Narratives about the Macroeconomy

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Motivation

Narratives: causal story/account of why an event occurred.

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Provide a lens through which individuals can interpret data and forecast future developments.

Importance recognized in psychology (e.g., Bruner, 1991), recently also in economics (e.g., Shiller 2017, 2020).

But empirical evidence on econ. narratives remains scarce.

This paper

Goal: Assess nature, consequences, origins of econ. narratives.

High-stakes macroeconomic setting: Rise of US inflation.

- competing narratives
- different implications for future development
- inflation expectations are critical

Research questions

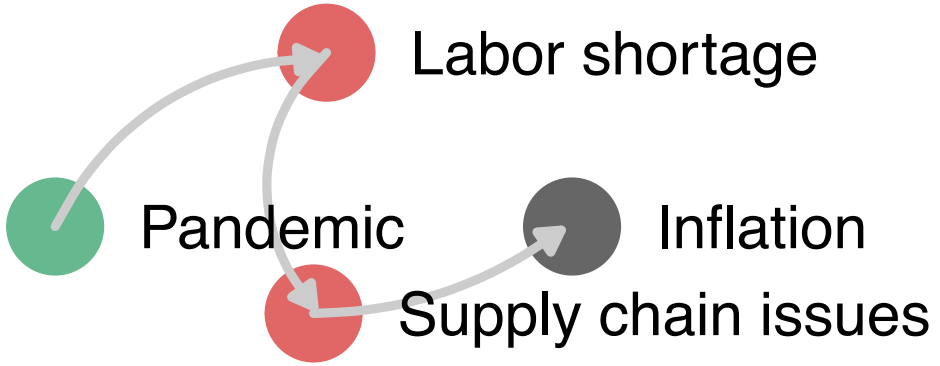
1. What characterizes people's narratives?
2. Do narratives shape inflation expectations?
3. Is the news media an important source of narratives?

Approach

1. **Why has inflation increased?**
   Measure narratives in **open-ended survey responses**

2. Narratives as **causal graphs behind stories**

(As in Eliaz and Spiegler, 2020)



3. **Descriptive surveys**

4. **Experiments** to study
   - causal effect on expectations
   - role of exposure to news media

Related literature

Economic expectations

(see excellent program ☺; or, e.g.: Adam and Nagel, 2022; Armantier et al., 2013; Bachmann et al., 2015, 2020; Binder et al., 2020, 2022; Christelis et al., 2020; Coibion and Gorodnichenko, 2012, 2015; Coibion et al., 2019, 2020, 2022; Cavallo et al., 2017; D'Acunto et al., 2019, 2021, 2022; Malmendier and Nagel, 2011, 2016; Roth et al. 2021)

Narratives in economics

(e.g., Eliaz and Spiegler, 2020; Shiller 2017, 2020; Bénabou et al., 2020; Morag and Loewenstein, 2021; Borup et al., 2021; Hansen et al. 2017)

Attention and belief formation

(e.g., Bordalo et al., 2016, 2020; Gabaix, 2019; Gennaioli and Shleifer, 2010)

Media

(e.g., Bursztyn et al., 2022a; Bybee et al., 2021; Larsen and Thorsrud, 2021; Levy, 2021; Chen and Yang, 2019; Chopra, 2021; Coibion et al., 2019; Link et al., 2022; Pedemonte, 2020)

Measurement

Samples

Online surveys shortly after BLS inflation data release.

US households

- About 1k per wave, 5 waves, Nov. 21 to May 22.
- Broadly rep. of pop. (income, region, age, gender).
- Recruited with professional survey company (Lucid).

Academic experts

- 111 responses, Nov. 21.
- Invited 2k economists: pub. in top 20 journal (2015–2019) on JEL: E.

Survey structure

1. Attention screener
2. Demographics
3. Definition of inflation
4. Baseline knowledge of inflation
5. **Narratives: Inflation has increased. Why?**
6. **Inflation forecasts**
7. Additional questions

Survey structure

1. Attention screener — *Not for experts*
2. Demographics — *Not for experts*
3. Definition of inflation — *Not for experts*
4. Baseline knowledge of inflation — *Not for experts*
5. **Narratives: Inflation has increased. Why?**
6. **Inflation forecasts**
7. Additional questions

Measuring expected inflation: 1y-ahead

(same approach for 5y-ahead expectations)

Your forecasts for the future

Recall that, in previous years, the US inflation rate has mostly varied between 1.5% and 2.5%. Recently, however, the inflation rate has increased. It is now at 6.2%.

Next, we would like you to think about the different things that may happen to inflation **over the next 12 months**. We realize that this question may take a little more time. **In your view, what would you say is the percent chance that, over the next 12 months...**

(Please note: The numbers need to add up to 100%.)

The rate of inflation will be 12% or higher.	0 %
The rate of inflation will be between 8% and 12%.	0 %
The rate of inflation will be between 4% and 8%.	0 %
The rate of inflation will be between 2% and 4%.	0 %
The rate of inflation will be between 0% and 2%.	0 %
The rate of deflation (the opposite of inflation) will be between 0% and 2%.	0 %
The rate of deflation (the opposite of inflation) will be between 2% and 4%.	0 %
The rate of deflation (the opposite of inflation) will be between 4% and 8%.	0 %
The rate of deflation (the opposite of inflation) will be between 8% and 12%.	0 %
The rate of deflation (the opposite of inflation) will be 12% or higher.	0 %
Total	0 %

Measuring narratives

Why has the inflation rate increased?

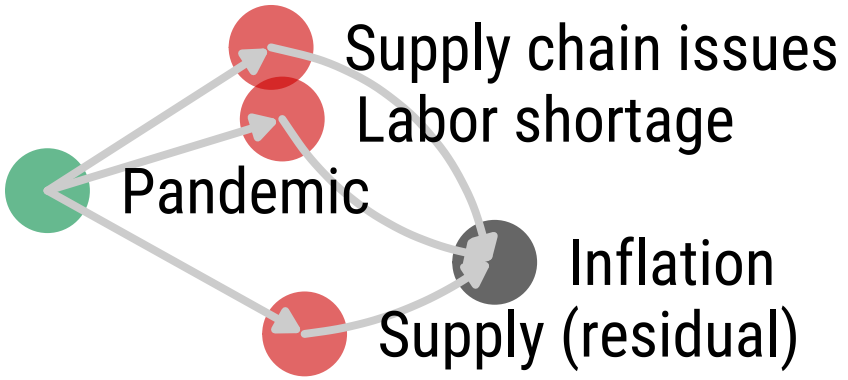
In previous years, the US inflation rate has mostly varied between 1.5% and 2.5%. At this rate, a bundle of goods and services that costs $1,000 in one year, would cost between $1,015 and $1,025 in the next year.

Recently, however, the inflation rate has increased. It is now at 6.2%. At this rate, a bundle of goods and services that costs $1,000 in one year, would cost $1,062 in the next year.

Which factors do you think caused the increase in the inflation rate? Please respond in full sentences.

Example stories: Households

"I think the biggest factor in the large inflation rate over the last year or so is probably the pandemic. With **labor shortages** and **business shutdowns because of the pandemic**, certain goods are harder to get a hold of, and **supply chains have been heavily impacted**."



Classifying narratives

Manually code **causal connections** between **key factors**.

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Demand	Supply	Other
Gov. spending increased	Supply chain disruptions	Pandemic
Loose monetary policy	Labor shortage	Gov. mismanagement
Pent-up demand	Energy crisis	Russia-Ukraine war
Shift in demand	General/residual supply	Price gouging
General/residual demand		…

Coding protocol

Each response coded by **two independent reviewers**.
Each conflict resolved manually.

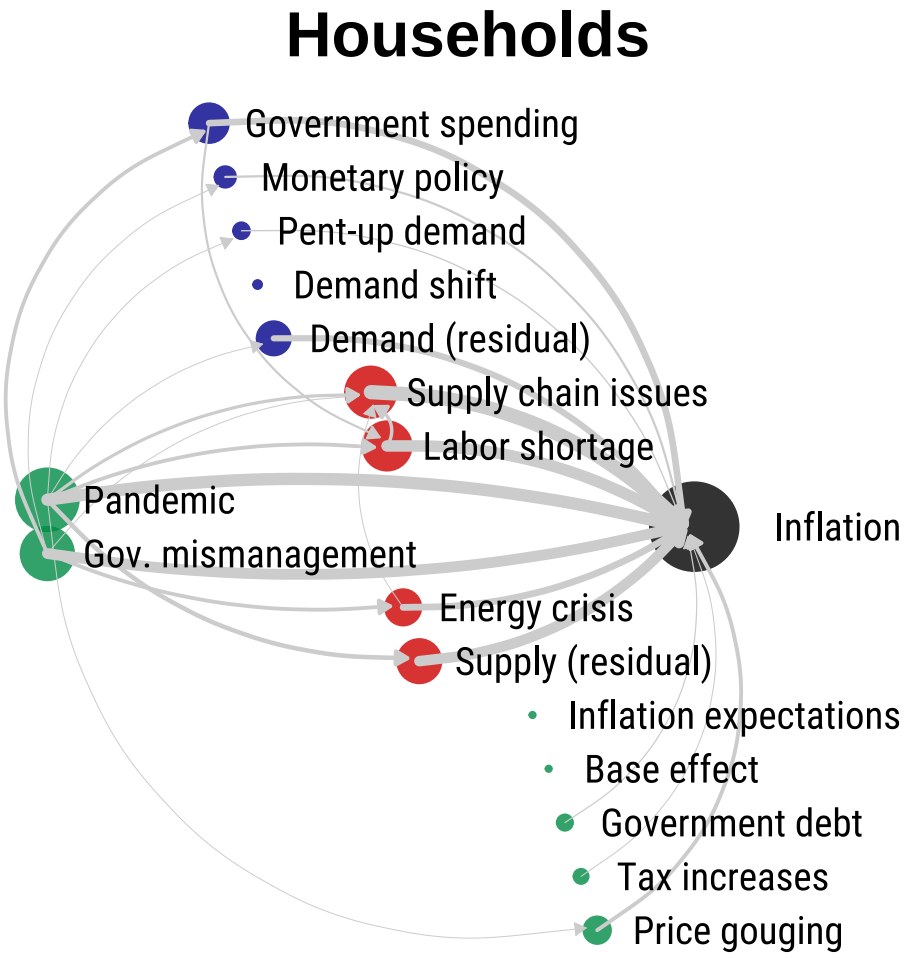
High data quality
Almost all responses contain a narrative.
Households: 91%. Experts: 100%.

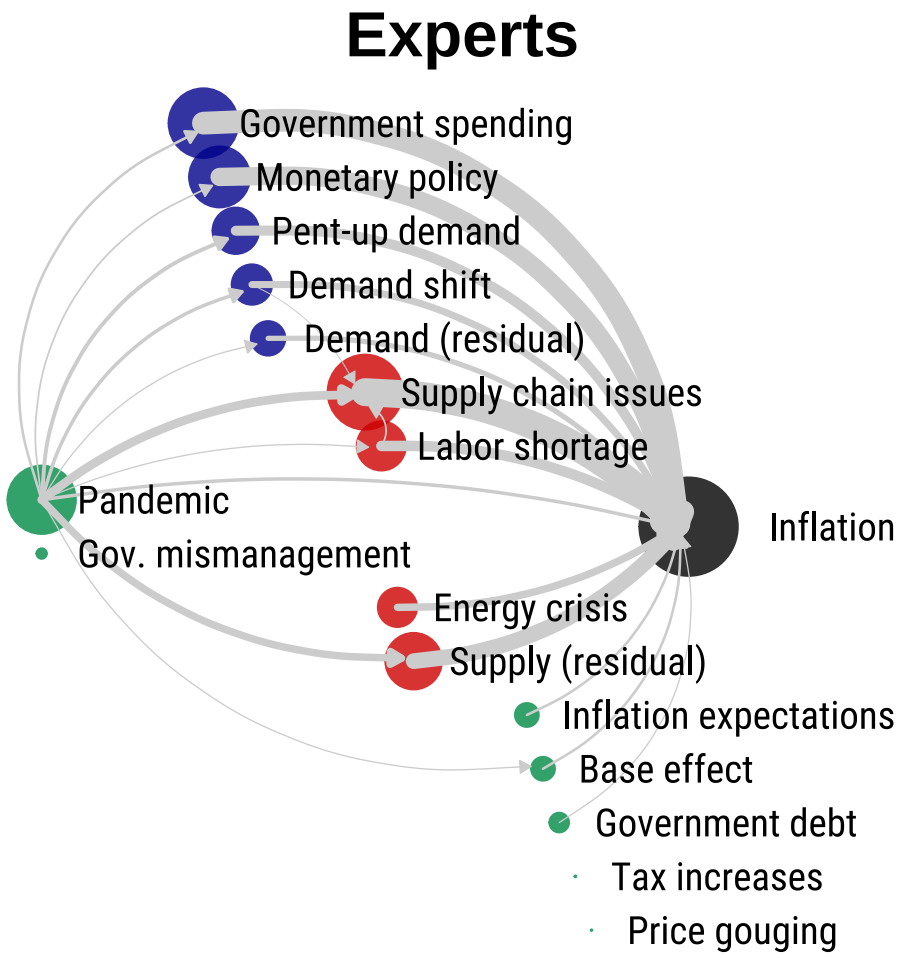
High inter-rater-reliability
95% of assigned factors align with final version.
89% of assigned connections align with final version.


Government spending
Monetary policy
Supply chain issues
Pandemic
Inflation
Pos. demand: other
Profit−seeking
Labor shortage
Government debt
'Bad' politics
Energy
Neg. supply: other
Pent−up demand
Expectations
Base effects

Descriptive evidence

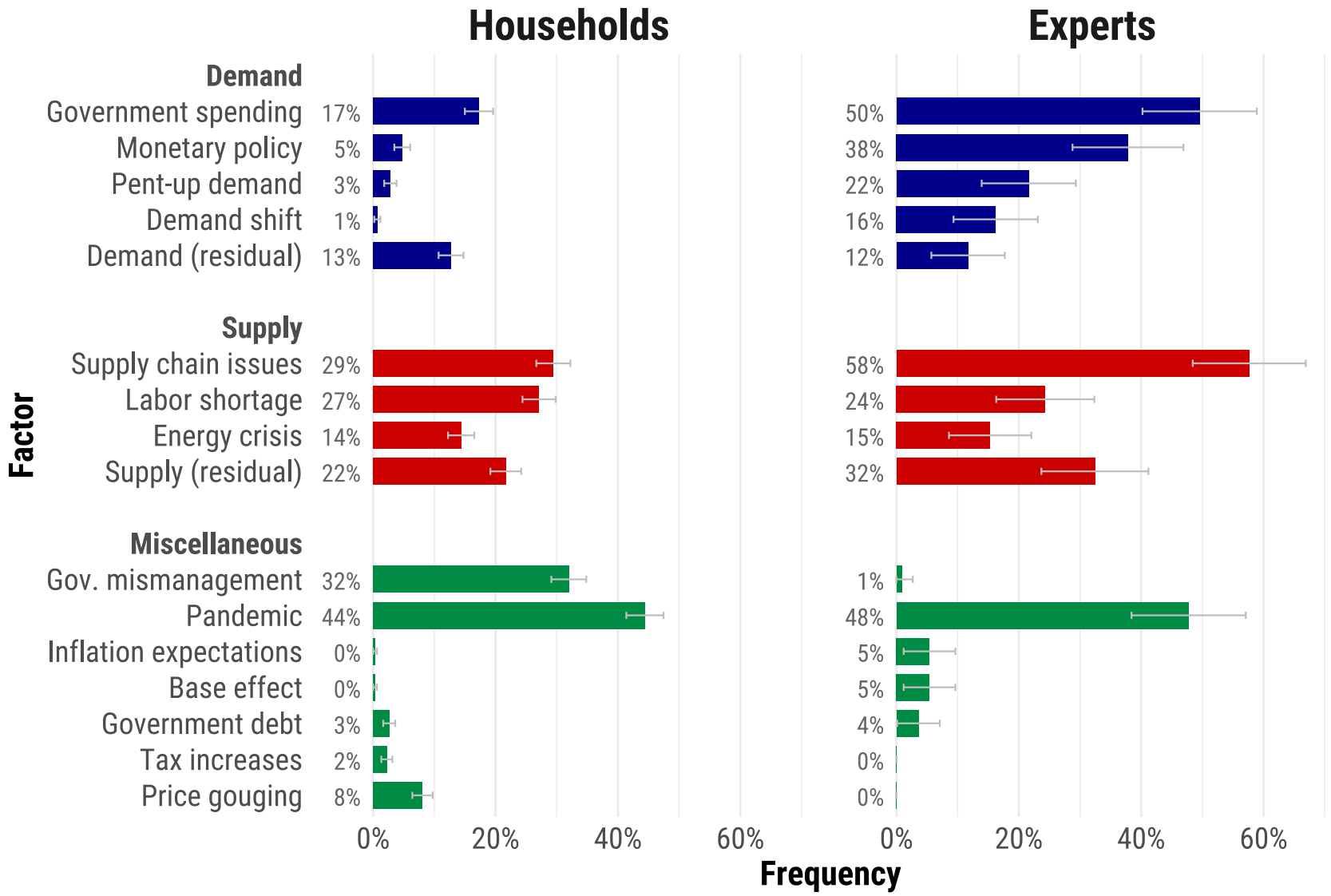
“Average” narratives



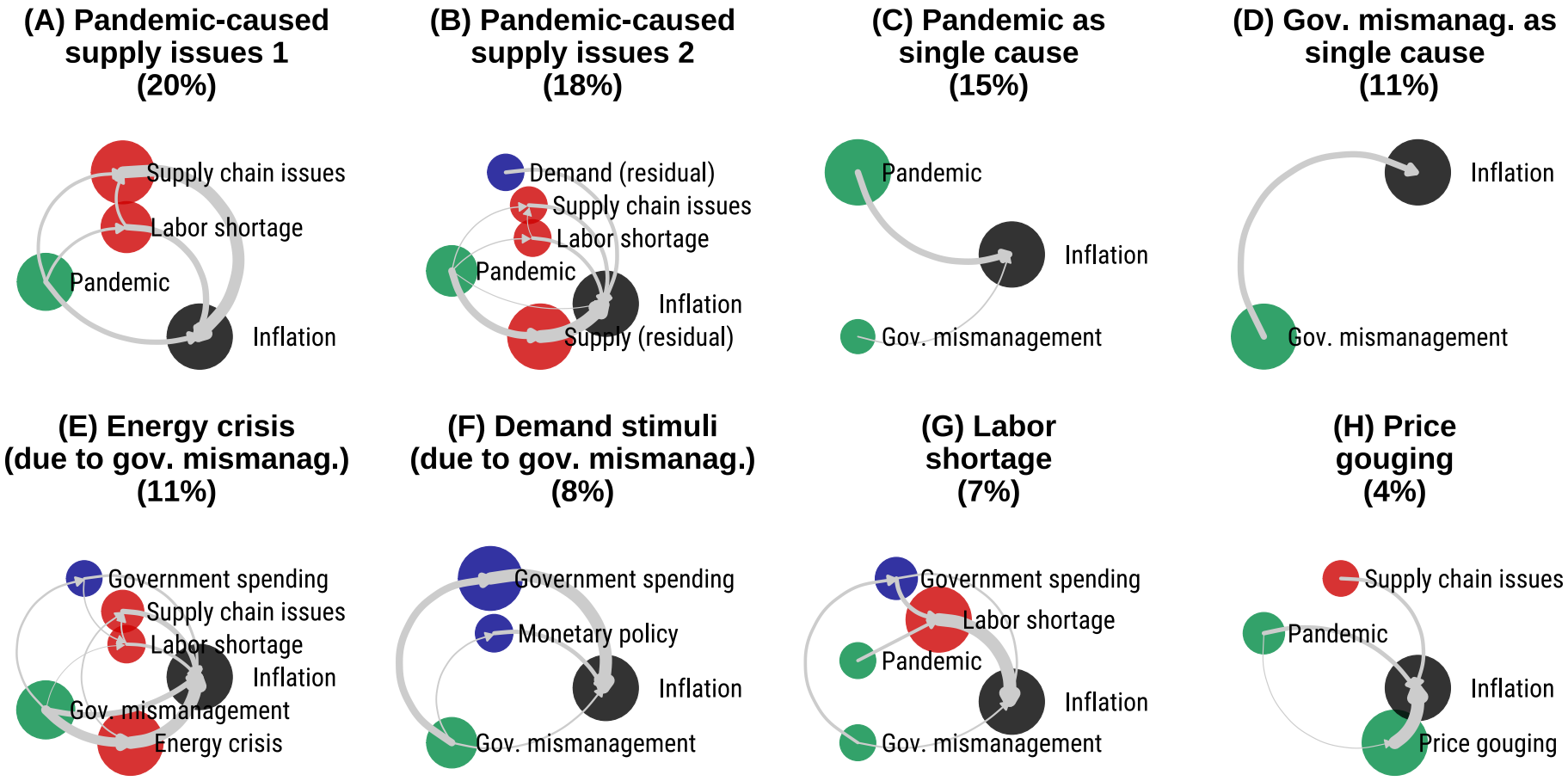


Size of nodes: frequency at which they are mentioned.
Color of nodes: blue (demand), red (supply), green (misc.), black (inflation).
Size of edges: frequency of causal link.

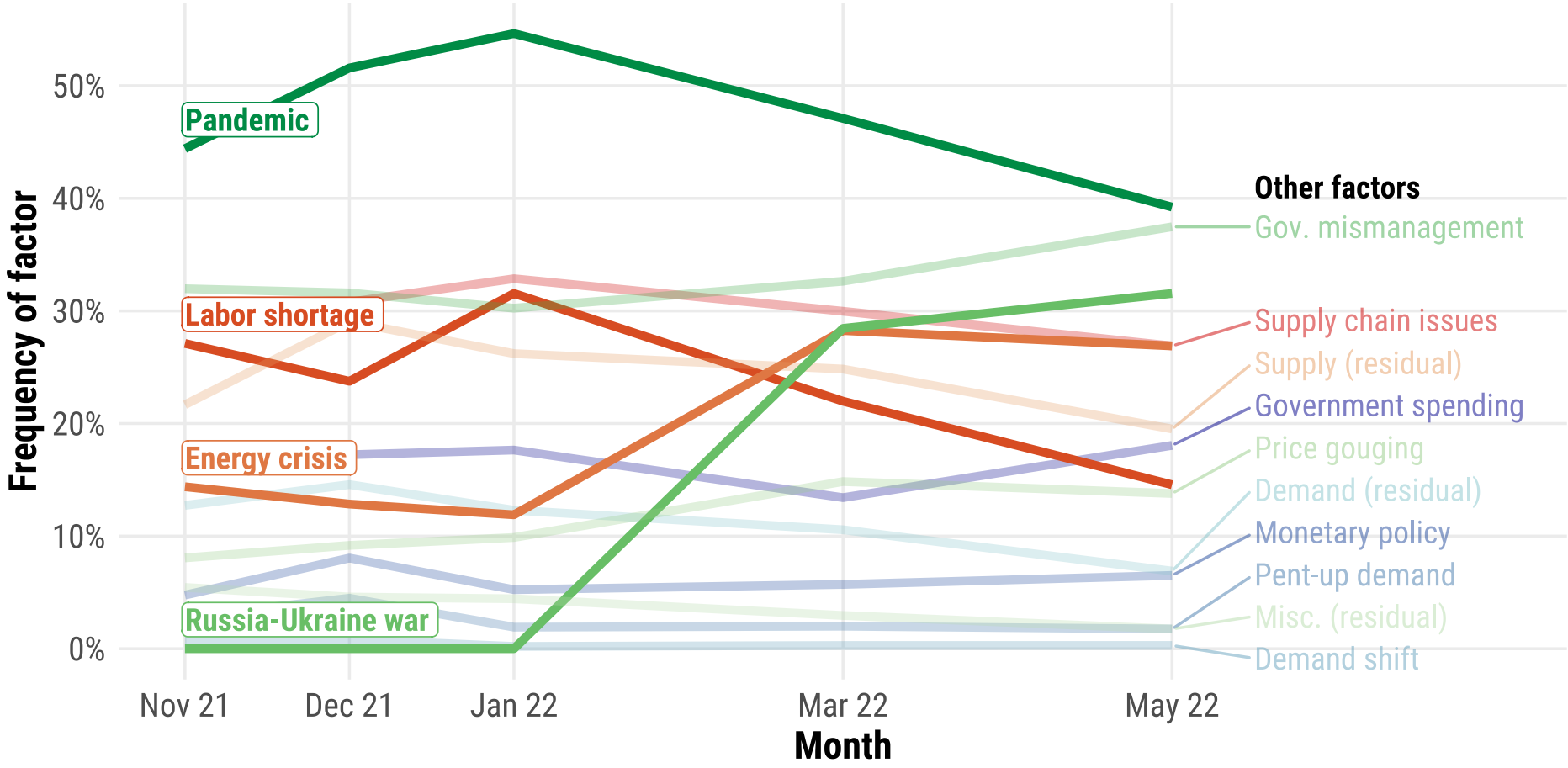
Frequency of narrative elements



Distinct narrative clusters among households



Narratives can change abruptly over time



Result 1
Descriptive evidence on narratives

Households' narratives are:

- Simpler than those of experts
- Less focused on demand side
- Blame policymakers and corporations

Households endorse distinct narratives.

(Heterogeneity is strongly related to background chars.)

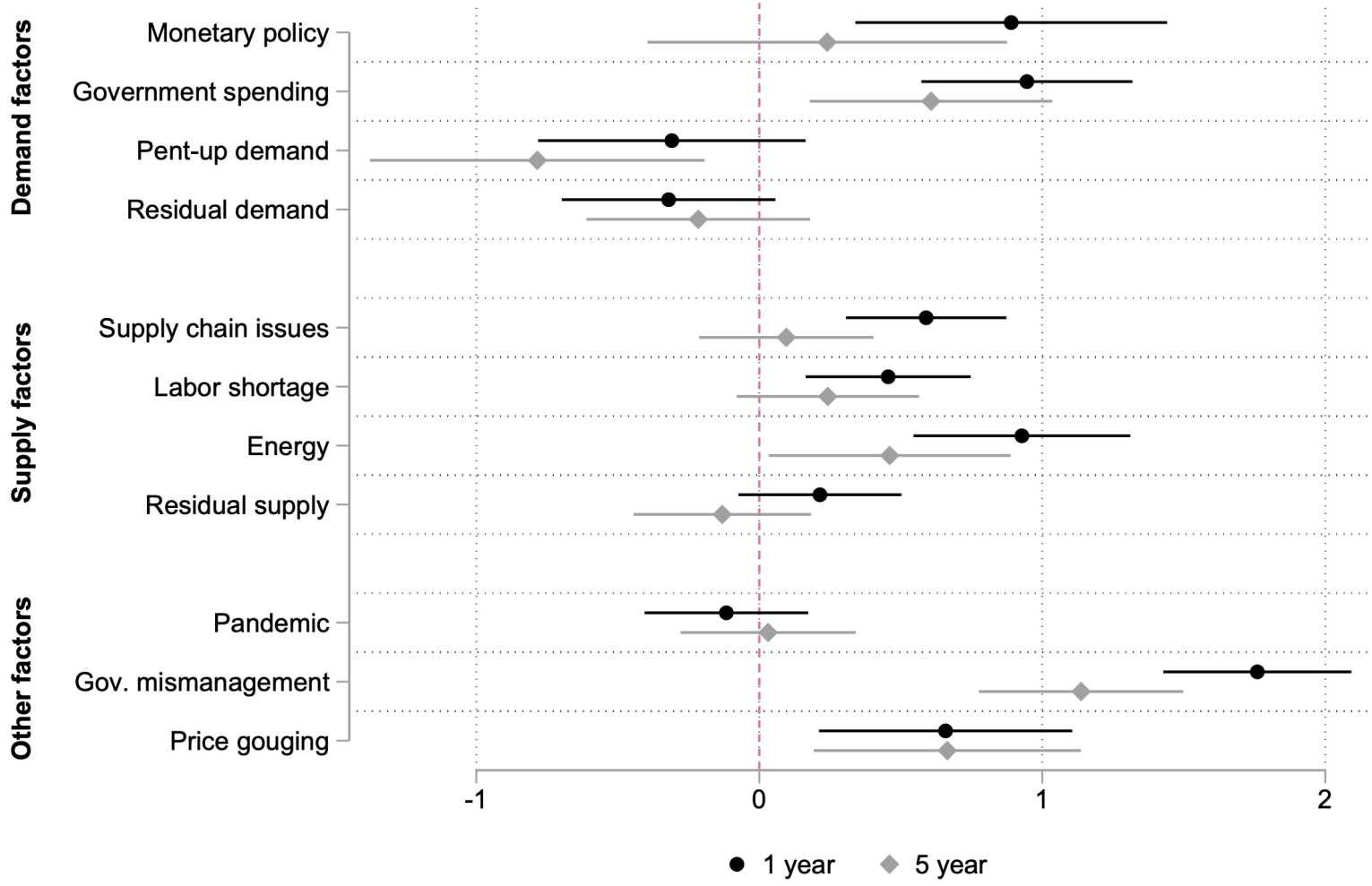
Narratives can change abruptly over time.

Narratives and expectation formation

Descriptive evidence

Narratives **strongly correlate** with inflation expectations.

Descriptive evidence



Data

Descriptive waves
Nov 21 – Jan 22
Households

Analysis

Multivariate regression

Result

Narratives are associated with different inflation expectations.

Descriptive evidence

Narratives **strongly correlate** with inflation expectations.

Experiments

Narrative provision

Provide different narratives about *past* inflation increase.

→ Affects *future* π^e.

Narrative provision: Design

Sample: Households, n = 2,398, April 2022, 2 waves, w/ Prolific.

Experimental manipulation in wave 1

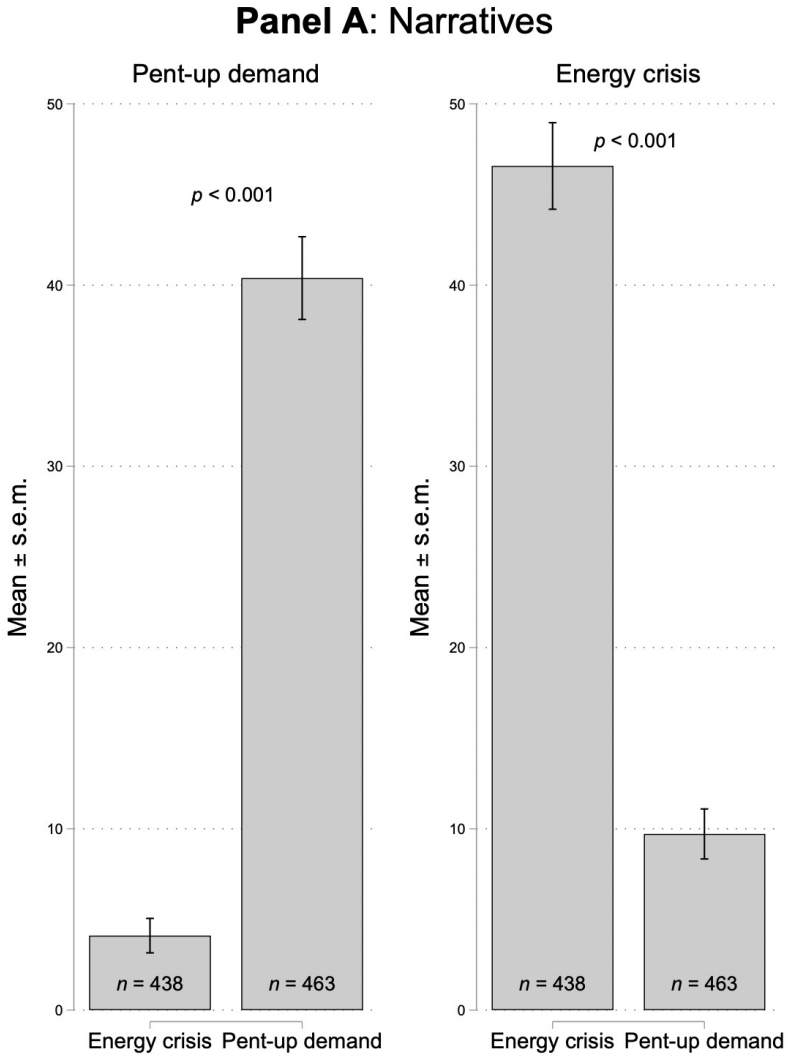
Manipulate which narratives come to mind by **providing narratives**:

- Pure control
- **Treatment 1**: Pent-up demand narrative (low persistence)
- **Treatment 2**: Energy crisis narrative (high persistence)

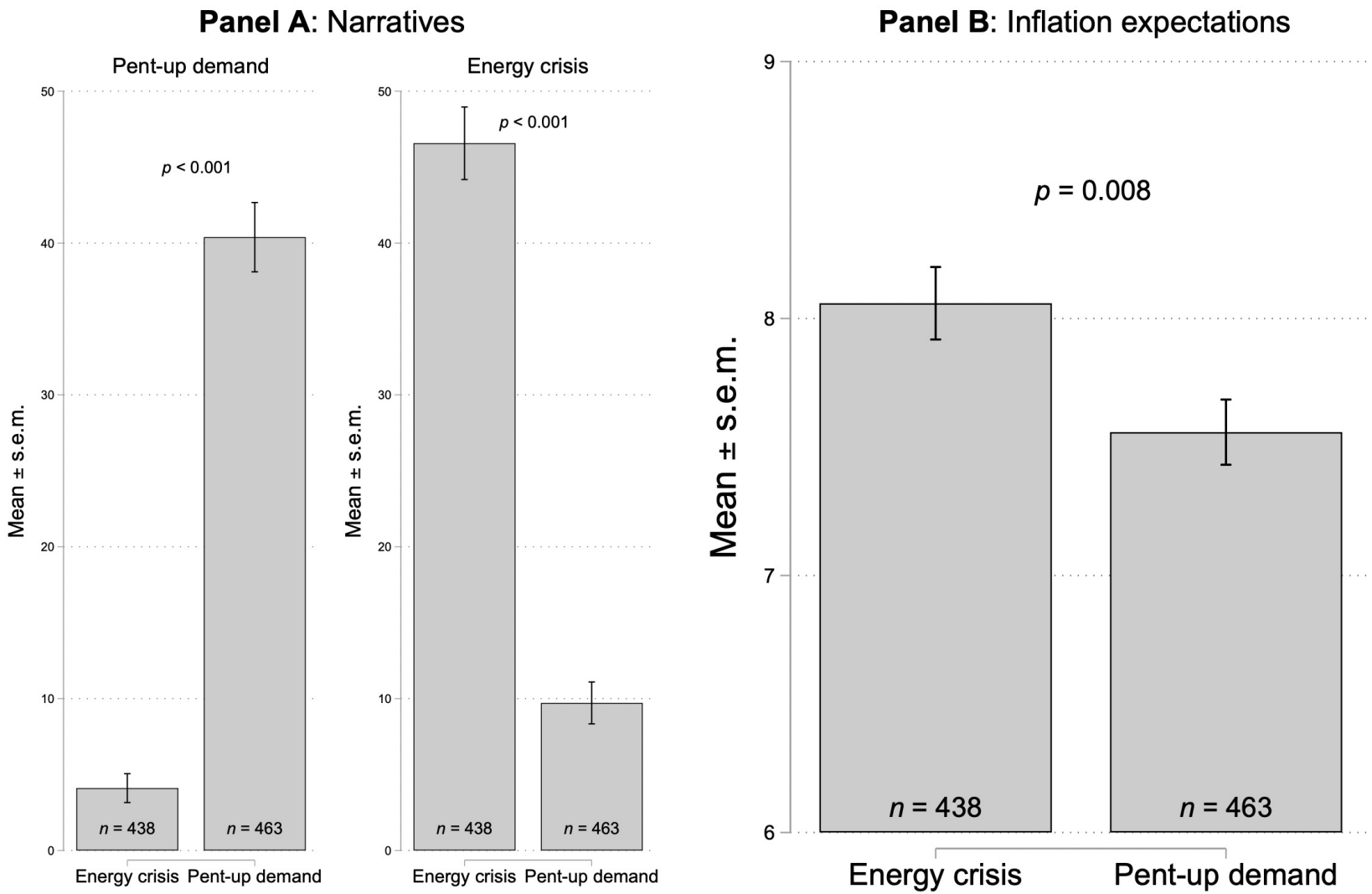
Measure inflation expectations (1y ahead).

Wave 2: Measure narratives and inflation expectations.

Narrative provision: Results



Narrative provision: Results



Descriptive evidence

Narratives **strongly correlate** with inflation expectations.

Experiments

Narrative provision

Provide different narratives about *past* inflation increase.

→ Affects *future* π^e.

Provision of new information

Step 1. Provide *energy* versus *gov. spending* narrative.
Step 2. Provide experts forecast about future gov. spending.

→ Forecasts only affect π^e in gov. spending group.

Provision of new info: Design

Sample: Households, n = 997, April 2022, w/ Prolific.

2x2 factorial experimental design

1) **Provide narratives**
   - **Treatment**: Government spending narrative
   - **Active control**: Energy crisis narrative
2) **Provide info**: professional forecasts
   - High forecast (+6pp in real gov. spending)
   - Low forecast (–4pp in real gov. spending)

Then, elicit expectations.

Provision of new info: Results

	OLS	
	(1) Expected government spending growth	(2) Expected inflation rate
Panel A: Spending narrative		
Treatment: High spending		
N		
Controls		
Panel B: Energy narrative		
Treatment: High spending		
N		
Controls		
p-value: Panel A = Panel B		

Provision of new info: Results

	OLS	
	(1) Expected government spending growth	(2) Expected inflation rate
Panel A: Spending narrative		
Treatment: High spending	4.723***	
	(0.629)	
N	498	
Controls	Yes	
Panel B: Energy narrative		
Treatment: High spending	6.770***	
	(1.236)	
N	479	
Controls	Yes	
p-value: Panel A = Panel B	0.134	

Provision of new info: Results

	OLS	
	(1) Expected government spending growth	(2) Expected inflation rate
Panel A: Spending narrative		
Treatment: High spending	4.723***	1.786***
	(0.629)	(0.276)
N	498	498
Controls	Yes	Yes
Panel B: Energy narrative		
Treatment: High spending	6.770***	0.344
	(1.236)	(0.271)
N	479	479
Controls	Yes	Yes
p-value: Panel A = Panel B	0.134	0.000

Results

Both narrative groups update expected future gov. spending.

But only spending narrative group also updates inflation expectation.

Result 2
Do narratives affect expectations?

Yes, narratives about the past shape:

- how people look into the future
- how they interpret new data

Narratives Are Shaped by News Media

Media experiment: Design

Sample: Households, n = 763, 3 waves, Feb. 2021, w/ Prolific.

Experimental design

Exogenously increase exposure to inflation related news.

Provide monetary incentives to read:

- **Treatment**: self-selected article about inflation.
- **Active control**: self-selected article about Miami.

Observe which article is read.

Measure narratives a day before and a day afterward.

Which effect does media exposure have on narratives?

	News	Narratives				Confidence
	(1) Read news	(2) Number of factors	(3) Contains supply factor	(4) Contains demand factor	(5) Contains other factors	(6) Confidence in narrative
Treatment	0.358***	0.287***	0.096***	0.073**	0.039	0.104*
	(0.031)	(0.091)	(0.026)	(0.031)	(0.027)	(0.053)
N	747	747	747	747	747	747
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Baseline control	No	Yes	Yes	Yes	Yes	Yes
Baseline mean	0.488	3.873	0.751	0.452	0.835	0.000

Results

Increased richness of narratives and confidence in narrative.

Result 3
Does exposure to news shape economic narratives?

Yes, exposure to inflation-related news affects which narratives people invoke.

Conclusion

Approach

- **Measure of narratives:** open-ended responses.
- Represented as **DAGs**.
- Apply in **descriptive surveys and experiments.**

Results

1. Characterize nature of inflation narratives.
2. Narratives affect inflation expectations.
3. Media exposure shapes narratives.

Implications

Heterogeneity in narratives relevant for

… understanding heterogeneity in macroeconomic expectations.

(Coibion and Gorodnichenko, 2012; Dovern et al., 2012; Giglio et al., 2021; Link et al., 2020; Mankiw et al., 2003)

… improving expectation management and policy communication.

(Blinder et al., 2008; Coibion et al., 2019b; Haldane and McMahon, 2018; Hansen et al., 2017, 2019)