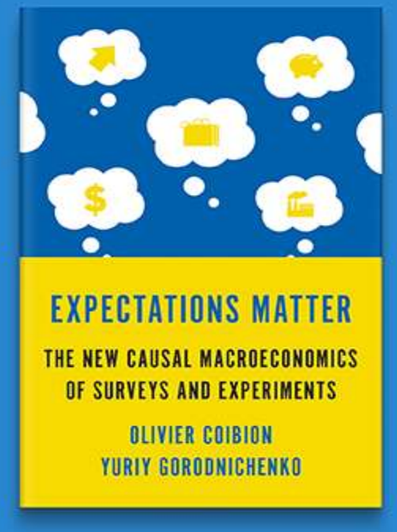
PRINCETON UNIVERSITY PRESS

What people believe about the economy—and why it matters



EXPECTATIONS MATTER: THE NEW CAUSAL MACROECONOMICS OF SURVEYS AND EXPERIMENTS

Olivier Coibion
University of Texas at Austin

EXPECTATIONS AND DECISIONS

- For just about every dimension of macroeconomic models, optimal decisions depend on expectations about the future:
  - Consumption/saving decisions
  - Investment decisions by households and firms
  - Pricing and wage-setting decisions
  - Employment decisions
  - Policymaking
  - ….

EXPECTATIONS AND DECISIONS

- For just about every dimension of macroeconomic models, optimal decisions depend on expectations about the future:
  - Consumption/saving decisions
  - Investment decisions by households and firms
  - Pricing and wage-setting decisions
  - Employment decisions
  - Policymaking
  - ….

"*Our obligation is to keep longer-term inflation expectations well anchored to make certain that a one-time increase in the price level does not become an ongoing inflation problem*"

Jerome Powell, April 4th, 2025 & May 7, 2025.

EXPECTATIONS AND DECISIONS

- For just about every dimension of macroeconomic models, optimal decisions depend on expectations about the future:
  - Consumption/saving decisions
  - Investment decisions by households and firms
  - Pricing and wage-setting decisions
  - Employment decisions
  - Policymaking
  - ….

- A key challenge for macroeconomists is identifying and characterizing the role that expectations *actually* play in decision-making.

EXPECTATIONS AND DECISIONS

Strategies for studying expectations and decisions:

- Estimating DSGE models

EXPECTATIONS AND DECISIONS

Strategies for studying expectations and decisions:

- Estimating DSGE models
- Estimating specific structural macroeconomic relationships that embody interaction of expectations and decisions.

EXPECTATIONS AND DECISIONS

Strategies for studying expectations and decisions:

- Estimating DSGE models
- Estimating specific structural macroeconomic relationships that embody interaction of expectations and decisions.
- Estimating correlations of expectations and decisions at the microeconomic level.

EXPECTATIONS AND DECISIONS

Strategies for studying expectations and decisions:

- Estimating DSGE models
- Estimating specific structural macroeconomic relationships that embody interaction of expectations and decisions.
- Estimating correlations of expectations and decisions at the microeconomic level.
- Estimating the *causal* effect of expectations on decisions using an RCT framework at the micro level to answer macro questions.

AN RCT APPROACH TO THE QUESTION

AN RCT APPROACH TO THE QUESTION

Elicit (1st, 2nd, … moment) **prior** expectations and planned decisions

Measuring expectations of economic agents using a survey (see e.g. Stantcheva 2022).

AN RCT APPROACH TO THE QUESTION

Elicit (1st, 2nd, … moment) **prior** expectations and planned decisions

Information treatment

Control group (no information)

Implement a randomized info treatment that generates exogenous variation in beliefs (see e.g. Haaland et al. 2023).

AN RCT APPROACH TO THE QUESTION

Elicit (1st, 2nd, … moment) **prior** expectations and planned decisions

Information treatment

Measure **posterior** (1st, 2nd, … moment) beliefs

Control group (no information)

Measure **posterior** (1st, 2nd, … moment) beliefs

AN RCT APPROACH TO THE QUESTION

Elicit (1st, 2nd, … moment) **prior** expectations and planned decisions

Information treatment

Measure **posterior** (1st, 2nd, … moment) beliefs

Measure ex-post decisions consumption/ investment/labor

Control group (no information)

Measure **posterior** (1st, 2nd, … moment) beliefs

Measure ex-post decisions consumption/ investment/labor

Measure ex-post decisions to assess how expectations affect economic decisions.

EXAMPLE: COIBION, GORODNICHENKO AND WEBER (JPE 2022)

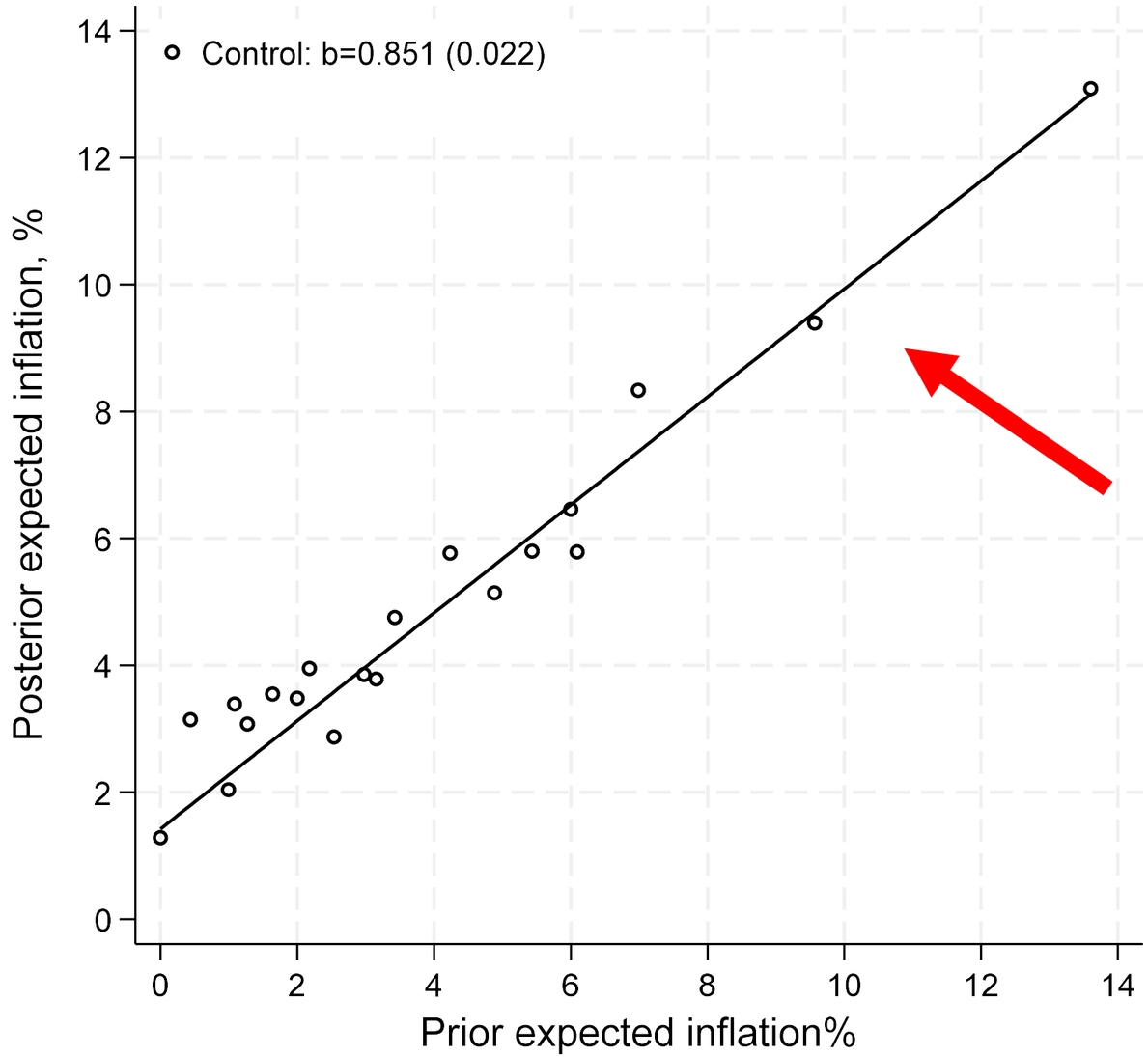
EXAMPLE: COIBION, GORODNICHENKO AND WEBER (JPE 2022)

- **The survey:** Nielsen Homescan Panel participants
  - Around 80,000 representative households participate in the panel
  - We survey these households repeatedly over time, ~20,000/wave
  - We measure inflation expectations using both distributional and point forecasts.
  - We also ask about their recent consumption levels and their planned spending decisions.

EXAMPLE: COIBION, GORODNICHENKO AND WEBER (JPE 2022)

1. **The survey:** Nielsen Homescan Panel participants
2. **The information treatment:** information about inflation/Fed
   - In 2018Q2, households were *randomly* assigned to either control or one of multiple treatment groups
   - Some treated households were told about recent inflation rate.
   - Some treated households were told about Fed's inflation target.
   - Some treated households were told about Fed's inflation forecast.
   - Posterior beliefs measured after treatment.

ILLUSTRATION: NIELSEN RCT 2018Q2 (CGW 2022)

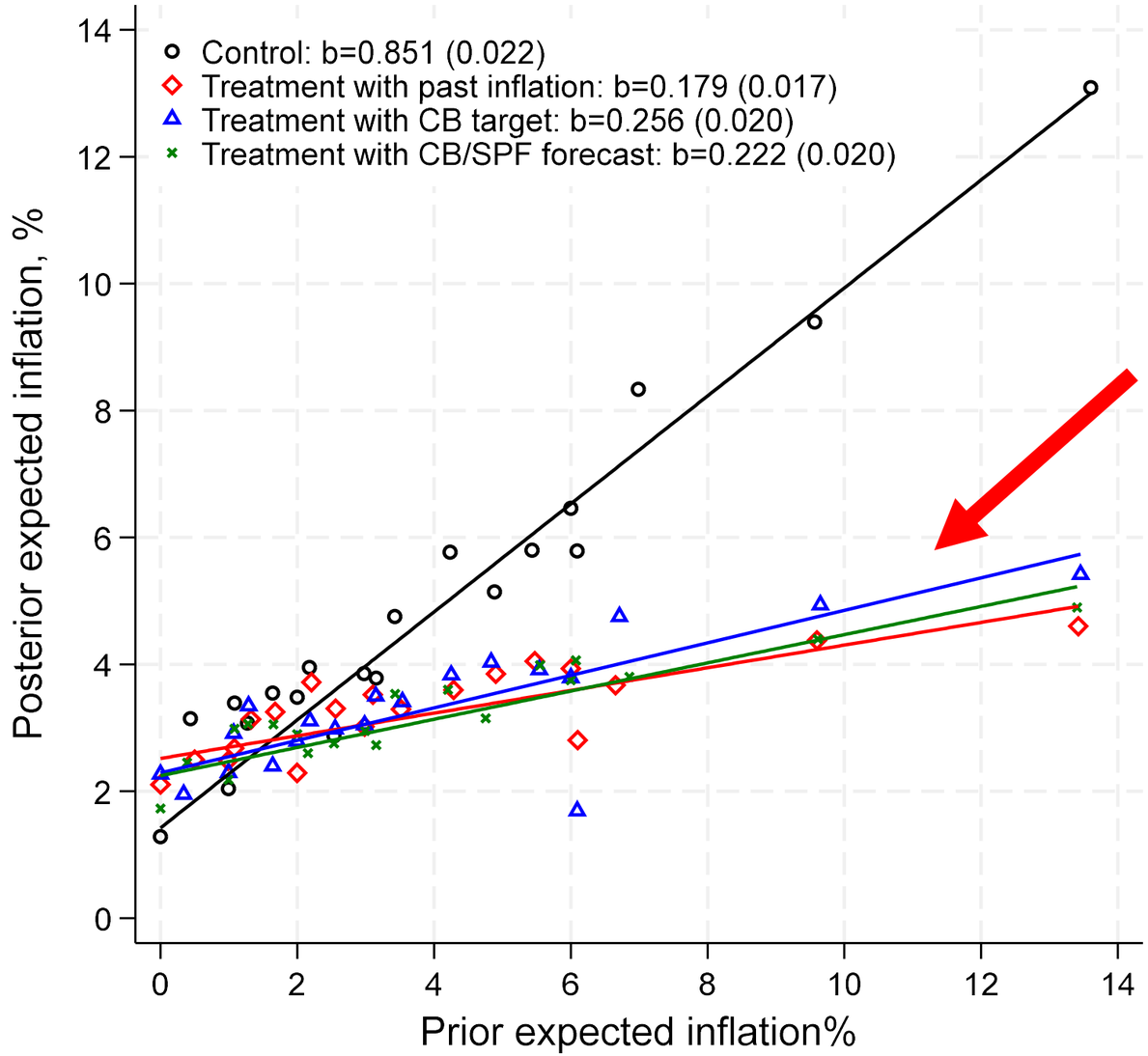


Slope for control group

Slope β

For control group that gets no information, posterior expectations are the same as prior expectations on average. Because different questions are used for priors and posteriors, it is common for the slope coefficient to be somewhat different from one for control group.

ILLUSTRATION: NIELSEN RCT 2018Q2 (CGW 2022)



Receive information about inflation or the target; slope γ

When people are told information about inflation, their posteriors move toward the signal.
This is an example of treatments having a very powerful effect on beliefs.
We'll focus on $\hat{\gamma}/\hat{\beta}$ as our metric for the strength of the treatment effect.

INTERPRETING TREATMENT EFFECTS

Simple Bayesian updating predicts:

$$posterior_i = (1 - G) \times prior_i + G \times signal$$

where G will be large when signal is credible and informative and small otherwise. When G is small, posteriors will be close to priors.

INTERPRETING TREATMENT EFFECTS

Simple Bayesian updating predicts:

$$posterior_i = (1 - G) \times prior_i + G \times signal$$

where G will be large when signal is credible and informative and small otherwise. When G is small, posteriors will be close to priors.

Estimate treatment effect in the survey as follows:

$$posterior_i = \alpha + \beta \times prior_i + \delta \times T_i + \gamma \times (T_i \times prior_i) + error_i$$

INTERPRETING TREATMENT EFFECTS

Simple Bayesian updating predicts:

$$posterior_i = (1 - G) \times prior_i + G \times signal$$

where G will be large when signal is credible and informative and small otherwise. When G is small, posteriors will be close to priors.

Estimate treatment effect in the survey as follows:

$$posterior_i = \alpha + \beta \times prior_i + \delta \times T_i + \gamma \times (T_i \times prior_i) + error_i$$

- *Control group:* $T_i = 0,\ posterior_i = prior_i\ \ so\ \hat{\beta} = 1$

INTERPRETING TREATMENT EFFECTS

Simple Bayesian updating predicts:

$$posterior_i = (1 - G) \times prior_i + G \times signal$$

where G will be large when signal is credible and informative and small otherwise. When G is small, posteriors will be close to priors.

Estimate treatment effect in the survey as follows:

$$posterior_i = \alpha + \beta \times prior_i + \delta \times T_i + \gamma \times (T_i \times prior_i) + error_i$$

- *Control group:* $T_i = 0,\ posterior_i = prior_i\ \ so\ \hat{\beta} = 1$
- *Treatment group:* $T_i = 1,\ posterior_i = (\alpha + \delta) + (\beta + \gamma) \times prior_i$, so $\hat{\gamma}$ tells us how much less weight treated firms place on their prior (equivalent to $-G$) relative to control.

ILLUSTRATION: NIELSEN RCT 2018Q2 (CGW 2022)

1. **The survey:** Nielsen Homescan Panel participants
2. **The information treatment:** information about inflation/Fed
3. **The effects on decisions:** Homescan spending data.
   - We can measure spending directly via the spending that is measured by Nielsen directly and self-reported measures in survey.

ILLUSTRATION: NIELSEN RCT 2018Q2 (CGW 2022)

1. **The survey:** Nielsen Homescan Panel participants
2. **The information treatment:** information about inflation/Fed
3. **The effects on decisions:** Homescan spending data.
   - We can measure spending directly via the spending that is measured by Nielsen directly and self-reported measures in survey.

   - We can estimate the causal effect of expectations on spending using:

$$\log(spend)_{i,t+h} = b \times E_{it}^{post}\pi + c_1 \times E_{it}^{prior}\pi + c_2 \times Plan_{it} + Controls_{it} + error$$

while instrumenting for posterior inflation expectations using:

$$E_{it}^{post}\pi = \alpha + \sum_j \delta_j \times Treat_{i,j} + \sum_j \gamma_j \times Treat_{i,j} \times E_i^{prior}\pi + \beta \times E_{it}^{prior}\pi + error$$

ILLUSTRATION: NIELSEN RCT 2018Q2 (CGW 2022)

Dep. var. is indicated in the title of the panel	Actual spending, horizon, month	
	3 months	6 months
	(1)	(2)
Posterior inflation expectations		
Observations	13,170	13,132
1st stage F-stat	134.8	128.1

This approach yields *very strong* instruments for expectations.

ILLUSTRATION: NIELSEN RCT 2018Q2 (CGW 2022)

Dep. var. is indicated in the title of the panel	Actual spending, horizon, month	
	3 months	6 months
	(1)	(2)
Posterior inflation expectations	0.950***	0.864**
	(0.286)	(0.336)
Observations	13,170	13,132
1st stage F-stat	134.8	128.1

This approach yields evidence suggesting positive *causal* link from inflation expectations to total spending of households, but negative w.r.t durables.

More examples of this Causal Approach

- The effects of *inflation expectations*:
  - Firms: CGK (2018), CGR (2020), Abberger et al. (2024)
  - Households: **CGW (2022)**, CGGKR (2024)

- The effects of *macroeconomic uncertainty and expectations*:
  - Firms: Kumar et al. (2024)
  - Households: Roth and Wohlfart (2020), CGGKW (2023)

- The effects of *exchange rate expectations*:
  - On firms: Delgado et al. (2024)

- The effects of *housing price expectations*:
  - Armona et al. (2018), Chopra et al. (2024), Bottan et al. (2024)

- The effects of *financial asset price expectations*:
  - Beutel and Weber (2023), Weber et al. (2023), Gorodnichenko and Yin (2024)

Potential Pitfalls and Challenges

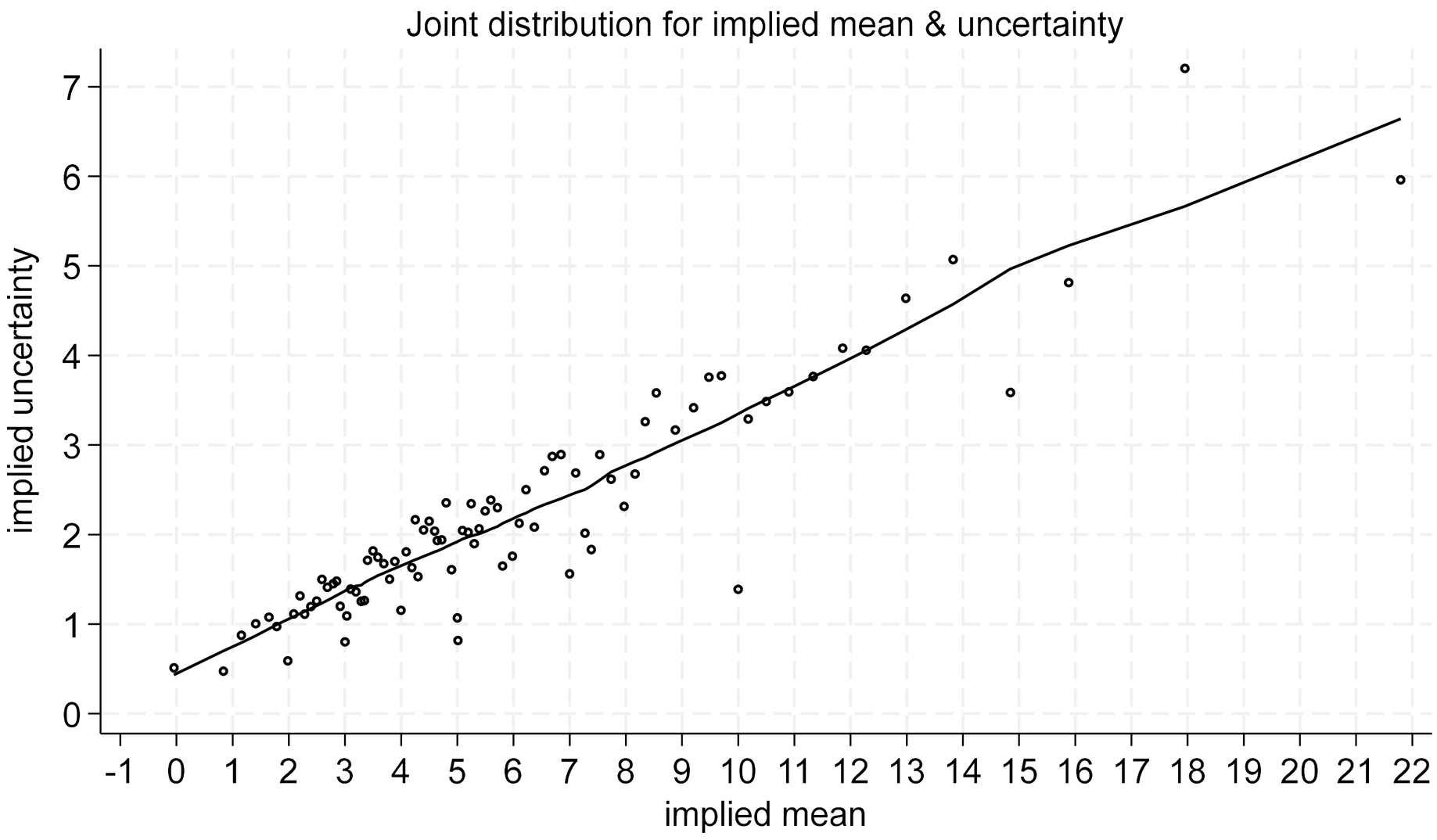
1. Measurement of expectations and survey implementation
2. Where can you run an RCT?
3. Successful information treatments
4. Measurement of outcomes
5. **Interpreting RCT estimates: direct vs. indirect effects**
6. External validity
7. Alternatives
8. Partial vs general equilibrium outcomes

GEORGARAKOS ET AL. (2024)

Objective: separate the effect of inflation expectations from inflation uncertainty on household decisions.

GEORGARAKOS ET AL. (2024)

Objective: separate the effect of inflation expectations from inflation uncertainty on household decisions, but these two are highly correlated.



STRATEGY

- Monthly panel from the ECB Consumer Expectations Survey (CES); eleven largest EA countries; ~ 19,000 households

STRATEGY

- Monthly panel from the ECB Consumer Expectations Survey (CES); eleven largest EA countries; ~ 19,000 households

- **September 2023:** RCT is fielded in a 10 min special-purpose survey following the regular survey wave:
  - Measure prior inflation expectations, uncertainty and planned decisions
  - Implement information treatment
  - Measure posterior beliefs, plans and hypotheticals

STRATEGY

- Monthly panel from the ECB Consumer Expectations Survey (CES); eleven largest EA countries; ~ 19,000 households

- **September 2023:** RCT is fielded in a 10 min special-purpose survey following the regular survey wave:
  - Measure prior inflation expectations, uncertainty and planned decisions
  - Implement information treatment
  - Measure posterior beliefs, plans and hypotheticals

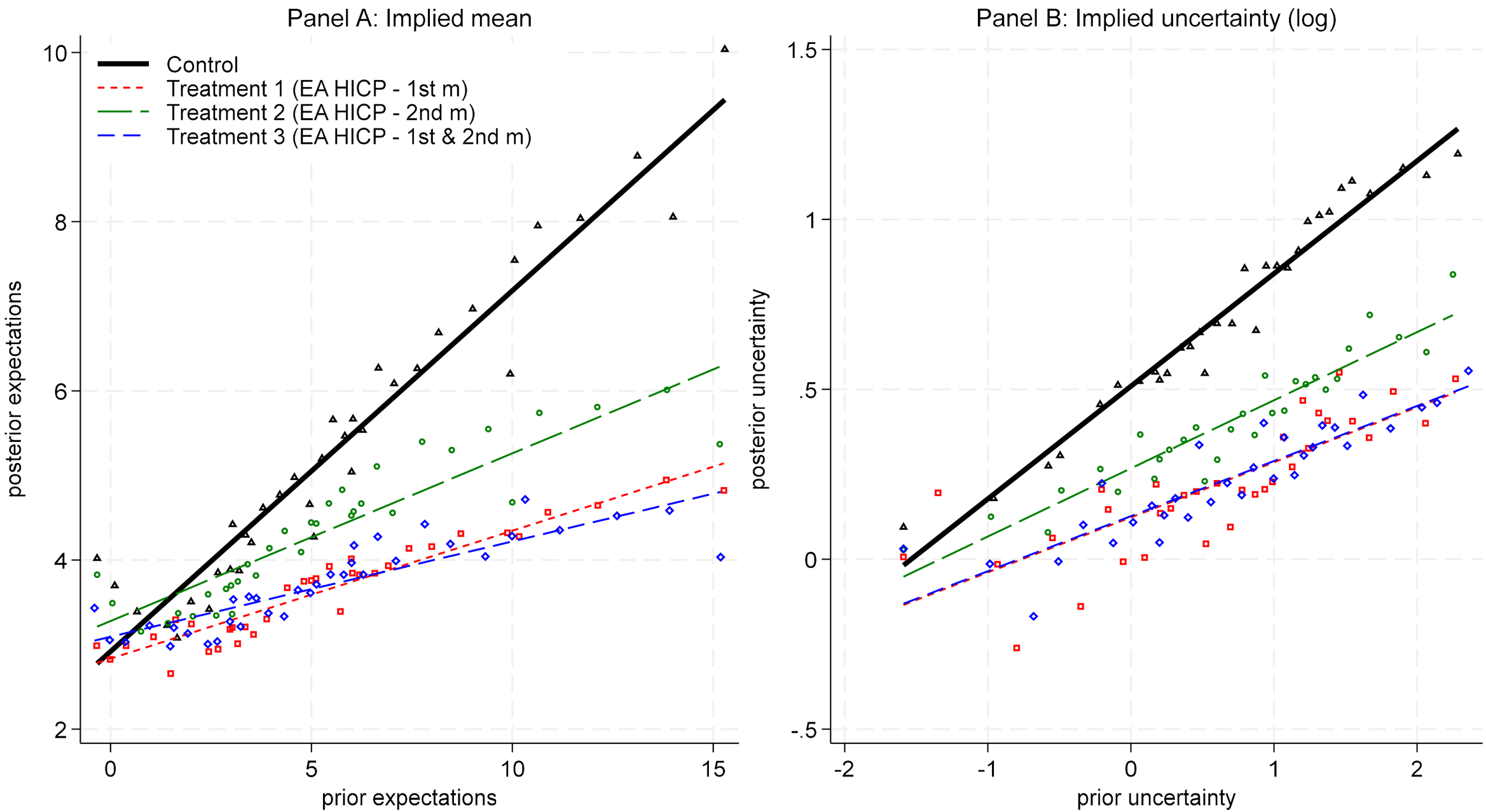
- **October, November, December 2023 & January 2024** regular survey waves:
  - Measure *actual* spending, investment and labour market outcomes

INFORMATION TREATMENTS

T1 (first moment): *The average prediction among professional forecasters is that inflation in the euro area will be at 2.5% over the next 12 months.*

T2 (second moment): *Professional forecasters are exceptionally uncertain right now about inflation compared to recent years. As a result, there is a significant difference of 3.1 percentage points between the lowest and the highest predictions about inflation in the euro area over the next 12 months.*

T3 (first and second moment): *The average prediction among professional forecasters is that inflation in the euro area will be at 2.5% over the next 12 months. At the same time, professional forecasters are exceptionally uncertain right now about inflation compared to recent years. As a result, there is a significant difference of 3.1 percentage points between the lowest and the highest predictions about inflation in the euro area over the next 12 months.*



Strong treatment effects on beliefs

POST-TREATMENT BEHAVIOR: ESTIMATION

$$\boldsymbol{Outcome_i} = \alpha_1 Post_i^{mean} + \beta_1 Post_i^{uncert} + \alpha_0 Prior_i^{mean} + \beta_0 Prior_i^{uncert} + Controls + error_i$$

$$Post_i^{mean} = a_0 + \sum_{j=1}^{3} a_j \times I\{i \in Treat\ j\} + \sum_{j=1}^{3} b_j \times I\{i \in Treat\ j\} \times Prior_i^{mean} + \sum_{j=1}^{3} c_j \times I\{i \in Treat\ j\} \times Prior_i^{uncert} + Controls + error_i$$

$$Post_i^{uncert} = \tilde{a}_0 + \sum_{j=1}^{3} \tilde{a}_j \times I\{i \in Treat\ j\} + \sum_{j=1}^{3} \tilde{b}_j \times I\{i \in Treat\ j\} \times Prior_i^{mean} + \sum_{j=1}^{3} \tilde{c}_j \times I\{i \in Treat\ j\} \times Prior_i^{uncert} + Controls + error_i$$

PURCHASES OF DURABLES: 1 MONTH AFTER TREATMENT

	Dependent variable: 100×indicator variable is a good is purchased.					
	Home	Durable	Car	Holiday package	Luxury items	Other
	(1)	(2)	(3)	(4)	(5)	(6)
Posterior mean						
100×log(Posterior uncertainty)						
Observations	11,514	11,506	11,502	11,512	11,519	11,483
1st stage F-stat (mean)	118.4	113.8	117.6	114.8	118	112.7
1st stage F-stat (uncert)	100.5	99.29	99.10	100.7	101.9	101.2
KP Wald test	10.63	9.532	10.34	10.51	10.48	10.19

Information treatments are powerful instruments.

PURCHASES OF DURABLES: 1 MONTH AFTER TREATMENT

	Dependent variable: 100×indicator variable is a good is purchased.					
	Home	Durable	Car	Holiday package	Luxury items	Other
	(1)	(2)	(3)	(4)	(5)	(6)
Posterior mean						
100×log(Posterior uncertainty)	-0.025**	-0.230***	-0.024*	-0.091	-0.021**	-0.055*
	(0.010)	(0.057)	(0.013)	(0.065)	(0.011)	(0.034)
Observations	11,514	11,506	11,502	11,512	11,519	11,483
1st stage F-stat (mean)	118.4	113.8	117.6	114.8	118	112.7
1st stage F-stat (uncert)	100.5	99.29	99.10	100.7	101.9	101.2
KP Wald test	10.63	9.532	10.34	10.51	10.48	10.19

Higher inflation uncertainty leads to an immediate and large reduction in purchases of durable goods of different types.

PURCHASES OF DURABLES: 1 MONTH AFTER TREATMENT

	Dependent variable: 100×indicator variable is a good is purchased.					
	Home	Durable	Car	Holiday package	Luxury items	Other
	(1)	(2)	(3)	(4)	(5)	(6)
Posterior mean	0.421	4.812***	0.483	1.934	0.539*	0.451
	(0.268)	(1.369)	(0.315)	(1.578)	(0.283)	(0.863)
100×log(Posterior uncertainty)	-0.025**	-0.230***	-0.024*	-0.091	-0.021**	-0.055*
	(0.010)	(0.057)	(0.013)	(0.065)	(0.011)	(0.034)
Observations	11,514	11,506	11,502	11,512	11,519	11,483
1st stage F-stat (mean)	118.4	113.8	117.6	114.8	118	112.7
1st stage F-stat (uncert)	100.5	99.29	99.10	100.7	101.9	101.2
KP Wald test	10.63	9.532	10.34	10.51	10.48	10.19

Higher inflation expectations lead to a rise in durable goods purchases.

PURCHASES OF DURABLES: 1 MONTH AFTER TREATMENT

	Dependent variable: 100×indicator variable is a good is purchased.					
	Home	Durable	Car	Holiday package	Luxury items	Other
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Separate two moments						
Posterior mean	0.421	4.812***	0.483	1.934	0.539*	0.451
	(0.268)	(1.369)	(0.315)	(1.578)	(0.283)	(0.863)
100×log(Posterior uncertainty)	-0.025**	-0.230***	-0.024*	-0.091	-0.021**	-0.055*
	(0.010)	(0.057)	(0.013)	(0.065)	(0.011)	(0.034)
Panel B. Use only 1st moment						

PURCHASES OF DURABLES: 1 MONTH AFTER TREATMENT

	Dependent variable: 100×indicator variable is a good is purchased.					
	Home	Durable	Car	Holiday package	Luxury items	Other
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Separate two moments						
Posterior mean	0.421	4.812***	0.483	1.934	0.539*	0.451
	(0.268)	(1.369)	(0.315)	(1.578)	(0.283)	(0.863)
100×log(Posterior uncertainty)	-0.025**	-0.230***	-0.024*	-0.091	-0.021**	-0.055*
	(0.010)	(0.057)	(0.013)	(0.065)	(0.011)	(0.034)
Panel B. Use only 1st moment						
Posterior mean	-0.305***	-1.695***	-0.325***	-1.158**	-0.208***	-1.452***
	(0.066)	(0.400)	(0.078)	(0.501)	(0.071)	(0.267)
1st stage F-stat (mean)	208.3	200.1	206.6	212.8	207.3	202.6

The total effect of inflation expectations is negative!

The direct effect is positive but the indirect effect via uncertainty is stronger.

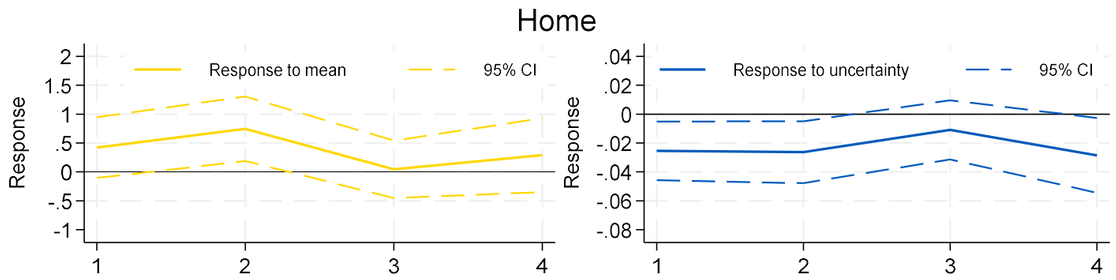
PURCHASES OF DURABLES: 1 MONTH AFTER TREATMENT

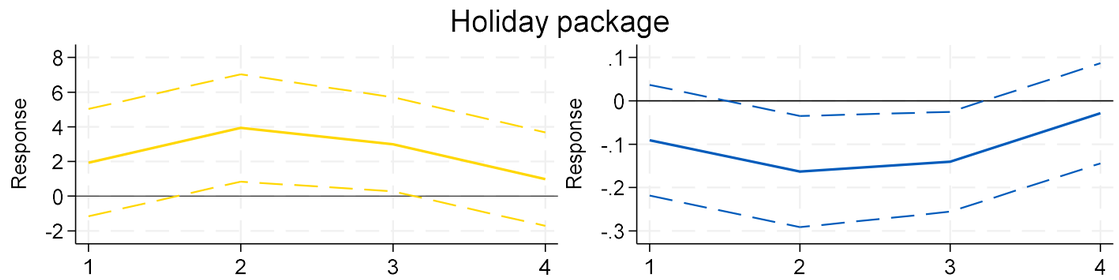
	Dependent variable: 100×indicator variable is a good is purchased.					
	Home	Durable	Car	Holiday package	Luxury items	Other
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. IV						
Posterior mean	0.421	4.812***	0.483	1.934	0.539*	0.451
	(0.268)	(1.369)	(0.315)	(1.578)	(0.283)	(0.863)
100×log(Posterior uncertainty)	-0.025**	-0.230***	-0.024*	-0.091	-0.021**	-0.055*
	(0.010)	(0.057)	(0.013)	(0.065)	(0.011)	(0.034)
Panel B. OLS						
Posterior mean	0.077	-0.014	0.120	0.246	0.217***	0.685***
	(0.081)	(0.332)	(0.083)	(0.273)	(0.082)	(0.215)
100×log(Posterior uncertainty)	-0.131	3.383**	0.140	0.086	-0.465	-0.790
	(0.430)	(1.645)	(0.312)	(1.351)	(0.339)	(1.074)

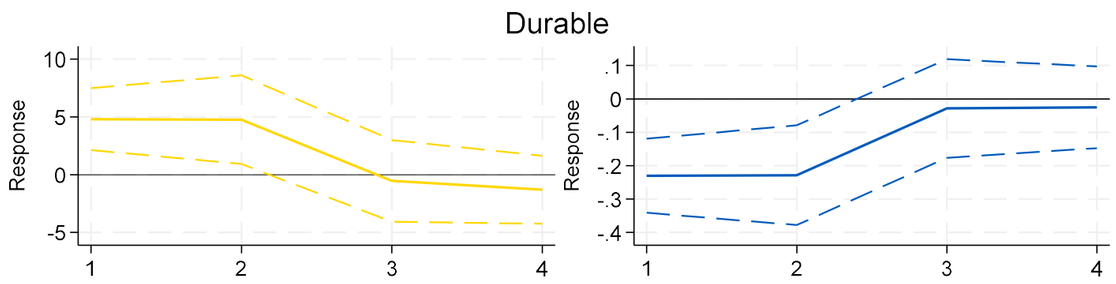
The RCT/IV approach is essential to the identification.

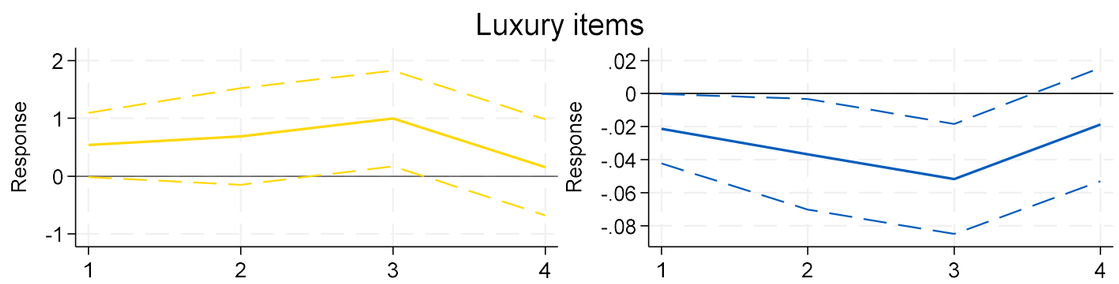
With OLS, effects are much smaller and generally insignificant.

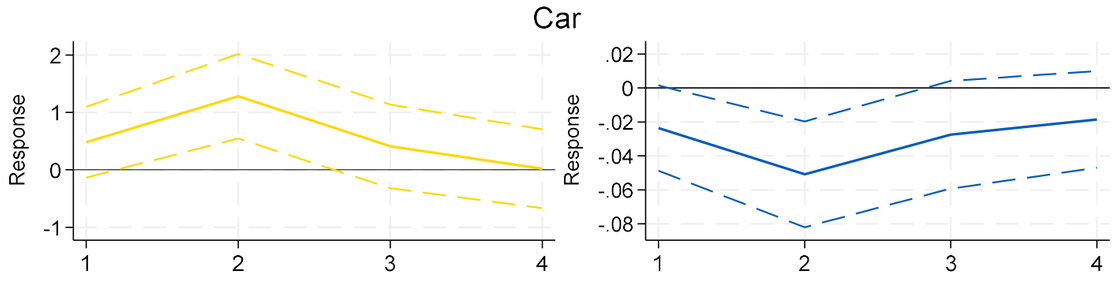
PURCHASES OF DURABLES: DYNAMICS

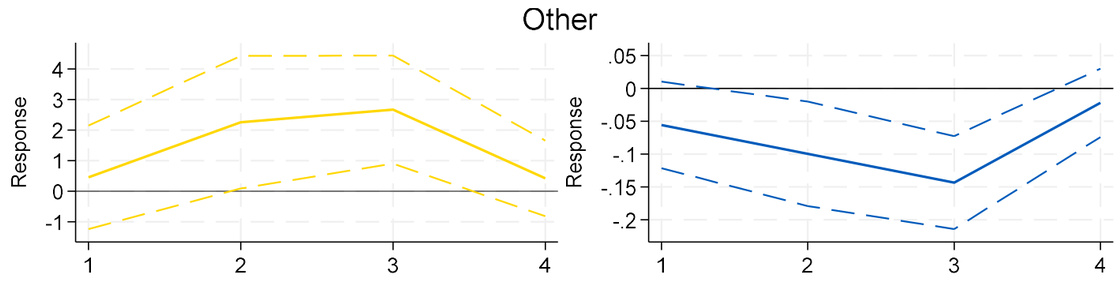












The effect dissipates after ~ 4 months.

PORTFOLIO ALLOCATIONS: ACTUAL (2 MONTHS AFTER TREATMENT)

PORTFOLIO ALLOCATIONS: ACTUAL (2 MONTHS AFTER TREATMENT)

	Portfolio shares							
	Cash	Curr/Sav account	Stocks	Mutual funds	Retirement account	Bonds	Crypto assets	Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Posterior mean								
100×log(Post. uncertainty)								
Observations								
1st stage F-stat (mean)								
1st stage F-stat (uncert.)								
KP Wald								

PORTFOLIO ALLOCATIONS: ACTUAL (2 MONTHS AFTER TREATMENT)

	Portfolio shares							
	Cash	Curr/Sav account	Stocks	Mutual funds	Retirement account	Bonds	Crypto assets	Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Posterior mean	-0.325	-4.894***	1.026*	0.589	1.833*	0.678**	0.016	1.612**
	(0.398)	(1.723)	(0.526)	(0.537)	(1.073)	(0.330)	(0.063)	(0.741)
100×log(Post. uncertainty)	0.010	0.233***	-0.053**	-0.025	-0.076*	-0.036***	-0.003	-0.065**
	(0.015)	(0.071)	(0.022)	(0.023)	(0.044)	(0.013)	(0.003)	(0.030)
Observations	13,601	13,601	13,601	13,601	13,601	13,601	13,601	13,601
1st stage F-stat (mean)	143.9	143.9	143.9	143.9	143.9	143.9	143.9	143.9
1st stage F-stat (uncert.)	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5
KP Wald	12.78	12.78	12.78	12.78	12.78	12.78	12.78	12.78

- Changes in both first and second moments of inflation expectations lead to reallocation between safe/liquid assets (checking/savings accounts) and risky/illiquid assets (retirement accounts).

SUMMARY

- With multiple treatments, we can separate direct and indirect effects of expectations changes on decisions.

SUMMARY

- With multiple treatments, we can separate direct and indirect effects of expectations changes on decisions.

- This is particularly important for inflation expectations, since first and second moments are strongly positively correlated but generally have opposing effects on decisions.

SUMMARY

- With multiple treatments, we can separate direct and indirect effects of expectations changes on decisions.

- This is particularly important for inflation expectations, since first and second moments are strongly positively correlated but generally have opposing effects on decisions.

- For policy purposes, the total effect is generally the most relevant statistic. But even in that case, knowing how decisions respond to inflation expectations and uncertainty can be useful in designing communications:

  To boost spending, we could try to raise inflation expectations *or* reduce inflation uncertainty (doing both would be particularly effective).

POTENTIAL PITFALLS AND CHALLENGES

1. Measurement of expectations and survey implementation

2. Where can you run an RCT?

3. **Successful information treatments**

4. Measurement of outcomes

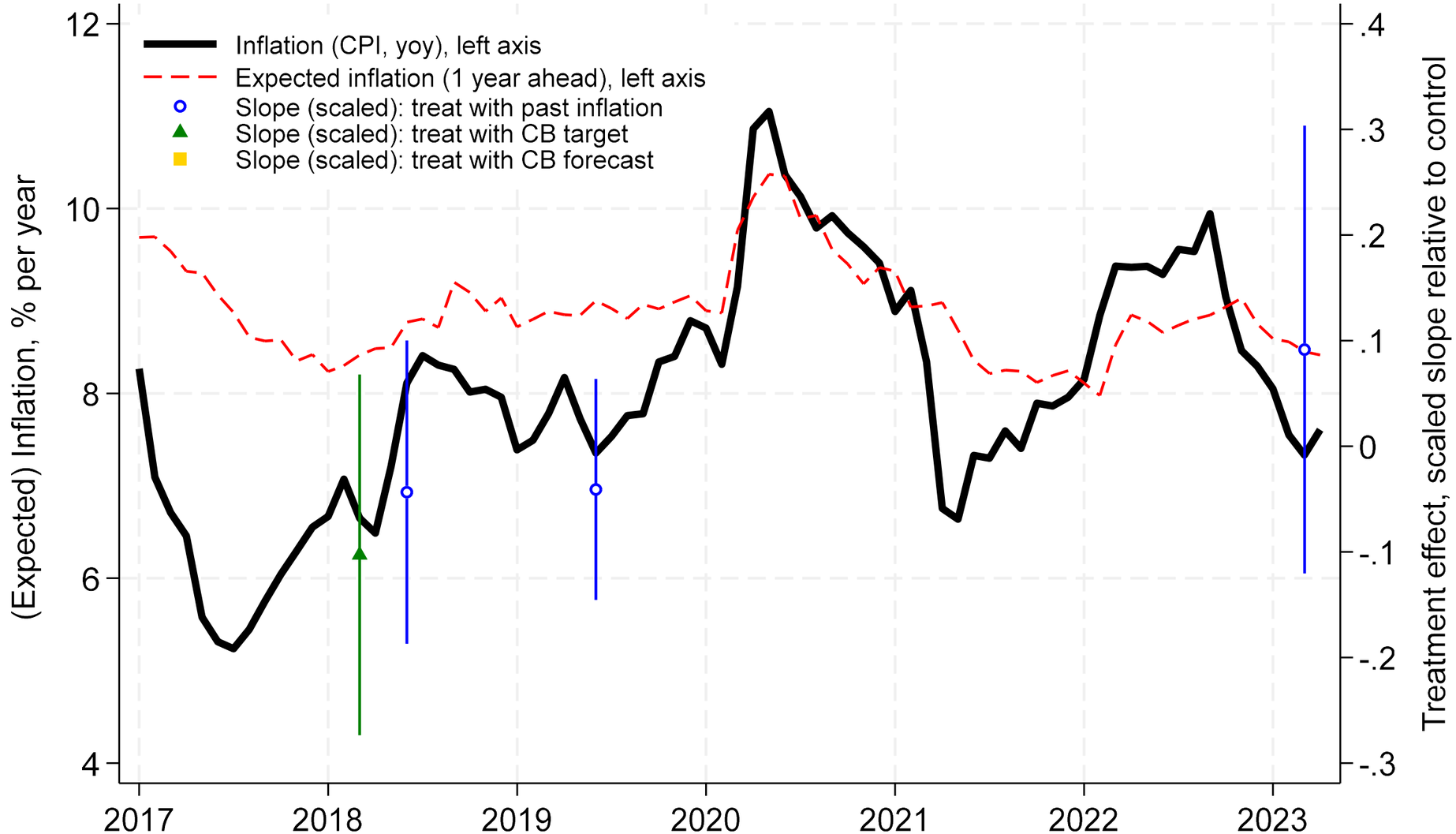
5. Interpreting RCT estimates: direct vs. indirect effects

6. External validity

7. Alternatives

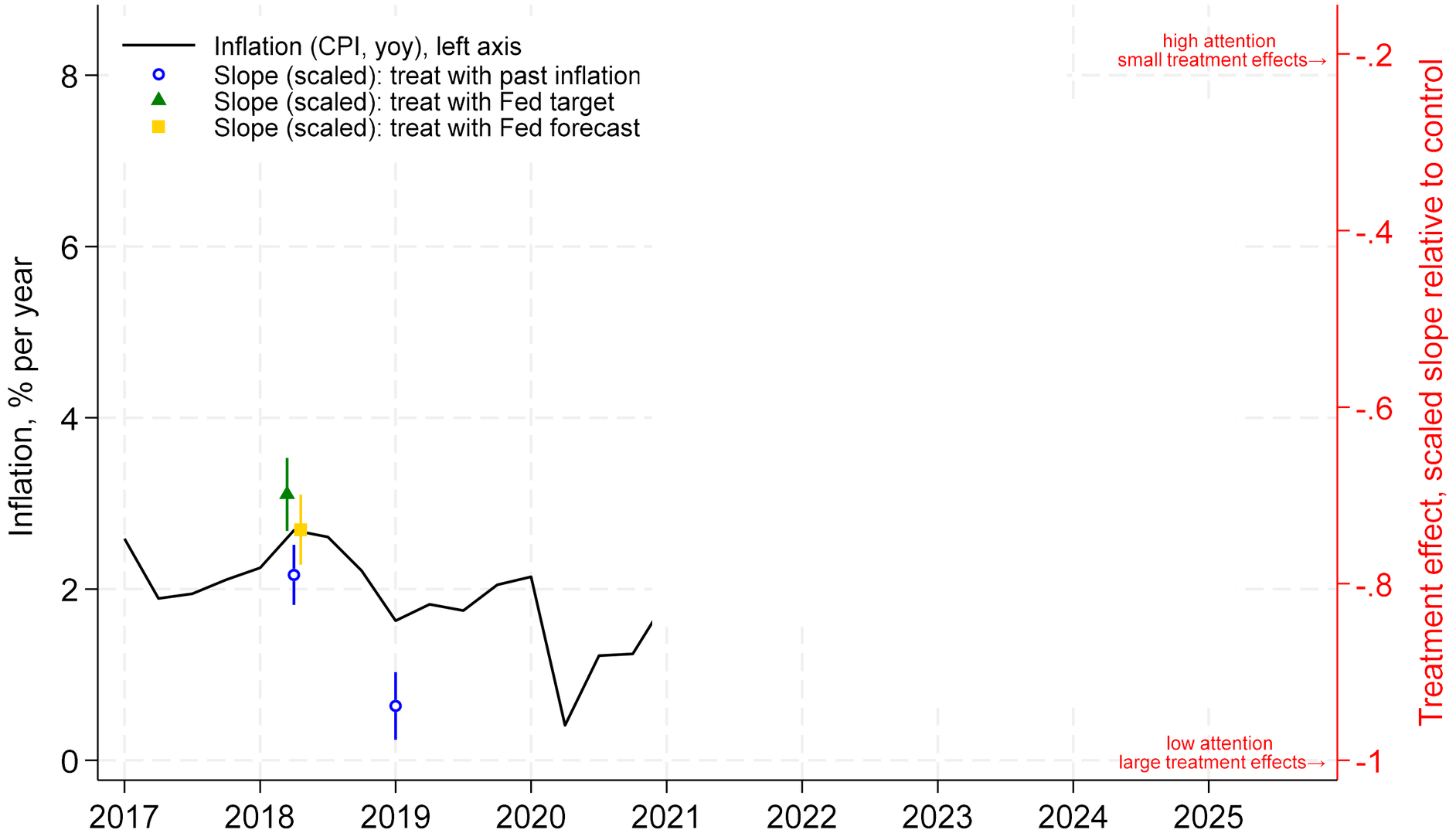
8. Partial vs general equilibrium outcomes

Example of a "Failed" First Stage



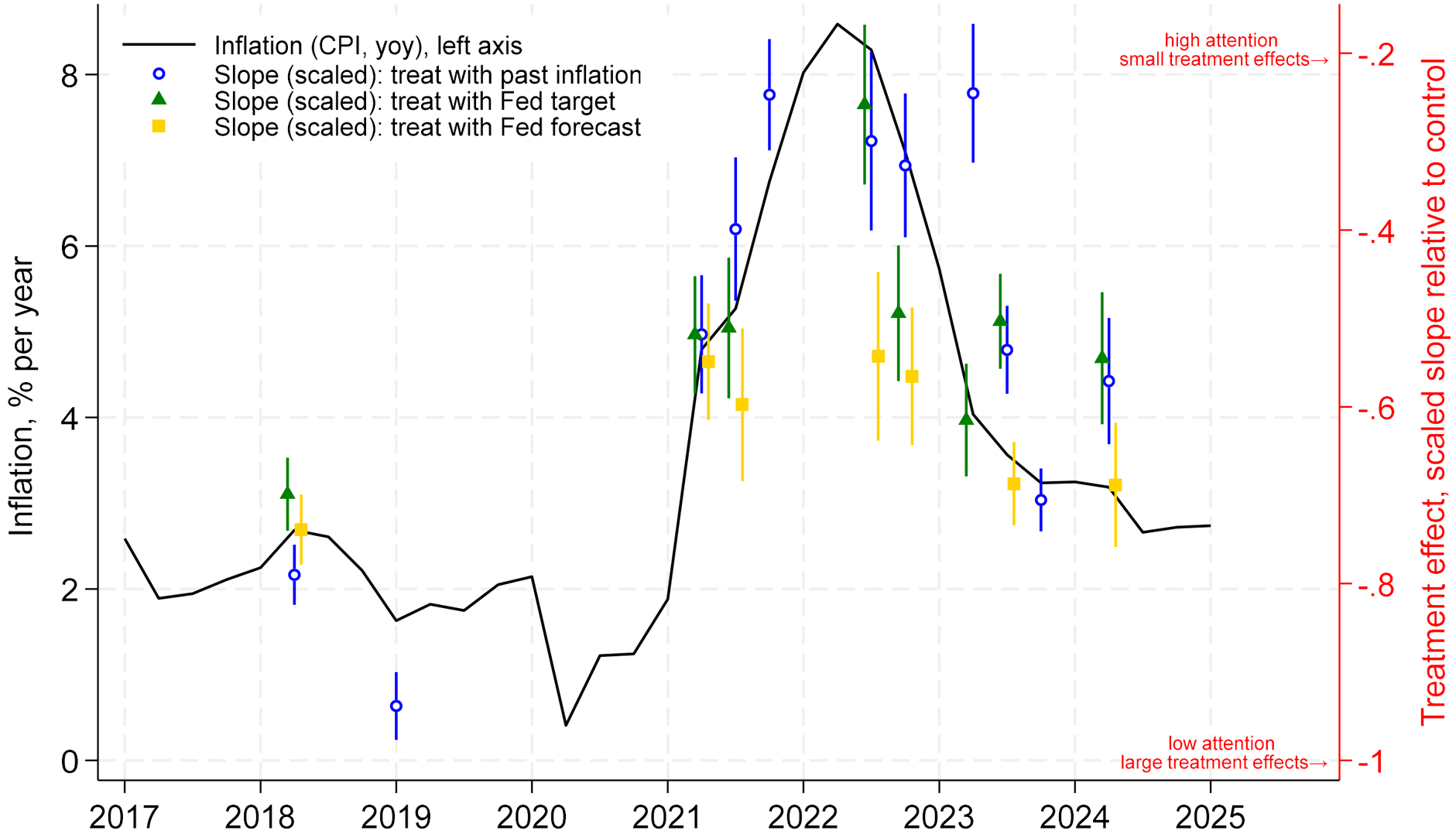
In Uruguay, four different RCTs providing information about inflation or central bank's target/forecast found no effect on firms' inflation expectations.

Example of a Changing Treatment Effect



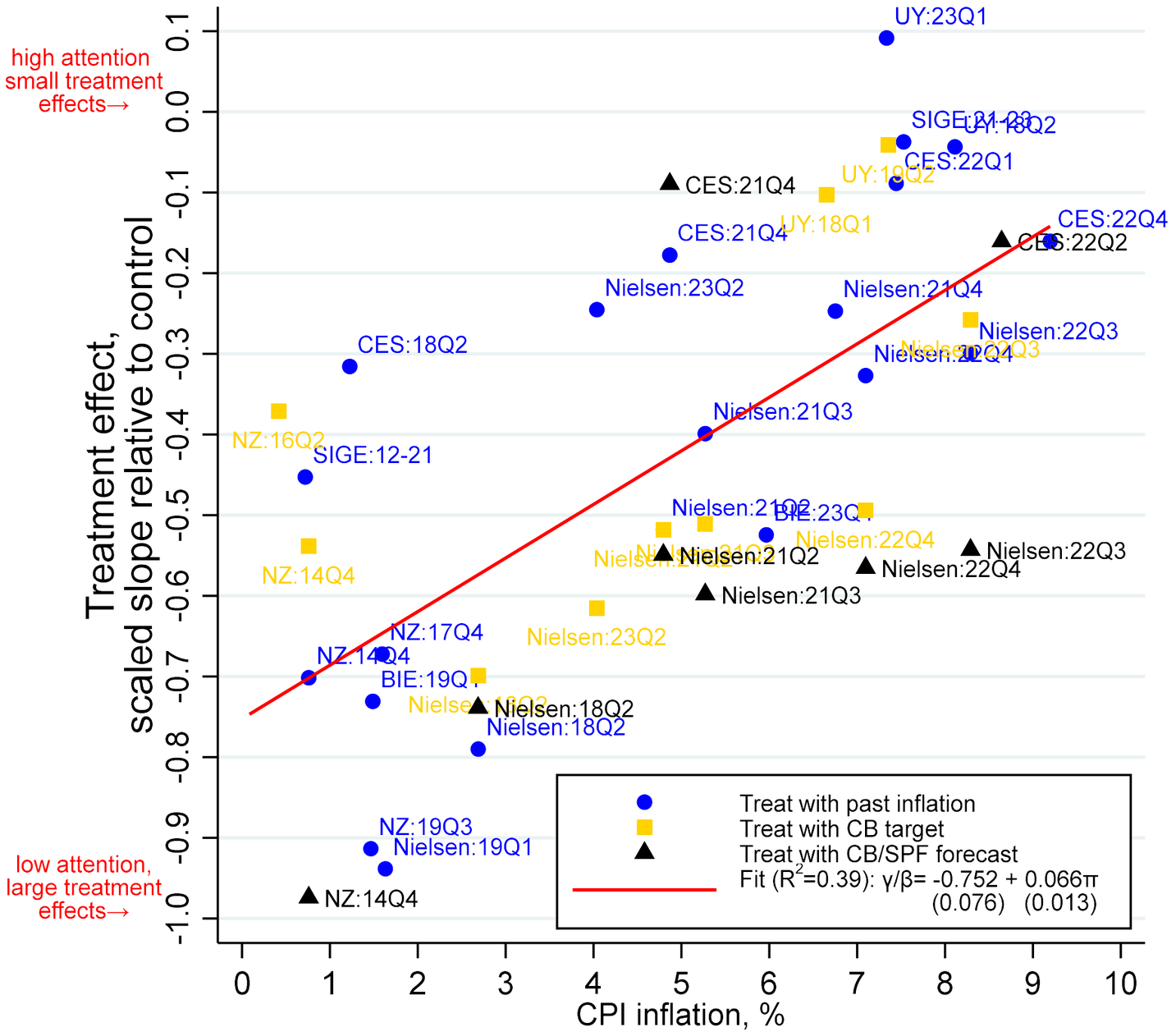
Among Nielsen households, treatment effects was in 2018

Example of a Changing Treatment Effect



Among Nielsen households, treatment effects was in 2018
but it became considerably smaller in 2021-2022 when inflation got high.

CROSS-COUNTRY EXPERIENCE (WEBER ET AL. ECMA 2025)



Nielsen: HHs, USA

CES: HHs, euro area

BIE: firms, USA

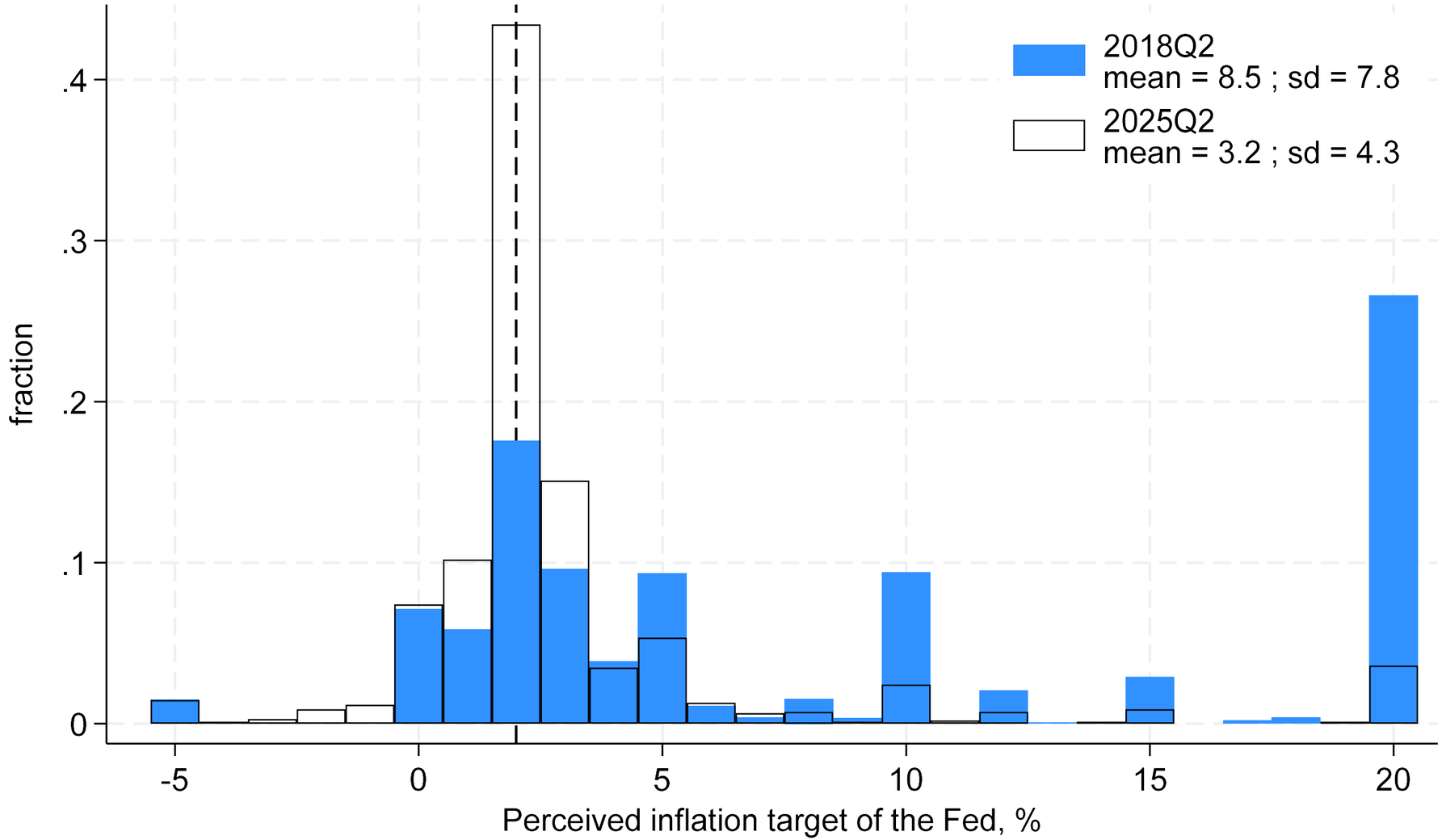
NZ: firms, New Zeal.

SIGE: firms, Italy

UY: firms, Uruguay

As inflation surged, people and firms became more attentive to inflation!

KNOWLEDGE OF MONETARY POLICY IN THE U.S.



People knew little about the Fed's policy framework and mandate prior to the surge

…but then they learned the inflation target and actual inflation

THE CYCLE OF SELECTIVE INATTENTION

- When inflation is low: the public is largely inattentive to inflation and monetary policy. Expectations are driven by easily and regularly observed prices and are largely **unanchored**. Simple messages can be very powerful but reaching the public is difficult.

- When inflation is high: the public becomes attentive and learns that *inflation is much higher than the target and the central bank is failing*! Expectations become ***more unanchored***. At that time, reaching the public is easy but changing their opinions is difficult since they are more informed.

POTENTIAL PITFALLS AND CHALLENGES

1. Measurement of expectations and survey implementation

2. Where can you run an RCT?

3. Successful information treatments

4. **Measurement of outcomes**

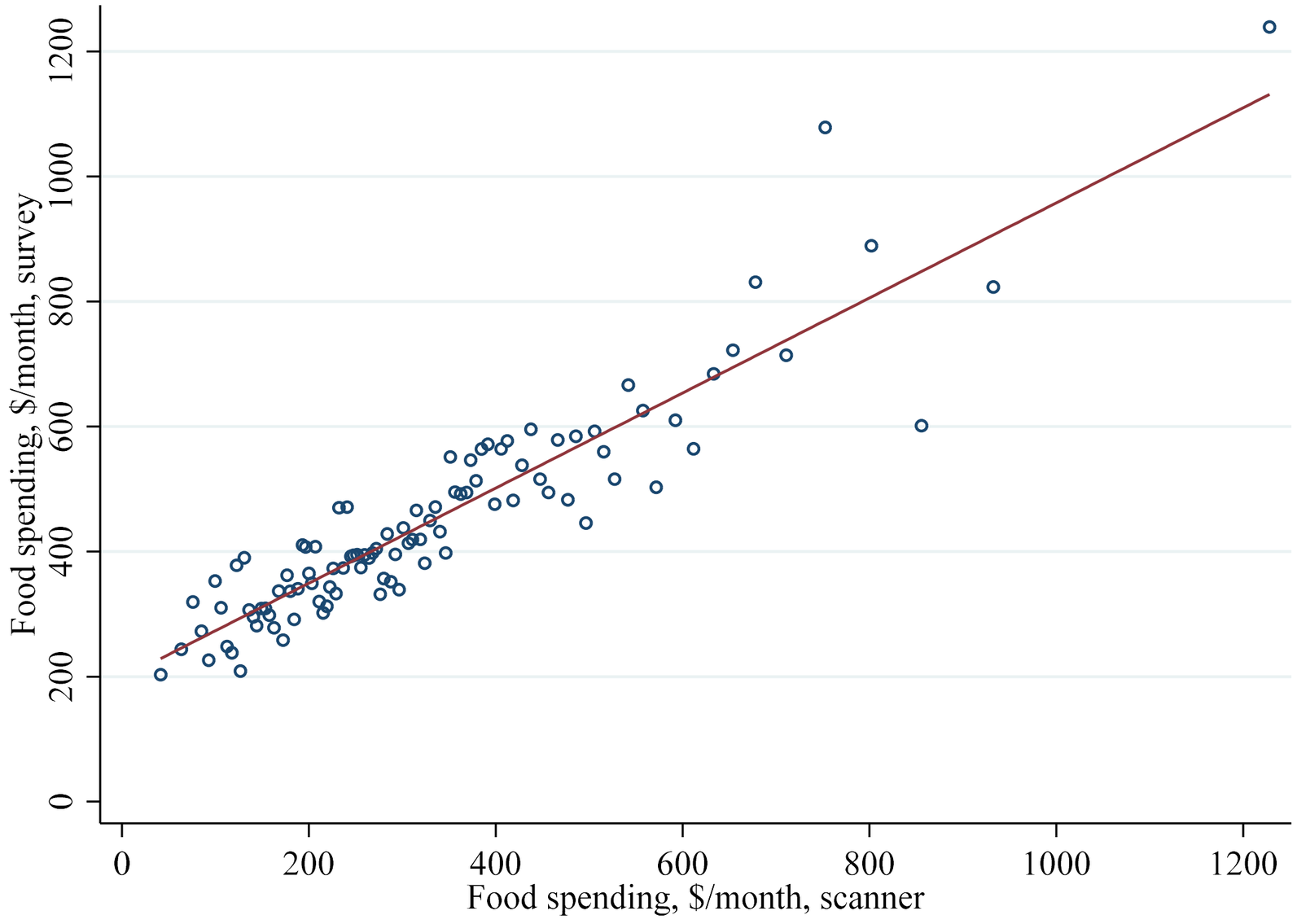
5. Interpreting RCT estimates: direct vs. indirect effects

6. External validity

7. Alternatives

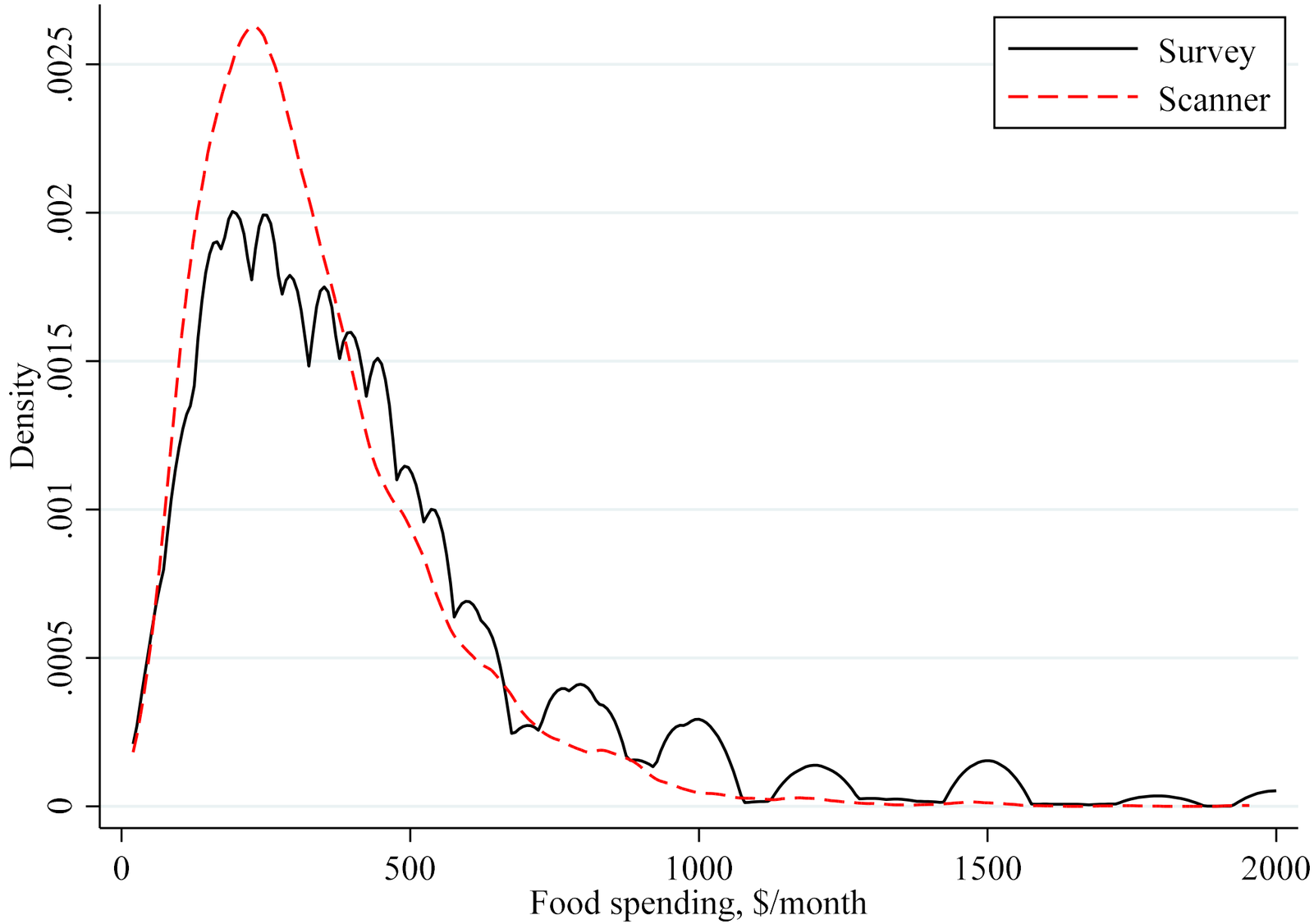
8. Partial vs general equilibrium outcomes

External vs Self-reported Spending



On average, self-reported and scanner measures of spending are closely aligned.

External vs Self-reported Spending



But self-reported spending is much “lumpier” due to rounding.

EXAMPLE: CGW (2022)

Dep. var. is indicated in the title of the panel	Actual spending, horizon, month	
	3 months	6 months
	(1)	(2)
Panel A. Total Spending, survey		
Posterior inflation expectations		
Observations	6,459	6,570
1st stage F-stat	46.97	60.06
Panel B. Total Spending, scanner		
Posterior inflation expectations		
Observations	13,170	13,132
1st stage F-stat	134.8	128.1

Let's compare estimates of effects of inflation expectations on spending using scanner data vs self-reported spending data.

EXAMPLE: CGW (2022)

Dep. var. is indicated in the title of the panel	Actual spending, horizon, month	
	3 months	6 months
	(1)	(2)
Panel A. Total Spending, survey		
Posterior inflation expectations		
Observations	6,459	6,570
1st stage F-stat	46.97	60.06
Panel B. Total Spending, scanner		
Posterior inflation expectations	0.950***	0.864**
	(0.286)	(0.336)
Observations	13,170	13,132
1st stage F-stat	134.8	128.1

This approach yields evidence suggesting positive *causal* link from inflation expectations to total spending of households.

EXAMPLE: CGW (2022)

Dep. var. is indicated in the title of the panel	Actual spending, horizon, month	
	3 months	6 months
	(1)	(2)
Panel A. Total Spending, survey		
Posterior inflation expectations	1.826***	1.015
	(0.690)	(0.638)
Observations	6,459	6,570
1st stage F-stat	46.97	60.06
Panel B. Total Spending, scanner		
Posterior inflation expectations	0.950***	0.864**
	(0.286)	(0.336)
Observations	13,170	13,132
1st stage F-stat	134.8	128.1

The results are much more precise (better measurement + more observations) when we have access to external sources of information on decisions instead of self-reported outcomes.

Potential Pitfalls and Challenges

1. Measurement of expectations and survey implementation
2. Where can you run an RCT?
3. Successful information treatments
4. Measurement of outcomes
5. Interpreting RCT estimates: direct vs. indirect effects
6. External validity
7. **Alternatives**
8. Partial vs general equilibrium outcomes

COMPLEMENTARY APPROACH: HYPOTHETICALS

An alternative to the 3-step RCT procedure described here is to ask survey participants directly how they would react if they held different beliefs (see e.g. Coliarieti et al. 2024):

> *Please think about the ways in which uncertainty about changes in prices in general in the country you currently live in may (or may not) affect your decisions.*
>
> *If **uncertainty about changes in prices in general [increases/decreases]**, I would like to…*

Answers are [Yes/No]

COMPLEMENTARY APPROACH: HYPOTHETICALS

#	Action	Hypothetical Answer	Consistent with RCT estimate
	Spending/Saving Behavior		
1	Bring forward major purchases of durable goods		
2	Reduce usual spending and put aside more money		
3	Save less than usual or liquidate (some or all) savings		
4	Use more credit than usual to finance spending		
	Shopping Behavior		
5	Substitute goods and services with cheaper alternatives		
6	Switch stores		
7	Shop around more actively to find the best price		
	Investment Behavior		
8	Buy gold, real estate and other inflation-protected assets		
9	Hold more savings in cash		
	Job Search Behavior		
10	Ask for a pay rise from my current employer or look for a higher paying job		
11	Look to increase your income in other ways (e.g. take on a second job, increase hours)		

COMPLEMENTARY APPROACH: HYPOTHETICALS

#	Action	Hypothetical Answer	Consistent with RCT estimate
	Spending/Saving Behavior		
1	Bring forward major purchases of durable goods	No	✓
2	Reduce usual spending and put aside more money	Yes	✓
3	Save less than usual or liquidate (some or all) savings	No	n/a
4	Use more credit than usual to finance spending	No	n/a
	Shopping Behavior		
5	Substitute goods and services with cheaper alternatives	Yes	n/a
6	Switch stores	Yes	n/a
7	Shop around more actively to find the best price	Yes	✓
	Investment Behavior		
8	Buy gold, real estate and other inflation-protected assets	No	n/a
9	Hold more savings in cash	Yes	✓
	Job Search Behavior		
10	Ask for a pay rise from my current employer or look for a higher paying job	Yes	✓
11	Look to increase your income in other ways (e.g. take on a second job, increase hours)	Yes	✓

Along most metrics, answers to hypothetical line up with RCT.

COMPLEMENTARY APPROACH: HYPOTHETICALS

Hypotheticals/vignettes/strategic surveys:

- Can be implemented in surveys that do not allow RCTs
- Do not require follow-up surveys
- Do not require external data on decisions
- Do not require same large samples as for RCTs
- Are (often) immune to concerns about power of the first stage
- Can be framed to measure either partial or total effects
- Can be framed to provide either qualitative or quantitative estimates, **measure non-linearities and asymmetric effects.**

COMPLEMENTARY APPROACH: HYPOTHETICALS

Hypotheticals/vignettes/strategic surveys:

- Can be implemented in surveys that do not allow RCTs
- Do not require follow-up surveys
- Do not require external data on decisions
- Do not require same large samples as for RCTs
- Are (often) immune to concerns about power of the first stage
- Can be framed to measure either partial or total effects
- Can be framed to provide either qualitative or quantitative estimates, **measure non-linearities and asymmetric effects.**

But it remains to be established under what conditions hypotheticals and RCTs will systematically yield the same results.

CONCLUSION

- Identification is a huge challenge for macroeconomics in general and for understanding the role and effects of expectations specifically.

CONCLUSION

- Identification is a huge challenge for macroeconomics in general and for understanding the role and effects of expectations specifically.

- Applying randomized information treatments to surveys of economic agents can provide new answers to fundamental questions in macroeconomics with sharper causality than many other strategies in the face of otherwise daunting identification issues.

CONCLUSION

- Identification is a huge challenge for macroeconomics in general and for understanding the role and effects of expectations specifically.

- Applying randomized information treatments to surveys of economic agents can provide new answers to fundamental questions in macroeconomics with sharper causality than many other strategies in the face of otherwise daunting identification issues.

- You create your own data needed to test specific hypotheses.

CONCLUSION

- Identification is a huge challenge for macroeconomics in general and for understanding the role and effects of expectations specifically.

- Applying randomized information treatments to surveys of economic agents can provide new answers to fundamental questions in macroeconomics with sharper causality than many other strategies in the face of otherwise daunting identification issues.

- You create your own data needed to test specific hypotheses.

- This strategy has already been applied to a number of areas with success, but there is room to apply these methods far more systematically.

CONCLUSION

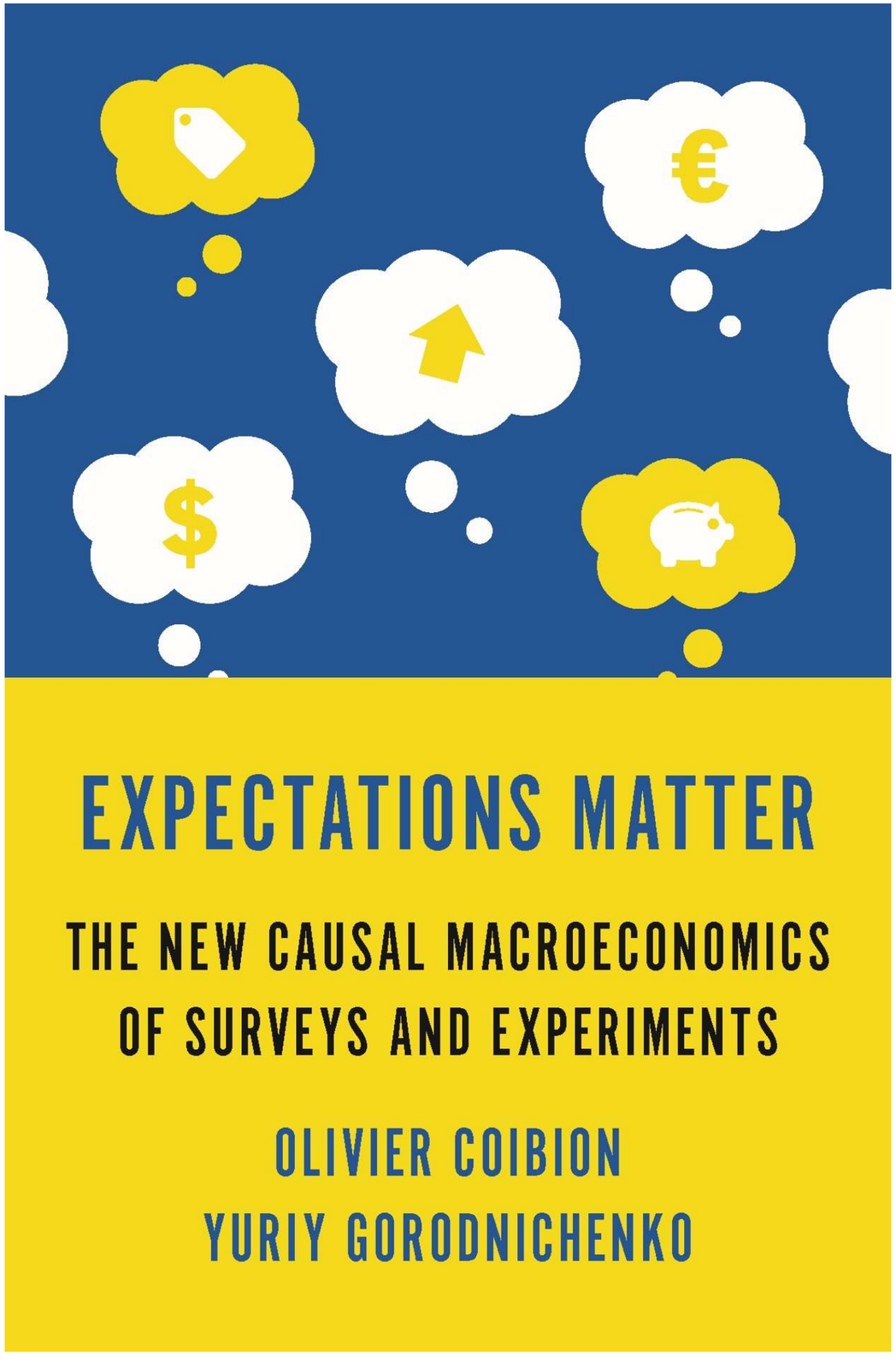
- Identification is a huge challenge for macroeconomics in general and for understanding the role and effects of expectations specifically.

- Applying randomized information treatments to surveys of economic agents can provide new answers to fundamental questions in macroeconomics with sharper causality than many other strategies in the face of otherwise daunting identification issues.

- You create your own data needed to test specific hypotheses.

- This strategy has already been applied to a number of areas with success, but there is room to apply these methods far more systematically.

- However, RCTs cannot solve every problem
  - RCTs generally identifies partial equilibrium responses (…but there are exceptions).
  - We still need models and aggregate data to go from partial equilibrium elasticities to general equilibrium effects.

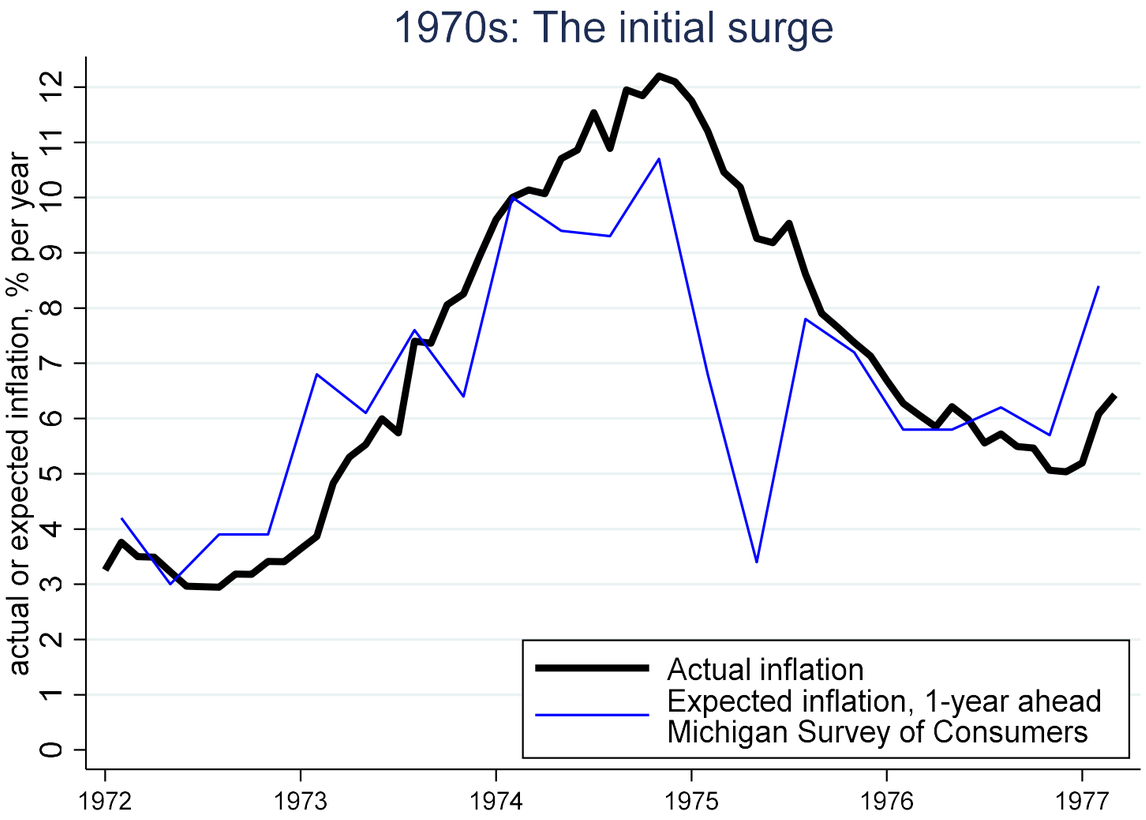


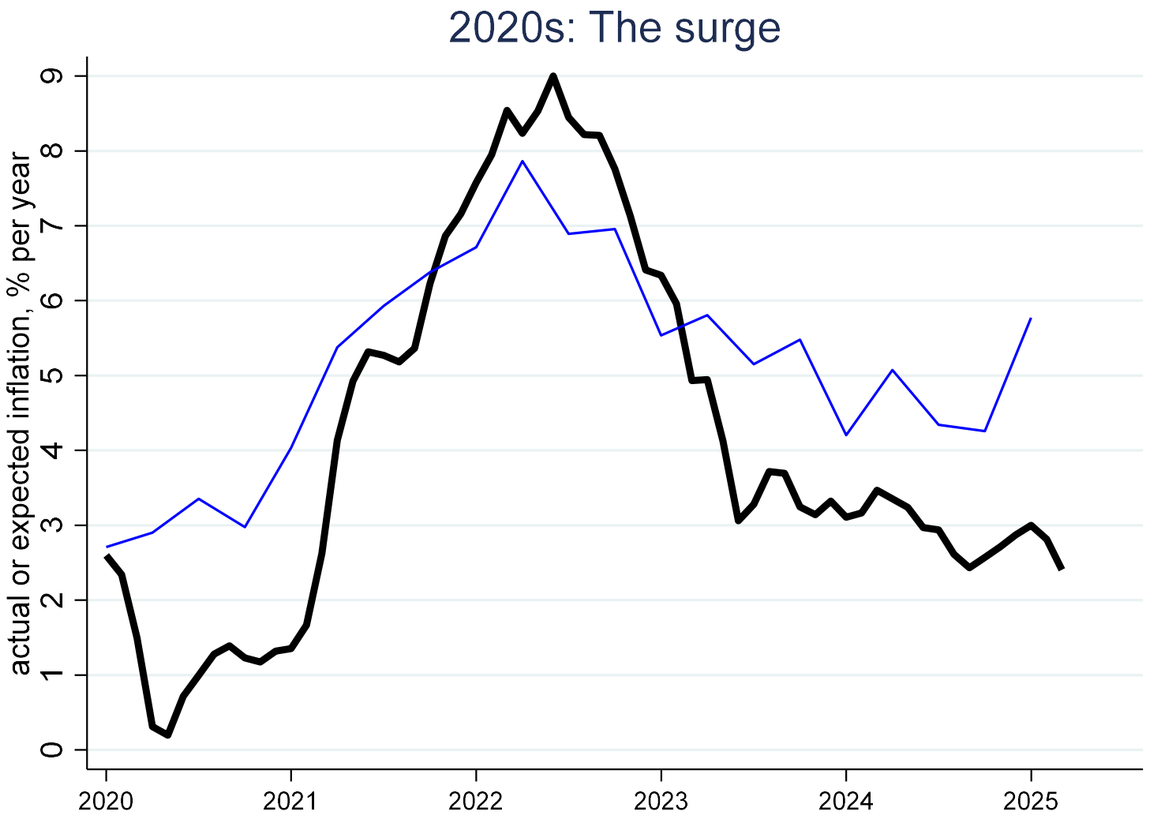
EXPECTATIONS MATTER

THE NEW CAUSAL MACROECONOMICS OF SURVEYS AND EXPERIMENTS

OLIVIER COIBION
YURIY GORODNICHENKO

Inflation and Inflation expectations: Now and Then



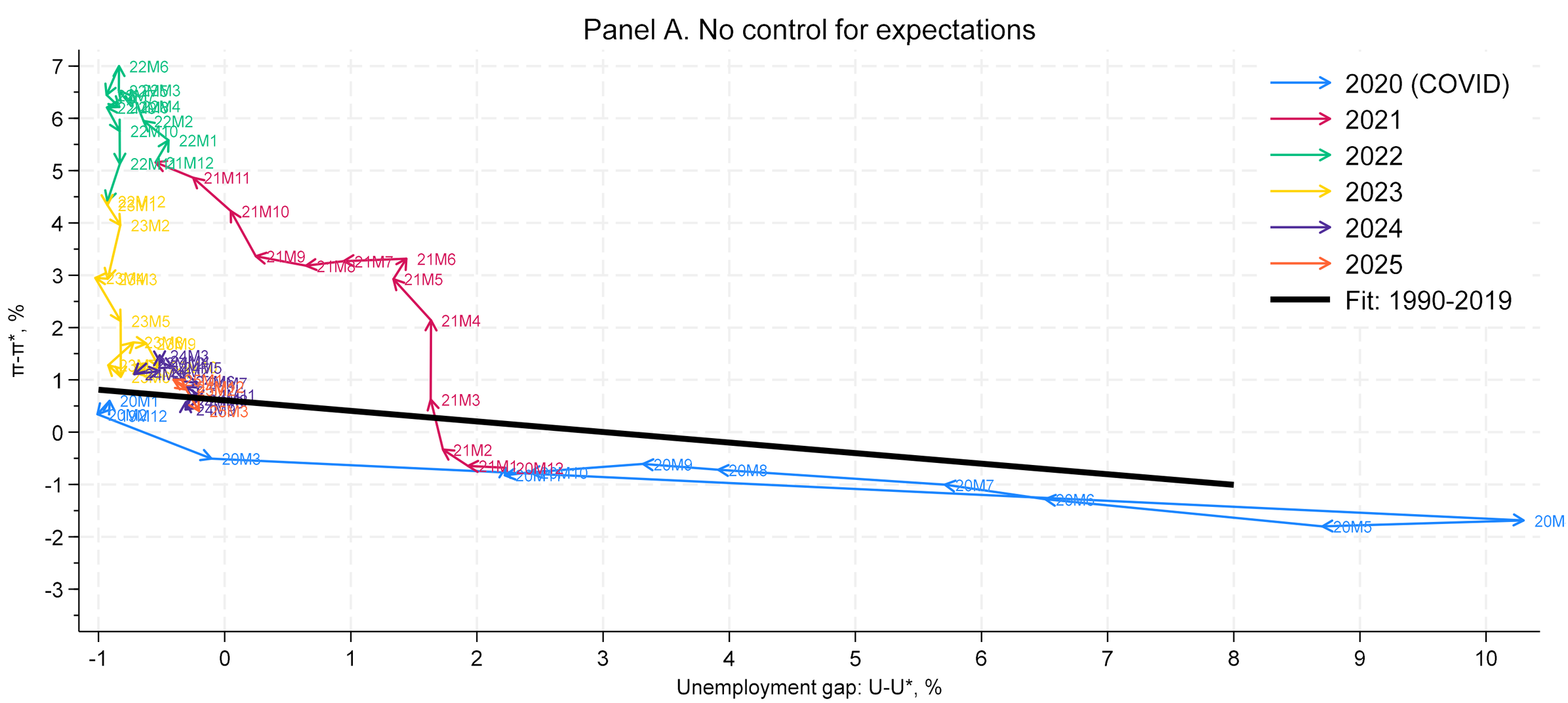


It's common wisdom that unanchored expectations played a key role in the 1970s.

Popular narrative: inflation fell because inflation expectations are anchored in the 2020s

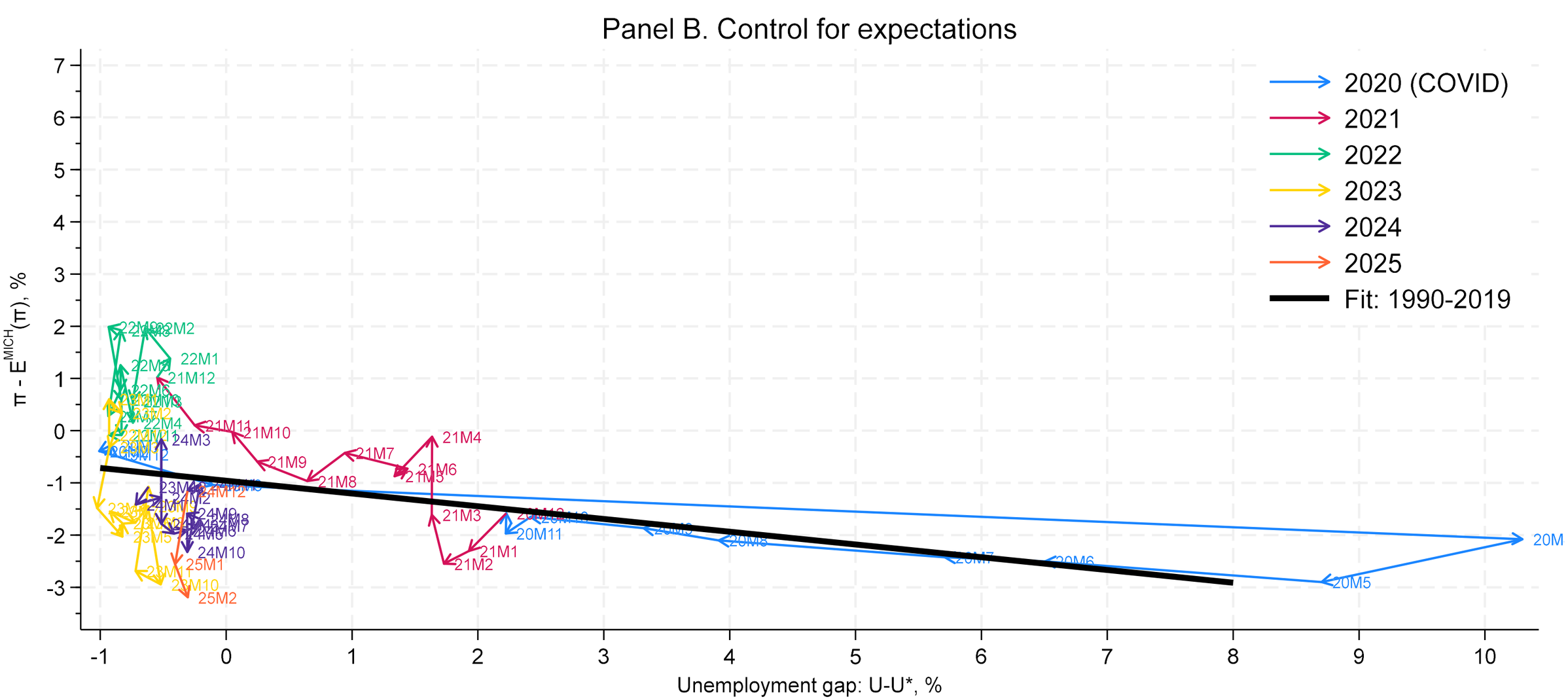
- How can one look at the current situation and view it as a success of anchored expectations?

The Surge via the Lens of a Phillips Curve



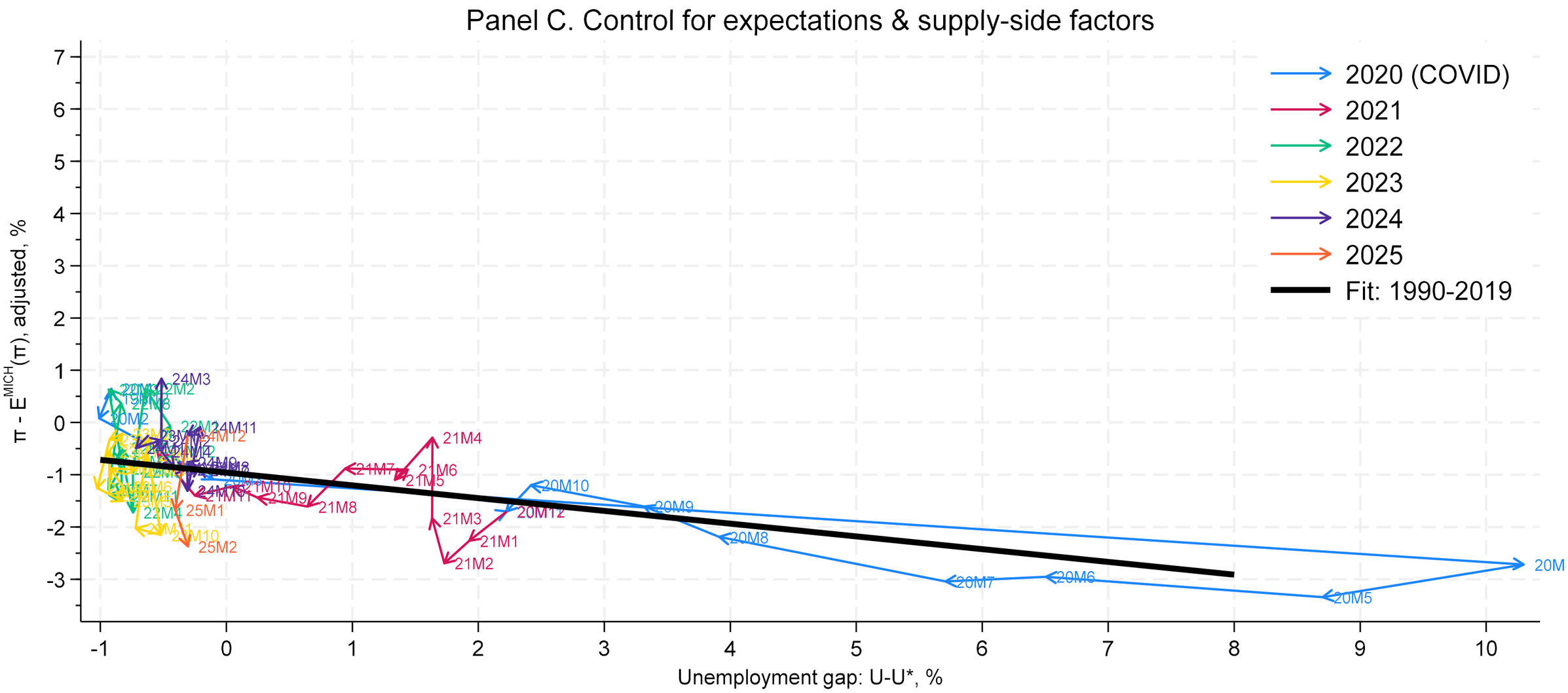
Without expectations or controls, the Phillips curve looks nonlinear and we move off the Phillips curve in early 2021 as inflation starts rising above & beyond anything suggested by labor markets.

The Surge via the Lens of a Phillips Curve



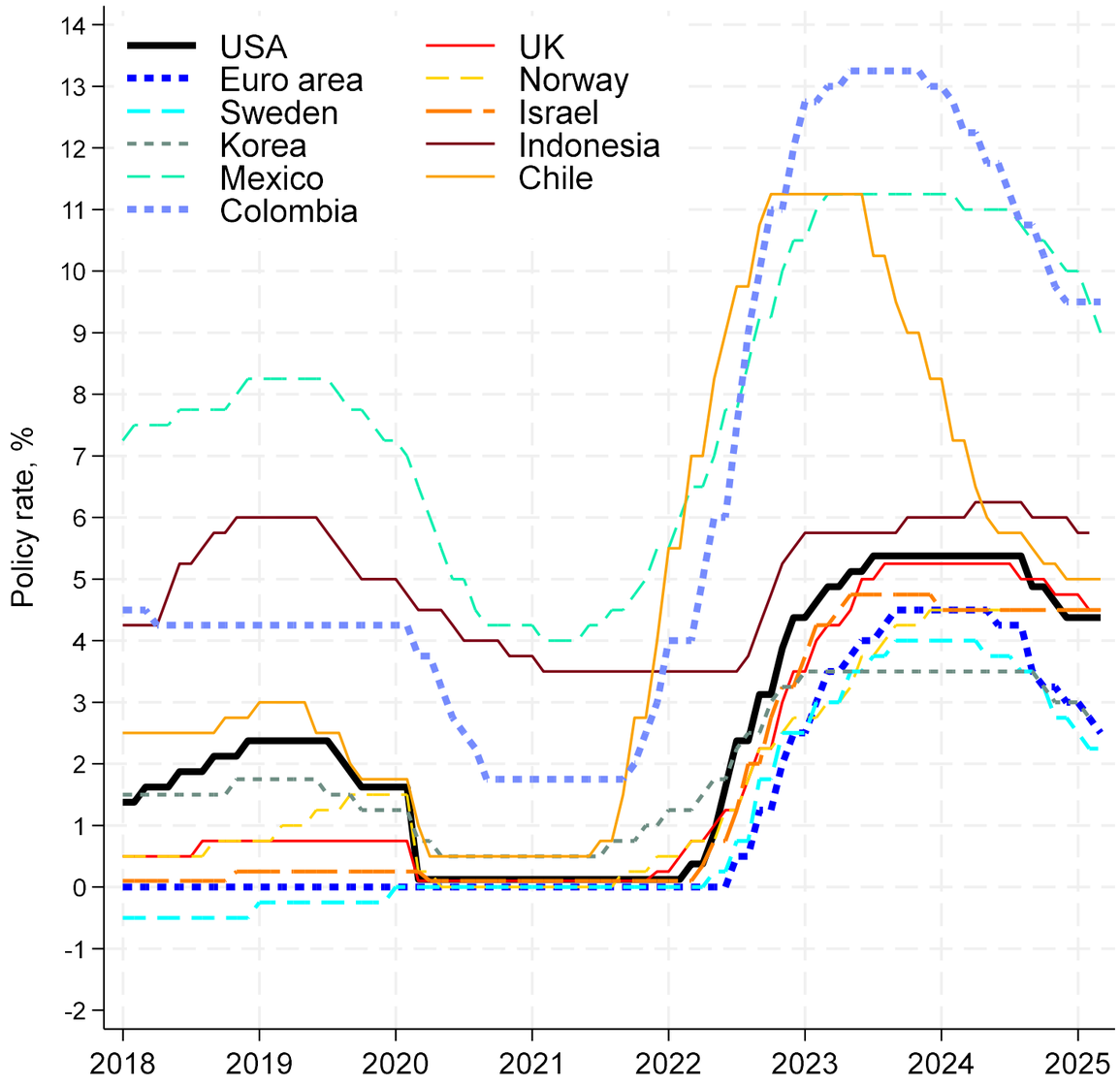
Controlling for inflation expectations, 2021 is a movement along the curve, until the 2022-24 supply shocks.

THE SURGE VIA THE LENS OF A PHILLIPS CURVE



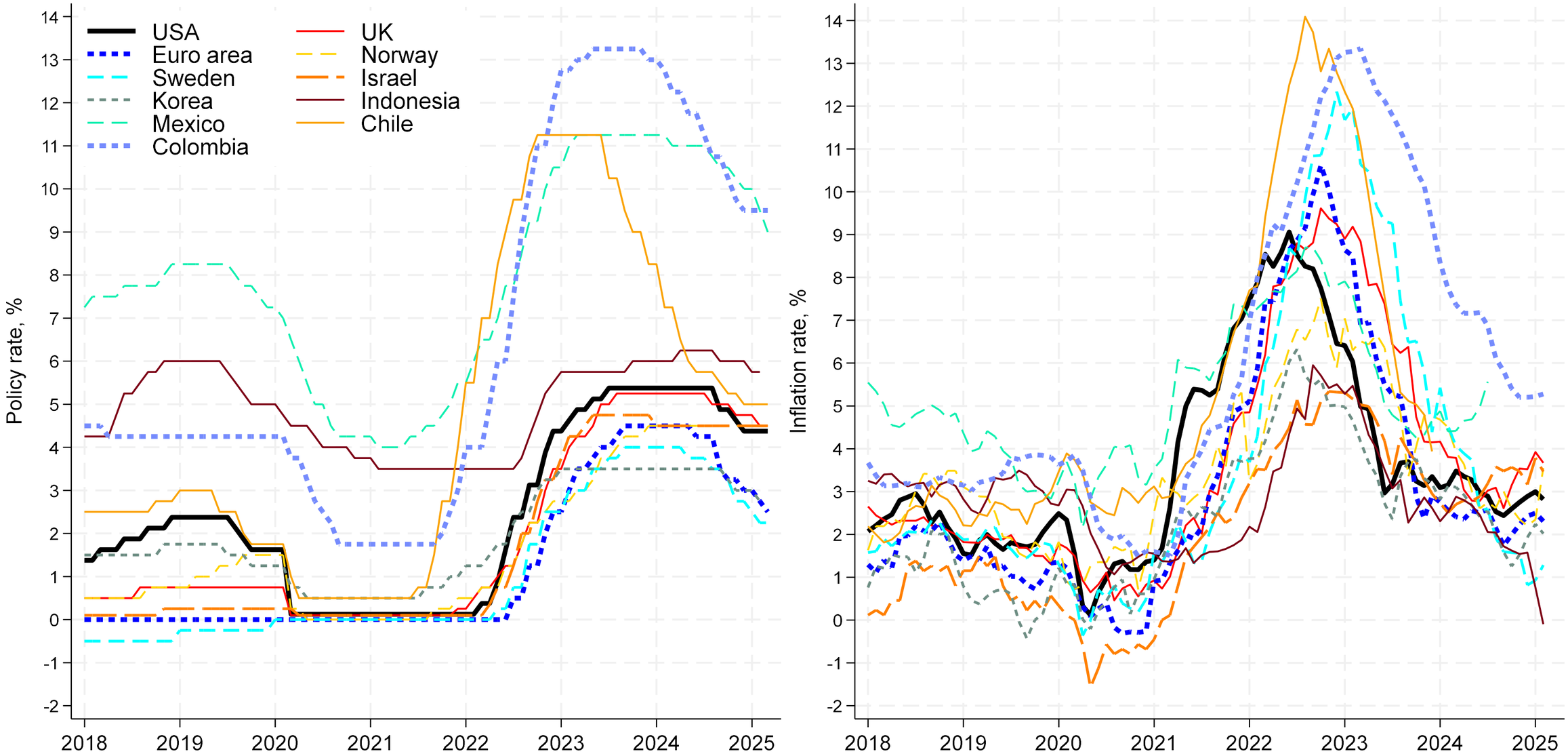
Controlling for inflation expectations *and* supply shocks, there is almost no unexplained variation left.

INTERNATIONAL EVIDENCE ON SUPPLY-SIDE FACTORS



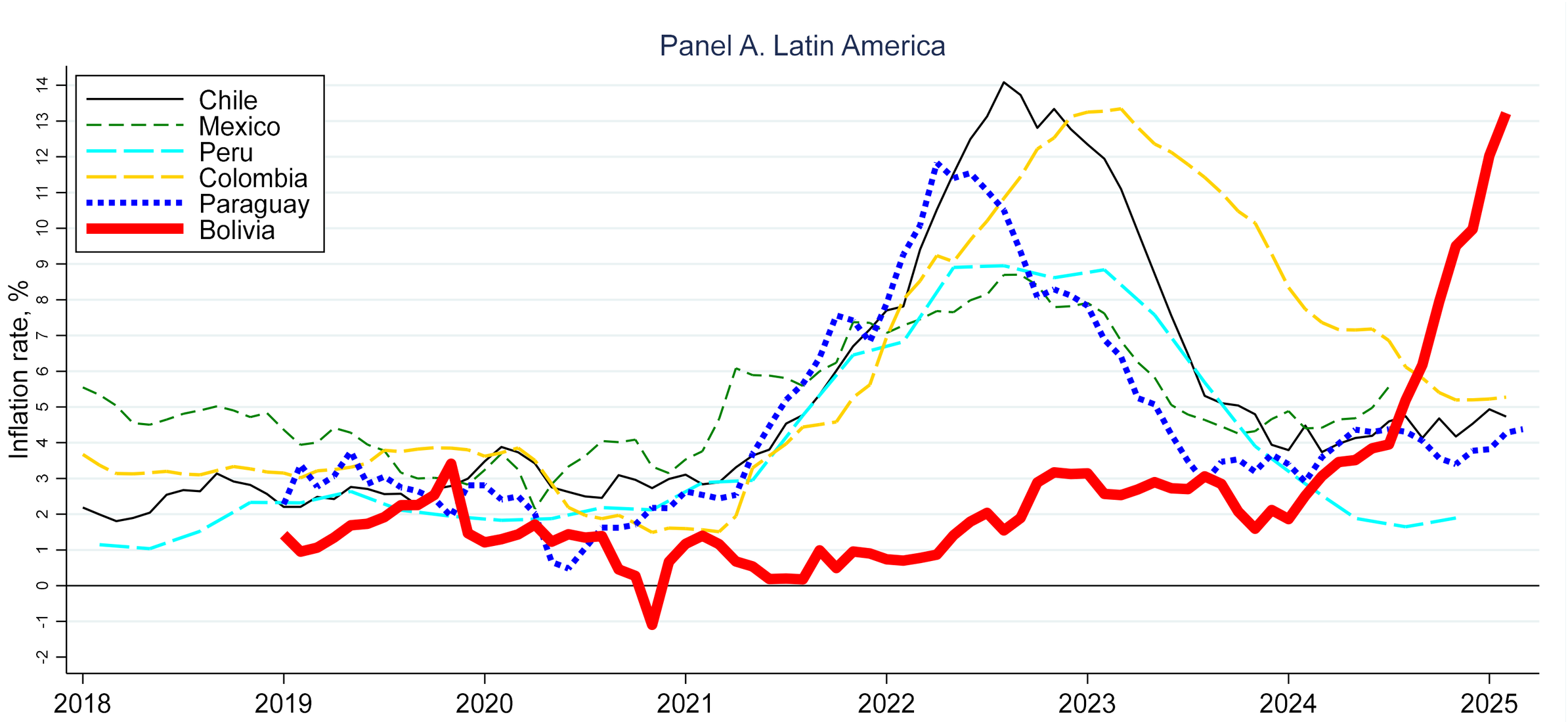
Monetary policy decisions varied widely

INTERNATIONAL EVIDENCE ON SUPPLY-SIDE FACTORS



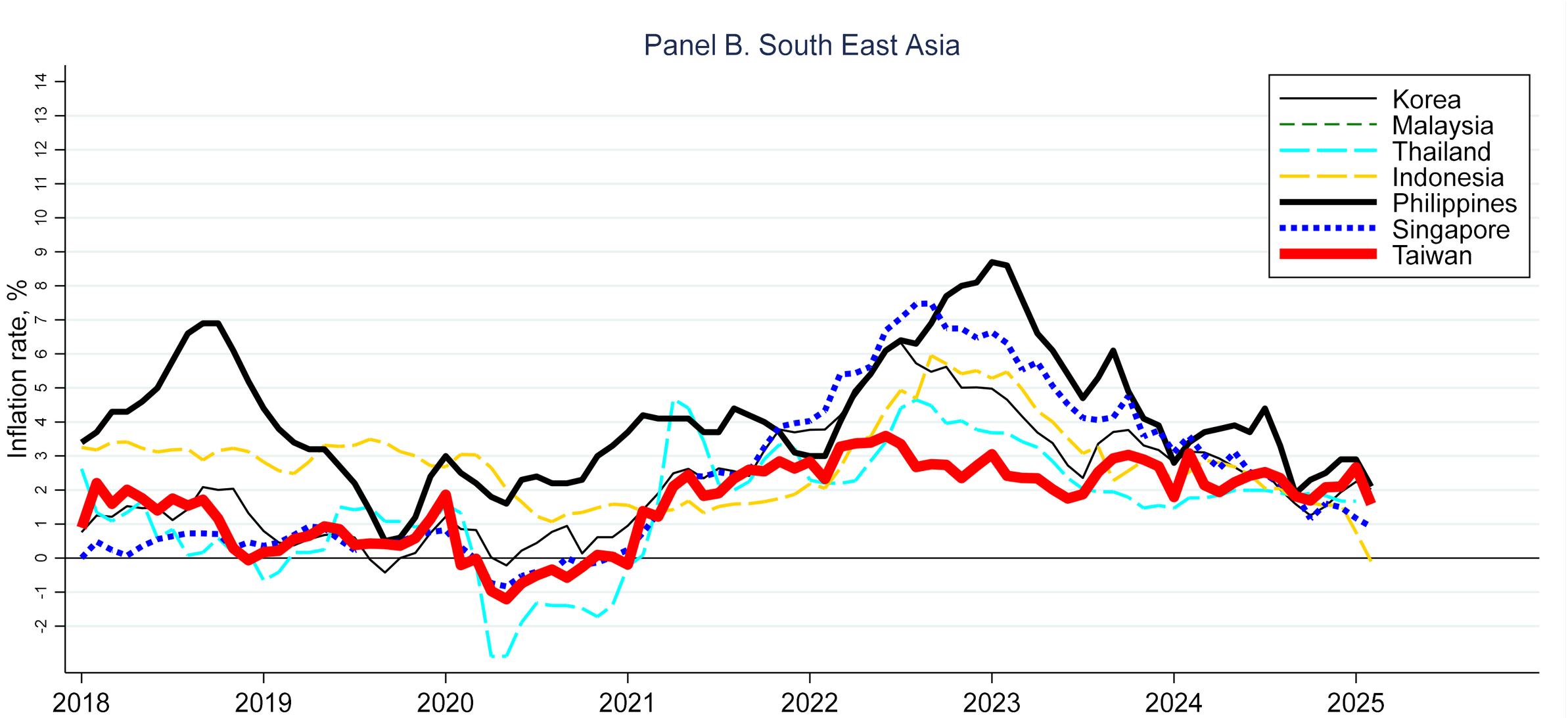
Monetary policy decisions varied widely whereas the inflation experience was surprisingly similar.

INTERNATIONAL EVIDENCE ON SUPPLY-SIDE FACTORS



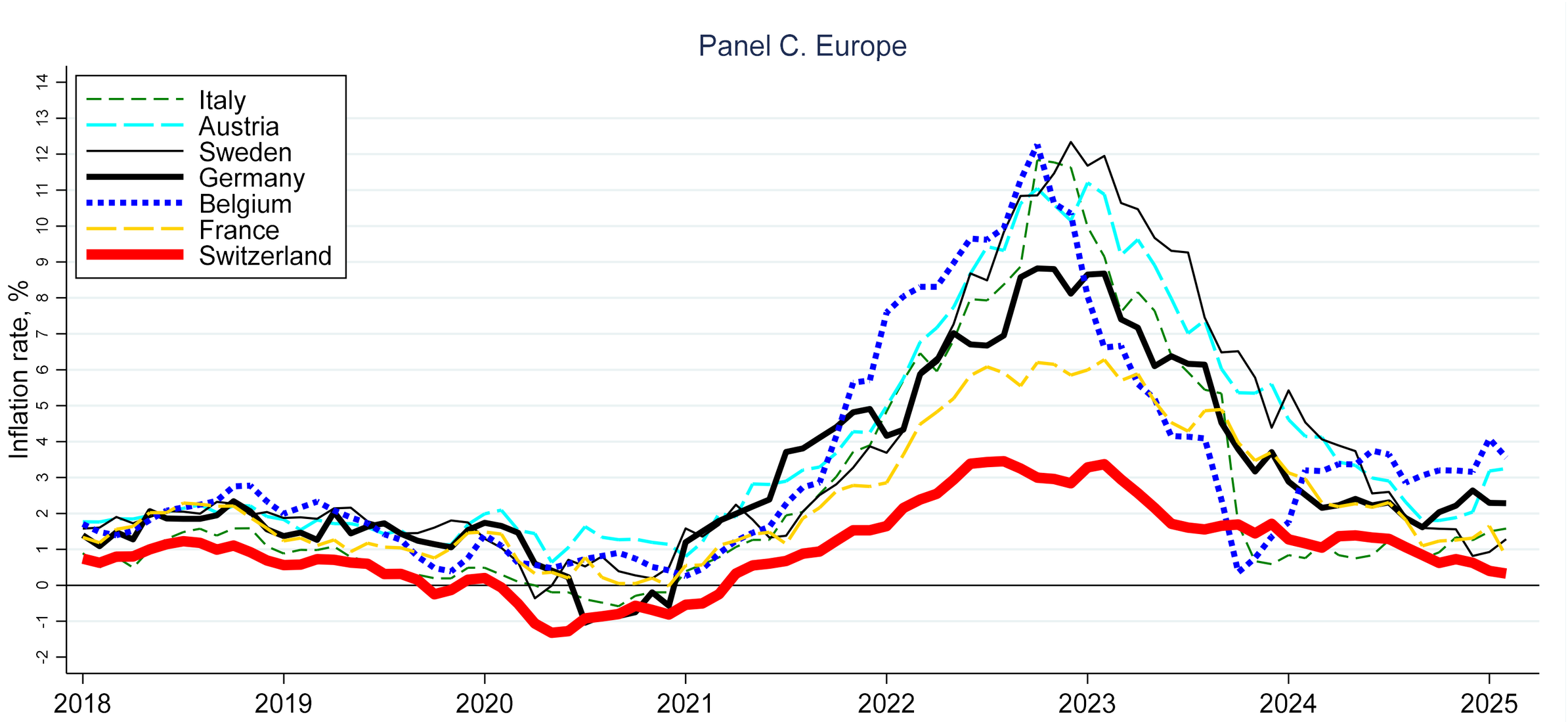
In Latin America, Bolivia was able to escape the initial surge through massive energy price subsidies.

INTERNATIONAL EVIDENCE ON SUPPLY-SIDE FACTORS

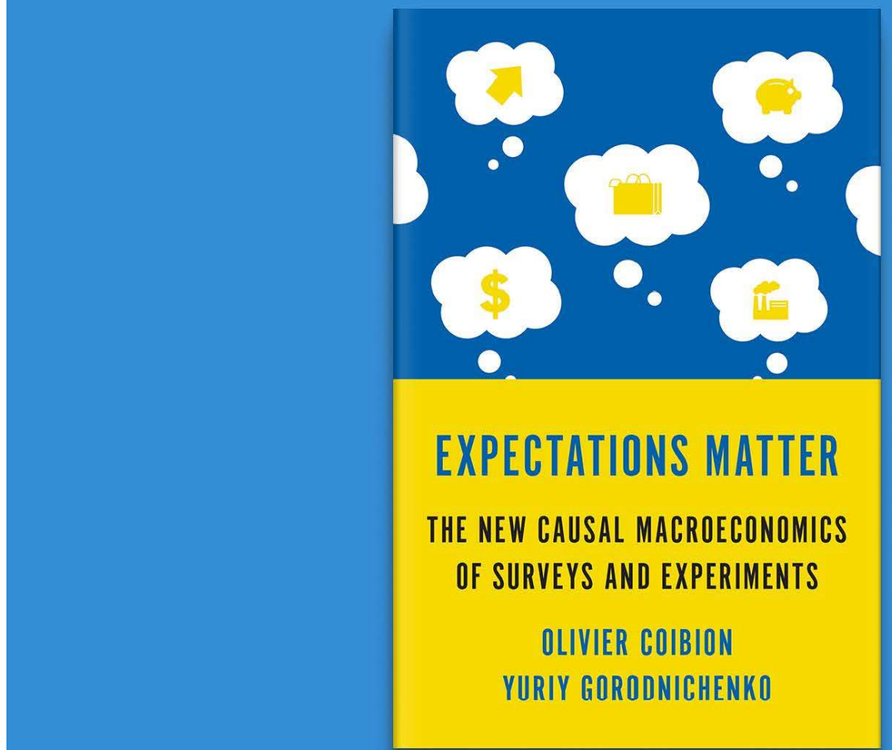


In Asia, Taiwan was able to escape the initial surge through massive energy price subsidies.

INTERNATIONAL EVIDENCE ON SUPPLY-SIDE FACTORS



In Europe, Switzerland escaped the inflation surge through reduced exposure and sensitivity to global energy prices.



PRINCETON UNIVERSITY PRESS

Olivier Coibion & Yuriy Gorodnichenko
Expectations Matter

30% off with code **P329** at press.princeton.edu