What’s up with Inflation and the Phillips Curve?

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The Phillips Curve

- **The Phillips Curve has flattened (or disappeared). E.g.,**
  - ✓ Ball and Mazumder (2011), IMF (2013), Blanchard, Cerutti and Summers (2015), Summers (2017), Andolfatto (2017), Blinder (2018)

- **Inflation follows an exogenous process, unrelated to measures of slack. E.g.,**
  - ✓ Atkeson and Ohanian (2001), Stock and Watson (2007, 2009), Hall (2011), Dotsey, Fujita and Stark (2017), Cecchetti, Feroli, Hooper, Kashyap, and Schoenholtz (2017), Forbes, Kirkham and Theodoridis (2017)

- **This disconnect between inflation and slack poses a challenge to Monetary Policy Framework**
  - ✓ Hall (2013), Uhlig (2018)

Does the disconnect pose a challenge to framework? McLeay and Tenreyro (2019)

A simple model

Dual Mandate:

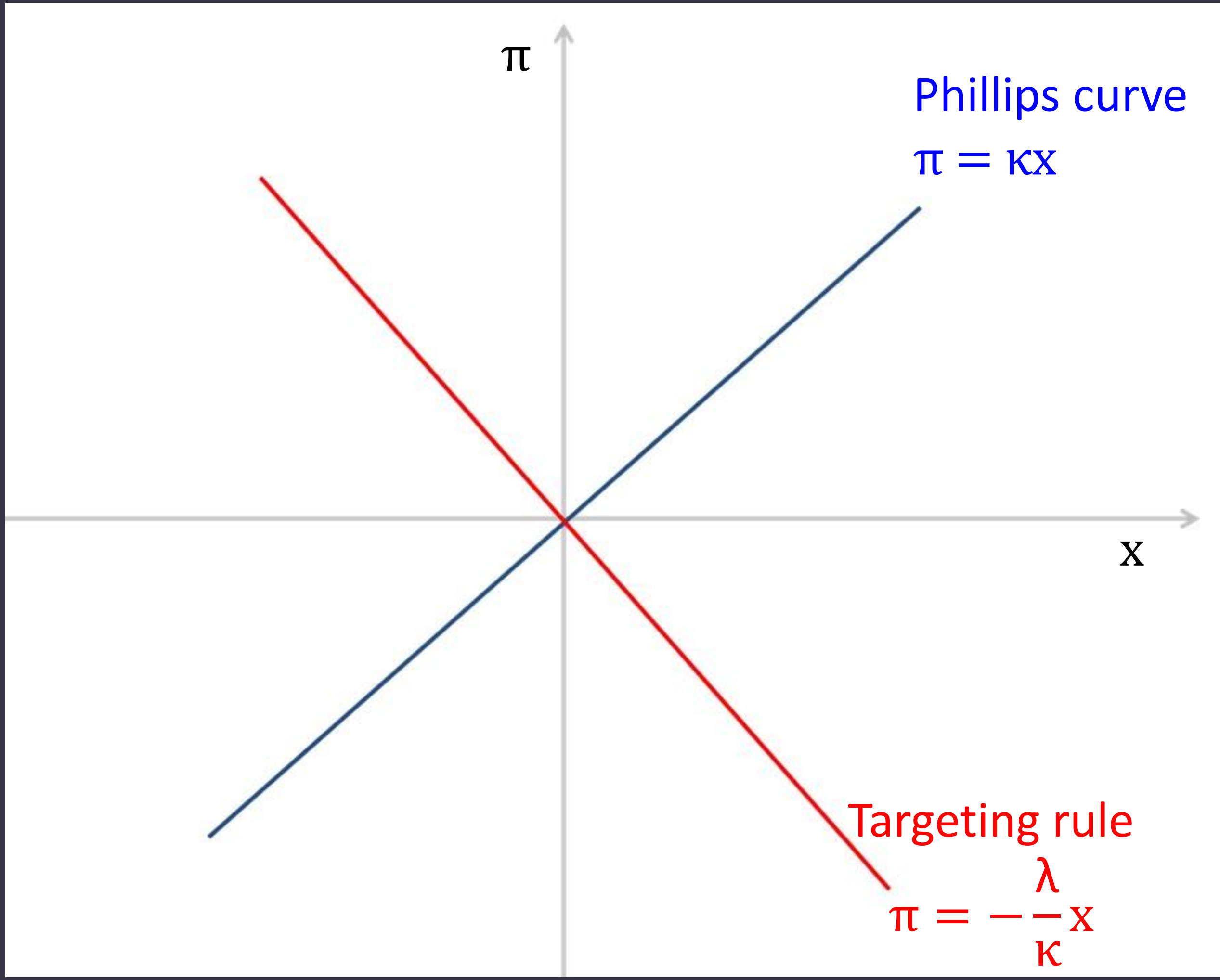
$$\min \pi_t^2 + \lambda x_t^2$$

s.t.:

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

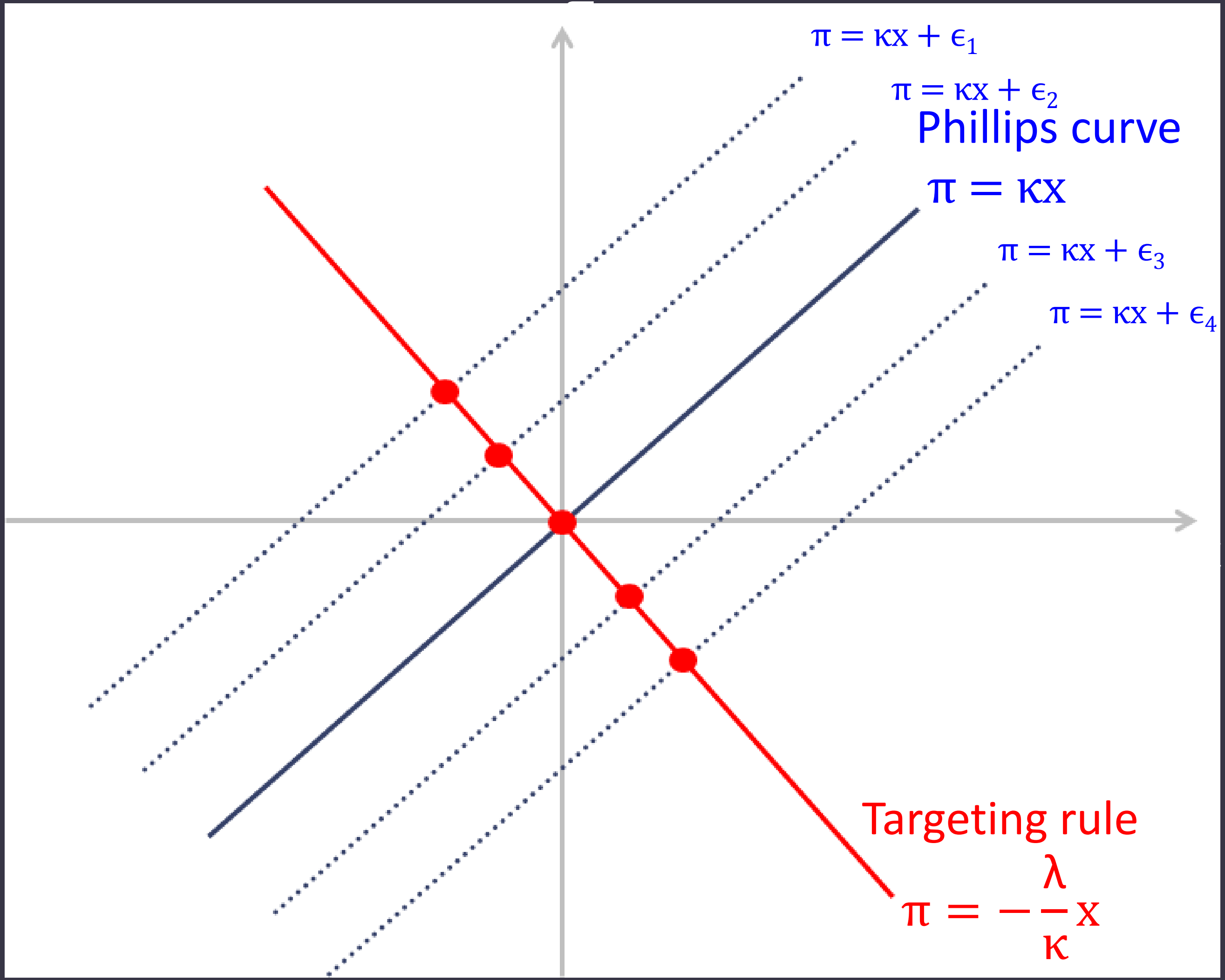
Solution: Targeting rule

$$\pi_t = -\frac{\lambda}{\kappa} x_t \qquad \text{(TR)}$$



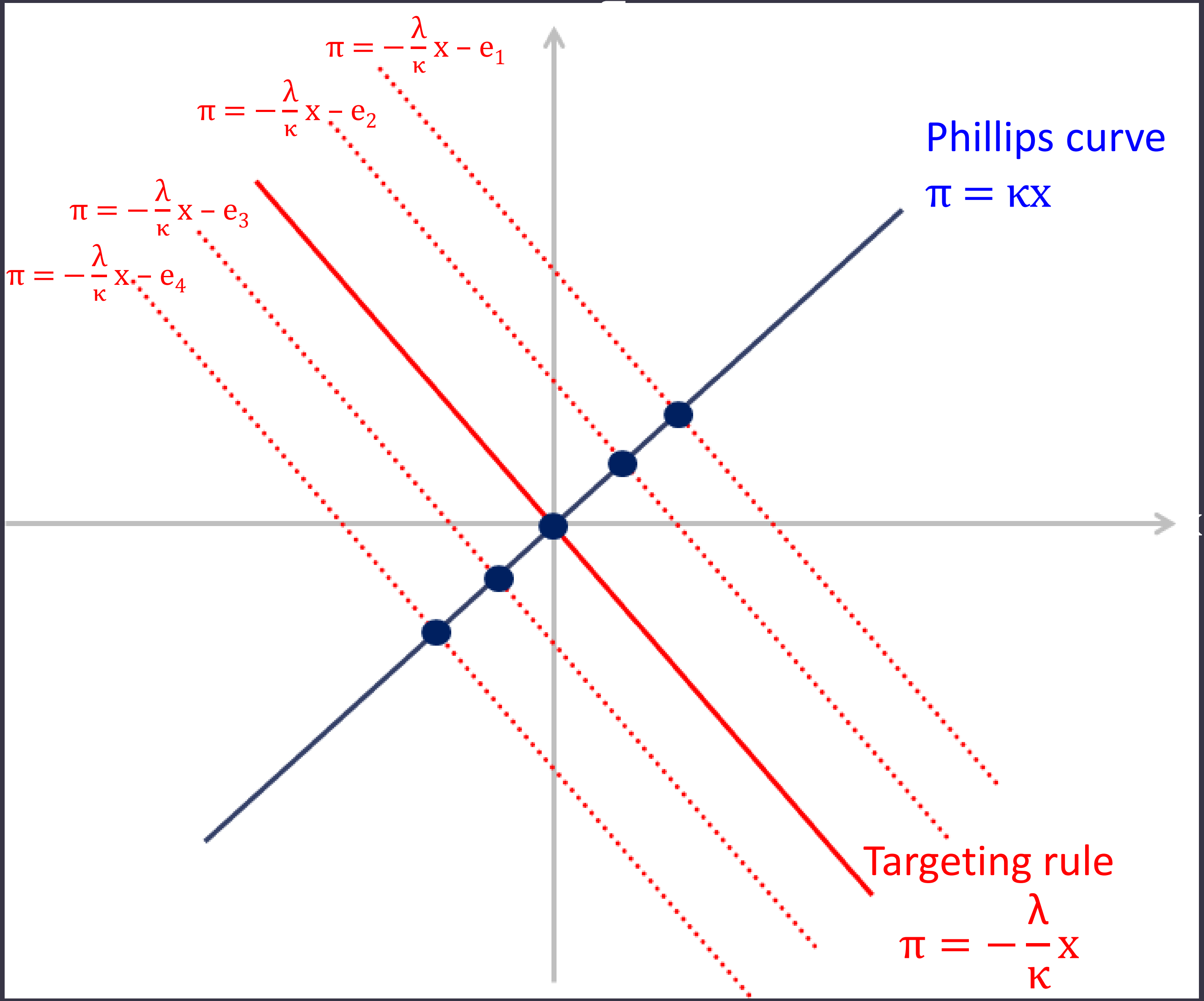
Identification: challenge

- ❑ If monetary policy successfully offsets all other shocks, the data only show the response to the cost shocks, tracing out the wrong slope.
- ❑ Inflation inherits the properties of the exogenous process



Identification: solution

If monetary policy follows a dual mandate, then it will always exert some negative bias following cost/supply shocks, even if Var(e_t) is large.



Regional

Table 3: *US Metro area Phillips curve: 1990-2017*

Regression	(1) Pooled OLS	(2) Metro area FE only	(3) Year FE only	(4) Year and Metro area FE
Unemployment rate	-0.150***	-0.162***	-0.272***	-0.379***
	[0.016]	[0.019]	[0.036]	[0.052]
Inflation expectations	0.598***	0.589***	0.259*	0.225
	[0.058]	[0.059]	[0.147]	[0.141]
Core CPI inflation				
First lag	0.362***	0.371***	0.122***	0.105***
	[0.035]	[0.036]	[0.035]	[0.034]
Observations	1,525	1,525	1,525	1,525
R-squared	0.321	0.350	0.450	0.487
Metro area FE	No	Yes	No	Yes
Year FE	No	No	Yes	Yes
Seasonal dummies	Yes	Yes	Yes	Yes

Robust standard errors (clustered by metro area) in brackets
*** p<0.01, ** p<0.05, * p<0.1

- Pooled OLS suggests flat Phillips curve.

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- **2.5 times** the naïve slope once area and time FE are included.

Summary

- The **relation between inflation and slack** has flattened. Much of the debate suggests this poses a challenge to monetary framework used by central banks.
- But: this is exactly what should be expected with **flexible inflation targeting/dual mandate.**
- A more careful identification suggests the structural PC is still alive. (E.g., US regional data.)
- The reduced form PC is a mix of supply and demand factors. For individual episodes of 'missing' inflations/disinflations such as the Great Recession, the theory and data are consistent with either:
  - **Large cost-push or supply shocks**. E.g. financial frictions and lower productivity increased costs and unemployment (Christiano, Eichenbaum and Trabandt, 2015).
  - **Smaller changes in demand** than suggested by the unemployment rate: alternative measures of slack (Ball and Mazumder, 2018); changes in the natural rate of unemployment, U*.