EUROPEAN CENTRAL BANK

Stepping on a rake: The role of fiscal policy in the inflation of the 1970s.
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Discussion
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European Central Bank

International Conference

Bank of Japan

28/29 May 2008

Overview

- **The fiscal theory of the price level (FTPL):**

  – **Fiscal shocks determine the price level;**

  – **Interest rate tightening will be counterproductive and lead to an increase in inflation.**

- **Empirical evidence on impulse responses**

- **Normative analysis?**

- **The monetary/fiscal policy framework in EMU**

Understanding the FTPL

- **Leeper: Passive Monetary policy (PM, e.g. interest rate peg) and Active Fiscal policy (AF, e.g. exogenous primary surplus) delivers a unique equilibrium with a stable price level. Fiscal policy shocks determine the price level (FTPL).**

- **Sims:**

  - **Section III.2: Continuous-time flexible-price example.**

  - **Section III.3: Model with bells and whistles: sticky prices, habit formation, long-term debt, …**

Understanding the FTPL: Flexible prices

– **From the government budget constraint, the real value of government debt has to equal the expected discounted sum of future primary surpluses:**

B(t)/P(t) = E(t)PDV(r)[Future Primary Surpluses].

– **Under AF, when the surplus falls or is expected to fall, the PDV decreases;**

– **As the nominal debt is a predetermined state variable, the price level (P(t)) has to adjust.**

– **With flexible prices, this will be achieved by an unexpected jump in the price level**

Understanding the FTPL: Flexible prices

- The basic economic mechanism is the wealth effect of fiscal disturbances upon private expenditure. Lower surpluses make households feel wealthier, and thus leads them to demand goods and services in excess of those the economy can supply, except insofar as prices rise.

- With PM, price level determined by fiscal policy (FTPL);

- With AM, monetary policy leans against the rise in prices, real interest rate burden increases, which lowers the PDV, and which requires an even higher jump in prices. With AM, there may be no equilibrium or explosive equilibria.

Understanding the FTPL: Flexible prices

- **Focus on AF/PM: what does an interest rate tightening do?**

  - **A rise in the interest rate is like a deficit shock, unless inflation jumps up one for one, as it is the real interest rate that matters: r=R-PI.**

  - **With flexible prices, that is what will happen: Inflation will jump up. Real debt is not affected and over time both inflation and the interest rate will gradually fall back to steady-state.**

  - **!! MP tightening leads to immediate rise in inflation !!**

    "Stepping on a rake"

Understanding the FTPL: larger model

- **Larger model differs in a number of features: sticky prices, habit formation, long-term debt,...**

- **Maintain PM/AF assumption - Fiscal shock.**

- **Intertemporal budget constraint becomes:**

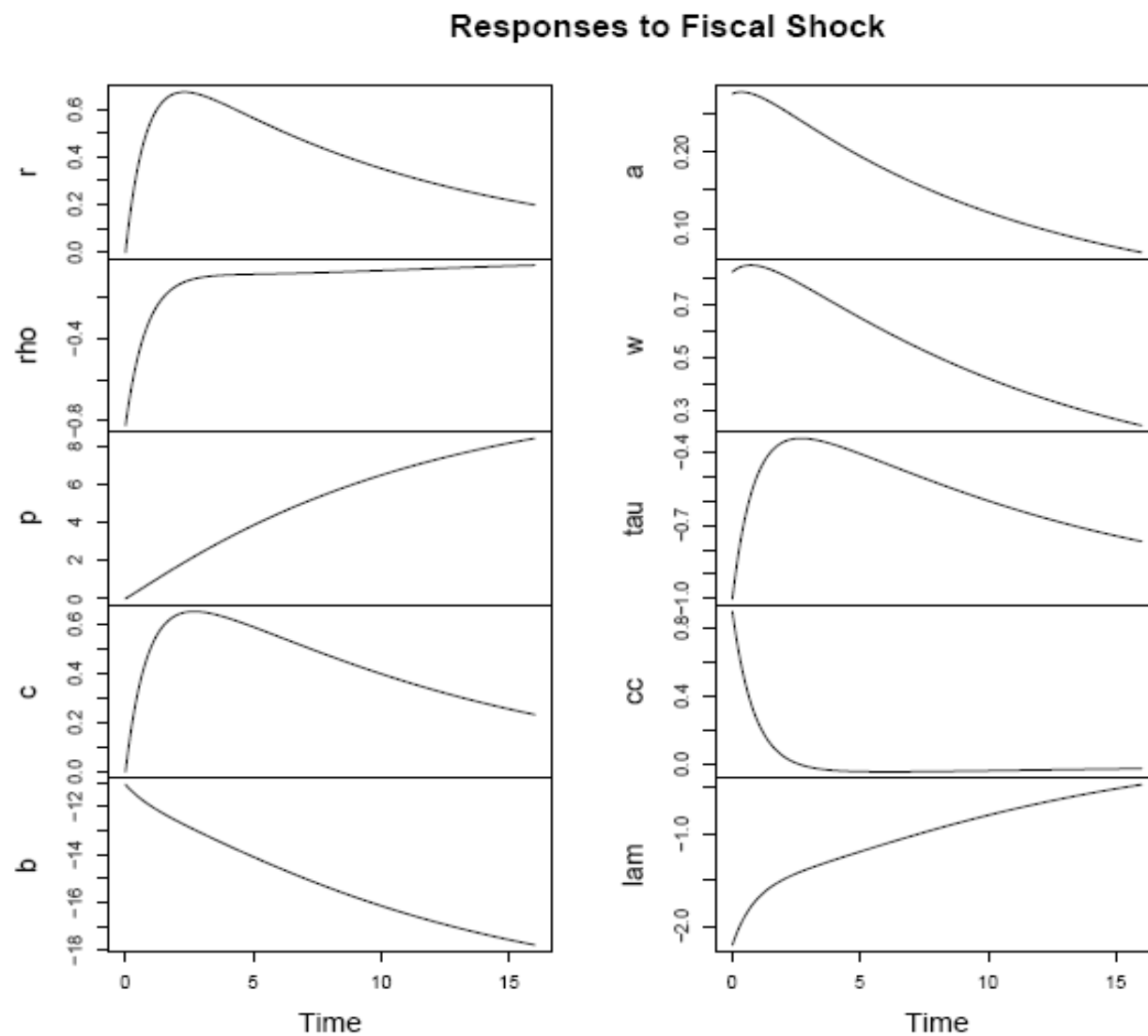 $V^{(t)}B/P^{(t)} = E(t)PDV(r^{(t)})$[Future Primary Surpluses

  – **In the short run, prices are sticky, but :**

  – **The real interest rate falls; this will tend to increase the present discounted value of future surpluses;**

  – **The value of outstanding long-term debt falls**

Understanding the FTPL: larger model


Responses to Fiscal Shock

Understanding the FTPL: larger model

- **Monetary policy shock:**
  - **In the short run, the government budget constraint is alleviated by the fall in the value of long-term debt in response to the rise in long-term interest rate:**

  - **Intertemporal budget constraint:**

    $$V^{(t)}B/P^{(t)} = E(t)PDV(r^{(t)})[\text{Future Primary Surpluses}]$$

Understanding the FTPL: larger model
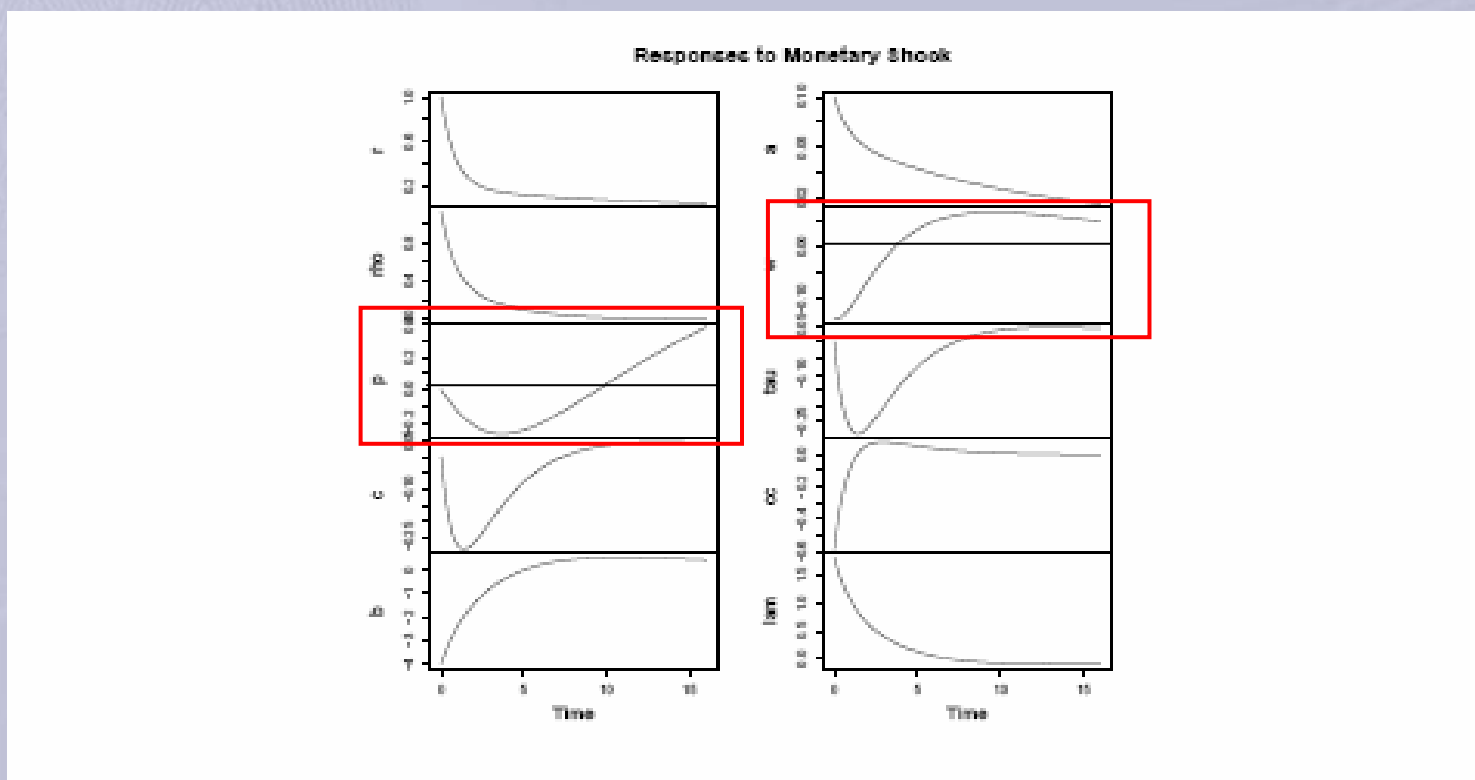

Responses to Monetary Shock
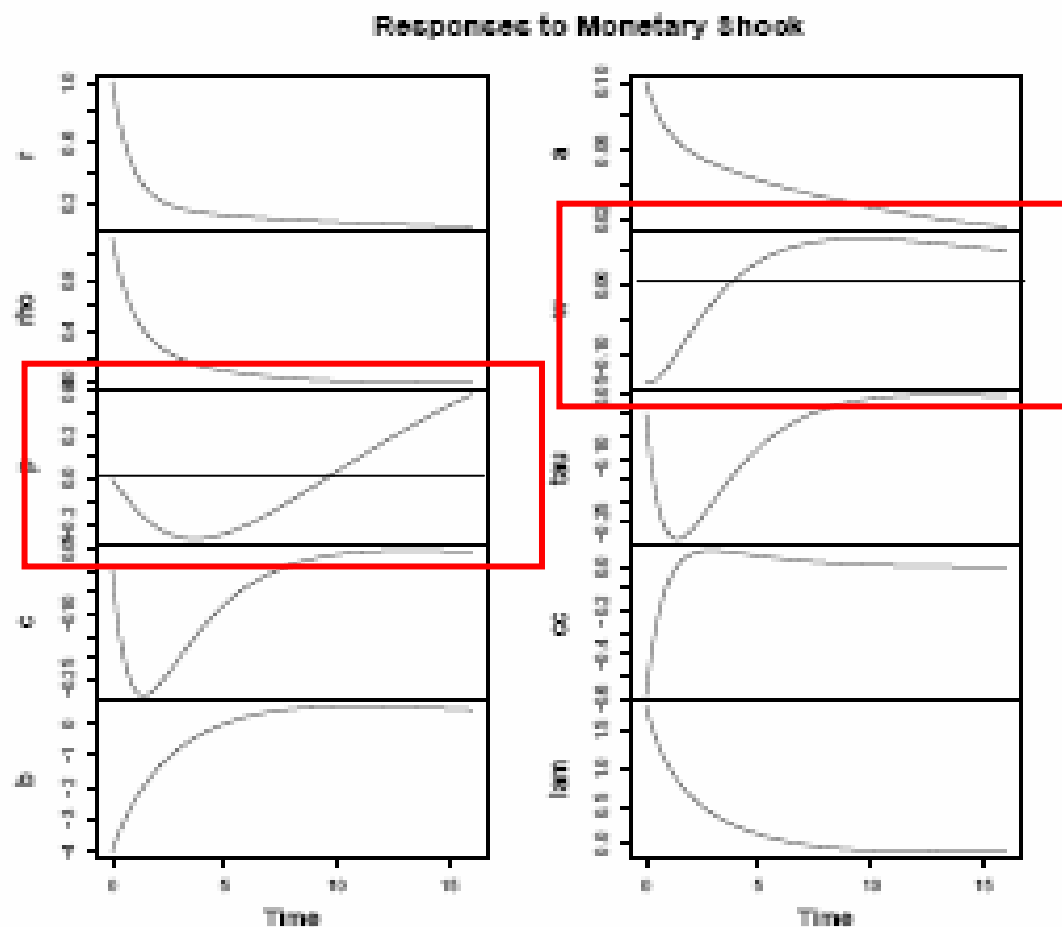
"Delayed rake effect"

Some cheap shots

- **Calibration? Sensitivity?**

- **Would be good to go step by step to see how the various additional features matter for the impulse responses?**

  – **Under what conditions do you get an initial recession? Does habit formation matter?**

- **How does the region of the AF/PM depend on on the calibration?**
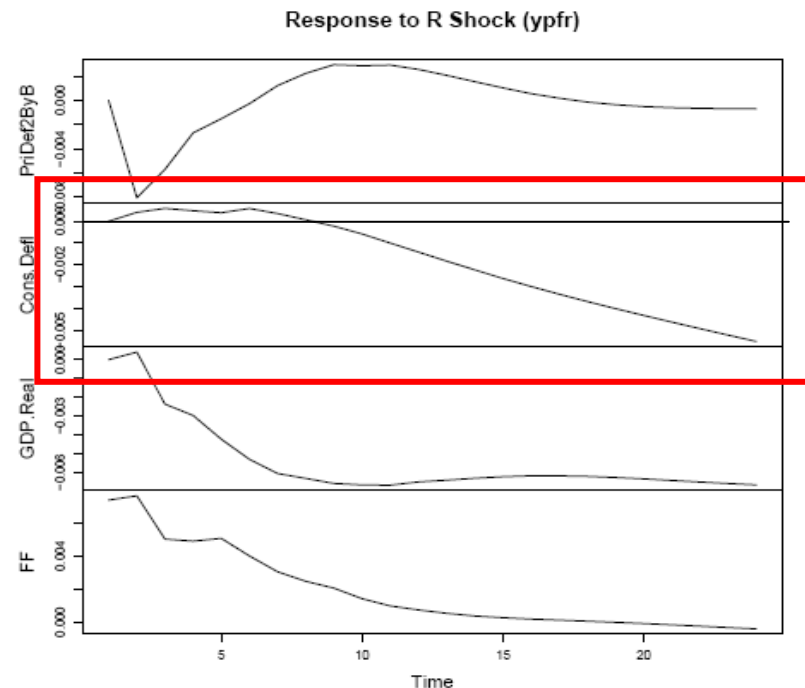
Empirical evidence? Interest rate shock

- **The sticky-price model implies that prices first fall and then rise following an interest rate contraction. Similarly, inflation first drops and then rises above steady-state.**

Responses to Monetary Shock

Impulse responses to an interest rate shock

- **This is not what one finds in the empirical VAR literature started by Sims (1980)!**

- **Struggle with the price puzzle: Prices first rise before falling after a monetary policy tightening.**

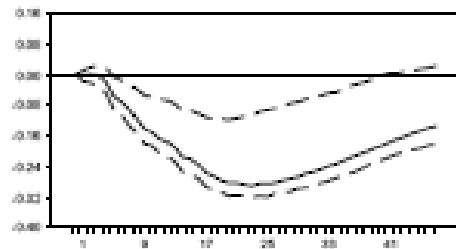Sample period?

Response to R Shock (ypfr)

Impulse responses to an interest rate shock

- **If there has been a regime shift in the US from AF/PM in the 1970s to AM/PF in the 1980/90s (Clarida, Gali and Gertler), then the impulse responses may have changed. as the US moved towards.**

  - **Again, the evidence appears to show the opposite: For example, Christiano, Eichenbaum and Evans (1999) find that if anything the price puzzle is worse in the 1965-1979 period than in the later period.**
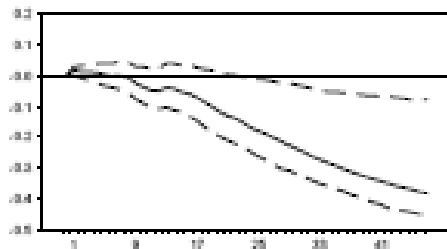
Impulse responses to an interest rate shock
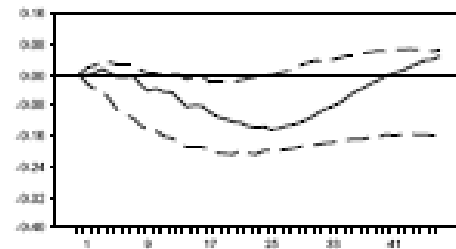

Fed Funds Model 65:01 to 94:12
Fed Funds Model 65:01 to 79:09
Fed Funds Model 79:10 to 94:12
Fed Funds Model 84:02 to 94:12
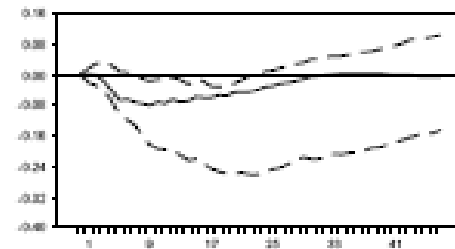
MP Shock => EM
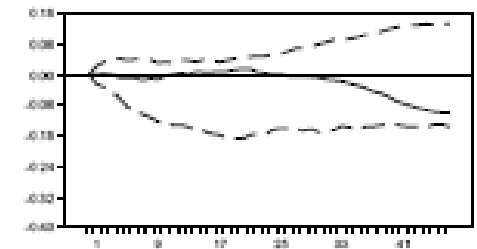
MP Shock => Price
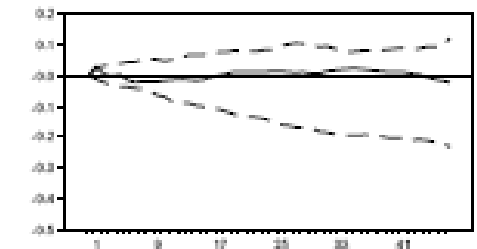
Empirical evidence: Fiscal shock

- **The FTPL has no problem generating a consumption increase after a positive spending shock:**

Responses to Fiscal Shock
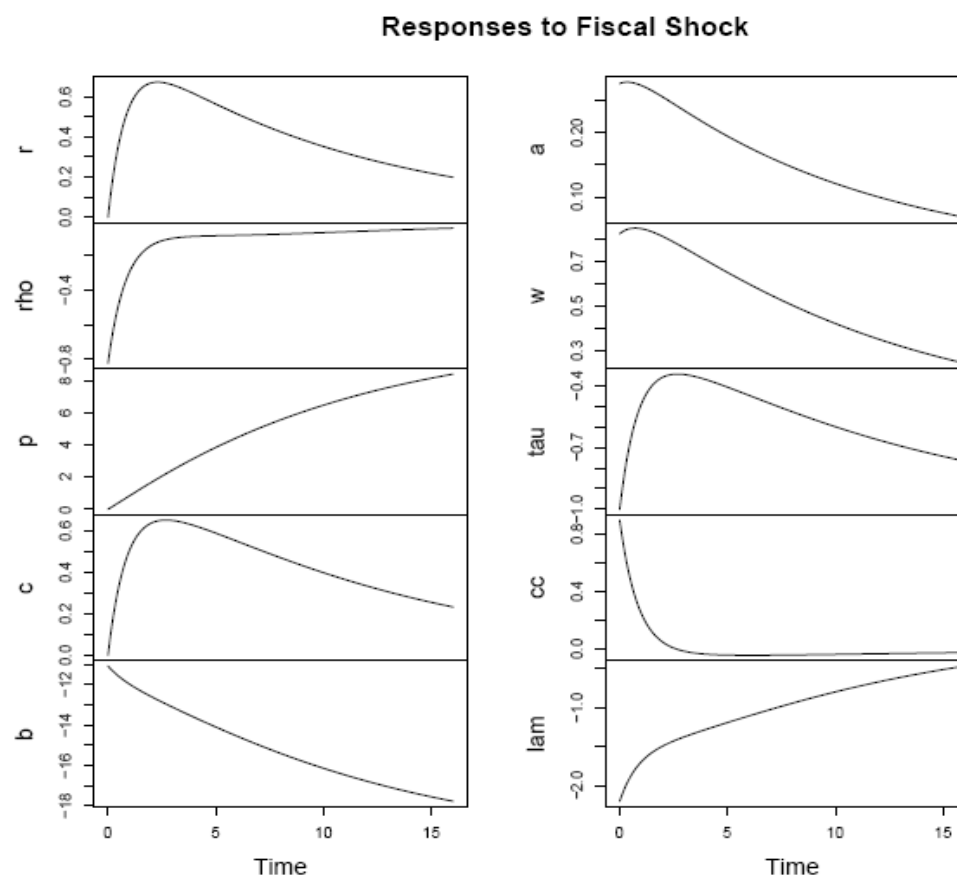
Impulse responses to a fiscal shock

- **This is more problematic for the standard RBC/New Keynesian models:**

  - **Typically, an increase in government spending generates a negative wealth effect on consumption; this leads also to a shift in labour supply and rising output**

  - **Gali, Lopez-Salido and Valles (2007) develop a New Keynesian model with rule-of-thumb consumers to account for the positive consumption multiplier in the US data. However, they fail to generate real interest rate decrease in that model.**

  - **The FTPL has no problem generating the real rate fall.**

Regime changes?

- **Perotti (2004)**

  – **Concludes that the effects of fiscal policy on GDP have fallen since early 1980s.**

  – **In the first sample, private consumption increases, the real interest rate falls or increases little.**

  – **In the second sample period, effects on consumption are negative, but the real interest rate increases.**

Regime changes?

Table 12: Cumulative response of private consumption and investment to fiscal shocks

	USA		DEU		GBR		CAN		AUS	
	4	12	4	12	4	12	4	12	4	12
A. Cumul. private consumption resp. to a spending shock										
S1	.57*	2.15*	-.26*	-.17	.66*	.48*	.21*	.19*	.24*	.82*
S2	.34*	1.08*	-.08	-2.06*	-.18	.05	-.07	-1.17*	.10*	.03
S2-S1	-.23	-1.07*	.18	-1.89*	-.84*	-.43	-.28*	-1.36*	-.14*	-.79*
B. Cumul. private investment resp. to a spending shock										
S1	.26	.36	-.24	-.36	-.33*	-.41*	.14	-.72*	-.21	1.49*
S2	-.24	-2.12*	.28	-1.43*	-.54*	-1.70*	-.64*	-2.37*	-.34*	-.21
S2-S1	-.50	-2.48*	.52	-1.07	-.21	-1.29*	-.78*	-1.65*	-.13	-1.70*
C. Cumul. private investment resp. to a spending shock, no invent.										
S1	.19	1.02*			.11*	.20*	.23*	-.14	.00	1.36*
S2	-.04	-1.15*			-.36*	-1.50*	.10	-1.57*	-.16*	-.24
S2-S1	-.23	-2.27*			-.47*	-1.70*	-.13	-1.43*	-.16	-1.60*

Table 15: Comparison of effects of spending and tax shocks on interest rates

	USA		DEU		GBR		CAN		AUS	
	4	12	4	12	4	12	4	12	4	12
A. Average, nominal interest rate										
S1	.12	.01	.26*	.18*	.33*	.50*	-.01	-.11*	-.09	-.14*
S2	.35	-.04	.35	.49*	-.06	.14*	.27	.36*	.24*	.30*
B. Average, *ex-post* real interest rate										
S1	-.22	-.05	-.04	-.00	-.31	-.37*	.32	.16	.67*	.29*
S2	.61*	.34*	1.14*	.47*	.41*	.56*	.61*	.34*	.49*	-.05
C. Average, *ex-ante* real interest rate										
S1	.08	.07	-.29	.31*	-.72*	-.25*	.46*	-.10	-.10	.15
S2	.79*	.33*	.08	.31*	.41*	.39*	-.43*	.43*	-.26*	-.37*

Average interest rate response to a spending shock less average interest rate response to a net tax cut. See also Table 5 for the notation.

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Normative analysis?

- **The AF/PM does lead to a stable inflation environment, but generates volatility in response to fiscal shocks.**

- **What can we say about the desirability of such a regime?**

Woodford's (2000) recommendation

- "As a practical proposal …, I shall suggest that a Taylor rule for monetary policy should be accompanied by targets for the size of government budget deficits."

- "Fiscal policy should be locally Ricardian, so that fiscal expectations do not frustrate the central bank's use of a suitably "active" monetary policy to stabilise the price level."

Benigno and Woodford (2006)

- **Derive targeting rules for monetary and fiscal authorities in a New Keynesian model with distortionary taxes.**

  - **Changes in taxes should be chosen to serve the same objectives as those emphasized in the literature on monetary stabilisation policy: stabilisation of inflation and of a properly defined output gap, which takes into account tax distortions.**

    - **CB: flexible inflation targeting rule**

      - **Similar to NK models with distortionary taxes**

    - **FA: set optimal level of government borrowing as a function of the fiscal authority's projections of the exogenous determinants of fiscal stress and of future real activity.**

Monetary/fiscal policy framework in EMU

- **Monetary policy delegated to an independent central bank (ECB) focused on maintaining price stability:**

    - **Definition: Annual HICP inflation below, but close to 2 percent.**

- **Constraints on fiscal policy (debt and deficit) aimed at avoiding spending and deficit biases, which may be worse in a monetary union with mostly national fiscal authorities.**

The Treaty and the Stability and Growth Pact

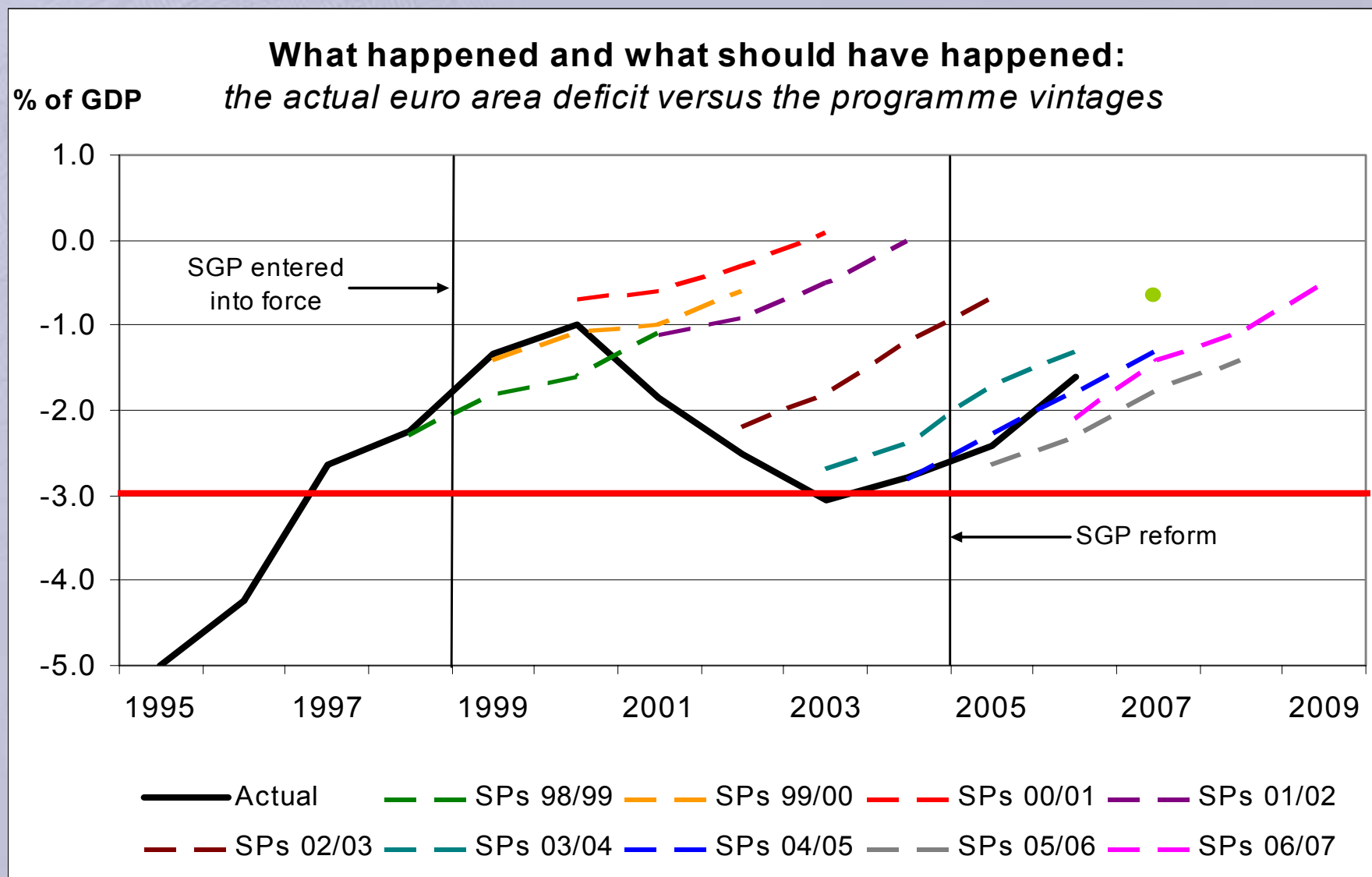**Building blocks of the EMU fiscal framework are laid down in the Treaty**

- **Art 101: Prohibits monetary financing by the ESCB**

- **Art 103: No-bail-out clause – European institutions and Member States can not be liable for or assume other MS's financial obligations**

- **Art 104: Excessive deficit procedure (EDP)**

- **Protocol on EDP: 3% and 60% reference values**

But Treaty needed to be made operational

The Stability and Growth Pact (SGP)

- **"Preventive arm":**
  - Stability and convergence programmes
  - "close to balance or in surplus" requirement

- **"Corrective arm" clarified and strengthened the EDP:**
  - 3% reference value: hard ceiling
  - Clear timetable; "exceptional circumstances"; sanctions

- **European Council resolution (solemn declaration)**
  - Political commitment

What happened?

What happened and what should have happened:
the actual euro area deficit versus the programme vintages

% of GDP

Legend:
- Actual
- SPs 98/99
- SPs 99/00
- SPs 00/01
- SPs 01/02
- SPs 02/03
- SPs 03/04
- SPs 04/05
- SPs 05/06
- SPs 06/07

SGP entered into force

SGP reform

The revised Pact: what has changed?

- **Preventive arm:**

  – **Differentiated Medium Term Objectives (MTOs);**

  – **Adjustment path towards MTO (benchmark: 0.5% cyclically adjusted);**

  – **Taking into account structural reforms (pension reforms).**

- **Corrective arm:**

  – **Revised definition of "severe economic downturn"**

  – **Listing of "other relevant factors"**

  – **Extension of deadlines and repeated recommendations and notices**