



# Feigning Fairness: The Loss from a Voluntary Gender Quota in Public Service



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## Motivation and Research Question

### Motivation

- The potential "men-women" shift in patriarchy society may threaten some people.
- The backlash from the fear of losing prestige can occur in any institution and across various contexts.
- The decision makers often glamorized it feigning fairness, usually in the name of the equality of outcome.
- Debates on affirmative action focus on compulsory policy favoring disadvantaged group.

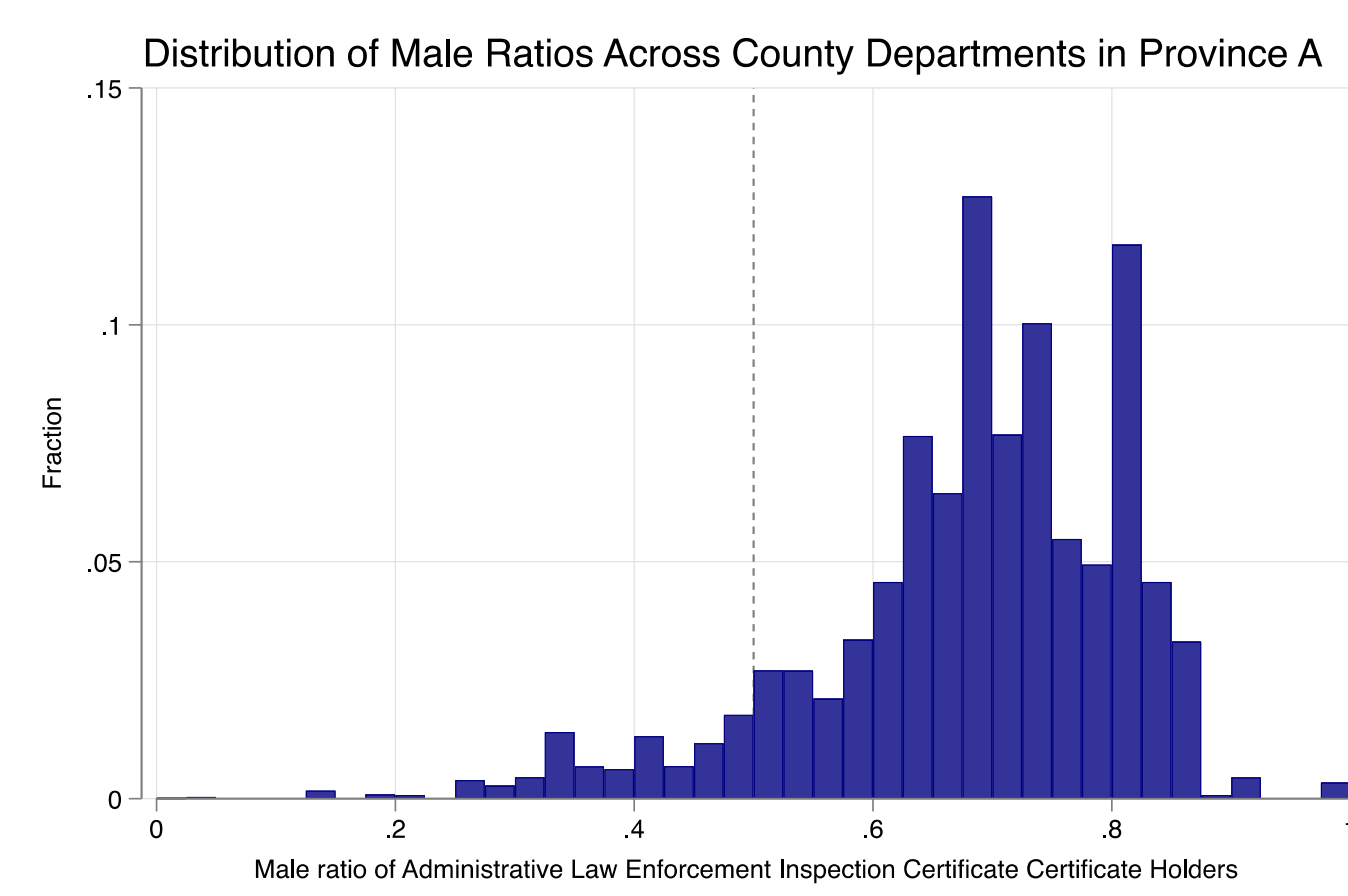
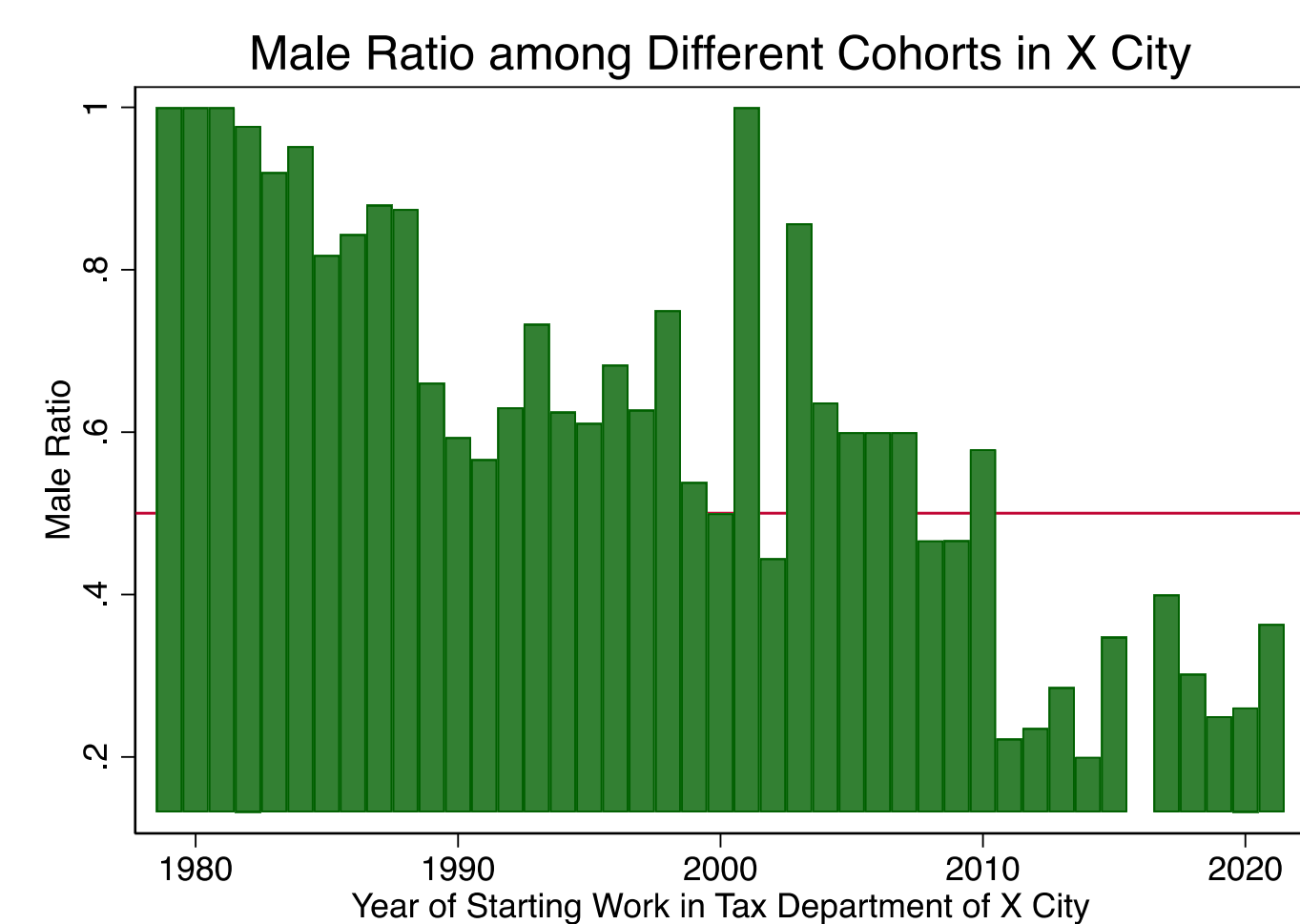
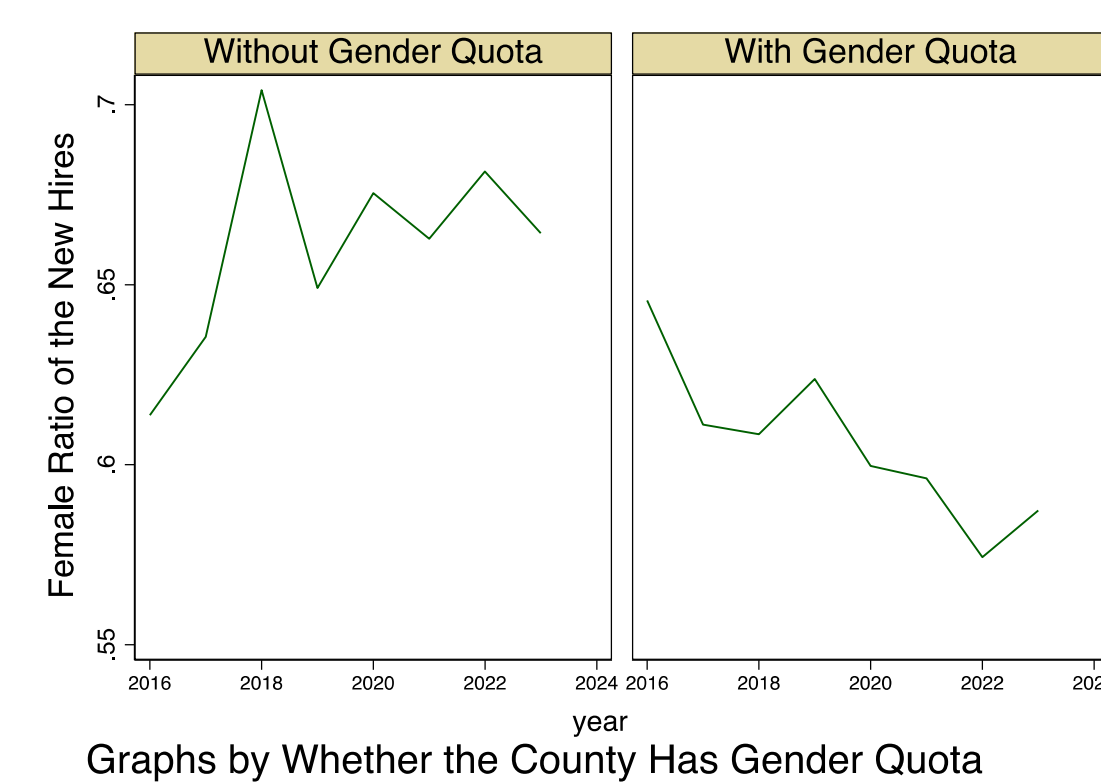
### Research Question

- What are the determinants of a voluntary gender quota?
- What are the consequences of a selectively adopted gender quota for civil servants?

## Background

### Tax Department in China

- 31 provincial, 535 city and 2,924 county tax departments.
- County-level tax department recruit entry-level civil servants via National Civil Servants Examination.
- Positions can be categorized to front positions (directly related to tax collection), middle positions (indirectly related to tax), or back positions (not related to tax).
- Men are more represented within tax department in general and historically, while male ratio among the new hires is around 35%.
- Women outperformed men in the examination.

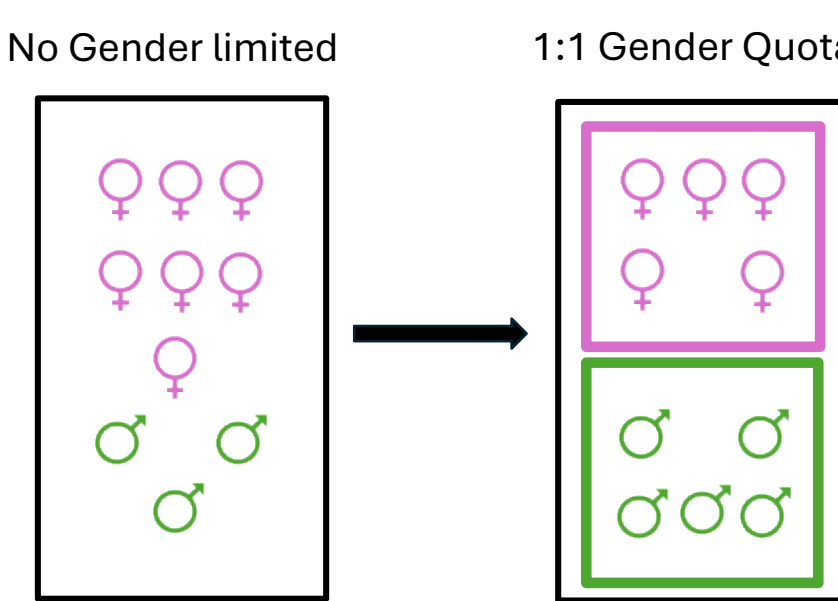


### National Civil Service Examination

- Post positions  $\Rightarrow$  Apply  $\Rightarrow$  National Standardized Written Exam  $\Rightarrow$  Interview  $\Rightarrow$  Admission  $\Rightarrow$  Publicly announce.
- The tax department holds a large share in civil service exam.

### 1:1 Gender Quota

- Gender neutral positions to gender-targeted positions.
- Each county has a share of positions adopted the gender quota.



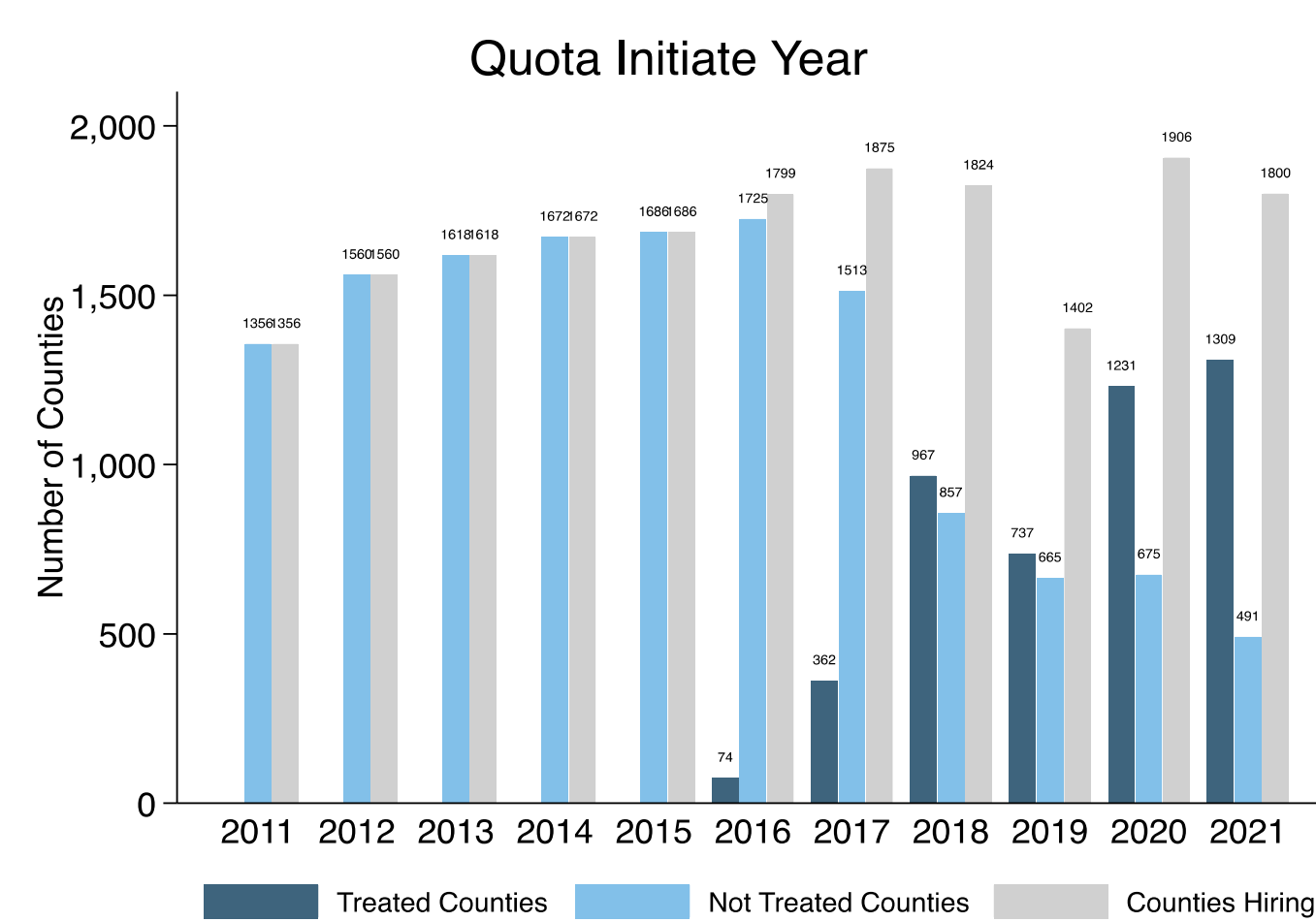
## Data

### Gender Quota Data

- Position level gender quota from National Civil Servant Examination positions.
- Position Quota: 0 if "No gender limit", 1 if "Male" or "Female".
- County-level Quota: 1 if at least one quota position, 0 no quota positions.
- County-level Quota Share: the share of quota positions within the county.
- The quota starts from 2016 to 2023.

### County-level Tax Revenue Data

- Total tax, individual tax, firm tax.
- Manually collected from the Chinese City Statistical Yearbooks from 2011 to 2022.
- A total of 894 counties across 21 provinces, resulting in 8,188 county-year observations.

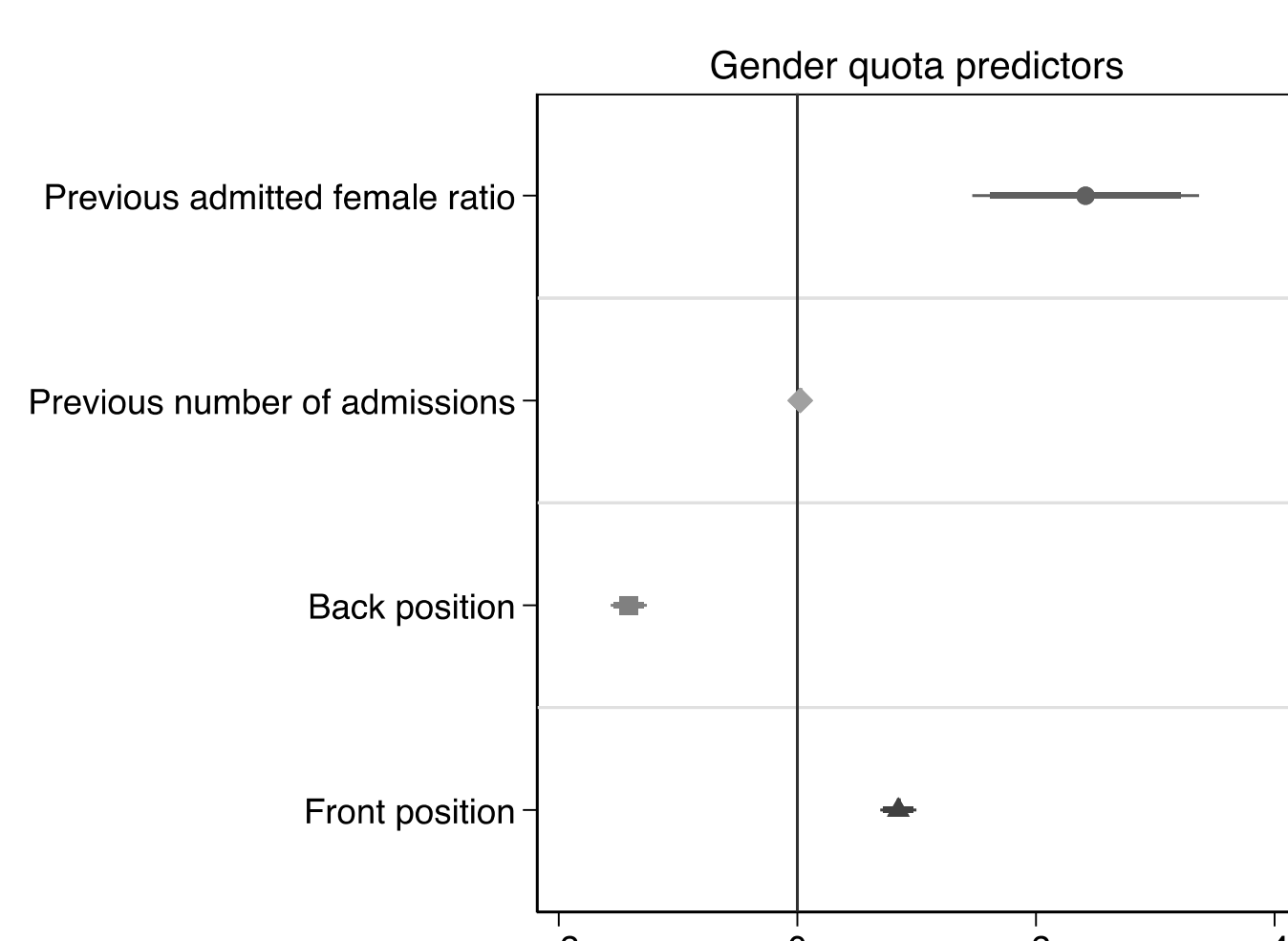
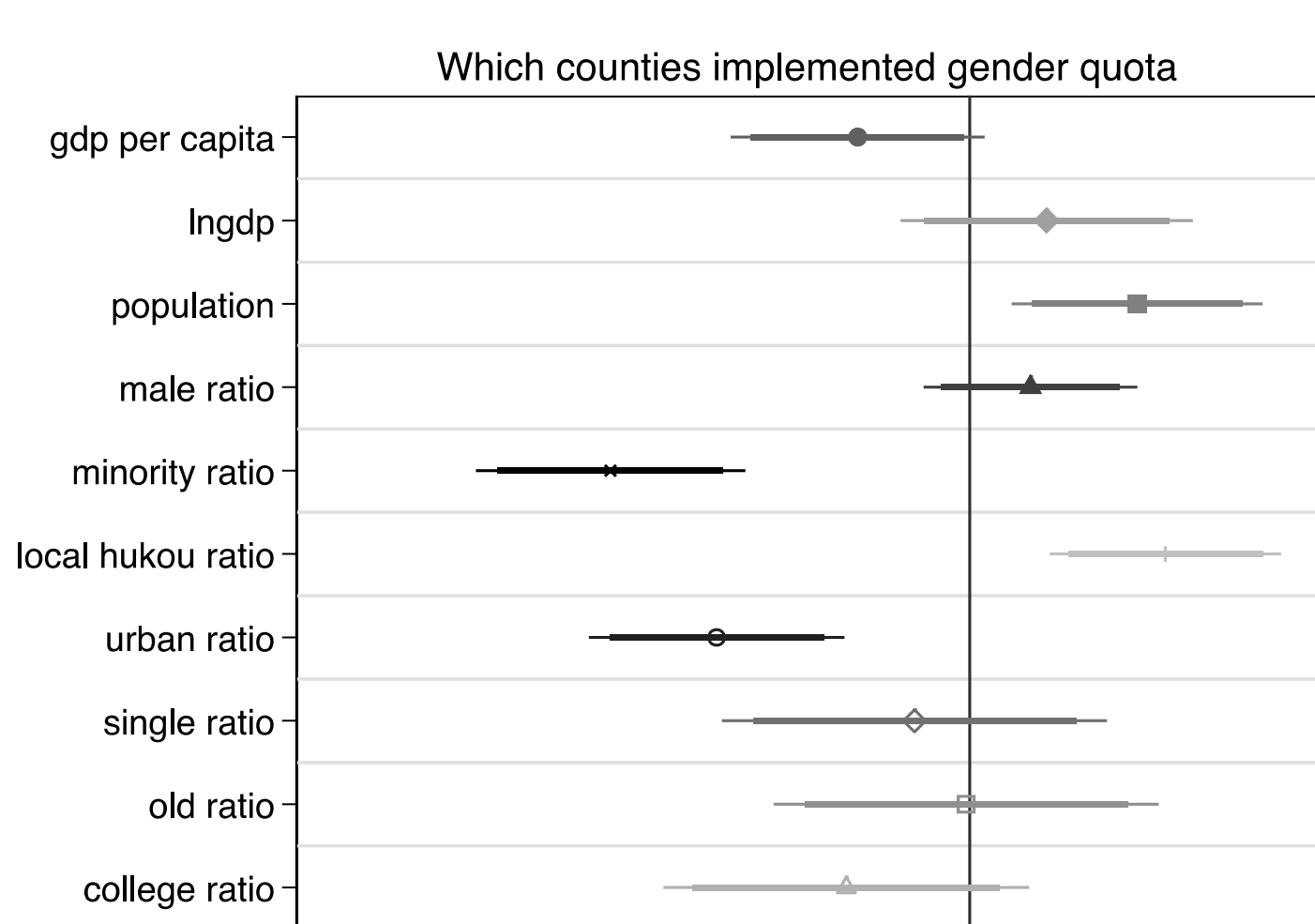


### Position and Applicants Data

- Department (can identify county names), position category, position description.
- Position required major, education, hukou, gender
- Written exam cut-off scores for each position.
- Number of applicants for each position.
- Interviewee list with their name.
- Admission list with their name, gender, education background.

## Part I: Determinants of the Gender Quota

- Counties with lower minority ethnicity ratios, more local residents, and lower urbanization are more likely to have gender-targeted positions. I apply a matching method to balance these variables.
- A higher female hiring ratio in prior years increases the likelihood of a county setting a 1:1 quota position.
- Less critical positions are less likely to have quotas, while core tax-related positions are more likely to do so.



Note: County characteristics data is from Census 2010 reported in county level. Single, old, and college ratio is from 10% sample Survey in Census 2010. Year fixed effect and province fixed effect are controlled in each regression.

Note: Back position tasks for administration, HR, internal finance, IT, etc. Front position is more tax-collection-related. County fixed effect and year fixed effect are controlled in each regression.

## Empirical Strategy

### Coarsened Exact Matching DiD

- Match counties ever been treated and counties never been treated.
- Match using pre-treatment county characteristics, including GDP, urban ratio, population, male ratio.

### Staggered DiD

$$Y_{ct} = \beta Treat_{ct} + \delta_t + \gamma_c + \theta_c \cdot t + \varepsilon_{ct}$$

$$Y_{ct} = \beta CTreat_{ct} + \delta_t + \gamma_c + \theta_c \cdot t + \varepsilon_{ct}$$

### Event Study

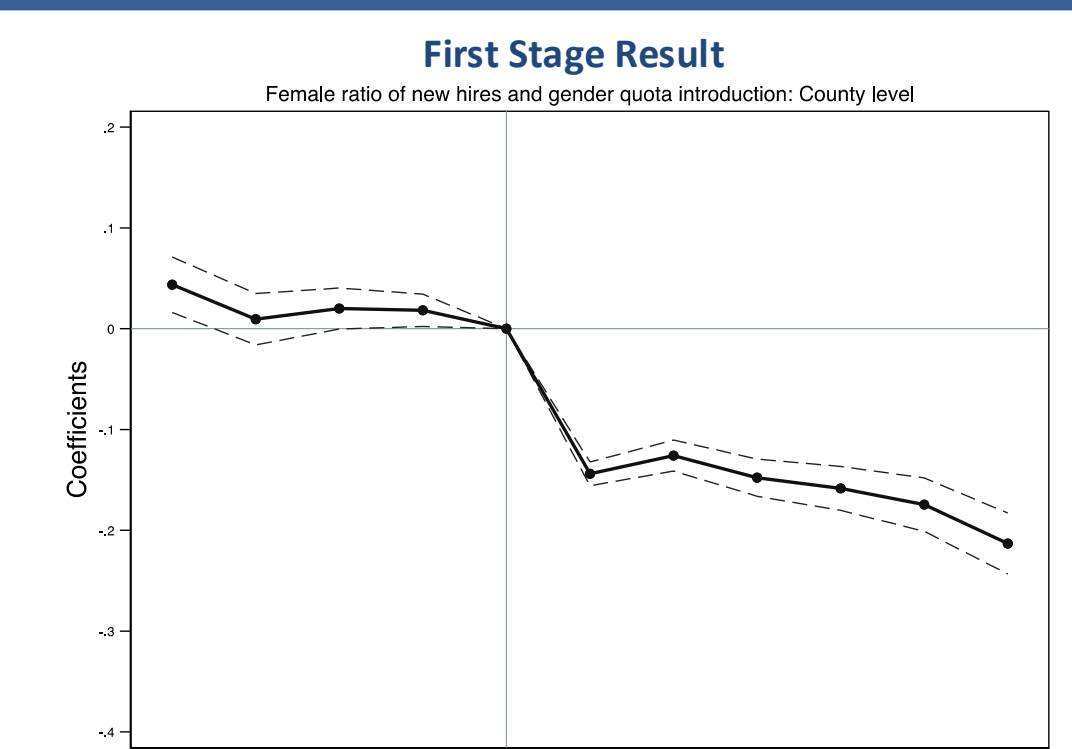
$$Y_{ct} = \sum_{k=a}^b \theta_k I\{t = t_c^* + k\} + \delta_t + \gamma_c + \theta_c \cdot t + \varepsilon_{ct}$$

- $Y_{ct}$  represents the number of applicants per vacancy, cut-off score, and county-level tax revenue.
- $Treat_{ct}$  equals 1 when county  $c$  initiates the gender quota from year  $t$  onwards.
- $CTreat_{ct}$  is treatment intensity (mean share of gender-targeted positions in county  $c$  once treated).
- $\delta_t$  is year fixed effect,  $\gamma_c$  denotes the county fixed effect,  $\theta_c \cdot t$  controls city year trend. Cluster at the county level.

## Part II: Consequences of Gender Quota

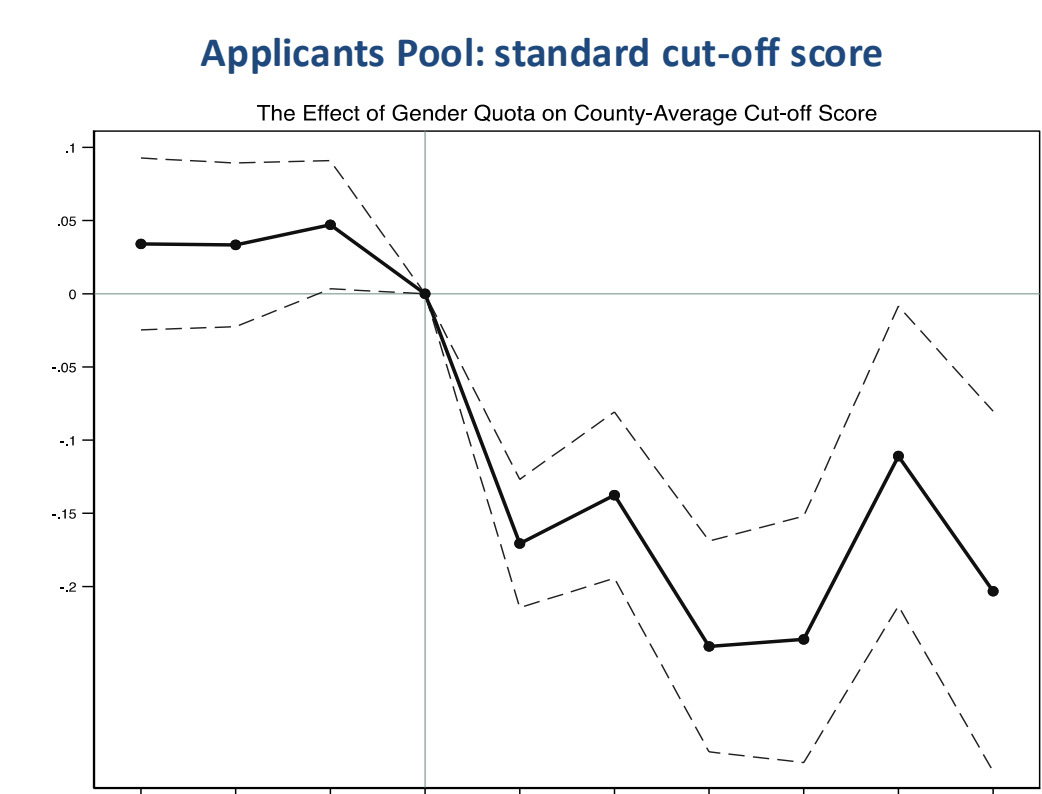
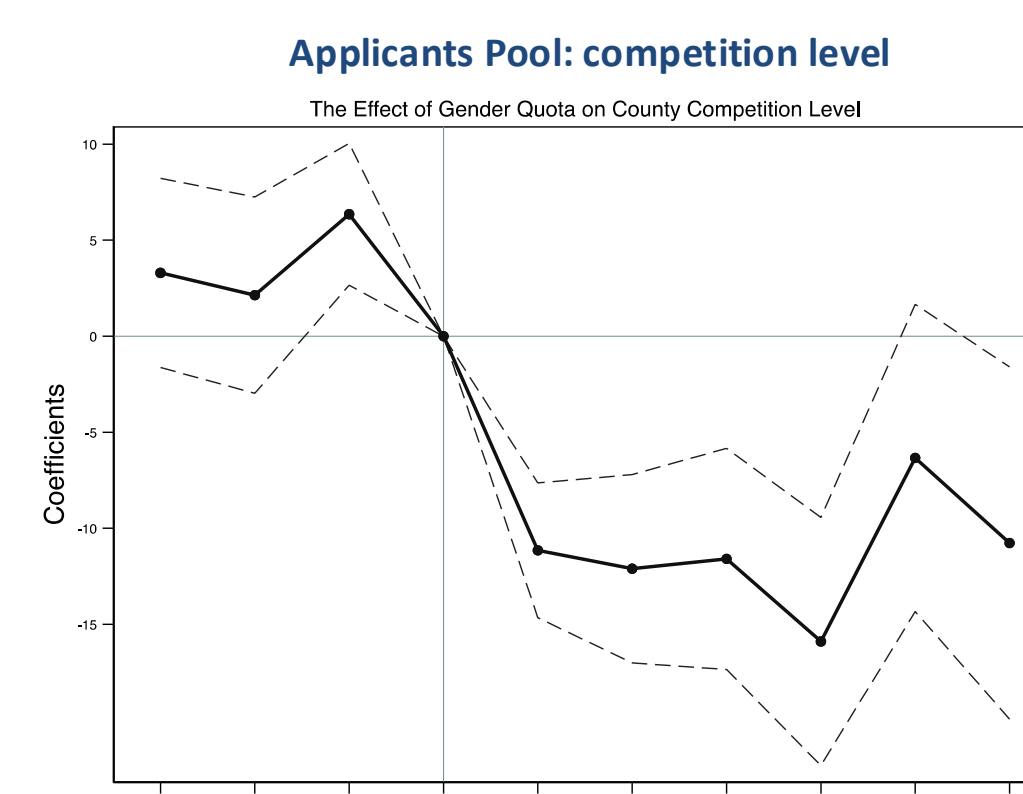
### First Stage Result

- Female ratio of newly hired civil servants decreased.



### Applicants Pool

- Competition level (number of applicants per vacancy) decreased.
- County average standard cut-off score for interview decreased.



### Work Performance

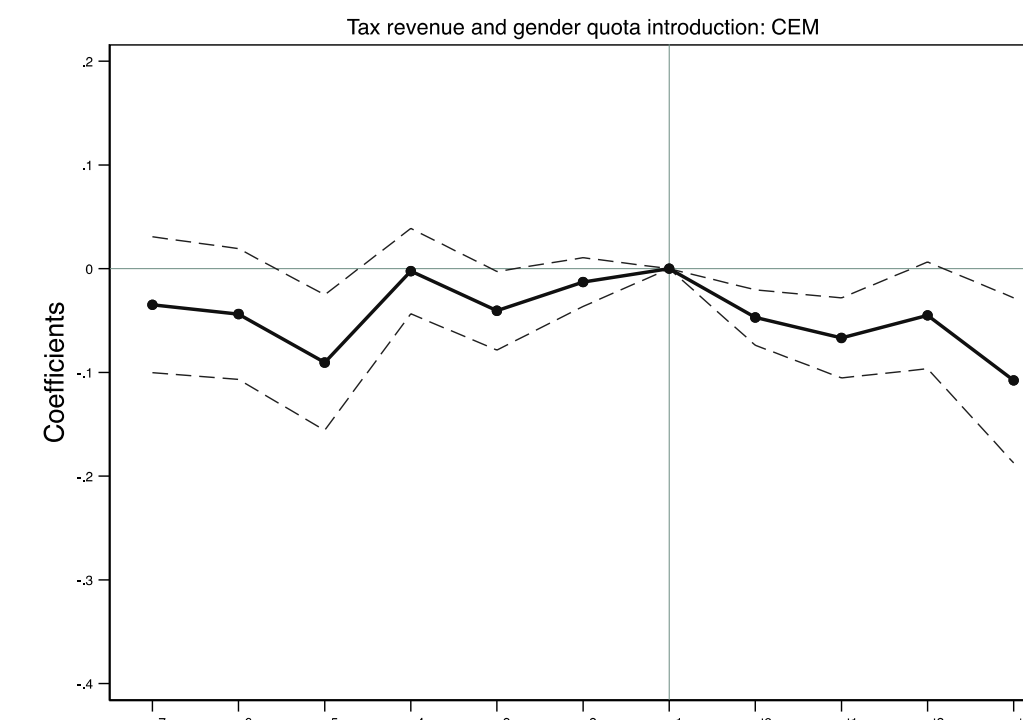
- County-level tax revenue decreased as a proxy variable for both dummy treatment and treatment intensity.

Table 1: The Effect of Reversal Gender Quota on Total Tax Revenue:CEM

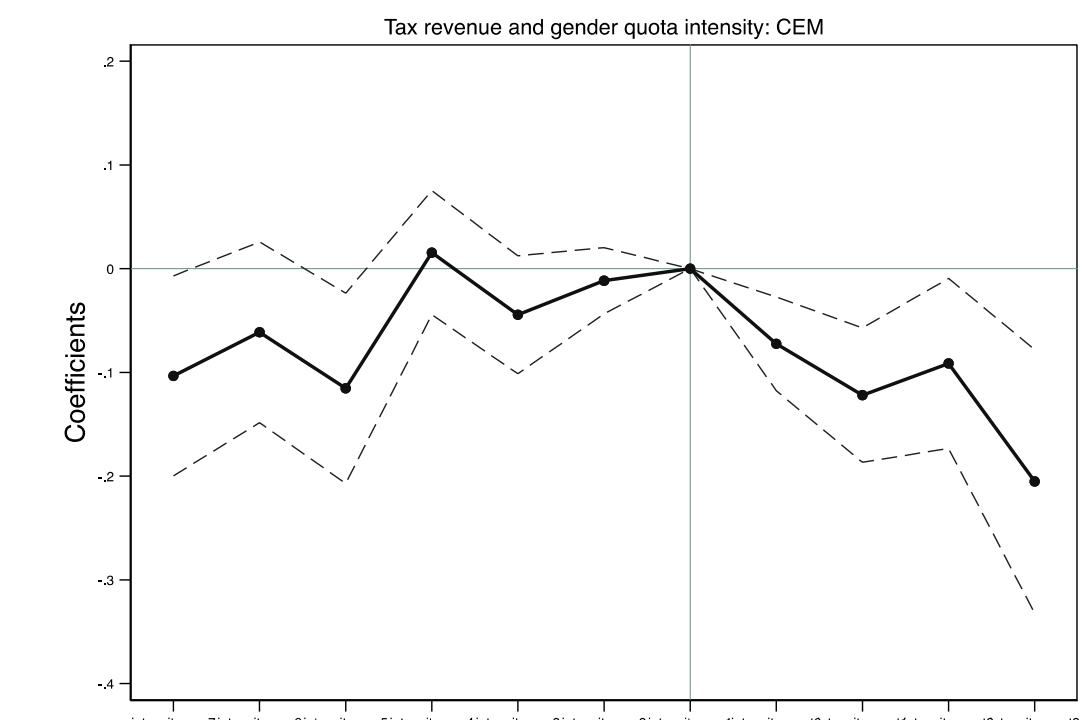
	(1)	(2)	(3)	(4)
Ever treated	-0.042**	-0.053**		
Share of Gender-targeted position			-0.062**	-0.102**
Observations	5530	3684	5530	3684
Mean	11.082	10.844	11.082	10.844
r2	0.952	0.951	0.952	0.951
PreTreatControl_year	X	X	X	X
Year.FE	X	X	X	X
County.FE	X	X	X	X
City_Year_Trend	X	X	X	X
Cluster_County	X	X	X	X

Standard errors in parentheses  
Tax revenue (10,000) in log form. Pre-treatment controls include gdp, population, and male ratio in 2010.  
\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

### Ever Treated Event Study



### Treatment Intensity Event Study



## Discussion

### Quality of Civil Servants

- The quality of civil servants positively affects tax revenue.

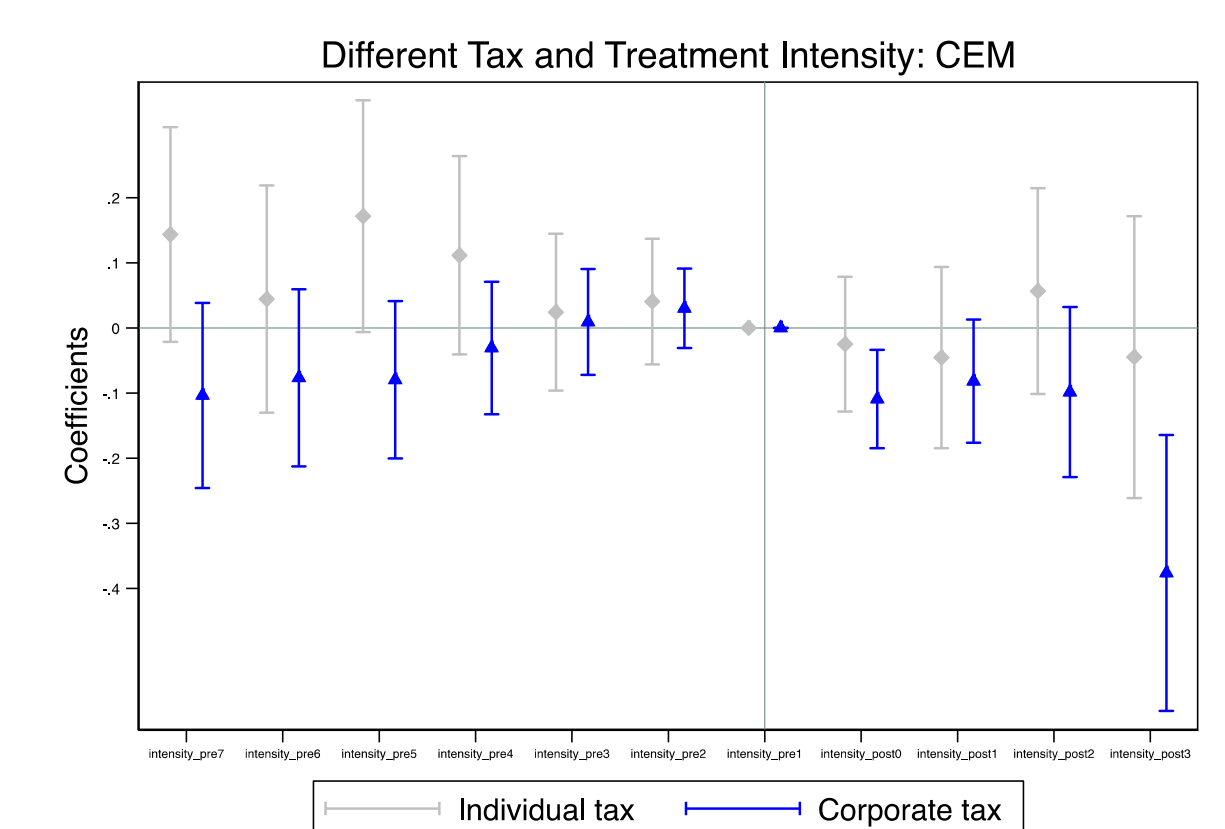
### Placebo Test

- Individual tax is not affected, while corporate tax which civil servants' quality matters more decreases.

Table 2: The Effect of Average County-level Cut-off Score on Tax

	(1)	(2)	(3)	(4)
Standardized Cut-off Score	0.010*	0.007	0.010	0.003
Observations	1907	1399	2794	2096
Mean	11.183	11.045	11.414	11.311
r2	0.983	0.982	0.984	0.983
PreTreatControl_year	X	X	X	X
Year.FE	X	X	X	X
County.FE	X	X	X	X
City_Year_Trend	X	X	X	X
Cluster_County	X	X	X	X

Standard errors in parentheses  
Tax revenue (10,000) in log form. Time range is 2017 to 2022 when cut-off score data is available.  
\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01



## Conclusion and Next Steps

### My Findings:

- The voluntary gender quota aims to increase male ratio in new hires and shows implicit preference for men.
- The gender-targeted position has decreased the female ratio of new hires.
- The quota decreased county tax revenue by hiring less qualified civil servants.

### Next Steps:

- More mechanism analysis and more evidence on implicit gender discrimination against female civil servants.