How Monetary Policy Is Made: Lessons from Historical FOMC Discussions

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HOW DOES MONETARY POLICY WORK?

In theory: $r_t = \rho r_{t-1} + \phi_\pi E_t \pi_{t+1} + \phi_x E_t x_t + e_t$

- π_t = inflation
- x_t = output gap
- e_t = policy shock

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- What other variables are missing?
- What does it mean when MP deviates from this rule? What is a "shock"?

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How can we figure out how policymakers conduct MP? They tell us!

HOW DO WE DO IT?

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- We trained a platoon of RAs to extract detailed info from every transcript from 1966-1990
- 268 meetings (usually 80-100 pages each) × roughly 18 participants per meeting = 4,775 participant-meeting observations
- Every transcript was read by at least two RAs, plus another to cross-check discrepancies
- Greenspan's decision to release them sterilized the conversation (Meade & Stasavage 2008)

HOW DO WE DO IT?

We use these data to quantify important determinants of MP decisions:

- What was each participant's preferred policy?
- What was the reasoning each participant provided for their preference?
- What were the perceived tradeoffs between output/inflation?
- What outside sources, if any, were relevant for decision-making?
- How much did participants disagree?

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We use these data to better understand monetary policy rules:

- Participant-level mapping from econ conditions → discussions → policy preferences
- Importance of the perceived slope of the Phillips Curve
- Participant roles matter in aggregation

INDIVIDUAL POLICY PREFERENCES

Average of expressed numerical range for Fed Funds Rate (FFR) and money growth

- "I prefer a target Fed Funds Rate range of 7 to 8 percent"
- "I like option B in the Blue Book [which corresponds to an FFR range of 7-8 %]"
- "I agree with Governor Teeters [who preferred option B in the Blue Book]"

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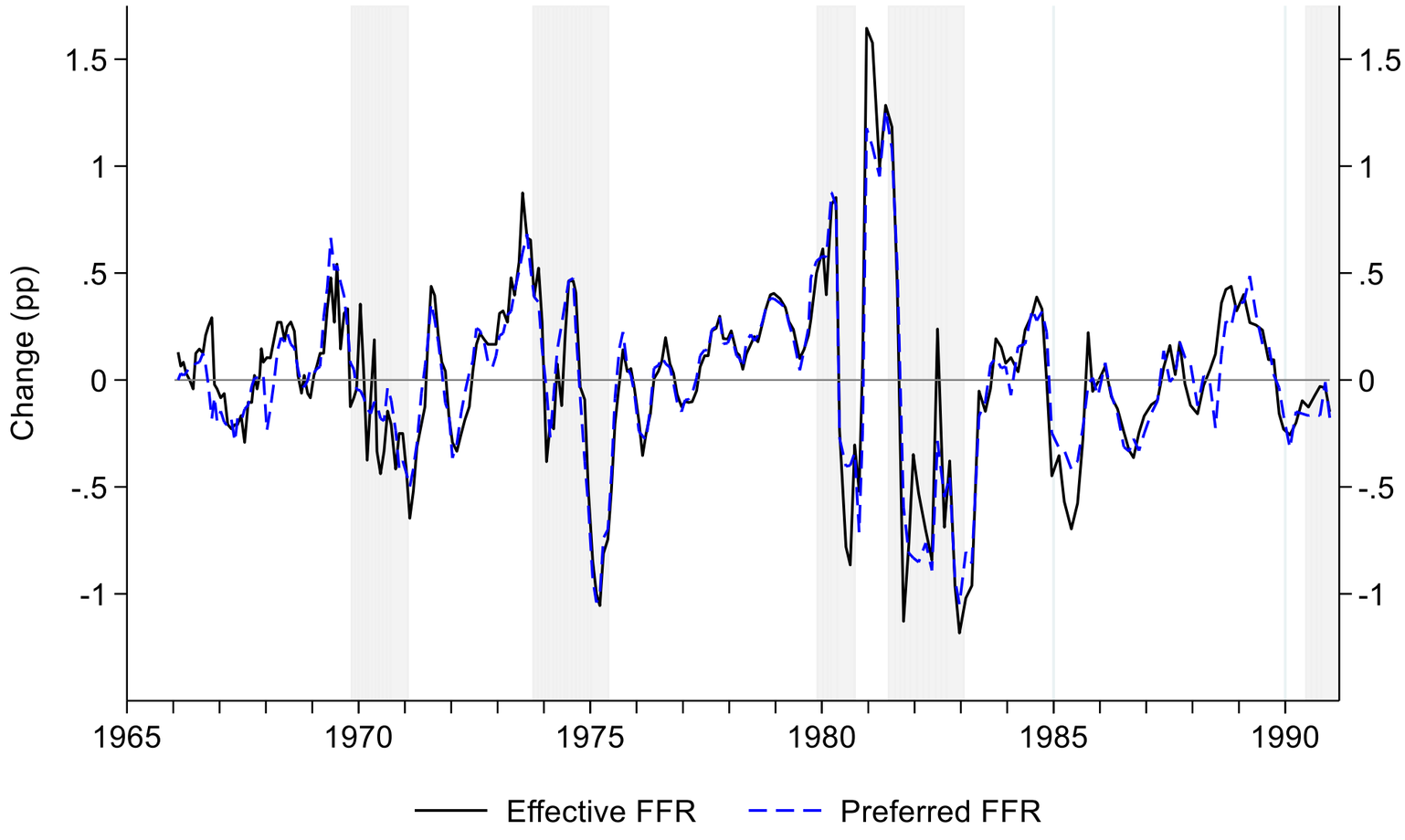
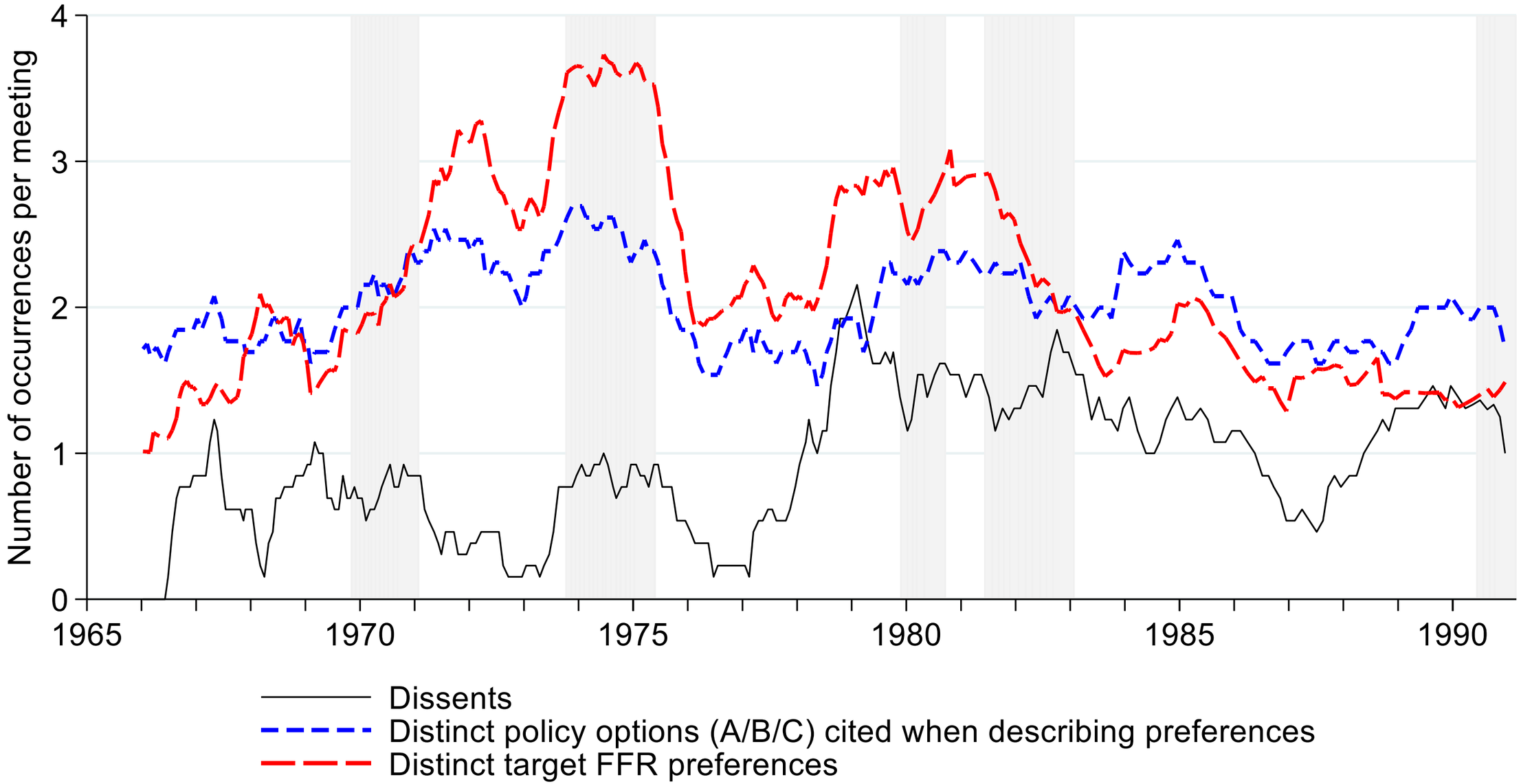
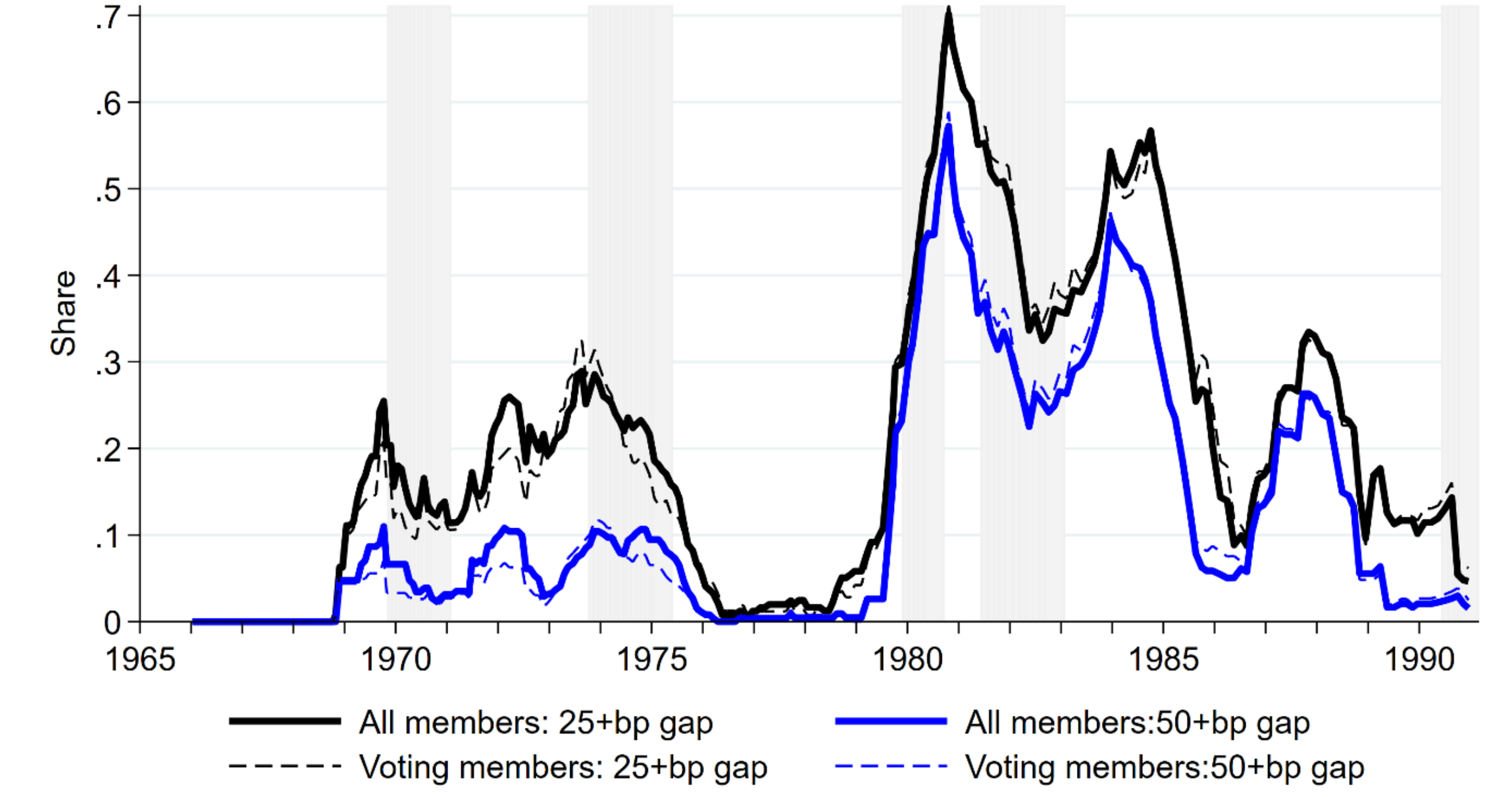


INDIVIDUAL POLICY PREFERENCES VS. DISSENT



INDIVIDUAL POLICY PREFERENCES: NOT MY POLICY!



Where does disagreement come from?

INDIVIDUAL TAYLOR RULES

Estimate: $r_{it}^{pref} = \rho_i r_{t-1} + \phi_{\pi,i} E_t \pi_{t+1} + \phi_{y,i} E_t \Delta Y_t + e_t$

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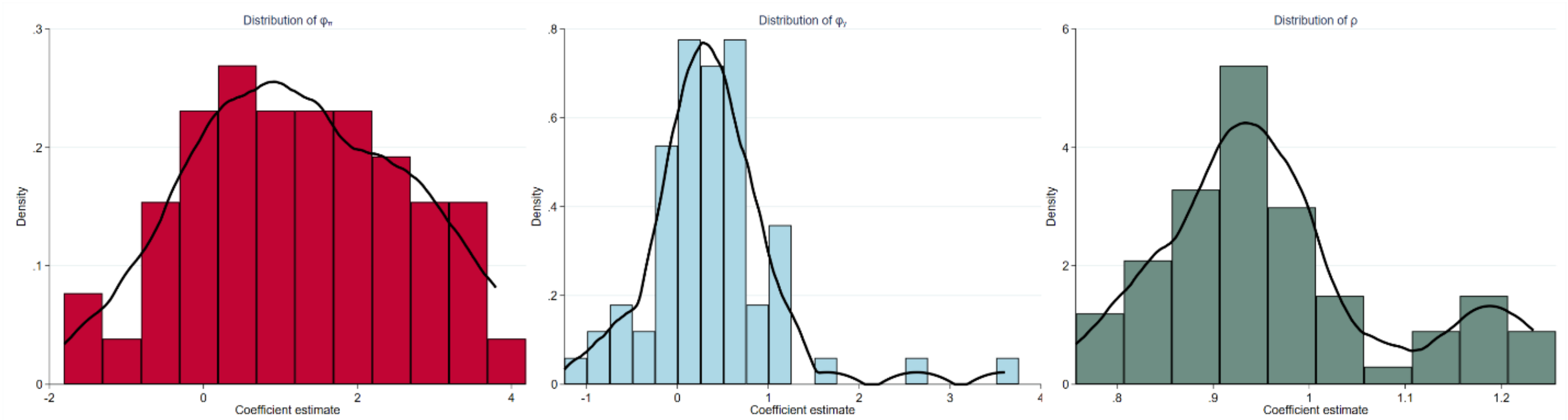
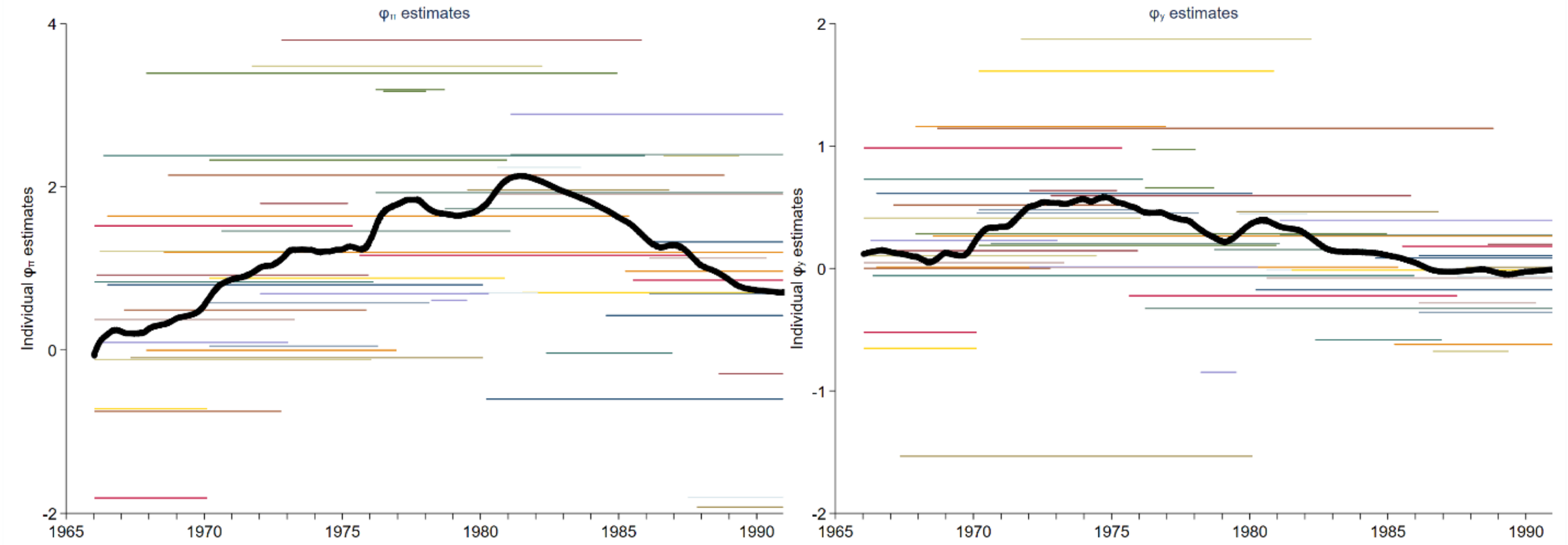


Averages are very close to estimates from aggregate data ($\rho \approx 0.9, \phi_\pi \approx 1.5, \phi_y \approx 0.25$)

But there is a lot of dispersion! About one third respond less than one-for-one to inflation

INDIVIDUAL TAYLOR RULES OVER TIME



Lots of var around mean (solid black line) of individual estimates

NARRATIVE JUSTIFICATIONS FOR POLICY

Capture the reasoning behind each participant's policy preference

- Include inflation, output, uncertainty, financial stability, international, and other
- Record +1/‑1 for each justification of looser/tighter policy (0 otherwise)
- "Inflation is too high, we really need to get it down..." → ‑1 for inflation
- "...but too much tightening may disrupt financial markets" → +1 for financial stability

NARRATIVE JUSTIFICATIONS FOR POLICY

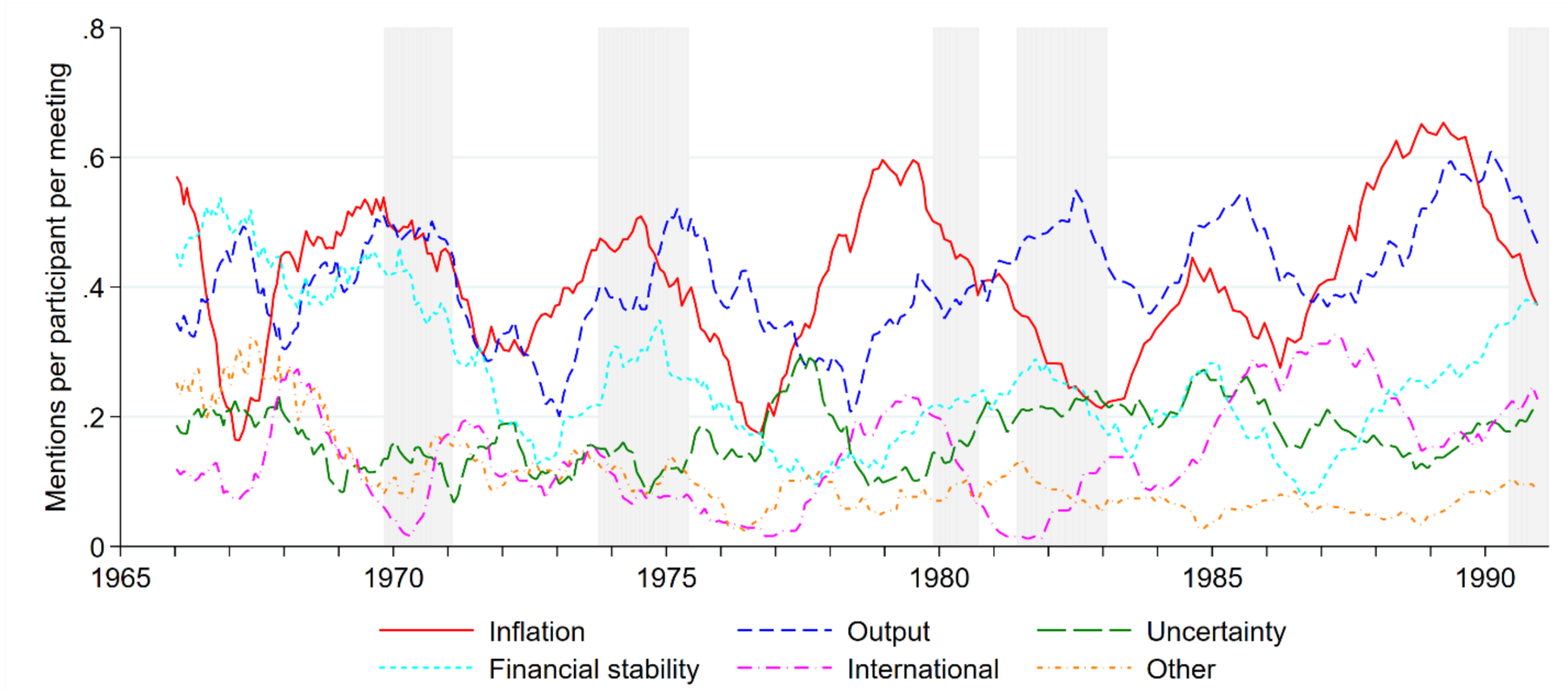
January 1980, SF President Balles: "*it seems to me that inflation does remain the key threat to the longer-term health of the economy… without going into more detail, I too would come out in favor of alternative C.*"

[we score as a -1 for inflationary intention (calls for tightening)]

June 1976, Vice Chair Volcker: "*And that leaves me with somewhat opposite prescriptions of wanting to boost business investment but at the same time wanting to be very cautious on the inflationary side, which leaves me right in the middle where the rest of you have been.*"

[we score as a -1 for inflationary intention (calls for tightening) and a +1 for output intention (calls for loosening)]

NARRATIVE JUSTIFICATIONS FOR POLICY



Inflation ≈ tightening; Output ≈ loosening

A lot of comovement between inflation vs. output justification

JUSTIFICATIONS SUPPORT POLICY PREFERENCES

DEPENDENT VARIABLE: INDIVIDUAL PREFERRED FFR

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Inflation preference	-0.258***						-0.154***	-0.077***
	(0.034)						(0.030)	(0.016)
Output preference		-0.313***					-0.217***	-0.087***
		(0.055)					(0.051)	(0.018)
Financial stability preference			-0.346***				-0.190***	-0.091***
			(0.041)				(0.032)	(0.024)
International preference				-0.291***			-0.123**	-0.045*
				(0.057)			(0.048)	(0.025)
Uncertainty preference					-0.358***		-0.166***	-0.025
					(0.066)		(0.063)	(0.036)
Other preference						-0.357***	-0.233***	-0.133***
						(0.056)	(0.056)	(0.045)
Participant FE	N	N	N	N	N	N	N	Y
Meeting FE	N	N	N	N	N	N	N	Y
Observations	3,008	3,008	3,008	3,008	3,008	3,008	3,008	3,003
R^2	0.966	0.966	0.965	0.965	0.965	0.965	0.968	0.041

Higher preference values → Looser policy → Lower FFR preference

ECONOMIC CONDITIONS MATTER FOR JUSTIFICATIONS…

DEPENDENT VARIABLE: INFLATION/OUTPUT JUSTIFICATION FOR LOOSER/TIGHTER POLICY (+1/-1)

	Inflation						Output					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Expected RGDP growth	0.012					0.003	-0.022					-0.034**
	(0.012)					(0.015)	(0.014)					(0.015)
Current RGDP growth		-0.007				-0.009		-0.021**				-0.010
		(0.008)				(0.008)		(0.009)				(0.008)
Expected inflation			-0.055***			-0.054***			-0.043			-0.060**
			(0.019)			(0.020)			(0.026)			(0.028)
Current inflation				-0.015		-0.012				0.009		-0.001
				(0.015)		(0.018)				(0.016)		(0.013)
Unemployment rate					0.080	0.049					0.351***	0.329***
					(0.056)	(0.057)					(0.063)	(0.062)
Observations	3,900	3,900	3,900	3,900	4,712	3,900	3,900	3,900	3,900	3,900	4,712	3,900
R^2	0.001	0.001	0.004	0.001	0.001	0.007	0.002	0.007	0.002	0.000	0.028	0.040

High inflation/output → Lower preference values → Tighter policy preference

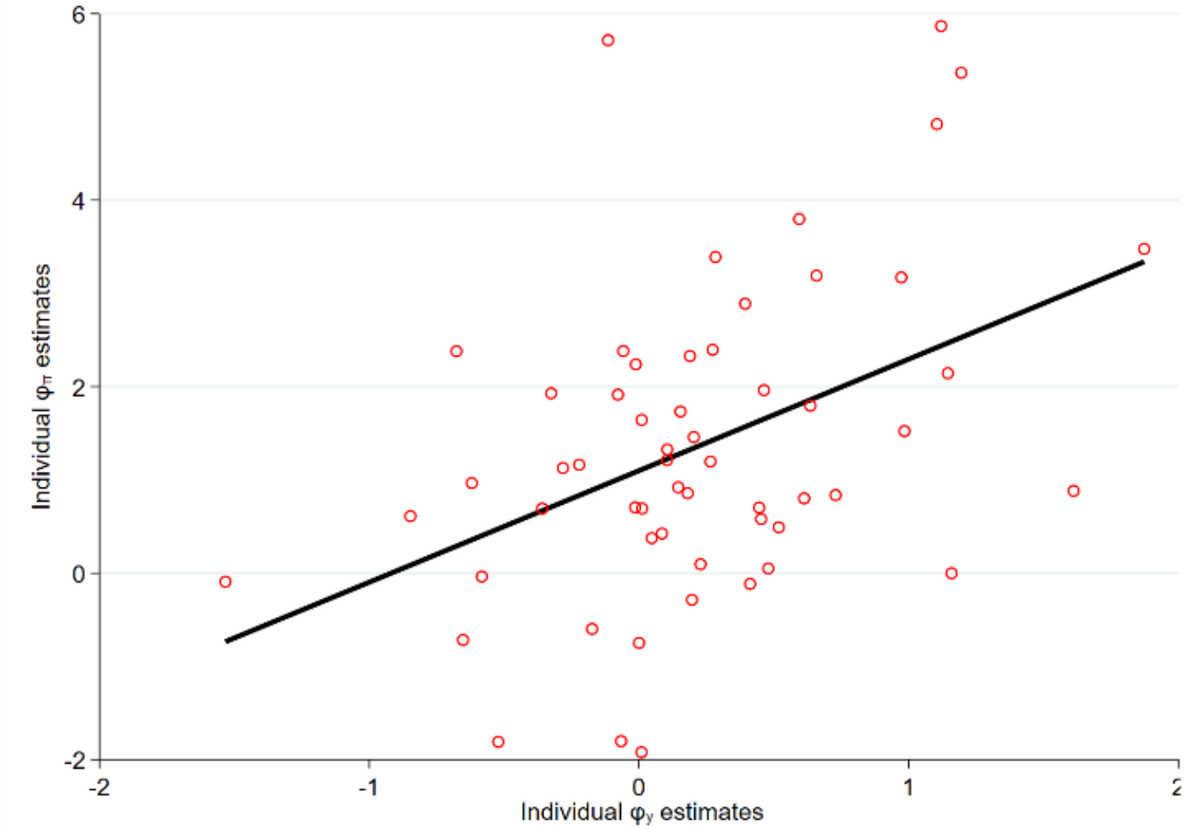
…BUT DO NOT FULLY EXPLAIN THEM

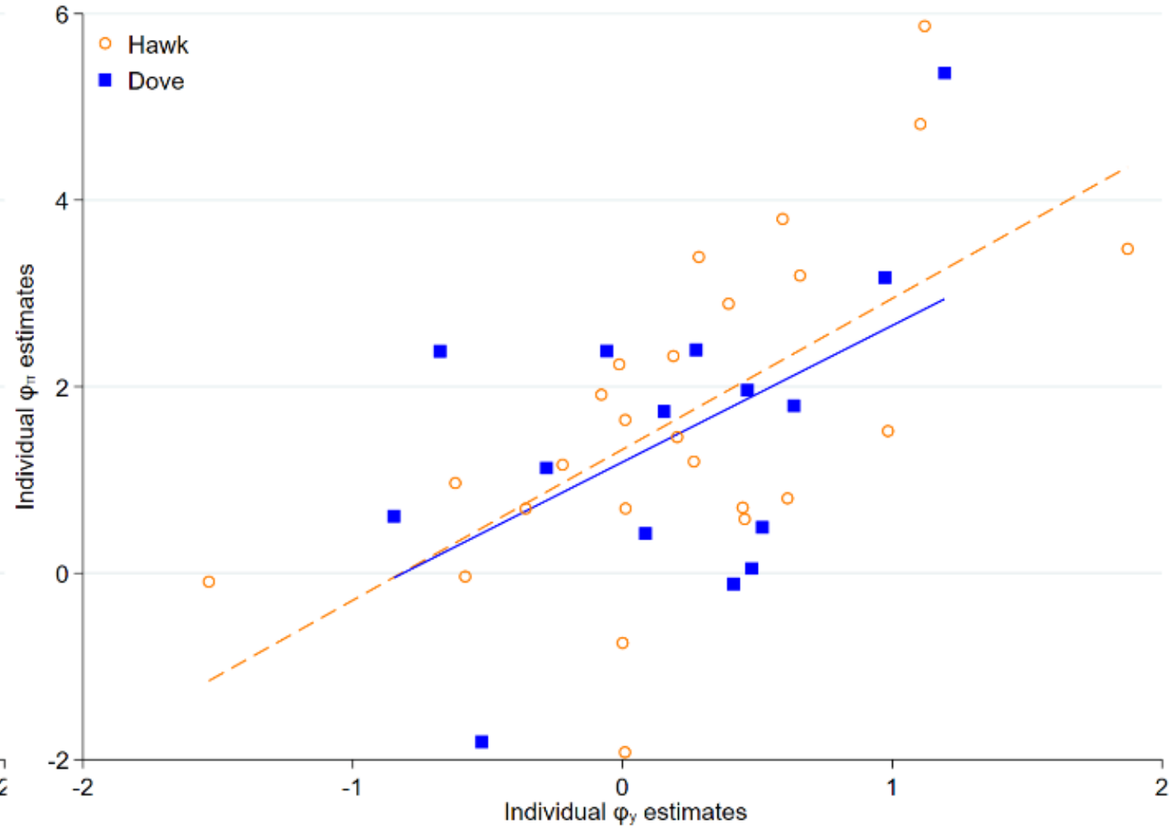
DEPENDENT VARIABLE: INDIVIDUAL PREFERRED FFR

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Previous FFR target	0.934***	0.934***	0.963***	0.966***	0.938***	0.942***		
	(0.024)	(0.026)	(0.030)	(0.031)	(0.030)	(0.030)		
Output preference			-0.309***	-0.279***	-0.242***	-0.220***	-0.120***	-0.090***
			(0.055)	(0.057)	(0.040)	(0.038)	(0.020)	(0.017)
Current RGDP growth			0.007	0.008	0.010	0.011		
			(0.021)	(0.021)	(0.019)	(0.018)		
Expected RGDP growth			-0.014	-0.012	-0.004	0.011		
			(0.027)	(0.026)	(0.024)	(0.023)		
Inflation preference	-0.226***	-0.189***			-0.167***	-0.139***	-0.117***	-0.080***
	(0.029)	(0.028)			(0.028)	(0.028)	(0.016)	(0.015)
Current inflation	-0.068	-0.067			-0.054	-0.049		
	(0.047)	(0.045)			(0.047)	(0.043)		
Expected inflation	0.159***	0.168***			0.148**	0.164***		
	(0.060)	(0.062)			(0.061)	(0.063)		
Participant FE	N	Y	N	Y	N	Y	N	Y
Meeting FE	N	N	N	N	N	N	Y	Y
Observations	3,003	3,003	3,003	3,003	3,003	3,003	3,406	3,404
R^2	0.969	0.963	0.967	0.961	0.971	0.965	0.052	0.025

Many different ways to read the same tea leaves

INDIVIDUAL TAYLOR RULES: ϕ_π VS. ϕ_y





ϕ_y and ϕ_π are very similar on average across hawks and doves (Istrefi and Bordo 2023):

Hawks: $\phi_\pi = 1.69$, ϕ_y=0.25

Doves: $\phi_\pi = 1.60$, ϕ_y=0.26

HAWKS AND DOVES: NOT SO DIFFERENT AFTER ALL

DEPENDENT VARIABLE: INDIVIDUAL PREFERRED FFR

	(1)	(2)	(3)	(4)	(5)	(6)
Hawk	0.044*	0.012	0.016	0.014	-0.003	0.005
	(0.025)	(0.023)	(0.027)	(0.015)	(0.015)	(0.019)
Dove	-0.150***	-0.091***	-0.073**	-0.139***	-0.109***	-0.083***
	(0.027)	(0.027)	(0.032)	(0.020)	(0.019)	(0.020)
Inflation preference		-0.173***	-0.180***		-0.113***	-0.142***
		(0.026)	(0.037)		(0.015)	(0.022)
Output preference		-0.276***	-0.251***		-0.117***	-0.114***
		(0.038)	(0.046)		(0.019)	(0.024)
Hawk × inflation preference			0.004			0.035
			(0.051)			(0.031)
Dove × inflation preference			0.029			0.077*
			(0.064)			(0.042)
Hawk × output preference			-0.024			0.024
			(0.053)			(0.030)
Dove × output preference			-0.072			-0.059
			(0.060)			(0.037)
Meeting FE	N	N	N	Y	Y	Y
Observations	3,008	3,008	3,008	3,003	3,003	3,003
R^2	0.015	0.094	0.095	0.026	0.068	0.070

Conditional on talking about inflation, hawks and doves have same responses

POLICY TRADEOFFS

Quantify perceived tradeoff between real activity & prices: $\%\Delta M = \%\Delta Q + \%\Delta P$

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Score 1-5; higher values $\Longrightarrow$ more effect on P ($\Longrightarrow$ flatter perceived Phillips Curve)

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Score 1-5; higher values ⟹ more effect on P (⟹ flatter perceived Phillips Curve)

"...given the generally low rate of resource utilization, an increase in demands stemming from a monetary expansion would have almost no inflationary effect in the short run; the impact would be almost entirely on physical activity."
Jan 1975 (score 1)

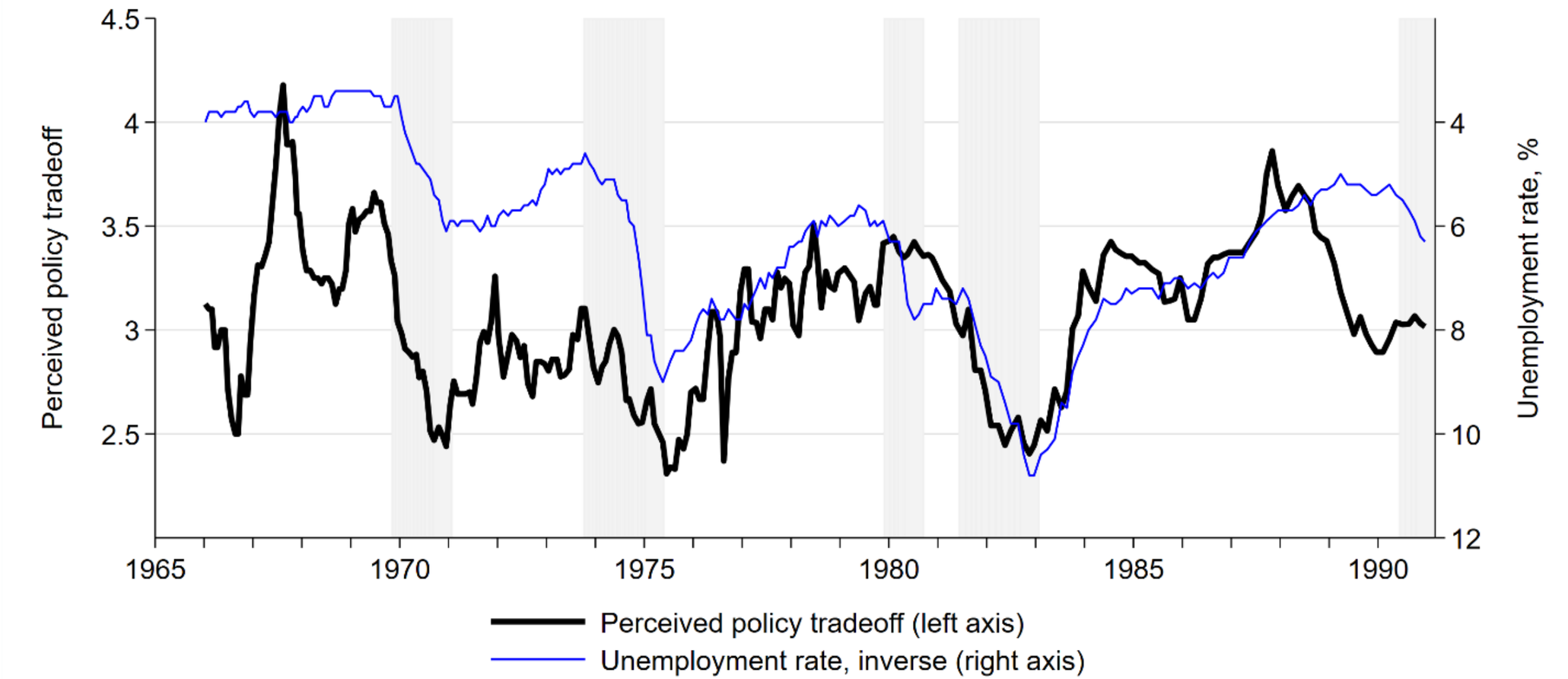
"...In his judgment that would have only a modest effect on prices--there would be slightly less slowing in the advance of the GNP deflator--but it would have a significant impact on the general economic climate and on the rate of growth in real GNP" July 1970 (score 2)

"I don't think we can do anything that will affect [GDP] very much very soon. But monetary policy certainly can affect expectations and prices." April 1979 (score 4)

POLICY TRADEOFFS

Quantify perceived tradeoff between real activity & prices: $\%\Delta M = \%\Delta Q + \%\Delta P$

Score 1-5; higher values ⟹ more effect on P (⟹ flatter perceived Phillips Curve)



Time-varying Phillips Curve!

POLICY TRADEOFFS DRIVE JUSTIFICATIONS

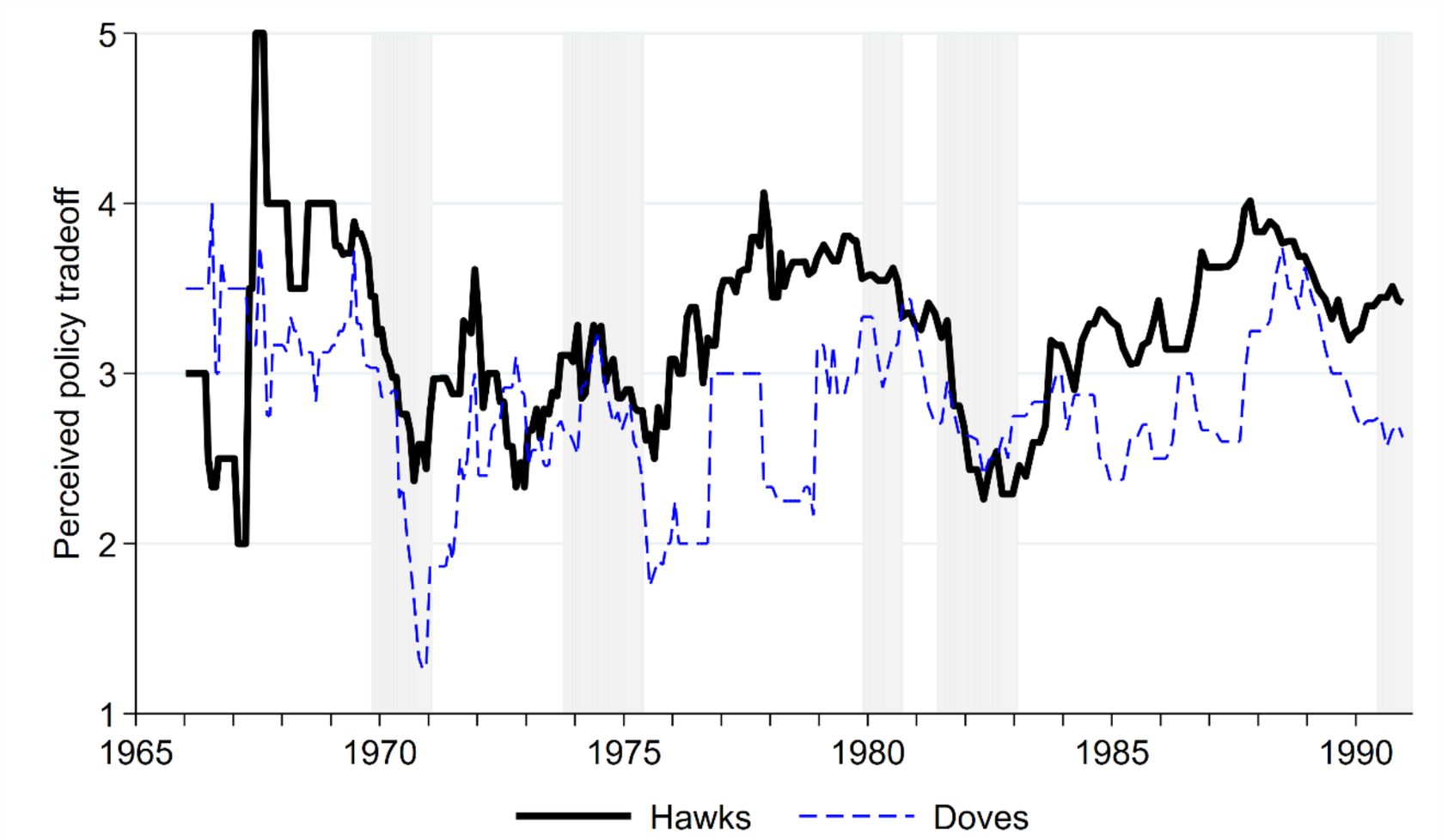
DEPENDENT VARIABLE: JUSTIFICATION FOR POLICY (COUNT)

	Inflation				Output			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Perceived tradeoff	0.093***	0.073***	0.063***	0.024	-0.109***	-0.095***	-0.102***	-0.092***
	(0.022)	(0.026)	(0.024)	(0.025)	(0.023)	(0.021)	(0.025)	(0.024)
Participant FE	N	Y	N	Y	N	Y	N	Y
Meeting FE	N	N	Y	Y	N	N	Y	Y
Observations	588	583	518	513	588	583	518	513
R^2	0.038	0.021	0.018	0.002	0.057	0.040	0.049	0.036

	Financial Stability				International			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Perceived tradeoff	-0.005	-0.003	-0.020	-0.022	0.015	-0.004	0.016	-0.010
	(0.013)	(0.016)	(0.016)	(0.018)	(0.011)	(0.013)	(0.014)	(0.017)
Participant FE	N	Y	N	Y	N	Y	N	Y
Meeting FE	N	N	Y	Y	N	N	Y	Y
Observations	588	583	518	513	588	583	518	513
R^2	0.000	0.000	0.003	0.004	0.003	0.000	0.003	0.001

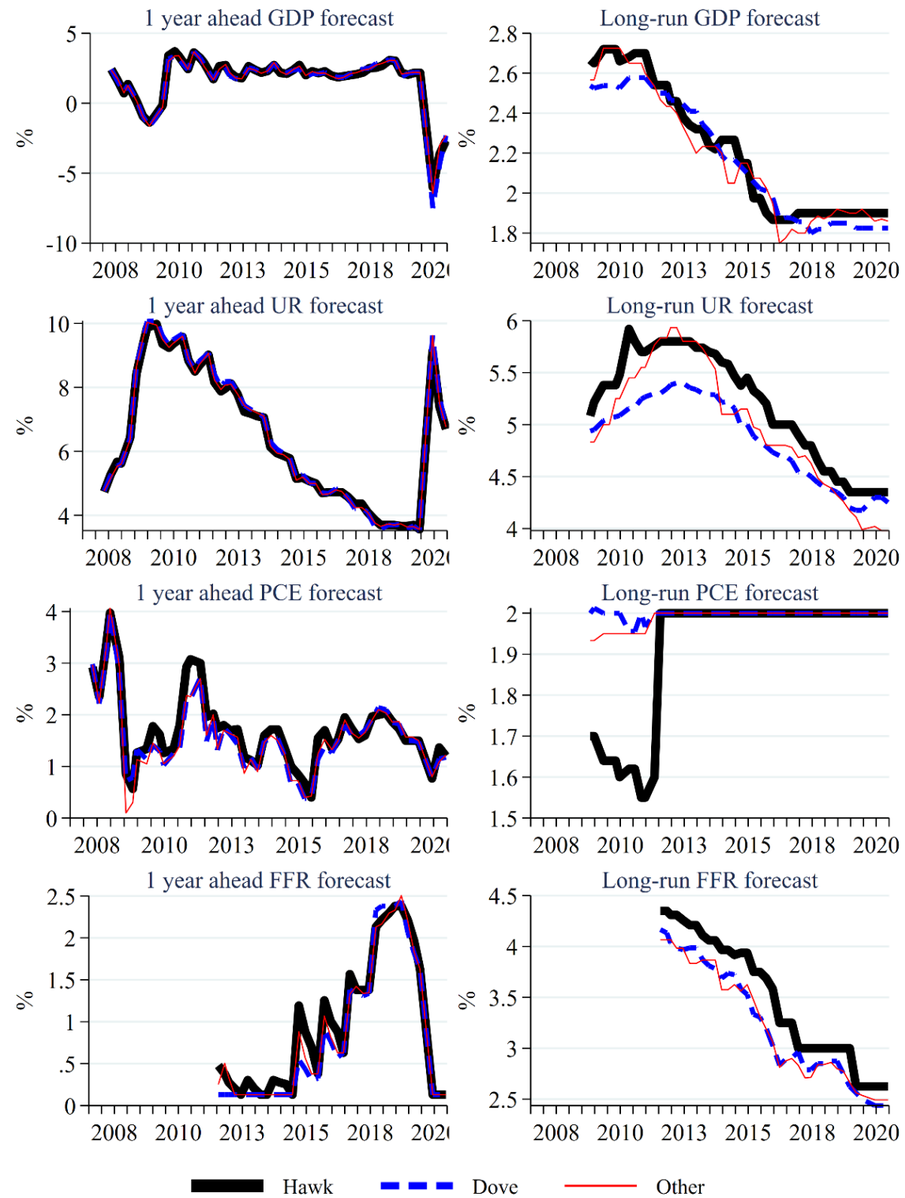
Perceived tradeoffs influence (inflation or output) justifications

HAWKS AND DOVES PERCEIVE DIFFERENT TRADEOFFS



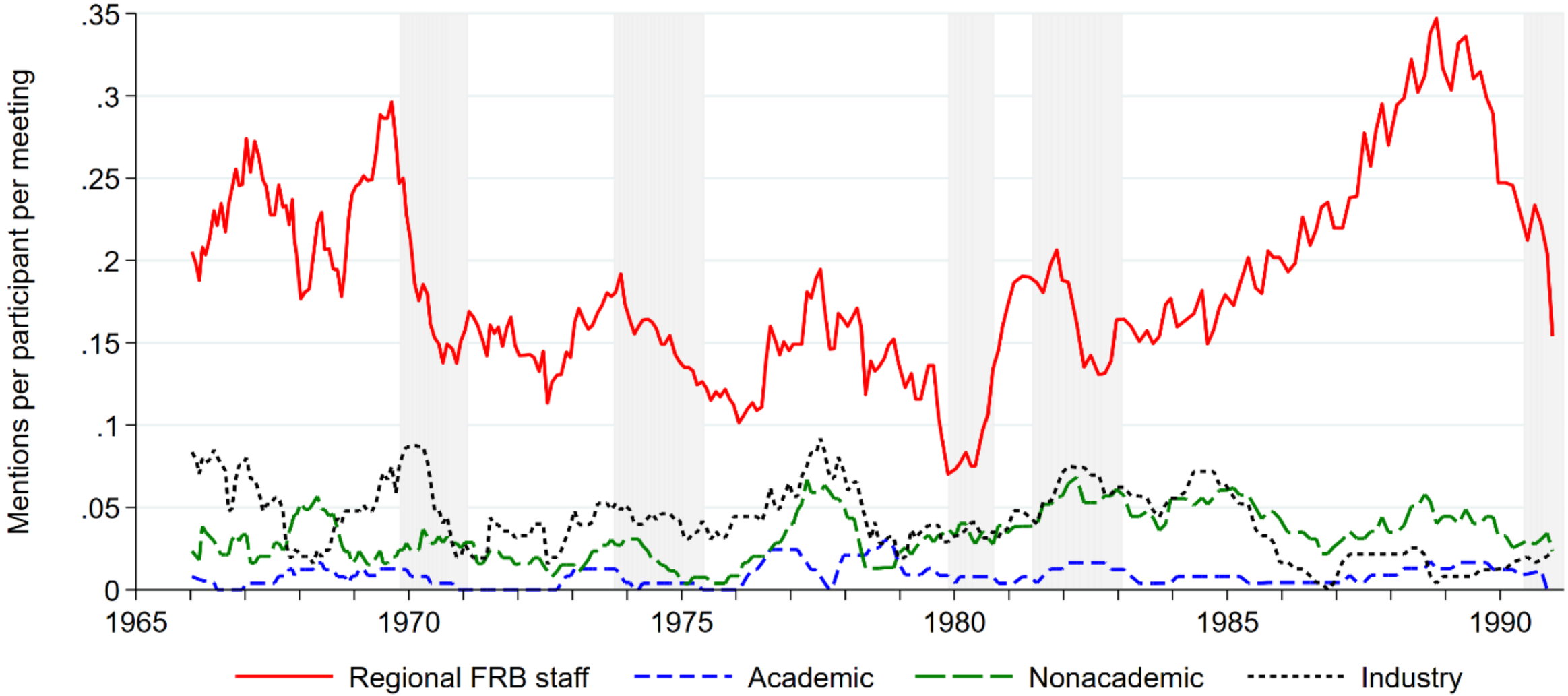
Easier to justify tightening if you don't think it will restrain activity

LONG-RUN OUTLOOK DRIVES PERCEIVED TRADEOFFS

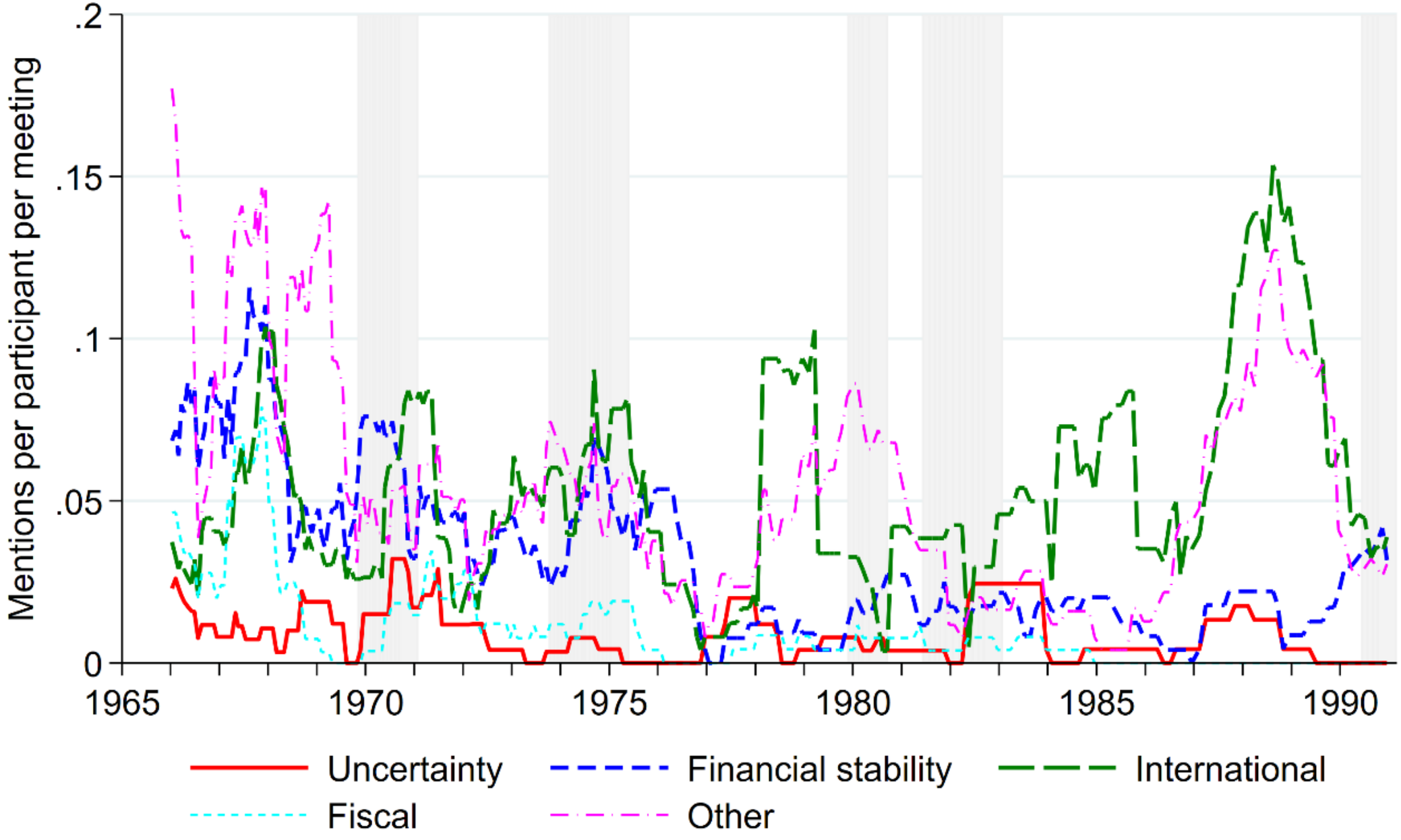


Link Hawk-Dove to Summary of Economic Projections: Short-run: No. Long-run: Yes.

CITATIONS


Mentions per participant per meeting
.35
.3
.25
.2
.15
.1
.05
0
1965
1970
1975
1980
1985
1990
Regional FRB staff
Academic
Nonacademic
Industry

OBJECTIVES


Mentions per participant per meeting
.2
.15
.1
.05
0
1965
1970
1975
1980
1985
1990
Uncertainty
Financial stability
International
Fiscal
Other

GRADUALISM

Policy changes can be rapid (-1) or gradual (+1).

February 1973, Gov. Morris: "*He 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.*" [+1 gradualism due to uncertainty about the economy]

February 1973, Chairman Burns: "*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 in 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.*"
[-1 gradualism due to financial market speculation]

GRADUALISM

Policy changes can be rapid (-1) or gradual (+1).

Motivation in terms of five categories:

(i) **Firm/Household Reactions**—the pace motivated by anticipated responses of households and non-financial firms;

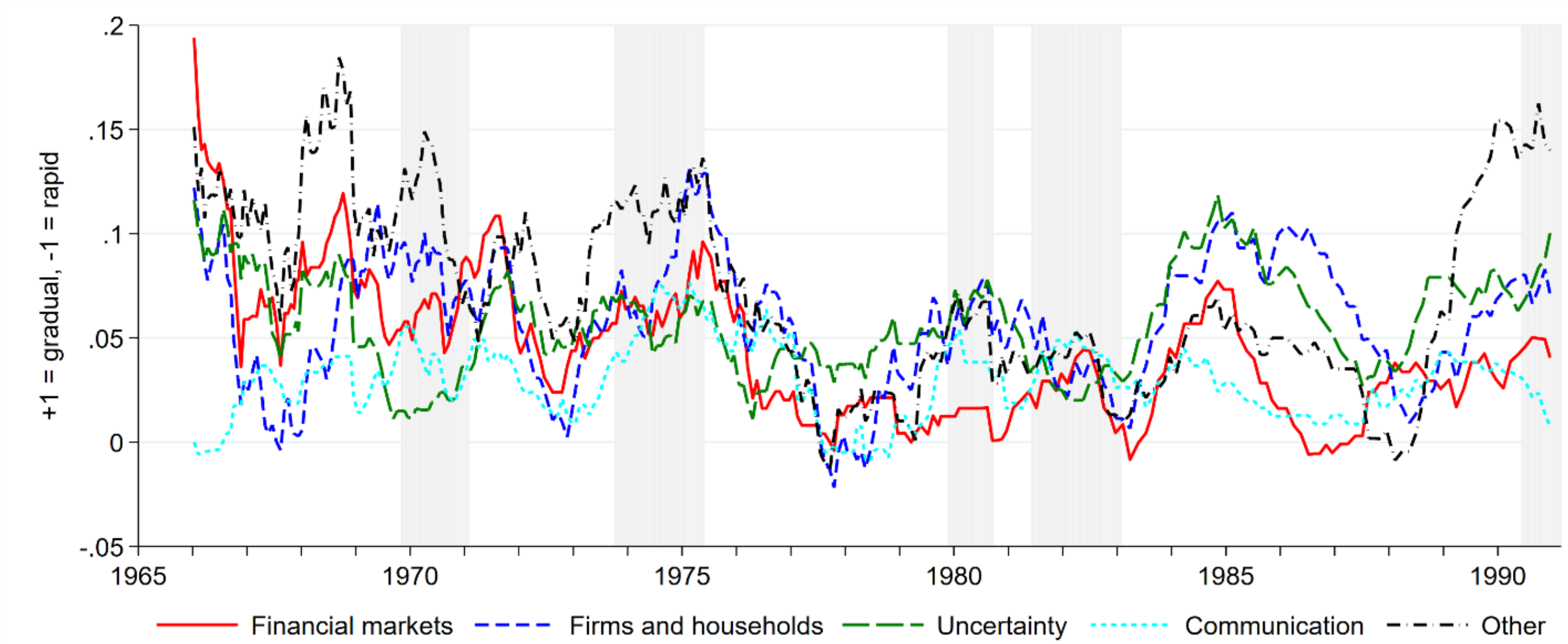
(ii) **Financial Market Reactions**—the pace motivated by potential reactions within the financial sector;

(iii) **Uncertainty**—the pace motivated by existing economic or financial uncertainty, or by the aim to avoid generating additional uncertainty;

(iv) **Communications**—the pace motivated by the necessity to clearly communicate the Fed's policy stance;

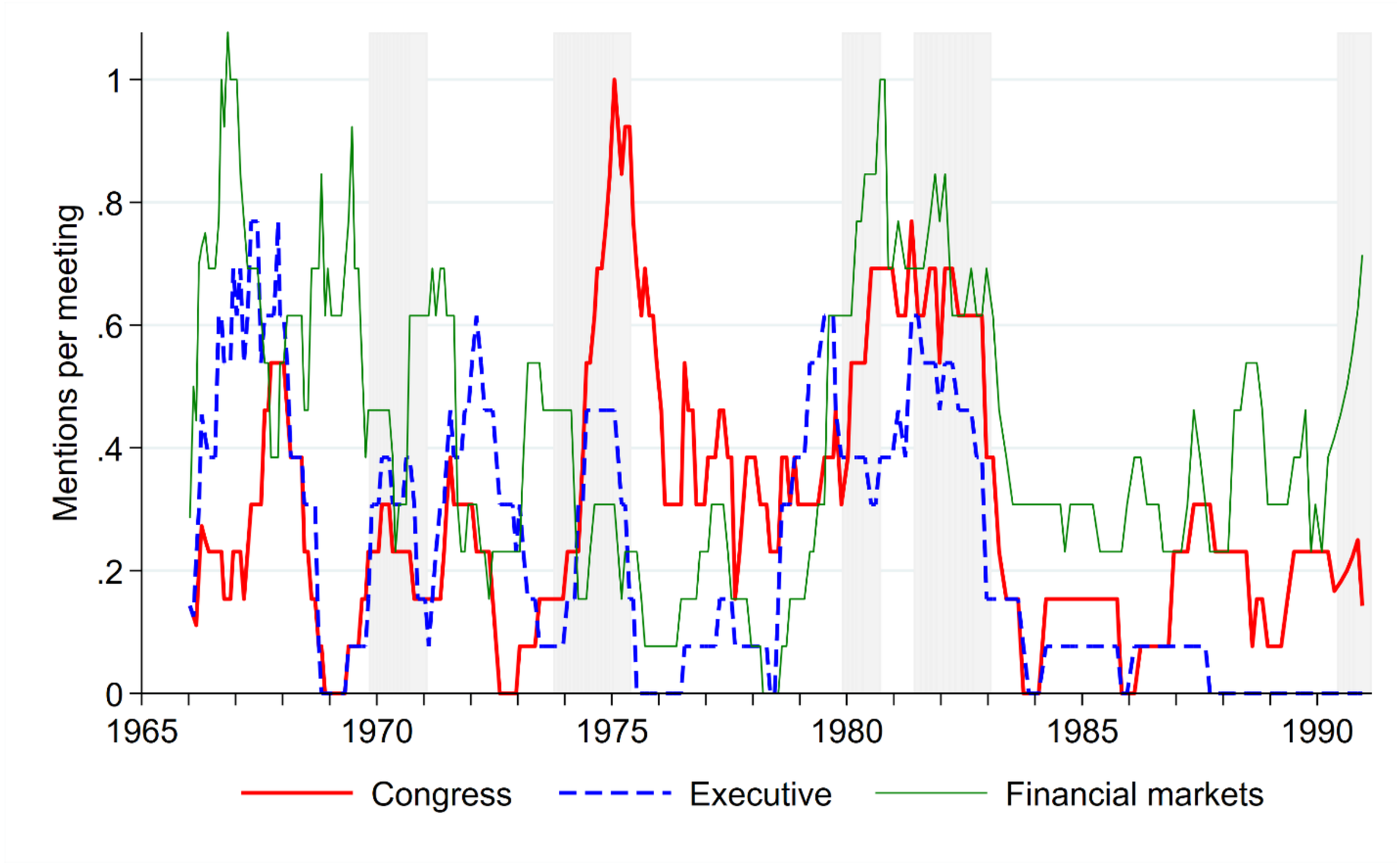
(v) **Other**—the pace motivated by reasons not captured by the categories above.

GRADUALISM



Justifications for this changing pace of adjustment were broad-based

External pressure



Financial markets are usually more important than President or Congress.

WHAT EXPLAINS DISAGREEMENT

$$FFR_{it}^{pref} = \boldsymbol{X}_{i,A}\boldsymbol{\beta}_A + \boldsymbol{X}_{i,B}\boldsymbol{\beta}_B + error$$

WHAT EXPLAINS DISAGREEMENT

$$FFR_{it}^{pref} = \underbrace{\boldsymbol{X}_{i,A}\boldsymbol{\beta}_A}_{R_A^2} + \underbrace{\boldsymbol{X}_{i,B}\boldsymbol{\beta}_B}_{R_B^2} + error$$

WHAT EXPLAINS DISAGREEMENT

$$FFR_{it}^{pref} = \underbrace{\boldsymbol{X}_{i,A}\boldsymbol{\beta}_A}_{R_A^2} + \underbrace{\boldsymbol{X}_{i,B}\boldsymbol{\beta}_B}_{R_B^2} + error$$

How to allocate total R^2 into R_A^2 and R_B^2 when $\boldsymbol{X}_{i,A}$ **and** $\boldsymbol{X}_{i,B}$ **are correlated** so that

- The allocation is not sensitive to ordering
- The allocation adds up to R^2

WHAT EXPLAINS DISAGREEMENT

$$FFR_{it}^{pref} = \underbrace{\boldsymbol{X}_{i,A}\boldsymbol{\beta}_A}_{R_A^2} + \underbrace{\boldsymbol{X}_{i,B}\boldsymbol{\beta}_B}_{R_B^2} + error$$

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A classic option: Shapley (1953) decomposition

Report shares: R_A^2/R^2, R_B^2/R^2

WHAT EXPLAINS DISAGREEMENT: SHAPLEY VALUE DECOMP

Justification	0.5804
GB Forecast	0.3545
Objective	0.0310
Influence	0.0012
Tradeoff	0.0330

WHAT EXPLAINS DISAGREEMENT: SHAPLEY VALUE DECOMP

Justification	0.5804	0.2228
GB Forecast	0.3545	0.1266
Objective	0.0310	0.0059
Influence	0.0012	0.0009
Tradeoff	0.0330	0.0180
Justification × GB Forecast		0.1647
Justification × Objective		0.0245
Justification × Influence		0.0302
Justification × Tradeoff		0.1977
GB Forecast × Objective		0.0363
GB Forecast × Influence		0.0203
GB Forecast × Tradeoff		0.1291
Objective × Influence		0.0053
Objective × Tradeoff		0.0156
Influence × Tradeoff		0.0020

HOW TO MAKE A DECISION?

Policymakers with different views come into the meeting and agree to a decision as a committee, typically without dissent even in the presence of disagreement.

- How do these decisions get made and what determines which viewpoints ultimately win the day?
- For those whose views differ significantly from the committee's decision, what determines if they decide to dissent?
- What is the passthrough from preferred choices to actual decisions?

PASSTHROUGH

	Dependent variable: Actual Change in FFR
Pref ΔFFR (Chair)	0.817***
	(0.204)
Pref ΔFFR × FRB non-voter	-0.478**
	(0.191)
Pref ΔFFR × FRB voter	-0.429**
	(0.167)
Pref ΔFFR × FRB governor	-0.397***
	(0.142)
Observations	3,008
R-squared	0.222

Chairs have large passthrough from preferences to actual policies

CRIME (DISSENT) AND PUNISHMENT

	Dependent variable: Actual Change in FFR
Pref ΔFFR	0.424***
	(0.078)
Pref $\Delta FFR \times$ Count dissent (4 meetings)	-0.144*
	(0.075)
Observations	3,008
R-squared	0.217

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- This likely stems from different beliefs about the natural rate of unemployment and the productive capacity of the economy, so that participants view the economy as being on different points along a nonlinear Phillips curve.
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- $\Longrightarrow$ they perceive that policy choices would have different implications for inflation and output, accounting for some of the variation if their policy preference
- The Chair shapes policy; dissent is costly in terms of influencing policy.