Using Surveys for Research in Macroeconomics

New Applications

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SOCIAL
ECONOMICS
LAB

Social Economics Surveys and Experiments

Surveys have been used for a long time for measurement & statistics, now largely replaced by high-quality admin data.

Yet, **some things remain invisible** in data other than survey data (even great data!): **perceptions, attitudes and beliefs, knowledge, and reasoning.**

Revealed preference approach can be challenging due to lack of data and identifying variation.

Surveys are more than a measurement tool. Control of data generating process. **"Creating your own identifying variation and uncovering the invisible."**

Using Surveys for Macroeconomics Research

If used well, approach can be applied to many settings and questions (including as complement to other approaches).

> Examples from the **Social Economics Lab**: Trade policy, Climate change policies, Zero-sum thinking, Taxation, Inflation, Consumer behavior, etc.

New mobile technologies & platforms offer exciting opportunities.

For the results to be reliable, it is critical that these surveys are well-designed, carefully calibrated, and deployed on appropriate samples.

If interested, a "How to" manual: "How to Run Surveys: A guide to creating your own identifying variation and revealing the invisible."
(socialeconomicslab.org/how-to-run-surveys/)

Survey Use in Macro 1: Estimating key parameters

- **Use of hypothetical scenarios:** Allows to recover estimates that are hard to obtain using existing observational data and variation.
- **Application:** iMPCs and iMPDs out of income shocks.
- **Provides valuable variation:** Allows us to vary size, timing, sign, source of the shock.
- **Can study heterogeneity:** Can elicit detailed information about economic and financial circumstances, but also (hard to get from other data) past experiences, perceptions, expectations, goals and constraints...

But can we trust survey responses to predict behaviors?

Paper	Estimate	Sample	Value	Our estimate
Patterson (2023)	**MPC** out of income loss due to unemp.	CEX, PSID	.53	.59 (.024)
Kaplan et al. (2014)	Share of HtM households	SCF	.31	.31 (.013)
	Share of wealthy HtM out of total HtM		.62	.64 (.036)
Chetty and Szeidl (2007)	Share of committed expenditures	CEX, PSID	0.5 (update: 0.6)	.62 (.005)
Baugh et al. (2021)	**MPC** out of tax refund, 30 days before receipt	Admin data, account aggregator	.001	.01 (.002)
	MPC out of tax refund, 30 days after receipt		.07	.091 (.009)
	MPC out of tax refund, 30-60 days after receipt		.03	.096 (.009)
Baugh et al. (2021)	**MPC** out of tax payment, 30 days before due	Admin data, account aggregator	.001	.044 (.007)
	MPC out of tax payment, 30 days after due		.001	.026 (.004)
	MPC out of tax payment, 30-60 days after due		.01	.02 (.004)
Di Maggio et al. (2017)	**Car spending/initial mort. paym.** out of cuts in mort. paym.	BlackBox Logic, Equifax	.043	.065 (.02)
	Repaym. of mortgage debt/initial mort. paym. out of cuts in mort. paym.		.043	.059 (.008)
Karger and Rajan (2021)	**MPC** out of the first EIP	Facteus bank-account data	.46	.5 (.024)
Misra et al. (2022)	**MPC** out of the first EIP	Facteus data, ZIP code level	.51	
Chetty et al. (2023)	**MPC** out of the first EIP	Affinity Solutions, aggregated data	.37-.61	

Survey Use in Macro 2: Model Selection

- Several models can be observationally equivalent, especially given the (often limited) data we have.
  - And different households may function according to different models.
- Surveys allow us to ask people **more directly** about their **mental model of behavior**.
- **More specific adjustment margins**: what specific decisions– type of spending, (de)leveraging, saving, labor supply- are affected by the shock? E.g., deleveraging by paying mortgage versus repaying late bills.
- **Motivations/Reasons**: why do households choose to use or not use certain adjustment margins?
- **Puzzles:** Combo of key parameter estimates and underlying motivations can help resolve some "puzzles"
  - Which are often puzzles because we don't understand households' reasons!

Survey Use in Macro 3: People's Understanding of Policy

- Why is it important for our macroeconomic models?
- We study impact of policies like monetary or fiscal policy.
- Impacts of policy depend on people's understanding and perceptions of it.
  - **Perceptions shape expectations, higher-order beliefs (what others/firms/government will do), and, ultimately, behaviors and the impacts of macro policy**.
- **Application:** People's understanding of inflation and policies to fight it.

Survey Use in Macro 4: Identifying Misperceptions and Lack of Information

- Lots of behaviors relevant in macro models are **driven by information or lack thereof**
  - asymmetric information/lack of information can have big impacts.
- Using **survey data matched to administrative records** can show gap between subjective perceptions and reality.
- **Application:** Misperception of the incomes of others and one's own outside opportunities
  - Relevant for macro-labor, search models, on-the-job behaviors.

"The How and Why of Household Reactions to Income Shocks"

by Roberto Colarieti, Pierfrancesco Mei, and Stefanie Stantcheva

Quantitative Estimation of iMPCs and iMPDs

Suppose that today you learn that you and your household will receive an **unexpected, one-time payment** of approximately 10 percent of your total household annual income (after taxes and transfers). You can think of this payment as a government stimulus check, tax refund, bonus, inheritance, gift, or lottery win. This one-time payment, which will not be taxed, will be available on your bank account or as a check in your mailbox within a few days.

Now, consider ways in which you and your household could use this additional income:

1. **Additional spending:** purchases of durable goods (e.g., cars, furniture, jewelry, etc.) or non-durable goods and services that do not last for a long time (e.g., food, clothes, vacation, etc.) in addition to those you have already planned.
2. **Additional debt repayments:** principal and interest payments to reimburse outstanding debt (e.g., credit card debts, mortgages, student and consumer loans, etc.) in addition to those you have already planned.
3. **Savings:** amount of additional income that is neither spent nor used to repay debt. It is left for future use, for instance by depositing it in checking, savings, or pension accounts, or by purchasing financial assets.

We would like to understand how you and your household would allocate this one-time payment to additional spending and debt repayments in the next few quarters.

Suppose that today you and your household receive a one-time payment of the following amount:

$4500

Please enter how you would **allocate this one-time payment to additional spending and debt repayments** in different 3-month periods. Money that you do not use for additional spending and debt repayments during these periods will **saved for future use**.

	Additional spending	Additional debt repayments
Between today and 3 months from now		
Between 4 and 6 months from now		
Between 7 and 9 months from now		
Between 10 and 12 months from now		

Savings: $4500

Suppose that today you and your household receive a one-time payment of the following amount:

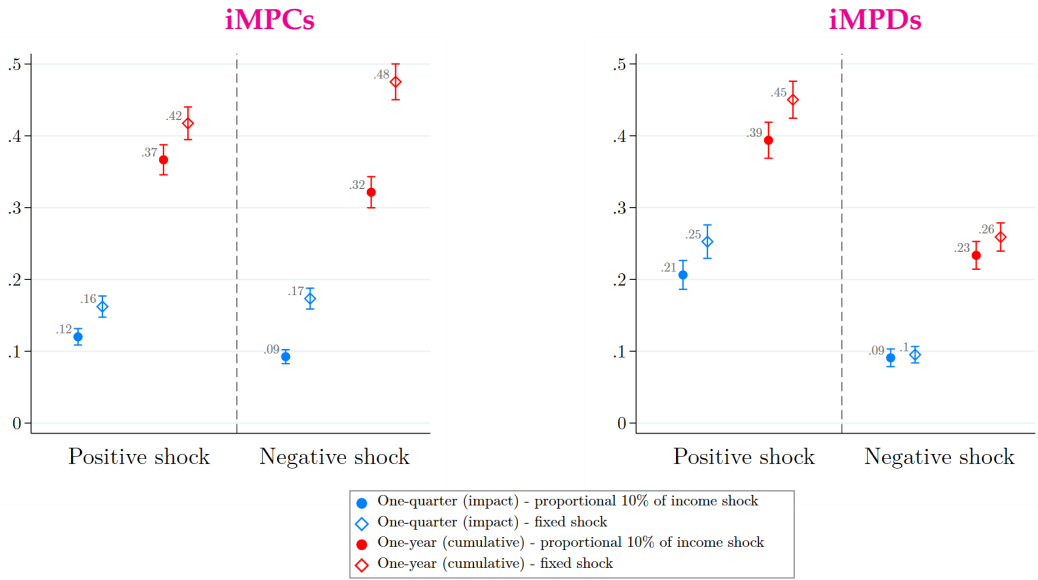
$4500

Please enter how you would **allocate this one-time payment to additional spending and debt repayments** in different 3-month periods. Money that you do not use for additional spending and debt repayments during these periods will **saved for future use**.

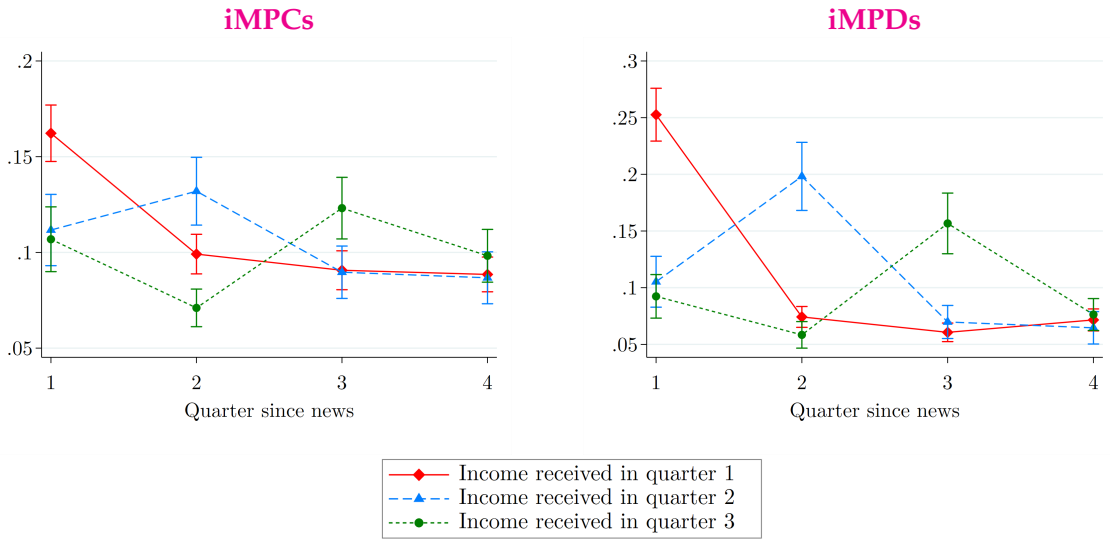
	Additional spending	Additional debt repayments
Between today and 3 months from now	500	300
Between 4 and 6 months from now	200	200
Between 7 and 9 months from now	100	
Between 10 and 12 months from now		

Savings: $3200

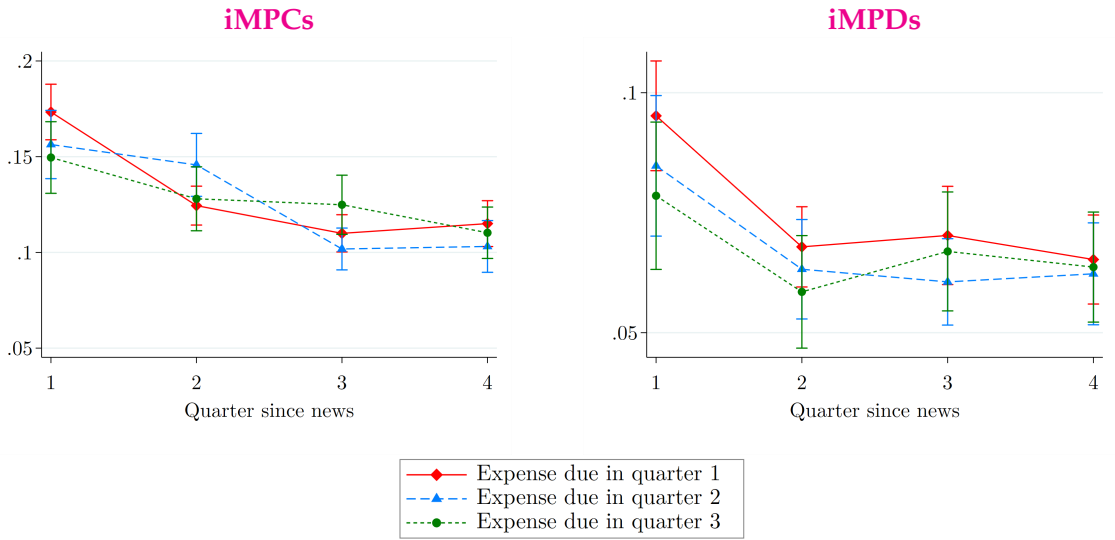
iMPCs and iMPDs out of an income shock



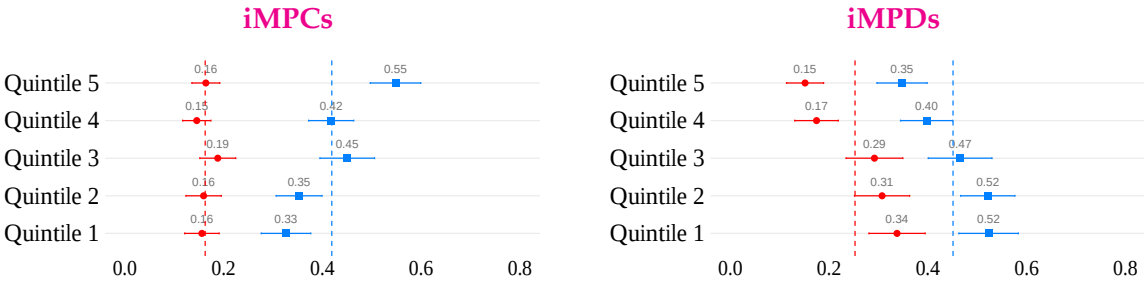
Dynamics: iMPCs and iMPDs for positive $1000 shock



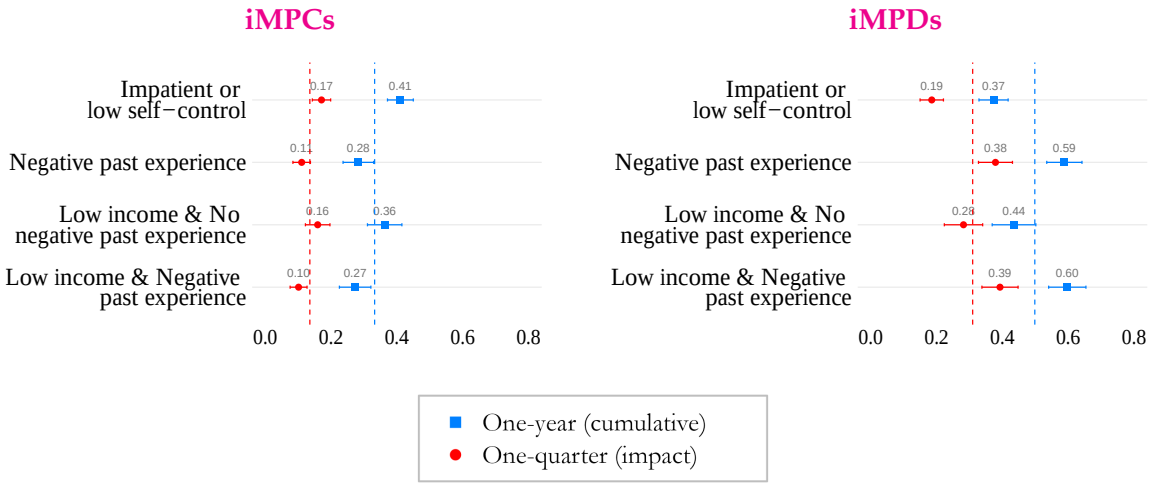
Dynamics: iMPCs and iMPDs for negative $1000 shock



iMPCs and iMPDs and Quintiles of liquid wealth (+$1000 shock)



iMPCs and iMPDs among Low liquidity households (+$1000 shock)



Model Selection

How we elicit the reasons behind households' behaviors

Start by repeating scenarios for positive and negative shocks.

Ask how relevant many potential **detailed adjustment margins** are. Some examples:

"Purchase basic necessities and items that we need and cannot currently afford"

"Put money into our emergency fund"

"Repay late bills that we wouldn't normally pay without this extra money"

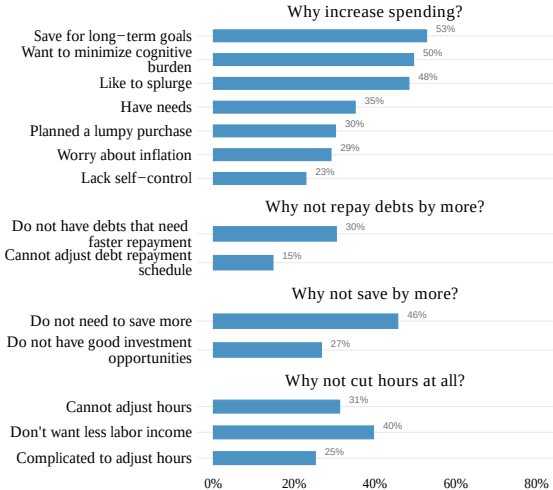
"Put more money towards our long-term goals (e.g., house purchase, education, or retirement)"

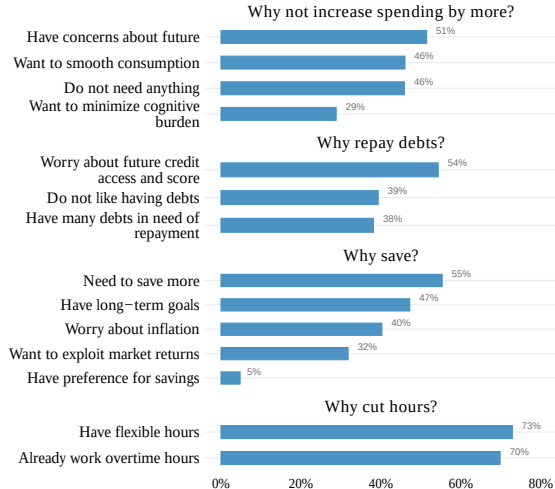
Ask about **detailed reasons for doing, *not* doing, or not doing more of something** (See next slide)

Use **machine learning algorithm to classify households** into "types" based on their adjustment margins and reasons provided (Latent Class Analysis (LCA)).

Distribution of reasons for taking/not taking various actions

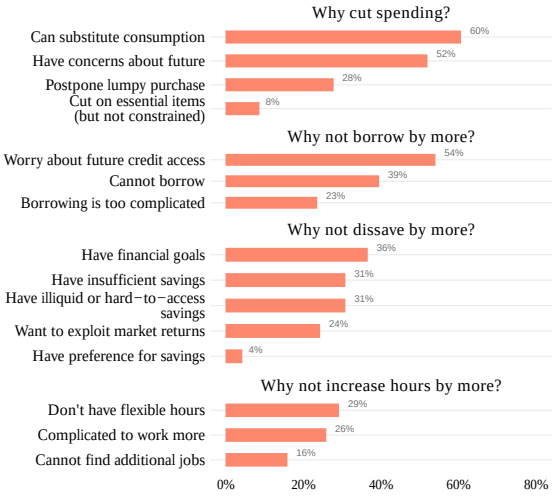
Positive income shock

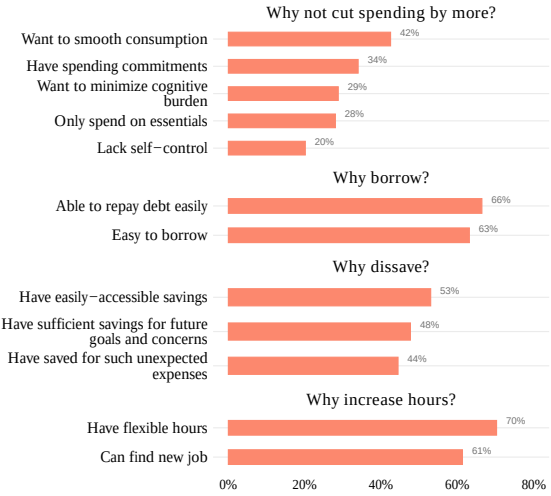




Distribution of reasons for taking/not taking various actions

Negative income shock





Characteristics	**Strongly constrained (18%)**	**Spenders (33%)**	**Precautionary (16%)**	**Quasi-smoothers (18%)**
MPCs/MPDs after positive shock	Low MPCs, high MPDs	High MPCs, low MPDs	Low MPCs, low MPDs	Slightly higher MPCs, low MPDs
MPCs/MPDs after negative shock	Average MPCs, high MPDs on impact only	Low MPCs, high MPDs	High MPCs, low MPDs	Slightly lower MPCs, low MPDs
Main reaction after positive shock	Deleverage	Spend more	Save	Save
Main reason	Too many debts	Minimize cognitive burden, splurging	Concerns about future and long term goals	Do not need things, have long term goals
Main reaction after negative shock	Cut spending and borrow	Mix of spending cut, borrowing and dip into savings	Dip into saving and cut consumption	Dip into savings
Main reason	Future concerns, substitute away towards lower quality and cannot borrow more	Easy to borrow, want to minimize cognitive burden	Future concerns and because they have buffer stock for such situations	Want to smooth consumption and have easily accessible savings
Decision making characteristics	Can only handle very limited unexpected expenses, unable to stick to plans because of volatility and shocks, planning horizon short	Average length planning horizon, able to withstand average unexpected expenses	Large planned investments, stick to plans in disciplined manner	Longer planning horizon, able to stick to plans, can handle large unexpected expenses
Main socioeconomic characteristics	Women, older, low income, low assets of all types	Younger, higher income and assets, with children, low income risk	Somewhat older, higher assets, lower debts, typically low income risk	Older, high assets, low debt
Other characteristics	Higher risk aversion, lots of concerns, high income risk	Low self-control, low risk-aversion	High self-control, high planned investments	High self-control, high risk aversion

Explaining some puzzles with the combination of "the how and the why"

Why do constrained households have surprisingly low MPCs?

They mostly focus on deleveraging.

Why do liquid households exhibit high MPCs?

Spend on leisure and more luxurious items because enjoy splurging or are saving for future expenses ("term liquidity" constrained).

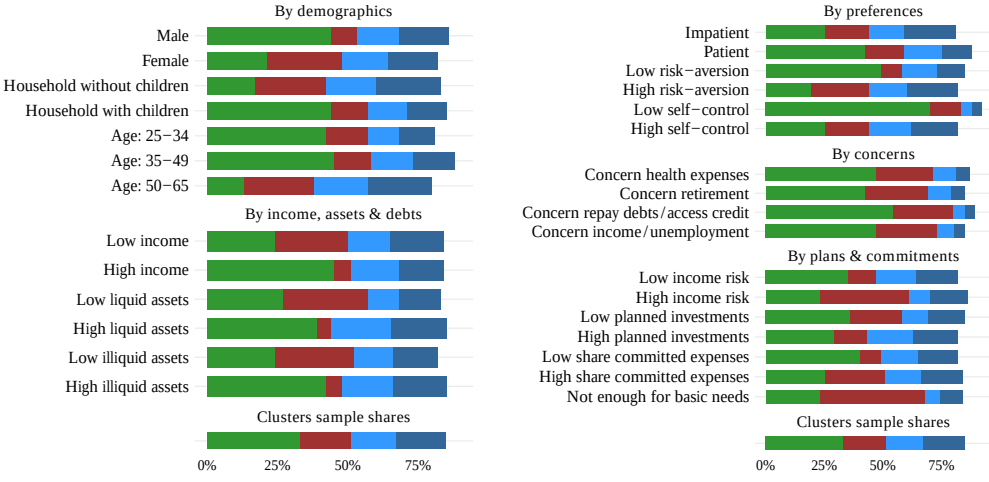
Why do households respond asymmetrically to positive and negative shocks?

Different answers for different households:

The Precautionary smooth consumption after positive shock but cut spending after negative one because worry about the future.

The Spenders and Quasi-Smoothers increase spending out of desire to indulge when possible, but smooth out negative shocks because they can.

Distribution of clusters for each characteristic



Key takeaway: Heterogeneity in Household Models

Analysis highlights that **different households do the same thing for different reasons.**

Observational data on adjustments in spending, debt, or savings $\Rightarrow$ limited info about underlying model that households follow (limited predictive power for identifying types).

Other useful info that can be gleaned from surveys, but not sufficient:

- Size of MPCs/MPDs
- More specific adjustment margins (e.g., using credit card debt versus leaving bills unpaid)
- Socioeconomic characteristics such as assets or income
- Concerns, goals, and plans are more predictive but not sufficiently so (many households have shared concerns and aspirations).

Key information needed: underlying reasons for choosing specific behaviors or not.

"People's Understanding of Inflation"

by Alberto Binetti, Francesco Nuzzi, and Stefanie Stantcheva

Research question: How do people understand inflation?

Inflation is a **complex** phenomenon.

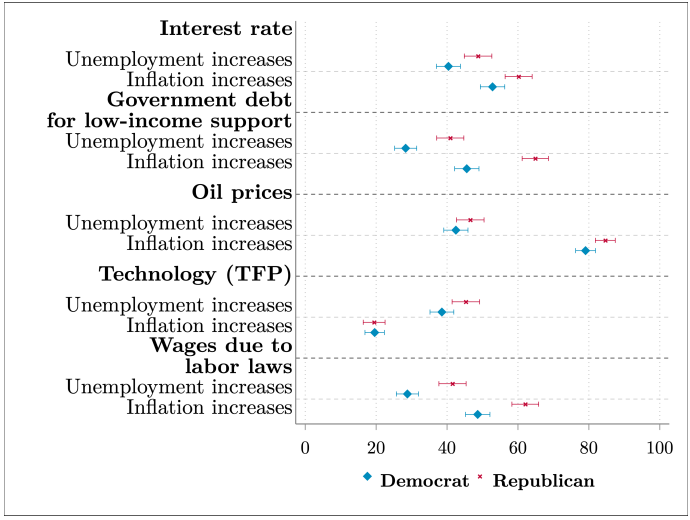
How do people perceive its **causes, consequences, & trade-offs**?

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

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

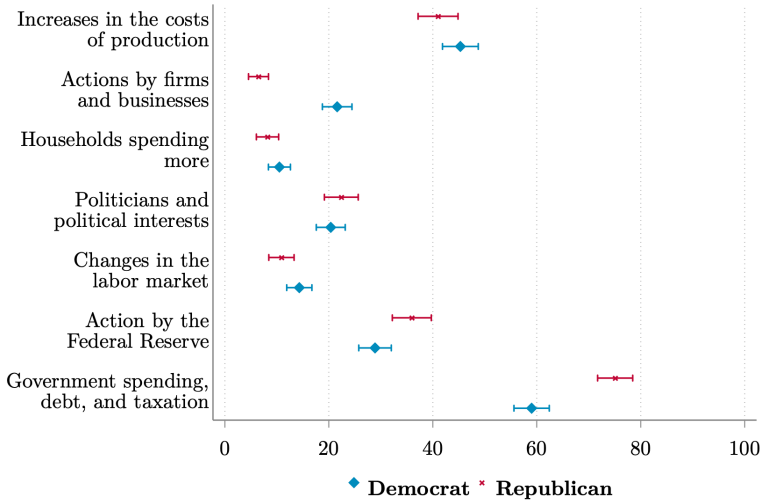
Understanding of Inflation

Inflation & unemployment responses to increases in...

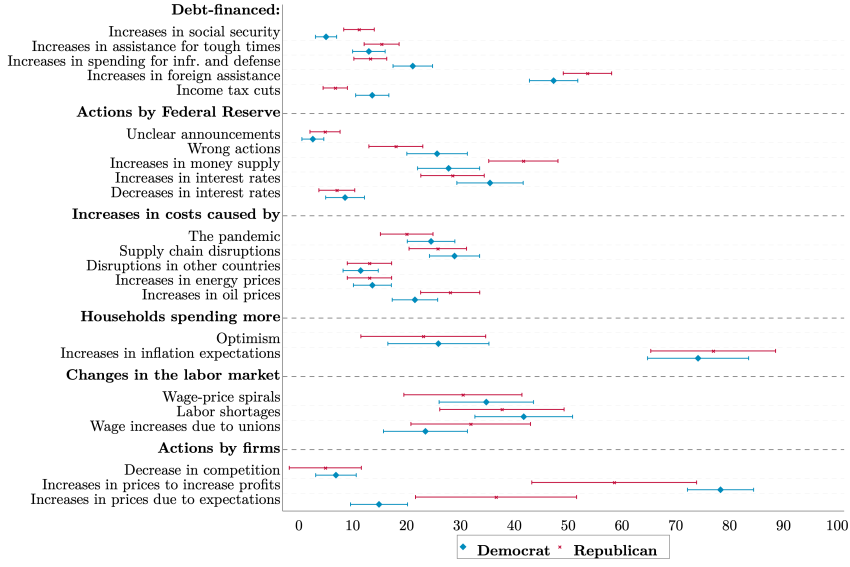


"Correct" share is 12% for interest rate shock, 13% for government debt/spending shock, 42% for oil shock, 28% for wages shock

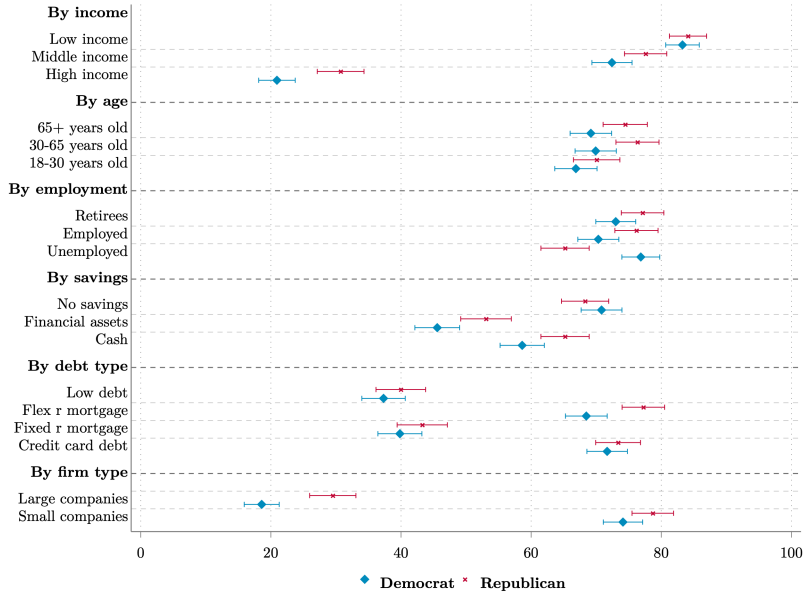
Top 2 perceived broad causes of inflation



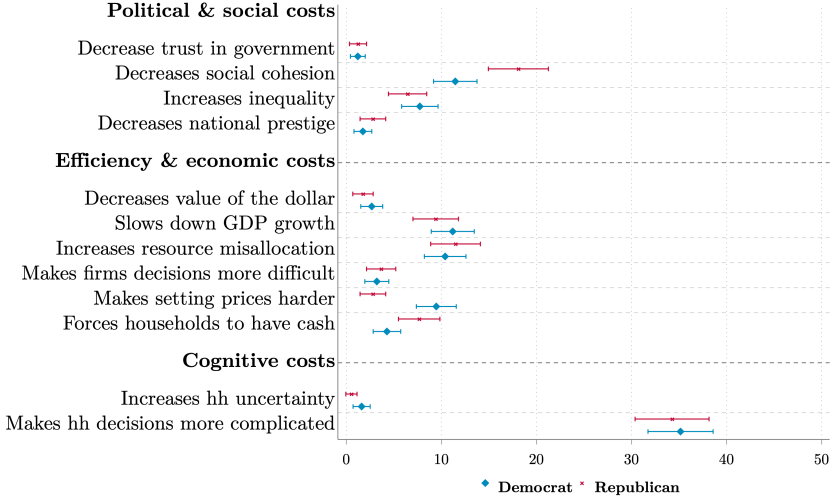
Perceived top specific cause of inflation



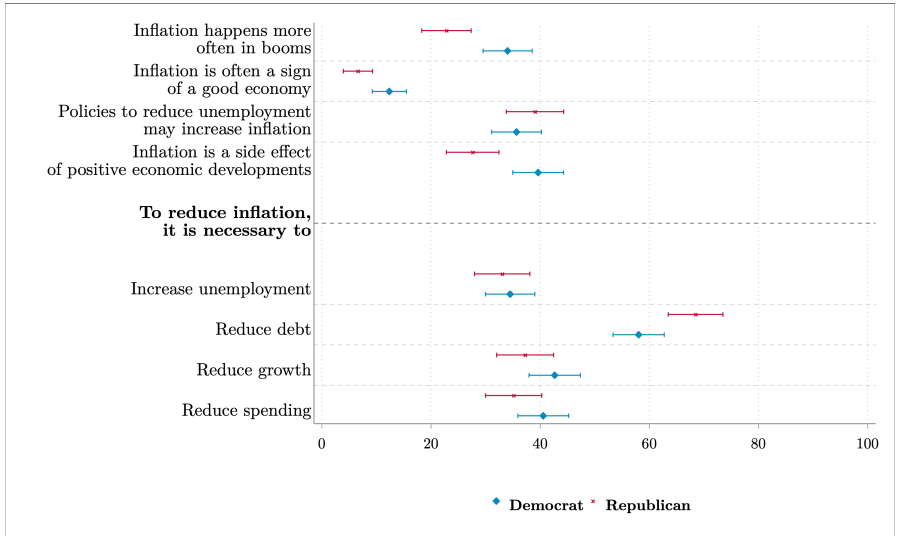
Distributional impacts: % believing these groups lose



Top perceived consequence of inflation



Perceived trade-offs related to inflation

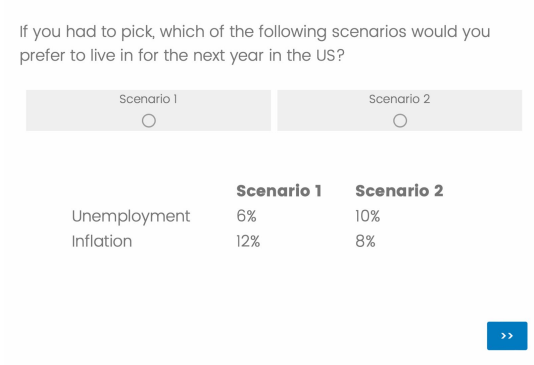


Policy views

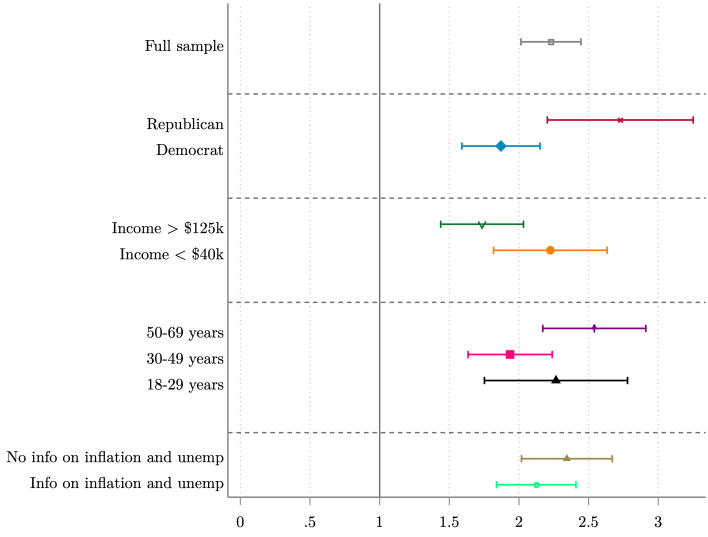
Conjoint experiment

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.

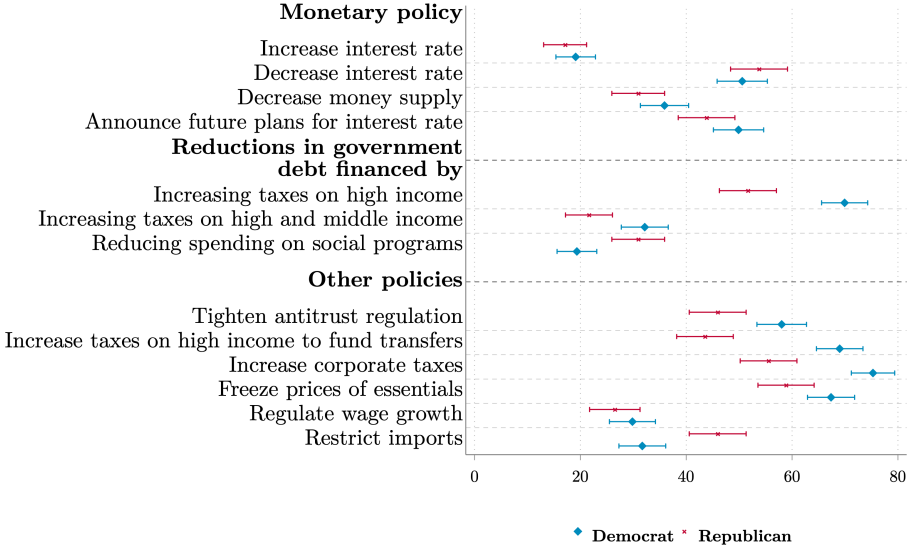
Values of inflation randomly picked in [0,16], values of unemployment in [2,16]



Weight on inflation is twice that on unemployment



Policy views: Monetary, fiscal, and other Policies



Summary of Key Findings

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

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.

"Social Positions and Fairness Views on Inequality"

by Kristoffer Balle Hvidberg, Claus Thustrup Kreiner, and Stefanie Stantcheva

Eliciting the Cohort Median Income (P50)

What do you think the income for **P50** was in 2017 for individuals born in 1970?

Remember that P50 is the income, where half have an income that is the same as or lower than this income, and half have an income that is higher than this income.

Remember also that income is before tax for the whole of 2017 and consists of salary, net profit from self-employment, other business income, unemployment benefits, transfers and payments from private and public pensions.

Note: Please state your answer in **entire thousand DKKs**. If you enter 1 it corresponds to 1,000 DKK.

thousand DKK

Eliciting the Median (P50) in Reference Groups

We will now ask you what you think the before tax income for **P50** was in 2017 for the groups below, which you are a part of. The first slider shows your answer from the previous question. You can use the other sliders to select, what you think the income was for P50 for the different groups of **people who were born the same year as you.**

P50 for people **born in 1970**

400.000

P50 for **men** born in 1970

20.000

P50 for people who also lived in **Københavns municipality**

20.000

P50 for people who also had the educational level **Master or PhD program**

20.000

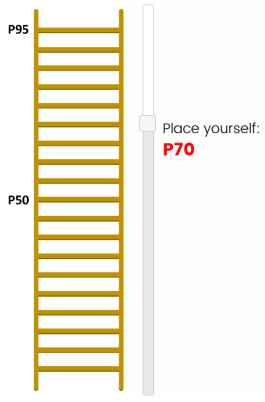
P50 for people who also worked in the sector **Finance and insurance**

20.000

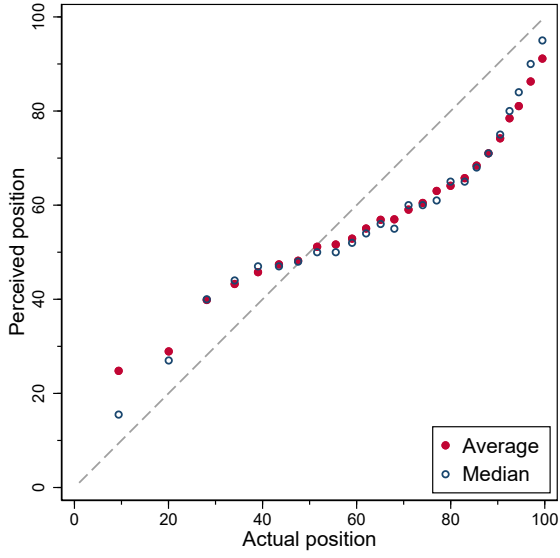
Eliciting Perceived Own Position

Rank among all people **born in 1970**

You previously reported that you had a yearly income in 2017 of 400000 DKK before tax. We will now ask you to report where you think this income placed you on the income ladder in 2017 for people who were born in 1970. Use the slider to select your position. Later, we will inform you about your true position.

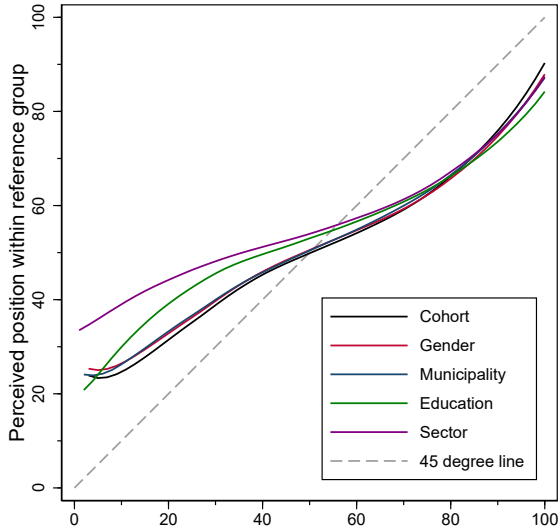


Systematic Misperception of Own Position: Center Bias



Center Bias in All Reference Groups

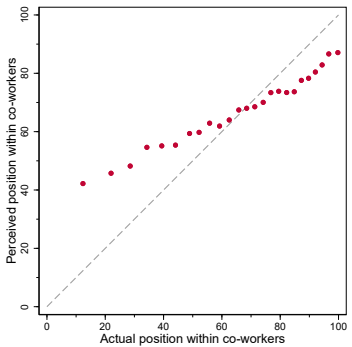
... Largest misperceptions: education and sector groups.



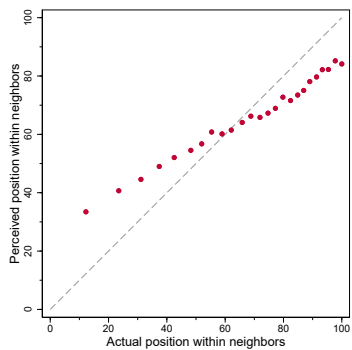
Strong Misperception of Position Among Co-workers

Small Reference Groups

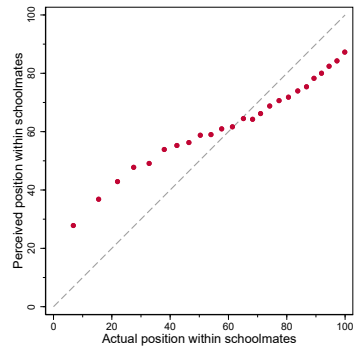
Co-workers



Neighbors



Schoolmates



Conclusion: Using Surveys for Research in Macro

Estimating key parameters of interest

- Application: iMPCs, iMPDs

Model Selection

- Application: Why households react to income shocks the way they do

Studying people's understanding of the macroeconomy & macro policies

- Application: How do people understanding inflation?

Identifying misperceptions and lack of information

- Application: Perceptions of position relative to others (in sector & labor market)

THANK YOU!

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