WHAT DO WE LEARN FROM READING EVERY FOMC TRANSCRIPT?

Olivier Coibion
UT Austin and NBER

Marc Dordal-i-Carreras
UC Berkeley

Yuriy Gorodnichenko
UC Berkeley and NBER

Cooper Howes
UT Austin

ASSA 2020, San Diego

MONETARY POLICY

- What is the effect of monetary policy on the economy?

MONETARY POLICY

- What is the effect of monetary policy on the economy?
    - What is the transmission mechanism?
    - What is the "exogenous" shock?
    - Why do we have shocks?

MONETARY POLICY

Conventional approach:

- First stage:

$$i_t = \phi_\pi E_t \pi_{t+1} + \phi_x E_t x_t + \rho_i i_{t-1} + \epsilon_t$$

$\epsilon_t \equiv$ monetary policy shock
$\pi_t \equiv$ inflation
$x_t \equiv$ output gap

MONETARY POLICY

Conventional approach:

- First stage:

$$i_t = \phi_\pi E_t \pi_{t+1} + \phi_x E_t x_t + \rho_i i_{t-1} + \epsilon_t$$

$\epsilon_t \equiv$ monetary policy shock
$\pi_t \equiv$ inflation
$x_t \equiv$ output gap

- Second stage

$$y_{t+h} = \beta \hat{\epsilon}_t + controls + error$$

$y \equiv$ outcome variable (unemployment, GDP, etc.)

MONETARY POLICY

Conventional approach:

- First stage:

$$i_t = \phi_\pi E_t \pi_{t+1} + \phi_x E_t x_t + \rho_i i_{t-1} + \epsilon_t$$

$\epsilon_t \equiv$ monetary policy shock
$\pi_t \equiv$ inflation
$x_t \equiv$ output gap

We usually take a statistical approach: ϵ_t should be unpredictable

MONETARY POLICY

Conventional approach:

- First stage:

$$i_t = \phi_\pi E_t \pi_{t+1} + \phi_x E_t x_t + \rho_i i_{t-1} + \epsilon_t$$

$\epsilon_t \equiv$ monetary policy shock
$\pi_t \equiv$ inflation
$x_t \equiv$ output gap

We usually take a statistical approach: ϵ_t should be unpredictable but…

- We don't explain why ϵ_t happens
- We do not explain why ϕ_x, ϕ_π, ρ_i may vary over time
- We do not explain why e.g. ρ_i is there in the first place

MONETARY POLICY

Conventional approach:

- First stage:

$$i_t = \phi_\pi E_t \pi_{t+1} + \phi_x E_t x_t + \rho_i i_{t-1} + \epsilon_t$$

$\epsilon_t \equiv$ monetary policy shock
$\pi_t \equiv$ inflation
$x_t \equiv$ output gap

We usually take a statistical approach: ϵ_t should be unpredictable but…

- We don't explain why ϵ_t happens
- We do not explain why ϕ_x, ϕ_π, ρ_i may vary over time
- We do not explain why e.g. ρ_i is there in the first place

We need narrative identification to shed light on these questions

THIS PROJECT

- Consider several hypotheses on how/why monetary decisions are made
- For each hypothesis develop measurable metrics

THIS PROJECT

- Consider several hypotheses on how/why monetary decisions are made
- For each hypothesis develop measurable metrics
- Ask trained research assistants to read FOMC transcripts and score transcripts along the developed metrics

THIS PROJECT

- Consider several hypotheses on how/why monetary decisions are made
- For each hypothesis develop measurable metrics
- Ask trained research assistants to read FOMC transcripts and score transcripts along the developed metrics
- Aggregate scores across research assistants (each transcript is read by multiple research assistants)

THIS PROJECT

- Consider several hypotheses on how/why monetary decisions are made
- For each hypothesis develop measurable metrics
- Ask trained research assistants to read FOMC transcripts and score transcripts along the developed metrics
- Aggregate scores across research assistants (each transcript is read by multiple research assistants)
- Study properties of generated time series

THIS PROJECT

- Consider several hypotheses on how/why monetary decisions are made
- For each hypothesis develop measurable metrics
- Ask trained research assistants to read FOMC transcripts and score transcripts along the developed metrics
- Aggregate scores across research assistants (each transcript is read by multiple research assistants)
- Study properties of generated time series
- Sample restriction: we score transcripts through 1990; when Greenspan decided to make transcripts public with a 5-year delay in the mid-90s, this apparently changed the way people talk about policy at the FOMC, Meade & Stasavage (2008).

APPLICATION #1: POLICY TRADEOFFS

APPLICATION #1: POLICY TRADEOFFS

"*I share your views, Mr. Chairman, about what monetary policy can do with respect to the real sector; I don't think we can do anything that will affect it very much very soon. But monetary policy certainly can affect expectations and prices.*"

Governor Wallich, April 1979

APPLICATION #1: POLICY TRADEOFFS

"*I share your views, Mr. Chairman, about what monetary policy can do with respect to the real sector; I don't think we can do anything that will affect it very much very soon. But monetary policy certainly can affect expectations and prices.*"

Governor Wallich, April 1979

"*If you tighten monetary policy, the first impact is on real output. We have had very little impact on prices.*"

Governor Teeters, October 1980

APPLICATION #1: POLICY TRADEOFFS

"*I share your views, Mr. Chairman, about what monetary policy can do with respect to the real sector; I don't think we can do anything that will affect it very much very soon. But monetary policy certainly can affect expectations and prices.*"

Governor Wallich, April 1979

"*If you tighten monetary policy, the first impact is on real output. We have had very little impact on prices.*"

Governor Teeters, October 1980

How to make this operational?

APPLICATION #1: POLICY TRADEOFFS

We are interested in a thought experiment in which the FOMC increases the money supply enough to cause real GDP and inflation to go up

$$\Delta\%M \approx \Delta\%Q + \Delta\%P$$

APPLICATION #1: POLICY TRADEOFFS

We are interested in a thought experiment in which the FOMC increases the money supply enough to cause real GDP and inflation to go up

$$\Delta\%M \approx \Delta\%Q + \Delta\%P$$

Ideal quote: "I want rates to be lower because *I don't think it will lead to any inflation*"

APPLICATION #1: POLICY TRADEOFFS

We are interested in a thought experiment in which the FOMC increases the money supply enough to cause real GDP and inflation to go up

$$\Delta\%M \approx \Delta\%Q + \Delta\%P$$

Ideal quote: "I want rates to be lower because *I don't think it will lead to any inflation*"

Example: Governor Partee (20 January 1975, FOMC minutes):

> "*…given the generally low rate of resource utilization, an increase in demands stemming from monetary expansion would have almost no inflationary effect in the short run; the impact would be almost entirely on physical activity.*"

APPLICATION #1: POLICY TRADEOFFS

We are interested in a thought experiment in which the FOMC increases the money supply enough to cause real GDP and inflation to go up

$$\Delta\%M \approx \Delta\%Q + \Delta\%P$$

Scores:

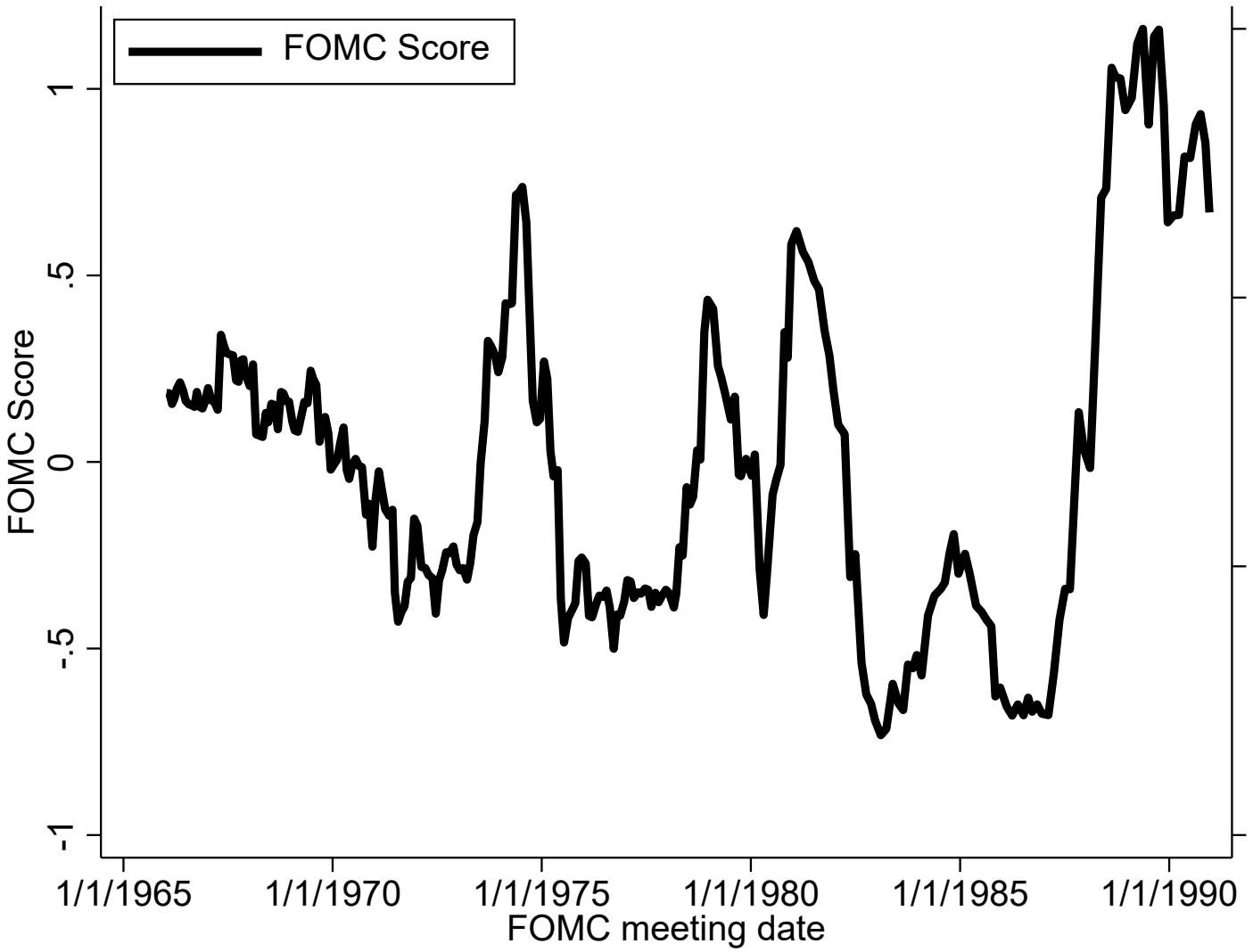
2: $\Delta\%M \Longrightarrow \Delta\%P$: almost all

1: $\Delta\%M \Longrightarrow \Delta\%P$: mostly

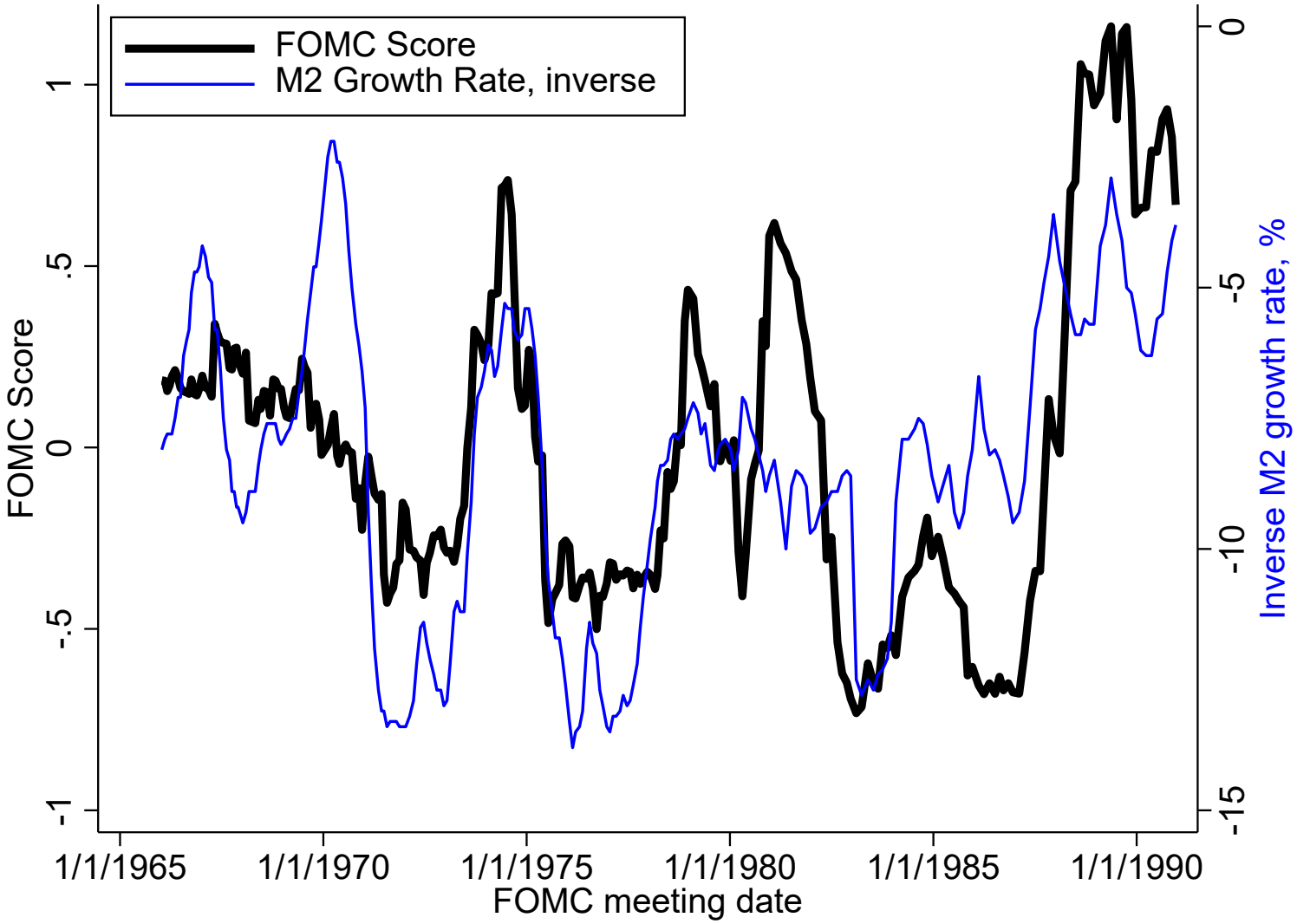
-1: $\Delta\%M \Longrightarrow \Delta\%Q$: mostly

-2: $\Delta\%M \Longrightarrow \Delta\%Q$: almost all

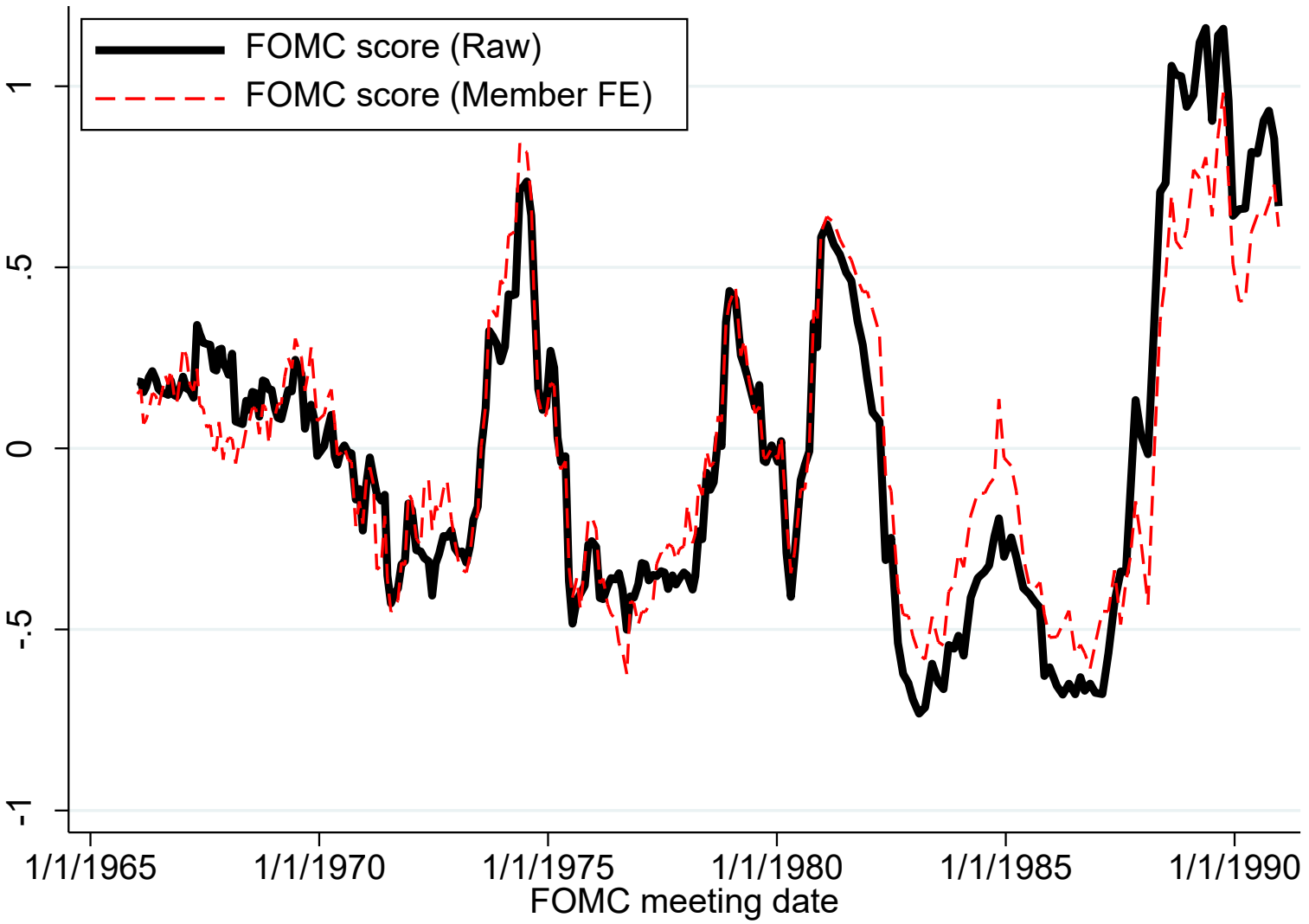
APPLICATION #1: POLICY TRADEOFFS



APPLICATION #1: POLICY TRADEOFFS



APPLICATION #1: POLICY TRADEOFFS



APPLICATION #2: POLICY GRADUALISM

$$i_t = \phi_\pi E_t \pi_{t+1} + \phi_x E_t x_t + \rho_i i_{t-1} + \epsilon_t$$

$\epsilon_t \equiv$ monetary policy shock
$\pi_t \equiv$ inflation
$x_t \equiv$ output gap

Why do we have $\rho_i \neq 0$?

APPLICATION #2: POLICY GRADUALISM

Example: FOMC 2/13/1973

Preference for gradualism:

> [Mr. Morris] was not sure that it was possible as yet to evaluate the effect of that firming on growth rates in reserves and the money supply, and he would be inclined to hold the ground for another month in order to get a better basis for judging those effects.

APPLICATION #2: POLICY GRADUALISM

Example: FOMC 2/13/1973

Preference for gradualism:

> [Mr. Morris] was not sure that it was possible as yet to evaluate the effect of that firming on growth rates in reserves and the money supply, and he would be inclined to hold the ground for another month in order to get a better basis for judging those effects.

Preference for rapid action

> The Chairman added that the pursuit of such a policy course might temporarily produce a little more firmness than desired on a steady basis. Personally, he saw nothing wrong with pursuing a zig-zag policy course in the short run. Apart from the fact that it was not always easy to specify the straight path to monetary policy objectives, deviations, within limits, had the advantage of depriving speculators of the free ride offered to them when the course of policy was made crystal clear.

APPLICATION #2: POLICY GRADUALISM

$$i_t = \phi_\pi E_t \pi_{t+1} + \phi_x E_t x_t + \rho_i i_{t-1} + \epsilon_t$$

$\epsilon_t \equiv$ monetary policy shock
$\pi_t \equiv$ inflation
$x_t \equiv$ output gap

Why do we have $\rho_i \neq 0$?

Reasons for $\rho_i \neq 0$:

- Avoid volatility in the financial markets
- Avoid volatility in the real sector (firms and consumers)
- Policy uncertainty ("wait and see", need more data to decide)
- Do not confuse economic agents with policy reversals

APPLICATION #2: POLICY GRADUALISM

$$i_t = \phi_\pi E_t \pi_{t+1} + \phi_x E_t x_t + \rho_i i_{t-1} + \epsilon_t$$

$\epsilon_t \equiv$ monetary policy shock
$\pi_t \equiv$ inflation
$x_t \equiv$ output gap

Why do we have $\rho_i \neq 0$?

Reasons for $\rho_i \neq 0$:

- Avoid volatility in the financial markets
- Avoid volatility in the real sector (firms and consumers)
- Policy uncertainty ("wait and see", need more data to decide)
- Do not confuse economic agents with policy reversals

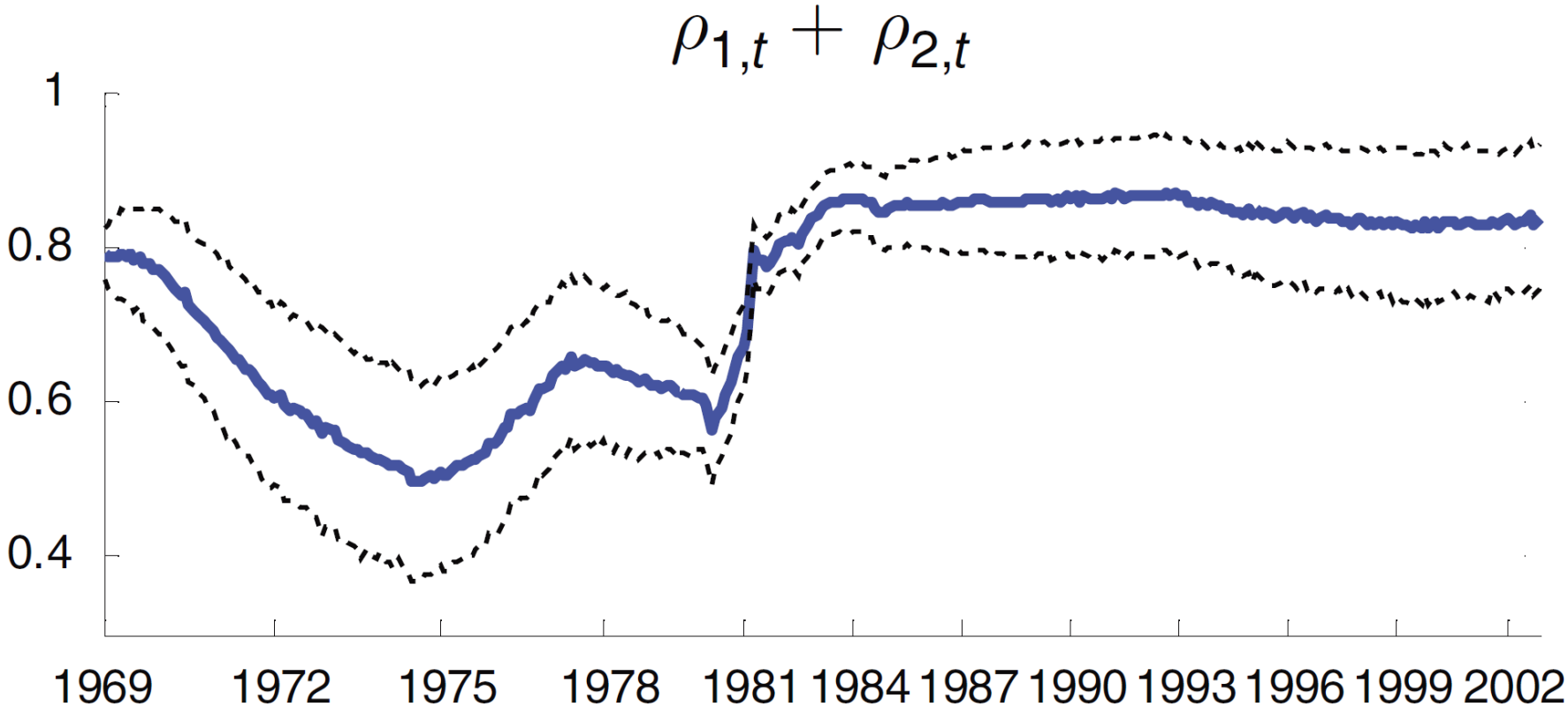
Scoring: 1 if preference for gradualism is mentioned and 0 otherwise

APPLICATION #2: POLICY GRADUALISM

$$i_t = \phi_{\pi,t}(E_t\pi_{t+1} - \pi_t^*) + \phi_{x,t}E_t x_t + \rho_{1,t}i_{t-1} + \rho_{2,t}i_{t-2} + \epsilon_t$$

Coibion and Gorodnichenko (AER 2012)

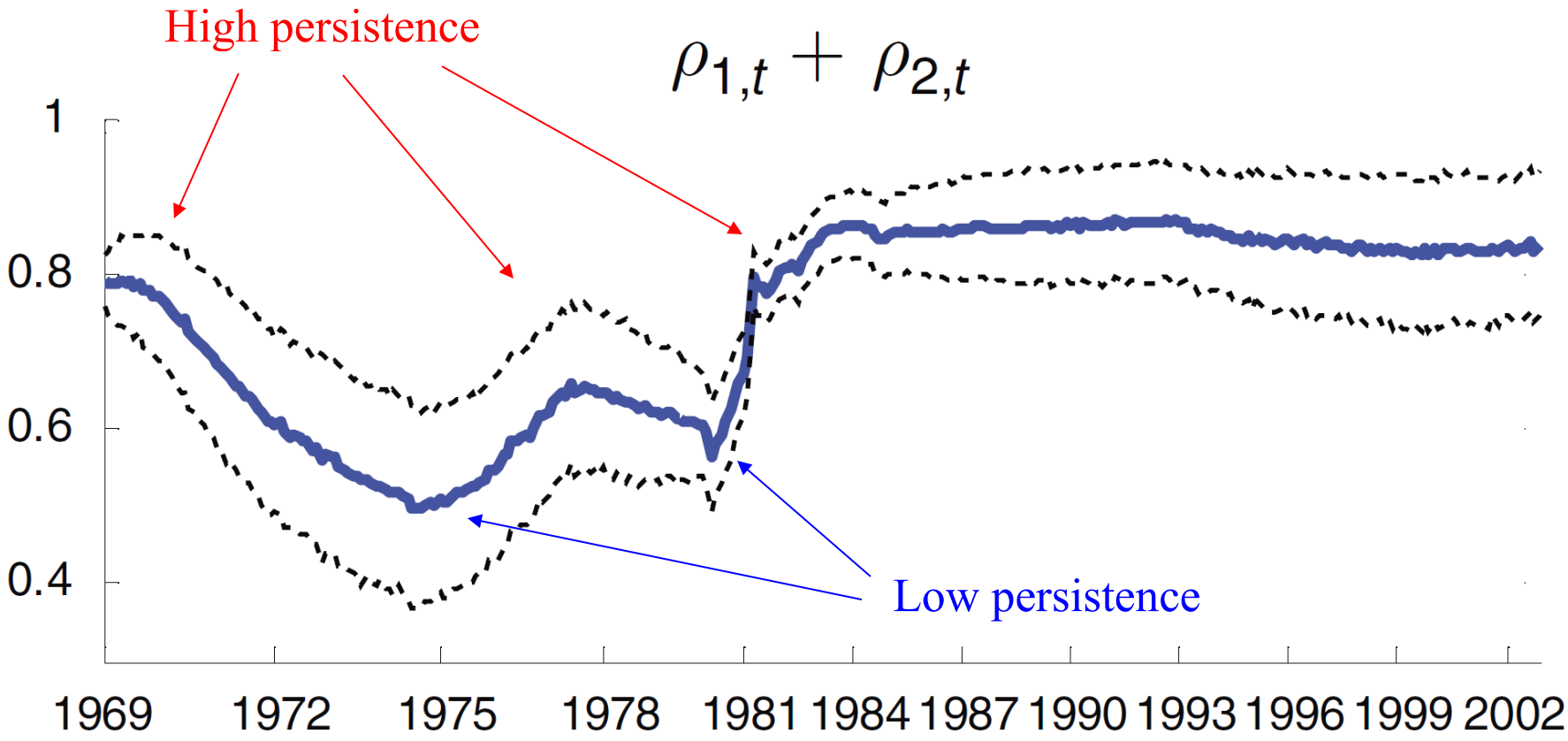
APPLICATION #2: POLICY GRADUALISM



$$i_t = \phi_{\pi,t}(E_t\pi_{t+1} - \pi_t^*) + \phi_{x,t}E_t x_t + \rho_{1,t}i_{t-1} + \rho_{2,t}i_{t-2} + \epsilon_t$$

Coibion and Gorodnichenko (AER 2012)

APPLICATION #2: POLICY GRADUALISM

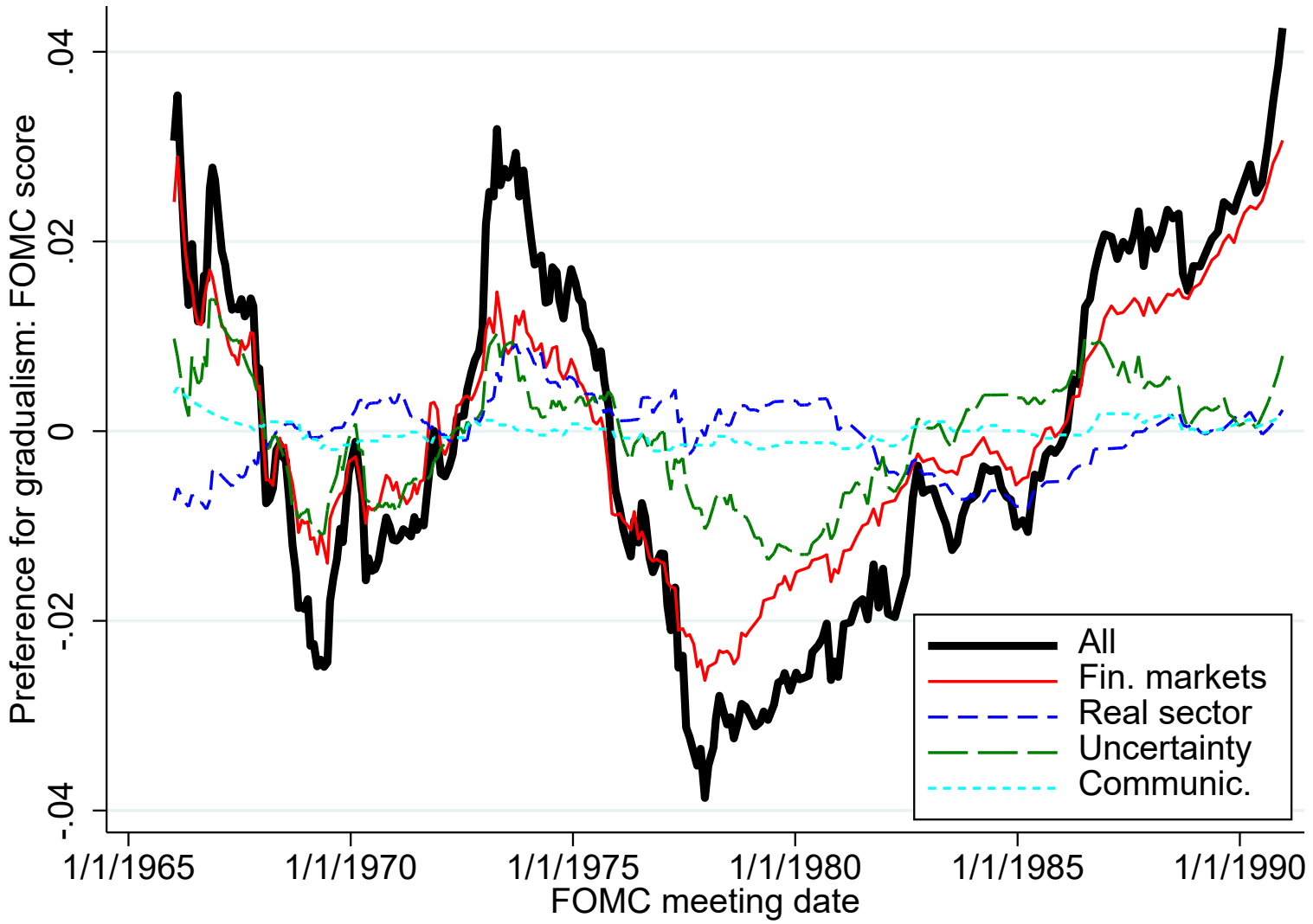


$$i_t = \phi_{\pi,t}(E_t\pi_{t+1} - \pi_t^*) + \phi_{x,t}E_t x_t + \rho_{1,t}i_{t-1} + \rho_{2,t}i_{t-2} + \epsilon_t$$

Coibion and Gorodnichenko (AER 2012)

APPLICATION #2: POLICY GRADUALISM

APPLICATION #2: POLICY GRADUALISM



APPLICATION #3: DISSENT

Monetary policy shocks can be due to the composition of voting members (their preferences) and voting outcomes (especially dissents)

APPLICATION #3: DISSENT

Monetary policy shocks can be due to the composition of voting members (their preferences) and voting outcomes (especially dissents)

- Dissent help predict future policy and stock market reactions, Ehrmann & Fratzscher (2013), Apel & Blix Grimaldi (2014)
- Personal and professional characteristics explain dissent, Havrilesky et al. (1991, 1995, …)

APPLICATION #3: DISSENT

Monetary policy shocks can be due to the composition of voting members (their preferences) and voting outcomes (especially dissents)

- Dissent help predict future policy and stock market reactions, Ehrmann & Fratzscher (2013), Apel & Blix Grimaldi (2014)
- Personal and professional characteristics explain dissent, Havrilesky et al. (1991, 1995, …)

Typical approach: use votes or simple search algorithms

APPLICATION #3: DISSENT

Monetary policy shocks can be due to the composition of voting members (their preferences) and voting outcomes (especially dissents)

- Dissent help predict future policy and stock market reactions, Ehrmann & Fratzscher (2013), Apel & Blix Grimaldi (2014)
- Personal and professional characteristics explain dissent, Havrilesky et al. (1991, 1995, …)

Typical approach: use votes or simple search algorithms

But views can be complex and vary a lot more than votes, and non-voting participants are often important drivers of policy discussion, Gerlach-Kristen (2009)

APPLICATION #3: DISSENT

Our approach: FOMC members express their policy preferences in "go around table" discussion.

Typically, they are choosing from options A/B/C and sometimes additional options D/E

APPLICATION #3: DISSENT

Our approach: FOMC members express their policy preferences in "go around table" discussion.

Typically, they are choosing from options A/B/C and sometimes additional options D/E

Example of mixed preferences:

"*I think that to some extent we should accept the shortfall [in M1], but I don't think we now have to accept it completely. My guess is that we would have a better chance of keeping interest rates roughly constrained and not going any higher if we had something between B and C.*"

- Vice Chairman Solomon, February 1981

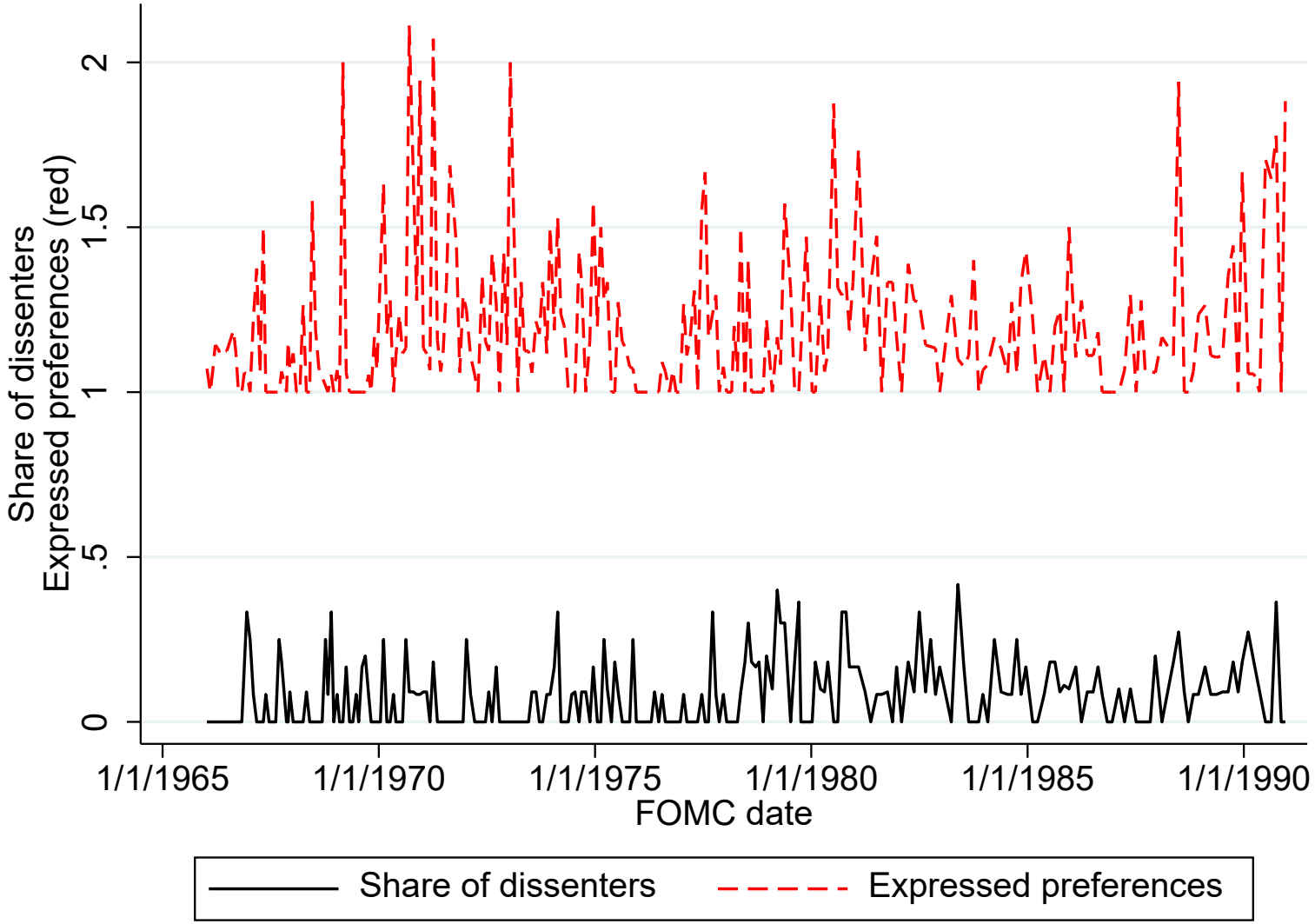
APPLICATION #3: DISSENT

# of preferred options	Voting members		
	No Dissent	Dissent	Total
1	1,602	140	1,742
2	392	24	416
3	19	2	21
4	4	0	4
Total	2,017	166	2,183

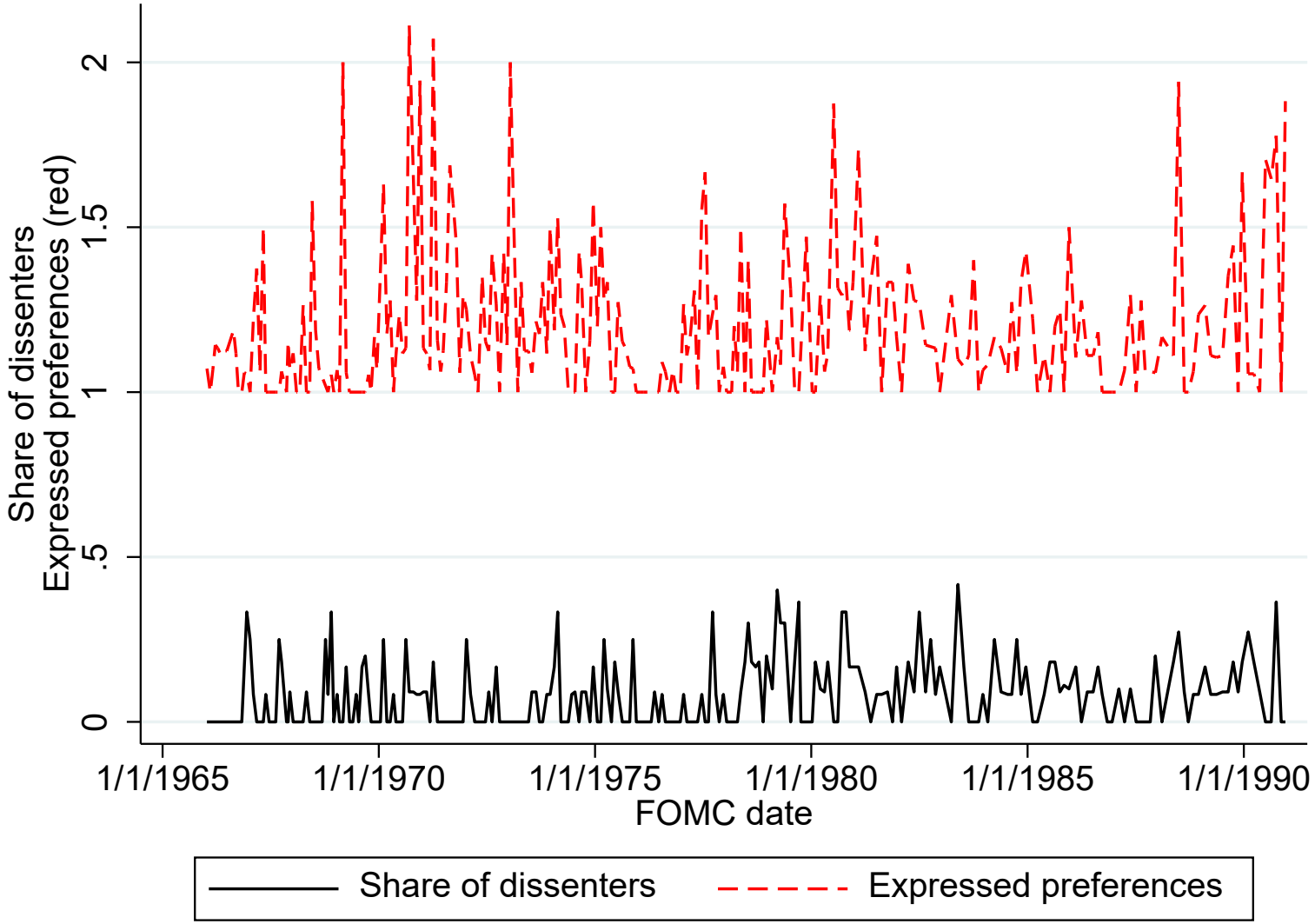
APPLICATION #3: DISSENT

# of preferred options	Voting members			Non-voting members
	No Dissent	Dissent	Total	
1	1,602	140	1,742	946
2	392	24	416	189
3	19	2	21	14
4	4	0	4	0
Total	2,017	166	2,183	1,149

APPLICATION #3: DISSENT



APPLICATION #3: DISSENT



Expressed preferences Granger-cause dissent in votes.

CONCLUDING REMARKS

- To understand how monetary policy influences the economy, we need to understand how monetary policy is done.
- While the conventional approach focuses on statistical methods to identify policy shocks, we can learn a lot more about how/why policy is set by using narrative identification.
- Applications:
  - Perceived policy trade-offs
  - Reasons for policy gradualism
  - Measurement of dissent
  - Political pressure (in progress)
  - Objectives (in progress)
  - Power networks (in progress)