

Early exposure to entrepreneurship and the creation of female entrepreneurs

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Abstract

We document the long-run effects of early exposure to entrepreneurship on men's and women's decision to become entrepreneurs by following one million Danish individuals from the age of 13 to the age of 40. We exploit within-school, across-cohort variation in adolescents' exposure to entrepreneurship, as measured by the share of their peers whose parents are entrepreneurs during the last years of compulsory schooling. We find that higher exposure during adolescence encourages early entry and tenure into entrepreneurship, and that this effect is driven by girls exposed to female peers with entrepreneur parents. For this group, the effect works via an increase in girls' enrolment into vocational schools and a decrease in their likelihood to hold low-pay jobs. Moreover, it disproportionately takes place in the same sectors in which businesses led by their former schoolmates' parents operated, highlighting the importance of the transmission of sector specific information. Finally, the increase in female entrepreneurship is associated with the creation of larger and longer surviving firms than both the average male-led and female-led firms. Taken together, our results suggest the presence of gender-specific barriers to entrepreneurship and point to early exposure as a way of lowering these barriers for women with sector-specific talent.

Introduction

Despite convergence in the occupational distribution of men and women, women continue to be highly **underrepresented in entrepreneurship** in OECD countries. Important both for **gender equality & aggregate productivity**:

- ↑ Women's representation in traditionally **male-dominated occupations** increases aggregate performance via better allocation of talent in the economy (Hsieh et al 2019)
- **Entrepreneurship** is key for innovation, job creation, growth (Deker et al 2014; Klenow and Li 2021) → costs of talent misallocation may be greater due to high social impact

Yet, surprisingly **little is known** about the factors shaping the gender gap in entrepreneurship and the extent to which this gap reflects **talent misallocation**

Research Question

What is the effect of early exposure on gender gaps and allocation of talent in entrepreneurship?

1. We study whether **exposure** to entrepreneurs during **adolescence** increases women's probability to start a business during adulthood using Danish registry data:
 - Exploit quasi-random variation within schools across cohorts in the share of **peers whose parents are entrepreneurs** during the last years of compulsory schooling (age 13-15)
 - Follow the entire education and career history of ≈ 1 million individuals until they are 40 years old
2. Establish whether gender gaps reflect **talent misallocation** by estimating the **private and social returns** of narrowing gender gaps in entrepreneurship through early exposure
 - Identify women's **counterfactual education and career** trajectories
 - **Compare the performance** of the business they create with that of existing firms

Contributions to the literature

1. **Emerging literature on misallocation of talent across occupations** (Hsieh et al 2019)
 - ⇒ Focus on entrepreneurship → particularly relevant for its **high social returns**
 - ⇒ First to **directly show** that gender gap in entrepreneurship reflect talent misallocation
2. **Role of social context and exposure for the creation of entrepreneurs**
 - Nanda & Sørensen 2010; Lerner & Malmendier 2013; Lindquist et al 2015; Guiso et al. 2021
 - Few studies on gender gaps - which study selective settings and no link to productivity
 - MBA Hacamo & Kleiner, 2020; **Startups** Rocha & Van Praag 2020; Markussen & Røed 2017
 - ⇒ **Minimize issue of gender differences in sorting & obtain estimates for full population**
3. **Role of nurture (vs nature) in shaping women's occupational choices**
 - Role of information/social norms/beliefs/role models (Bell et al. 2019; Bertrand 2011, 2020; Bursztyn et al. 2020; Del Carpio & Guadalupe 2021; Olivetti et al 2020; Porter & Serra 2020)
 - ⇒ Focus on both **equity & efficiency** considerations

Data and Sample

- Administrative data for the full population of individuals and firms in Denmark between 1980-2017
- **Exposure period**: the last three years of compulsory school (grades 7 to 9)
 - * Students are between 13 and 16 years old → **impressionable years**
 - * Compulsory education → **trajectories between boys and girls have not yet diverged**
- **Sample**: all children attending grade 7 between 1980 and 1992
 - * Observed until they are 35 to 40 years old → **long-run effects**
 - * 807,300 individuals; 1,702 schools; 13 cohorts; 275 municipalities
- **Entrepreneurs**: founders or top managers of newly created firms
 - * Conditional on having employees → **exclude the self-employed** (Levine & Rubinstein, 2017)

Empirical Strategy

- We measure **exposure** as the share of **school peers with parents** who are entrepreneurs
- Selection into school is not random ⇒ Exploit **within-school across-cohort** variation in share of peers with entrepreneur parents
- **Identifying assumption**: composition of parental occupation by cohort within-school is quasi-random → Parents unlikely to be aware of cohort-to-cohort variation in the percentage of students with entrepreneurs parents within a particular school

$$Y_{isc} = \beta_1 Entrepr_{-i,sc} + \beta_2 Parent_{isc} + \gamma_s + \gamma_c + \gamma_m \times \gamma_c + \theta X_{isc} + \eta Z_{sc} + \epsilon_{isc}$$

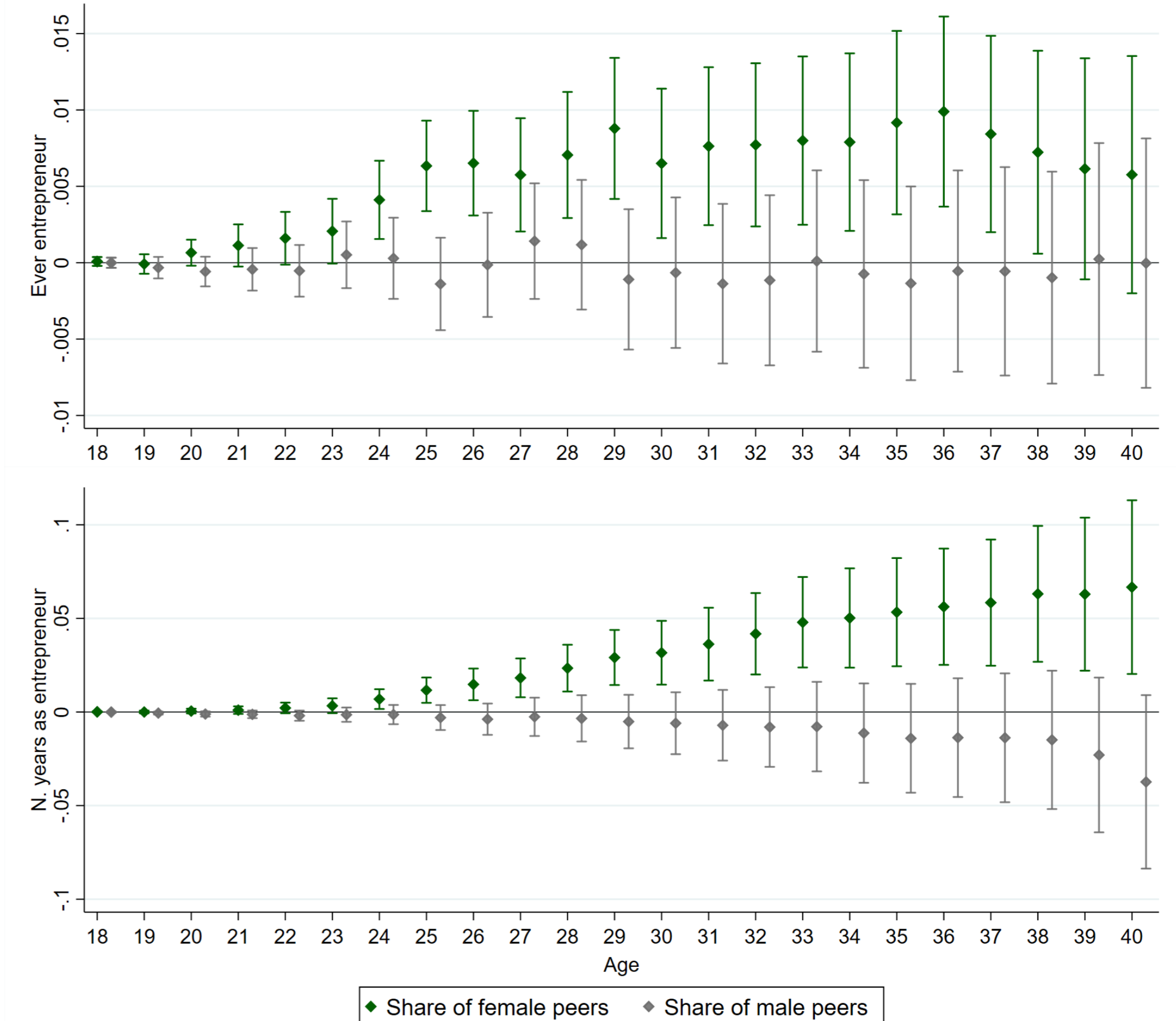
- * i, s and c represents individual, school and cohort
- * Y_{isc} : (i) indicator for ever being an entrepreneur; (ii) number of years spent in entrepreneurship
- * $Entrepr_{-i,sc}$: share of peers with at least one entrepreneur parent (**leave-one-out**)
- * $Parent_{isc}$ is equal to 1 if individual i has an entrepreneur parent
- * γ_s, γ_c and γ_m are school, cohort and municipality FE
- * X_{isc} and Z_{isc} are a set of individual and peers characteristics
- * Standard errors are clustered at the school level
- * Estimated separately for men and women

Results

1. Exposure increases entry and time spent into entrepreneurship for girls only

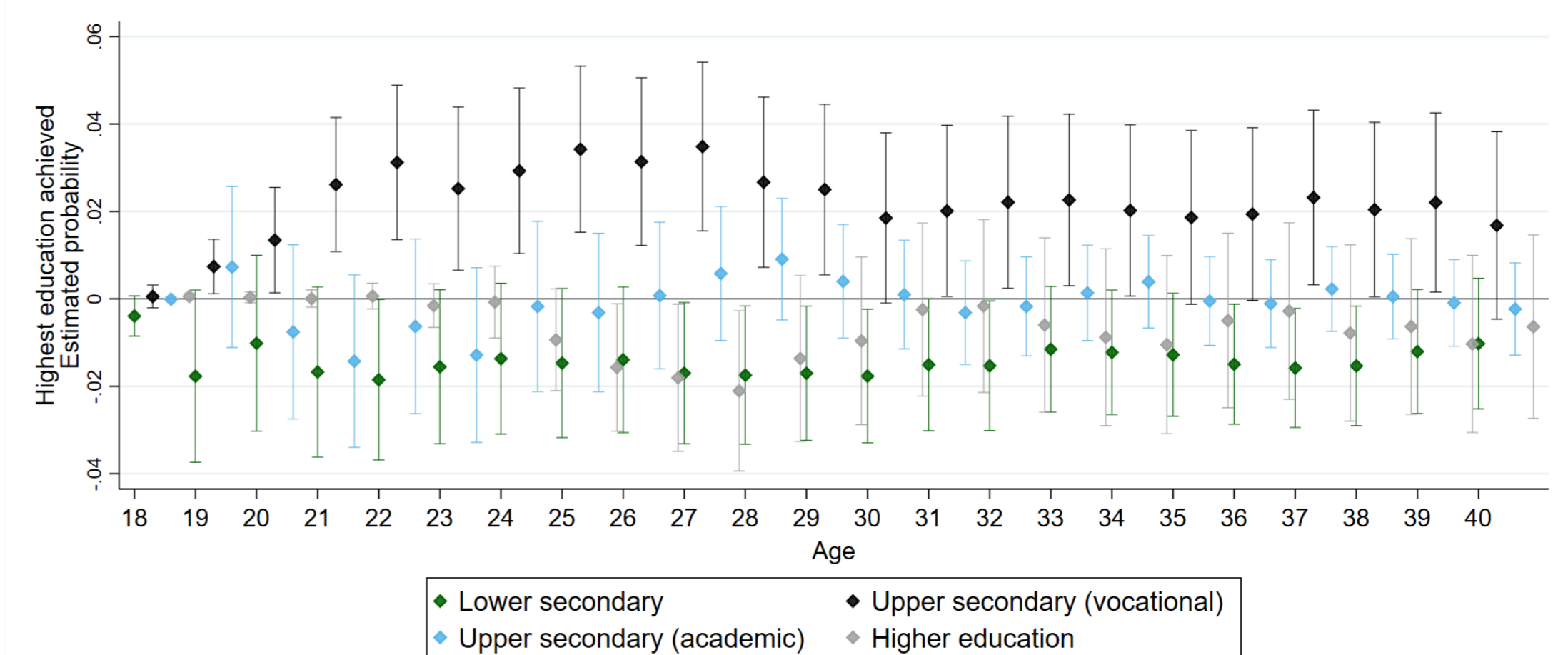
- 25th → 75th pct in share of peers ⇒ 4.5% (7.1%) ↑ in prob. of ever being entrepreneur (n. years in entrepreneurship) by age 30

2. Effect is driven entirely by girls exposed to entrepreneurship through their female peers



- 25th → 75th pct in share of **female** peers ⇒ 6.4% (10.2%) ↑ in prob. of ever being entrepreneur (n. years in entrepreneurship) at age 30
- Exposure effect is 7.3% of own parent effect (↑ prob by 88%)

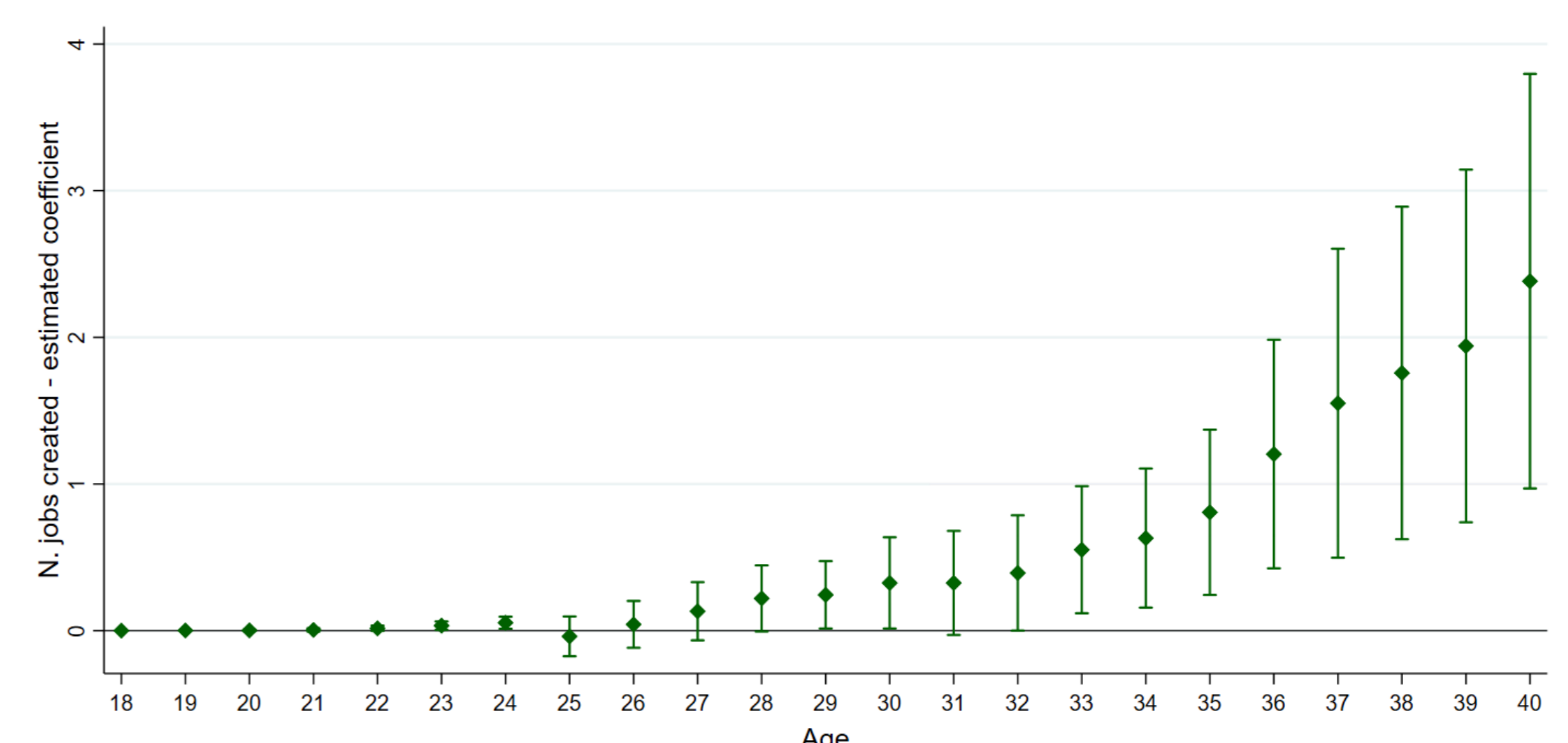
3. Early exposure to entrepreneurship improves women's educational and occupational paths



- Girls more likely to enrol & complete **vocational education** → path conducive to entrepreneurship
- Exposure ↓ time spent into unemployment and **low-pay employment**

4. Gender gaps in entrepreneurship reflect misallocation of talent

- ↑ in female entrepreneurship associated with creation of **larger and longer surviving businesses**
- Consistent with presence of **talent misallocation** in entrepreneurship
- **Cost of talent misallocation**: ↑ exposure from 25th to 75th pct would ↑ total n. jobs created by 4.8%



Plausible mechanisms

- Effects do not differ depending on the gender of peers' parents
 - ↳ **No strong support for role modeling**
- Effect disproportionately takes place in **same sectors** in which businesses led by their former schoolmates' parents operated - especially in **male-dominated** sectors
 - ↳ **Transmission of sector-specific knowledge**
- Results do not apply to **other male-dominated occupations** (architects/engineers)
 - ↳ **Transmission of information about intrinsic features of entrepreneurship**

Conclusions

- Early exposure helps narrowing **gender gaps** in entrepreneurship
 - * Increases girls' probability of entering and staying into entrepreneurship - no effect on boys
 - * Operates through transmission of sector- and entrepreneurship-specific information → Consistent with presence of **gender-specific entry barriers** to entrepreneurship
- Early exposure improves **allocation of talent** in entrepreneurship
 - * Marginal woman entering entrepreneurship is as/more productive than average firm → Consistent with talent misallocation negatively affecting aggregate welfare