Some lessons from six years of practical inflation targeting

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Some of my lessons for Sweden and the Riksbank: Outline

1. How should the mandate should be specified?
2. Should household debt be (effectively) added as a target for monetary policy?
3. How should forecast targeting be done?
4. How can policy be evaluated, ex ante and ex post
5. What are the policy implications of a downward-sloping long-run Phillips curve?
6. What is the relation between monetary policy and financial policy (micro- and macroprudential policy)?
7. What are my conclusions?

1. The mandate for monetary policy: Riksbank

- Sveriges Riksbank Act
  - "The objective for monetary policy shall be to **maintain price stability"**
- Government bill
  - "In addition, as an authority under the Riksdag, the Riksbank, without prejudice to the price stability target, is to support the goals of general economic policy with the aim to achieve sustainable growth and **high employment**".
  - High employment = highest **sustainable** rate of employment
- Price stability and the highest sustainable rate of employment
  - Highest sustainable rate of employment = the lowest sustainable rate of unemployment
  - Stabilize inflation around the inflation target and unemployment around an estimated long-run sustainable rate of unemployment (LSRU)

1. The mandate for monetary policy: Fed

- Federal Reserve Act
  - The Fed shall "promote effectively the goals of **maximum employment** and **stable prices**"
  - Maximum **sustainable** employment
- Statement on longer-run goals and monetary policy strategy
  - Inflation target of 2 percent
  - Maximum employment determined by non-monetary factors, may change, needs to be estimated
  - Longer-run normal rate of unemployment, central tendency 5.2-6 %
  - **Balanced approach** in mitigating inflation and employment deviations
- Fed and Riksbank same mandate
  - Stabilize inflation around inflation target and unemployment around an estimated LSRU
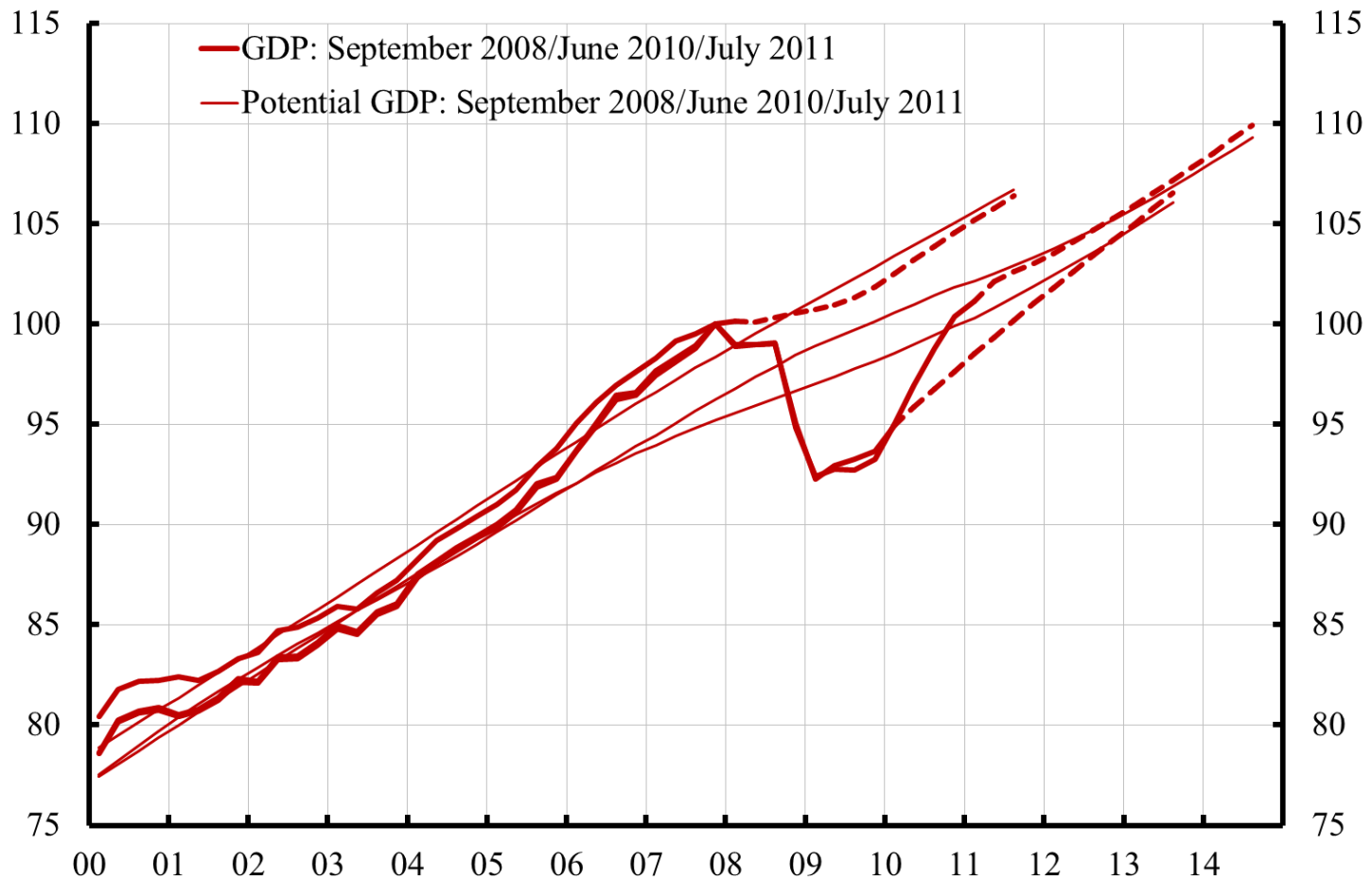
1. The mandate for monetary policy

- Accountability requires not only deviation of inflation but also deviation of resource utilization to be measured
  - Therefore unemployment gap to estimated long-run sustainable rate of unemployment (LSRU)
  - Gap to LSRU as target variable; gap to short-run NAIRU in Phillips curve. Different! (Blanchard and Galí 2010)
- What does the clause "without prejudice to the objective of price stability" mean?
  - Not "inflation on or close to target at all times"
  - Instead "average inflation over a longer period on or close to target"
  - Criterion whether price-stability objective fulfilled or not

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1. The mandate for monetary policy

- Stabilize output gap instead of unemployment gap?
- Problems with potential output
  - Requires estimates of potential: labor force, worked hours, total factor productivity, capital stock
  - Not stationary, moving target
  - Output date measures less frequently, often revised, larger measurement errors
  - Impossible to verify, possible to manipulate
  - Riksbank's estimate of potential output shifted down after crisis, but mainly aggregate-demand shock (?)
  - HP filter problems

Swedish GDP and potential GDP

GDP: September 2008/June 2010/July 2011
Potential GDP: September 2008/June 2010/July 2011

Source: Statistics Sweden and the Riksbank..

1. The mandate for monetary policy

- Unemployment better known and understood
- Importantly, strongly related to welfare. Blanchflower (2009):

"Unemployment hurts. Unemployment has undeniably adverse effects on those unfortunate enough to experience it. A range of evidence indicates that unemployment tends to be associated with malnutrition, illness, mental stress, depression, increases in the suicide rate, poor physical health in later life and reductions in life expectancy. However, there is also a wider social aspect. Many studies find a strong relationship between crime rates and unemployment, particularly for property crime.

Sustained unemployment while young is especially damaging. By preventing labour market entrants from gaining a foothold in employment, sustained youth unemployment may reduce their productivity. Those that suffer youth unemployment tend to have lower incomes and poorer labour market experiences in later life. Unemployment while young creates permanent scars rather than temporary blemishes."

2. Should household debt be an additional target variable for monetary policy?

- High household debt used as justification for inflation below target and unemployment above LSRU

- Effectively new target (or intermediate target)

- Preceding discussion and analysis?
  - Justified for economic and economic-policy reasons?
  - What mechanisms and channels?
 - Consistent with Riksbank Act and Government Bill?

2. Should household debt be an additional target variable for monetary policy?

- **Three claims** that must all be true before trying to use the policy rate to limit household indebtedness

1. The current level of household debt in Sweden entails sufficiently large risks that it needs to be restrained.

2. A higher repo rate could, by restraining the debt, significantly reduce these risks and the risks thus reduced is worth the lower inflation and higher unemployment caused by the higher repo rate.

3. There is no better instrument available, with greater or similar effect on the risks and less effect on inflation and unemployment.

Check claim 2: Policy rate effective in reducing the risks?

- Extensive theoretical and empirical research on effects of policy rate
- The policy rate has **little short-run effect** on the household debt ratio (debt/disposable income)
- "Leaning against the wind" – a higher policy rate – actually *increases* (not reduces) real debt and the debt-to-GDP and debt-to-income ratios (Svensson 2013)
- After 10-15 years, real debt and debt ratios back to baseline
- The policy rate affects total nominal debt very slowly – but the price level, nominal GDP and nominal income much faster
- Assumptions
  - New mortgages at constant LTV ratio (70%)
  - Only $1/15^{th} = 6.7\%$ of mortgages refinanced each year
  - Impulse responses of inflation and GDP according to Ramses
  - Housing-price semi-elasticity w.r.t. 1-yr mortgage rate about 0.7 (Svensson 2013)

Impulse responses to 1 percentage point higher policy rate during year 1
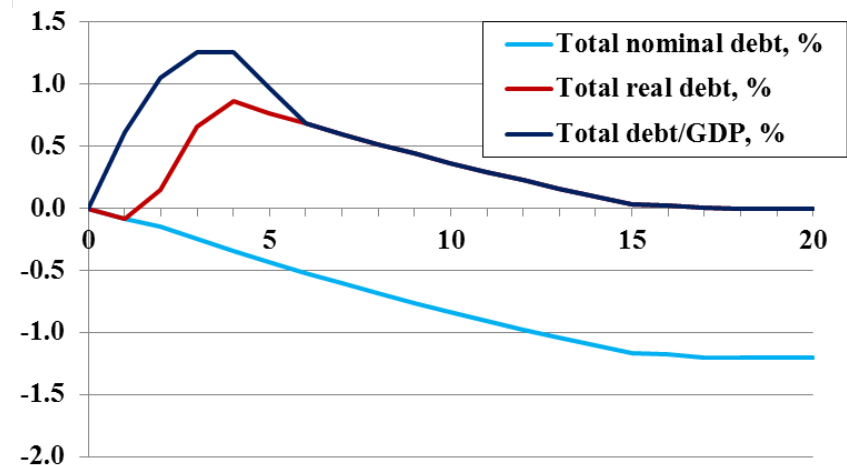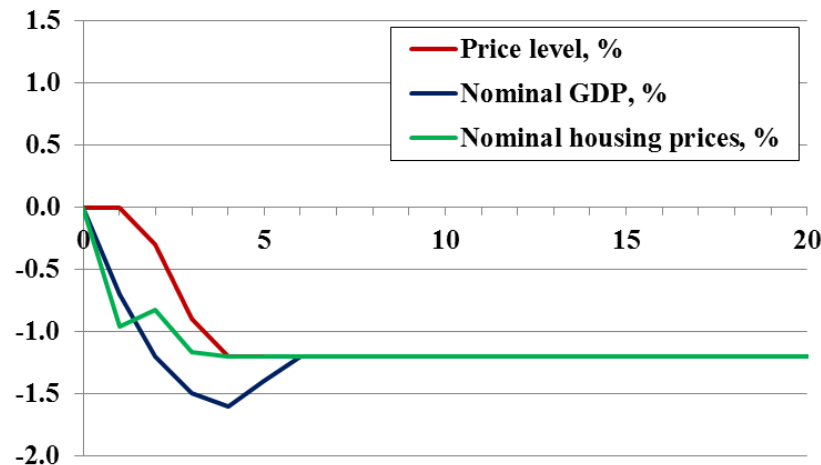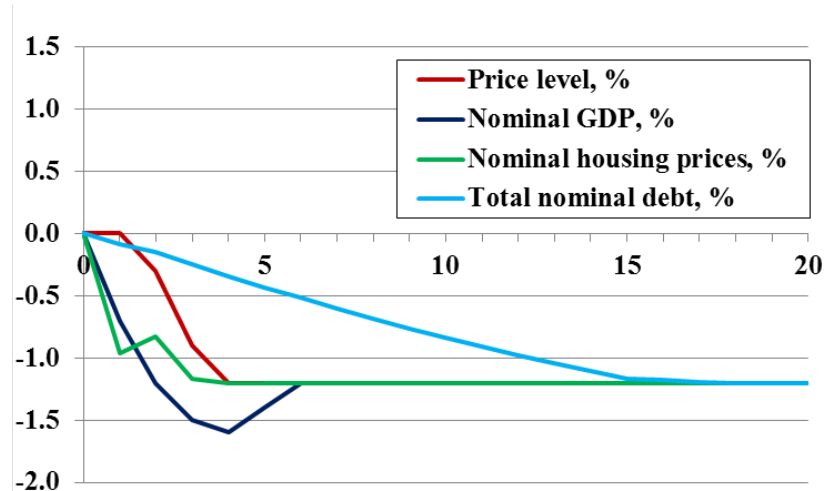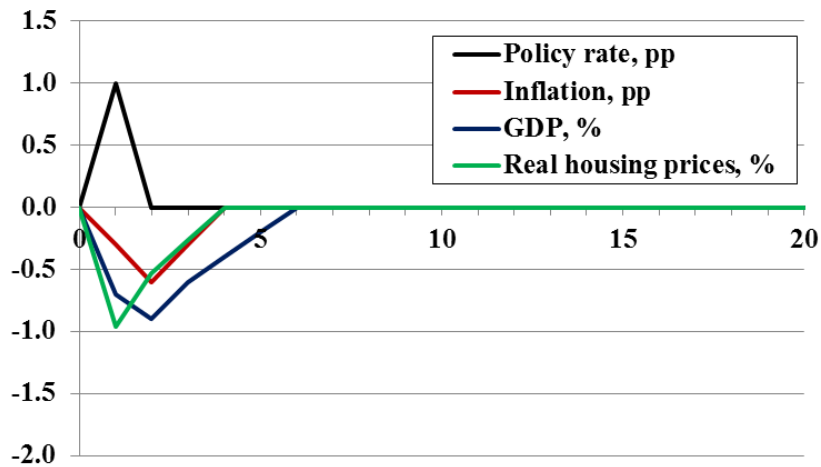
Source: Svensson (2013), "Leaning against the wind leads to higher (not lower) household debt-to-GDP ratio," larseosvensson.se.

Check claim 2: Policy rate effective in reducing the risks?

- The dynamics of real debt and debt ratios dominated by the dynamics of the denominator
- Real housing prices are relative prices
- The debt ratio is not a nominal variable

- **Claim 2 does not hold true!**

Check claim 3: No other instruments?

- The government and Finansinspektionen (FSA) have taken or announced several effective measures
1. The loan-to-value cap
2. Higher capital adequacy requirements for systemically important banks
3. Higher risk weights for mortgages
- The banks are contributing
1. Applying the loan-to-value cap
2. Strict lending standards (FSA Mortgage Market Reports)
- **Claim 3 does not hold true**
- **Household debt should not be an additional target**

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# New strengthened framework for financial stability in Sweden

- ## Finansinspektionen (FSA)
  - Responsible for financial stability
  - Control of all micro- and macroprudential instruments (including the counter-cyclical capital buffer)
- ## Stability Council
  - Chair: Minister of Financial Markets
  - Members: Heads of the FSA, the NDO, and the Riksbank
  - Transparent discussion about financial stability, not decisions
- ## Riksbank mandate not broadened

3. Forecast targeting

- Set policy rate and policy-rate path so corresponding forecasts for inflation and unemployment "look good"

- Algorithm
  - Step 1: For previous policy-rate path, show impact of new information and assessments on forecasts for inflation and unemployment
  - Step 2: Adjust policy-rate path so corresponding forecasts for inflation and unemployment "look good"
  - Publish both steps
  - In practice, only outcome of step 2 published so far

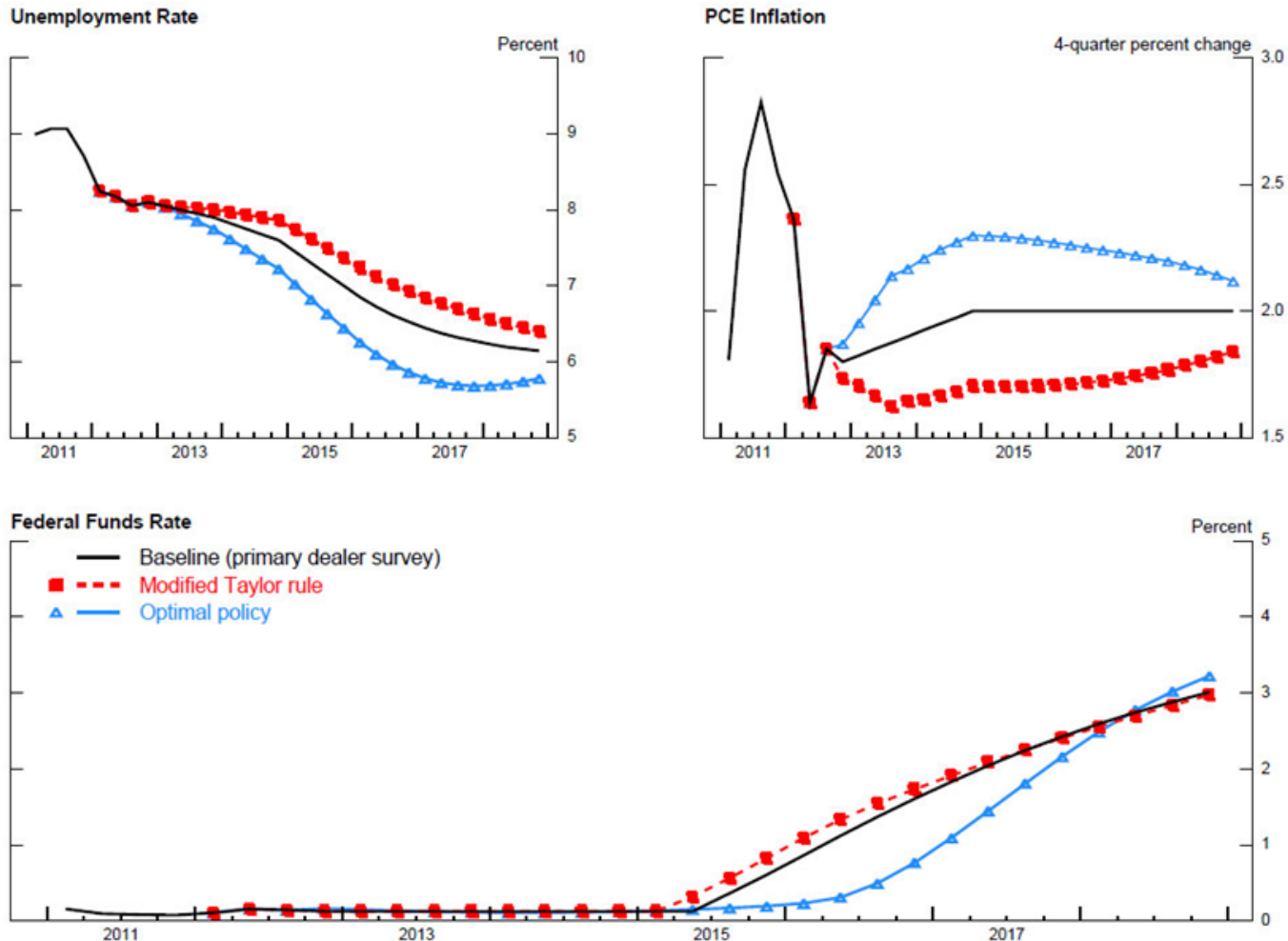# 3. Forecast targeting: Use four-panel graphs
Example: Feb 2012 meeting
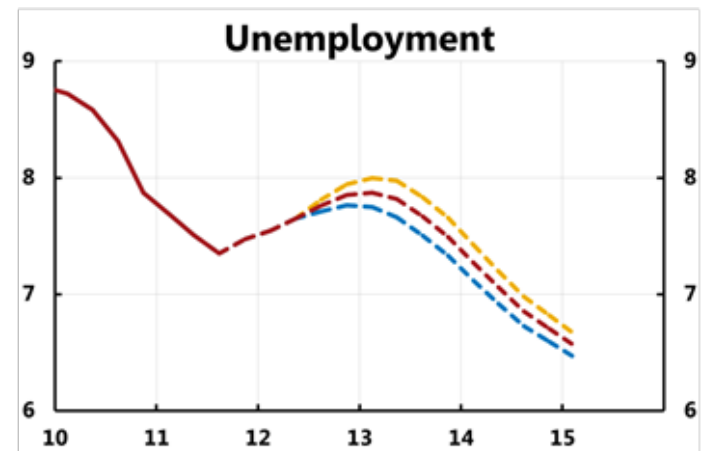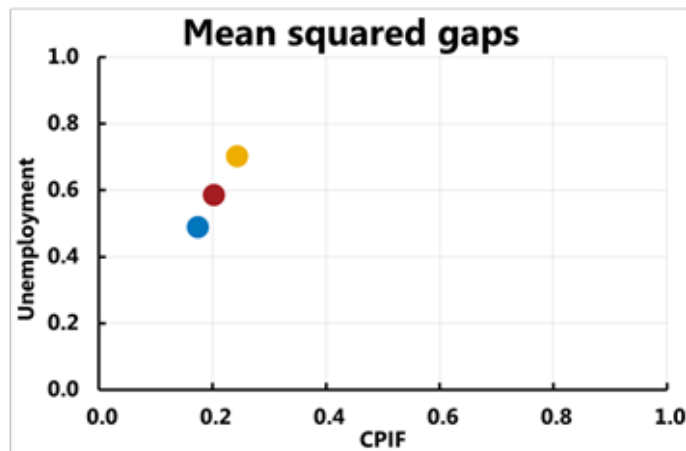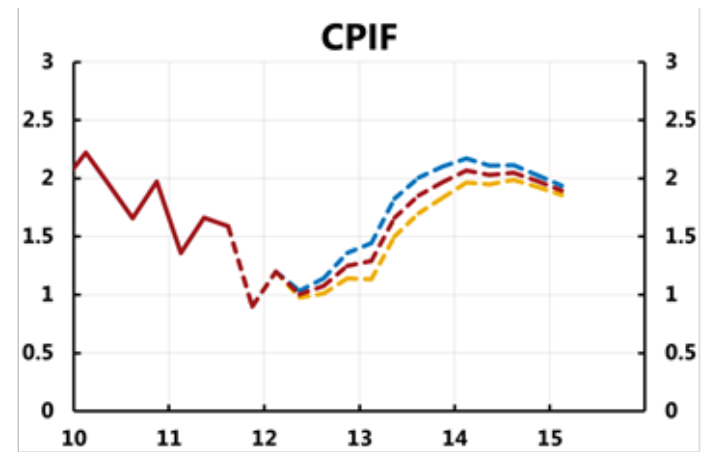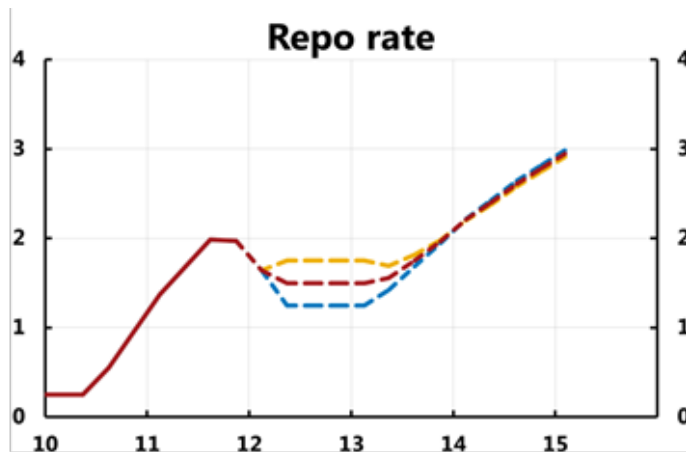
Main scenario   Lower repo rate   Higher repo rate

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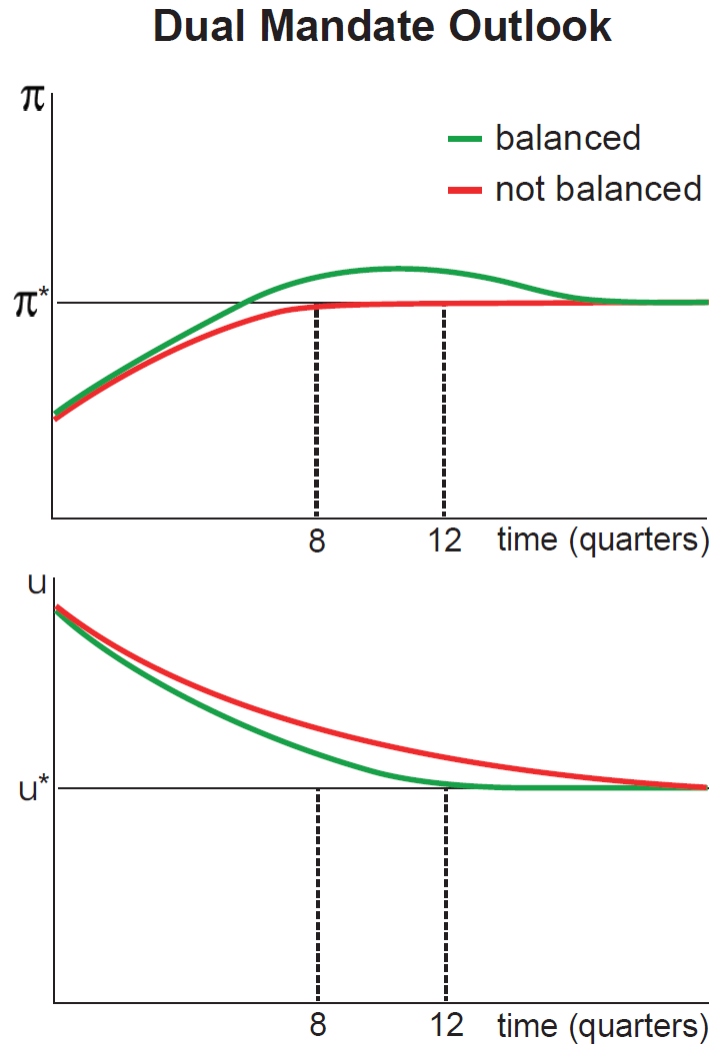Financial Research

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3. Forecast targeting: Yellen (2012)

Three Policy Paths: An Illustrative Exercise

Source: Federal Reserve Bank of New York, Survey of Primary Dealers, September 2012.
(The charts have been revised since their original release.)

Source: Yellen, Janet L. (2012), "Revolution and Evolution in Central Bank Communications," speech at the Haas School of Business, University of California, Berkeley, November 13, 2012, www.federalreserve.gov.

3. Forecast targeting: "Balanced approach" Kocherlakota (2013)

Kocherlakota, Narayanaa (2013), "Operational Implications of the FOMC's Principles Statement," speech at the Federal Reserve Bank of Boston, April 13, 2013.
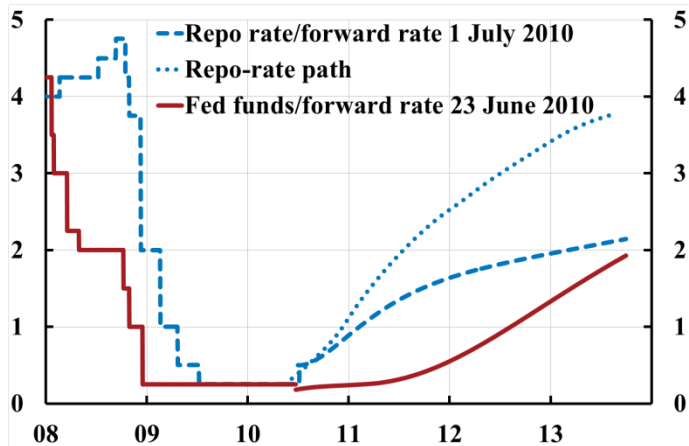
4. Policy evaluation

- Ex ante, in real time, taking into account only information available at the time of decision

- Ex post, after the fact, taking into account information about economy after the decision
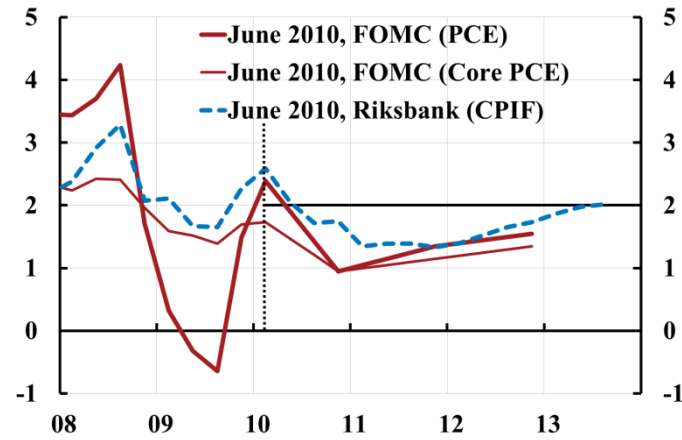
4. Policy evaluation ex ante
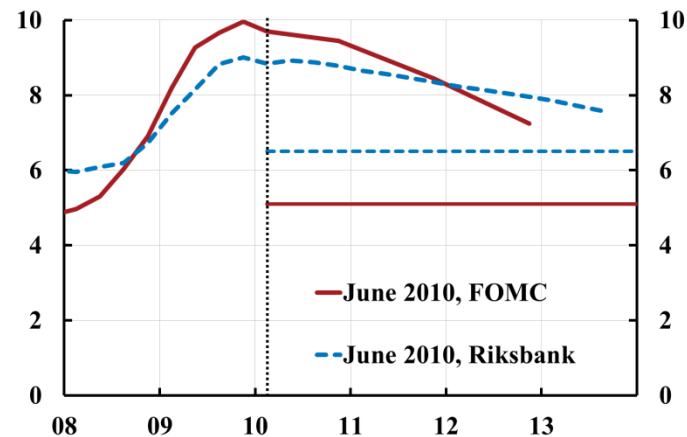# FOMC and Riksbank, June/July 2010

Policy rate

- Repo rate/forward rate 1 July 2010
- Repo-rate path
- Fed funds/forward rate 23 June 2010

Inflation

- June 2010, FOMC (PCE)
- June 2010, FOMC (Core PCE)
- June 2010, Riksbank (CPIF)

Unemployment

- June 2010, FOMC
- June 2010, Riksbank
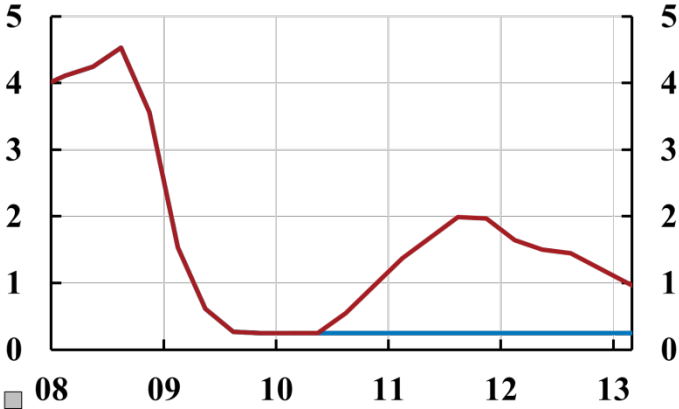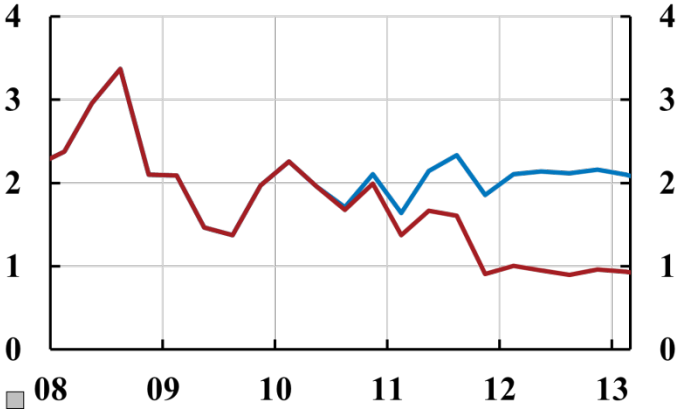
Svensson, Lars E.O. (2011), "Practical Monetary Policy: Examples from Sweden and the United," *Brookings Papers on Economic Activity*, Fall 2011, 289-332.

21

4. Policy evaluation ex post: Outcomes compared to counterfactual low policy rate 2010-2012

Policy rate

CPIF

Household debt ratio, % of disposable income

— Actual outcome
— Low policy rate

Unemployment

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Sources: The Riksbank, Statistics Sweden, and own calculations
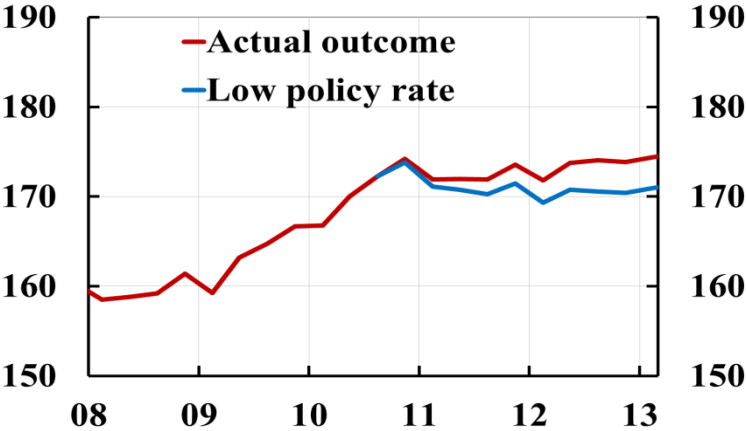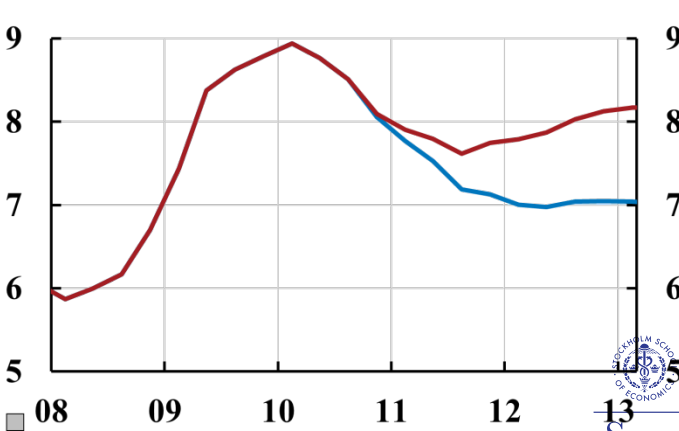
4. Policy evaluation ex post:
Average inflation over a longer period on target?
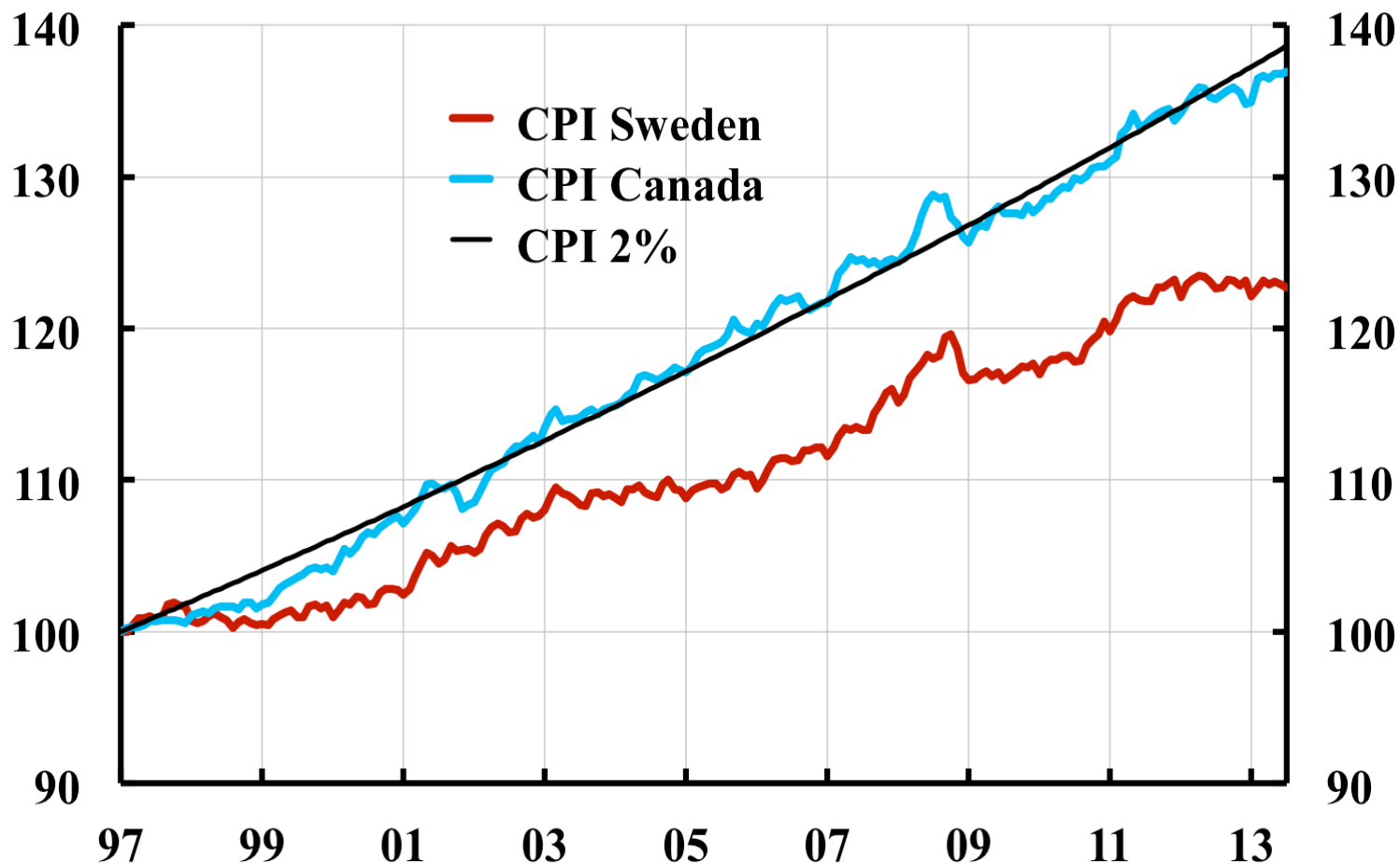
Average inflation below credible target: "Debt deflation!"

- Since 1997, inflation target credible, average inflation expectations anchored at target 2 %

- Average CPI-inflation 1.4 %

- Sweden an outlier

Average inflation in some countries:
Sweden an outlier

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	
USA	(≤ 2) (2000-)	core CPI	2000-2011	2.0	
		core PCE	2000-2011	1.9	

Price level ex post lower than anticipated:
"Debt deflation": Real debt higher than anticipated!

Unaticipated increase in real value of nominal debt in July 2013, depending on when the debt was taken on
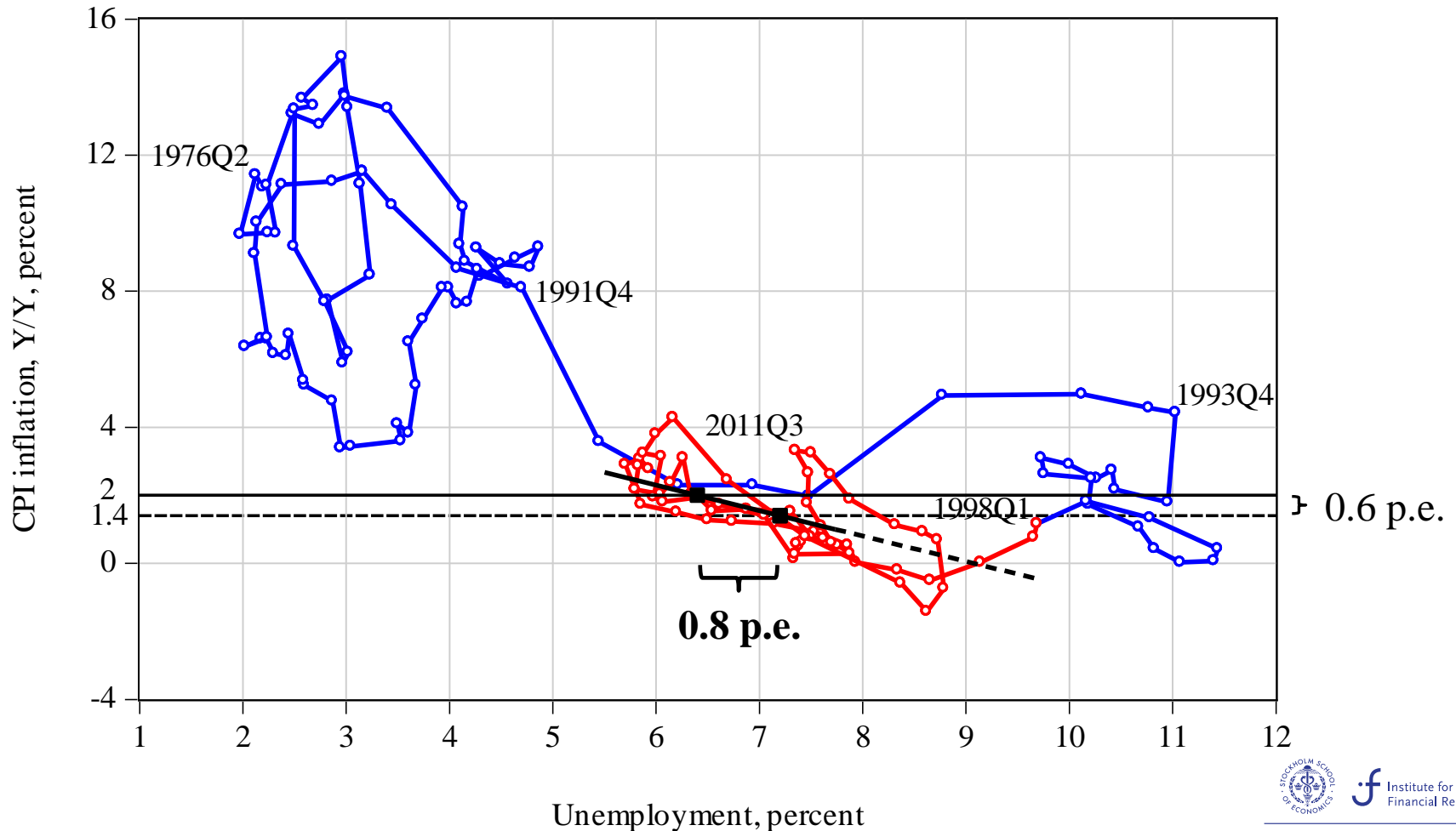
Percent

5. A downward-sloping Phillips curve

- Since 1997, inflation target credible, average inflation expectations anchored at target 2 %

- Average CPI-inflation 1.4 %

- Sweden an outlier

- Non-vertical long-run Phillips curve, at least for not too large deviations of average inflation from target

- Average unemployment 0.8 p.p. higher than if average inflation had been on target

5. A downward-sloping Phillips curve

Unemployment and annual CPI inflation 1976-2012 and the long-run Phillips curve 1997-2012

Source: Svensson , Lars E.O. (2013), "The possible unemployment cost of average inflation below a credible target", www.larseosvensson.net.

5. A downward-sloping Phillips curve

- Credible inflation targets, non-vertical Phillips curve global phenomenon
- Fuhrer (2011): The U.S. 2000-2011
- Canada 1997-2013
- IMF WEO ch. 3: Credible inflation targets, flat Phillips curves in several countries, global phenomenon
- Policy conclusion: Keep average inflation over a longer period on or close to target
- Do not show "prejudice to the objective of price stability"

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6. Monetary policy and financial stability

- Lessons from financial crisis?
- Financial policy (micro- and macroprudential policy) failed, not monetary policy
- Flexible inflation targeting remains best-practice – before, during, and after crisis
- Monetary policy and financial policy should not be confused
- Financial policy: Maintain **resilience** of financial system
- Conduct monetary policy and financial policy independently but with full information about the conduct of the other policy
- For Sweden: New strengthened framework for financial stability, in line with this
- More on household debt and risks to financial stability in paper

7. Conclusions

- Be clear about the mandate: Stabilize inflation around inflation target and unemployment around an estimated LSRU

- Do not add the household debt ratio as a target

- "Leaning against the wind" is counterproductive

- Use a 2-step algorithm to do forecast targeting: Show both steps in 4-panel graphs

- Use 4 panel graphs in evaluation of monetary policy ex ante and ex post

- With a credible inflation target, the long-run Phillips curve will be non-vertical: Keep average inflation over a longer period on or close to the target

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7. Conclusions

- Flexible inflation targeting remains best-practice monetary policy before, during, and after the financial crisis
- Do not confuse monetary and financial policy
- Use monetary policy to achieve price stability and highest sustainable employment
- Use financial policy to maintain financial stability (maintain sufficient **resilience** against disturbances that threaten financial system's 3 main functions)
- Each policy fully informed about the conduct of the other
- The new framework for financial stability in Sweden in line with this

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