Monetary Policy: Current Controversies

— Week 8 —

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Summary

1. The dominant view in modern central banking
2. The tremendous controversy in current monetary policy: some examples
3. The mandate of the ECB (partially covered ... lack of time)
4. The mandate of the FED (partially covered ... lack of time)
5. Comparing ECB with the FED (not covered ... lack of time)
6. Credibility, Independence and Transparency
7. Bibliography

I – The dominant view in modern central banking

The dominant view about central banking

1. Central Banks are crucial to modern economies
   1. Providing liquidity
   2. Maintaining price stability
   3. Lender of last resort
2. CB should be credible:

$$\textit{commitment} \longmapsto \textit{rule} \longrightarrow \textit{target}$$

3. CB should be independent from governments ... even at the cost of not having them accountable to the people
4. CB should be transparent: information disclosure

Credibility, Independence and Transparency

II – The tremendous controversy in current monetary policy

'Battle of the beards': Paul Krugman vs. Ben Bernanke

Getty Images - Paul Krugman, a Nobel Prize winner and a New York Times columnist, accuses the Federal Reserve of being too timid. Fed Chairman Ben Bernanke calls Krugman's policy proposals "reckless."

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By Robert J. Samuelson, Published: May 7

It's being called the "battle of the beards" — Paul Krugman vs. Ben Bernanke. Both are eminent (and bearded) economists: Bernanke, chairman of the Federal Reserve Board; Krugman, a Nobel Prize winner and a prominent New York Times columnist. Krugman accuses Bernanke of being too timid in fighting high unemployment and slow economic growth. Bernanke calls Krugman's policy proposals "reckless." What's going on?

Ben Bernanke: "green shoots"

"I think as those green shoots begin to appear in different markets and as some confidence begins to come back that will begin the positive dynamic that brings our economy back.

– Do you see green shoots?

– I do. I do see green shoots."

Ben Bernanke, FED chairman, in "60 Minutes", March 15, 2009

Paul Krugman on Ben Bernanke

> *"His remarks immediately became famous [...] resemblance to the words of Chance ... the* **simpleminded gardener mistaken for a wise man in the movie Being There***. In one scene Chance, asked to comment on economic policy, assures the president, "As long as the roots are not severed, all is well and all will be well in the garden ...There will be growth in the spring." Despite the jokes, however, Bernanke's optimism was widely shared ... and Time declared Bernanke its Person of the Year."*

Paul Krugman, from "End This Depression Now!", W.W. Norton & Company, 2012.

Jens Weidmann: Bundesbank President

"In addition to lowering interest rates, the Eurosystem has enacted a number of unconventional measures to deal with the unique challenges to price stability and financial stability emanating from the crisis. [...] They must not become a convenient analgesic for prolonging an unsustainable status quo. [...]

Delivering on its primary goal to maintain price stability is the prerequisite for safeguarding the most precious resource a central bank can command: **credibility***."*

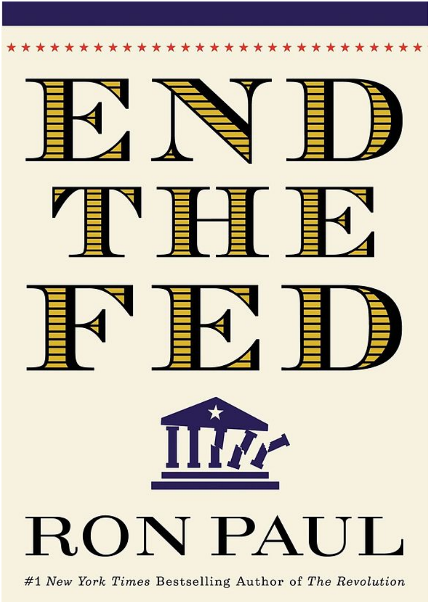
Jens Weidmann, Monetary policy is no panacea for Europe, Financial Times, May 7, 2012

Ron Paul: runner for Republican party's presidential nomination

> *"The financial crisis has fully exposed the intellectual bankruptcy of the world's central bankers.*
>
> *Why? Central bankers neglect the fact that interest rates are prices. Manipulating those prices ...has real and deleterious effects on the economy. [...]* **the myth persists that central banks are a necessary component of market economies.***"*

Ron Paul, "Our central bankers are intellectually bankrupt", Financial Times, May 2, 2012

Ron Paul: solution



Paul Krugman: Nobel Prize in Economics

"My point is that when central bankers invoke **"credibility"**, *they're in effect saying something like this:*

Our most precious asset is our hypothetical ability — for which we have no evidence, but in which we nonetheless believe — to deal more easily with a hypothetical future problem. And rather than endanger this precious asset, we refuse to act on the intense problem we have right now.

Serious!"

Paul Krugman, The Credibility Fixation, New York Times, 8 May.

Martin Wolf: Financial Times Economics Editor

> *"What is the future of central banks? It will be busy, because they are now expected to deliver both monetary and financial stability. It will be controversial, because the decisions they make have a huge impact on the distribution of income, people's access to finance, the way the financial system operates and even the solvency of governments."*

Martin Wolf, After the bonfire of the verities, Financial Times, May 1, 2012

FED Bazooka

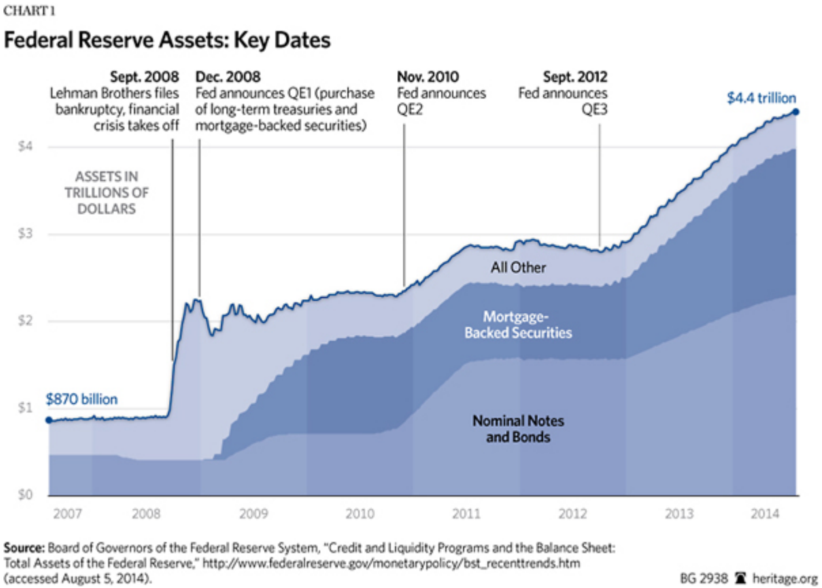
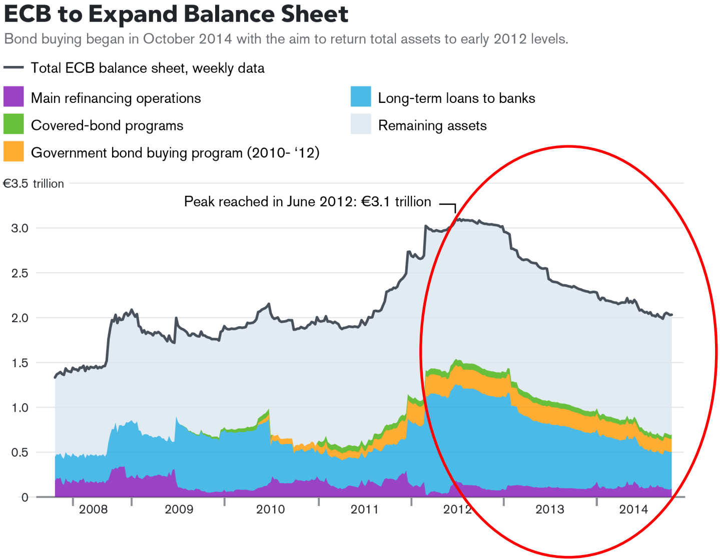
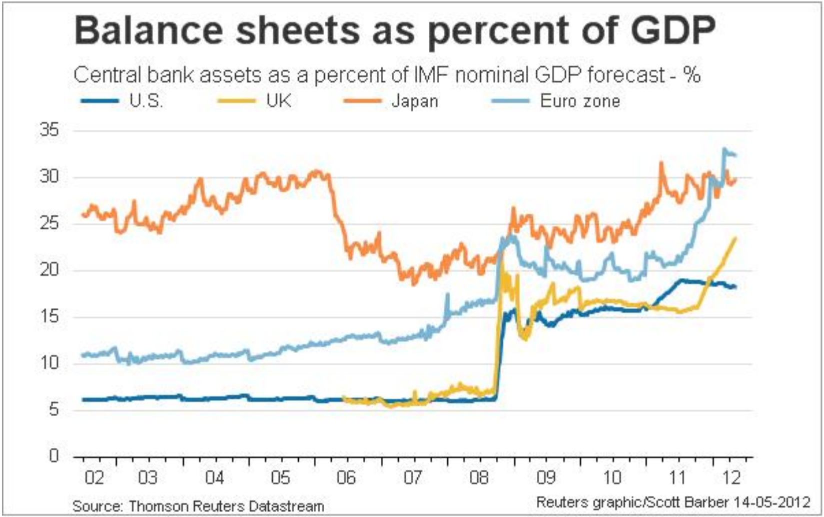


CHART 1
Federal Reserve Assets: Key Dates
Sept. 2008
Lehman Brothers files bankruptcy, financial crisis takes off
Dec. 2008
Fed announces QE1 (purchase of long-term treasuries and mortgage-backed securities)
Nov. 2010
Fed announces QE2
Sept. 2012
Fed announces QE3
$4.4 trillion
$4
$3
$2
$1
$0
ASSETS IN TRILLIONS OF DOLLARS
$870 billion
All Other
Mortgage-Backed Securities
Nominal Notes and Bonds
2007
2008
2009
2010
2011
2012
2013
2014
Source: Board of Governors of the Federal Reserve System, "Credit and Liquidity Programs and the Balance Sheet: Total Assets of the Federal Reserve," http://www.federalreserve.gov/monetarypolicy/bst_recenttrends.htm (accessed August 5, 2014).
BG 2938 heritage.org

ECB: why the bazooka went away?

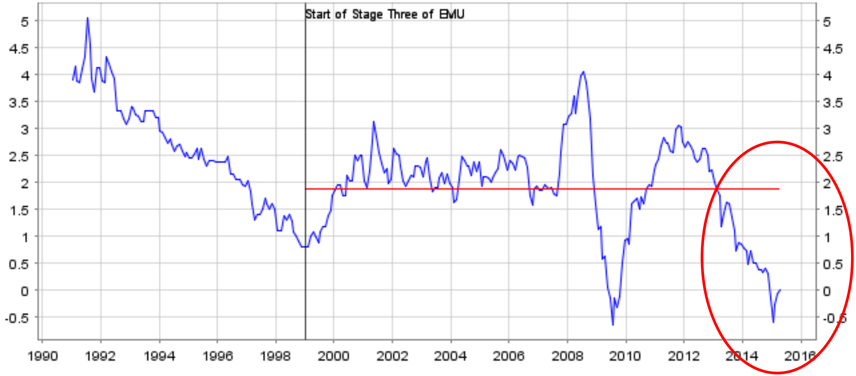


Bazookas everywhere



Is the ECB respecting its mandate?

1. Inflation target: 2%
2. But ... we have



III – The mandate of the European Central Bank (ECB)

The European Central Bank (ECB)

ARTICLE 105 (THE MAASTRICHT TREATY)

Main objective

"1. **The primary objective** of the ESCB shall be **to maintain price stability** ... The ESCB shall act in accordance with the principle of an open market economy with free competition, favouring an efficient allocation of resources, and in compliance with the principles set out in Article 3a."

Main tasks

"2. The basic tasks to be carried out through the ESCB shall be:

1. to define and **implement the monetary policy** of the Community;
2. to conduct **foreign exchange operations** consistent with the provisions of Article 109;
3. to hold and manage the official foreign reserves of the Member States;
4. to promote the **smooth operation of payment systems**."

Who belongs to the ECB?

Figure 2

European System of Central Banks

ECB's fundamental objective

1. What is "price stability"?
2. **Clarification 1**: in 1998, the Governing Council presented this quantitative target:

What is "Price Stability"?

"Price stability shall be defined as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%. Price stability is to be maintained over the medium term".

3. **Clarification 2**: in 2003, new clarification:

What is "Price Stability"?

" [The ECB] aims to maintain inflation rates below but close to 2 % over the medium term".

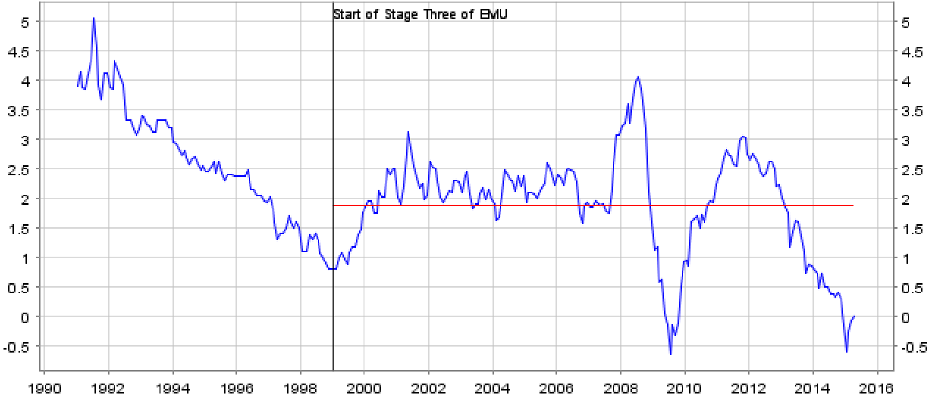
Harmonized Index of Consumer Prices: structure

TABLE WEIGHTS OF THE MAIN EURO AREA HICP COMPONENTS APPLICABLE FOR 2007

Overall index	**100.0**
Goods prices	**59.1***
Unprocessed food	7.6
Processed food	11.9
Non-energy industrial goods	30.0
Energy	9.8
Services	**40.8**
Housing services	10.2
Transport	6.4
Communication	3.1
Recreation and personal services	14.4
Miscellaneous	6.7

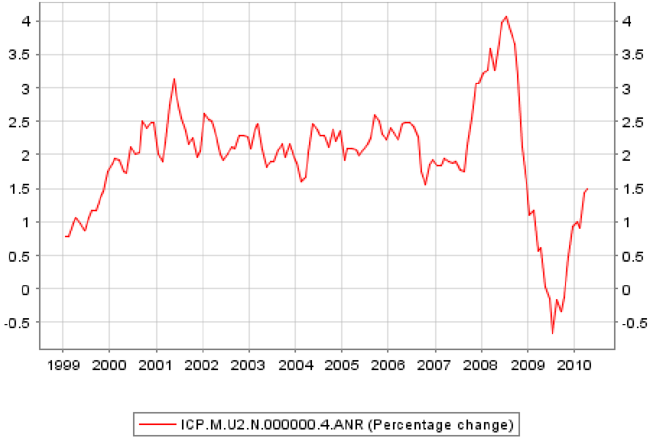
* Figures may not add up due to rounding. Source: Eurostat.

Harmonized Index of Consumer Prices: evolution



Harmonized Index of Consumer Prices: objective

1. The problem of the 2% : **anchorage expectations**
2. Average inflation between 2000 and 2008: **2%**.



IV – The mandate of the Federal Reserve Board (FED)

The US central bank (FED)

1. Federal Reserve Act (1913)
2. The Full Employment and Balanced Growth Act (known informally as the Humphrey–Hawkins Full Employment Act), 1978

Main objectives

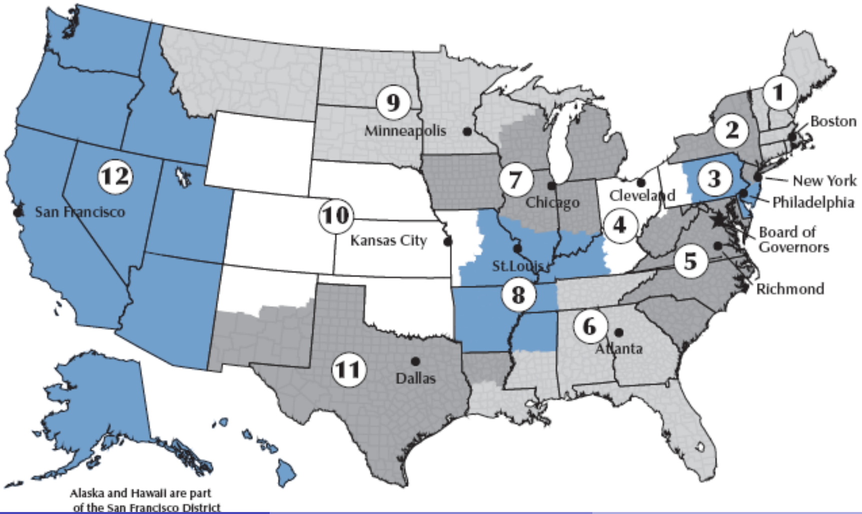
"The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of **maximum employment, stable prices, and moderate long-term interest rates**."

3. Notice that: **maximum employment and stable prices** .. *Aren't they conflicting goals?*
4. The Phillips Curve tells us that these two objectives are generally conflicting goals.
5. How to solve the problem? **Two** goals, only **one** main tool?

Who belongs to the FED?

Figure 1

The Federal Reserve System

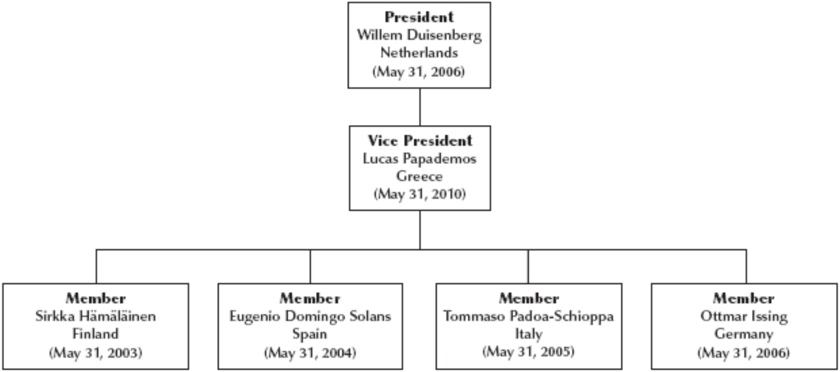


V – Comparing ECB with the FED

The Governing Council: ECB

Figure 4

Members of the Executive Board

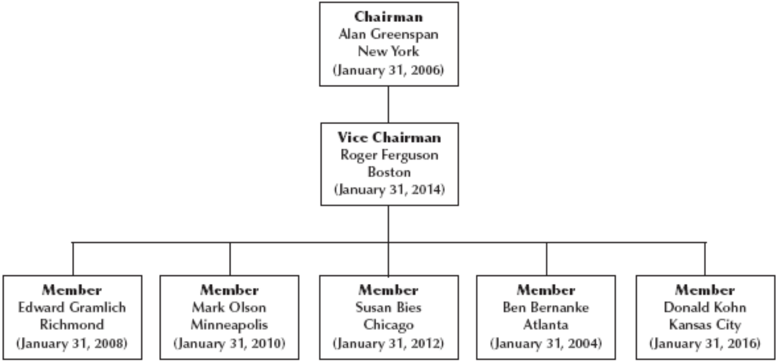


NOTE: Date indicates expiration of term.

The Board of Governors: FED

Figure 3

Members of the Board of Governors



NOTE: Date indicates expiration of term.

The main tasks of ECB and FED

Table 1

Tasks of the Federal Reserve System and European System of Central Banks

	FRS	ESCB
Define and implement monetary policy	Yes	Yes
Issue banknotes	Yes	Yes
Conduct foreign exchange operations	Yes	Yes
Hold and manage official reserves	Yes	Yes
Act as the fiscal agent for the government	Yes	NCBS
Promote stability of financial system	Yes	Yes
Supervise and regulate banks	Yes	Some NCBS
Implement consumer protection laws	Yes	Some NCBS
Promote the smooth operation of the payments system	Yes	Yes
Collect statistical information	Yes	Yes
Participate in international monetary institutions	Yes	Yes

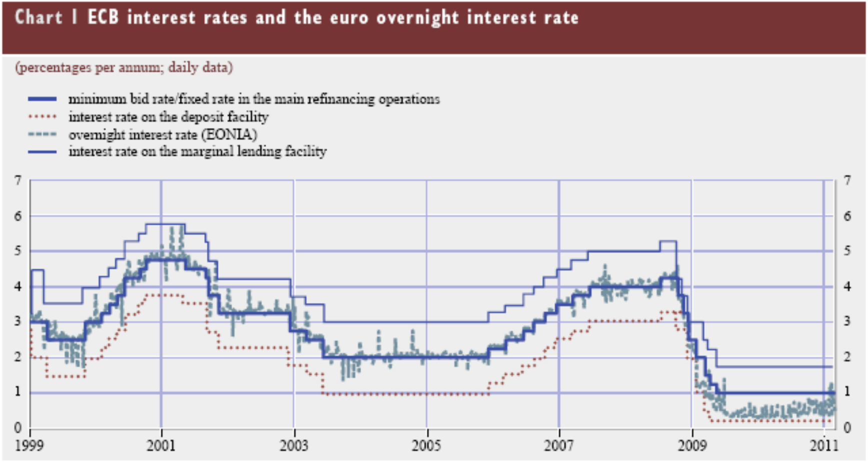
NOTE: NCBS refers to national central banks of the Eurosystem.

The monetary policy

Tools of Monetary Policy

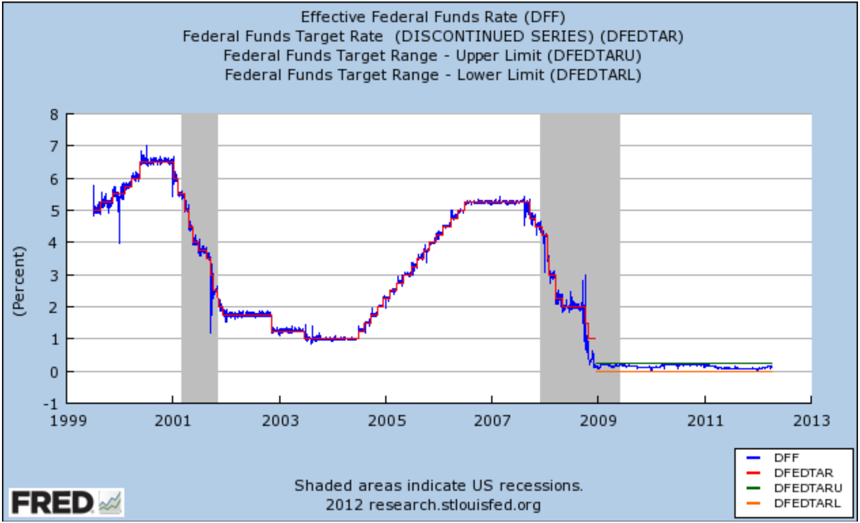
Federal Reserve	ECB
Open market operations	Open market operations
Discount window	Standing facilities
Reserve requirements	Reserve requirements

Monetary policy in the ECB



Sources: ECB and Thomson Reuters.

Monetary policy in the FED



VI - Credibility, Independence and Transparency

What is a well designed central bank?

Independence + Accountability

Why the Fed Is a Well-Designed Central Bank

The Federal Reserve has taken unprecedented actions in the financial markets since the advent of the financial crisis. Noteworthy examples include lending more than $1.5 trillion to financial institutions and buying $1.25 trillion of mortgage-backed securities to stabilize the economy. The large

What is a well designed central bank? (cont.)

A well-designed central bank needs to be 1) credible, 2) independent, 3) accountable and 4) transparent.

U.S. government has a history of resorting to the printing press to pay for government expenditures.

Most governments have taken steps to disci-

That is why most gover

tie their own hands and m

ble stewards of their natio

It became very clear that if

Main messages in monetary policy

1. In the "old" macro model (1950–1980), the main message in monetary policy was:
    1. **Deflation is a painful process, it costs a lot output and unemployment**
    2. Remember the Phillips curve
2. A new message in the 1980s: **Deflation can be a painless process**
    1. if central banks are committed to fight inflation
    2. if their attitudes are credible
    3. if agents have rational expectations

Credibility: the logic of the problem

1. When is a central bank credible?
    1. if it is independent
    2. if follows rules in its behavior, and shows commitment to such rules
    3. if it is transparent in its procedures
2. The inflation game: rational private agents and credible central bankers

The inflation game: discretion versus commitment

1. Consider two crucial variables in macroeconomics: output (y) and inflation (π)
2. Assume that the central bank has desired levels for those

$$y^*, \pi^*$$

3. Private agents have rational expectations (agents do not make systematic mistakes in their forecasts)

$$\pi^e = \pi \tag{1}$$

   on average, inflation expectations are equal to actual inflation
4. Assume that the natural level of output is given by (remember the long term trend of the economy)

$$y^n$$

The Loss function

1. Assume that the loss function of the central bank is here

$$L=\frac{1}{2}\left[\lambda(y-y^*)^2+(\pi-\pi^*)^2\right]$$

   y is output, π is inflation, $y^*, \pi^*$are the respective desired levels, λ is a parameter

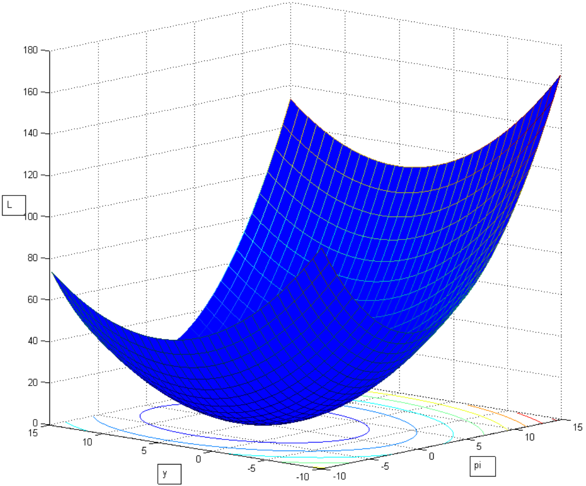
2. The central bank's objective is to minimize the loss function

$$y=y^*,\ \pi=\pi^* \Longrightarrow L=0$$

3. Parameter λ is very important: the relative importance the central bank gives to output (or unemployment) in its concerns
   1. $\lambda=1$: for the central bank, output is as important as inflation
   2. $\lambda<1$: for the central bank, output is less important as inflation
   3. $\lambda=0$: for the central bank, only inflation is important

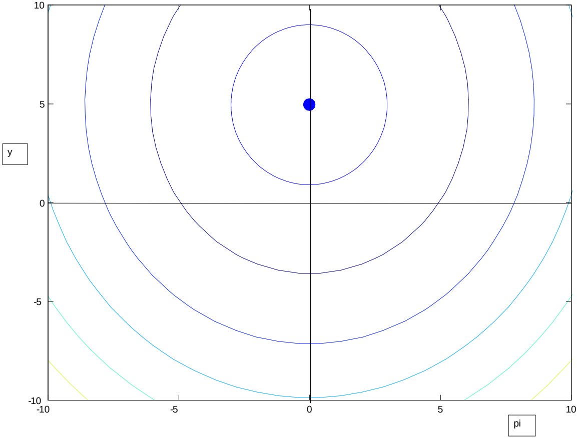
The Loss function: in 3 dimension

For $\lambda = 0.5$; $y^* = 5$; $\pi^* = 0$



The Loss function: indiference curves

For $\lambda = 0.5$; $y^* = 5$; $\pi^* = 0$



The Phillips Curve

1. Let's introduce the Phillips curve: unemployment (or output) as a function of inflation
2. Assume that output behaves in accordance with

$$y = y^n + a(\pi - \pi^e) \tag{2}$$

   y^n is natural output, and a is a parameter.

3. Notice that if

$$\pi = \pi^e \Longrightarrow y = y^n$$

4. Notice also that

$$\pi > \pi^e \Longrightarrow y > y^n$$

$$\pi < \pi^e \Longrightarrow y < y^n$$

The 3 fundamental equations

1. Our three equations in this game are

$$
\begin{aligned}
L &= \frac{1}{2}\left[\lambda(y-y^*)^2+(\pi-\pi^*)^2\right] && (3)\\
y &= y^n + a(\pi-\pi^e) && (4)\\
\pi^e &= \pi && (5)
\end{aligned}
$$

2. To simplify, let's assume that the central bank wants zero inflation

$$\pi^* = 0$$

3. Let us define the gap between desired and natural output as

$$k \equiv y^* - y^n$$

4. With all this information we can rewrite eq.(3) in the following way

The Loss function with all ingredients

1. Substitute eq.(4) into eq.(3)
2. Use the definition of $k \equiv y^* - y^n$
3. And we will get:

$$L = \frac{1}{2}\left\{\lambda[a(\pi - \pi^e) - k]^2 + (\pi)^2\right\}$$

4. This game can be played with two types of central bank's behavior: **discretion** and **commitment**

Discretion: the inflation game

1. Discretion means that the central bank is **not committed** to any kind of rule or objective
2. It also means that the expectations of the private agents are irrelevant to the central bank: expectations are exogenous

$$\pi^e \text{ as a constant}$$

Discretion: the inflation game (cont.)

1. The Loss functions is

$$L = \frac{1}{2}\left\{\lambda[a(\pi - \pi^e) - k]^2 + (\pi)^2\right\} \tag{6}$$

2. The level of π is determined by the CB, **taking the expectations of private agents as given** (π^e as given)
3. The first order condition is given by

$$\frac{\partial L}{\partial \pi_d} = 0$$

4. That is

$$\frac{\partial L}{\partial \pi_d} = 0 \Longrightarrow a\lambda[a(\pi_d - \pi^e) - k] + \pi_d = 0$$

Discretion: the inflation game (cont)

1. Solving the previous equation for π_d, gives us

$$\pi_d = \frac{a^2\lambda}{1+a^2\lambda}\pi_d^e + \frac{a\lambda}{1+a^2\lambda}k \qquad (7)$$

2. Now consider that private agents have Rational Expectations (on average, they do not make systematic mistakes)

$$\pi^e = \pi$$

3. Inserting this condition into eq (7), and we will get

$$\pi_d = a\lambda k$$

4. To obtain the loss, we have to use the L function and after some tedious algebra we get (do not worry about this part)

$$L_d = \frac{\lambda k^2}{2}(1+a^2\lambda)$$

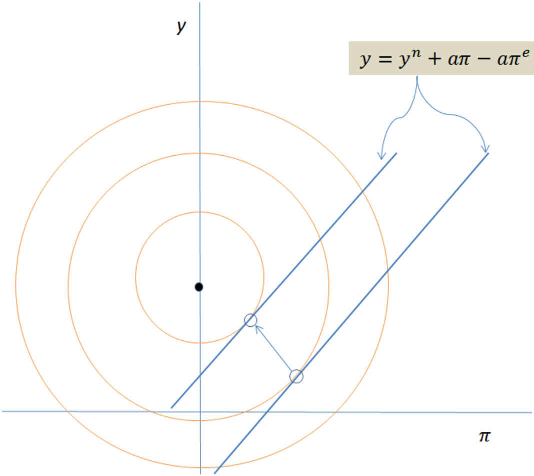
Discretion: main results

1. We obtained the result

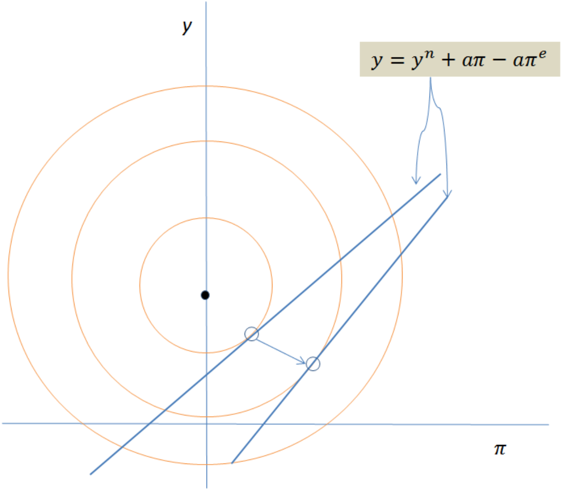
$$\pi_d = a\lambda k$$

2. Notice three fundamental points:
   1. The central bank wants to achieve $\pi^* = 0$
   2. If the bank wishes to have $y^* > y^n$, (or $k > 0$), it will end up having positive inflation
   3. This will not occur if the central bank does not worry about output (or unemployment): $\lambda = 0$.
3. **Main message**: if the central bank does not worry about output, or unemployment, it achieves its inflation target, if agents have rational expectations.

An increase in "yn"



An increase in "a"



Commitment: the inflation game

1. With commitment, the central bank knows that its commitment will affect the determination of inflation expectations
2. The game has to be played with this principle: inflation expectations can not be a constant anymore

$$\textit{expectations are endogenous}$$

3. Therefore, as from the start we know that Rational Expectations (REE) imply

$$\pi_c = \pi_c^e$$

4. This condition has to be imposed from the begining into the loss function ... before taking the first order conditions: EXPECTATIONS ARE NOW ENDOGENOUS

Commitment: the inflation game (cont.)

1. Inserting the REE condition into the Loss function, we get

$$
\begin{aligned}
L &= \frac{1}{2}\{\lambda[a\underbrace{(\pi_c - \pi_c^e)}_{=0} - k]^2 + (\pi_c)^2\} \\
&= \frac{1}{2}\{\lambda(-k)^2 + (\pi_c)^2\}
\end{aligned}
$$

2. First order condition

$$\frac{\partial L}{\partial \pi_c} = 0 \Rightarrow \pi_c = 0$$

3. Inflation is always at zero, independently of k

no more inflation bias

4. The level of loss is given by (do not worry about this part)

$$L_c = \lambda k^2/2$$

Rules vs discretion: the fundamental results

$$\begin{array}{lcc} & \textit{discretion} & \textit{commitment} \\ \textit{optimal } \pi : & \pi_d = a\lambda k & \pi_c = 0 \\ \textit{optimal loss} : & L_d = \frac{\lambda k^2}{2}(1 + a^2\lambda) & L_c = \frac{\lambda k^2}{2} \end{array}$$

1. Commitment always leads to better results
2. How can we assure that the central bank always behaves with commitment:
   1. **Reputation** of central banks as tough on inflation
   2. **Delegation** to a central banker that dislikes inflation more that private agents
   3. **Contracts**: in some countries the Constitution establishes the objectives that central banks should achieve
3. These issues are central to the analysis of modern monetary policy

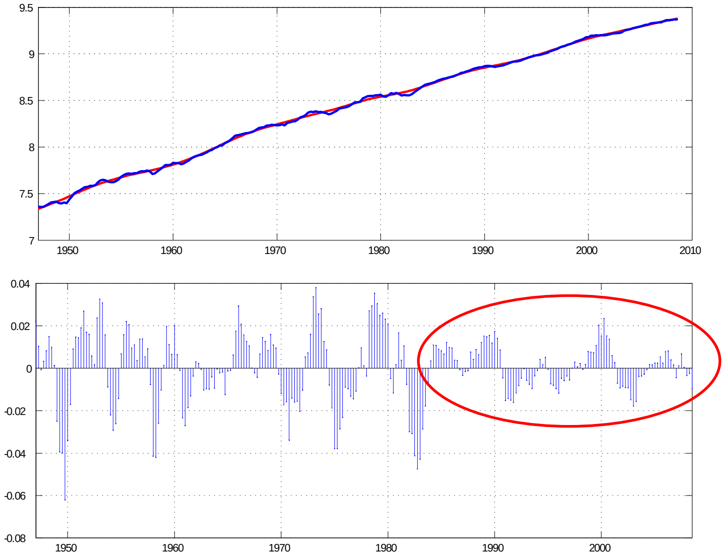
Paul Krugman: on this issue (yesterday)

"John Kay has a good piece about the damage done by the obsession with policy "credibility". This is one of those ideas rooted in theoretical models that happened to mate perfectly with political prejudices, and hence became part of the orthodoxy almost immediately despite a lack of convincing evidence that it really does matter.

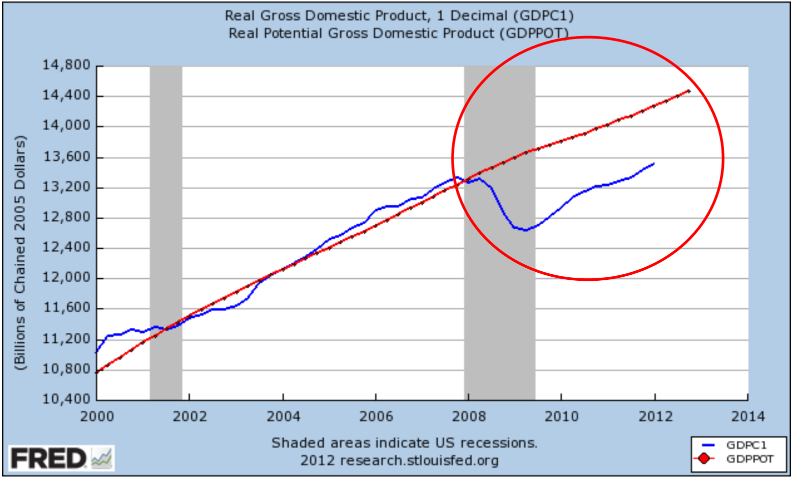
The big test of the credibility hypothesis was supposed to be disinflation. A really credible commitment to bringing down inflation was supposed to reduce the "sacrifice ratio", the cost in terms of protracted high unemployment to get underlying inflation down. The big proving ground was supposed to be the Volcker disinflation of the 1980s."

Paul Krugman, When Good Things Happen to Bad Ideas, New York Times, 16 May 2012

Others may defend the success of the recipe



Others may use this picture to show the limitations of the recipe



Bibliography

Readings

1. No compulsory readings for this section of the course
2. Reasons:
    1. There are many versions of the "Inflation game": some of them more sophisticated than the one covered in these slides; while others are so crude that they miss the major points explained above.
    2. So we kept somewhere in the middle of the two main sides above.
    3. I made some points easier by removing some assumptions of the more sophisticated versions.
    4. So I am afraid of recommending you to read one or another version of the this more sophisticated material.
    5. I am not aware of any set of notes available that cover the problem as analyzed in these slides

Readings

Just for curiosity (not compulsory), these are useful texts for the highly curious student:

- Bradford DeLong (2007). "Central Bank Credibility and Consistency: The Analytics, University of Berkeley." *Very good, and very simple. Presentation different from our classes.*
- Bradford DeLong (2007). Appendix to Chapter 13 — "Central Bank Credibility and Consistency", University of Berkeley. *Provides numerical examples to the previous reference.*
- Robert Becker (2001). "The Inflation Game", Lecture Notes, Indiana University. *Not very demanding, but follows a presentation rather different from ours.*
- Thomas J. Sargent and Ulf Söderström (2000). The conquest of American inflation: A summary, *Sveriges Risksbank Economic Review*, 2000 (3), pag. 12-45. *This is a wonderful text, but unfortunately much more demanding than what we expect from our course, so ...*

That's all.

Thank you for coming, hope you enjoyed this course.

I tried to make it as "modern" as possible, as "controversial" as possible, and I tried to be as "neutral" as possible.

Thank you.