0.522	0.500	7018.639	154070
Male Mean	0.228	0.671	0.587	6398.706	163300
R^2	0.065	0.045	0.137	0.034	0.033
N	4972	4538	3239	4443	3580
Class x Year x Female FE	Yes	Yes	Yes	Yes	Yes

Back

Job Referrals and Information Transmission

- Literature on importance of job referrals and private career information for career outcomes

  (Granovetter 1973; Calvo-Armengol and Jackson 2004; Bolte, Immorlica, and Jackson 2021)

- Women may benefit from gender-specific private information
- Female peers can help women (esp. later in their careers):
  - identify and enter firms that support women in their career advancement
  - learn how to take advantage of female-friendly policies
    - i.e., maternity leave and flexible work schedules

Back

Suggestive Evidence of Job Referrals and Information Transmission

Probability of Working in Same Firm

- Female classmates more likely to work in same firm if from same section Referrals
  - Not true for men
- Effect driven by female-friendly firms Female-Friendly Firms

Suggestive Evidence of Job Referrals and Information Transmission

Probability of Working in Same Firm

- Female classmates more likely to work in same firm if from same section
  - Not true for men
- Effect driven by female-friendly firms

(Preliminary) Survey Descriptive Evidence

- Female MBAs *with children* are significantly more likely to respond
  - "Obtained top management position due to MBA peers"
  - "Secured jobs and promotions" through their MBA network

Suggestive Evidence of Job Referrals and Information Transmission

Probability of Working in Same Firm

- Female classmates more likely to work in same firm if from same section
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- Female MBAs *with children* are significantly more likely to respond
  - "Obtained top management position due to MBA peers"
  - "Secured jobs and promotions" through their MBA network

Results suggest that female MBAs rely on their MBA peer network to identify firms and attain promotions

- Suggestive of search and information frictions for female-friendly firms

Back

Referrals and Information Transmission

- Likelihood of working in same firm of a same-gender same-section classmate (Bayer et al. (2005), Schmutte (2015), Zimmerman (2019))
- Matched all MBAs to all classmates (same graduating year)

$$y_{i,j} = \alpha_1 SameSection_{i,j} \times BothMales_{i,j} + \alpha_2 SameSection_{i,j} \times BothFemales_{i,j} + \alpha_3 SameSection_{i,j} + \alpha_4 BothMales_{i,j} + \alpha_5 BothFemales_{i,j} + \delta_c + \phi_f + u_{i,j}$$

- $y_{i,j}$ takes value 1 if i and j in same firm
- *SameSection* takes value 1 if i and j in same section
- *BothMales* (*BothFemales*) takes value 1 if i and j are both men (women)
- δ_c class FE
- γ_f firm FE

Back

Referrals and Information Transmission

Probability of Entering Same Firm

	(1)
Same Section	0.000071
	(0.000264)
Same Section × Both Males	-0.000092
	(0.000333)
Same Section × Both Females	0.001260**
	(0.000640)
p-value Both Male vs. Both Female	.034460
Female Mean	.006549
Male Mean	.006420
R^2	.040879
N	11,991,054
Class x Year FE	Yes
Firm FE	Yes

- Female classmates more likely to work in same firm if from same section
- Effect driven by family-friendly firms Female-Friendly Firms Back

Referrals and Information Transmission

Back

Probability of Entering Same Firm

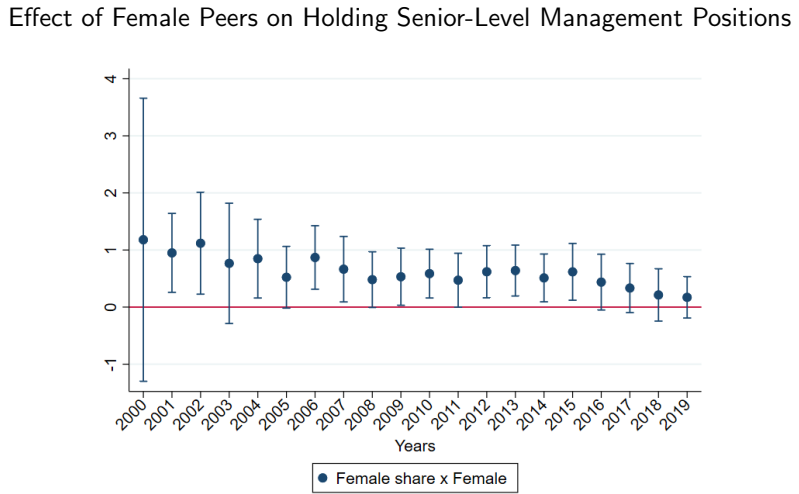
	(1)
Same Section × Both Males	0.000059
	(0.000473)
Same Section × Both Males × Female-Friendly Firm	-0.000215
	(0.000660)
Same Section × Mixed Gender	-0.000644
	(0.000487)
Same Section × Mixed Gender × Female-Friendly Firm	0.000428
	(0.000707)
Same Section × Both Females	-0.000118
	(0.000946)
Same Section × Both Females × Female-Friendly Firm	0.002810**
	(0.001430)
p-value Both Male vs. Both Female	.055300
Female Mean	.006549
Male Mean	.006420
R^2	.050743
N	7,623,733
Class x Year FE	Yes
Firm FE	Yes

How Should We Allocate Female Students?

- Non-linear effect of female peers Non-Linearity
- Back-of-the-envelope counterfactual exercise
  - Assuming no change in share of female students in MBA program in 2000-2018
  - Students reallocation: female students in sections with at least 34% women
    $\Rightarrow$ 2 to 5 additional female senior managers per graduating class (3.6% to 8.4% $\uparrow$)

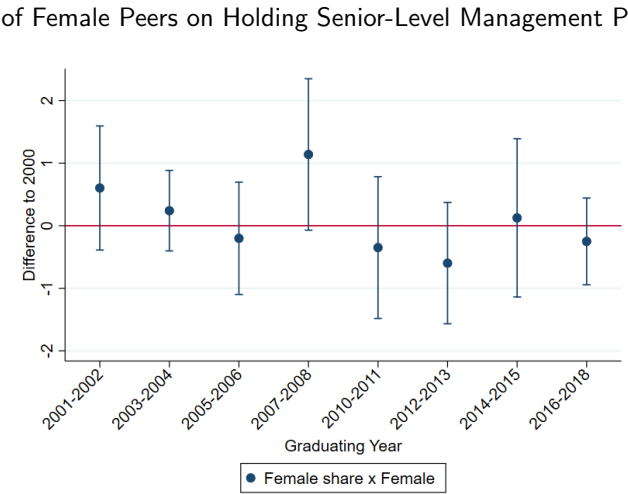
Back

Probability of Holding a Senior Manager Position by Year



Back

Probability of Holding a Senior Manager Position by Cohort



Back

Probability of Holding a Senior Manager Position by Year Since Graduation

Effect of Female Peers on Holding Senior-Level Management Positions

- 1SD (4pp) ↑ in female share ⇒ 7.7% increase in probability of becoming senior manager 15 years post graduation
- No effect on men Back

Heterogeneity on Pre-Characteristics

Back

Standardized Index: 3 pre-MBA characteristics that predict senior manager position

- Attended top 20 US undergraduate university based on US News Ranking
- Having any senior management experience
- Having worked in finance

Probability to Become Senior Manager

	Senior Manager
Female share × Female	0.587***
	(0.209)
Female share × Female × Quality Index Above Median	1.164**
	(0.543)
Mean	0.488
SD	0.500
R^2	0.0806
N	51440
Class x Year x Female FE	Yes

Female Share and Gender of the Faculty

Gender of the Faculty

	(1) Female Faculty	(2) Any Female Faculty
Female share × Female	0.111	0.450
	(0.225)	(0.871)
R^2	0.402	0.226
N	48	48
Class FE	Yes	Yes

Notes: Sample includes graduating classes 2011-2018. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Back

Mechanisms

Ruled-out mechanisms:

- Academic Outcomes GPA and Finance
- Initial Placement First Job

Back

Firm Benefits and Culture

"If I receive an offer, I'm comfortable talking to a [female] friend [...] I'd ask how maternity leave works or generally what the female community looks like and what the support is. **I probably wouldn't ask those questions [to a hiring manager] in the off chance the person uses this as a red flag.** *" (MBA 2015)*

Back

Work-life Balance and Related Policies

"I was one of the first people at an earlier stage company [...] to actually have kids [...] and so they had no idea what parental leave looks like [...]. I had to write up a document that scopes who to contact and how to leave my projects to other people. **I talked to several females from the [MBA] community who had already gone through this cycle, just to learn exactly how they left things.**" *(MBA 2015)*

Back

Identification of Peer Effects

Two main identification challenges in estimating causal effect of peers

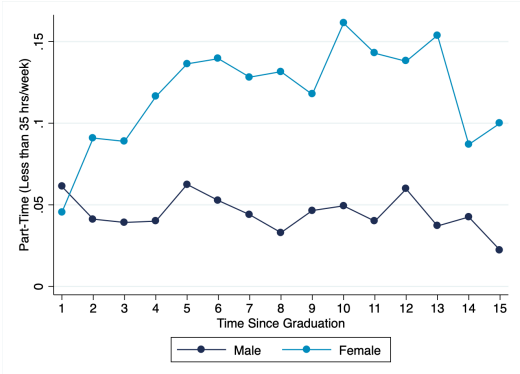
(Manski 1993; Sacerdote 2001; Brock and Durlauf 2001; Moffitt 2001; de Paula 2017; Charles, Hurst, and Notowidigdo 2018; Caeyers and Fafchamps 2021):

- Endogenous selection of peers:
  - Exogenous variation in female share across MBA sections Female Share Randomization
- Contemporaneous shocks:
  - Treatment is a function of predetermined characteristics Faculty

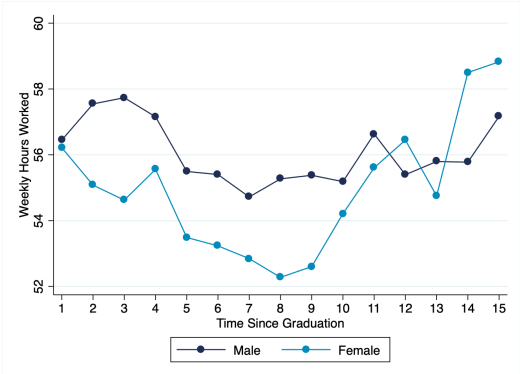
Back Challenges

Role of Female Peers in Female-Friendly Firms

Part-time (Survey Data)



Weekly Hours (Survey Data)



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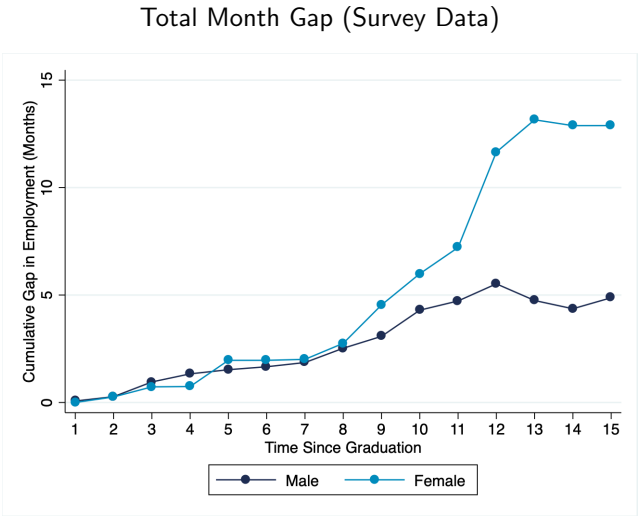
Role of Female Peers in Female-Friendly Firms



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Female-Friendly Firms

"If you are working at businesses that are more "female-friendly," it probably [...] allows more flexibility in the workforce, meaning, I have to leave every day at four to pick up my kid because that's my job at home, but I'll get back on. And the more that's normalized and celebrated, the more [women] can kind of lean in and not drop down [...] when they have kids." (MBA 2015)

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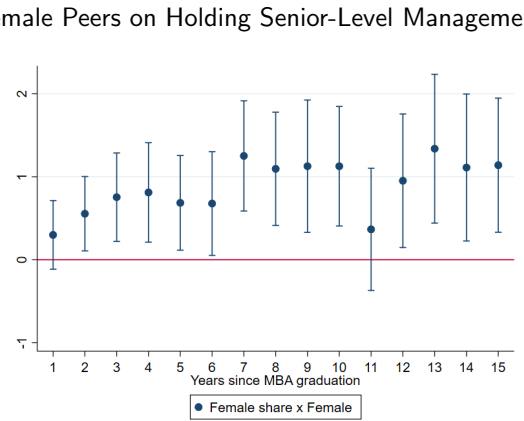
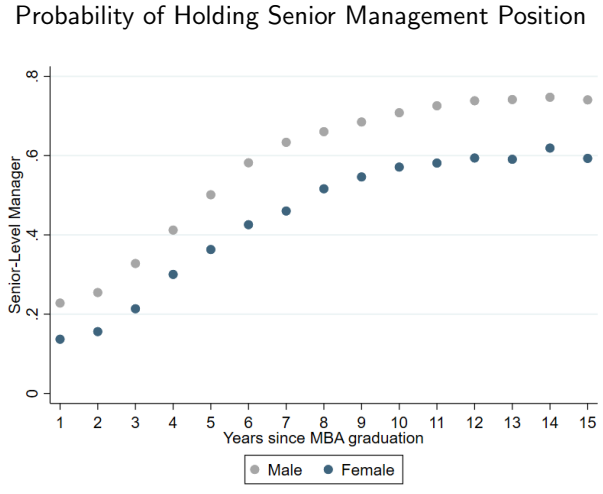
Probability of Holding a Senior Manager Position by Year Since Graduation



- 1SD (4pp) ↑ in female share ⇒ 7.7% increase in probability of becoming senior manager 15 years post graduation

Ever Senior Manager | Directors and VPs | SVPs | C-Suite | With Men | By Year | By Cohort | Back

Gender Gap in Senior Management Over Time Since Graduation

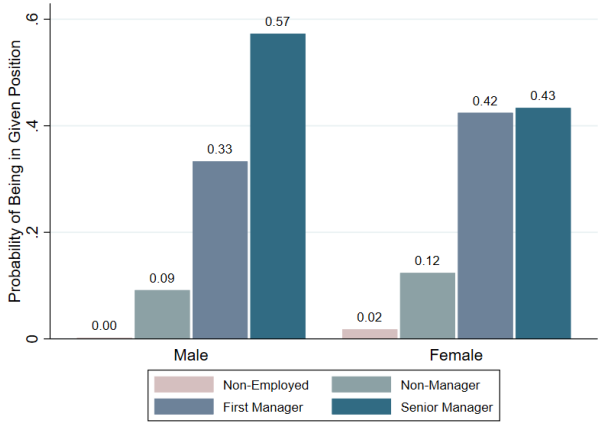


- Gender gap emerges immediately post MBA and persists over time

By Industry Back

Gender Gap in Promotion into Senior Management

5-Year Transition Probabilities for First-Level Managers



Female first-level managers:

- 26% less likely to transition into senior management
- 56% more likely to transition into non-employment or non-management

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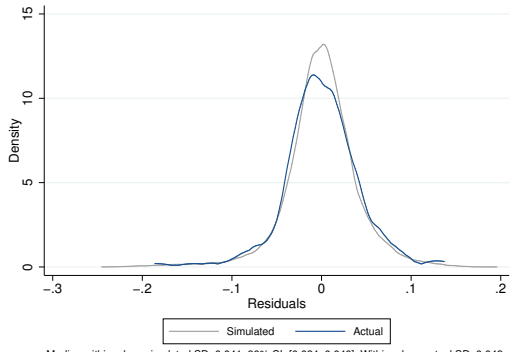
Share of Female Students



No significantly different distribution of residualized actual and simulated female share (Bietenbeck 2020)

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