

U.S. Monetary Policy's Distributional Impacts: Evaluating Wealth and Employment Outcomes by Race and Gender

Melanie G. Long

Department of Economics
The College of Wooster

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Motivation

Is monetary policy “**identity neutral**” in its effects?

Some policymakers are calling for the potential distributional consequences to be examined alongside MP’s demand management effects (Bostic 2020).

Research Questions

- ▶ How do monetary policy shocks affect relative **unemployment rates** and **wealth** by race and gender in the United States?
- ▶ What are the mechanisms that explain the labor market effects?
- ▶ Do the answers change when considering unconventional MP?

Social Stratification and MP Impacts

A change in the federal funds rate could differentially impact women and Black workers via multiple channels. The implied directions (more + or less – sensitive) vary and are potentially asymmetric.

Unemployment rates

- + Job precarity
- + Discrimination
- Industrial composition

Net worth

- ? Labor income
- Portfolio composition
- +/- Differential returns

Empirical Literature

- ▶ Contractionary policy increases racial unemployment gap; mixed evidence regarding gender gap.
- ▶ Portfolio effects of CMP decrease wealth gap (Bartscher et al 2022)
- ▶ No work on unconventional MP post-2007.

▶ Detailed review of literature

Most work has used time-series methodologies: VAR, IV-LP

Two recent papers on MP exploit fact that policy is set at national level but outcomes can be observed at the state level → **panel data approaches**

Empirical Literature

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Two recent papers on MP exploit fact that policy is set at national level but outcomes can be observed at the state level → **panel data approaches**

Empirical strategies

1. Baseline panel data estimation

$$y_{ijt} = \alpha_i + \gamma_j + \theta_j r_{t-1} + \beta \mathbf{X}_{ijt} + \epsilon_{ijt}$$

for gender/race group j in state i in year t where $t = 1980, \dots, 2007$

Panel extended to 2019 to examine unconventional MP using shadow rates

y_{ijt} = unemployment rate/measure of net worth

r_{t-1} = nominal federal funds rate (percentage points)

\mathbf{X}_{ijt} = additional covariates

Errors clustered at state/group levels

Empirical strategies

2. Analysis using state-specific monetary policy measure (Cooper, Luengo-Prado, and Olivei 2022) [▶ Details](#)

Solution: Identify MP shocks via differentials in state impacts of MP

Step 1: Estimate interest rate r_{it}^* that closes unemployment gap in $t + 2$

Step 2: Estimate baseline model using time FEs and relative MP stance:

$\tilde{r}_{it} = r_{it} - r_{it}^*$ where r_{it} is real FFR using state-specific inflation measure

Identifying assumptions:

- State economies have different sensitivities to monetary policy shocks
- Monetary policy is set in response to national economic conditions, not state idiosyncrasies.

3. Mediator analysis (adapted from Leahy and Thapar 2022)

Panel data can be used to identify heterogeneity in first-order effects.
Time FEs absorb common MP impacts and national economic conditions.

$$u_{ijt} = \alpha_i + \gamma_j + \eta_t + \theta_j \tilde{r}_{it-1} + \xi_j z_{it-1} + \omega_j z_{it-1} \tilde{r}_{it-1} + \beta \mathbf{X}_{itj} + \epsilon_{ijt}$$

for gender/race group j in state i in year t where $t = 1980, \dots, 2007$

u_{ijt} = unemployment rate

z_{it} = one of three mediator variables

Errors clustered at state/group level

▶ Variable list

Microeconomic data

Microdata aggregated to the state-race-gender-year level: Black men, black women, white men, white women (Seguino and Heintz 2012)

CPS Annual Social and Economic Supplement

- ▶ Employment status for individuals
- ▶ Gender, race
- ▶ 1980 - 2007
- ▶ Approx. 150,000 observations per year

Panel Study of Income Dynamics

- ▶ Household wealth outcomes
- ▶ HH structure, race
- ▶ 1984, 1989, 1994, 1999-2007 biennially
- ▶ Approx. 7000 observations per year

Final panel: 4 race-gender categories \times 28 or 7 years \times S States

Aggregation to the state level

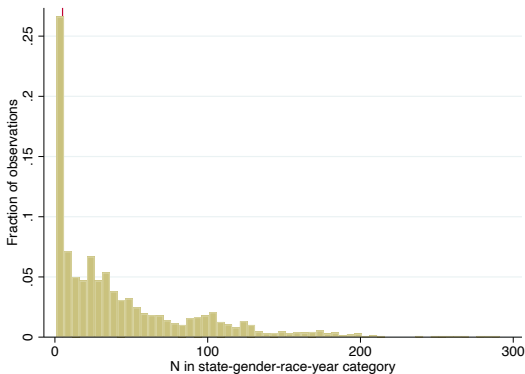
Sample Sizes:

N varies widely across state-race-gender-year observations, esp. PSID.

[▶ CPS histogram](#)

Wealth:

Heavily skewed to the right, increases variance; worse with small N



- ▶ 18.7% of observations are missing in PSID; 2.5% in CPS
- ▶ Drop states where at least one observation has $N < 5$: 19 states remain in PSID, 41 in CPS

[▶ States included](#)

[▶ Sensitivity Analysis](#)

Summary Statistics

Panel A: CPS Sample

	White men	Black men	Black women	White women	Total
Unemployment rate	6.020 (2.631)	14.83 (10.18)	12.31 (8.963)	5.045 (2.025)	9.549 (8.111)
Labor force participation rate	79.70 (3.341)	76.89 (7.250)	69.25 (8.295)	65.27 (5.166)	72.78 (8.556)
Real GSP growth	2.957 (2.987)	2.957 (2.987)	2.957 (2.987)	2.957 (2.987)	2.957 (2.986)
N	1148	1148	1148	1148	4592

Panel B: PSID Sample

	White men	Black men	Black women	White women	Total
Average household wealth	304869.3 (200516.1)	84211.0 (187283.6)	34603.0 (79366.8)	134679.0 (93290.4)	139590.6 (181201.9)
Median household wealth	118064.0 (73699.0)	21457.6 (18573.0)	5266.8 (7463.3)	50901.7 (50714.4)	48922.5 (62887.7)
Log of average household wealth	12.44 (0.607)	10.82 (0.830)	9.850 (1.029)	11.59 (0.669)	11.18 (1.247)
N	152	152	152	152	608

Notes: Standard deviations in parentheses. Averages are unweighted. Samples are limited to states that meet cutoff threshold of $N = 5$ for each dataset.

Cooper, Luengo-Prado, and Olivei (2022)

A one p.p. increase in interest rate gap = a one p.p. increase in real FFR relative to eq. rate = relatively contractionary MP

▶ 1. Smoothed inflation rate

▶ 2. State-level IS curve

▶ Economic significance

	(1) Unemployment Rate	(2) Average Wealth	(3) Median Wealth	(4) Logged Wealth
L.Rate gap	0.528*** (0.143)	-32985.6** (14490.3)	-7999.0** (3853.8)	-0.0626 (0.0450)
Black men × L.Rate gap	0.781*** (0.119)	10877.4 (14766.6)	6900.5** (2943.8)	-0.0162 (0.0414)
Black women × L.Rate gap	0.641*** (0.114)	31902.4*** (8443.6)	6101.1** (2716.4)	-0.0459 (0.0372)
White women × L.Rate gap	-0.0328 (0.0483)	28306.3*** (8710.5)	3630.9 (3035.4)	0.0168 (0.0251)
Time FEs	Yes	Yes	Yes	Yes
Observations	4592	532	532	532
Adjusted R-squared	0.452	0.519	0.779	0.770

Notes: Standard errors in parentheses. Stars indicate significance at the * 10%, ** 5%, and *** 1% levels. Aggregation threshold used is $N = 5$.

Alternative observation thresholds

N = 10

	(1) Unemployment Rate	(2) Average Wealth	(3) Median Wealth	(4) Logged Wealth
L.Rate gap	0.741***	-45857.7**	-10650.1**	-0.0996*
Black men \times L.Rate gap	0.602***	1851.9	5358.8*	-0.0358
Black women \times L.Rate gap	0.522***	30547.2***	5530.4*	-0.0620
White women \times L.Rate gap	-0.00681	26666.8***	3596.0	0.0189
Observations	3808	420	420	420

N = 20

L.Rate gap	0.749***	-33020.7**	-11666.3**	-0.121**
Black men \times L.Rate gap	0.623***	9345.9	4567.0	-0.0382
Black women \times L.Rate gap	0.546***	26065.5**	5228.9	-0.0639*
White women \times L.Rate gap	-0.0533	24981.0**	4514.2	0.0174
Observations	3360	280	280	280

Leahy and Thapar (2022): Mediator Analysis

z_{it-1} = one of three mediator variables

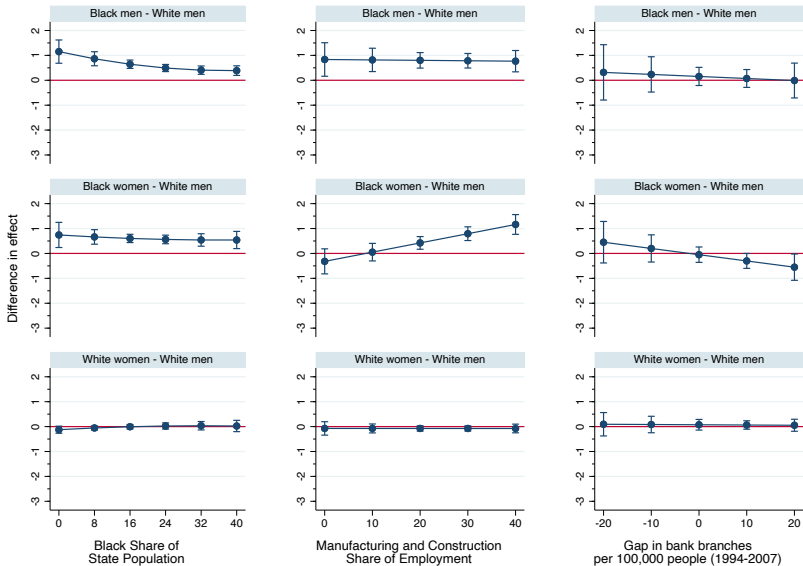
- Black share of the state population in state i and year $t - 1$ (Census), quadratic form (Dysmki and Aldana 2014; Seguino and Heintz 2012)
- Share of non-farm employment in manufacturing and construction in state i and year $t - 1$ (BEA)
- Gap in bank branches per 100,000 people (FDIC, 1994 onward):

$$bdgap_{it-1} = bd_{it-1}^b - bd_{it-1}^a$$

where bd_{it-1}^b is bank density in counties with above median black population share for state i in year $t - 1$ (and conversely for bd_{it-1}^a)

► Histograms of mediators

► Back



Notes: Each column presents results from separate regression with interaction of mediator variable and race-gender groups. Bars indicate 95% confidence intervals.

Conclusions

- ▶ Contractionary monetary policy shocks disproportionately increase unemployment rate for Black men and women in the U.S.
- ▶ Mediator analysis
 - Larger Black population share or smaller manufacturing/construction employment share reduces effect
 - Competition over scarce jobs may play a role in results
(Chelwa, Hamilton, and Stewart 2022; Seguino and Heintz 2012)
- ▶ Contractionary policy does not reduce racial wealth gap as predicted by portfolio effect. Possibly larger relative wealth losses for black women.

Conclusions

- ▶ Unconventional monetary policy ▶ Shadow rate results
 - Wu-Xia shadow rates are used to extend panel to 1980-2019.
 - Overall results hold
 - No evidence of distributional effects in 2008-2019 period specifically
- ▶ The distributional impacts of monetary policy may be mixed and should be part of the discussion of policy costs.

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Net worth

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Empirical Literature [▶ Back](#)

Study	Geography	Time Period	Methodology	Monetary Policy Variable	Results:
Hull (1983)	United States	1968-1981	Correlations	Monetary base	CMP increases black-white unemployment gap
Abell (1991)	United States	1974-1987	VAR	M2 money supply	EMP decreases unemployment more for white men and black women
Zavodny and Zha (2000)	United States	1972-1999	Bayesian VAR	Shock to federal funds rate	CMP increases unemployment more for black workers in absolute but not relative terms
Thorbecke (2001)	United States	1973-1996	VAR, narrative evidence, Romer-Romer method	Shock to federal funds rate, Romer & Romer series	CMP increases unemployment rates for black and Hispanic workers more than white workers
Carpenter and Rodgers (2004)	United States	1973-2002	VAR, narrative evidence, Romer-Romer method	Shock to federal funds rate, Romer & Romer series	CMP decreases employment-population ratio of black workers more than white workers
Braunstein and Heintz (2008)	Developing economies	1971-2002	Trends from contractionary episodes	Deflation, interest rate, money supply	CMP decreases employment more for women than men
Takhtamanova and Sierminska (2009)	OECD countries	1980-2004	Single equation regression, VAR	Short-term interest rate	CMP has no gendered impact on employment
Seguino and Heintz (2012)	United States	1979-2008	Two-stage estimation, state-level panel data	Federal funds rate	CMP increases unemployment ratio for black men, black women, and white women rel. to white men
Bartscher et al. (2022)	United States	1972-2008 (2019 SCF Data)	Instrumental variable local projection	Extended Romer-Romer series as instrument for FFR	EMP increases wealth more for white households, increases employment and earnings more for black households

Empirical strategies

2. Analysis using state-specific monetary policy measure (Cooper, Luengo-Prado, and Olivei 2022)

Solution: Identify MP shocks via differentials in state impacts of MP

Stage 1: Estimate equilibrium rate of interest for state i

$$u_{it} = \phi_i + \zeta_t + \lambda_{1i}u_{it-1} + \lambda_{2i}u_{it-2} + \nu_i r_{it-1} + \epsilon_{it}$$

for state i in year t where $t = 1980, \dots, 2007$

u_{it} = unemployment rate in year t - unemployment rate in 1995/96

r_{it-1} = smoothed real federal funds rate (nominal - % Δ GSP deflator)

→ Rate that closes unemployment gap in two years: r_{it}^*

Stage 2: Estimate model from 1. using relative MP stance: $\tilde{r}_{it} = r_{it} - r_{it}^*$

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List of covariates and data sources

Interest Rate Smoothing	
Variable	Data Source
<i>Dependent:</i> Percent change in GSP deflator	BEA
Percent change in Core PCE Index	BEA
Relative growth rate in year t : real GSP growth - US GDP growth	BEA
Relative growth rate in year $t - 1$	

State IS Curve	
Variable	Data Source
<i>Dependent:</i> Unemployment gap = Average unemployment rate in state i in year t - average unemployment rate in state i in 1995/96	BEA
Unemployment gap in year $t - 1$	BEA
Unemployment gap in year $t - 2$	BEA
Real federal funds rate in year t = nominal federal funds rate - smoothed state inflation rate	Federal Reserve Board of Governors

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List of covariates and data sources

Variable	Unemployment Regressions	Data Source
<i>Dependent:</i> Unemployment rate for group j in state i and year t		CPS (1980 - 2007)
Reverse rate gap, federal funds rate, or Romer & Romer residuals		Derived, FR Board of Governors, or Wieland and Yang (2019)
Unemployment rate for group j in state i and year $t - 1$		CPS (1980 - 2007)
LFPR for group j in state i and year t		CPS (1980 - 2007)
Real GSP growth in state i and year t		BEA
Real GSP growth in state i and year $t - 1$		BEA

Variable	Wealth Regressions	Data Source
<i>Dependent:</i> Average, median, or log of average wealth for group j in state i and year t		PSID (1984, 1989, 1994, 1999-2007 biennially)
Reverse rate gap, federal funds rate, or Romer & Romer residuals		Derived, FR Board of Governors, or Wieland and Yang (2019)
Average, median, or log of average wealth for group j in state i and year $t - 2$ or $t - 5$ (see data source)		PSID (1984, 1989, 1994, 1999-2007 biennially)
Real GSP growth in state i and year t		BEA
Real GSP growth in state i and year $t - 1$		BEA

List of covariates and data sources

Variable	Mechanism Analysis	Data Source
<i>Dependent:</i> Unemployment rate for group j in state i and year t		CPS (1980 - 2007)
Reverse rate gap, federal funds rate, or Romer & Romer residuals		Derived, FR Board of Governors, or Wieland and Yang (2019)
Unemployment rate for group j in state i and year $t - 1$		CPS (1980 - 2007)
Real GSP growth in state i and year t		BEA
Real GSP growth in state i and year $t - 1$		BEA
Share of employment in manufacturing and construction in state i and year $t - 1$		BEA
Black share of the state population in state i and year $t - 1$, quadratic form		Census
Bank density gap		FDIC (1994-2007)

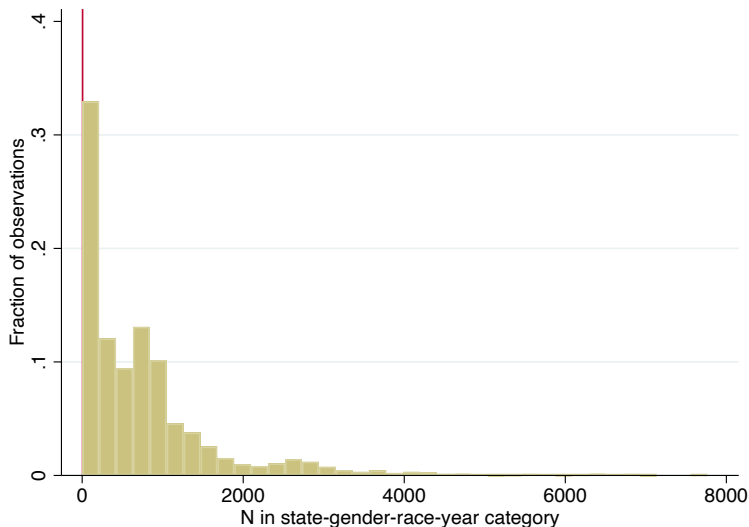
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States included in analysis

CPS (Unemployment Regressions)		PSID (Wealth Regressions)
AK	MS	CA
AL	NC	FL
AR	NE	GA
AZ	NJ	IL
CA	NM	IN
CO	NV	MD
CT	NY	MI
DC	OH	MO
DE	OK	MS
FL	OR	NC
GA	PA	NY
IA	RI	OH
IL	SC	PA
IN	TN	SC
KS	TX	TX
KY	VA	VA
LA	WA	
MA	WI	
MD	WV	
MI		
MN		
MO		

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Histograms of observations by sample size, CPS



Notes: Histograms omit observations where $N = 0$. Red line indicates cutoff threshold of $N = 5$, such that states with any gender-race-year observations with fewer than 5 individual or household observations are dropped from the analysis.

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Baseline regression results

	(1) Unemployment Rate	(2) Average Wealth	(3) Median Wealth	(4) Logged Wealth
L.Nominal FFR	0.181*** (0.0226)	-18074.6*** (6225.4)	-5630.8*** (1555.9)	-0.0386** (0.0176)
Black men \times L.Nominal FFR	0.369*** (0.0785)	4106.9 (9852.5)	6788.8*** (1842.8)	0.0185 (0.0316)
Black women \times L.Nominal FFR	0.362*** (0.0902)	11798.3** (5251.3)	6038.2*** (1475.0)	-0.0426 (0.0326)
White women \times L.Nominal FFR	-0.0301 (0.0406)	9982.0* (5308.4)	3400.3* (1891.3)	-0.0155 (0.0192)
Time FEs	No	No	No	No
Observations	4592	532	532	532
Adjusted R-squared	0.412	0.488	0.638	0.756

Notes: Standard errors in parentheses. Stars indicate significance at the * 10%, ** 5%, and *** 1% levels. Regressions control for current and lagged real GSP growth, the lagged value of the dependent variable, and group and state fixed effects. "Men" are "male- or dual-headed" and "women" are "female-headed HHs" in wealth regressions. Errors are clustered at the group-state level. Aggregation threshold used is $N = 5$, where any state that has one or more race-gender-state-year observations below N is dropped from the sample.

Smoothed Inflation Rate

1. Estimate smoothed measure of state-level inflation

- ▶ GSP deflator calculated using BEA estimates of real and nominal GSP
- ▶ Inflation is calculated as the annual percentage change in the GSP deflator
- ▶ Smoothed inflation measure calculated as the fitted values of the following regression:

$$i_{it} = \alpha_i + \mu p_t + \tilde{g}_{it} + \tilde{g}_{it-1} + \epsilon_{it}$$

where i_{it} is the state inflation rate, α_i is a state FE, p_t is the core PCE inflation rate for the U.S., and \tilde{g}_{it} is the difference between real GSP growth and U.S. GDP growth in year t .

- ▶ Estimates are weighted based on the size of the labor force in state i in year t .

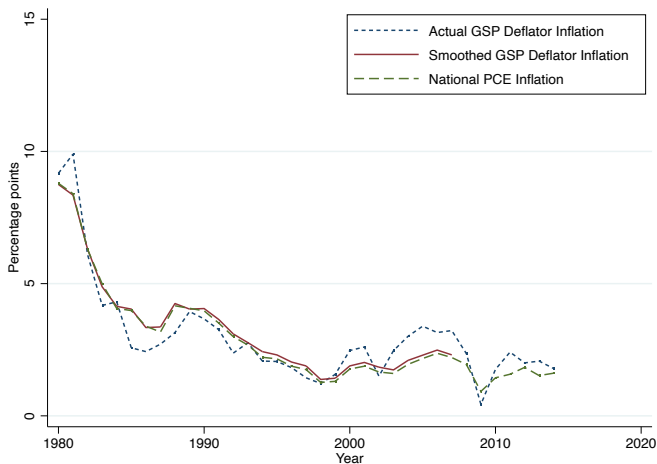
▶ Regression results

▶ Smoothed and original inflation rates

▶ Nominal vs Real FFR

▶ Back

Cooper, Luengo-Prado, and Olivei (2022)



Notes: Standard errors in parentheses. Stars indicate significance at the * 10%, ** 5%, and *** 1% levels. State inflation rate calculated as percentage change in GSP deflator. State fixed effects not shown. Full panel of 50 states and Washington D.C. is used, covering period between 1980 and 2007.

Smoothed Inflation Rate: Regression Results

	State Inflation Rate
Core PCE inflation (%)	0.969*** (0.0164)
Relative real GSP growth (%)	0.0702*** (0.0159)
L.Relative real GSP growth (%)	-0.0209 (0.0160)
Constant	0.138 (0.246)
Observations	1428
R^2	0.721

Notes: Standard errors in parentheses. Stars indicate significance at the * 10%, ** 5%, and *** 1% levels. State inflation rate calculated as percentage change in GSP deflator. State fixed effects not shown. Full panel of 50 states and Washington D.C. is used, covering period between 1980 and 2007.

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Cooper, Luengo-Prado, and Olivei (2022)

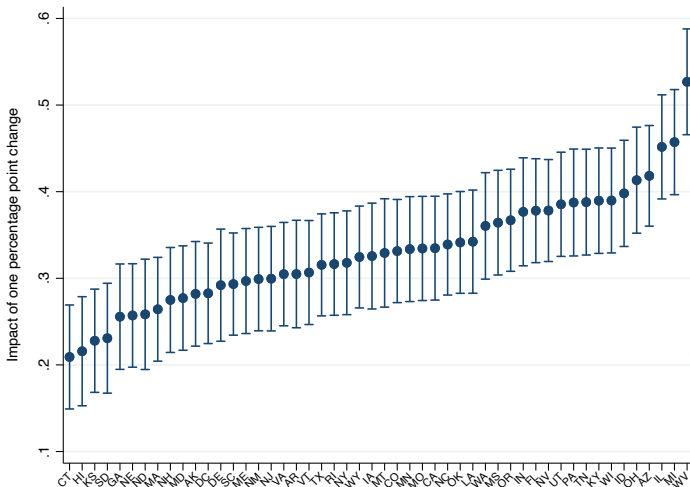
2. Estimate state-level IS curve \rightarrow equilibrium rate of interest r_{it}^* that closes unemployment rate gap in two years [Details](#)

	mean/sd	min	max	count
Interest rate coefficient	0.333 (0.0648)	0.209	0.527	51
Unemployment rate gap t-1 coefficient	0.977 (0.145)	0.584	1.345	51
Unemployment rate gap t-2 coefficient	-0.255 (0.156)	-0.520	0.219	51
Total unemployment rate gap effect	0.722 (0.1000)	0.504	0.935	51
State fixed effect coefficient	0.0871 (0.206)	-0.624	0.380	51
Two-year interest rate effect	0.992 (0.208)	0.596	1.659	51

Notes: Coefficients are estimated by regressing the unemployment rate gap in state i in year t on two lags of the unemployment

Estimated Interest Rate Effect by State

F test rejects null that interest rate effects are equal ($p = 0.002$) [▶ Back](#)



Notes: Bars indicate standard errors.

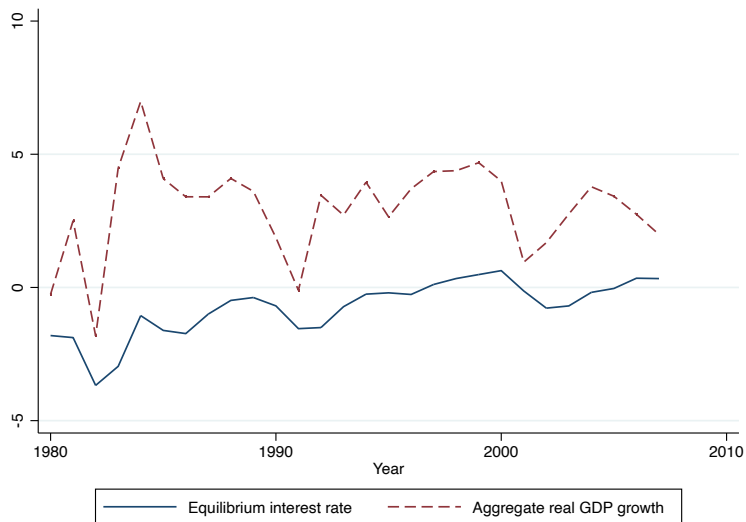
Calculating Equilibrium Interest Rate

Cooper, Luengo-Prado, and Olivei (2022) show that, by iterating the IS curve equation forward two periods, the rate of interest that will close the unemployment gap in two years can be calculated as

$$r_{it}^* = - [(\lambda_{1i}^2 + \lambda_{2i}^2)u_{it} + \lambda_{1i}\lambda_{2i}u_{it-1}] \times \left(\frac{1}{\lambda_{1i}\nu_i + \nu_i}\right) \\ - (1 + \lambda_{1i})\phi_i \times \left(\frac{1}{\lambda_{1i}\nu_i + \nu_i}\right)$$

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Aggregate real GDP growth and average equilibrium rates



Notes: The equilibrium interest rate is calculated from the derived state-level IS curve coefficients as described in Cooper, Luengo-Prado, and Olivei (2022). Yearly averages are unweighted.

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Economic Significance

Average rate gap is 3.85 percentage points (SD = 2.89).

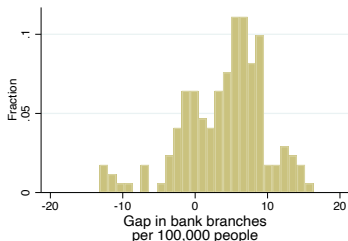
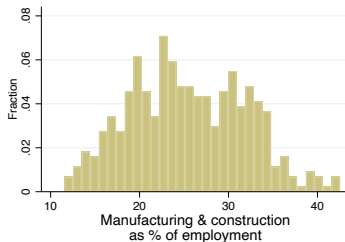
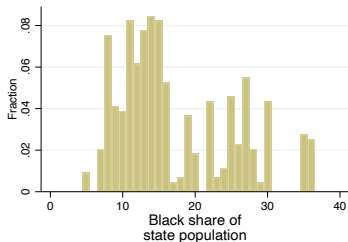
Effect size of 1 SD rate gap change relative to average unemployment rate is:

- ▶ White men = 25.4%
- ▶ White women = 30.2%
- ▶ Black men = 25.4%
- ▶ Black women = 27.4%

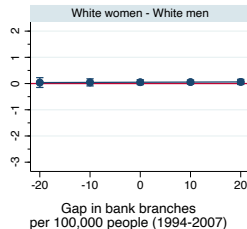
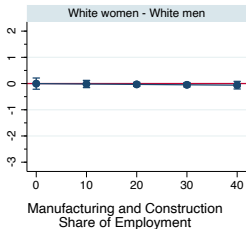
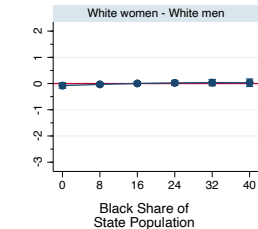
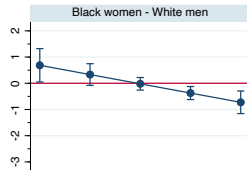
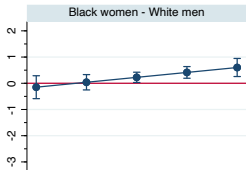
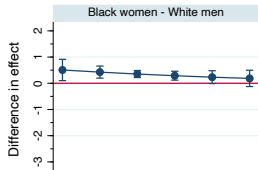
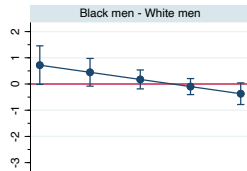
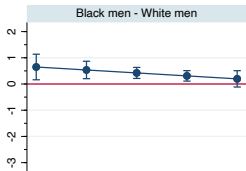
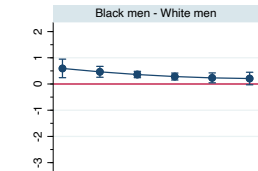
Results indicate economically significant effects within groups and absolute differences in effects across groups.

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Leahy and Thapar (2022): Mediator Analysis



Notes: Sample omits states with any race-gender-state-year observations including fewer than 5 individuals or households based on the CPS sample.



	(1) Unemployment Rate	(2) Average Wealth	(3) Median Wealth	(4) Logged Wealth
L.Nominal FFR	0.00210 (0.0320)	1466.8 (6036.9)	-539.8 (2040.5)	0.0114 (0.0181)
Black men \times L.Nominal FFR	-0.0121 (0.136)	-11232.3 (11355.4)	2397.3 (2369.4)	0.00687 (0.0367)
Black women \times L.Nominal FFR	0.136 (0.163)	-4255.7 (6410.4)	1424.0 (1913.4)	-0.0461 (0.0374)
White women \times L.Nominal FFR	-0.00626 (0.0368)	-554.2 (5922.2)	2480.6 (2389.3)	-0.0180 (0.0202)
Year	-0.0897*** (0.0151)	14434.0*** (2348.4)	1664.4** (782.8)	0.0387*** (0.00592)
Black men \times Year	-0.207*** (0.0563)	-11649.8*** (2364.8)	-1466.2* (805.9)	-0.00625 (0.0105)
Black women \times Year	-0.126* (0.0676)	-12468.0*** (2505.1)	-1426.0* (782.2)	0.00399 (0.0135)
White women \times Year	0.0106 (0.0213)	-8456.2*** (2432.4)	-85.13 (889.0)	-0.00189 (0.00833)
Time FEs	No	No	No	No
Observations	4592	532	532	532
Adjusted R-squared	0.421	0.521	0.775	0.770

Notes: Standard errors in parentheses. Stars indicate significance at the * 10%, ** 5%, and *** 1% levels. Regressions also control for current and lagged real GSP growth, the lagged value of the dependent variable, and group and state fixed effects. "Men" are "male- or dual-headed" and "women" are "female-headed HHs" in wealth regressions. Errors are clustered at the group-state level. Aggregation threshold used is $N = 5$, where any state that has one or more race-gender-state-year observations below N is dropped from the sample.

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	(1)	(2)	(3)	(4)	(5)
	Unemployment Rate		Average Wealth	Median Wealth	Logged Wealth
L.Rate gap	0.107** (0.0450)	0.582*** (0.137)	-26920.9* (13734.6)	-7424.5* (3894.2)	-0.0630 (0.0459)
Black men × L.Rate gap	0.690*** (0.131)	0.711*** (0.139)	841.7 (15179.3)	5715.0* (3030.4)	-0.0279 (0.0429)
Black women × L.Rate gap	0.486*** (0.159)	0.510*** (0.166)	22609.6** (8650.8)	5098.0* (2788.2)	-0.0370 (0.0405)
White women × L.Rate gap	-0.0462 (0.0553)	-0.0467 (0.0573)	22623.6** (8730.3)	3646.0 (3291.8)	0.0212 (0.0278)
Year	-0.0671*** (0.0130)	0.00500 (0.0184)	11004.5*** (2311.3)	1259.6 (798.1)	0.0318*** (0.00804)
Black men × Year	-0.0290 (0.0355)	-0.0347 (0.0371)	-9667.6*** (1906.2)	-1374.2** (667.9)	-0.0105 (0.00925)
Black women × Year	-0.0563 (0.0525)	-0.0654 (0.0533)	-9580.6*** (2109.7)	-1221.5* (666.0)	0.00892 (0.0128)
White women × Year	0.0000340 (0.0228)	-0.00780 (0.0216)	-6158.4*** (2083.0)	-205.6 (736.0)	0.00383 (0.00864)
Time FEs	No	Yes	Yes	Yes	Yes
Observations	4592	4592	532	532	532
Adjusted R-squared	0.433	0.452	0.529	0.781	0.770

Notes: Standard errors in parentheses. Stars indicate significance at the * 10%, ** 5%, and *** 1% levels. Regressions also control for current and lagged real GSP growth, the lagged value of the dependent variable, and group and state fixed effects. "Men" are "male- or dual-headed" and "women" are "female-headed HHs" in wealth regressions. Errors are clustered at the group-state level. Aggregation threshold used is $N = 5$, where any state that has one or more race-gender-state-year observations below N is dropped from the sample.

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Alternative observation thresholds

N = 1

	(1) Unemployment Rate	(2) Average Wealth	(3) Median Wealth	(4) Logged Wealth
L.Rate gap	0.526***	-19217.5**	-7047.4***	0.0739
Black men \times L.Rate gap	0.778***	9341.6	7380.5***	0.00531
Black women \times L.Rate gap	0.624***	23539.1***	6169.0***	0.0398
White women \times L.Rate gap	-0.0413	21363.0***	4851.9*	0.0539
Observations	4699	672	672	672

N = 5

L.Rate gap	0.528***	-32985.6**	-7999.0**	-0.0626
Black men \times L.Rate gap	0.781***	10877.4	6900.5**	-0.0162
Black women \times L.Rate gap	0.641***	31902.4***	6101.1**	-0.0459
White women \times L.Rate gap	-0.0328	28306.3***	3630.9	0.0168
Observations	4592	532	532	532

Alternative observation thresholds

N = 35

	(1) Unemployment Rate	(2) Average Wealth	(3) Median Wealth	(4) Logged Wealth
L.Rate gap	0.641***	-59148.4***	-18261.4*	-0.321**
Black men × L.Rate gap	0.565***	30530.5	16357.6	0.0486
Black women × L.Rate gap	0.522***	21266.6	14887.7	-0.123***
White women × L.Rate gap	-0.0513	18031.7	13610.6	-0.0193
Observations	2688	56	56	56

Notes: Standard errors in parentheses. Stars indicate significance at the * 10%, ** 5%, and *** 1% levels. Regressions also control for current and lagged real GSP growth, the lagged value of the dependent variable, and group and state fixed effects. "Men" are "male- or dual-headed" and "women" are "female-headed HHs" in wealth regressions. Errors are clustered at the group-state level. Any state that has one or more race-gender-state-year observations below N is dropped from the sample.

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Bootstrapped standard errors

	(1) Unemployment Rate	(2) Average Wealth	(3) Median Wealth	(4) Logged Wealth
L.Rate gap	0.526** (0.231)	-19217.5 (12543.7)	-7047.4** (3342.0)	0.0739 (0.103)
Black men × L.Rate gap	0.778*** (0.123)	9341.6 (9594.8)	7380.5*** (2698.8)	0.00531 (0.0326)
Black women × L.Rate gap	0.624*** (0.128)	23539.1** (9317.7)	6169.0** (2640.6)	0.0398 (0.0659)
White women × L.Rate gap	-0.0413 (0.0378)	21363.0** (8519.6)	4851.9** (2377.5)	0.0539 (0.0354)
Time FEs	Yes	Yes	Yes	Yes
Observations	4699	672	672	672

Notes: Standard errors in parentheses. Stars indicate significance at the * 10%, ** 5%, and *** 1% levels. Regressions also control for current and lagged real GSP growth, the lagged value of the dependent variable, and group and state fixed effects. "Men" are "male- or dual-headed" and "women" are "female-headed HHs" in wealth regressions. Errors are clustered at the group-state level. Bootstrapping is clustered at the state level with 200 iterations. Aggregation threshold used is $N = 1$, where any state that has one or more race-gender-state-year observations below N is dropped from the sample.

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Results using wealth without home equity

	(1) Average Wealth	(2) Median Wealth	(3) Logged Wealth
L.Rate gap	-25793.8** (12693.5)	-1277.8 (2165.2)	-0.144 (0.101)
Black men \times L.Rate gap	1833.9 (15649.0)	827.0 (1287.7)	-0.0670 (0.0775)
Black women \times L.Rate gap	24390.1*** (7411.5)	945.2 (1283.1)	-0.168** (0.0805)
White women \times L.Rate gap	25824.3*** (7551.9)	-573.6 (1505.6)	0.0489 (0.0354)
Time FEs	Yes	Yes	Yes
Observations	532	532	532
Adjusted R-squared	0.395	0.613	0.506

Notes: Standard errors in parentheses. Stars indicate significance at the * 10%, ** 5%, and *** 1% levels. Regressions also control for current and lagged real GSP growth, the lagged value of the dependent variable, and group and state fixed effects. "Men" are "male- or dual-headed" and "women" are "female-headed HHs" in wealth regressions. Errors are clustered at the group-state level. Aggregation threshold used is $N = 5$, where any state that has one or more race-gender-state-year observations below N is dropped from the sample.

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FFR/Wu-Xia shadow rates series, 1980 to 2019

	(1) Unemployment Rate	(2) Average Wealth	(3) Median Wealth	(4) Logged Wealth
L.Rate gap	0.657*** (0.114)	-39745.0*** (12104.9)	-10429.1*** (3438.6)	-0.125* (0.0659)
Black men	5.616*** (0.305)	-235541.4*** (35954.3)	-52526.2*** (10545.1)	-1.087*** (0.144)
Black women	3.638*** (0.365)	-262223.3*** (41192.4)	-56419.7*** (10956.0)	-1.510*** (0.164)
White women	-0.808* (0.444)	-160710.8*** (27807.3)	-32144.5*** (9717.6)	-0.448*** (0.0685)
Black men × L.Rate gap	0.555*** (0.0800)	27221.2*** (4963.8)	3959.7*** (1388.2)	-0.00243 (0.0242)
Black women × L.Rate gap	0.447*** (0.0810)	30139.2*** (5209.3)	2979.8** (1248.6)	0.0299 (0.0394)
White women × L.Rate gap	-0.0241 (0.0325)	18101.8*** (5260.2)	1082.1 (1950.0)	0.00295 (0.0165)
Time FEs	Yes	Yes	Yes	Yes
Observations	6560	988	988	988
Adjusted R-squared	0.473	0.601	0.676	0.668

FFR/Wu-Xia shadow rates series, 2008 to 2019

	(1) Unemployment Rate	(2) Average Wealth	(3) Median Wealth	(4) Logged Wealth
L.Rate gap	-0.00816 (0.0111)	-8455.8*** (2633.7)	-2786.2 (1724.3)	0.0122 (0.0317)
Black men	5.647*** (0.375)	-325287.1*** (73838.0)	-80001.5*** (17160.5)	-1.271*** (0.234)
Black women	3.121*** (0.340)	-344737.6*** (79934.0)	-83494.1*** (16980.1)	-1.733*** (0.272)
White women	-0.952** (0.430)	-222855.4*** (46198.3)	-55645.0*** (16731.2)	-0.588*** (0.118)
Black men × L.Rate gap	0.000657 (0.00346)	5498.4 (3467.1)	1718.5* (985.6)	-0.00523 (0.0126)
Black women × L.Rate gap	0.00469 (0.00641)	6324.1* (3271.0)	1915.0* (991.9)	0.0110 (0.0138)
White women × L.Rate gap	-0.000500 (0.00315)	5505.6 (3890.7)	1741.1* (952.6)	0.0161* (0.00964)
Time FEs	Yes	Yes	Yes	Yes
Observations	1968	456	456	456
Adjusted R-squared	0.571	0.636	0.604	0.603