People's Understanding of Inflation

NBER "Inflation in the COVID Era & Beyond" Conference

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SOCIAL ECONOMICS LAB

Research question: How do people understand inflation?

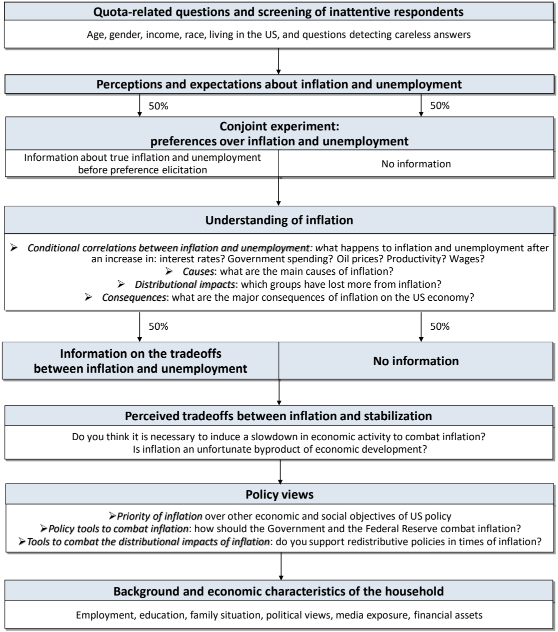
Inflation is a **complex** phenomenon.

How do people perceive its **causes, consequences, & trade-offs**?

What **policies** do they support to fight inflation?

We run a **new survey inspired by the macroeconomics literature** to probe people's understanding.

New survey building on the macro literature



Sample

	Survey	US population
Targeted quotas		
Male	0.48	0.49
Female	0.51	0.51
18-29 years old	0.23	0.23
30-39 years old	0.20	0.21
40-49 years old	0.19	0.19
50-59 years old	0.19	0.19
60-69 years old	0.18	0.18
$0-$19,999	0.14	0.13
$20,000-$39,999	0.16	0.16
$40,000-$69,999	0.21	0.20
$70,000-$99,999	0.15	0.15
$100,000-$124,999	0.09	0.09
$125,000+	0.26	0.26
White	0.68	0.6
African-American/Black	0.13	0.13
Hispanic/Latino	0.10	0.19
Asian/Asian-American	0.04	0.06
Sample size	2264	

▸ Non targeted characteristics ▸ Procedure to clean sample

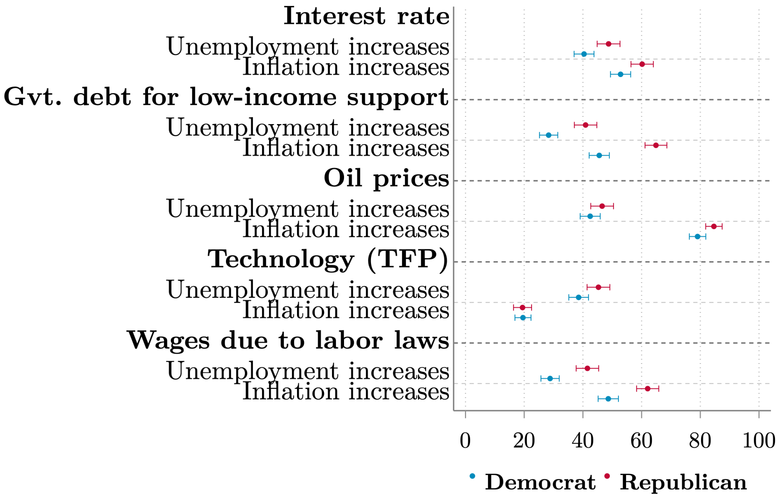
Plan for this talk

1. Understanding of Inflation

2. Policy views

Understanding of Inflation

Inflation & unemployment responses to increases in...



"Correct" share is 12% for interest rate shock, 13% for government debt/spending shock, 42% for oil shock, 28% for wages shock

By income By age Comparison

The causes of inflation

Economics Literature	Our Findings
• **Phenomena with an inflationary potential emphasized by the economics literature:** • changes in fiscal policy (e.g., government spending, debt, and taxation); • monetary policy actions (e.g., increasing money supply, changing interest rates, and managing inflation expectations); • increases in the costs of production (i.e., cost-push shocks); • changes in the labor market (e.g., increases in labor market tightness, increase in union power, wage-price spirals); • politicians and political interests (e.g., political pressures on central banks, political instability, politicians catering to special interest); • increases in household demand (e.g., due to sentiment or inflation expectations changes); • firms' pricing decisions (e.g., in response to inflation expectation changes).	• **Perceived as most important causes** • Government spending, debt, and taxation (67%), increases in the costs of production (43%), actions by the Federal Reserve (31%), politics and politicians (22%), actions by firms and businesses (15%), changes in the labor market (13%), households spending more (10%). • **Relevant heterogeneity** • Republicans: ∗ blame the Government and Fed more; ∗ blame firms and businesses less. • Older respondents: ∗ more likely to blame politicians and political interests and actions of firms and businesses; ∗ less likely to blame the government or changes in the labor market. • Fox News viewers (opposite holds for NPR listeners): ∗ blame the Government more; ∗ blame firms and businesses less.

How we ask about the causes of inflation

Open-ended question on the causes of inflation

In your opinion, what are the primary causes of inflation?

For each item listed below, please tell us whether or not you think it is an important cause of inflation

1. Government spending, debt and taxation
2. Actions by the Federal Reserve
3. Increases in the costs of production
4. Changes in the labor market
5. Politicians and political interests
6. Households spending more
7. Actions by firms and businesses

From the previous list, please select the 2 most important causes of inflation

For each item listed below, please tell us whether or not you think it is an important cause of inflation
(Each respondent was displayed the lists of items pertaining to the top 2 causes of inflation selected above)

Government spending, debt and taxation:
- ❑ Income tax cuts
- ❑ Increase in government debt for foreign assistance
- ❑ Debt-financed increase in spending (defense/infrastructure)
- ❑ Debt-financed increase in spending (Covid stimulus)
- ❑ Debt-financed increase in spending (social programs)

Actions by the Federal Reserve:
- ❑ Interest rate cuts
- ❑ Increases in interest rates
- ❑ Increases in money supply
- ❑ Failure to take appropriate action
- ❑ Unclear announcements about future intentions

Increases in the costs of production:
- ❑ Oil price increases
- ❑ Energy price increases
- ❑ Large-scale disruptions in other countries (wars or disasters)
- ❑ Disruptions in international supply chains
- ❑ Cost increases induced by the Pandemic

Changes in the labor market:
- ❑ Wage increases due to labor rights or unionization
- ❑ Wage increases due to labor shortages
- ❑ Workers asking for wage increases after increases in the cost of living

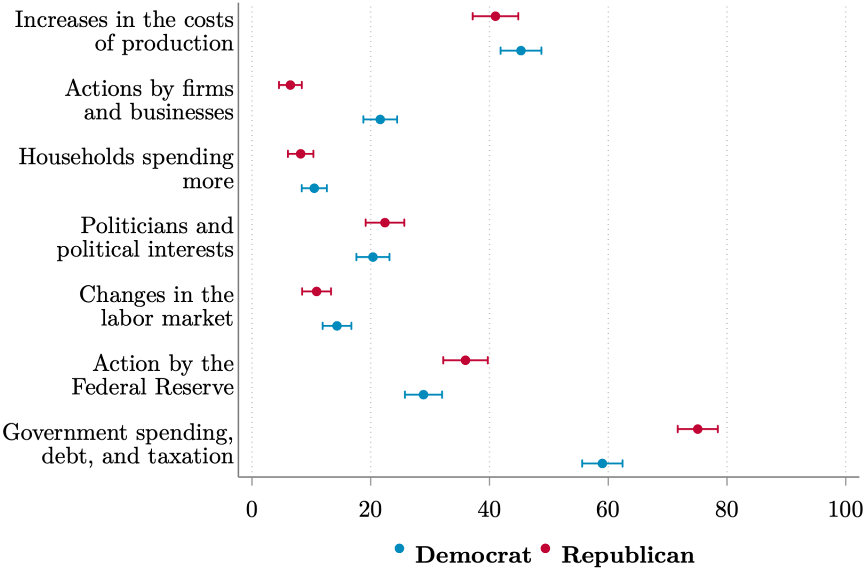
Politicians and political interests:

Households spending more:
- ❑ Due to expected price increases in the future
- ❑ Due to optimism about the economy

Actions by firms and businesses:
- ❑ Higher prices due to higher expectations
- ❑ Higher prices to increase profits, even if costs have not increased
- ❑ Lack of competition and the rise of big firms without competitors

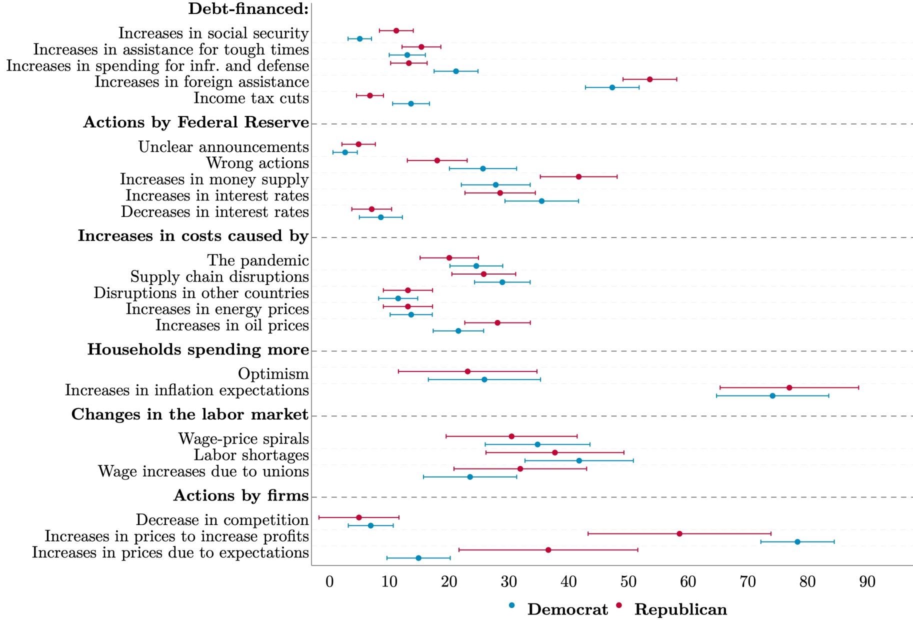
From the previous list, what is the most important cause of inflation?
(This question was asked for each list pertaining to one of the top 2 causes of inflation selected above)

Top 2 perceived broad causes of inflation



By income   By age

Perceived top detailed causes of inflation



By income By age

Our results on the perceived causes of inflation

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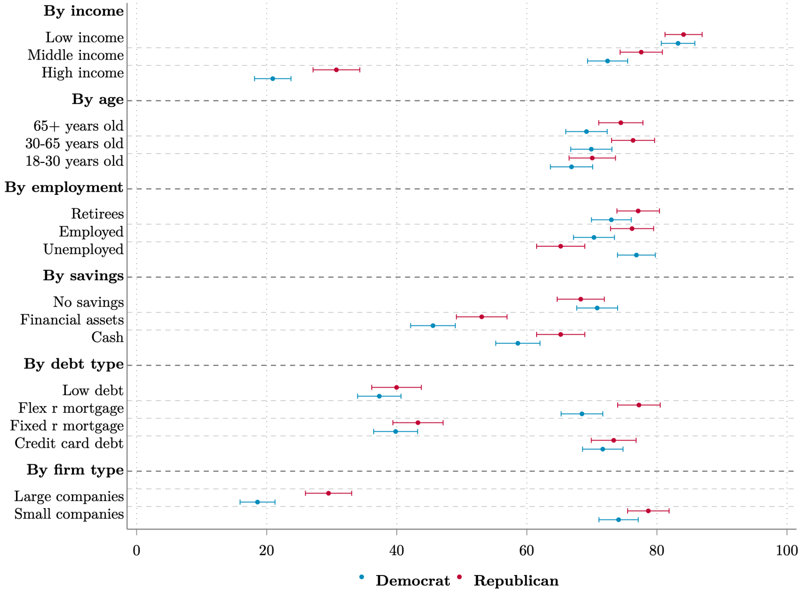
The distributional impacts of inflation

Economics Literature	Our Findings

• **Channels through which inflation or inflationary shocks might have unequal impacts**
  • Relative consumption channel (or "inflation inequality"): households with different consumption baskets experience heterogeneous inflation rates.
  • Debt devaluation (or "Fisher") channel: inflation redistributes real wealth from lenders to borrowers.
  • Labor income channel: inflation erodes nominal income and, if wages are sticky, inflation will have larger % impact on higher-incomes.
  • Asset channel: heterogeneous responses of asset prices and dividends to various types of inflation shocks affect households differently based on their portfolio composition.
	• **Perceived distributional impacts of inflation within specific groups**
	  • Income groups: low-income people thought to lose more (84%) than high-income people (25%).
	  • Age groups: perceived to lose uniformly.
	  • Retirees/employed/unemployed: perceived to lose uniformly.
	  • Asset position groups: people without savings perceived to lose more than those with savings; people with little/no debt perceived to lose less than those with debt.
	  • Firm size groups: small firms thought to lose more (75%) than big corporations (25%).
	• **Relevant heterogeneity**
	  • Republicans:
	    * more likely to think some groups lose from inflation (high-income people, people with savings in cash, people with flexible-rate mortgages, big firms).
	  • High-income respondents:
	    * systematically perceive more adverse impacts across different groups.
	  • Fox News viewers:
	    * less likely to perceive adverse distributional impacts (even conditional on political leaning).

% who believes these groups lose from inflation



▸ By income ▸ By age

Findings: the distributional impacts of inflation

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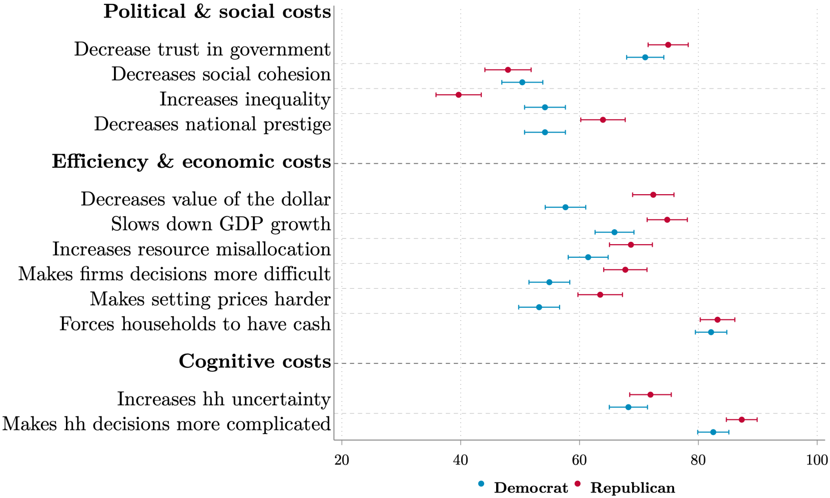
The consequences of inflation

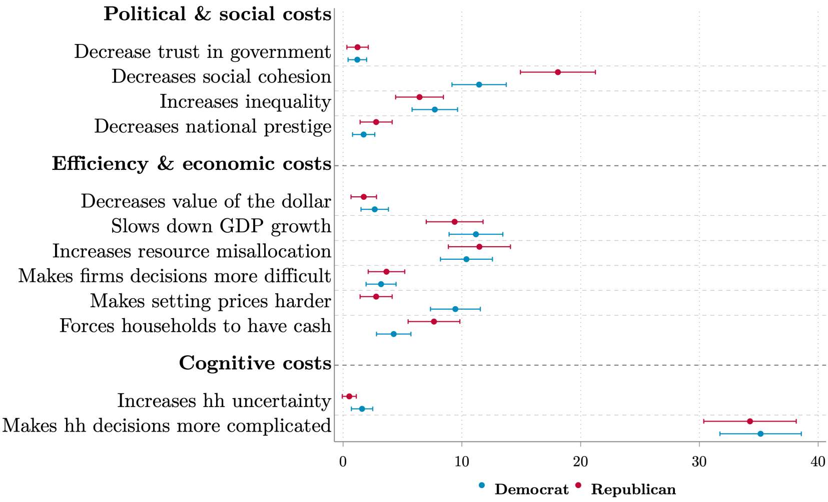
Economics Literature	Our Findings
• **Most-studied consequences:** • shoe-leather costs; • resource misallocation. • **Less-studied consequences:** • uncertainty and unpredictability; • decision-making complexity; • broader social and economic costs (decreases in trust in government, social cohesion, the value of the dollar, national prestige, GDP growth, and increases in inequality).	• **Top 5 most-perceived consequences:** • complexity in economic decisions (85%), shoe-leather costs (80%), decreased trust in government (70%), lower GDP growth (70%), uncertainty for households (70%). • **Relevant heterogeneity** • Republicans: ∗ perceive more adverse effects for households and businesses, and broader economic costs; ∗ perceive less increases in inequality. • High-income respondents: ∗ perceive more increases in inequality and a decrease in trust for government.

Perceived importance of consequences of inflation



By income By age

Top perceived consequence of inflation



▸ By income ▸ By age

Findings: the perceived consequences of inflation

Economics Literature	Our Findings

• **Most-studied consequences:**
  • shoe-leather costs;
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The trade-offs related to inflation

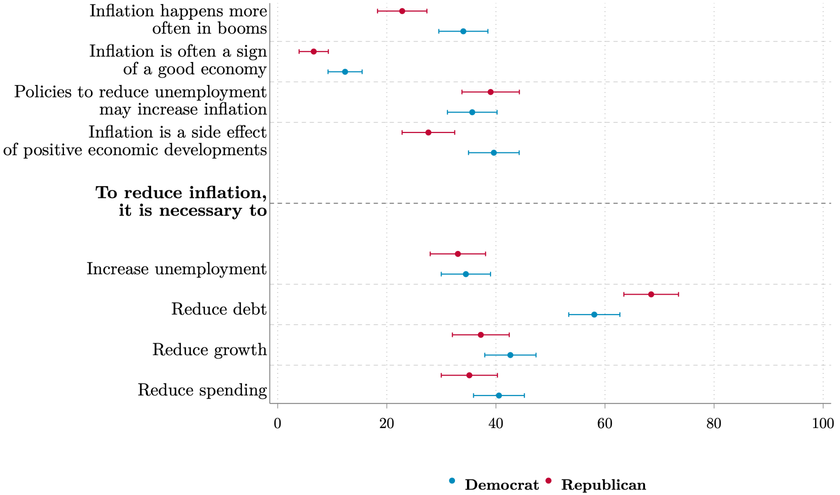
Economics Literature

- **Relation between inflation and economic activity**
  - Equilibrium relation between inflation and economic activity formalized by the New-Keynesian Phillips Curve. In equilibrium, inflation determined by:
    * inflation expectations;
    * economic slack (e.g. output gap, gap between current and potential level of unemployment);
    * cost-push shocks.
- **Policy tradeoffs**
  - When confronted with high inflation, policymakers can:
    * induce a slowdown in economic activity (e.g., increase interest rates, announce future increases in interest rates, decrease spending/debt, increase taxes);
    * manage inflation expectations.
  - Supply side interventions in response to adverse supply shocks less studied in this context.

Our Findings

- **Perceived reduced-form relation between inflation and economic activity**
  - Few respondents believe that inflation happens more often in booms than in recessions (30%), that it might be a side effect of positive economic developments (32%), or that it can be associated with a good economy (10%).
  - Few respondents believe policies designed to reduce unemployment increase inflation (35%).
- **Perceived policy tradeoffs**
  - A minority of respondents believe it is necessary for policy makers to induce slow downs in economic activity to decrease intlation (30-40%).
  - A majority of respondents (62%) believe it is necessary to reduce government debt to reduce inflation.
- **Relevant heterogeneity**
  - Republicans.
    * less likely to think inflation can be a side effects of positive economic development.
  - NYT readers and CNN viewers (opposite for Fox News viewers):
    * more likely to consider inflation a potential byproduct of a good economy.

Perceived trade-offs related to inflation



▸ By income ▸ By age

Findings: perceived trade-offs related to inflation

<table>
<tr><th>Economics Literature</th><th>Our Findings</th></tr>
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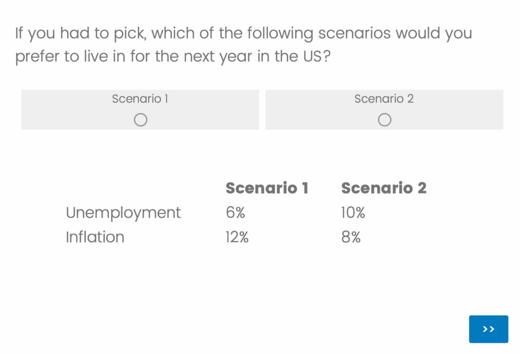
Policy views

Description of conjoint experiment

Each respondent saw 5 questions describing two scenarios characterized by a pair of values of inflation and unemployment. Respondents were then asked which of the scenarios they would prefer.

Values of inflation randomly picked in [0,16], values of unemployment in [2,16]


If you had to pick, which of the following scenarios would you prefer to live in for the next year in the US?

Scenario 1 ○ Scenario 2 ○

	Scenario 1	**Scenario 2**
Unemployment	6%	10%
Inflation	12%	8%

››

Estimation from a conjoint experiment

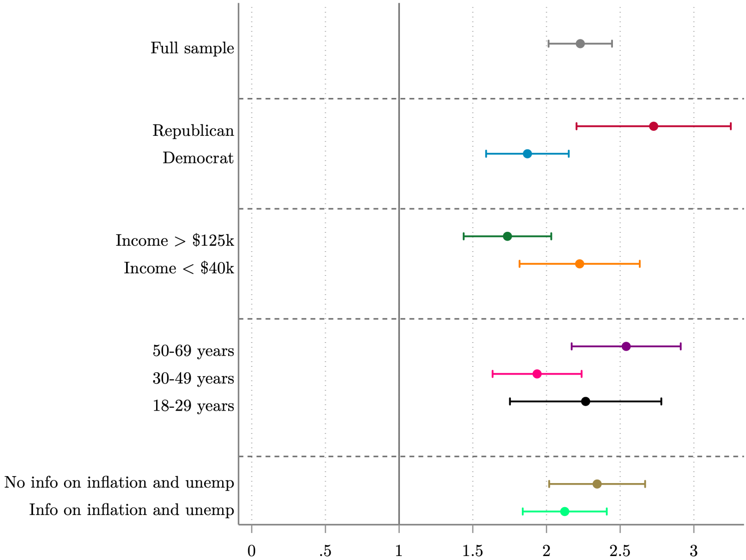
Denote by p a pair of two economies e and e'. We then run the following regression:

$$Y_{e,p,i} = \psi_i + \beta_1 \Delta(\pi)_{e,e',p} + \beta_2 \Delta(u)_{e,e',p} + \varepsilon_{e,p,i}$$

where $Y_{e,p,i}$ is an indicator variable equal to 1 if economy e in pair p was chosen by individual i, $\Delta(\pi)_{e,e',p}$ ($\Delta(u)_{e,e',p}$) is the difference in inflation (unemployment) between e and e' in p, and ψ_i are individual fixed effects.

For each subgroup, we plot $\lambda = \frac{\beta_1}{\beta_2}$ which is the marginal rate of substitution between inflation and unemployment under a linearity assumption for preferences

Implicit weight on inflation from conjoint experiment



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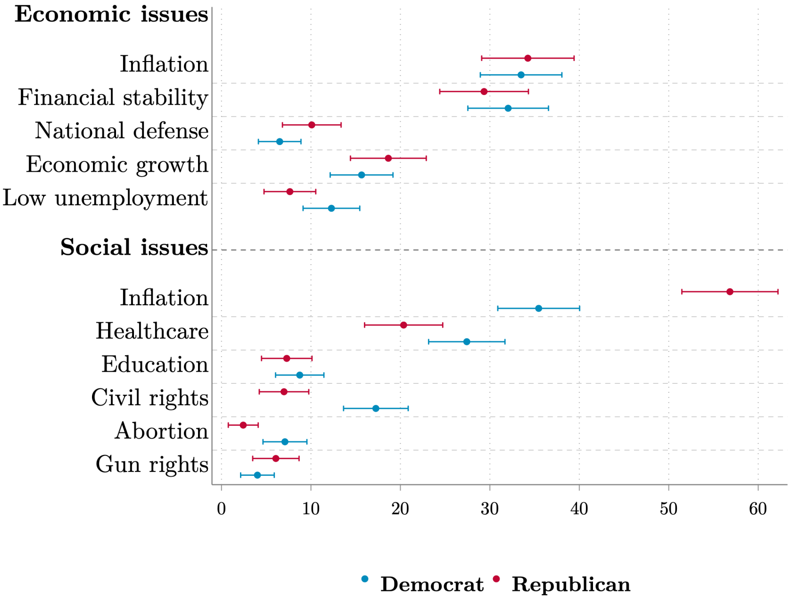
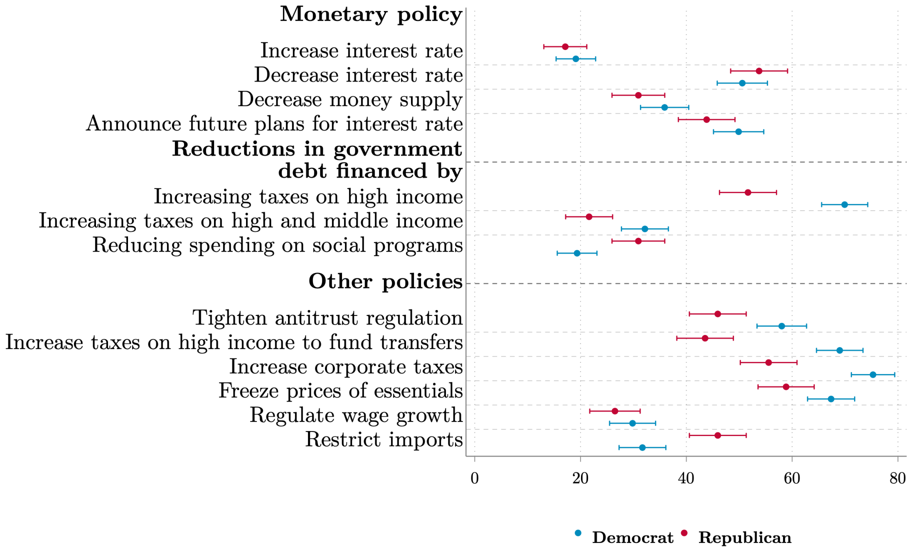
Most important policy priority



By income   By age

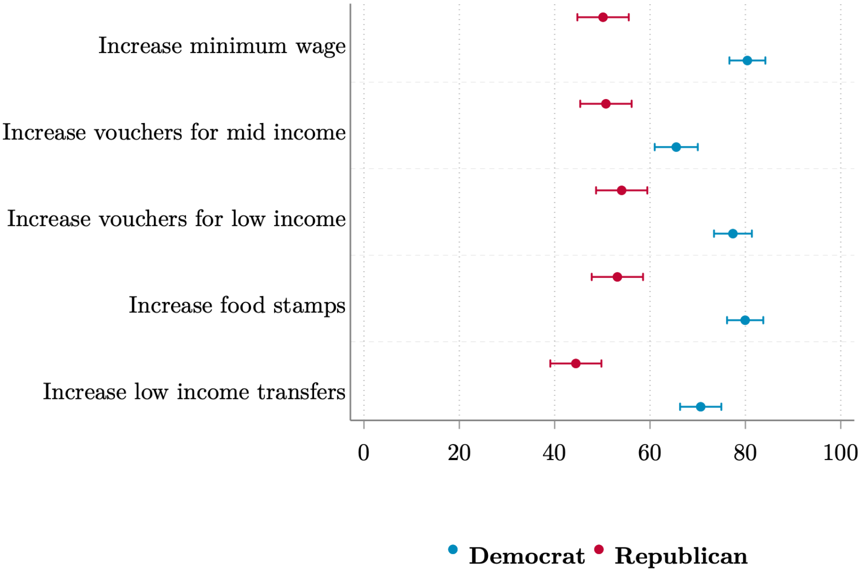
Inflation ranked highest regardless of (randomized) order of the sections

Policy views: Monetary, Fiscal, and Other Policies



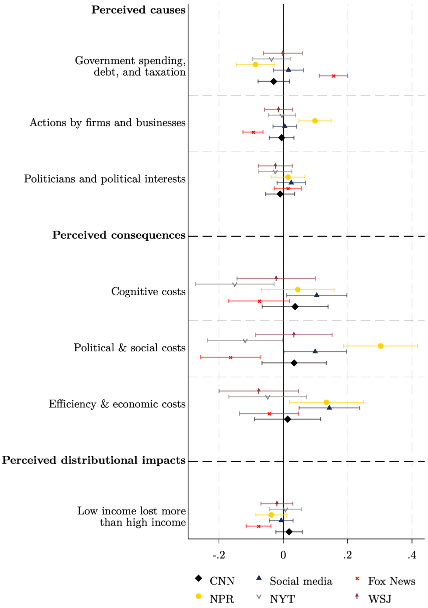
▸ By income ▸ By age ▸ Open-ended answers

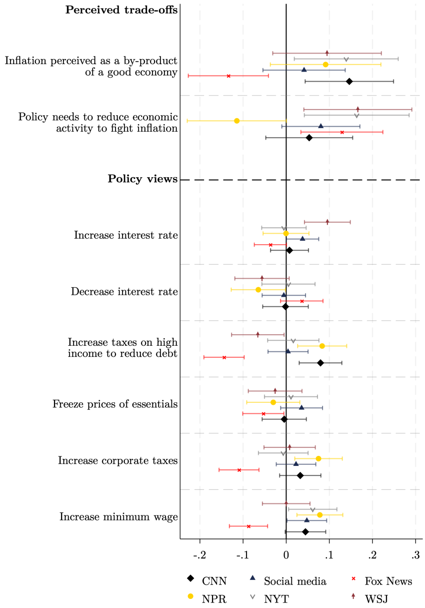
Policies to combat redistributive consequences of inflation



By income   By age

News, understanding, and policy views



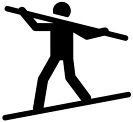


Information treatment

Inflation is the **rate of increase in prices** over a given period of time, meaning you have to spend more money to buy the same things.

Here's the tricky part:
reducing inflation can be like walking a tightrope

Cutting down on how much money is floating around might cool off inflation, but...



... this is not without its pains, **affecting jobs and economic vibrancy.**

Importantly, policies that are, in principle, good,

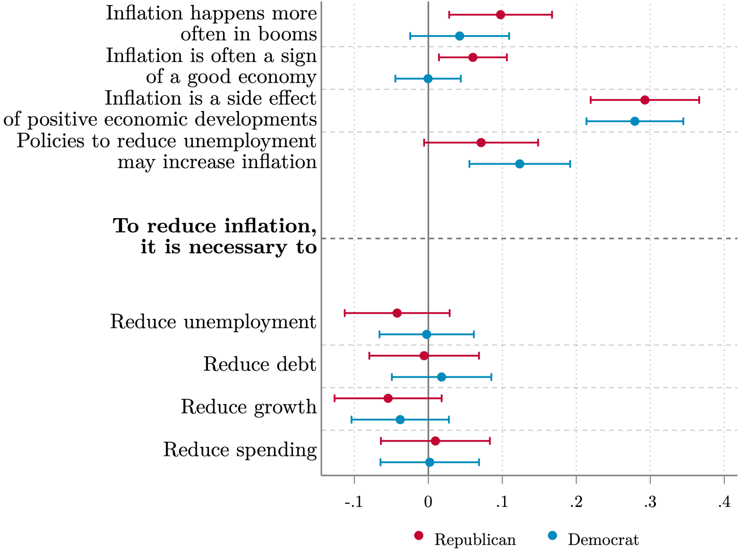
such as those that reduce unemployment and increase economic activity

might, paradoxically, increase inflation too.

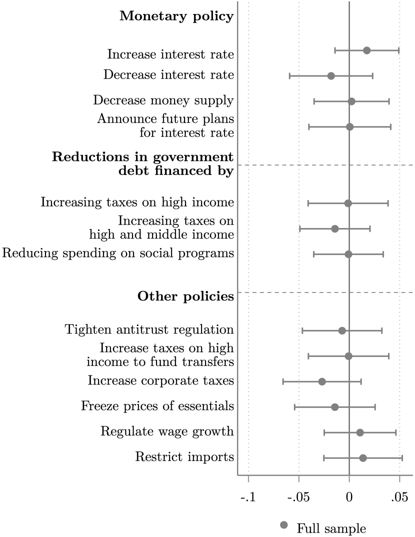
Tax cuts are another example of a policy that can put **more cash in your pocket** and that can **stimulate economic activity.**

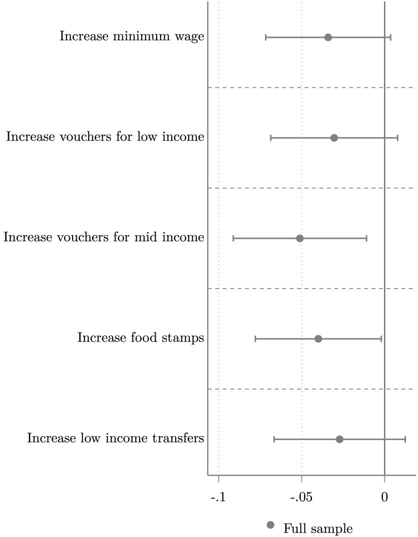
But if lots of people start spending more, **demand outstrips supply**, and that might also result in **inflation**.

First stage: shifting perceptions of trade-offs



Second stage: shifting policy preferences





Conclusion: Summary of Key Findings (I)

Main perceived causes: government actions, esp. foreign assistance (war) and rise in production costs due to COVID, oil prices, and supply chain disruptions.

Key consequence: complicates household decision making

Perceived distributional impacts: low-income people will lose more than high-income ones. Uniform perceived impacts by age.

Significant partisan gaps in most perceptions; News source matters too (Fox News vs. CNN/New York Times/NPR)

Lack of perceived trade-offs: inflation unambiguously "bad" and policymakers not perceived to face stark trade-offs to manage inflation.

- Information experiment explaining trade-offs does not shift views

Conclusion: Summary of Key Findings (II)

Inflation is top priority: conjoint experiment reveals weight on inflation ≈ 2 times weight on unemployment.

Policy views:

Little support for standard monetary tightening measures (consistent with belief contraction not necessary)

Preference for rate ***cuts*** to fight inflation (consistent with misperception that rate increases lead to higher inflation).

Support for policies targeting companies (anti-trust, corporate tax increases), government debt reductions (esp. progressively with taxes on high-incomes).

Strong support for policies to help households cope with inflation.

THANK YOU!

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Sample: non-targeted characteristics

Non-targeted characteristics		
Married	0.46	0.52
Single	0.37	0.35
Separated/Divorced	0.13	0.12
Widowed	0.04	0.02
Has children	0.59	0.40
Less than 4-year college	0.62	0.64
4-year college/Master's	0.34	0.32
Professional degree	0.04	0.03
Employed	0.66	0.70
Unemployed	0.10	0.03
Republican	0.28	0.26
Democrat	0.36	0.25
Independent & others	0.36	0.47
Voted in 2020 presidential election	0.74	0.61
Voted for Biden in 2020 presidential election	0.47	0.51
Voted for Trump in 2020 presidential election	0.43	0.47
Sample size	2264	

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Sample: Cleaning procedure

We collected 3,055 responses in total. We drop those providing age or gender information inaccurately relative to the information provided to the survey company (359).

We drop respondents giving the same number as answer to all perception/expectations questions.

We drop respondents providing bot-like or nonsensical answers to the open-ended questions.

We drop respondents saying that they want to both increase and decrease interest rate to combat inflation.

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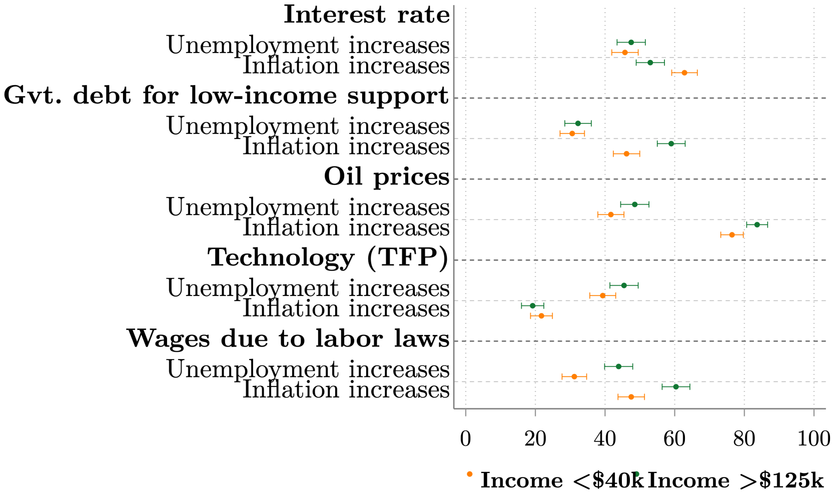
Inflation and unemployment responses to shocks: by income



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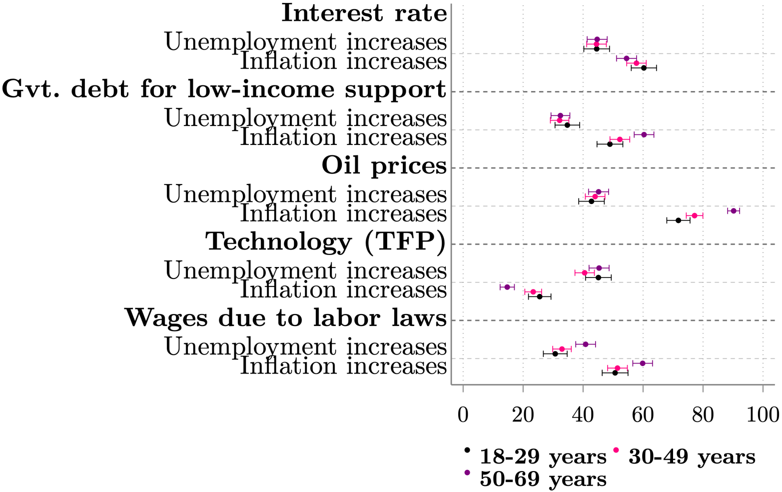
Inflation and unemployment responses to shocks: by age



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Inflation and unemployment responses to shocks: comparison with ?

	Decreases	Stays the same	Increases
Increase in oil prices			
Inflation			
?	21%	9%	71%
Our estimate	7%	12%	81%
Unemployment			
?	25%	14%	62%
Our estimate	13%	43%	44%
Increase in interest rate			
Inflation			
?	30%	13%	55%
Our estimate	27%	16%	57%
Unemployment			
?	33%	16%	51%
Our estimate	17%	39%	44%
Increase in government spending			
Inflation			
?	29%	16%	55%
Our estimate	19%	26%	54%
Unemployment			
?	43%	18%	39%
Our estimate	30%	37%	33%

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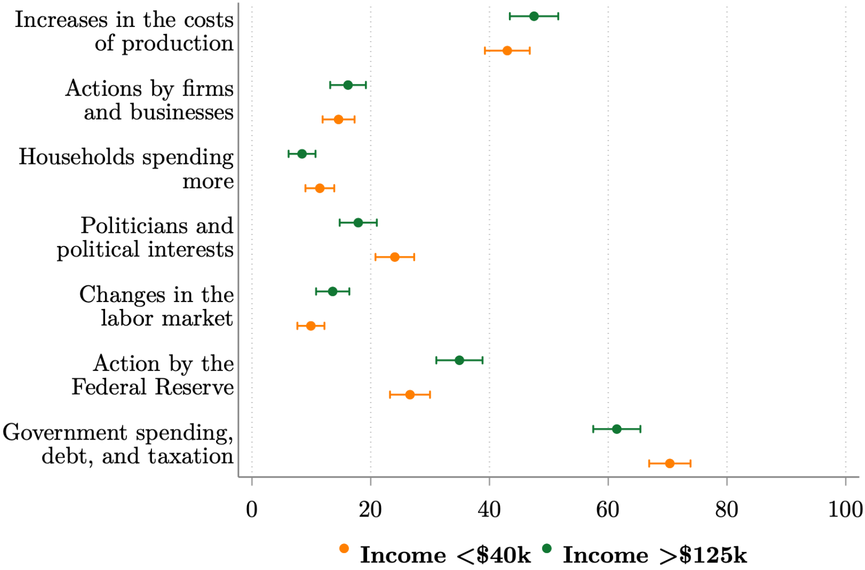
Most important causes of inflation: by income



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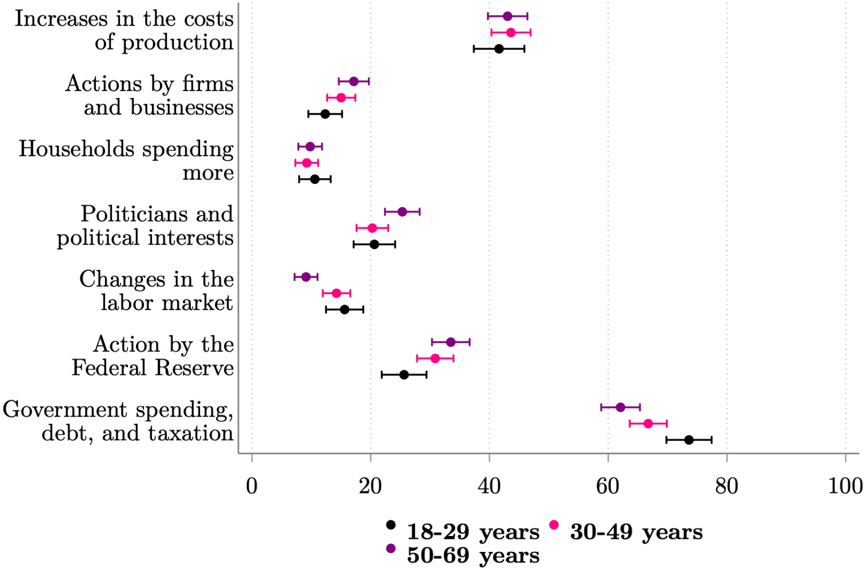
Most important causes of inflation: by age



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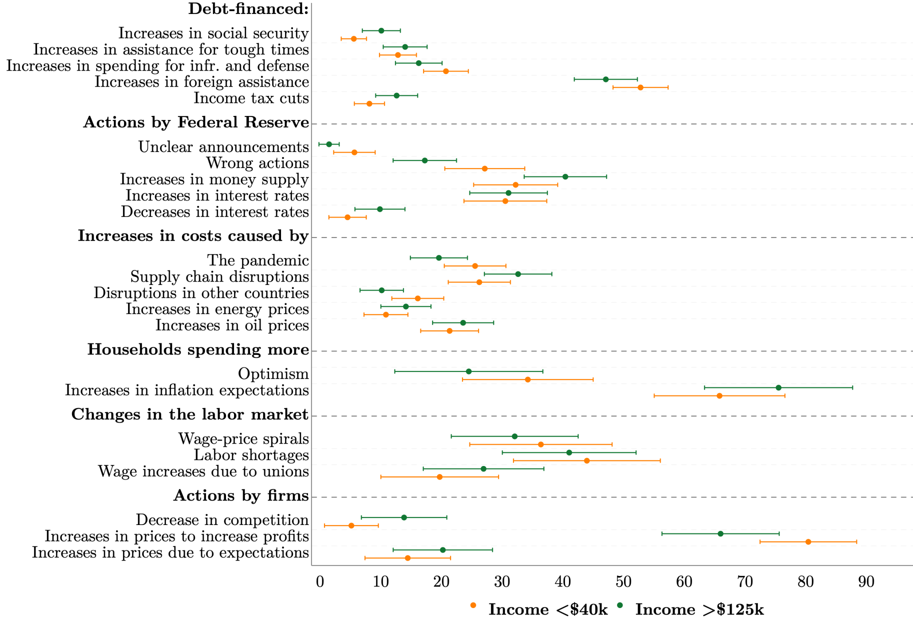
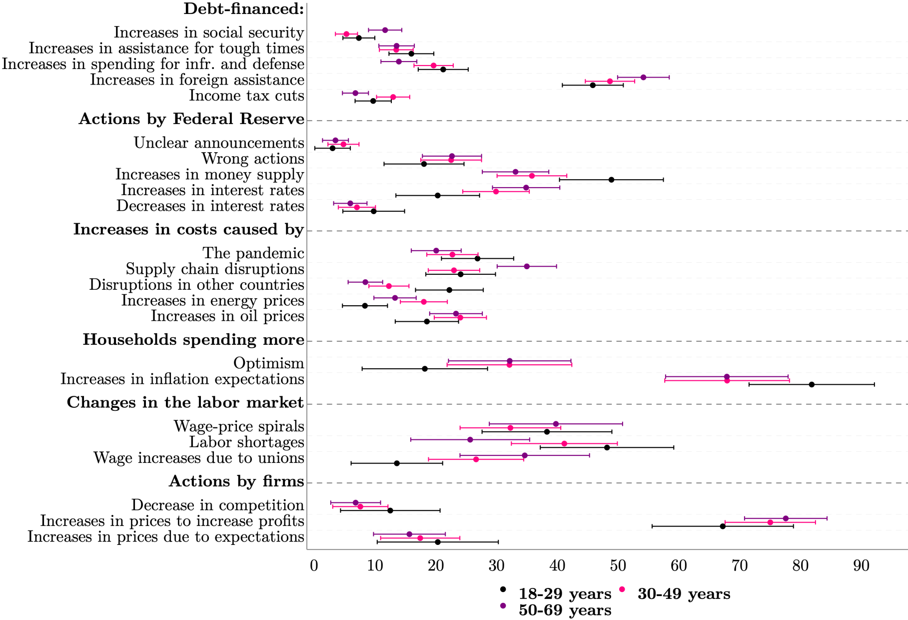
Perceived top detailed causes of inflation: by income



Perceived top detailed causes of inflation: by age



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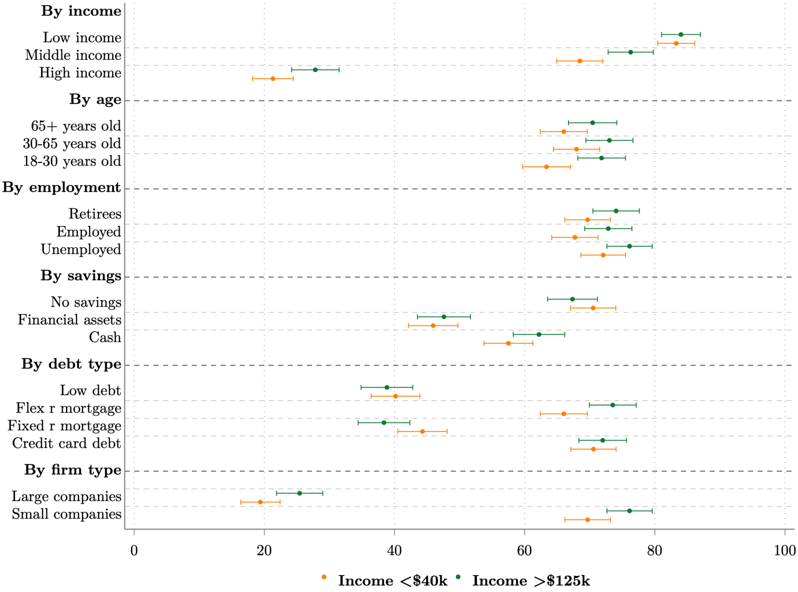
Who loses from inflation, by income



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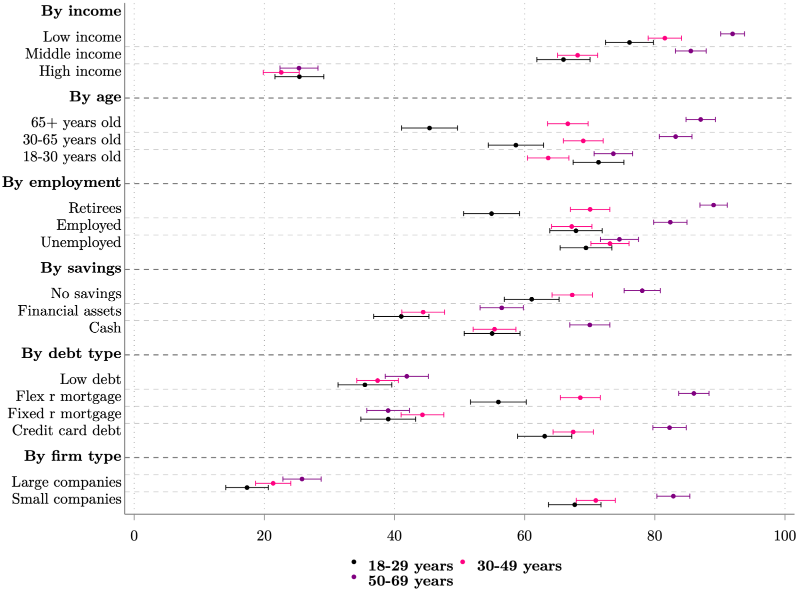
Who loses from inflation, by age



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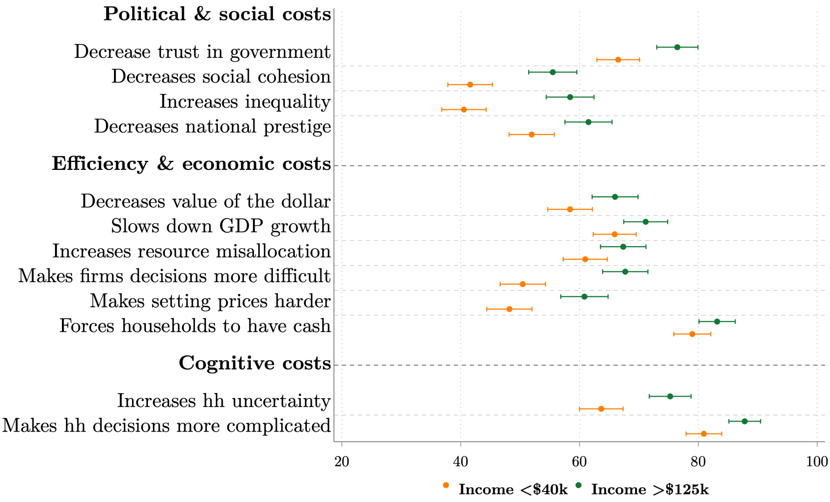
Consequences of inflation: by income



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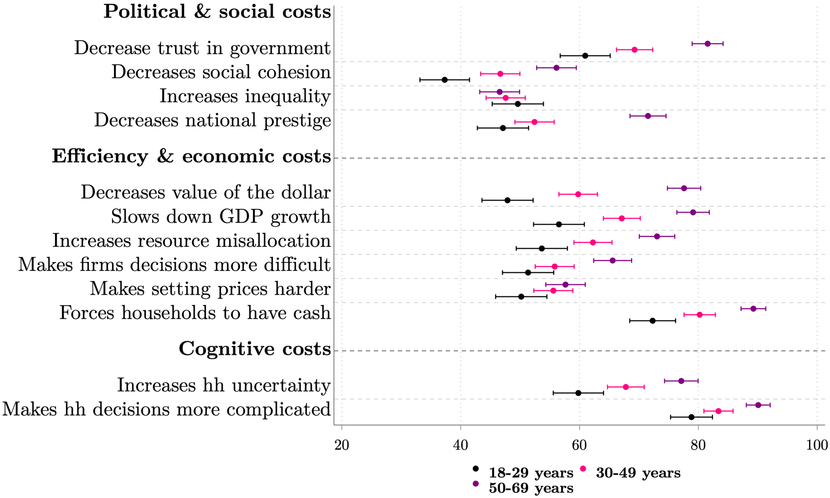
Consequences of inflation: by age



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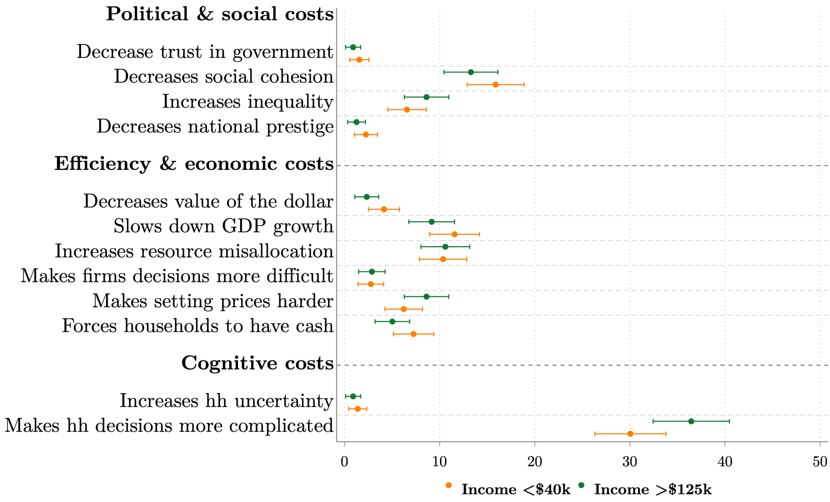
Most important consequences of inflation: by income



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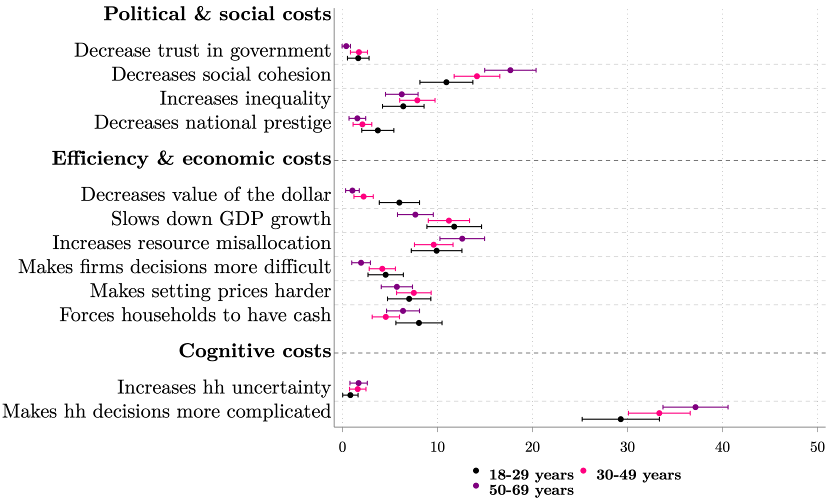
Most important consequences of inflation: by age



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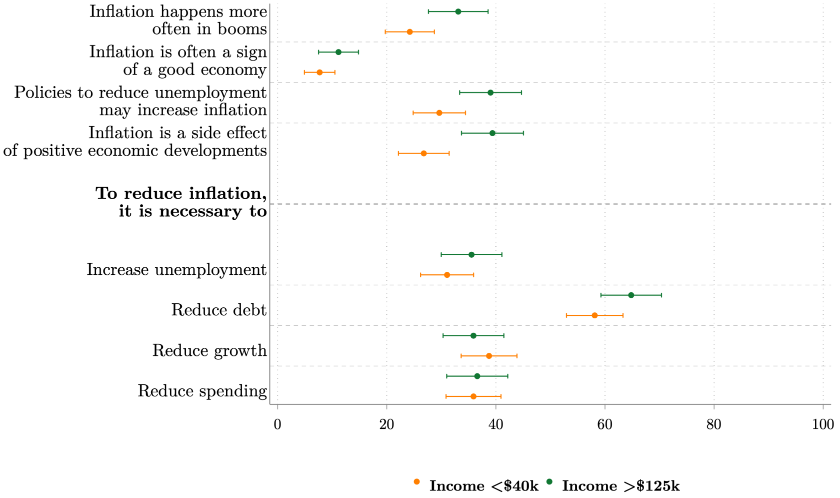
Do people perceived any trade-offs related to inflation, by income



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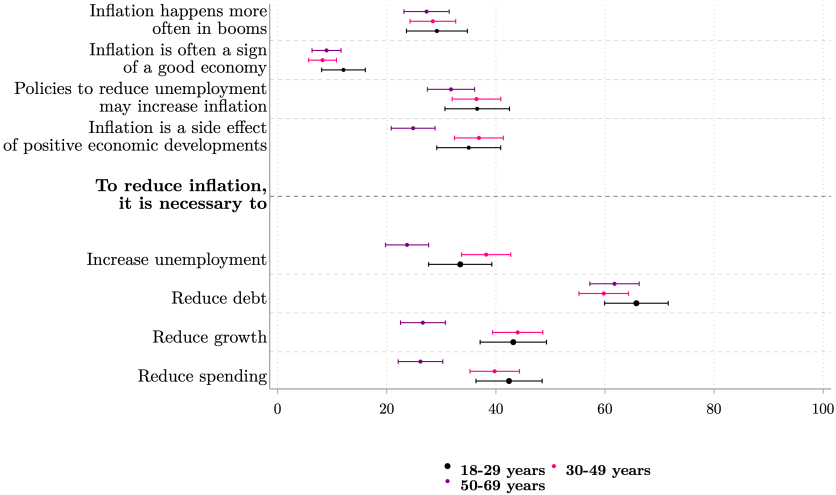
Do people perceived any trade-offs related to inflation, by age



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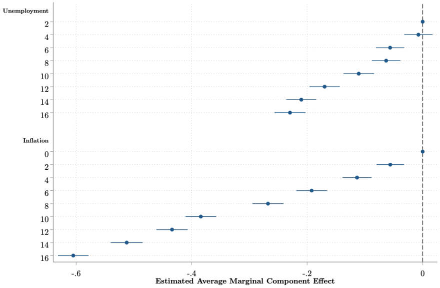
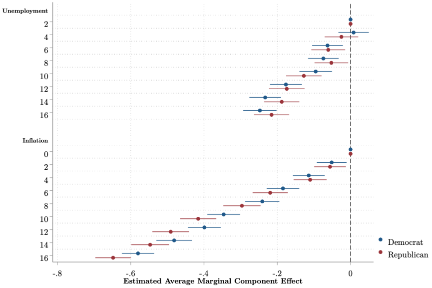
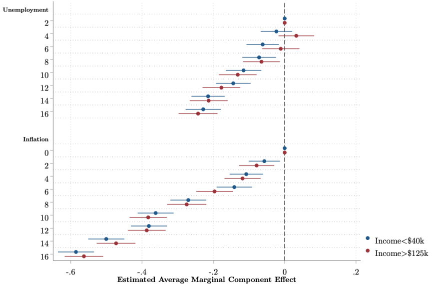
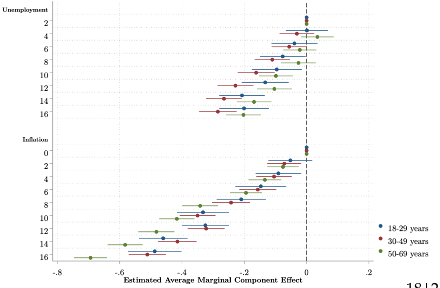
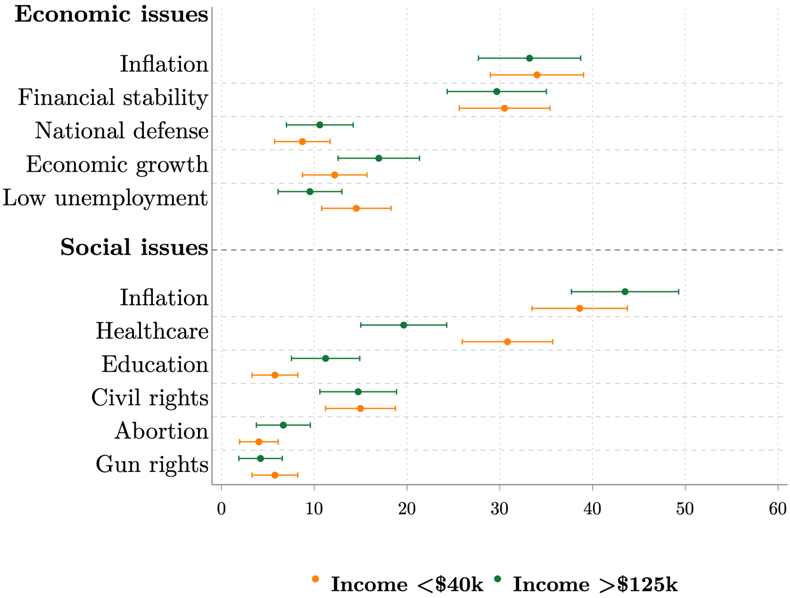

Unemployment
2
4
6
8
10
12
14
16
Inflation
0
2
4
6
8
10
12
14
16
-.6
-.4
-.2
0
Estimated Average Marginal Component Effect


Unemployment
2
4
6
8
10
12
14
16
Inflation
0
2
4
6
8
10
12
14
16
-.8
-.6
-.4
-.2
0
Estimated Average Marginal Component Effect
Democrat
Republican


Unemployment
2
4
6
8
10
12
14
16
Inflation
0
2
4
6
8
10
12
14
16
-.6
-.4
-.2
0
.2
Estimated Average Marginal Component Effect
Income<$40k
Income>$125k


Unemployment
2
4
6
8
10
12
14
16
Inflation
0
2
4
6
8
10
12
14
16
-.8
-.6
-.4
-.2
0
.2
Estimated Average Marginal Component Effect
18-29 years
30-49 years
50-69 years

Most important policy priority, by income



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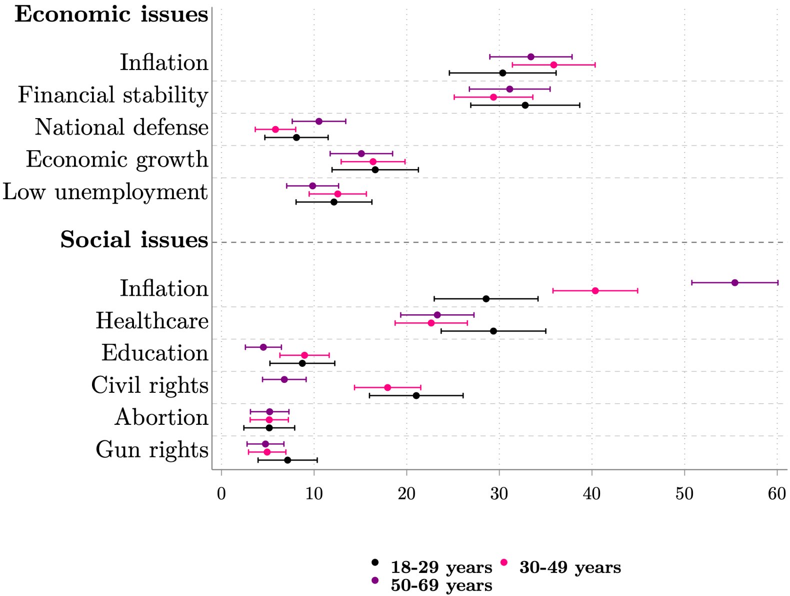
Most important policy priority, by age



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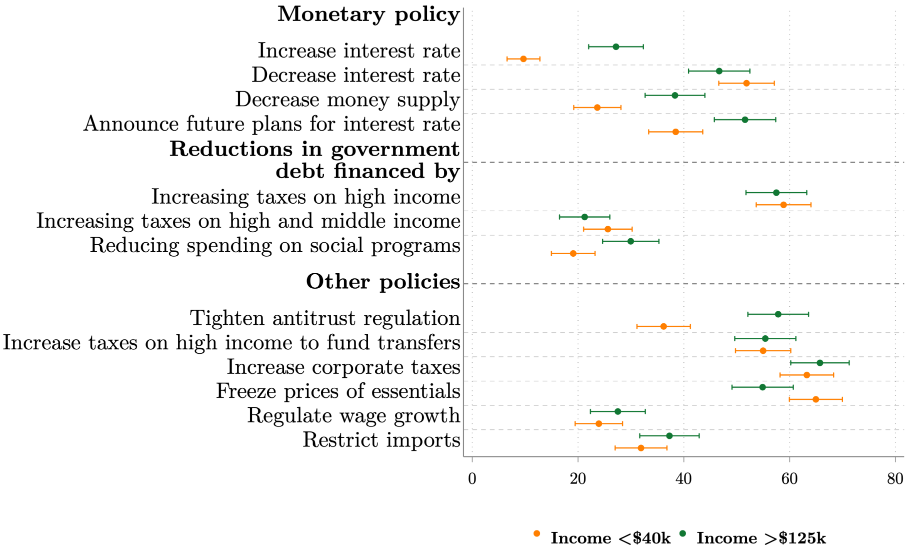
Policy views: Monetary, Fiscal, and Other Policies: by income



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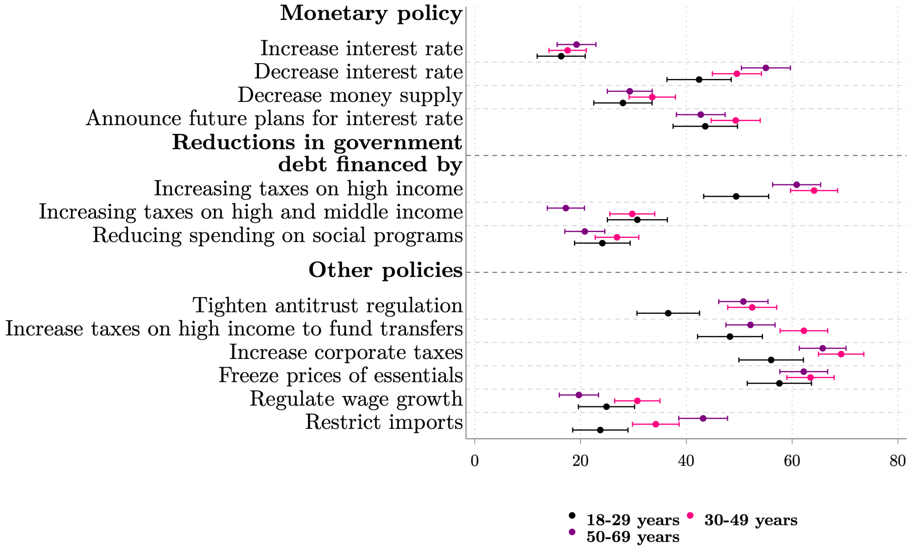
Policy views: Monetary, Fiscal, and Other Policies: by age



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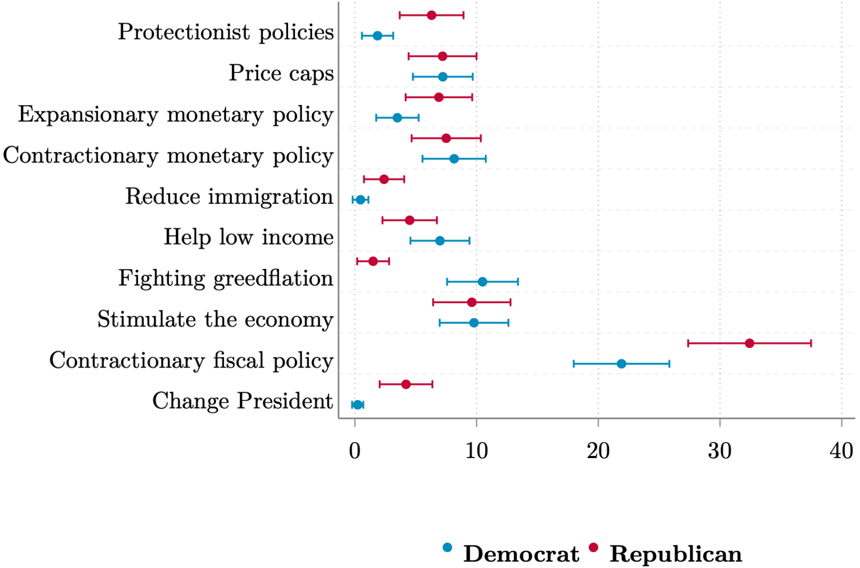
Most important policy from open-ended questions



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Policies to combat redistributive consequences of inflation: by income

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Policies to combat redistributive consequences of inflation: by age

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References I

Andre, P., C. Pizzinelli, C. Roth, and J. Wohlfart (2022). Subjective Models of the Macroeconomy: Evidence From Experts and Representative Samples. *The Review of Economic Studies 89*(6), 2958–2991.