

The Friedman Forces in the Phillips Curve

Discussion prepared for 50th
anniversary of Milton Friedman's 1968
presidential address at the AEA

Emi Nakamura
Columbia University

How did Friedman change our thinking?

Pre-Friedman

- Main focus on inflation-unemployment trade-off
- Expectations were “caveat” to Samuelson-Solow analysis
- IS-LM gives at best a secondary role to expectations

Post-Friedman

- Expectations were *central* to the theory

The Centrality of Expectations

	Friedman	Rational Expectations Revolution	Counter-revolution
Expectations	Adaptive?	Rational	Sticky information Rational Inattention Behavioral
	Friedman, Phelps	Lucas, Sargent, Wallace, Barro	Mankiw-Reis, Sims, Woodford, Malmendier-Nagel

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Post-Friedman

- Expectations were *central* to the theory
- Long-run outcomes invariant to monetary policy (“natural rate” hypothesis)

Contrasting Views on Natural Rate Hypothesis

- Blanchard (2017):
 - Surveys evidence on growth surrounding disinflations.
 - Long-term effects of unemployment suggestive of hysteresis effects
- Hall-Sargent:
 - “Hypothesis...has prevailed over the last half-century based on the broad sweep of evidence from many economies over many years.”
 - Lucas (1973) gave “strong support” based on data

What did Lucas (1973) Do?

- Compared Argentina and Paraguay to 16 low inflation volatility countries
 - Real growth no hither in Argentina and Paraguay
 - Nominal growth has less explanatory power for real growth
- But hyperinflations are a blunt test
- Monetary policy is not the only thing different in Argentina and Paraguay
- Our standards of empirical proof have risen

Blanchard (2017)

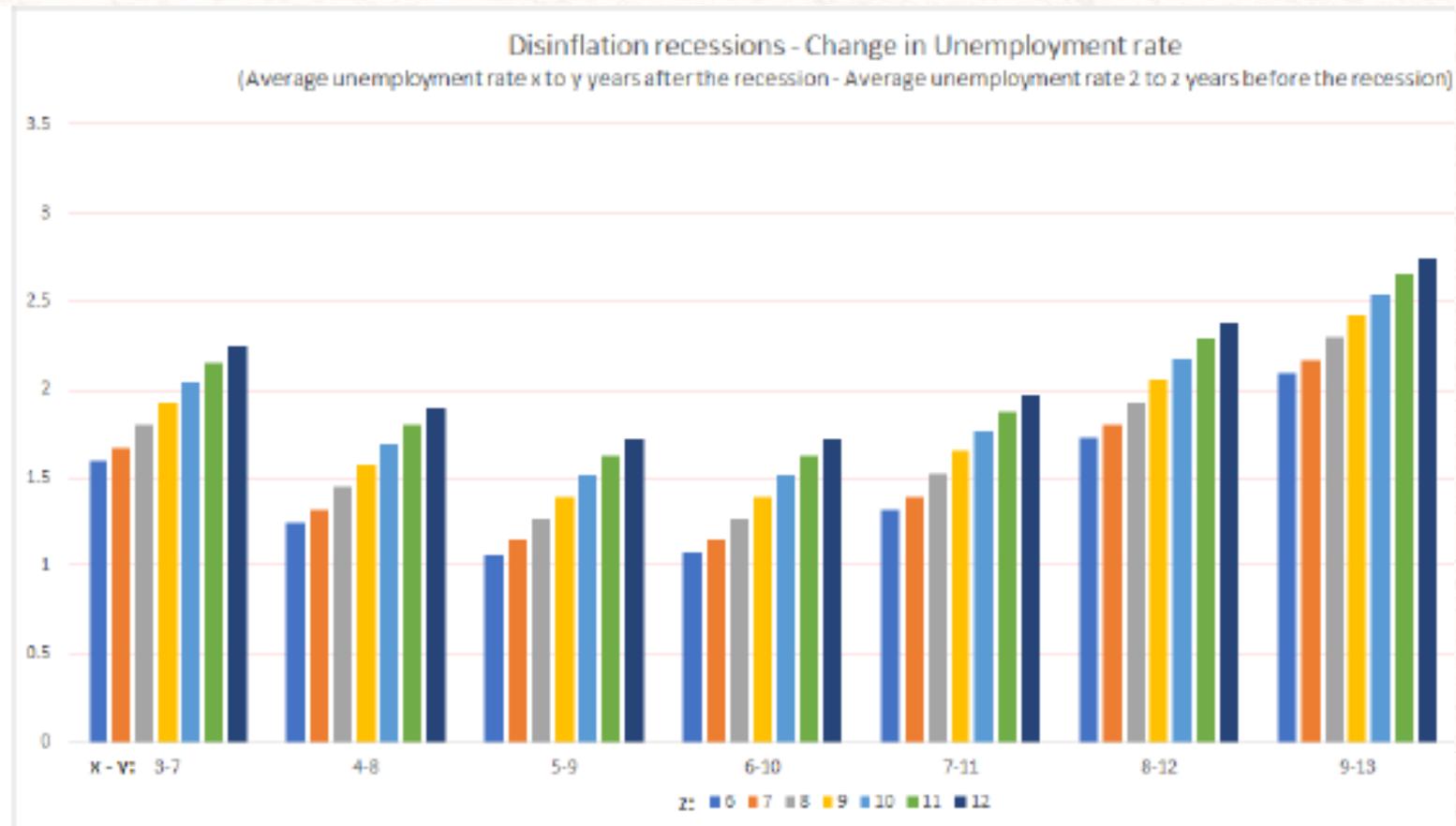


Figure 3:

Phillips Curve

$$\pi_t = \kappa(u_t - u^*) + \beta E_t(\pi_{t+1})$$

Traditional

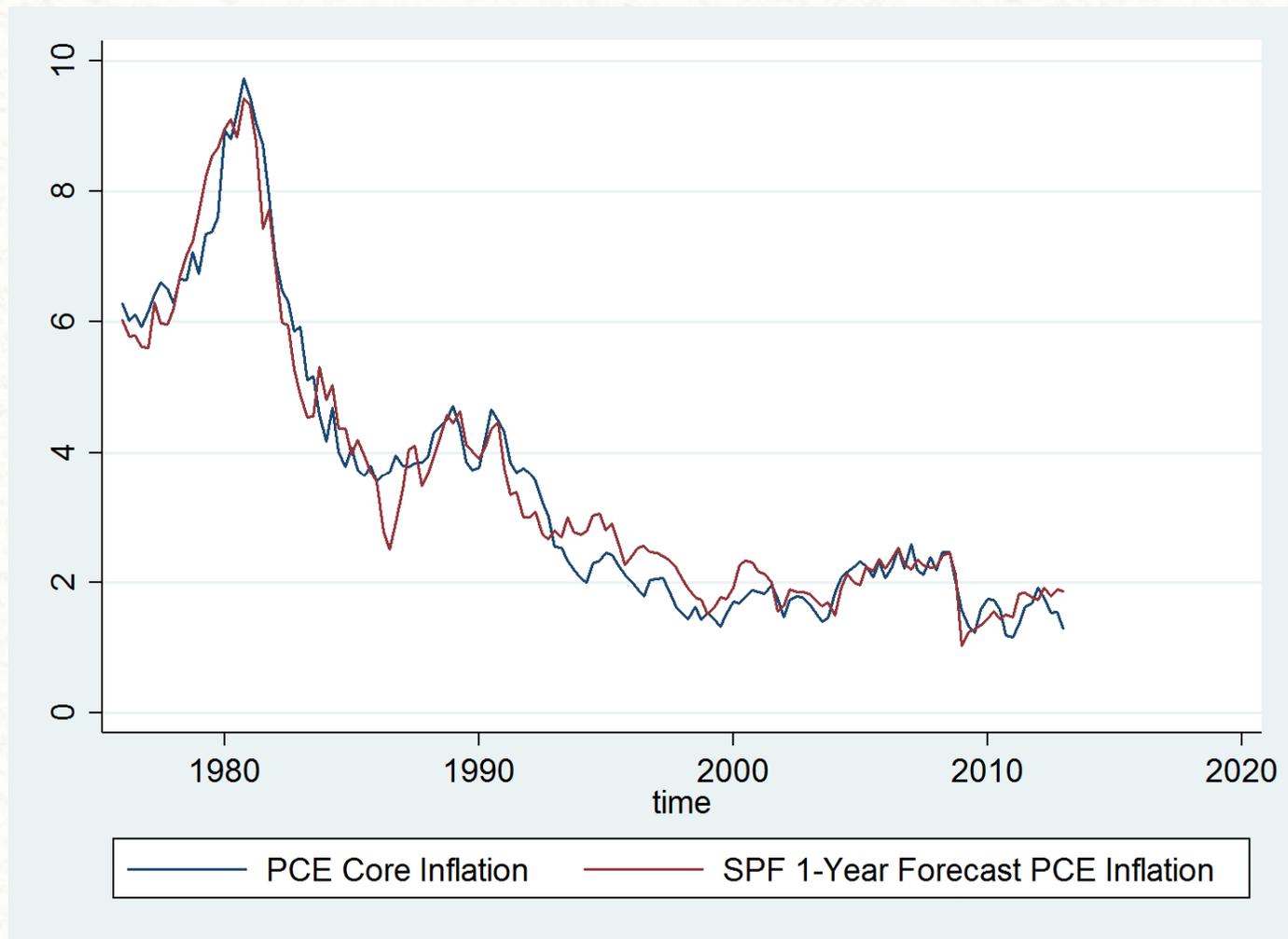
Friedman Forces

- Mankiw-Reis: Key role of expectations term
- Hall-Sargent: “Traditional” term in the Phillips curve has little power in forecasting inflation
- Important consequences for estimating Phillips curves

What do we learn from disinflations?

- Sargent (1982) points out that a credible disinflation may require *no* increase in unemployment (true in the Calvo model)
 - Dramatic evidence favoring this four hyperinflations
- Implies that disinflation episodes may be *completely* uninformative about slope of the Phillips curve
- What about the Volcker disinflation?

Inflation and Inflation Expectations



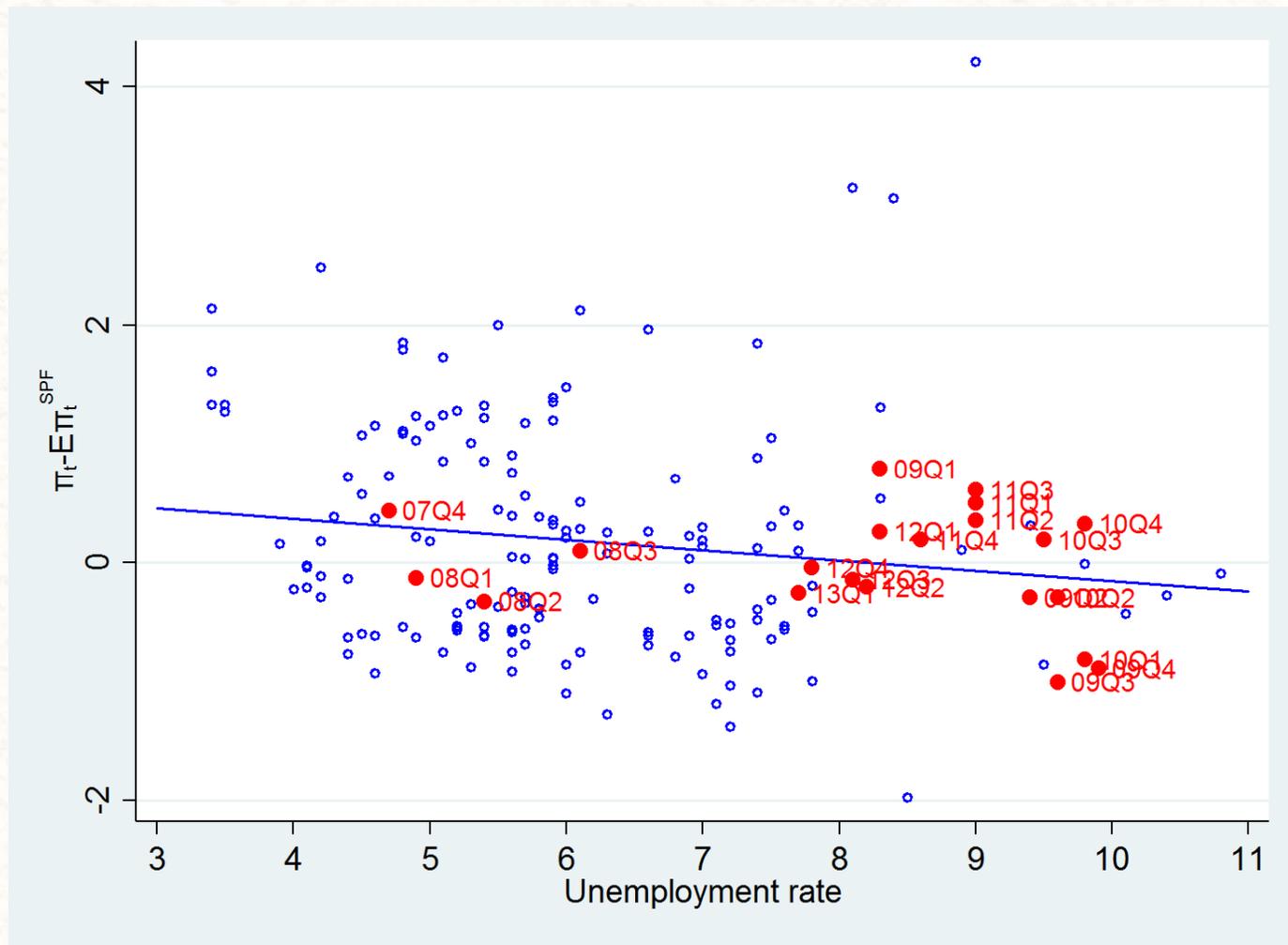
Phillips Curve Slope Estimates

$$\pi_t = \kappa u_t + \beta E_t(\pi_{t+1})$$

Slope Coefficients (κ) from Different Specifications

	Pre-2008	Post-2008	Missing Disinflation?
4-quarter PCE inflation, SPF exp.	-0.09 (0.05)	-0.06 (0.06)	No
4-quarter core PCE, SPF exp.	0.27 (0.03)	-0.08 (0.05)	No
Quarterly PCE, SPF exp.	-0.29 (0.07)	0.02 (0.12)	Yes
Quarterly PCE, 4-quarter lagged exp.	-0.31 (0.05)	0.10 (0.16)	Yes

Phillips Curve Scatter Plot



Can We Reject the Phillips Curve?

- Hall and Sargent argue we can (at least the “traditional” part)
- But a neoclassical model would predict a large response of prices to economic slack (i.e. a vertical Phillips curve)
 - Seems like a worse fit to the data (unless most variation in u is driven by supply shocks)
- κ close to zero suggests “hyper-Keynesian” world
- Is this a rejection of the Phillips curve or a Phillips curve on *steroids*?

Have the Millennials Forgotten Friedman

- Most recent analyses of the “missing disinflation” don’t put much weight on the expectations term
- Christiano et al, Beraja et al, Gilchrist et al.:
Supply-shock explanations for missing disinflation
 - Beraja et al: no expectations term in Phillips curve
 - Christiano et al: no change in inflation target since 1950
- Yet, role of expectations term may be crucial in reconciling Volcker disinflation and recent moderate inflation (despite high unemployment)

CPI and Long-Term Inflation Forecasts

