This Time It's Different: The Role of Women's Employment in a Pandemic Recession

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Franco-German Fiscal Policy Seminar, October 2020

"I can't remember—do I work at home or do I live at work?"

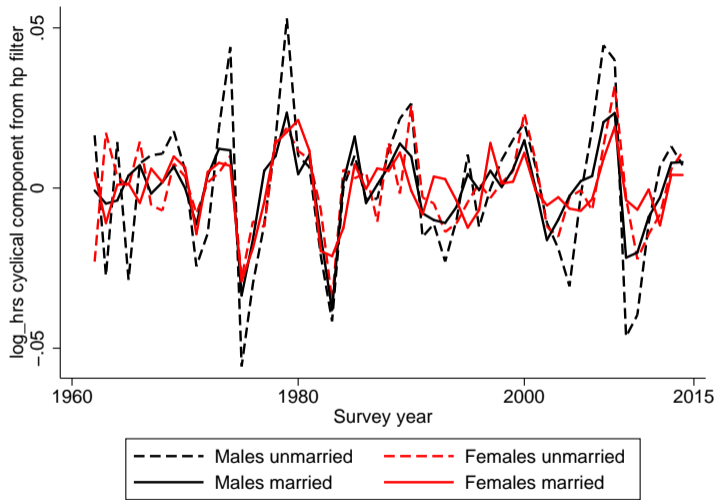# Why Gender?

COVID-19 kills more men than women . . .

. . . but pandemic recession has big economic impact on women.

$\rightarrow$ **Matters for welfare.**

$\rightarrow$ **Matters for policy.**

$\rightarrow$ **Matters for macroeconomic repercussions.**

Regular Recessions are "Mancessions"

76% of hours volatility due to men!

This Time It's Different . . .

. . . for two reasons:

▶ Usual recessions are concentrated in sectors where many men work, such as construction and manufacturing. **Not so this time.**

▶ People's ability to work also affected by increased childcare needs during school and daycare closures. **Affects women more than men.**

Outline

1. Facts from pre-crisis data.

2. Evidence on actual impact so far.

3. Macro model with heterogeneity in gender, marital status, occupation, and childcare needs.

4. Short-run, medium-run, and long-run implications

Expected Effects based on US Pre-Crisis Data

1. Women work less in critical (17%) and in telecommutable (22%) occupations than men (24% and 28%).
   → **Makes job loss more likely for women.**

2. 21% of children live with single mom, only 4% with single dad.
   → **More women unable to work due to increased childcare needs.**

3. Among 44% of couples where both work full time, mothers do 60% of childcare.
   → **Unequal division likely to continue during crisis.**

Expected Effects based on US Pre-Crisis Data

4. Job flexibility important for distribution of childcare: Men who can telecommute provide 50% more childcare compared to men who cannot.
   → **More equal division of childcare likely as crisis increases job flexibility.**

5. In 9-12% of couples, husband likely to become primary childcare provider during crisis (wife works in critical sector and he does not).
   → **Could lead to changing norms.**

The Actual Impact So Far

Large Gender Gap in Unemployment in the US
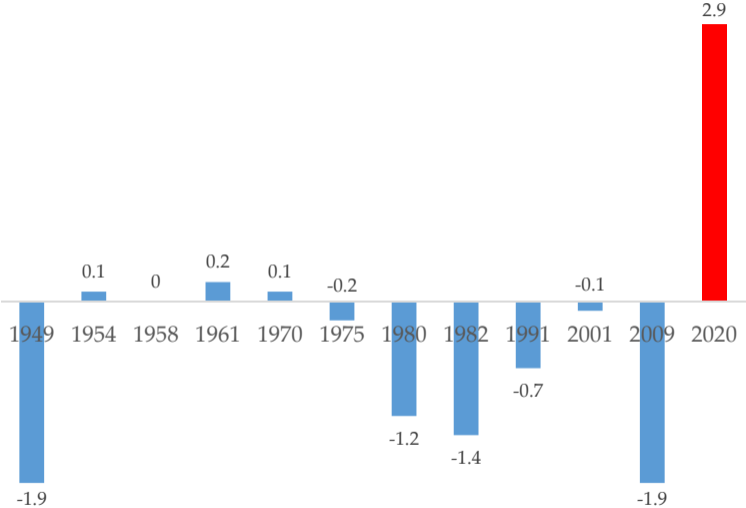
Difference btw Rise in Women's and Men's Unemployment, US Recessions 1948–2020

Changing Division of Child Care During This Crisis

- U.S.: Daily increase in childcare plus homeschooling hours among parents working from home 4.7 hours for men, 6.1 hours for women (Adams-Prassl et al).

- U.S.: Proportion of shared childcare increased by 11 pp (Carlson et al).

- Netherlands: In 30 percent of couples where only mother is in critical occupation father is now sole childcare provider (Gaudecker et al).

Family Macro Model

(Some) Literature We Build On

▶ **Role of female labor supply in business cycles**: Albanesi (2020), Albanesi and Sahin (2018), Bardoczy (2020), Fukui, Nakamura, and Steinsson (2019), Doepke and Tertilt (2016), Mankart and Oikonomou (2016, 2017).

▶ **Family risk sharing**: Blundell, Pistaferri, and Saporta-Eksten (2016), Ellieroth (2019), Guler, Guvenen, and Violante (2012), Ortigueira and Sassi (2013), Wu and Krueger (2018).

▶ **The Great Lockdown Recession**: Gregory, Menzio, and Wiczer (2020), . . .

Overview of Ingredients

- ▶ Women and men, singles and couples, childcare needs.

- ▶ Labor supply on the extensive margin, part-time work possible.

- ▶ Occupations differ by telecommutability.

- ▶ Job destruction shocks and unemployment (search model).

- ▶ Endogenous accumulation of experience.

- ▶ Division of labor partly shaped by social norm.

- ▶ Choices: labor supply, childcare, consumption, savings

No infection model! Pandemic recession: shock to **labor market** and **childcare needs**.

Setting

Continuum of three types of households: single women, single men, couples.

State variables:

- ▶ Assets a.

- ▶ Human capital h.

- ▶ Kids $k \in \{0, s, b\}$ (no kids, small kid, big kid).

- ▶ Employment $e \in \{E, U\}$ (employed, unemployed).

- ▶ Occupation $o \in \{TC, NT\}$ (can telecommute, cannot telecommute).

- ▶ Social norm $m \in \{0, 1\}$ (traditional, modern): utility penalty if he does more childcare $\psi(t^m - t^f)$.

- ▶ Aggregate state X: normal, recession, pandemic, new normal

Evolution of State Variables

▶ Marital state is permanent type.

▶ Children arrive and leave according to probabilities $\pi^g(k'|k)$ for singles and $\Pi(k'|k)$ for couples).

▶ Employment opportunities arise and vanish according to probabilities $\pi^g(e'|e, X)$ for singles and $\Pi^g(e'|e, X)$ for couples. Offers can be rejected.

▶ Occupation types change according to $\pi(o'|o, X)$.

▶ Social norms change according to $\Pi(m'|m, X)$.

▶ Human capital accumulates and depreciates stochastically as a function of labor supply.

The Decision Problem for Unemployed Singles

$$v_U^g(a, h, k, o, X) = \max_{a', c, l, t} \left\{ u^g(c, l) + \omega \beta E \left[\tilde{v}_{e'}^g(a', h', k', o', X') \right] \right\}.$$

$$c + a' = zw^g h + (1 + r)a,$$
$$t = \gamma(k, X),$$
$$l + t = T.$$

Childcare needs: $\gamma(s, X) > \gamma(b, X) > \gamma(0, X) = 0$.

The Decision Problem for Employed Singles

$$v_E^g(a, h, k, o, X) = \max_{a',c,l,n,t} \left\{ u^g(c, l) + \omega\beta E\left[\tilde{v}_{e'}^g(a', h', k', o', X')\right] \right\}.$$

subject to:

$$c + a' = w^g h\, n^\theta + (1 + r)a,$$

$$t + \phi(k)\, n\, I(o = TC) \geq \gamma(k, X),$$

$$l + n + t = T.$$

Decision Problem for Singles at Start of Period

Job offer:

$$\tilde{v}_E^g(a, h, k, o, X) = \max \left\{ v_E^g(a, h, k, o, X), v_U^g(a, h, k, o, X) \right\}.$$

Without a job offer there is no choice to be made, so we have:

$$\tilde{v}_U^g(a, h, k, o, X) = v_U^g(a, h, k, o, X).$$

Decision Problem for Dual-Earner Couples

$$V_{EE}(a, h^f, h^m, k, o^f, o^m, m, X) = \max \{ \lambda u^f(c^f, l^f) + (1 - \lambda)u^m(c^m, l^m)$$

$$- (1 - m)\psi(t^m - t^f) + \omega\beta E \left[\tilde{V}_{(e^f)', (e^m)'}(a', (h^f)', (h^m)', k', (o^f)', (o^m)', m', X') \right] \}.$$

subject to:

$$c^f + c^m + a' = w^f h^f (n^f)^\theta + w^m h^m (n^m)^\theta + (1 + r)a,$$

$$t^f + t^m + \phi(k) \left(n^f I(o^f = TC) + n^m I(o^m = TC) \right) = \gamma(k, X),$$

$$l^f + n^f + t^f = T,$$

$$l^m + n^m + t^m = T.$$

Couples' Problem at Start of Period

Both have job offer:

$$\tilde{V}_{EE}(a, h^f, h^m, k, o^f, o^m, m, X) = \max \{ V_{EE}(a, h^f, h^m, k, o^f, o^m, m, X),$$
$$V_{EU}(a, h^f, h^m, k, o^f, o^m, m, X), V_{UE}(a, h^f, h^m, k, o^f, o^m, m, X),$$
$$V_{UU}(a, h^f, h^m, k, o^f, o^m, m, X) \}.$$

. . . and so on.

Calibration

Choose initial parameters to match:

▶ Observed gender wage gap

▶ Division of childcare among dual earner couples

▶ Labor supply of married women

▶ Labor market flows in normal times

▶ Estimates of returns to experience and skill loss in unemployment.

External parameters Est. parameters Model fit

Recessions in the Model

Regular recession (6 quarters):

1. Large change in men's job destruction & finding rates, half as large for women

Pandemic recession (6 quarters):

1. Large change in men's job destruction & finding rates, equally large for women

2. Childcare needs ↑ from 13.7 hrs/wk to 42 hrs/wk (small kids), 4.2 to 26 (big kids)

3. Permanent shift in telecommuting fraction from 11% to 30% ("New Normal")

4. Permanent shift in fraction of modern couples from 70% to 85% ("New Normal")

more details

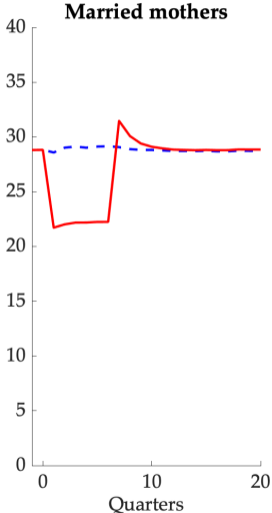# Short-Run Effects

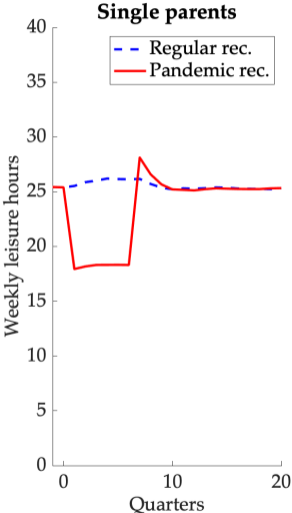# Decline in Labor Income, Pandemic vs. Regular Recession
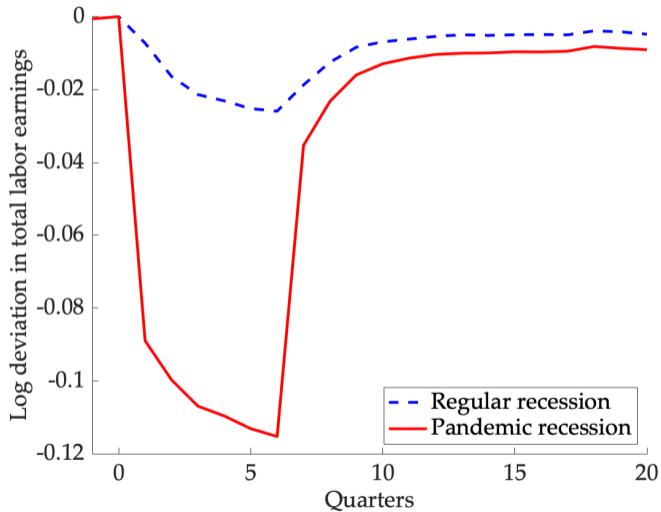
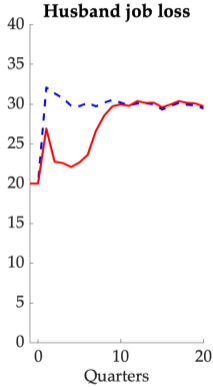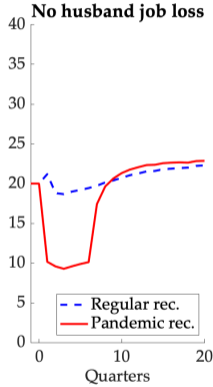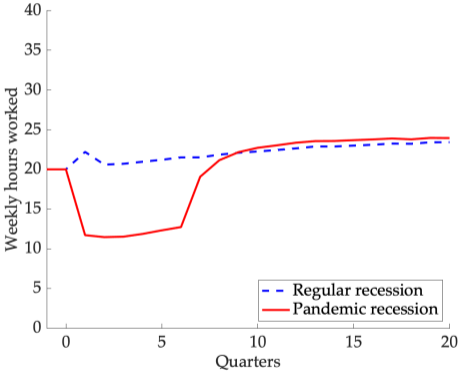# Women's vs. Men's Labor Supply, Pandemic vs. Regular Recession
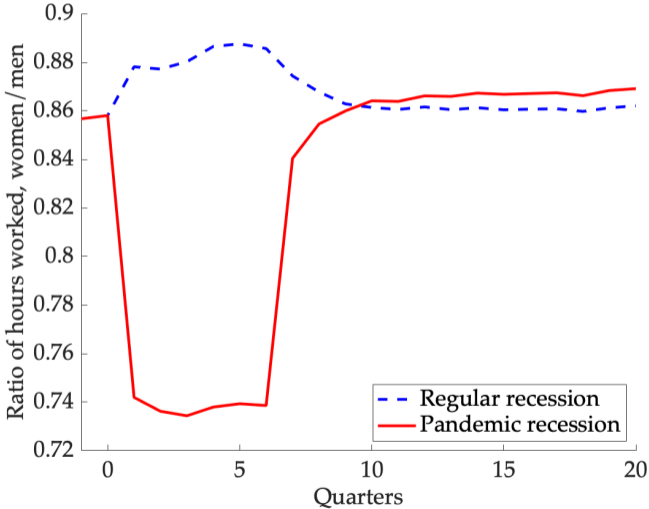
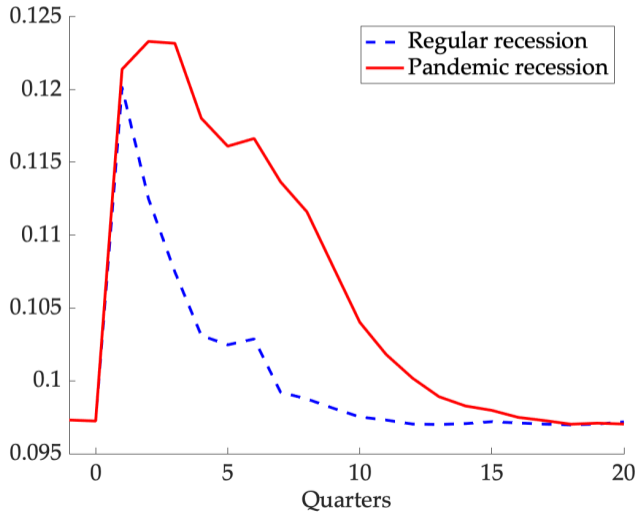# Labor Supply of Fathers and Mothers in Married Couple Households
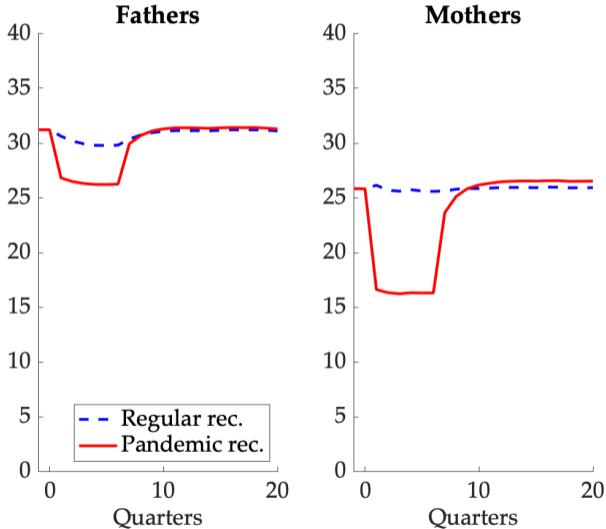
The Leisure Gap
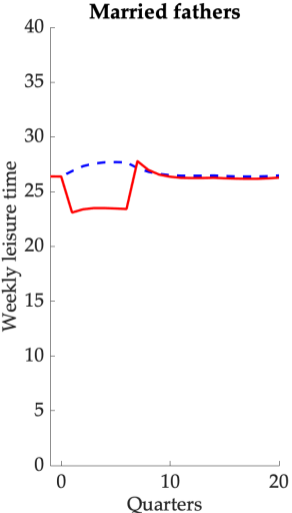
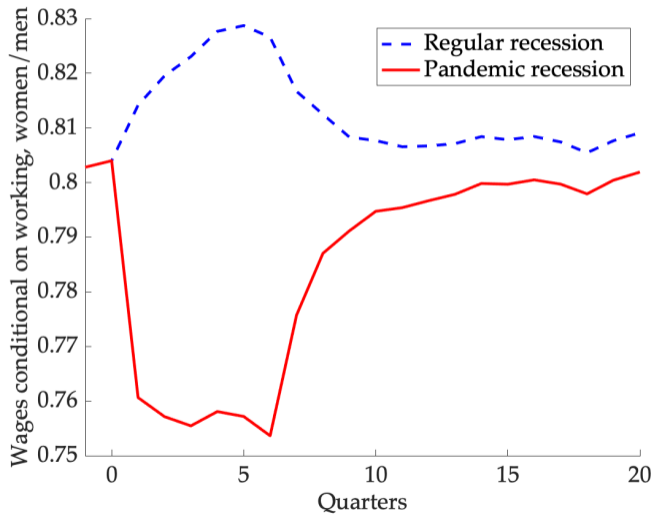# Spousal Insurance: Pre-Recession Part Time Wives' Labor Supply

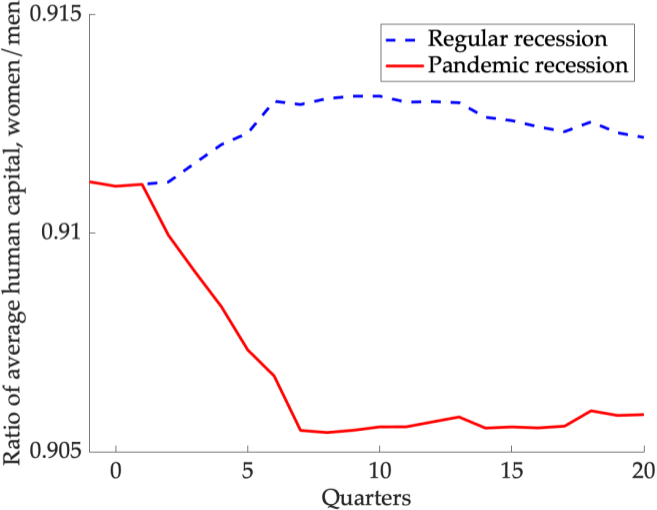# Marginal Propensities to Consume are Higher in Pandemic: Couples

Medium-Run Effects on Gender Equality

Gender Wage Gap, Pandemic vs. Regular Recession

Human Capital Gap, Pandemic vs. Regular Recession

Long-Run Effects on Gender Equality and Policy Counterfactuals

Potential for Changing Social Norms

"I just wanted to say I was excited to see your paper. My husband is a dentist who was never much involved with the kids or domestic activities, and has transformed to a stay-at-home dad for the past 5 weeks while I continue to work from home as a government contractor. The effect on our family has been profound and life changing, and it would NEVER have happened without a global pandemic."

Rise in Share of Couples Where Husband Does More Childcare
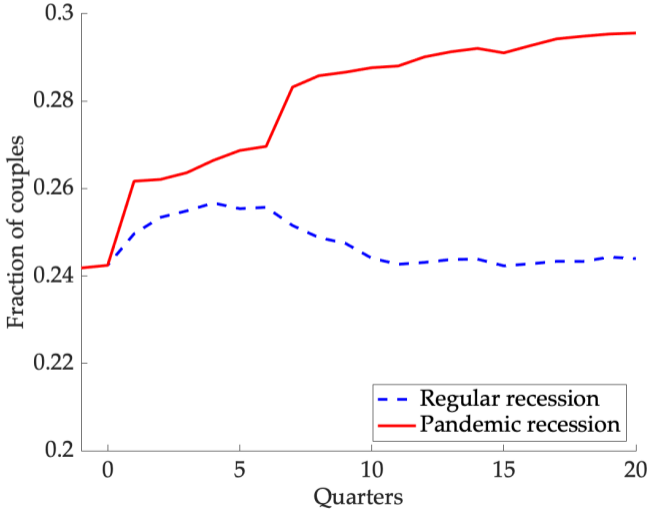
Long Run Labor Supply: Married Men vs. Married Women
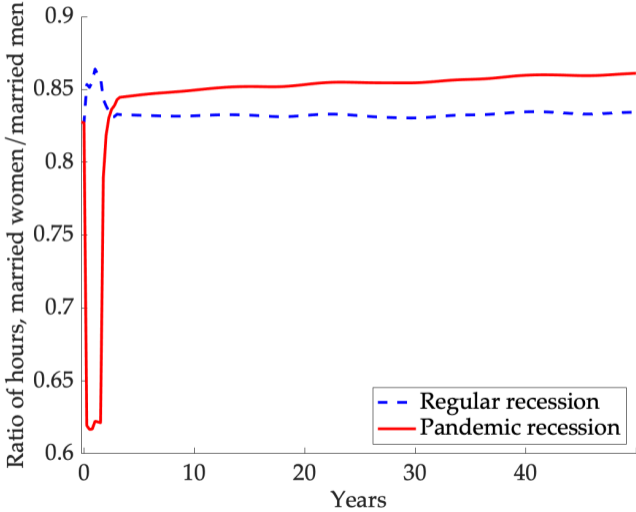
Long Run Gender Wage Gap

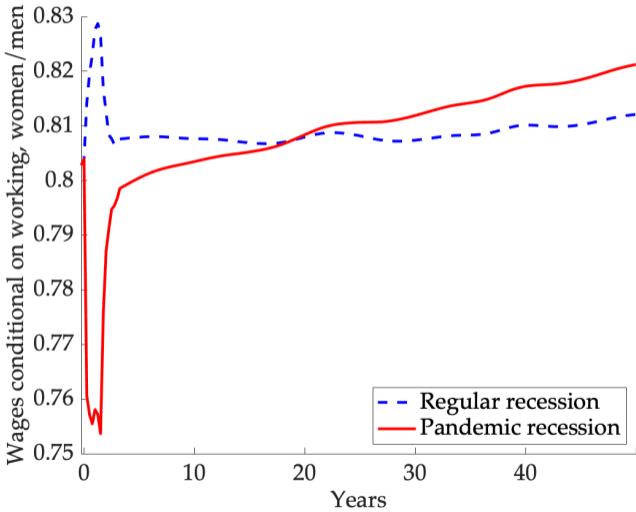# Equal Role for Social Norm and Telecommuting in Gender Wage Gap
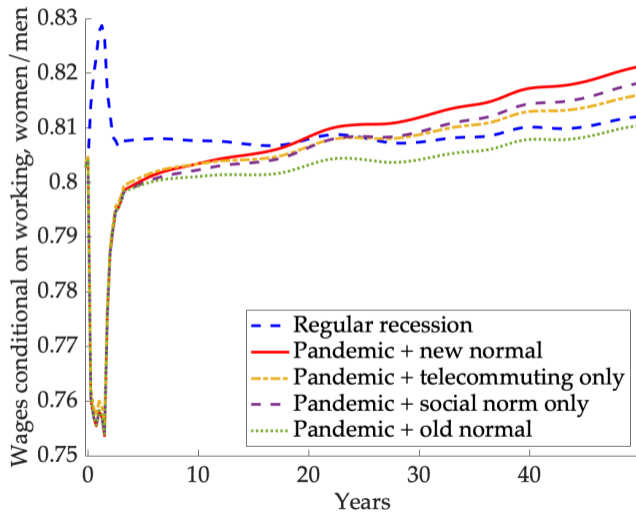
Policy Counterfactuals: School Reopenings: Labor Income
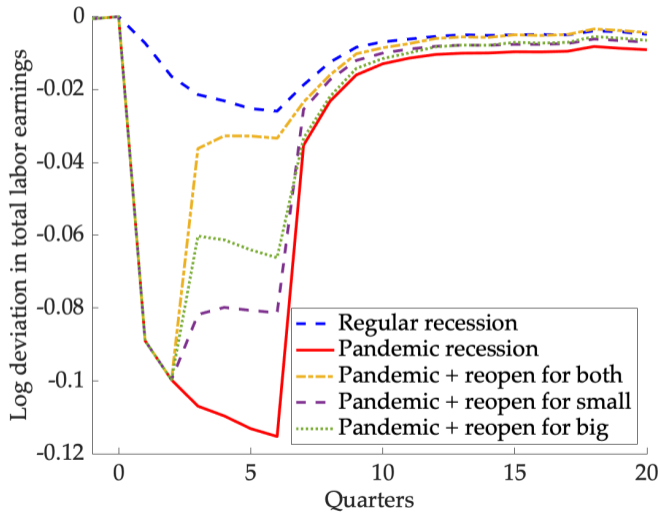
Policy Counterfactuals: Gender Wage Gap
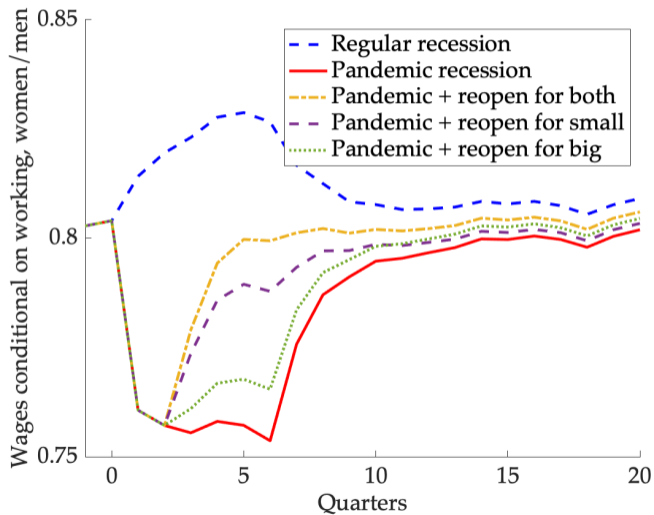
Summary

Economically, impact on women and childcare needs is biggest distinction between pandemic and regular recession.

▶ Labor income declines ∼4x more in pandemic recession than regular recession

▶ Fiscal policy more effective because of elevated MPCs

▶ Gender wage gap rises ∼5pp and takes 20 years to recover

▶ Increase in share of households with father as primary caregiver from 24% to 30%

▶ Reopening schools highly effective in speeding recovery, reducing gender wage gap

Extra Slides

Evolution of Aggregate State Variables

- $X \in \{N, NN, R, P\}$. navigationGo back

- N: normal before recession hits.

- R: regular recession, decline in job finding probabilities, rise in job-loss probabilities for men, smaller change for women.

- P: pandemic recession, same change in labor market flows for men and women, plus large increase in childcare requirements.

- NN: new normal after pandemic recession, rise in TC jobs & shift in social norms.

$$\pi(S'|S) = \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 1 - \rho_R & 0 & \rho_R & 0 \\ 0 & 1 - \rho_P & 0 & \rho_P \end{pmatrix}.$$

Parameter	Value	Interpretation
ω	0.99	Expected retirement at age 60
β	0.98	Discount factor
r	0.02	Interest rate
T	1.5	Time endowment
$\gamma(s, N)$	0.34	Small kids require 13.7 hours of childcare per week
$\gamma(b, N)$	0.11	Big kids require 4.2 hours of childcare per week
η	0.03	Return to labor market experience
δ	0.06	Skill depreciation in unemployment
ρ_{NT}	0.999	8.2% of pre-pandemic jobs are telecommuting

Internally Calibrated Parameters Go back

Description	Parameter	Value
Exogenous gender wage gap	w^f	0.91
Wife's bargaining power in married couples	λ	0.40
Diminishing returns to market work	θ	0.55
Women's leisure preference	α^f	0.64
Men's leisure preference	α^m	0.43
Telecommuters' childcare bonus for small children	$\phi(s)$	0.07
Telecommuters' childcare bonus for big children	$\phi(b)$	0.14
Job offer probability for employed women	$\pi^f(E\|E, N)$	0.93
Job offer probability for non-employed women	$\pi^f(E\|U, N)$	0.40
Job offer probability for employed men	$\pi^m(E\|E, N)$	0.93
Job offer probability for non-employed men	$\pi^m(E\|U, N)$	0.40
Utility cost of violating social norms	ψ	0.23

Model Fit

|	Data	Model
Gender wage gap	0.81	0.81
Childcare division, full-time couples, men-to-women	0.65	0.66
Men who telecommute do 50% more childcare	1.50	1.48
Relative labor supply, men-to-women	1.19	1.17
Labor supply of married women without kids	0.72	0.73
Labor supply of married women with small kids	0.56	0.59
Labor supply of married women with big kids	0.64	0.70
Share of married mothers not employed	0.30	0.26
Share of married mothers working part-time	0.18	0.19
Share of married mothers working full-time	0.52	0.55
Women's Labor Market Flows: E-to-E	0.91	0.92
Women's Labor Market Flows: U-to-U	0.77	0.73
Men's Labor Market Flows: E-to-E	0.93	0.92
Men's Labor Market Flows: U-to-U	0.66	0.66

Non-Targeted Moments

	Data	Model
Composition of single fathers by employment state:		
— not employed	0.16	0.15
— part-time	0.07	0.08
— full-time	0.77	0.77
Composition of married fathers by employment state:		
— not employed	0.07	0.19
— part-time	0.04	0.05
— full-time	0.89	0.75
Composition of single mothers by employment state:		
— not employed	0.24	0.15
— part-time	0.17	0.37
— full-time	0.59	0.48
Share of full-time dual earner couples by kids' age:		
— no kids	0.61	0.53
— small kids	0.43	0.21
— big kids	0.49	0.47

Single Parents' Labor Supply Falls Dramatically

Without kids | With kids

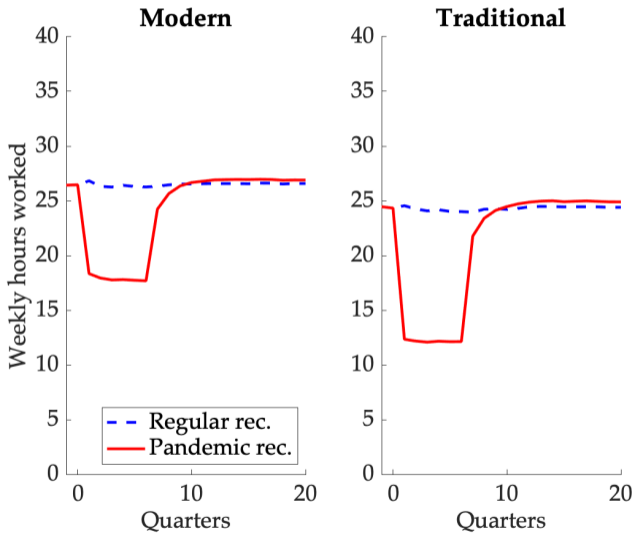Regular rec.
Pandemic rec.

Weekly hours worked

Quarters
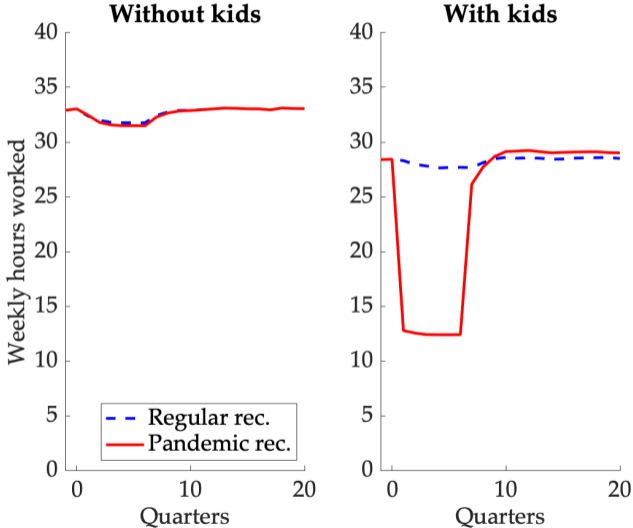
Labor Supply of Parents vs. Childless Married Couples
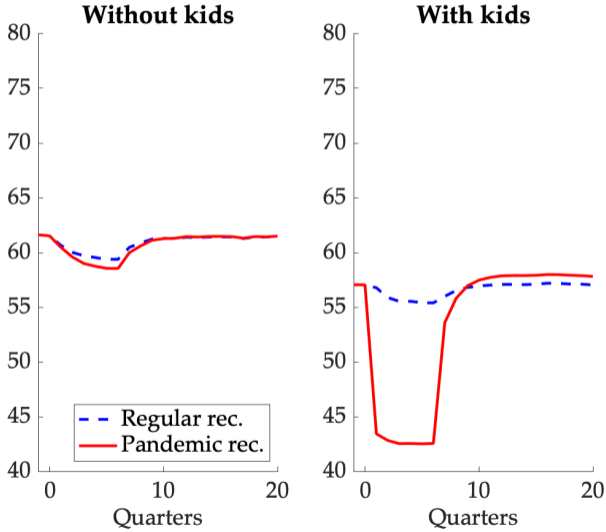
Modern vs. Traditional Couples: Mothers' Labor Supply

Importance of Ability to Telecommute: Married Mothers