

Comments on Bordo and Siklos, “Central Bank Credibility: An Historical and Quantitative Exploration”

Lars E.O. Svensson

Stockholm School of Economics

Web: larseosvensson.se

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Paper deals with

- Empirical measures of central-bank credibility
- Historical narrative from 11 countries
- Credibility and institutional factors
- Credibility and financial crises (currency, banking, sovereign debt)
- Credibility and the size of economic shocks, monetary policy regime, and policy errors

Outline of comments

- Credibility, definitions and measures
- Inferring inflation target from reaction-function intercepts (Kozicki-Tinsley)

Central-bank credibility 1

- General definition: Competence, “a safe pair of hands”
- More narrow definition: “Expected to achieve target”
 - Presumes an explicit (or known implicit) numerical target
 - Presumes measure of expectations of future target variable
 - Credibility: Proximity to target of expectations of future target variable
- Inflation target π^* , inflation expectations π^e
 - Credibility: $\pi^e \approx \pi^*$
- Exchange-rate target (target zone): s^* , $[\underline{s}, \bar{s}]$
 - Credibility: $s^e \approx s^*$, $s^e \in [\underline{s}, \bar{s}]$

Central-bank credibility 2

- Distinguish target credibility from **target achievement**
 - Inflation-target achievement: Use $\pi_t \approx \pi^*$?
 - No, imperfect control of inflation!
 - Some deviations from inflation target are unavoidable, unanticipated shocks
 - No, flexible inflation targeting (dual mandate): without prejudice to price stability, also stabilize real economy (employment or unemployment around long-run sustainable rate)
 - Some deviations from inflation target are deliberate, the result of compromise with other objective, “balanced approach” to mitigate deviations
- **Inflation-target achievement:** Longer-run average of inflation equal to target

Central-bank credibility 3

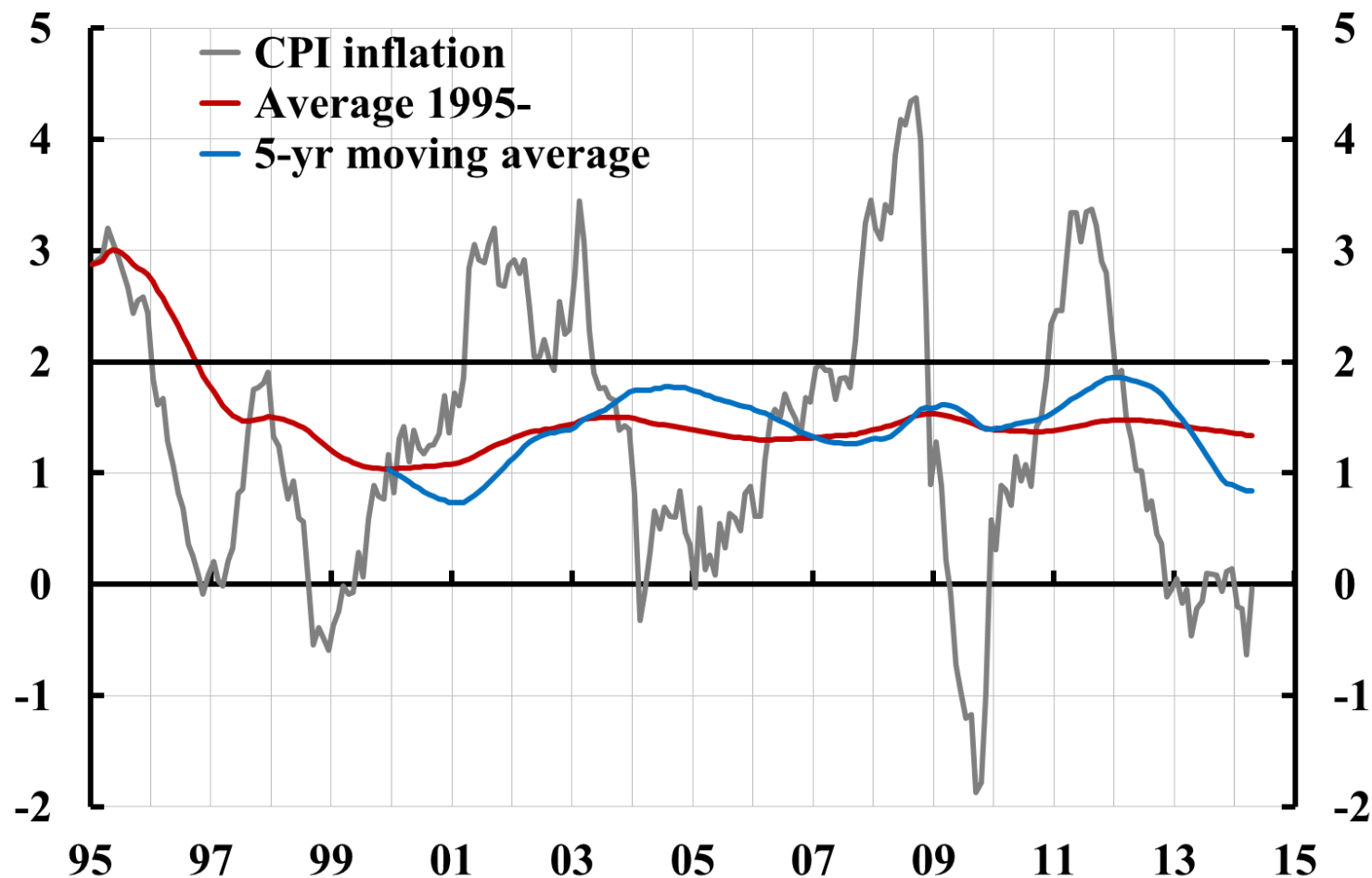
- Bordo-Siklos definition of credibility:

$$(\pi_{it} - \bar{\pi}_{it})^2 = \theta \mathbf{Z}_{it} + \varphi_i (\pi_{i,t-1} - \bar{\pi}_{i,t-1})^2 + \mathbf{u}_{it}$$

- Small squared deviation from inflation target
- But this is an imperfect measure of inflation-target *achievement*, rather than a measure of *credibility*
 - Achievement rather than credibility, since outcome rather than expectations
 - Imperfect, because it includes unanticipated shocks (which differing across economies and time) as well as deliberate deviations under flexible inflation targeting

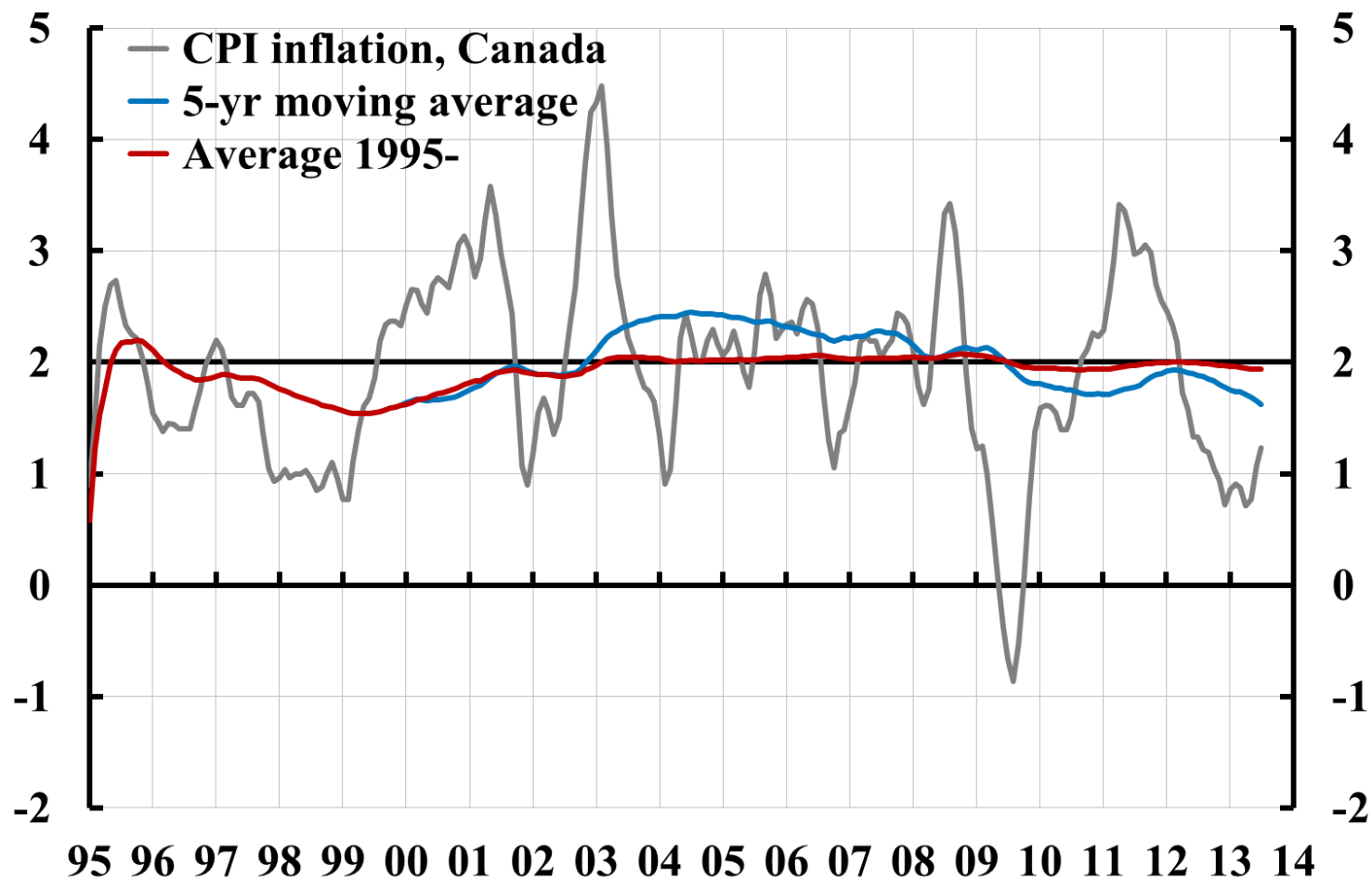
Example 1

Riksbank target achievement: Not good



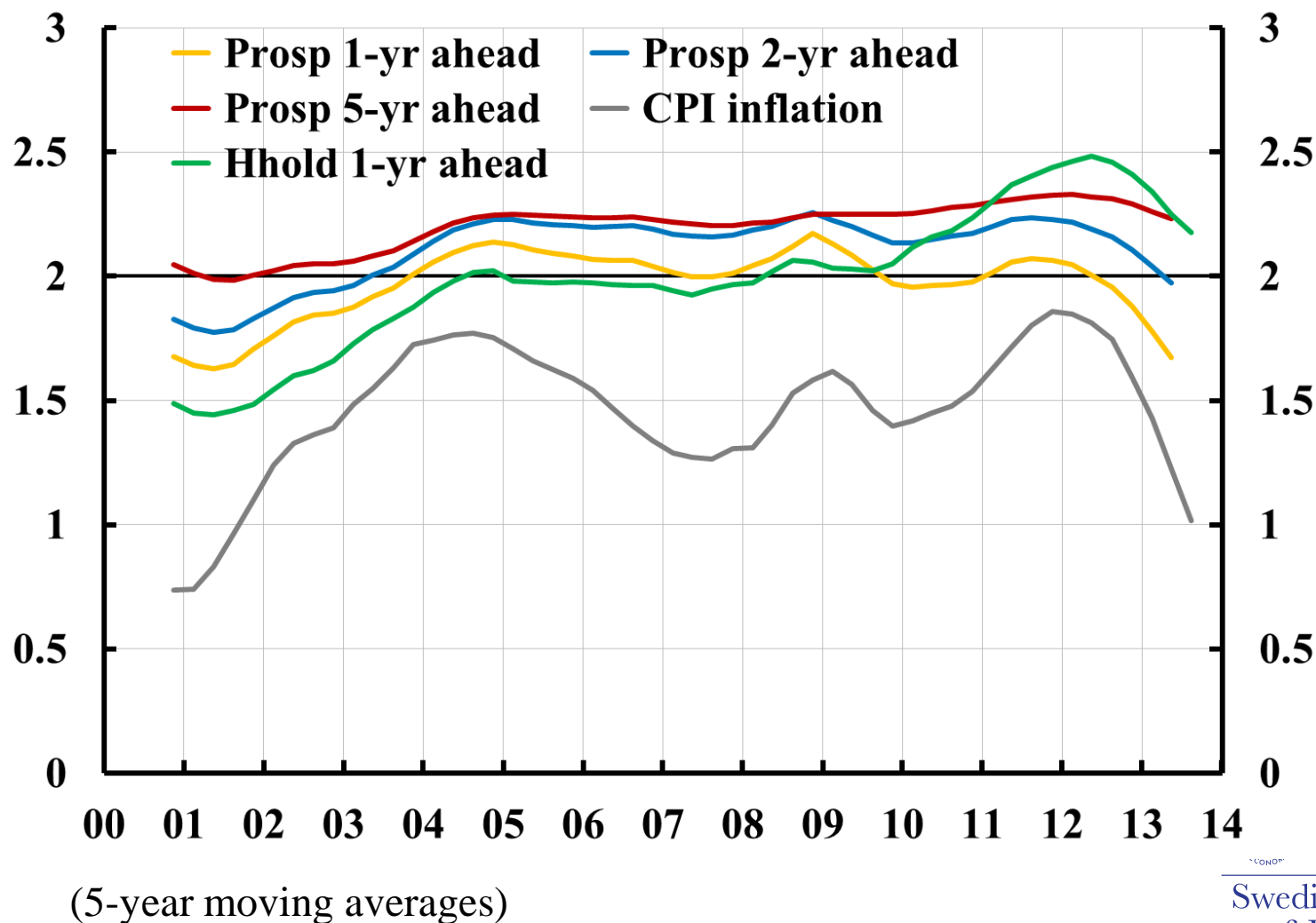
Example 2

Bank of Canada target achievement: Excellent



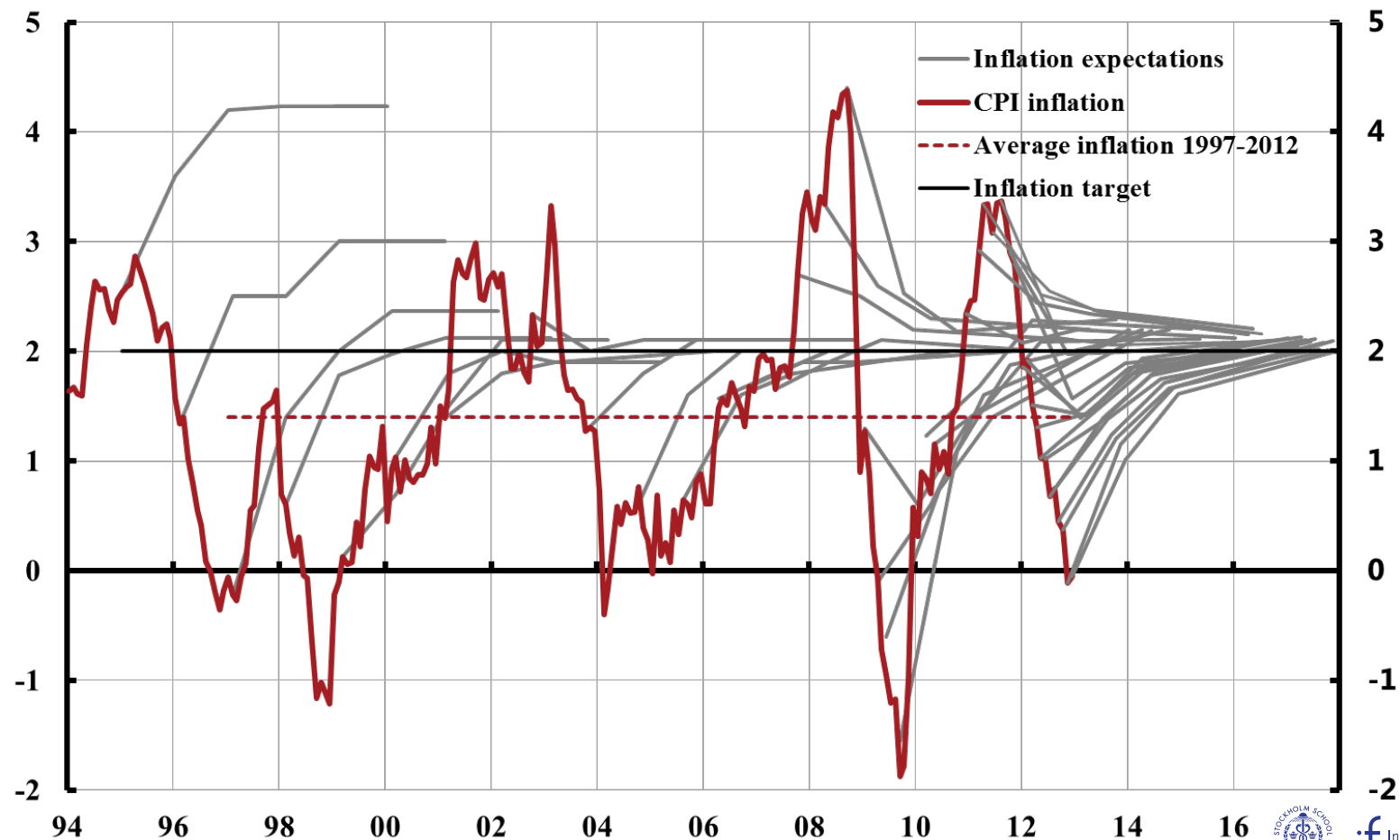
Example 3: Riksbank target credibility: Good

Inflation expectations close to target, in spite of average inflation below target



Example 3

Riksbank graph: "Inflation target credible"



Inferring inflation target from reaction-function intercept? (Kozicki-Tinsley)

$$\begin{aligned}\pi_t - \pi_t^e &= -\gamma(u_t - u^*) \\ u_t - u^* &= \theta(r_t - r^*) \\ r_t &\equiv i_t - \pi_t^e \\ i_t &= r^* + \bar{\pi} + \alpha(\pi_t - \bar{\pi})\end{aligned}$$

- Take unconditional mean and combine:

$$\pi - \pi^e = -\gamma\theta(r - r^*) = -\gamma\theta[(\bar{\pi} - \pi^e) + \alpha(\pi - \bar{\pi})]$$

$$\pi = \frac{1 + \gamma\theta}{1 + \gamma\theta\alpha} \pi^e + \frac{\gamma\theta(\alpha - 1)}{1 + \gamma\theta\alpha} \bar{\pi}$$

- We have $\pi^e > \pi > \bar{\pi}$ or $\pi^e < \pi < \bar{\pi}$, or equality
- If $\pi = \pi^*$ and $\pi^e > \pi^*$, then $\pi^e > \pi^* = \pi > \bar{\pi}$
- Sweden: If $\pi^e = \pi^*$ and $\pi^* > \pi$, then $\pi^e = \pi^* > \pi > \bar{\pi}$
- If high inflation expectations, higher real interest rate needed to fulfill inflation target (which implies a lower $\bar{\pi}$)

Summing up

- Distinguish target achievement and target credibility
 - Riksbank: Target achievement bad, target credibility good
 - $\pi < \pi^* = \pi^e$: Higher unemployment, higher real debt
- Measures of credibility are regime-dependent (target variable(s) different for different regimes)
- Examine each regime separately, break up into subsamples
- Measures of expectations essential (surveys, professional forecasts, break-even inflation rates, expected exchange rates from UIP...)
- Probably not enough old data

Extra slides



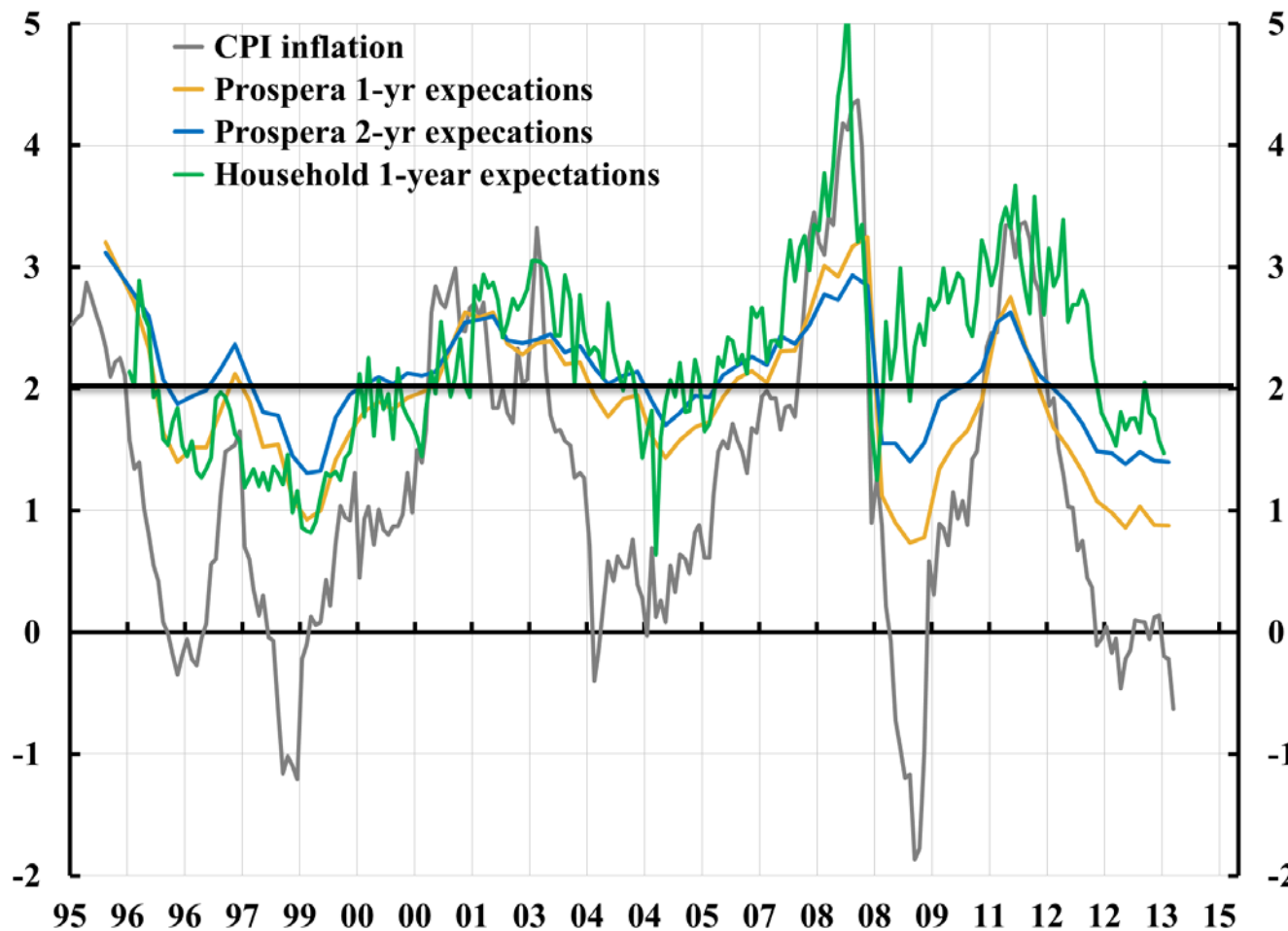
Average inflation in some countries

Country	Target	Index	Period	Average	Deviation
Sweden	2 (1995-)	CPI	1997-2011	1.4	- 0.6
	2 (1995-)	CPI	1997-2007	1.3	- 0.7
Australia	2-3 (1993-)	CPI	1997-2011	2.7	0.2
Canada	2 (1995-)	CPI	1997-2011	2.0	0.0
UK	2.5 (1992-2003)	RPIX	1997-2003	2.4	- 0.1
	2 (2004-)	CPI	2004-2007	2.0	0.0
	2 (2004-)	CPI	2008-2011	3.4	1.4
Euro zone	(< 2) (1999-)	HICP	2000-2011	2.1	
US	(≤ 2) (2000-)	core CPI	2000-2011	2.0	
		core PCE	2000-2011	1.9	



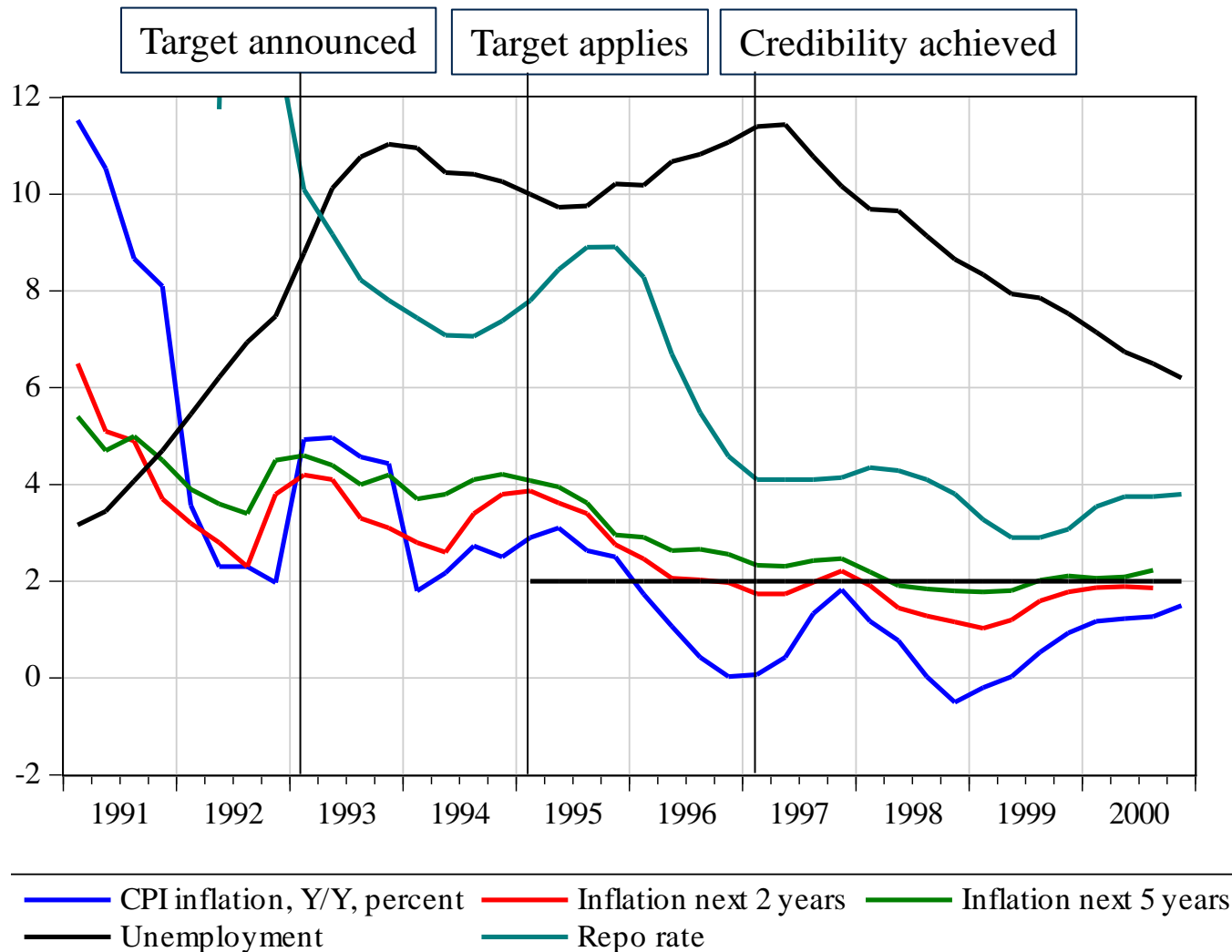
Example 3: Riksbank target credibility: Good

Inflation expectations close to target, in spite of average inflation below target

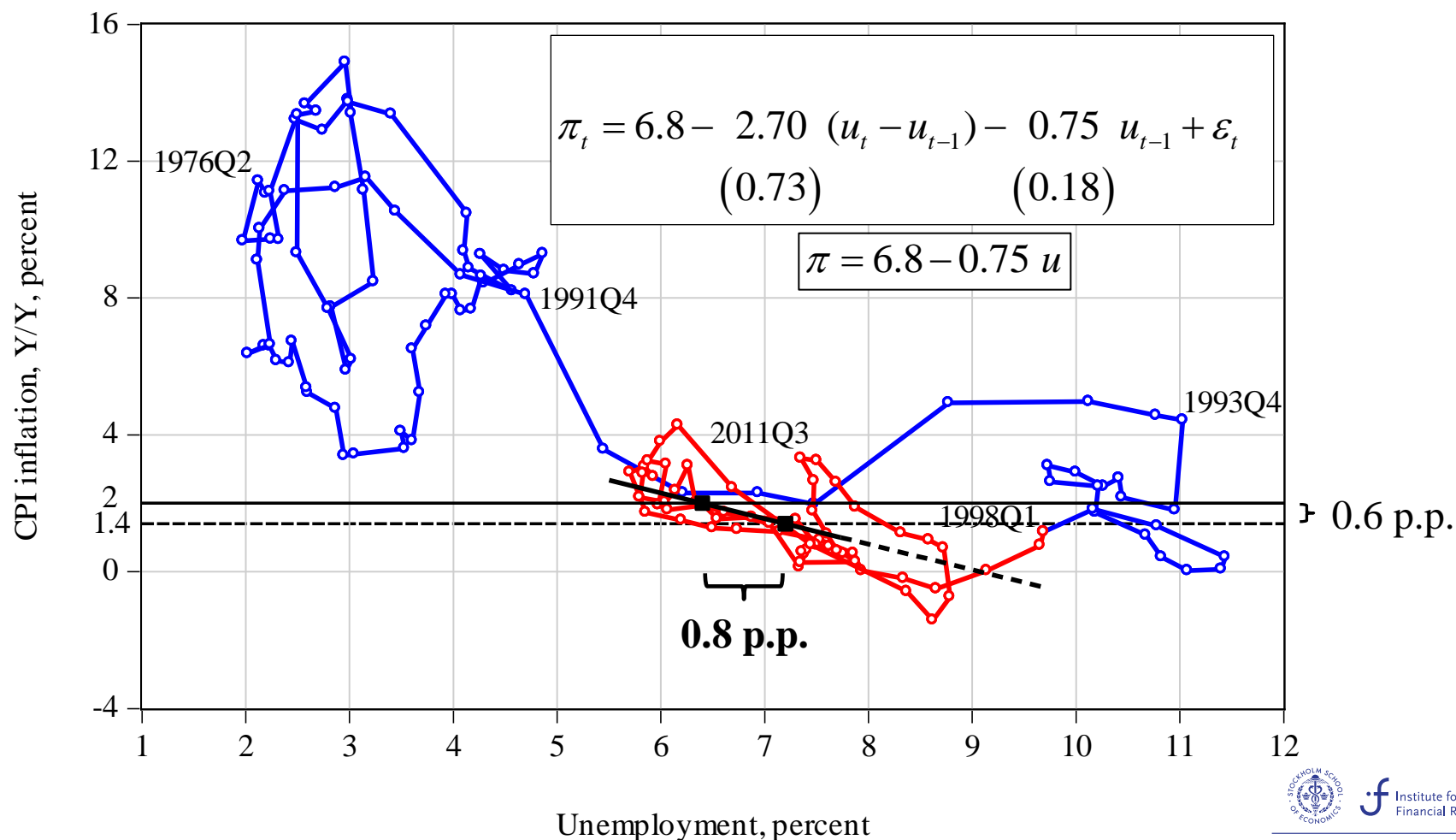


Example 4:

Riksbank establishing credibility of inflation target 1993-95



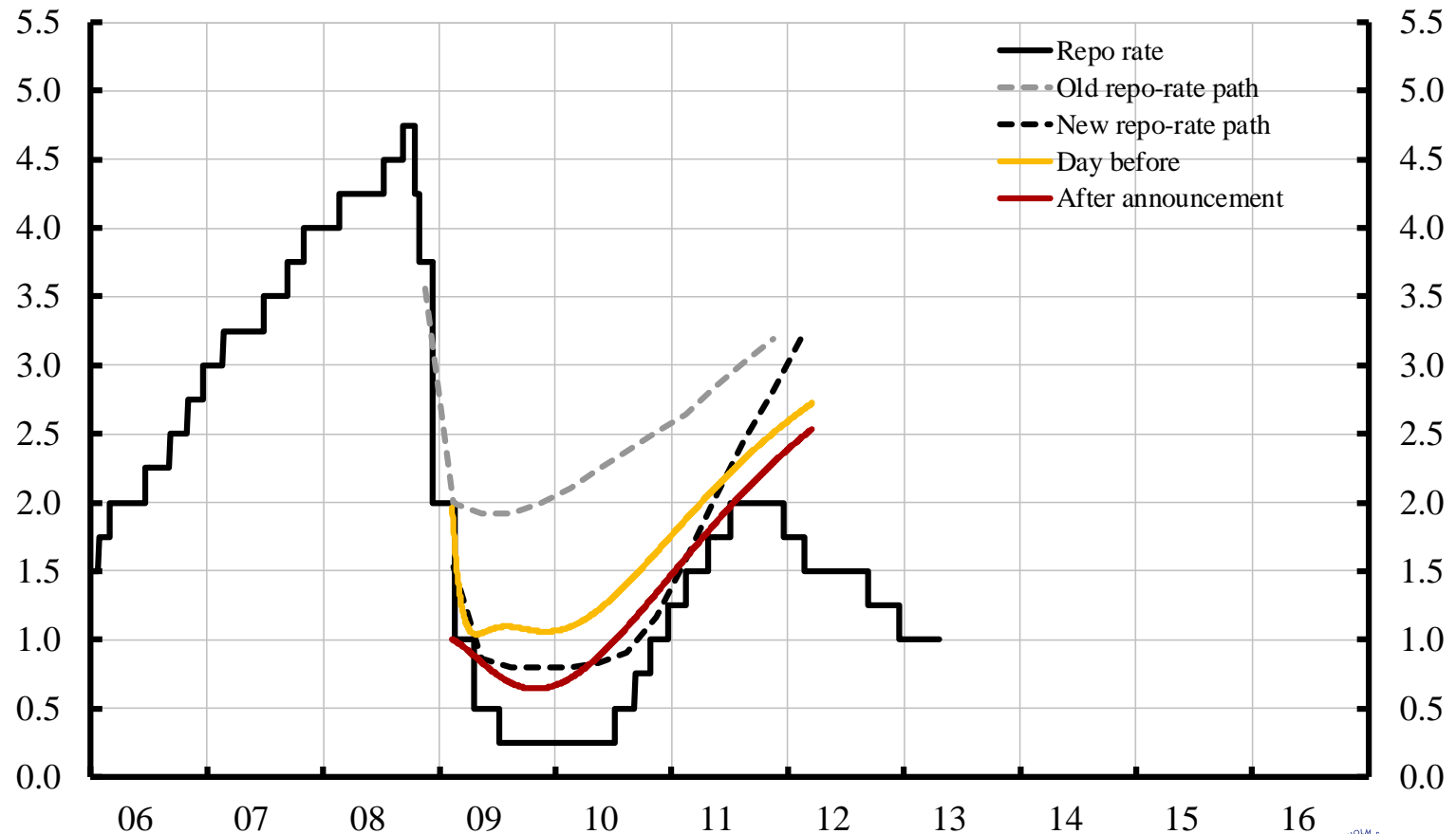
Sweden: Average inflation below target has led to higher average unemployment 1997-2011



Credibility of Riksbank forward guidance 1

Success!

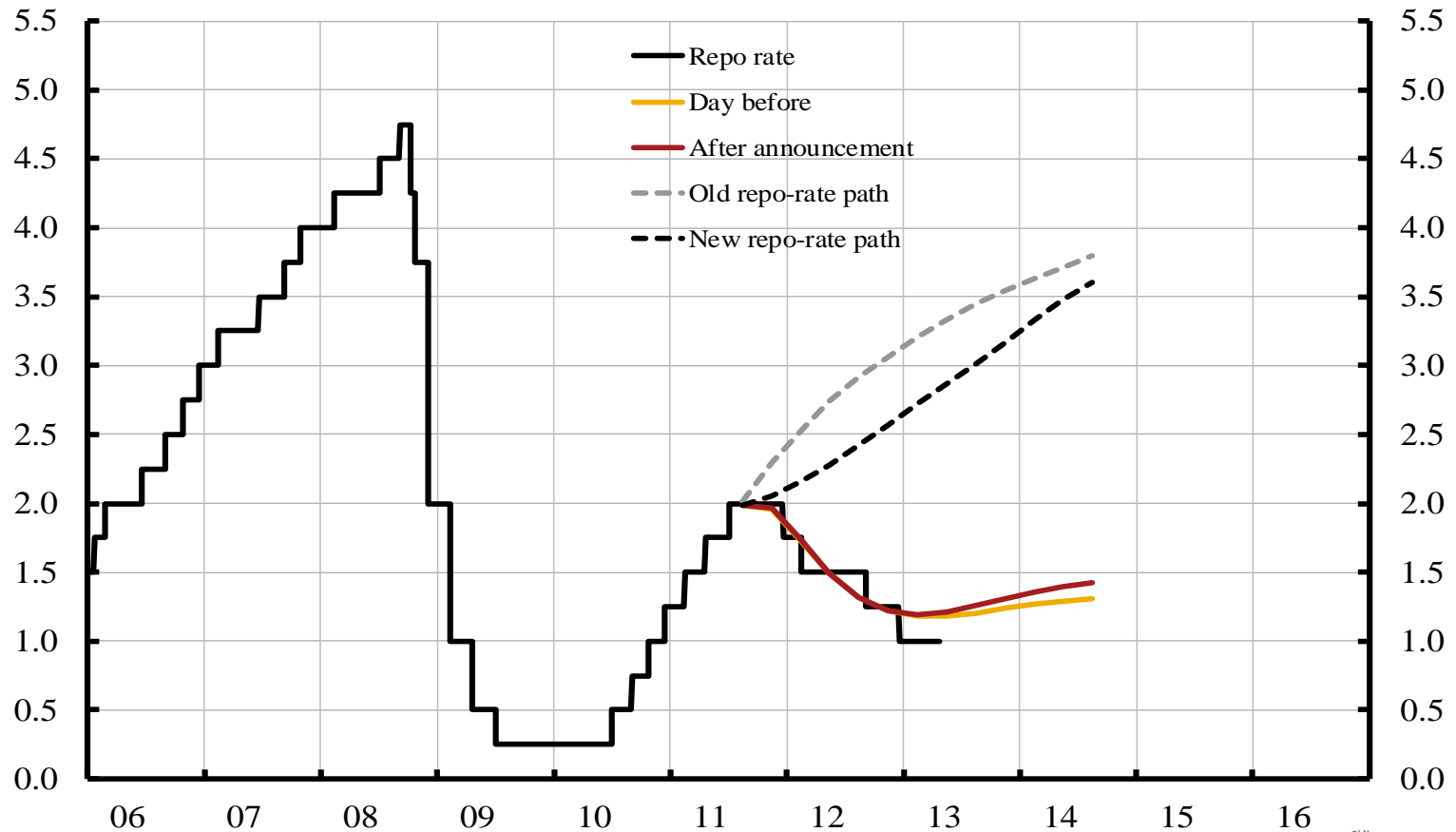
February 2009



Credibility of Riksbank forward guidance 2

Failure!

September 2011



Cont.



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