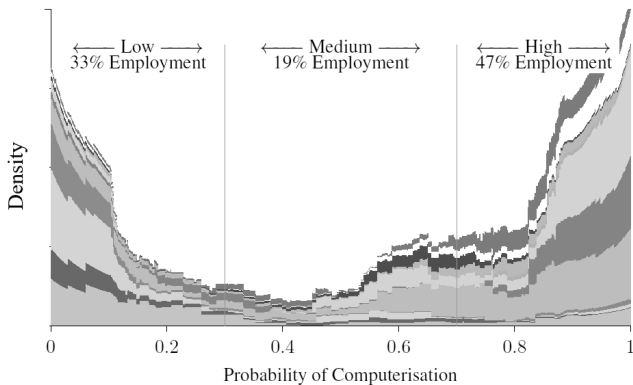# Distributive conflict in the age of AI:
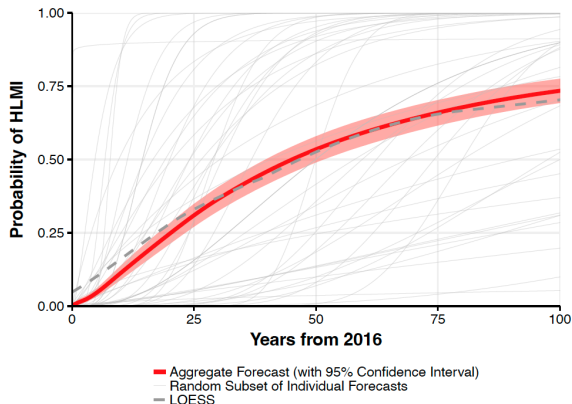# Theory and evidence from the advent of GPTs
(work in progress)

Carlos Felipe Balcázar
Yale University
MacMillan Center

Michael Becher
IE University
SPEG

Daniel Stegmuller
Duke University
Dept. of Politics

- Concerns given AI's capacity of automating (IT) tasks.

  (Frey, 2019; Agrawal et al., 2019; Gallego & Kurer, 2022)

- But AI's capabilities are limited; prediction fails out of training set.

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- Tech workers, creatives, etc., are concerned by AI; more mobilization?

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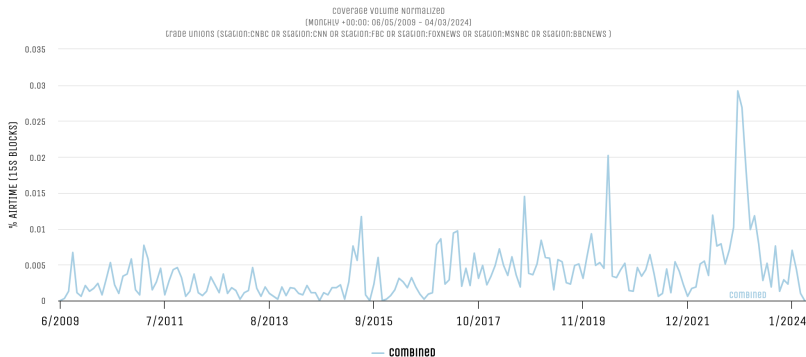 (Anelli et al., 2018; Balcazar, 2023; Microsoft, 2024)

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coverage volume normalized
(monthly +00:00: 06/05/2009 – 04/03/2024)
trade unions (station:CNBC or station:CNN or station:FBC or station:FOXNEWS or station:MSNBC or station:BBCNEWS)

GDELT PROJECT + INTERNET ARCHIVE (VIZ: GDELT + HIGHCHARTS)

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Does AI increase collective action and distributive conflict?

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Case study: The advent of ChatGPT
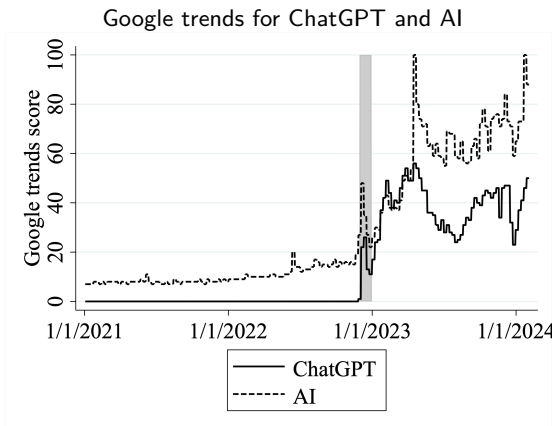
Google trends for ChatGPT and AI

- ChatGPT announcement (11/30/2022) had a high information flow uptick.

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- Geographical variation in the intensive margin by media market.

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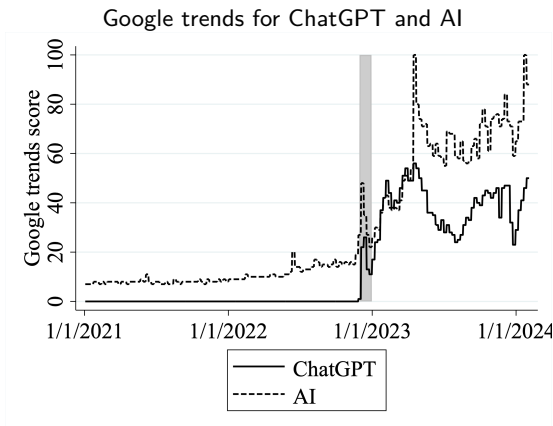
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Case study: The advent of ChatGPT

Normalized (30-day) average interest in ChatGPT

Interest score

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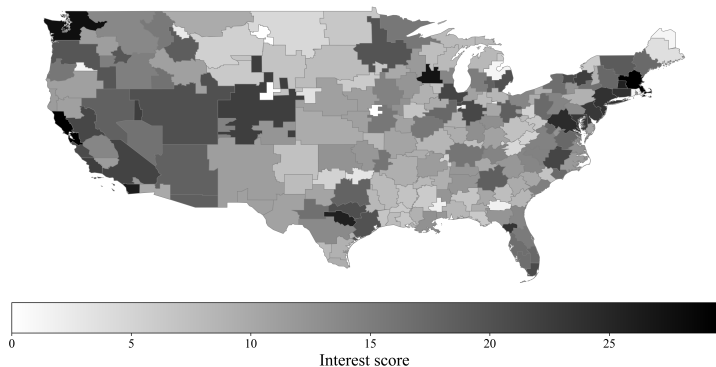- Geographical variation in the intensive margin by media market.

Theoretical framework: Substitution and deskilling

		Type of labor	
		Unskilled	*Med-skilled*	*Highly-skilled*
Type of automation	*Adoption*			
	Innovation			

*Note: (S)ubstitutes; (C)omplements.

Theoretical framework: Substitution and deskilling

		Type of labor		
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Type of	*Adoption*			
automation	*Innovation*			

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Type of automation

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Adoption	S		
Innovation			

*Note: (S)ubstitutes; (C)omplements.

- Substitution: Marginal productivity of labor is *lower* v. machines.

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- Skill is relative to existent machines (stock), not to innovations (flow).
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		Unskilled	Med-skilled	Highly-skilled
Type of	Adoption	S	$\sim$ C	
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Innovation			

Type of automation (label for rows)

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	Unskilled	*Med-skilled*	*Highly-skilled*
Adoption	S	$\sim$ C	C
Innovation	$\sim$S		

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Type of	*Adoption*	S	$\sim$ C	C
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Adoption	S	$\sim$ C	C
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Type of	*Adoption*	S	$\sim$ C	C
automation ↻	*Innovation*	$\sim$S	S	C

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Theoretical framework: Winners v. losers

		Type of labor	
		Unskilled	*Med-skilled*	*Highly-skilled*
Type of	*Adoption*	⇑		
automation	*Innovation*			

- Substitution: ⇑ preferences for redistribution.

- Deskilling: ⇑ preferences for redistribution for med-skilled.

Theoretical framework: Winners v. losers

		Type of labor		
		Unskilled	*Med-skilled*	*Highly-skilled*
Type of	*Adoption*	⇑	≅	
automation	*Innovation*			

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Theoretical framework: Winners v. losers

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Innovation	≅		

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automation	*Innovation*	≅	⇑	

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Adoption	⇑	≅	≅
Innovation	≅	⇑	≅

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- Vulnerability/scarcity: ⇑ in-group attitudes.

  (Balcazar, 2023)

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Adoption	⇓	≅	≅
Innovation	≅	⇓	≅

Type of automation

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  (Balcazar, 2023)

Theoretical framework: Firm v. workers

Type of automation ↻

		Type of labor		
		Unskilled	*Med-skilled*	*Highly-skilled*
	Adoption	⇑	≅	≅
	Innovation	≅	⇑	≅

- Deskilling: $\Uparrow Pr(E(rent - seeking) > E(working))$.

- Substitution: $\Uparrow Pr(rent - seeking > working)$.

  (Balcazar, 2023)

Theoretical framework: Firm v. workers

| | | **Type of labor** | | |
		Unskilled	Med-skilled	Highly-skilled
Type of automation	Adoption	$\Uparrow$	$\cong$	$\cong$
	Innovation	$\cong$	$\Uparrow$	$\cong$

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Theoretical framework: Firm v. workers

Type of labor

		Unskilled	Med-skilled	Highly-skilled
Type of	↻	Adoption	⇑	≅	≅
automation		Innovation	≅	⇑	≅

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- Substitution: $\Uparrow Pr(rent - seeking > working)$.
  (Balcazar, 2023)

- Long-run effect is linear if rent-seeking effect dominates.

Argument

⇑ **AI**

Exposure to the prospect of AI:

1. Increases distributive conflict.

⇑ Distributive conflict

Argument
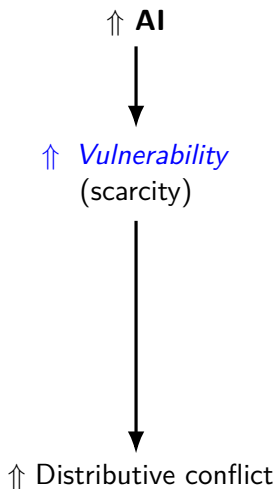
⇑ **AI**

↓

⇑ *Vulnerability*
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Mechanisms:

2. Increases sense of vulnerability.

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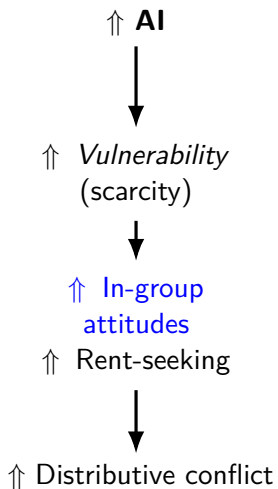
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⇑ In-group
attitudes

⇑ Rent-seeking

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Exposure to the prospect of AI:

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③ Changes preferences.

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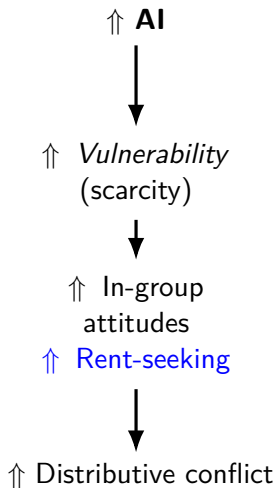
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⇑ *Vulnerability*
(scarcity)

↓

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attitudes
⇑ Rent-seeking

↓

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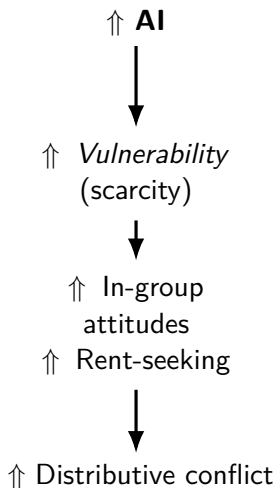
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Exposure to the prospect of AI:

1. Increases distributive conflict.

Mechanisms:

2. Increases sense of vulnerability.

3. Changes preferences.

4. Increases rent-seeking by workers.

Stronger effects for med-skilled workers.

Data

- Dependent variables: Voters opinions/rev. preferences (1 if agrees; 0 oth.); workers' rent-seeking activities (collective bargaining).

  (CCES; GSS; Latinobarometro; OLMS LS; NLBS; TAA).

- Independent variable: ChatGPT event.

  (Google Trends).

- Moderator: level of education.

  (CCES; GSS; Latinobarometro; O*NET).

Empirical strategy

Event study design (November - December 2022 + 2020/21):

$$\text{outcome}_{idrt} = \Big[\beta_1 \text{ChatGPT}[t \geq release]_{idt} + \text{ChatGPT}[t \geq release]_{idt} \times S'_{id}\beta_2 \Big] R_{idr}$$
$$+ X'_{idrt}\delta + f(t)'\gamma + \theta_d + \gamma_r + \varepsilon_{idrt}$$

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1. DVs: voters' preferences and attitudes.

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3. Moderator: education (i.e., low, med, high skill).

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3. Moderator: education (i.e., low, med, high skill).

4. Controls: age, gender, ethnicity, marital status, immigrant status, has children at home, education, and ideology; time polynomial; DMA FE; survey-round FE.

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5. SD: Conley (500km) + FWER corrections.

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$$[\beta_1 + S'_{ic}\beta_2]R_{idr}\text{: Effect of advent of AI.}$$

RDiT and Balance

Distribution of observations
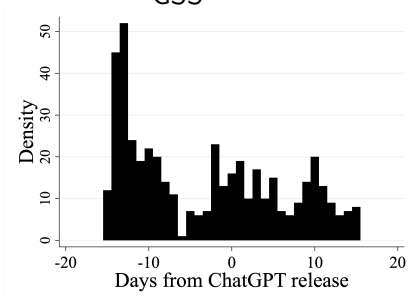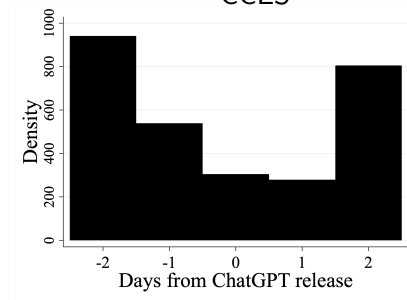
- 2-day and 15-day optimal bandwidths; 3k and 0.5k observations.

RDiT and Balance

Manipulation checks
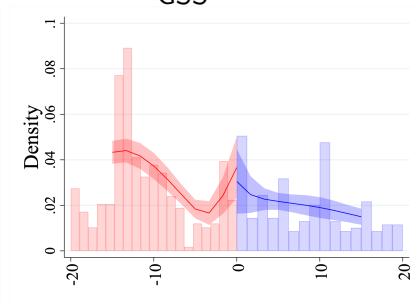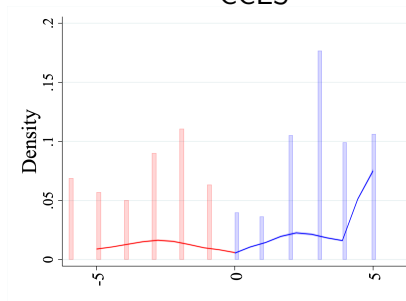
- No evidence of manipulation.

RDiT and Balance

Balance checks

Note: 95/99% confidence intervals; 500km-Conley SE level.
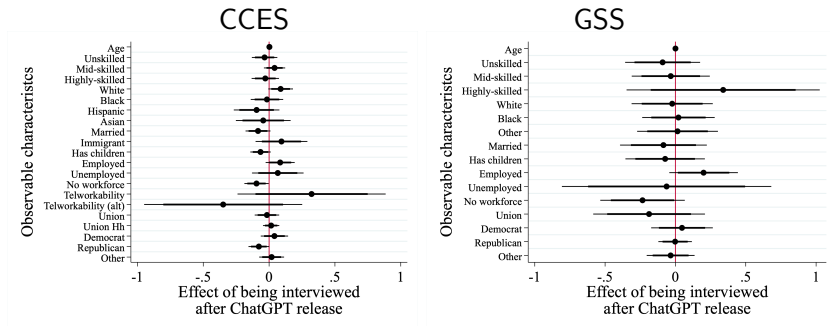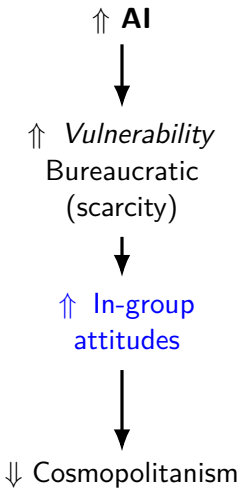
- Evidence for balance in both surveys.
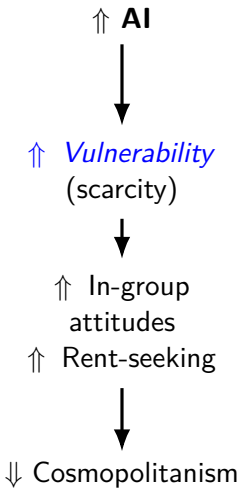
# Weak effect on perceptions of economic insecurity

Perception of economic situation (GSS)

Note: 95/99% 500km-Conley confidence intervals.

- Med-skilled: Advent of AI $\Rightarrow \Uparrow$ redistribution.

Balcázar, Becher & Stegmuller   AI and cosmopolitanism   April, 2024   11 / 15

Weak effect on perceptions of economic insecurity

Preferences for public spending (GSS)
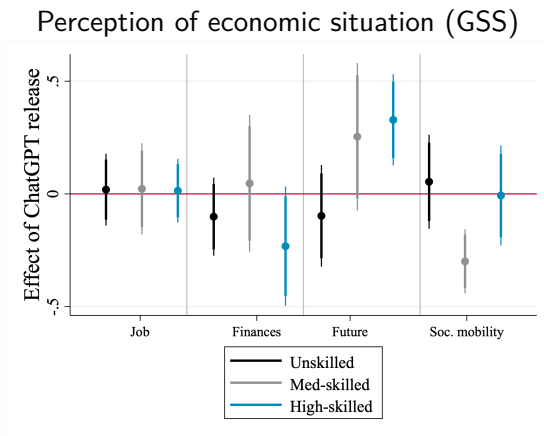
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Weak effect on perceptions of economic insecurity

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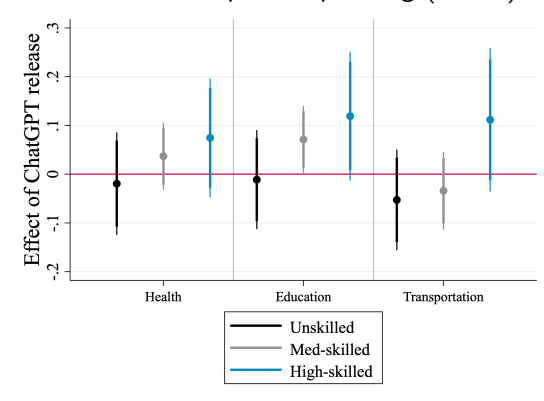
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⇑ **AI**

⇑ *Vulnerability*
Bureaucratic
(scarcity)

⇑ In-group
attitudes

⇓ Cosmopolitanism

Effect on attitudes toward women and minorities

Attitudes toward women and minorities (GSS)
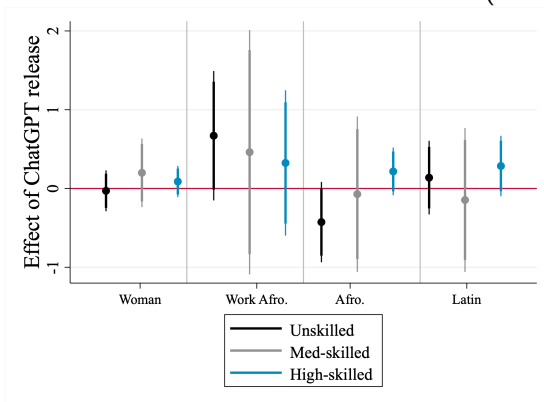
Note: 95/99% 500km-Conley confidence intervals.

- Low skilled: Advent of AI ⇒ increased discrimination.

Effect on attitudes toward women and minorities
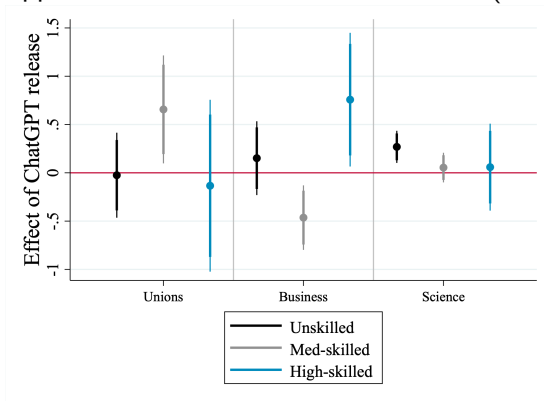
Attitudes toward women and minorities (CCES)
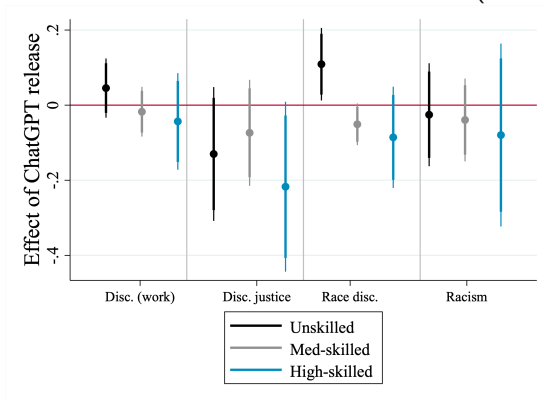
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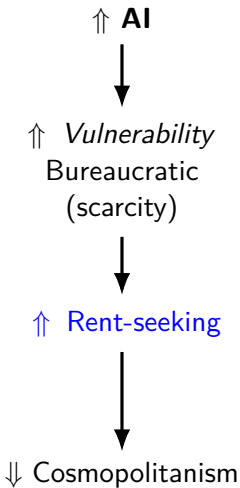
Potential distributive conflict, firm v. worker

Support for unions, business and science (GSS)

Note: 95/99% 500km-Conley confidence intervals.

- Advent of AI $\Rightarrow$ ⇑ rent-seeking but weaker unions.

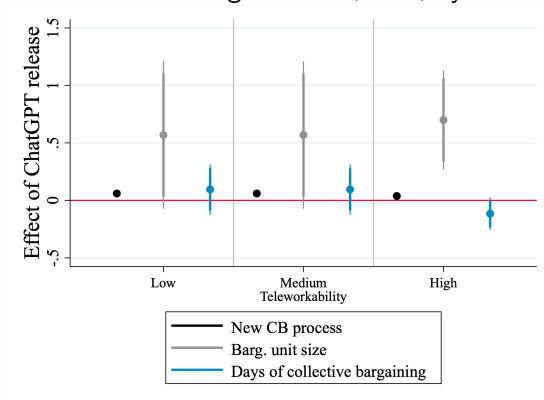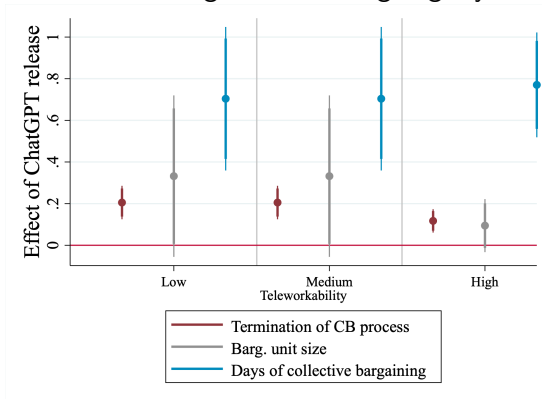# Potential distributive conflict, firm v. worker
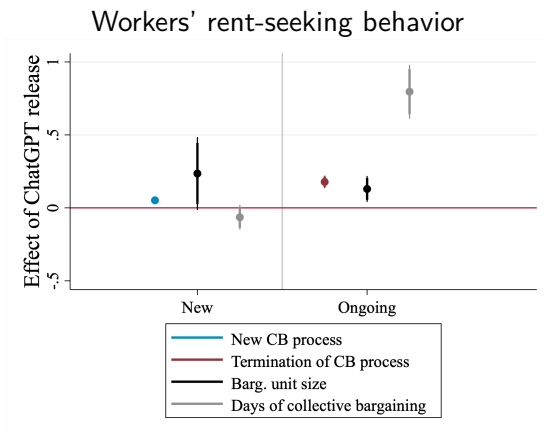
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Potential distributive conflict, firm v. worker

Workers' rent-seeking behavior, new, by IT index

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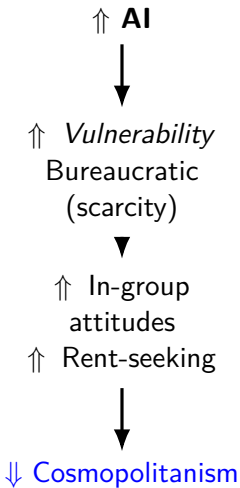- Advent of AI $\Rightarrow$ $\Uparrow$ rent-seeking but weaker unions.

Potential distributive conflict, firm v. worker

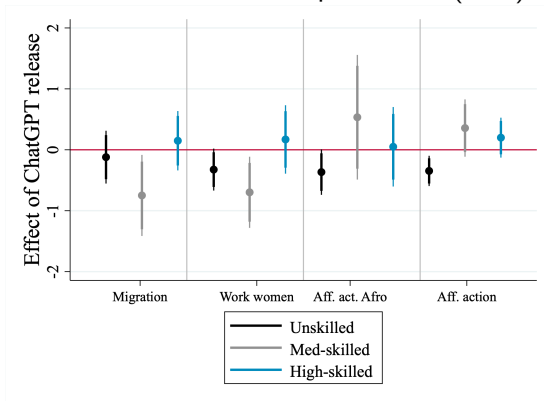Workers' rent-seeking behavior, ongoing, by IT index

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▼

⇑ In-group
attitudes
⇑ Rent-seeking

↓

⇓ Cosmopolitanism

Effect on in-group attitudes

Attitudes toward cosmopolitanism (GSS)

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- **Lower cosmopolitanism + collective action + firms v. workers distributive conflict.**

Thank you!

✉ carlos.balcazar@yale.edu

☁ @cfbalcazar.bsky.social

🐦 @cfbalcazar