

# Gender Gaps and Recessions: Comparing the Great Recession to Previous Recessions

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## Overview - Theoretical Background

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- ① Holding labor supply constant, a recession will result in a larger inward shift in labor demand for men than for women, which will reduce the gaps in their wages and employment.
  - ② Furthermore, if short-run labor supply of women is more elastic than that of men, those inward shifts of labor demand will lead to a larger change in the wage gap than in employment gap.

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- The gender gaps in both wages and employment were reduced during this recession (i.e. pro-cyclical movement), more so for the wage gap than for employment.
- Prior to that paper, previous findings based on time variation and correlation of gender gap and unemployment rate were mixed (i.e. pro-cyclicality, neutrality, or counter-cyclicality).

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  - ① Are the results consistent across multiple recessions or are they instead recession-specific?
  - ② Does the magnitude of the recession matter or are the effects similar regardless of magnitude?
  - ③ Do the generalized results over multiple recessions provide the same results as the previous methods?

## Approach - Data and Sample

- The wage, employment, and industry composition data are from the March Current Population Survey (CPS).
- The sample is restricted to full-time (35 hours or more per week), full-year (48 weeks or more per year), working age (15–64 years old) individuals in non-farm, private wage and salary employment (Altonji and Blank, 1999).
- The timing of the recessions is provided by the NBER Business Cycle Dating Committee.

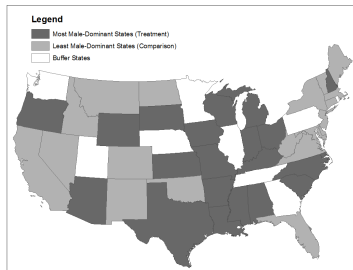
## Approach - Quasi-Experiment

- The industry composition within states is used to define their gender dominance and cyclicity exposure, which then determines the treatment and comparison sets.
- In male-dominant industries, men hold more than two-thirds of employment, as in construction (90.05%), mining (85.36%), and manufacturing (69.49%), which are highly cyclical.
- In female-dominant industries, women hold a simple majority of employment, including services (62.63%), F.I.R.E. (56.37%), and retail trade (50.12%), which are non-cyclical.

# Approach - Quasi-Experiment

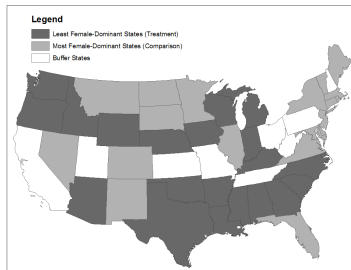
CPS Definition

Most Male-Dominant States



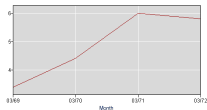
CPS Definition

Least Female-Dominant States

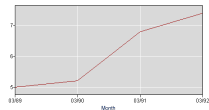


# Approach - Recessions

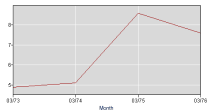
**Early 1970s**



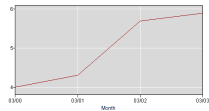
**Early 1990s**



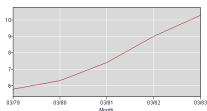
**Mid 1970s**



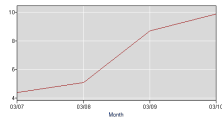
**Early 2000s**



**Early 1980s Double Dip**



**Great Recession**



## Approach - Estimation

- Difference-in-difference regressions are estimated of the form:

$$\ln(w_m)_{st} - \ln(w_f)_{st} = \alpha + \beta \cdot Treat_s + \gamma \cdot Post_t + \delta \cdot Treat_s * Post_t + \varepsilon_{st}$$

- $\ln(w)_{st}$  is the logged value of the labor outcome used to calculate the gender gap between males and females.
- $Treat_s$  is a treatment group binary indicator using the most male-dominant or least female-dominant ranking.
- $Post_t$  is a post-year binary indicator in the before, during, or after period, and  $Treat_s * Post_t$  is the interaction.



## Evidence - Great Recession

CPS Definitions	Hourly Wages			Employment		
	Before	During	After	Before	During	After
Most Male-Dom	2007-08	2008-09	2009-10	2007-08	2008-09	2009-10
Treat	0.0328 (0.0399)	0.0767* (0.0420)	-0.0049 (0.0424)	0.0016 (0.0291)	0.0262 (0.0322)	-0.0272 (0.0282)
Post	-0.0045 (0.0215)	-0.0330 (0.0204)	-0.0040 (0.0252)	-0.0101 (0.0133)	-0.0282* (0.0164)	0.0145 (0.0131)
Treat*Post	0.0439 (0.0309) [0.164]	-0.0815** (0.0305) [0.011]	0.0137 (0.0328) [0.679]	0.0246 (0.0229) [0.289]	-0.0534** (0.0262) [0.048]	0.0034 (0.0191) [0.859]
Observations	80	80	80	80	80	80

## Evidence - Great Recession

CPS Definitions	Hourly Wages			Employment		
	Before	During	After	Before	During	After
Least Fem-Dom	2007-08	2008-09	2009-10	2007-08	2008-09	2009-10
Treat	0.0641 (0.0406)	0.0970** (0.0402)	0.0196 (0.0418)	0.0272 (0.0280)	0.0572* (0.0293)	0.0030 (0.0280)
Post	-0.0076 (0.0199)	-0.0420** (0.0175)	-0.0094 (0.0218)	-0.0180 (0.0138)	-0.0259 (0.0161)	0.0142* (0.0080)
Treat*Post	0.0328 (0.0323) [0.316]	-0.0773** (0.0289) [0.011]	0.0286 (0.0337) [0.401]	0.0299 (0.0233) [0.207]	-0.0542** (0.0251) [0.037]	0.0098 (0.0185) [0.599]
Observations	80	80	80	80	80	80

## Evidence - Early 2000s

CPS Definitions	Hourly Wages			Employment		
	Before	During	After	Before	During	After
Most Male-Dom	2000-01	2001-02	2002-03	2000-01	2001-02	2002-03
Treat	0.0189 (0.0434)	-0.0316 (0.0403)	0.0271 (0.0373)	-0.0146 (0.0331)	-0.0506* (0.0281)	-0.0245 (0.0293)
Post	-0.0278 (0.0276)	-0.0187 (0.0216)	-0.0164 (0.0279)	0.0174 (0.0126)	0.0012 (0.0147)	-0.0219 (0.0144)
Treat*Post	-0.0505 (0.0346) [0.152]	0.0587* (0.0298) [0.056]	-0.0348 (0.0328) [0.295]	-0.0360* (0.0205) [0.087]	0.0261 (0.0206) [0.213]	0.0257 (0.0194) [0.193]
Observations	80	80	80	80	80	80

## Evidence - Early 2000s

	Hourly Wages			Employment		
CPS Definitions	Before	During	After	Before	During	After
Least Fem-Dom	2000-01	2001-02	2002-03	2000-01	2001-02	2002-03
Treat	0.0505 (0.0451)	-0.0224 (0.0431)	0.0609* (0.0357)	0.0372 (0.0336)	-0.0189 (0.0292)	0.0159 (0.0266)
Post	-0.0072 (0.0254)	-0.0426* (0.0230)	-0.0263 (0.0271)	0.0256** (0.0122)	-0.0097 (0.0141)	-0.0229* (0.0121)
Treat*Post	-0.0729** (0.0359) [0.049]	0.0832** (0.0321) [0.013]	-0.0094 (0.0326) [0.776]	-0.0561*** (0.0198) [0.007]	0.0349 (0.0214) [0.111]	0.0364** (0.0177) [0.047]
Observations	80	80	80	80	80	80

## Evidence - Early 1990s

CPS Definitions	Hourly Wages			Employment		
	Before	During	After	Before	During	After
Most Male-Dom	1989-90	1990-91	1991-92	1989-90	1990-91	1991-92
Treat	0.0461 (0.0567)	-0.0027 (0.0458)	-0.0020 (0.0558)	0.0245 (0.0410)	0.0167 (0.0345)	0.0153 (0.0408)
Post	-0.0133 (0.0252)	-0.0688*** (0.0247)	-0.0301 (0.0232)	0.0014 (0.0217)	-0.0569*** (0.0185)	-0.0074 (0.0177)
Treat*Post	-0.0488 (0.0341) [0.161]	0.0007 (0.0425) [0.986]	0.0565* (0.0332) [0.096]	-0.0077 (0.0306) [0.802]	-0.0015 (0.0314) [0.963]	0.0255 (0.0267) [0.344]
Observations	80	80	80	80	80	80

## Evidence - Early 1990s

CPS Definitions	Hourly Wages			Employment		
	Before	During	After	Before	During	After
Least Fem-Dom	1989-90	1990-91	1991-92	1989-90	1990-91	1991-92
Treat	0.0740 (0.0493)	0.0352 (0.0436)	0.0310 (0.0537)	0.0393 (0.0366)	0.0306 (0.0338)	0.0240 (0.0380)
Post	-0.0191 (0.0256)	-0.0435 (0.0297)	-0.0461* (0.0231)	0.0018 (0.0228)	-0.0404 (0.0256)	-0.0181 (0.0172)
Treat*Post	-0.0388 (0.0330) [0.247]	-0.0042 (0.0401) [0.917]	0.0759** (0.0326) [0.025]	-0.0087 (0.0310) [0.782]	-0.0066 (0.0343) [0.848]	0.0357 (0.0235) [0.136]
Observations	80	80	80	80	80	80

## Summary - Findings

- The gender gaps in both wages and employment were **reduced** during the **Great Recession**, with a larger reduction in the wage gap than in the employment gap.
- However, there is **no consistent pattern** in the changes to the gender wage and employment gaps during the **early 2000s** or **early 1990s** recessions.
- This evidence is consistent with **pro-cyclical** movements in the gender gap for the Great Recession, but it is mostly **neutral** for the early 2000s or early 1990s recessions.

## Summary - Explanations



- The evidence for pro-cyclicality may be recession-specific, in that it may have only occurred for the Great Recession and may not have occurred during any of the previous recessions.
- The early 2000s and early 1990s recessions may not have been large enough in magnitude to generate the pro-cyclical effect, as compared with the Great Recession.



## Summary - Next

- Include the early 1980s double dip recession, which was the last time the unemployment rate went above 10%, to see if the magnitude is what matters, but timing is still an issue.
- Generalize over all recessions and combinations of larger and smaller recessions to see if there are significant average effects on the gender wage and employment gaps to report.
- Use a consistent set of treatment and comparison states over all recessions to see if and how the results are altered, for example, from the Great Recession to the other recessions.

## Appendix - Further Reading

-  **Shin, D., 1999.** An equilibrium theory of wage and employment cyclicity by gender and by industry. *Southern Economic Journal*, 65(3), 451-471.
  
-  **Marchand, J., Olfert, S., 2013.** The US gender gap through the Great Recession using an alternative approach to cyclicity. *Applied Economics Letters*, 20(3), 276-281.