

Gender Gaps in the Evaluation of Research:
Evidence from Submissions to
Economics Conferences

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### Motivation

- Improving gender equality in academia and research is at the center of public policy debate.
- □ The share of women in economics has grown.
- But it is still lower than in STEM fields.
- □ And it has stagnated in the last decade.

## This Paper

- Study gender differences in the evaluation of submissions to economics conferences.
- Conferences are an essential part of academic life.
   They are useful to:
  - ▷ receive feedback
  - improve presentation and communication skills
  - ▷ get to know fellow economists in the field
  - hear about the latest research
  - gain visibility
  - develop networking and future collaborations
- Participating in major conferences (Gorodnichenko, Pham, and Talavera, 2019):
  - positive link with publishing in high-quality journals
  - associated with improved metrics for other measures of academic success (citations or abstract views)

#### Introduction

Data
Main Analysis
Robustness
Heterogeneity
Mechanisms

### Evaluation of Research

- Conferences submissions are evaluated through blind peer-review, which is an established component of professional practice:
  - Experts assess the quality of scientific work produced by others in their field.
- Peer review in economics covers a wide spectrum of activities:
  - Threats to the impartiality of the review may be larger in conferences, where referees have to evaluate a large number of papers in a short period of time.
- Gender gaps in the evaluation of submissions to conferences may have substantial impact on the professional careers of economists.

#### Introduction

Main Analys Robustness Heterogeneit Mechanisms

### Previous Literature

- □ Gender differences in the evaluation of research:
  - No differences: Blank (1990), Abrevaya & Hammermesh (2012), Chari & Goldsmith-Pinkham (2017).
  - Some differences: Broder (1993), Wennerds & Wold (1997), Van der Lee & Ellemers (2015), Krawczyk & Smyk (2016), Hengel (2017), Card et al (2018).
- $\hfill\Box$  Gender differences in other aspects of the profession:
  - Evaluation of teaching: Boring (2017), MacNell et al (2015), Mengel et al (2018).
  - Hiring and promotions committees: Bagues et al (2017), De Paola & Scoppa (2015).
  - ▶ Women are given less credit for papers written with men: Sarsons (2017).
  - ▶ People in academia judge women and men differently in a popular online discussion forum: Wu (2018).

#### Introduction

Main Analysi Robustness Heterogeneity Mechanisms

#### Data

- □ Data from three conferences:
  - European Economic Association Annual Congress (EEA).
  - Simposio de la Asociación Española de Economía (SAEe).
  - Spring Meeting of Young Economists (SMYE).
- □ Some of the largest in the world.
  - ▷ In 2017 they hosted approximately 1,000, 350, and 150 presentations, respectively.
- Our dataset covers all submissions from 2015–2017 for the EEA, 2012–2017 for the SAEe, and 2017 for the SMYE, adding up to 9,342 submissions.

Summary Statistics

Gender Gaps in the Evaluation of Research

# **Empirical Analysis**

#### Data Main Analysis Robustness

Heterogeneit Mechanisms Conclusion

#### **Evaluation Process:**

- In each edition of a conference, a program chair or board is responsible for the selection of papers.
- The board assigns papers to referees based on field. On average:
  - ▶ 7.7 papers per referee.
  - ▷ 1.5 referees per paper.
- □ Referees grade papers.
- □ The program chair makes the final selection.

### Probability of acceptance:

$$\mathsf{Accepted}_{prcy} = \beta \mathsf{Sh.} \ \ \mathsf{Male} \ \ \mathsf{Authors}_{prcy} + \alpha_{cy} + \epsilon_{prcy}.$$

# **Empirical Analysis**

## **Evaluation Process:**

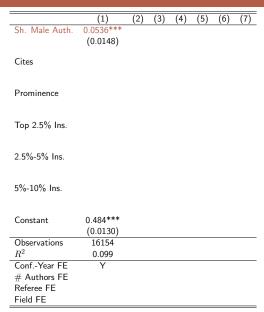
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  - ▶ 7.7 papers per referee.
  - ▷ 1.5 referees per paper.
- □ Referees grade papers.
- □ The program chair makes the final selection.

### Probability of acceptance:

$$\mathsf{Accepted}_{prcy} = \beta \mathsf{Sh}. \ \mathsf{Male Authors}_{prcy} + \alpha_{cy} + \epsilon_{prcy}.$$

Introduction
Data
Main Analysis
Robustness
Heterogeneity

### Results



### Number of Authors

- □ It has been documented that women single-author more than men (Boschini & Sjogren, 2007).
- □ We find that this is also the case in our context.
  - ▶ The mean share of male authors in single-authored papers is .66
  - ▶ The mean share of male authors in multiple-authored papers is .71
- If referees are harsher evaluating single-authored papers, this may make female-authored papers less likely to be accepted.
- To account for this possibility, we add number-ofauthors fixed effects.

## Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sh. Male Auth.	0.0536***	0.0463***					
	(0.0148)	(0.0148)					

Cites

Prominence

Top 2.5% Ins.

2.5%-5% Ins.

5%-10% Ins.

Constant	0.484***	0.489***
	(0.0130)	(0.0130)
	(0.0130)	(0.0130)
Observations	16154	16154
$R^2$	0.099	0.107
6 6 1/ 55		
ConfYear FE	Y	Y
# Authors FE		Υ
Referee FE		
Field FE		

## Non-random Assignment of Papers to Referees

- Data
  Main Analysis
  Robustness
  Heterogeneity
  Mechanisms
  Conclusion
- It might be that female-authored papers are assigned to harsher referees.
- To account for this possibility, we add referee fixed effects.

## Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sh. Male Auth.	0.0536***	0.0463***	0.0491***				
	(0.0148)	(0.0148)	(0.0147)				

Cites

Prominence

Top 2.5% Ins.

2.5%-5% Ins.

5%-10% Ins.

Constant	0.484*** (0.0130)	0.489*** (0.0130)	0.487*** (0.0109)	
Observations	16154	16154	16154	
$R^2$	0.099	0.107	0.166	
ConfYear FE	Y	Υ	Y	
# Authors FE		Υ	Υ	
Referee FE			Υ	
Field FE				

### Fields

- □ Women are relatively more represented in some fields than others (Dolado et al 2012).
- If it is relatively harder to be accepted in more feminized fields (for example, because there are relatively fewer slots at conferences), then this might explain the gender gap.
- To take this issue into account, we add fifteen field fixed effects.
- Note, however, that the referee fixed effects most likely already account for this, as papers are assigned to referees, to a large extent, by topic.

## Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sh. Male Auth.	0.0536***	0.0463***	0.0491***	0.0471***			
	(0.0148)	(0.0148)	(0.0147)	(0.0148)			

Cites

Prominence

Top 2.5% Ins.

2.5%-5% Ins.

5%-10% Ins.

Constant	0.484*** (0.0130)	0.489*** (0.0130)	0.487*** (0.0109)	0.478*** (0.0231)	
Observations	16154	16154	16154	16154	
$R^2$	0.099	0.107	0.166	0.171	
ConfYear FE	Y	Υ	Υ	Y	
# Authors FE		Υ	Υ	Υ	
Referee FE			Υ	Υ	
Field FE				Υ	

## Cites of the Paper

- If women submit papers of lower quality than men, this might explain why the probability of acceptance of female-authored papers is lower.
- To control for quality, we add the cites of the paper as a control variable.
  - We have collected Google Scholar cites of the submitted papers.
  - Our variable Cites is defined as the asinh of the number of cites of the paper at the submission year.
  - Measuring the cites at the submission year ensures that this variable cannot be a "bad control".

## Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sh. Male Auth.	0.0536***	0.0463***	0.0491***	0.0471***	0.0441***		
	(0.0148)	(0.0148)	(0.0147)	(0.0148)	(0.0148)		
Cites					0.0921***		
					(0.0127)		

Prominence

Top 2.5% Ins.

2.5%-5% Ins.

5%-10% Ins.

Constant	0.484*** (0.0130)	0.489*** (0.0130)	0.487*** (0.0109)	0.478*** (0.0231)	0.471*** (0.0232)	
Observations	16154	16154	16154	16154	16154	
$R^2$	0.099	0.107	0.166	0.171	0.177	
ConfYear FE	Y	Υ	Y	Υ	Y	
# Authors FE		Υ	Υ	Υ	Υ	
Referee FE			Υ	Υ	Υ	
Field FE				Υ	Υ	

### Prominence of the Authors

- Introduction Data Main Analysis Robustness Heterogeneity Mechanisms
- As an additional, indirect, measure of quality, we consider the publication record of the authors in the years before the conference.
- Our main variable is the number of publications in a set of 35 high-impact journals in the 5 years prior to the submission year.
- For multiple-authored papers, we consider the number of publications of the most prolific co-author.
- □ For robustness, we also consider:
  - ▶ The number of publications in *top-5* journals.
  - The number of publications in 10 years before submission.

## Results

-	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sh. Male Auth.	0.0536***	0.0463***	0.0491***	0.0471***	0.0441***	0.0323**	(-)
	(0.0148)	(0.0148)	(0.0147)	(0.0148)	(0.0148)	(0.0148)	
Cites	, ,	, ,	, ,	, ,	0.0921*** (0.0127)	0.0791*** (0.0125)	
Prominence						0.0428*** (0.00348)	
Top 2.5% Ins.							
2.5%-5% Ins.							
5%-10% Ins.							
Constant	0.484*** (0.0130)	0.489*** (0.0130)	0.487*** (0.0109)	0.478*** (0.0231)	0.471*** (0.0232)	0.451*** (0.0233)	
Observations	16154	16154	16154	16154	16154	16154	
$R^2$	0.099	0.107	0.166	0.171	0.177	0.195	
ConfYear FE	Υ	Υ	Υ	Υ	Υ	Υ	
# Authors FE		Υ	Υ	Υ	Υ	Υ	
Referee FE			Υ	Υ	Υ	Υ	
Field FE				Υ	Υ	Υ	

### Affiliation of the Authors

- Introduction
  Data
  Main Analysis
  Robustness
  Heterogeneity
  Mechanisms
- If women are more likely to work at lower-ranked institutions, and referees are harsher against authors in those institutions, this could explain the gender gap.
- To account for this possibility, we add institutionquality dummies as controls (IDEAS/Repec ranking of institutions):
  - ▶ top-200 institutions (approx. 2.5% of institutions),
  - ▶ between the top 200 and the top 5%,
  - ▶ between the top 5% and the top 10%,
  - ▶ below the top 10%.
- For multiple-authored papers, we consider the affiliation of the author in the highest-ranked institution.

20

## Results

Sh. Male Auth.         0.0536*** (0.0148)         0.0463*** (0.0148)         0.0491*** (0.0148)         0.0471*** (0.0148)         0.0441*** (0.0148)         0.0323** (0.0143)           Cites         0.091*** (0.0127)         0.0791*** (0.0125)         0.0634*** (0.0127)           Prominence         0.0428*** (0.0127)         0.0428*** (0.0122)           Prominence         0.0428*** (0.00348)         0.0350*** (0.00348)           Top 2.5% Ins.         0.278*** (0.0170)           2.5%-5% Ins.         0.168*** (0.0193)           Constant         0.484*** (0.489*** (0.0193)         0.487*** (0.0193)         0.471*** (0.0193)           Constant         0.484*** (0.0130) (0.0130) (0.0109) (0.0231) (0.0232) (0.0232) (0.0233) (0.0264)           Observations         16154 16		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cites         0.0921*** (0.0127)         0.0791*** (0.0125)         0.0634*** (0.0122)           Prominence         0.0428*** (0.0034)         0.0350*** (0.0034)           Top 2.5% Ins.         0.278*** (0.0170)           2.5%-5% Ins.         0.168*** (0.0170)           5%-10% Ins.         0.484*** (0.0130)         0.487*** (0.0130)         0.471*** (0.0130)         0.451*** (0.0185)           Constant (0.0130) (0.0130) (0.0130) (0.0109) (0.0231) (0.0232) (0.0232) (0.0233) (0.0264)         0.275*** (0.0154)         0.275*** (0.0154)           Observations (2.24) (0.099) (0.0100) (0.0166) (0.0171) (0.0177) (0.0195) (0.0234)         0.234         0.275*** (0.0234)           ConfYear FE (2.24) (2.	Sh. Male Auth.	0.0536***	0.0463***	0.0491***	0.0471***	0.0441***	0.0323**	0.0316**
Prominence		(0.0148)	(0.0148)	(0.0147)	(0.0148)	(0.0148)	(0.0148)	(0.0143)
Prominence (0.0127) (0.0125) (0.0122)  Prominence (0.00348) (0.0034)  Top 2.5% Ins. (0.00348) (0.0034)  2.5%-5% Ins. (0.0170)  2.5%-5% Ins. (0.0185)  Constant (0.484*** 0.489*** 0.487*** 0.478*** 0.471*** (0.0185)  Constant (0.0130) (0.0130) (0.0109) (0.0231) (0.0232) (0.0233) (0.0264)  Observations (0.099 0.107 0.166 0.171 0.177 0.195 0.234)  ConfYear FE Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	C:+					0.0001***	0.0701***	0.0624***
Prominence 0.0428*** 0.0350*** (0.00334)  Top 2.5% Ins. 0.278*** (0.0170)  2.5%-5% Ins. 0.168*** (0.0193)  5%-10% Ins. 0.484*** 0.489*** 0.487*** 0.471*** 0.451*** 0.0185)  Constant 0.484*** 0.489*** 0.487*** 0.478*** 0.471*** 0.451*** 0.275*** (0.0130) (0.0130) (0.0109) (0.0231) (0.0232) (0.0233) (0.0264)  Observations 16154 16155 16154 16155 16154 16155 16	Cites							
Top 2.5% Ins. $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$						(0.0127)	(0.0125)	(0.0122)
Top 2.5% Ins. $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Prominence						0.0428***	0.0350***
Top 2.5% Ins.  0.278*** (0.0170)  2.5%-5% Ins.  0.168*** (0.0193)  5%-10% Ins.  Constant 0.484*** 0.489*** 0.487*** 0.471*** 0.451*** 0.0185)  Constant 0.00130) 0.0130) 0.0109) 0.0231) 0.0232) 0.0233) 0.0264)  Observations 16154								
$\begin{array}{cccccccccccccccccccccccccccccccccccc$							(	()
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Top 2.5% Ins.							0.278***
Constant								(0.0170)
Constant	0 =0/ =0/							0.450444
5%-10% Ins.         0.0977*** (0.0185)           Constant (0.0130)         0.484*** (0.0130) (0.0130) (0.0109) (0.0231) (0.0232) (0.0233) (0.0264)           Observations R²         16154 (0.099) (0.017) (0.166 (0.171) (0.177) (0.195) (0.234)           ConfYear FE         Y	2.5%-5% Ins.							
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$								(0.0193)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	5%-10% Ins							0.0977***
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	370 1070 III3.							
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$								(0.0103)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Constant	0.484***	0.489***	0.487***	0.478***	0.471***	0.451***	0.275***
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		(0.0130)	(0.0130)	(0.0109)	(0.0231)	(0.0232)	(0.0233)	(0.0264)
ConfYear FE         Y         Y         Y         Y         Y         Y           # Authors FE         Y         Y         Y         Y         Y         Y         Y           Referee FE         Y         Y         Y         Y         Y         Y         Y	Observations	16154	16154	16154	16154	16154	16154	16154
# Authors FE Y Y Y Y Y Y Y Referee FE Y Y Y Y Y Y	$R^2$	0.099	0.107	0.166	0.171	0.177	0.195	0.234
Referee FE Y Y Y Y Y	ConfYear FE	Y	Y	Υ	Y	Y	Y	Y
	# Authors FE		Υ	Υ	Υ	Υ	Υ	Υ
Field FE Y Y Y Y	Referee FE			Υ	Υ	Υ	Υ	Υ
	Field FE				Υ	Υ	Υ	Υ

Gender Gaps in the Evaluation of Research

#### Robustness

Introduction
Data
Main Analysis

Robustness

Heterogeneit Mechanisms

#### Additional Results:

- Non-linearities
- Grades and Nomination outcomes.

#### Robustness checks:

- ☐ Ex-post (as opposed to ex-ante) number of cites.
- □ Publication (ex post) dummy.
- □ Number of publications in top-3 journals (instead of top-35).
- Probit (instead of linear probability model).

## Heterogeneity Analysis

- 1. Is the gap driven by a specific conference?
- 2. Is the gap driven by male- or female-dominated fields?
- 3. Is the gap driven by male or female referees?
- 4. Is the gap driven by papers written by prominent or non-prominent authors?

$$\begin{array}{ll} \mathsf{Accepted}_{prcy} &=& \beta_1 \mathsf{Sh.} \ \mathsf{Male} \ \mathsf{Authors}_{prcy} \\ &+ \beta_2 \mathsf{Sh.} \ \mathsf{Male} \ \mathsf{Authors} \times \mathsf{SAEe}_{prcy} \\ &+ \beta_3 \mathsf{Sh.} \ \mathsf{Male} \ \mathsf{Authors} \times \mathsf{SMYE}_{prcy} \\ &+ \alpha_{cy} + \alpha_n + \alpha_r + \alpha_f + X_{prcy} + \epsilon_{prcy}. \end{array}$$

## Heterogeneity Analysis

- 1. Is the gap driven by a specific conference?
- 2. Is the gap driven by male- or female-dominated fields?
- 3. Is the gap driven by male or female referees?
- 4. Is the gap driven by papers written by prominent or non-prominent authors?

$$\begin{split} \mathsf{Accepted}_{prcy} &= \beta_1 \mathsf{Sh. \ Male \ Authors}_{prcy} \\ &+ \beta_2 \mathsf{Sh. \ Male \ Authors} \times \mathsf{SAEe}_{prcy} \\ &+ \beta_3 \mathsf{Sh. \ Male \ Authors} \times \mathsf{SMYE}_{prcy} \\ &+ \alpha_{cy} + \alpha_n + \alpha_r + \alpha_f + X_{prcy} + \epsilon_{prcy}. \end{split}$$

# 1. ... a specific conference?

· ·	Conference		Field		Referee		Prominent
Sh. Male Auth.	0.0318 (0.0197)	Sh. Male Auth.	0.0211 (0.0182)	Sh. Male Auth.	-0.00222 (0.0211)	Sh. Male Auth.	0.0172 (0.0155)
Sh.MA × SAEe	-0.00347 (0.0278)	$Sh.MA \times Masc. \ Field$	0.0264 (0.0278)	Sh.MA x Male Referee	0.0449* (0.0238)	Sh.MA x Prominence D.	0.0796** (0.0372)
Sh.MA × SMYE	0.00549 (0.0417)						
Prominence	0.0350*** (0.00335)	Prominence	0.0350*** (0.00334)	Prominence	0.0350*** (0.00334)	Prominence Dummy	0.0951***
Cites	0.0634*** (0.0122)	Cites	0.0632*** (0.0122)	Cites	0.0634*** (0.0122)	Cites	0.0637***
Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.276*** (0.0170)
2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.165*** (0.0193)
5%-10% Ins.	0.0978*** (0.0185)	5%-10% Ins.	0.0984*** (0.0185)	5%-10% Ins.	0.0980*** (0.0185)	5%-10% Ins.	0.0981*** (0.0186)
Constant	0.274*** (0.0265)	Constant	0.280*** (0.0272)	Constant	0.273*** (0.0264)	Constant	0.270*** (0.0271)
Observations	16154		16154		16154		16154
$R^2$	0.234		0.234		0.234		0.236
ConfYear FE	Υ		Υ		Υ		Υ
# Authors FE	Y		Y		Y		Y
Referee FE Field FE	Y Y		Y Y		Y		Y Y

Gender Gaps in the Evaluation of Research

## 2. ... male- or female-dominated fields?

· ·	Conference		Field		Referee		Prominent
Sh. Male Auth.	0.0318	Sh. Male Auth.	0.0211	Sh. Male Auth.	-0.00222	Sh. Male Auth.	0.0172
	(0.0197)		(0.0182)		(0.0211)		(0.0155)
Sh.MA × SAEe	-0.00347 (0.0278)	Sh.MA x Masc. Field	0.0264 (0.0278)	Sh.MA x Male Referee	0.0449* (0.0238)	Sh.MA x Prominence D.	0.0796** (0.0372)
Sh.MA x SMYE	0.00549 (0.0417)						
Prominence	0.0350*** (0.00335)	Prominence	0.0350*** (0.00334)	Prominence	0.0350*** (0.00334)	Prominence Dummy	0.0951***
Cites	0.0634*** (0.0122)	Cites	0.0632*** (0.0122)	Cites	0.0634*** (0.0122)	Cites	0.0637*** (0.0122)
Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.276*** (0.0170)
2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.165*** (0.0193)
5%-10% Ins.	0.0978*** (0.0185)	5%-10% Ins.	0.0984*** (0.0185)	5%-10% Ins.	0.0980*** (0.0185)	5%-10% Ins.	0.0981*** (0.0186)
Constant	0.274*** (0.0265)	Constant	0.280*** (0.0272)	Constant	0.273*** (0.0264)	Constant	0.270*** (0.0271)
Observations	16154		16154		16154		16154
$R^2$	0.234		0.234		0.234		0.236
ConfYear FE	Y		Υ		Y		Y
# Authors FE	Υ		Υ		Υ		Y
Referee FE	Υ		Υ		Υ		Y
Field FE	Υ		Υ		Y		Y

## 3. ... male or female referees?

	Conference		Field		Referee		Prominent
Sh. Male Auth.	0.0318 (0.0197)	Sh. Male Auth.	0.0211 (0.0182)	Sh. Male Auth.	-0.00222 (0.0211)	Sh. Male Auth.	0.0172 (0.0155)
Sh.MA x SAEe	-0.00347 (0.0278)	Sh.MA × Masc. Field	0.0264 (0.0278)	Sh.MA x Male Referee	0.0449* (0.0238)	Sh.MA x Prominence D.	0.0796** (0.0372)
Sh.MA x SMYE	0.00549 (0.0417)						
Prominence	0.0350*** (0.00335)	Prominence	0.0350***	Prominence	0.0350***	Prominence Dummy	0.0951***
Cites	0.0634*** (0.0122)	Cites	0.0632*** (0.0122)	Cites	0.0634*** (0.0122)	Cites	0.0637*** (0.0122)
Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.276*** (0.0170)
2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.165*** (0.0193)
5%-10% Ins.	0.0978*** (0.0185)	5%-10% Ins.	0.0984*** (0.0185)	5%-10% Ins.	0.0980*** (0.0185)	5%-10% Ins.	0.0981*** (0.0186)
Constant	0.274*** (0.0265)	Constant	0.280*** (0.0272)	Constant	0.273*** (0.0264)	Constant	0.270*** (0.0271)
Observations	16154		16154		16154		16154
$R^2$	0.234		0.234		0.234		0.236
ConfYear FE	Υ		Y		Y		Y
# Authors FE	Υ		Υ		Υ		Υ
Referee FE	Υ		Υ		Υ		Υ
Field FE	Υ		Y		Υ		Υ

26

# 4. ... by prominent authors?

	Conference		Field		Referee		Prominent
Sh. Male Auth.	0.0318 (0.0197)	Sh. Male Auth.	0.0211 (0.0182)	Sh. Male Auth.	-0.00222 (0.0211)	Sh. Male Auth.	0.0172 (0.0155)
Sh.MA x SAEe	-0.00347 (0.0278)	Sh.MA × Masc. Field	0.0264 (0.0278)	Sh.MA x Male Referee	0.0449* (0.0238)	Sh.MA × Prominence D.	0.0796** (0.0372)
Sh.MA × SMYE	0.00549 (0.0417)						
Prominence	0.0350*** (0.00335)	Prominence	0.0350*** (0.00334)	Prominence	0.0350***	Prominence Dummy	0.0951***
Cites	0.0634*** (0.0122)	Cites	0.0632*** (0.0122)	Cites	0.0634*** (0.0122)	Cites	0.0637*** (0.0122)
Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.278*** (0.0170)	Top 2.5% Ins.	0.276*** (0.0170)
2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.168*** (0.0193)	2.5%-5% Ins.	0.165*** (0.0193)
5%-10% Ins.	0.0978*** (0.0185)	5%-10% Ins.	0.0984*** (0.0185)	5%-10% Ins.	0.0980*** (0.0185)	5%-10% Ins.	0.0981*** (0.0186)
Constant	0.274*** (0.0265)	Constant	0.280*** (0.0272)	Constant	0.273*** (0.0264)	Constant	0.270*** (0.0271)
Observations	16154		16154		16154		16154
$R^2$	0.234		0.234		0.234		0.236
ConfYear FE	Υ		Υ		Υ		Υ
# Authors FE	Υ		Υ		Υ		Υ
Referee FE	Y		Y		Y		Y
Field FE	Υ		Υ		Υ		Υ

Gender Gaps in the Evaluation of Research

# What Drives the Gender Gap in Acceptance Rates?

- 1. Our quality measures are gender biased.
- 2. Referees have stereotypes against female economists.
- 3. Papers' unobserved characteristics differ by gender.
- 4. Male economists are better connected than female economists.

## 1. Our quality measures are gender biased

- □ For the evaluations of submissions to conferences to be gender neutral, this would imply that the number of cites is biased *in favor of women*, i.e. female-authored papers are more cited than male-authored papers conditional on quality.
- If cites are biased against women, then gender bias against women is higher than what we find in this paper, i.e. we obtain a lower bound of the bias.
- Card et al (2018) argue, based on a survey to economists, that citations are biased against women.

# 2. Referees have stereotypes against female economists

- ☐ If only male referees share these stereotypes, this could explain why the gap is driven by male referees.
- However, this explanation cannot easily account for why there is no gender gap for papers written by non-prominent authors.
- Furthermore, one would expect prejudices against women to be stronger in fields that are less feminized and, therefore, offer fewer chances to interact with female researchers (Bagues et al (2017)).
  - ▶ But we find no differences in the gender gap by the masculinity of the field.

# 3. Papers' unobserved characteristics differ by gender

- It may be that female-authored papers lack some characteristics that are especially valued by conferences' referees.
  - For example, if female-authored papers make more substantive relative to methodological contributions, and conferences' referees are especially interested in this type of papers.
- However, this explanation cannot easily account for the observed heterogeneities.
  - It is not clear why we should expect that these unobserved papers' characteristics are only valued by male and not female referees.
  - ▷ It is not clear how this mechanism can explain why the effect appears only for the evaluation of papers written by prominent authors.

### 4. Male economists are better connected than female

- The probability of acceptance increases if the authors and referee of the paper are connected.
  - Connections important in evaluation processes:
     Combes et al (2008), De Paola and Scoppa (2015)
     Durante et al (2011) Perotti (2002), Sandstrom and Hallsten (2007), Zinovyeva and Bagues (2015).
- Male referees are more likely to be connected with male than with female authors, while female referees are similarly connected with both.
  - Ductor et al (2018): women have fewer collaborators.
  - ▶ Hilmer and Hilmer (2007): 50% (18%) of the PhD students being advised by women (men) are female.
- Referees more likely to be connected with male than with female prominent authors, but similarly connected with male and female non-prominent auth.

Introduction
Data
Main Analysis
Robustness
Heterogeneity
Mechanisms

Conclusion

### 4. Male economists are better connected than female

To provide some suggestive evidence on this regard, we leverage the fact that the SAEe organizes two types of sessions: regular and job-market.

□ There is no significant gap in job-market submissions, while in regular sessions there is a 4.8 p.p. gap (significant at the 10% level).

### Conclusion

- □ All-female-authored papers are 3.2 p.p. (6.8%) less likely to be accepted than all-male-authored papers.
  - ▶ Takes into account:
    - Number of authors fixed effects.
    - Referee fixed effects.
    - ► Field fixed effects.
    - Cites of the paper at submission year.
    - Previous publication record of the authors.
    - Ranking of the affiliations of the authors.

### □ This gap:

- ▷ Is present in the three conferences.
- ▷ Is not larger in fields with a higher share of men.
- ▷ Is entirely driven by male referees.
- $\,\,\,\,\,\,\,\,\,\,$  Is driven by papers written by prominent authors.

#### □ Mechanisms:

▷ Suggest that the gap may be driven by connections.

Introduction Data Main Analysis Robustness Heterogeneity Mechanisms

Conclusion



# Thank you!



# Summary Statistics (back)

	mean	min	max	sd	count
Accepted	0.53	0.00	1.00	0.50	11175
Sh Male Authors	0.68	0.00	1.00	0.41	11175
Half Male Authors	0.12	0.00	1.00	0.32	11175
Majority Male Authors	0.63	0.00	1.00	0.48	11175
Majority Female Authors	0.25	0.00	1.00	0.43	11175
Male Referee	0.62	0.00	1.00	0.49	5455
Micro Theory	0.10	0.00	1.00	0.30	11175
Applied Micro	0.47	0.00	1.00	0.50	11175
Macro	0.30	0.00	1.00	0.46	11175
Finance	0.10	0.00	1.00	0.29	11175
Econometrics	0.02	0.00	1.00	0.15	11175
History	0.01	0.00	1.00	0.11	11175
Cites	0.12	0.00	5.43	0.45	11175
Cites Ex Post	0.92	0.00	6.68	1.30	11175
Top35	0.59	0.00	20.00	1.59	11175
Top35,10	1.02	0.00	37.00	2.80	11175
Top5	0.10	0.00	9.00	0.49	11175
Top 200 Institution	0.46	0.00	1.00	0.50	11175
Top 5% Institution	0.20	0.00	1.00	0.40	11175
Top 5-10% Institution	0.18	0.00	1.00	0.38	11175
Below 10% Institution	0.16	0.00	1.00	0.37	11175

36

## Non-Linear Effects .....

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Half Male Authors	0.0459**	0.00169	0.00256	-0.000146	-0.00254	-0.00549	0.00395
	(0.0211)	(0.0247)	(0.0247)	(0.0246)	(0.0245)	(0.0242)	(0.0238)
Majority Male Authors	0.0608***	0.0427***	0.0453***	0.0433***	0.0406***	0.0299**	0.0309**
	(0.0144)	(0.0145)	(0.0144)	(0.0145)	(0.0144)	(0.0144)	(0.0139)
Chin					0.0923***	0.0793***	0.0635***
Cites							
					(0.0127)	(0.0125)	(0.0122)
Prominence						0.0427***	0.0350***
Frommence							
						(0.00348)	(0.00334)
Top 2.5% Ins.							0.278***
10p 2.370 ms.							(0.0170)
							(0.0110)
2.5%-5% Ins.							0.168***
2.570 570 11.5.							(0.0193)
							(0.0130)
5%-10% Ins.							0.0980***
							(0.0185)
							(
Constant	0.476***	0.493***	0.491***	0.482***	0.475***	0.454***	0.276***
	(0.0136)	(0.0139)	(0.0118)	(0.0238)	(0.0239)	(0.0239)	(0.0273)
Observations	16154	16154	16154	16154	16154	16154	16154
$R^2$	0.100	0.108	0.166	0.171	0.178	0.195	0.234
ConfYear FE	Υ	Υ	Υ	Υ	Υ	Υ	Y
# Authors FE		Υ	Υ	Υ	Υ	Υ	Υ
Referee FE			Υ	Υ	Υ	Υ	Υ
Field FE				Ý	Ý	Ý	Y

## Grades main

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sh. Male Authors	0.261***	0.214***	0.214***	0.201***	0.183**	0.147*	0.140*
	(0.0774)	(0.0778)	(0.0761)	(0.0763)	(0.0766)	(0.0763)	(0.0739)
C'.					0 = 40+++	0 470***	0.400***
Cites					0.549***	0.473***	0.429***
					(0.0716)	(0.0702)	(0.0700)
Prominence						0.260***	0.228***
						(0.0251)	(0.0232)
						(0.0231)	(0.0232)
Top 2.5% Ins.							1.140***
•							(0.0836)
							()
2.5%-5% Ins.							0.814***
							(0.0940)
5%-10% Ins.							0.529***
							(0.0934)
Constant	5.549***	5.581***	5.580***	5.525***	5.471***	5.388***	4.663***
Constant	(0.0702)	(0.0705)	(0.0528)	(0.176)	(0.172)	(0.167)	(0.176)
Observations	5825	5825	5825	5825	5825	5825	5825
$R^2$	0.072	0.081	0.229	0.235	0.245	0.272	0.304
ConfYear FE	Y	Y	Y	Y	Y	Y Y	Y
# Authors FE	ı	Ϋ́	Ϋ́	Ϋ́	Ϋ́	Ϋ́	Ϋ́
Referee FE		ı	Y	Y	Y	Y	Ϋ́
			Ť	-	-	-	
Field FE				Υ	Y	Y	Y

## Nomination main

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sh. Male Authors	0.0220	0.0215	0.0290**	0.0285**	0.0300**	0.0297**	0.0283**
	(0.0138)	(0.0137)	(0.0143)	(0.0145)	(0.0145)	(0.0145)	(0.0143)
Cites	` ,	, ,	,	, ,	0.130**	0.130**	0.131***
Cites					(0.0517)	(0.0513)	(0.0498)
Prominence						0.00586	0.00426
						(0.00511)	(0.00492)
Top 2.5% Ins.							0.0256*
							(0.0153)
2.5%-5% Ins.							0.0101
							(0.0183)
5%-10% Ins.							-0.00507
							(0.0159)
Constant	0.0524***	0.0527***	0.0481***	0.0552**	0.0471*	0.0471*	0.0390
	(0.0102)	(0.0101)	(0.00951)	(0.0246)	(0.0243)	(0.0244)	(0.0272)
Observations	1949	1949	1949	1949	1949	1949	1949
$R^2$	0.004	0.008	0.185	0.193	0.207	0.208	0.214
ConfYear FE	Υ	Υ	Υ	Υ	Υ	Υ	Y
# Authors FE		Υ	Υ	Υ	Υ	Υ	Υ
Referee FE			Υ	Υ	Υ	Υ	Υ
Field FE				Υ	Υ	Υ	Υ

39

## Robustness Checks min

	Cites Ex Post	Publication	Prominence 10 Y	Prominence Top 5	Probit
Sh. Male Authors	0.0284**	0.0286**	0.0326**	0.0381***	0.0313***
	(0.0141)	(0.0141)	(0.0143)	(0.0142)	(0.0100)
Cites Ex Post	0.0526*** (0.00452)	0.0484*** (0.00495)	, ,	, ,	, ,
Prominence	0.0313*** (0.00336)	0.0310*** (0.00337)			0.0446*** (0.00333)
Top 2.5% Ins.	0.268*** (0.0169)	0.267*** (0.0169)	0.277*** (0.0170)	0.286*** (0.0171)	0.272*** (0.0119)
2.5%-5% Ins.	0.164*** (0.0193)	0.163*** (0.0193)	0.167*** (0.0193)	0.168*** (0.0194)	0.164*** (0.0137)
5%-10% Ins.	0.0975*** (0.0183)	0.0967*** (0.0183)	0.0978*** (0.0186)	0.0993*** (0.0187)	0.0974*** (0.0125)
Published		0.0538*** (0.0199)			
Cites			0.0645*** (0.0122)	0.0672*** (0.0122)	0.0649*** (0.00931)
Prominence 10 Y			0.0197*** (0.00196)		
Prominence Top 5				0.0828*** (0.00981)	
Observations	16154	16154	16154	16154	15542
$R^2$	0.248	0.248	0.234	0.229	
ConfYear FE	Y	Υ	Y	Y	Y
# Authors FE	Υ	Υ	Y	Υ	Υ
Referee FE	Υ	Υ	Y	Υ	Υ
Field FE	Y	Y	Y	Y	Y