

Monetary Policy without an Anchor

Luigi Bocola

Stanford University, CEPR and NBER

Alessandro Dovis

University of Pennsylvania and NBER

Kasper Jorgensen

ECB

Rishabh Kirpalani

University of Wisconsin-Madison

RBA Conference on Monetary Policy Trade-offs
October 2026

The views in this paper are those of the authors and do not necessarily reflect those of the ECB or its staff

Motivation

- The **risk of de-anchoring** of inflation expectations is a key consideration for policymakers during inflationary episodes

Motivation

- The **risk of de-anchoring** of inflation expectations is a key consideration for policymakers during inflationary episodes
- E.g. Monetary policy response to post-pandemic inflation in Emerging Markets
 - Countries that tightened the most (e.g., Brazil) explicitly mention "de-anchoring risk"

Motivation

- The **risk of de-anchoring** of inflation expectations is a key consideration for policymakers during inflationary episodes
- E.g. Monetary policy response to post-pandemic inflation in Emerging Markets
 - Countries that tightened the most (e.g., Brazil) explicitly mention "de-anchoring risk"
- Questions:
 - 1 Was Brazil more at risk of a de-anchoring than other countries?
 - 2 What are the macroeconomic costs/benefits of keeping inflation expectations anchored?

Motivation

- The **risk of de-anchoring** of inflation expectations is a key consideration for policymakers during inflationary episodes
- E.g. Monetary policy response to post-pandemic inflation in Emerging Markets
 - Countries that tightened the most (e.g., Brazil) explicitly mention "de-anchoring risk"
- Questions:
 - 1 Was Brazil more at risk of a de-anchoring than other countries?
 - 2 What are the macroeconomic costs/benefits of keeping inflation expectations anchored?
- This paper: **Model** + **Data** to
 - Formalize the trade-off faced by a central bank when inflation expectations can de-anchor
 - Quantify risk of de-anchoring and benefits of maintaining inflation expectations anchored

Theory and measurement

- New Keynesian model with optimal monetary policy
 - Private sector **uncertain** about the policymaker's type, learns from actions
 - Interest rates $\rightarrow$ update beliefs on policymaker's type $\rightarrow$ inflation expectations
 - **Reputation channel**: when facing inflationary shocks, more incentives to tighten

Theory and measurement

- New Keynesian model with optimal monetary policy
 - Private sector **uncertain** about the policymaker's type, learns from actions
 - Interest rates $\rightarrow$ update beliefs on policymaker's type $\rightarrow$ inflation expectations
 - **Reputation channel**: when facing inflationary shocks, more incentives to tighten
- Key measure: Elasticity of inflation expectations to interest rate surprises
 - If the elasticity is large, dovish policy sharply raises inflation expectations
 - The more elastic inflation expectations, the stronger the reputation channel

Theory and measurement

- New Keynesian model with optimal monetary policy
 - Private sector **uncertain** about the policymaker's type, learns from actions
 - Interest rates → update beliefs on policymaker's type → inflation expectations
 - **Reputation channel**: when facing inflationary shocks, more incentives to tighten
- Key measure: Elasticity of inflation expectations to interest rate surprises
 - If the elasticity is large, dovish policy sharply raises inflation expectations
 - The more elastic inflation expectations, the stronger the reputation channel
- Quantitative strategy: Estimate elasticity, combine it with model for counterfactual
 - Find large elasticities for Brazil compared to other countries
 - For Brazil, the reputation channel is a key driver of monetary policy

Outline

- 1 The model
- 2 Mechanisms in a simplified version of the model
- 3 Empirical analysis
- 4 Quantifying the reputation mechanism

Environment

- Baseline New Keynesian model. Log-linear approximation around zero inflation

$$\pi_t = \kappa \hat{y}_t + \beta \mathbb{E}_t[\pi_{t+1}] + \hat{\mu}_t,$$

$$\hat{y}_t = \mathbb{E}_t[\hat{y}_{t+1}] - \frac{1}{\sigma} \left(\hat{i}_t - \mathbb{E}_t[\pi_{t+1}] \right).$$

Environment

- Baseline New Keynesian model. Log-linear approximation around zero inflation

$$\pi_t = \kappa \hat{y}_t + \beta \mathbb{E}_t[\pi_{t+1}] + \hat{\mu}_t,$$
$$\hat{y}_t = \mathbb{E}_t[\hat{y}_{t+1}] - \frac{1}{\sigma} \left(\hat{i}_t - \mathbb{E}_t[\pi_{t+1}] \right).$$

- i_t chosen by Central Bank (CB) without commitment. Objective function at t :

$$R_t = -\alpha(\theta_t, \varepsilon_t) \pi_t^2 - [1 - \alpha(\theta_t, \varepsilon_t)] \hat{y}_t^2$$

- $\theta_t \in \{\theta^H, \theta^D\}$ is the CB "type". Markov process with transition matrix P_θ
- ε_t is an iid Gaussian "monetary shock"

Environment

- Baseline New Keynesian model. Log-linear approximation around zero inflation

$$\pi_t = \kappa \hat{y}_t + \beta \mathbb{E}_t[\pi_{t+1}] + \hat{\mu}_t,$$
$$\hat{y}_t = \mathbb{E}_t[\hat{y}_{t+1}] - \frac{1}{\sigma} \left(\hat{i}_t - \mathbb{E}_t[\pi_{t+1}] \right).$$

- i_t chosen by Central Bank (CB) without commitment. Objective function at t :

$$R_t = -\alpha(\theta_t, \varepsilon_t) \pi_t^2 - [1 - \alpha(\theta_t, \varepsilon_t)] \hat{y}_t^2$$

- $\theta_t \in \{\theta^H, \theta^D\}$ is the CB "type". Markov process with transition matrix P_θ
- ε_t is an iid Gaussian "monetary shock"

Note: In the paper we allow Hawk and Dove to have different steady-state inflation

Learning the central bank's type

Households/firms observe the shocks μ_t and the policy rate i_t , but not $(\theta_t, \varepsilon_t)$.

Reputation ρ_{t-1} is the prior probability of a Hawk; p_t is the updated probability after observing the public state and i_t

$$\underbrace{\frac{p_t}{1 - p_t}}_{\text{Posterior odds}} = \underbrace{\frac{\rho_{t-1}}{1 - \rho_{t-1}}}_{\text{Prior odds}} \times \underbrace{\frac{\ell_H(i_t)}{\ell_D(i_t)}}_{\text{Likelihood ratio}}$$

$\ell_j(i)$: likelihood of the observed rate under type j , given μ_t and ρ_{t-1} .

Then, the updated prior for next period is

$$\rho_t = p_t P_{HH} + (1 - p_t) P_{DH}$$

Learning the central bank's type

Households/firms observe the shocks μ_t and the policy rate i_t , but not $(\theta_t, \varepsilon_t)$.

Reputation ρ_{t-1} is the prior probability of a Hawk; p_t is the updated probability after observing the public state and i_t

$$\underbrace{\frac{p_t}{1-p_t}}_{\text{Posterior odds}} = \underbrace{\frac{\rho_{t-1}}{1-\rho_{t-1}}}_{\text{Prior odds}} \times \underbrace{\frac{\ell_H(i_t)}{\ell_D(i_t)}}_{\text{Likelihood ratio}}$$

$\ell_j(i)$: likelihood of the observed rate under type j , given μ_t and ρ_{t-1} .

Then, the updated prior for next period is

$$\rho_t = p_t P_{HH} + (1-p_t) P_{DH}$$

Key idea: Suppose that after an inflationary shock we observe a big tightening. Then we update the prior toward the Hawk

Outline

- 1 The model
- 2 Mechanisms in a simplified version of the model
- 3 Empirical analysis
- 4 Quantifying the reputation mechanism

Simplified economy

- Permanent types. Unknown at $t = 1$, revealed at $t = 2$

Simplified economy

- Permanent types. Unknown at $t = 1$, revealed at $t = 2$
- From $t \geq 2$, type θ is known, with weight $\alpha(\theta)$

$$\max_{\pi_t, \hat{y}_t} -\frac{1}{2} \left[\alpha(\theta) \pi_t^2 + (1 - \alpha(\theta)) \hat{y}_t^2 \right] \text{ s.t. } \pi_t = \kappa \hat{y}_t + \beta \mathbb{E}[\pi_{t+1}(\theta, \mu_{t+1}) \mid \mu_t] + \mu_t$$

Simplified economy

- Permanent types. Unknown at $t = 1$, revealed at $t = 2$
- From $t \geq 2$, type θ is known, with weight $\alpha(\theta)$

$$\max_{\pi_t, \hat{y}_t} -\frac{1}{2} [\alpha(\theta)\pi_t^2 + (1 - \alpha(\theta))\hat{y}_t^2] \quad \text{s.t.} \quad \pi_t = \kappa\hat{y}_t + \beta\mathbb{E}[\pi_{t+1}(\theta, \mu_{t+1}) \mid \mu_t] + \mu_t$$

- At $t = 1$, type is unknown; the realized weight is α_1

$$\max_{\pi_1, \hat{y}_1} -\frac{1}{2} [\alpha_1\pi_1^2 + (1 - \alpha_1)\hat{y}_1^2] \quad \text{s.t.} \quad \pi_1 = \kappa\hat{y}_1 + \beta\Pi_2(\hat{y}_1; \mu_1, \rho_0) + \mu_1$$

$$\underbrace{\rho_1(\hat{y}_1; \mu_1, \rho_0) \mathbb{E}[\pi_2(\theta_H, \mu_2) \mid \mu_1]}_{\text{Hawk component}} + \underbrace{[1 - \rho_1(\hat{y}_1; \mu_1, \rho_0)] \mathbb{E}[\pi_2(\theta_D, \mu_2) \mid \mu_1]}_{\text{Dove component}}$$


Simplified economy

- Permanent types. Unknown at $t = 1$, revealed at $t = 2$
- From $t \geq 2$, type θ is known, with weight $\alpha(\theta)$

$$\max_{\pi_t, \hat{y}_t} -\frac{1}{2} [\alpha(\theta)\pi_t^2 + (1 - \alpha(\theta))\hat{y}_t^2] \quad \text{s.t.} \quad \pi_t = \kappa\hat{y}_t + \beta\mathbb{E}[\pi_{t+1}(\theta, \mu_{t+1}) \mid \mu_t] + \mu_t$$

- At $t = 1$, type is unknown; the realized weight is α_1

$$\max_{\pi_1, \hat{y}_1} -\frac{1}{2} [\alpha_1\pi_1^2 + (1 - \alpha_1)\hat{y}_1^2] \quad \text{s.t.} \quad \pi_1 = \kappa\hat{y}_1 + \beta\Pi_2(\hat{y}_1; \mu_1, \rho_0) + \mu_1$$

$\underbrace{\rho_1(\hat{y}_1; \mu_1, \rho_0) \mathbb{E}[\pi_2(\theta_H, \mu_2) \mid \mu_1]}_{\text{Hawk component}}$

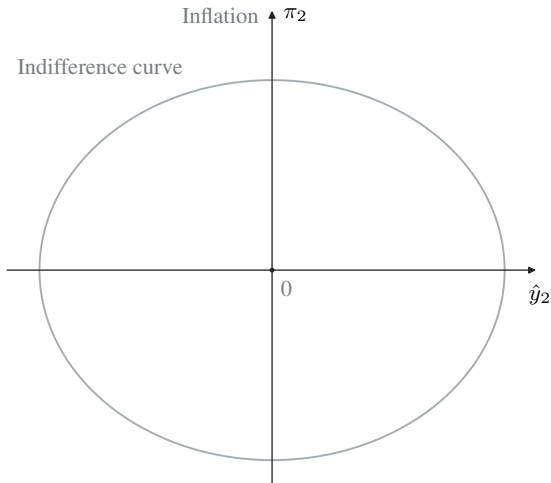
$+$

$\underbrace{[1 - \rho_1(\hat{y}_1; \mu_1, \rho_0)] \mathbb{E}[\pi_2(\theta_D, \mu_2) \mid \mu_1]}_{\text{Dove component}}$



Note: Analyze the equilibrium after inflationary shock at $t = 1$ from the Hawk's perspective

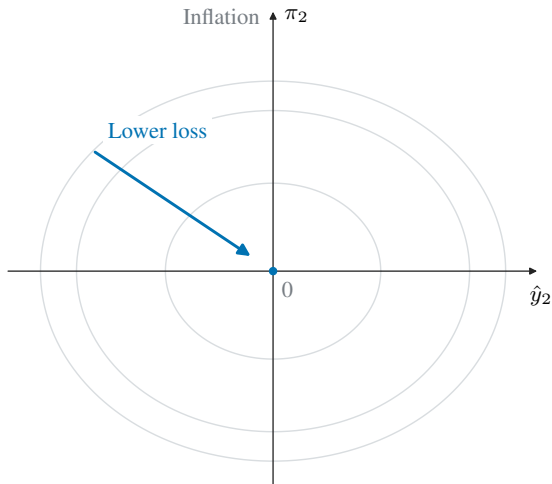
Perfect information benchmark



The central bank maximizes at $t = 2$

$$R_2 = -\frac{1}{2} [\alpha(\theta)\pi_2^2 + (1 - \alpha(\theta))\hat{y}_2^2]$$

Perfect information benchmark

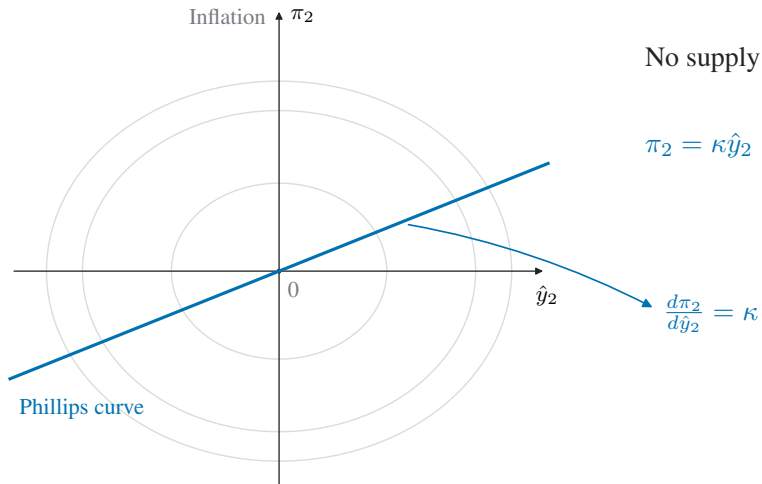


The central bank maximizes at $t = 2$

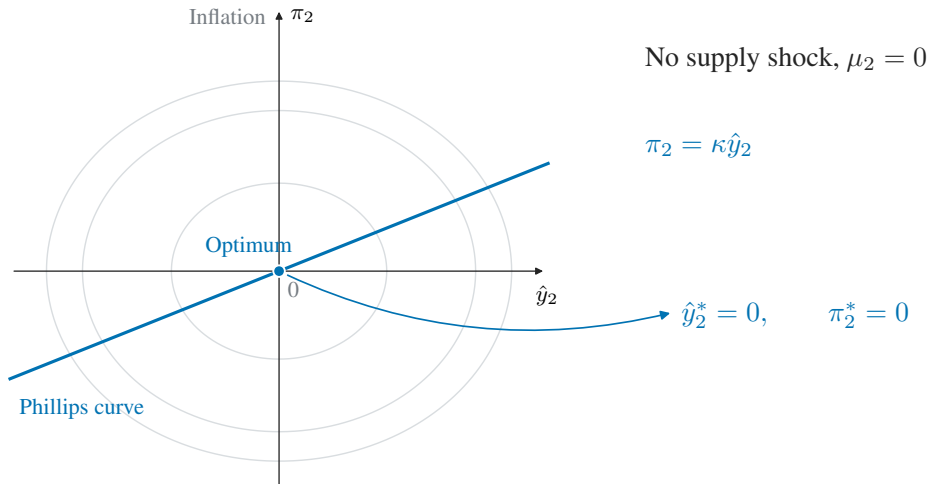
$$R_2 = -\frac{1}{2} [\alpha(\theta)\pi_2^2 + (1 - \alpha(\theta))\hat{y}_2^2]$$

Smaller deviations from both targets

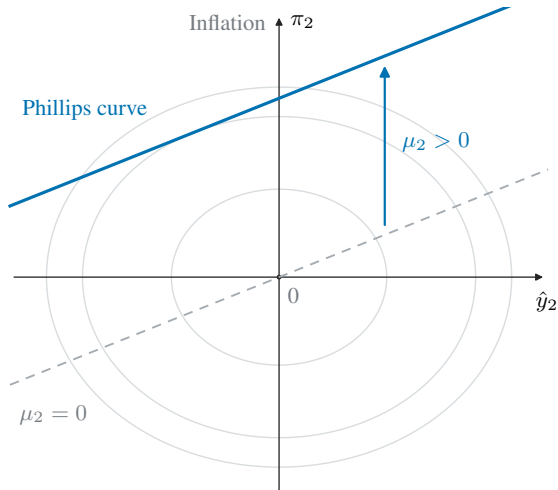
Perfect information benchmark



Perfect information benchmark



Perfect information benchmark

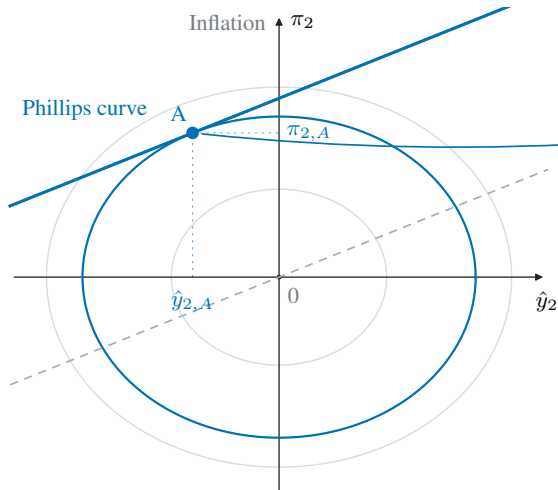


After a positive supply shock, $\mu_2 > 0$

$$\pi_2 = \kappa \hat{y}_2 + \beta \mathbb{E}[\pi_3(\theta, \mu_3) \mid \mu_2] + \mu_2$$

Higher inflation at a given output gap

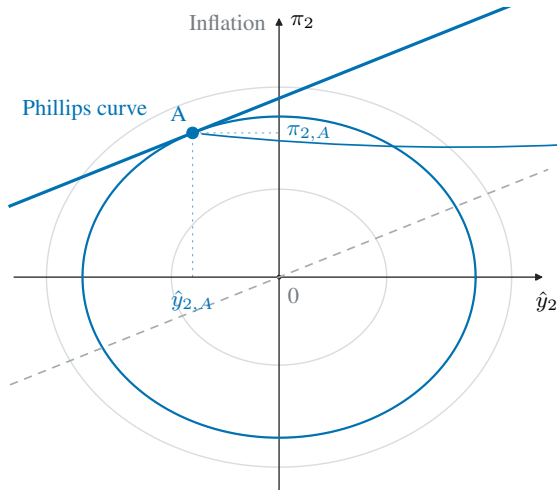
Perfect information benchmark



Optimal policy for type θ at point A

$$\underbrace{-(1 - \alpha(\theta))\hat{y}_2}_{\text{Marginal cost of a deeper recession}} = \underbrace{\alpha(\theta)\pi_2\kappa}_{\text{Marginal benefit of lower inflation}}$$

Perfect information benchmark



Optimal policy for type θ at point A

$$\underbrace{-(1 - \alpha(\theta))\hat{y}_2}_{\text{Marginal cost of a deeper recession}} = \underbrace{\alpha(\theta)\pi_2\kappa}_{\text{Marginal benefit of lower inflation}}$$

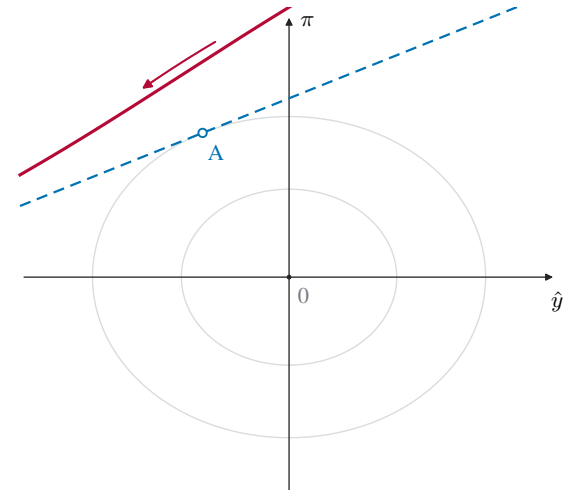
After a positive supply shock,
inflation is lower under the Hawk:

$$\pi_2(\theta_H, \mu_2) < \pi_2(\theta_D, \mu_2), \quad \mu_2 > 0$$

Monetary policy with imperfect information

Phillips curve **shifts up** and **steepens**

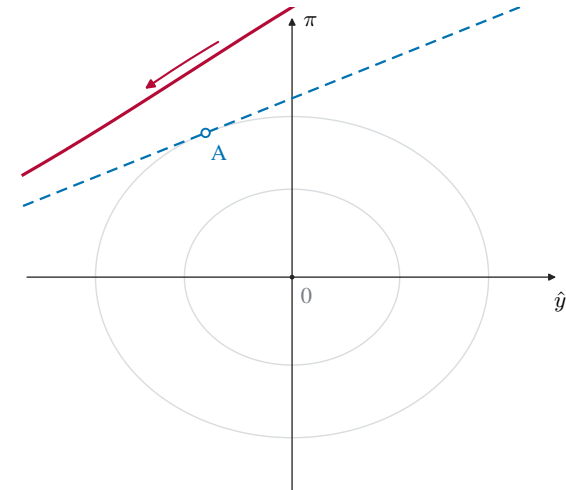
$$\pi_1 = \kappa \hat{y}_1 + \beta \Pi_2(\hat{y}_1; \mu_1, \rho_0) + \mu_1$$



--- Known Hawk

— Uncertain type

Monetary policy with imperfect information



Phillips curve **shifts up** and **steepens**

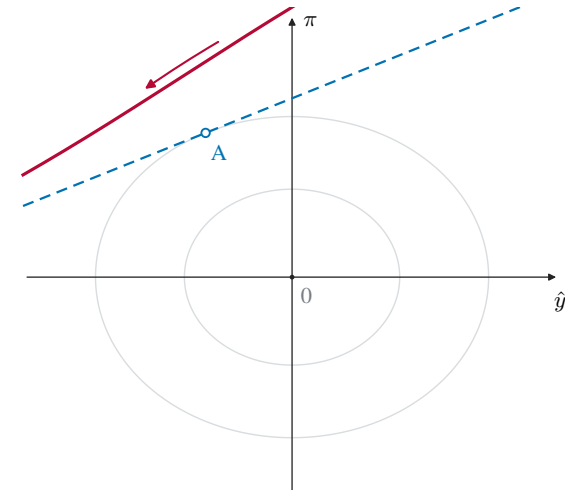
$$\pi_1 = \kappa \hat{y}_1 + \beta \Pi_2(\hat{y}_1; \mu_1, \rho_0) + \mu_1$$

Expected inflation higher than with known Hawk

--- Known Hawk

— Uncertain type

Monetary policy with imperfect information



--- Known Hawk

— Uncertain type

Phillips curve **shifts up** and **steepens**

$$\pi_1 = \kappa \hat{y}_1 + \beta \Pi_2(\hat{y}_1; \mu_1, \rho_0) + \mu_1$$

Expected inflation higher than with known Hawk

Steeper because expectations respond to policymakers' actions

$$\begin{aligned} \Pi'_2(\hat{y}_1; \mu_1, \rho_0) &= \rho'_1(\hat{y}_1; \mu_1, \rho_0) \\ &\times \{\mathbb{E}[\pi_2(H, \mu_2) \mid \mu_1] - \mathbb{E}[\pi_2(D, \mu_2) \mid \mu_1]\} > 0 \end{aligned}$$

Higher output signals the Dove: $\rho'_1 < 0$

Dove has higher inflation: $\pi_2(D, \mu_2) > \pi_2(H, \mu_2)$

Monetary policy with imperfect information

Optimal policy is at point B

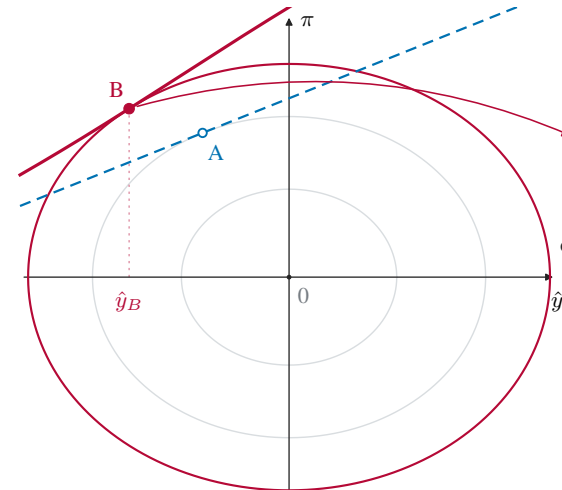
$$\underbrace{-(1 - \alpha_1)\hat{y}_1}_{\text{Marginal cost of a deeper recession}} = \underbrace{\alpha_1\pi_1[\kappa + \beta\Pi'_2(\hat{y}_1; \mu_1, \rho_0)]}_{\text{Marginal benefit of lower inflation}}$$

Marginal cost
of a deeper recession

Marginal benefit
of lower inflation

$$\hat{y}_B < \hat{y}_A$$

Larger contraction than under perfect info



--- Known Hawk

— Uncertain type

The reputation channel

Proposition

The central bank is more "Hawkish" when its type is unknown. That is, if $\mu_1 > 0$, then $\hat{y}_1$ is lower than in the Markov equilibrium under perfect information, strictly so if $\rho_0 \in (0, 1)$.

The reputation channel

Proposition

The central bank is more "Hawkish" when its type is unknown. That is, if $\mu_1 > 0$, then $\hat{y}_1$ is lower than in the Markov equilibrium under perfect information, strictly so if $\rho_0 \in (0, 1)$.

$$\alpha_1 \pi_1 \left[\kappa + \beta \Pi'_2(\hat{y}_1; \mu_1, \rho_0) \right] = -(1 - \alpha_1) \hat{y}_1$$

- With perfect info, reducing output when $\mu_1 > 0$ has the benefit of reducing inflation
 - By the slope of the Phillips curve κ

The reputation channel

Proposition

The central bank is more "Hawkish" when its type is unknown. That is, if $\mu_1 > 0$, then $\hat{y}_1$ is lower than in the Markov equilibrium under perfect information, strictly so if $\rho_0 \in (0, 1)$.

$$\alpha_1 \pi_1 \left[\kappa + \beta \Pi'_2(\hat{y}_1; \mu_1, \rho_0) \right] = -(1 - \alpha_1) \hat{y}_1$$

- With perfect info, reducing output when $\mu_1 > 0$ has the benefit of reducing inflation
 - By the slope of the Phillips curve κ
- With **imperfect information**, there is an **additional benefit**
 - By lowering output, CB improves reputation. Higher reputation reduces inflation
 - "As if" Phillips curve is steeper

Measuring the reputation channel

Proposition

Let $\Delta\mathbb{E}[i_1(\hat{y}_1; \mu_1, \rho_0)]$ be a "monetary surprise"

$$\Delta\mathbb{E}[i_1(\hat{y}_1; \mu_1, \rho_0)] = i_1(\hat{y}_1; \mu_1, \rho_0) - \mathbb{E}\left[i_1(\hat{y}_1(\mu_1, \rho_0, \theta, \varepsilon_1); \mu_1, \rho_0) \middle| \mu_1, \rho_0\right],$$

and $\Delta\mathbb{E}[\pi_2(\hat{y}_1; \mu_1, \rho_0)]$ be the revision in expected inflation in period 2 after the realization of monetary policy. Then, we have

$$\frac{\Delta\mathbb{E}[\pi_2(\hat{y}_1; \mu_1, \rho_0)]}{\Delta\mathbb{E}[i_1(\hat{y}_1; \mu_1, \rho_0)]} \approx - \frac{\Pi'_2(\bar{\hat{y}}; \mu_1, \rho_0)}{\sigma - \left(1 + \sigma \frac{1 - \beta \rho_\mu}{\kappa}\right) \Pi'_2(\bar{\hat{y}}; \mu_1, \rho_0)}$$

- Elasticity of inflation expectations to monetary surprises is informative about the reputation channel

Short vs long run inflation expectations

In the infinite-horizon economy, one more consideration for the Central Bank:

$$\left\{ R_{\pi,t} \left(\kappa + \frac{\partial \mathbb{E}_t[\pi_{t+1}]}{\partial \rho_{t+1}} \frac{\partial \rho_{t+1}}{\partial y_t} \right) + R_{y,t} \right\} \frac{\partial y_t}{\partial i_t} + \beta \frac{\partial \mathbb{E}_t^{cb}[V_{t+1}]}{\partial \rho_{t+1}} \frac{\partial \rho_{t+1}}{\partial y_t} \frac{\partial y_t}{\partial i_t} = 0$$

Short vs long run inflation expectations

In the infinite-horizon economy, one more consideration for the CB:

$$\left\{ R_{\pi,t} \left(\kappa + \frac{\partial \mathbb{E}_t[\pi_{t+1}]}{\partial \rho_{t+1}} \frac{\partial \rho_{t+1}}{\partial y_t} \right) + R_{y,t} \right\} \frac{\partial y_t}{\partial i_t} + \beta \frac{\partial \mathbb{E}_t^{cb}[V_{t+1}]}{\partial \rho_{t+1}} \frac{\partial \rho_{t+1}}{\partial y_t} \frac{\partial y_t}{\partial i_t} = 0$$

As in 2-period model

Value of reputation

Higher reputation is valuable, $\partial \mathbb{E}_t^{cb}[V_{t+1}]/\partial \rho_{t+1} > 0$:

- Inflation expectations less sensitive to $\hat{\mu}$ if CB perceived to be more Hawkish
- It allows CB to achieve better inflation/output trade-off for each $\hat{\mu}$

Short vs long run inflation expectations

In the infinite-horizon economy, one more consideration for the CB:

$$-\left\{R_{\pi,t}\kappa + R_{y,t}\right\}\frac{\partial y_t}{\partial i_t} = \beta\left\{R_{\pi,t}\frac{\partial \mathbb{E}_t[\pi_{t+1}]}{\partial \rho_{t+1}} + \frac{\partial \mathbb{E}_t^{cb}[V_{t+1}]}{\partial \rho_{t+1}}\right\}\frac{\partial \rho_{t+1}}{\partial i_t}$$

Short vs long run inflation expectations

In the infinite-horizon economy, one more consideration for the CB:

$$-\left\{R_{\pi,t}\kappa + R_{y,t}\right\}\frac{\partial y_t}{\partial i_t} = \beta\left\{R_{\pi,t}\frac{\partial \mathbb{E}_t[\pi_{t+1}]}{\partial \rho_{t+1}} + \boxed{\frac{\partial \mathbb{E}_t^{cb}[V_{t+1}]}{\partial \rho_{t+1}}}\right\}\frac{\partial \rho_{t+1}}{\partial i_t}$$

Apply envelope theorem



Short vs long run inflation expectations

In the infinite-horizon economy, one more consideration for the CB:

$$-\left\{R_{\pi,t}\kappa + R_{y,t}\right\}\frac{\partial y_t}{\partial i_t} = \sum_{k=1}^{\infty} \beta^k \mathbb{E}_t^{cb} \left\{ R_{\pi,t+k-1} \frac{\partial \mathbb{E}_t [\pi_{t+k}]}{\partial \rho_{t+1}} \right\} \frac{\partial \rho_{t+1}}{\partial i_t}$$

Short vs long run inflation expectations

In the infinite-horizon economy, one more consideration for the CB:

$$\boxed{-\left\{R_{\pi,t}\kappa + R_{y,t}\right\}\frac{\partial y_t}{\partial i_t}} = \sum_{k=1}^{\infty} \beta^k \mathbb{E}_t^{cb} \left\{ R_{\pi,t+k-1} \frac{\partial \mathbb{E}_t [\pi_{t+k}]}{\partial \rho_{t+1}} \right\} \frac{\partial \rho_{t+1}}{\partial i_t}$$

"Wedge" relative to perfect info



Short vs long run inflation expectations

In the infinite-horizon economy, one more consideration for the CB:

$$-\left\{R_{\pi,t}\kappa + R_{y,t}\right\}\frac{\partial y_t}{\partial i_t} = \boxed{\sum_{k=1}^{\infty} \beta^k \mathbb{E}_t^{cb} \left\{ R_{\pi,t+k-1} \frac{\partial \mathbb{E}_t[\pi_{t+k}]}{\partial \rho_{t+1}} \right\} \frac{\partial \rho_{t+1}}{\partial i_t}}$$

Gains from stabilizing inflation expectations 

Equation relates (**unobservable**) "reputation wedge" to (**potentially observable**) sensitivity of inflation expectations to policy changes

- **Next:** Measure $\frac{\partial \mathbb{E}_t[\pi_{t+j+1}]}{\partial \rho_{t+1}} \frac{\partial \rho_{t+1}}{\partial i_t}$ to discipline reputation mechanism

► Measurement

Short vs long run inflation expectations

In the infinite-horizon economy, one more consideration for the CB:

$$-\left\{R_{\pi,t}\kappa + R_{y,t}\right\} \frac{\partial y_t}{\partial i_t} = \boxed{\sum_{k=1}^{\infty} \beta^k \mathbb{E}_t^{cb} \left\{ R_{\pi,t+k-1} \frac{\partial \mathbb{E}_t[\pi_{t+k}]}{\partial \rho_{t+1}} \right\} \frac{\partial \rho_{t+1}}{\partial i_t}}$$

Gains from stabilizing inflation expectations 

Equation relates (**unobservable**) "reputation wedge" to (**potentially observable**) sensitivity of inflation expectations to policy changes

- **Next:** Measure $\frac{\partial \mathbb{E}_t[\pi_{t+j+1}]}{\partial \rho_{t+1}} \frac{\partial \rho_{t+1}}{\partial i_t}$ to discipline reputation mechanism

► Measurement

Note: in the theory, elasticity is time-varying. We will be able to estimate averages over time

Outline

- 1 The model
- 2 Mechanisms in a simplified version of the model
- 3 Empirical analysis
- 4 Quantifying the reputation mechanism

Data and baseline specification

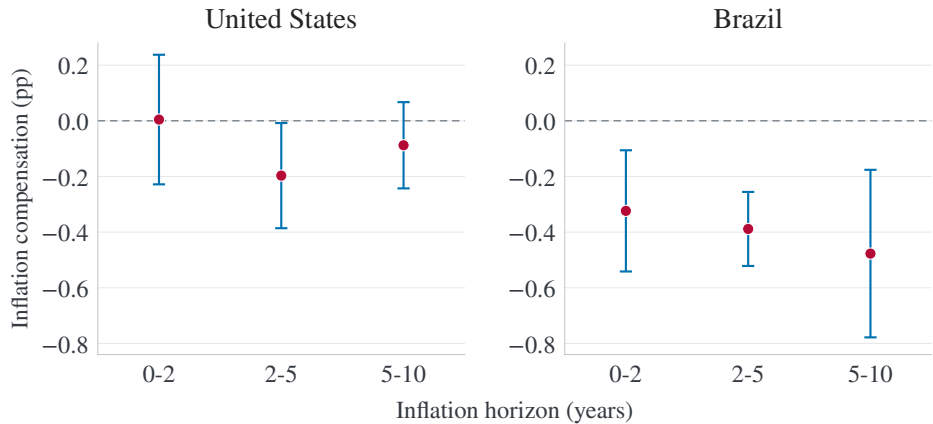
- Baseline specification

$$\Delta \mathbb{E}_t[\bar{\pi}_{k,k+s}] = a_{(k,s)} + b_{(k,s)} \Delta \mathbb{E}_t[i_t] + e_{(k,s),t}$$

$b_{(k,s)}$ measures sensitivity of inflation expectations between k and $k + s$ years from t

- Countries: Brazil, Chile, Mexico, Euro area, US, UK. Sample: 2010-2024
- Two measures of long-run inflation expectations
 - Five year/five year break-even inflation (daily frequency)
 - Surveys of professional forecasters (monthly/quarterly)
- Monetary policy surprises computed using short-term rates
 - 3mo OIS for emerging market economies
 - 1yr OIS for Euro area, US and UK

Brazil vs US



Focusing on the long-run

Panel A: Market-based results

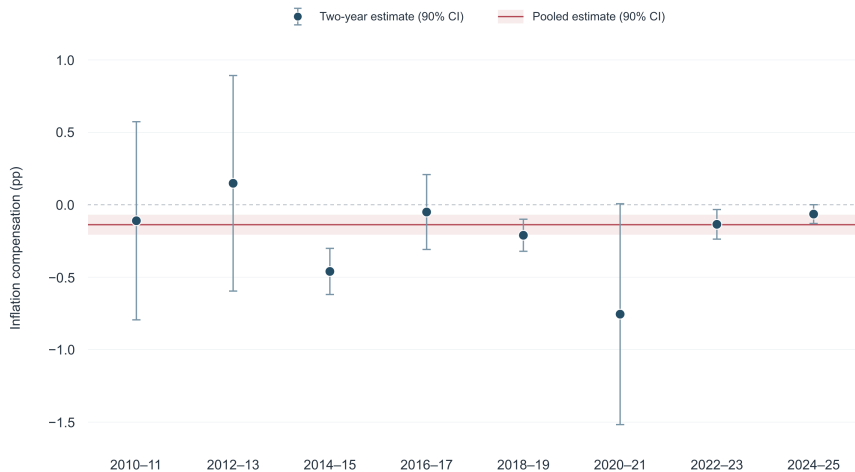
	Brazil	Chile	Mexico	Euro area	UK	US
$b_{(5y5y)}$	-0.48*** (0.18)	-0.05 (0.05)	0.02 (0.07)	0.03 (0.06)	-0.05 (0.07)	-0.09 (0.09)
R^2	0.08	0.03	0.00	0.00	0.01	0.00
Sample # obs.	2010-2024 92	2010-2023 104	2010-2024 109	2010-2024 134	2010-2024 143	2010-2024 114

Panel B: Survey-based results

	Brazil	Chile	Mexico	Euro area	UK	US
b	-0.18** (0.09)	-0.00 (0.02)	0.03 (0.06)	0.11 (0.08)	0.29 (0.23)	-0.04 (0.06)
R^2	0.22	0.00	0.00	0.05	0.02	0.00
Sample # obs.	2010-2024 92	2010-2024 117	2010-2024 106	2010-2024 57	2010-2024 47	2010-2024 54

- Large elasticities for Brazil
- Not precisely estimated for other countries

The long-run elasticity for the US over time



Note: include FOMC statement releases, press conferences and minutes releases

Outline

- 1 The model
- 2 Mechanisms in a simplified version of the model
- 3 Empirical analysis
- 4 Quantifying the reputation mechanism

Quantitative analysis

- Focus on Brazil
 - Among the first countries to raise interest rates after the pandemic, with CB explicitly citing risk of a de-anchoring of inflation expectations
 - Strong sensitivity of long-run inflation expectations to monetary surprises
- Calibration strategy:
 - Match key moments of inflation, nominal interest rates and de-trended output
 - Match elasticity of inflation expectations to monetary surprises
- Questions:
 - How important are reputation building motives?
 - What are the macroeconomic effects of reputation gains?

Quantifying the reputation channel

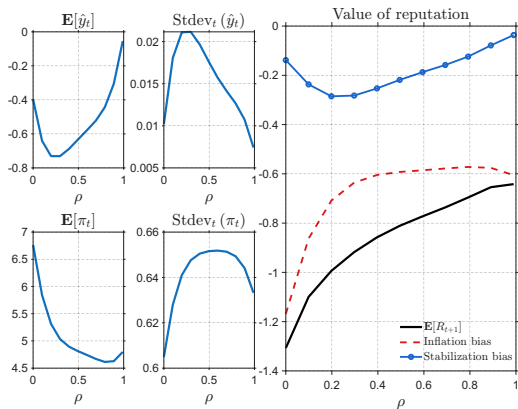
To assess the strength of reputation, compare the benchmark to an economy with a "myopic" CB

	Benchmark	Myopic	Benchmark	Myopic
Moment	High uncertainty		Low uncertainty	
Mean(π_t)	4.42	5.61	5.12	5.30
Stdev(π_t)	1.54	1.83	1.83	1.95
Mean($\hat{y}_t$)	-0.84	-0.41	-0.54	-0.30
Stdev($\hat{y}_t$)	0.68	0.13	0.70	0.13
Mean($\frac{R_t^{bench} - R_t}{\text{abs}(R_t^{bench})}$)	0.00	-0.37	0.00	-0.13

- Reputation moderates inflationary pressures (at the cost of higher output volatility)
- Ignoring reputation leads to substantial losses for the CB
- Effects stronger in periods of high policy uncertainty

The value of reputation

$$\begin{aligned} \mathbb{E}_t^{cb}[R_{t+1}|\theta, s, \rho] \approx & -\mathbb{E}_t \left\{ [1 - \alpha_{t+1}(\theta)] \mathbb{E}_t \left[\frac{y_{t+1} - y^*}{y^*} | \varepsilon_{t+1} \right]^2 + \alpha_{t+1}(\theta) \mathbb{E}_t [\pi_{t+1} | \varepsilon_{t+1}]^2 \right\} \\ & -\mathbb{E}_t \left[[1 - \alpha_{t+1}(\theta)] \text{Var}_t \left(\frac{y_{t+1} - y^*}{y^*} | \varepsilon_{t+1} \right) + \alpha_{t+1}(\theta) \text{Var}_t [\pi_{t+1} | \varepsilon_{t+1}] \right]. \end{aligned}$$



Conclusions

- Studied the trade-offs central banks face in keeping inflation expectations "anchored"
 - Short run output distortions vs. lower and more stable inflation expectations
- Sufficient statistic to gauge strength of reputation mechanism: PDV of the elasticity of inflation expectations to interest rate surprises
 - Estimated by applying high-frequency methods to bond market data
 - Elasticity sizable for some emerging market economies
 - In progress: time-variation in the elasticity
- Applied framework to Brazil
 - Motives for building reputation are a key driver of monetary policy
 - Gains in reputation substantially improved the inflation/output trade-off