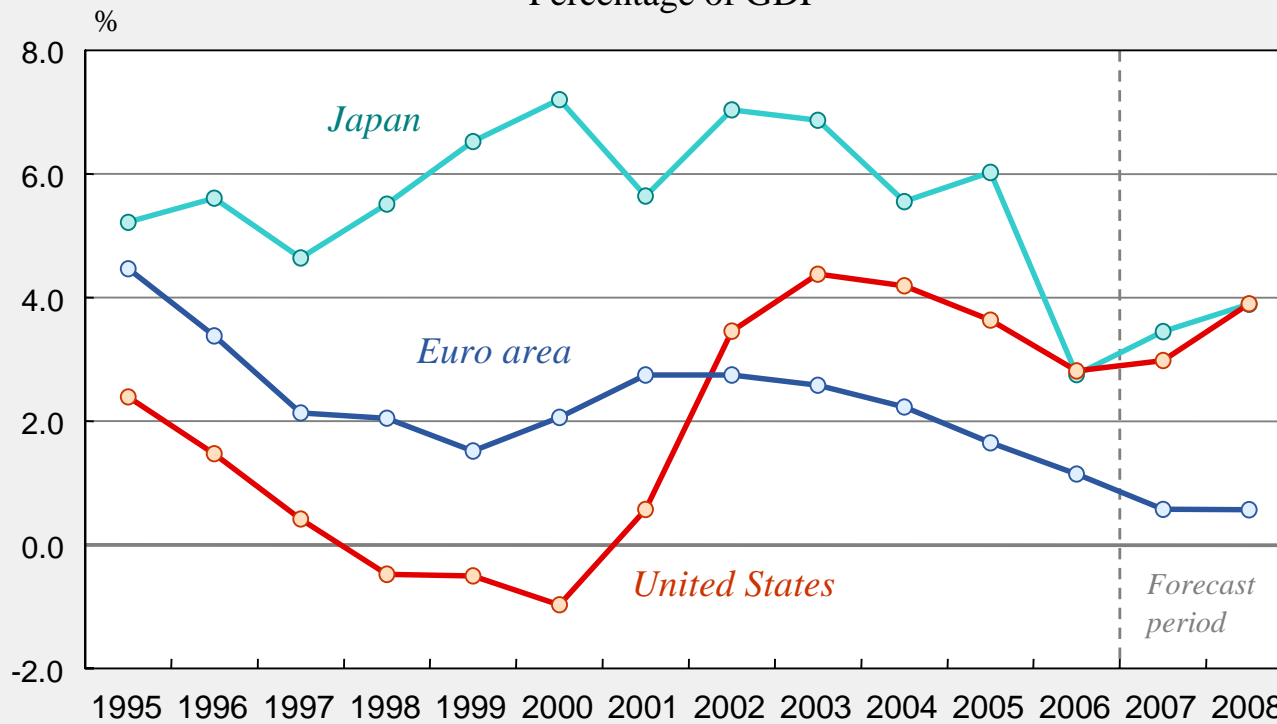**Lecture 10**: Intermediate macroeconomics, autumn 2008

Lars Calmfors

Fig. 1.13

Government structural budget deficit in the euro area, Japan and the United States
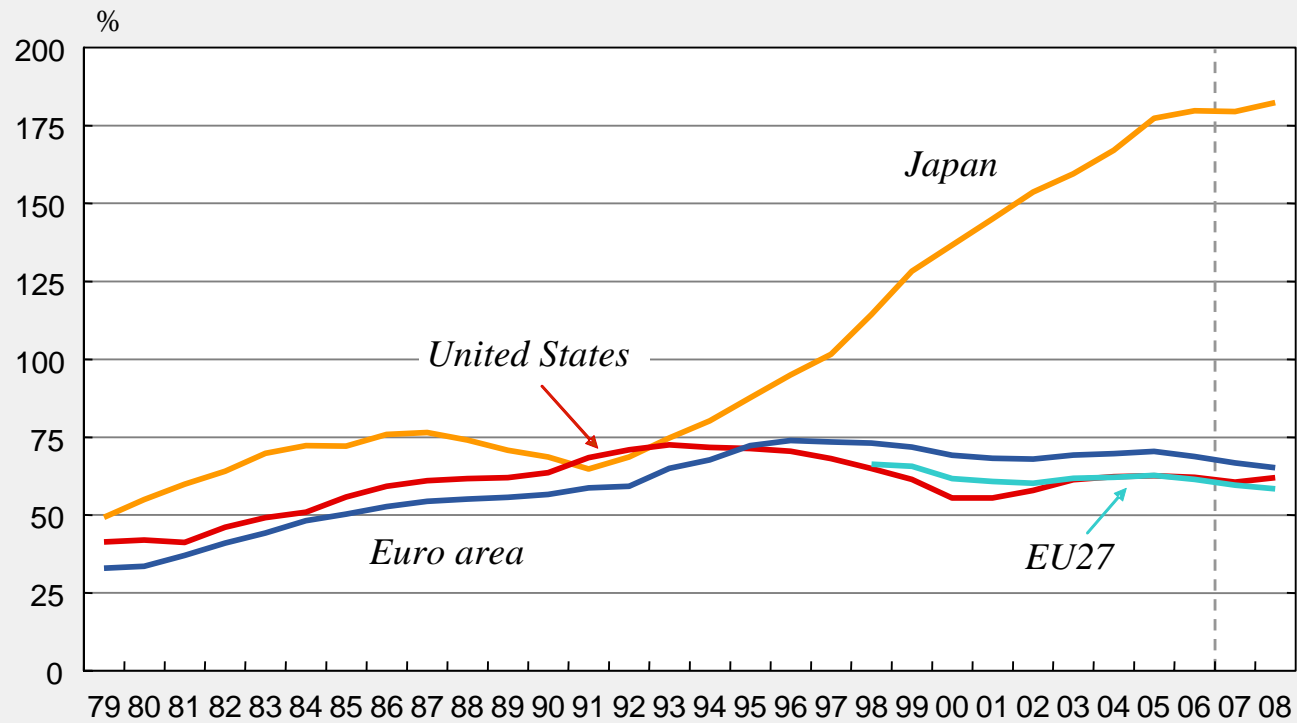
Percentage of GDP

Source: OECD, Economic Outlook 82, December 2007, Table 28; United States: 2008 ifo forecast.

EEAG Report 2008

Fig. 1.23

Gross government debt
Percentage of GDP

%

Japan

United States

Euro area

EU27

200
175
150
125
100
75
50
25
0

79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03 04 05 06 07 08

Source: Eurostat; European Commission: Statistical Annex of the European Economy, Autumn 2007, Table 76.   **EEAG Report 2008**

TABLE 15-1

## How Indebted Are the EU-15 Governments?

Country	Government Debt as a Percentage of GDP
Greece	107.5
Italy	106.4
Belgium	93.3
Germany	67.7
France	66.8
Portugal	63.9
Austria	62.9
Netherlands	52.9
Sweden	50.3
Spain	43.2
United Kingdom	42.8
Finland	41.1
Denmark	35.8
Ireland	27.6
Luxembourg	6.2

Source: Eurostat.
Notes: Data are based on estimates of general government gross debt and nominal GDP for 2005.

Figur 2.1 Finansiellt sparande i offentlig sektor och dess olika delar (procent av BNP)


Offentlig sektor ······ Staten —·—·· Kommunerna — — — Ålderspensionssystemet
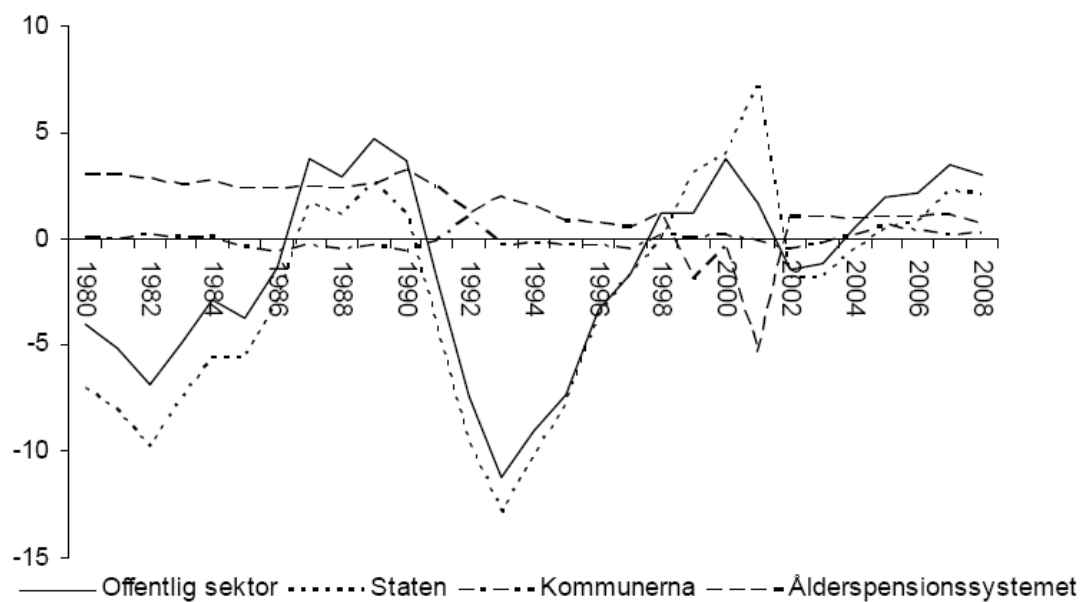
Anm: Data för 2008 är prognos.
Källa: Konjunkturinstitutet.

Different measures of the financial position of the public sector

1. **Public sector gross debt ("den offentliga sektorns bruttoskuld"): public sector debt after internal claims and debts have been netted out within the public sector (mainly the pension funds' holdings of government bonds). This is the debt concept used in the EU Maastricht Treaty.**

2. **Public sector net debt ("den offentliga sektorns nettoskuld"): total public sector debt less claims on the private sector.**

3. **Net worth ("nettoförmögenhet"). Real capital assets minus all financial debt.**

4. **Also implicit debt – including e.g. pension commitments – could be included.**

Figur 2.7 Offentlig sektors finansiella ställning och förmögenhet (procent av BNP)

Finansiell bruttoställning — — — Finansiell nettoställning
· · · · · Kapitalstock — Total nettoförmögenhet
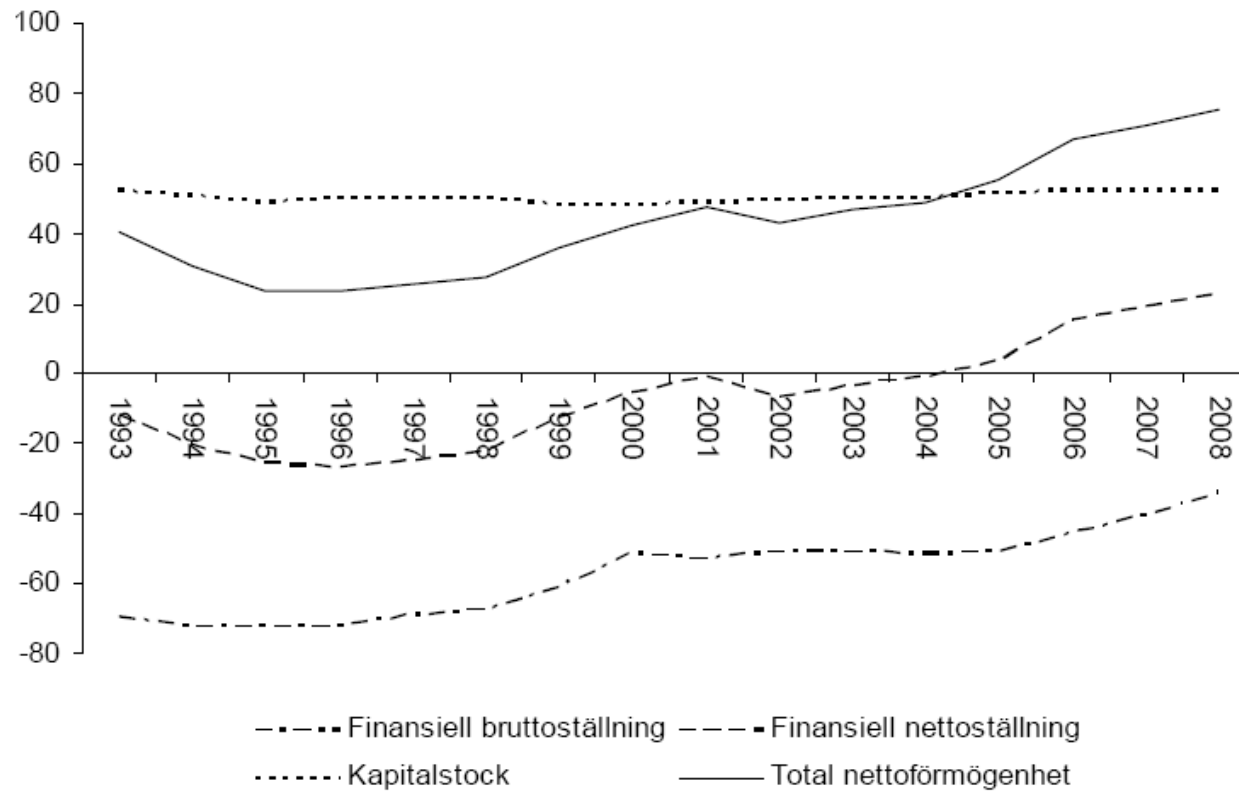
*Anm:* Data för 2007–2008 är prognoser.
Källa: Konjunkturinstitutet.

<u>Considerations regarding government debt</u>

- **Fair distribution among generations**
  - a deficit now means a redistribution of consumption in favour of current generations
  - we consume now; "our children" pay for that by paying the interest on the accumulated government debt
  - crowding out of investment: if the current generation accumulates financial claims on the government, it has less reason to accumulate physical capital.

- **Tax smoothing for efficiency reasons**
  - higher tax rates imply progressively higher distortionary costs: distortionary costs increase more than proportionally
  - argument for constant tax rates over time
  - if temporarily high government expenditures, optimal to run deficits
  - if future government expenditures will rise, it is optimal to run surpluses now (ageing).

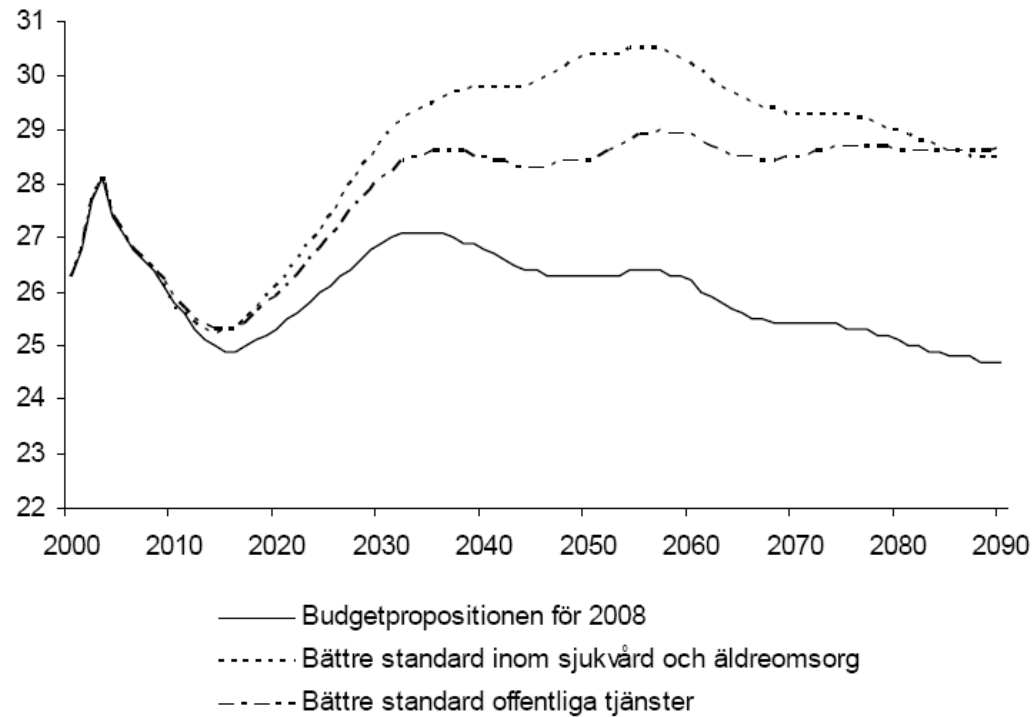## Figur 2.16 Försörjningskvoten (procent)
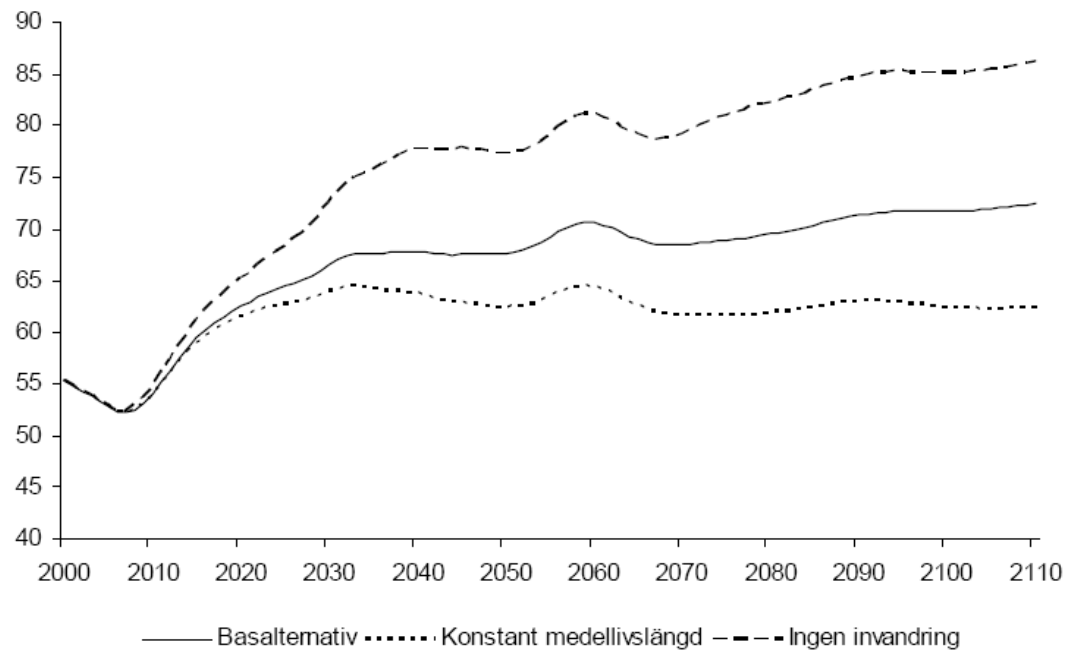
Anm: Försörjningskvoten anger antalet personer 0-14 år och 65 år och äldre som andel av antalet perso-
ner 15-64 år. Basalternativet baseras på befolkningsprognosen 2007-2050 framskriven till 2110. Kon-
stant medellivslängd innebär att dödsriskerna är konstanta på 2007 års nivå. Ingen invandring innebär
att all immigration upphör från 2007.
Källa: SCB.

Figur 2.20 Offentlig konsumtion (procent av BNP)

Budgetpropositionen för 2008
------- Bättre standard inom sjukvård och äldreomsorg
— · — · · Bättre standard offentliga tjänster

Anm: I alternativscenarierna antas personaltätheten öka med 0,75 procent per år 2009-2050 inom sjukvård och äldreomsorg alternativt öka med 0,2 procent i genomsnitt för offentliga tjänster.
Källor: Finansdepartementet och Finanspolitiska rådet.

Inherent tendency to budget deficits (*deficit bias*)

- Political business cycles
  - expenditure increases and tax cuts before elections

- "Tragedy of the commons"
  - lobbying by various interests

- Strategic behaviour
  - the party in power seeks to favour its own constituency in a system where parties alternate in government

- Time inconsistency
  - objective of high employment (same argument as for monetary policy)

Fiscal sustainability

- **Definition of fiscal sustainability: the ratio between government debt and GDP must settle down at some constant value.**

$\Delta D = B = iD + G - T$

D = Government debt

B = Total budget deficit

i = Nominal interest rate

G = Government expenditure

T = Taxes

$G - T$ = Primary deficit

Y = Nominal GDP

$$\frac{\Delta D}{D} = \frac{B}{D}$$

If D/Y is to be constant, it must hold that D and Y increase at the same rate:

$$\frac{\Delta D}{D} = g + \pi$$

$$g = \text{real growth rate}$$

$$\pi = \text{inflation rate}$$

Thus:

$$\frac{\Delta D}{D} = \frac{B}{D} = g + \pi$$

$$\frac{B/Y}{D/Y} = g + \pi$$

$$\frac{D}{Y} = \frac{B}{Y} \cdot \frac{1}{(g + \pi)}$$

- **A given deficit-to-GDP ratio, *B*/*Y*, determines the debt-to-GDP ratio, *D*/*Y*, in the long run.**

- **Assume $g = 0.02$ and $\pi = 0.02$**

$$\frac{B}{Y} = 0\% \Rightarrow \frac{D}{Y} = 0\%$$

$$\frac{B}{Y} = 1\% \Rightarrow \frac{D}{Y} = 25\%$$

$$\frac{B}{Y} = 2\% \Rightarrow \frac{D}{Y} = 50\%$$

$$\frac{B}{Y} = 3\% \Rightarrow \frac{D}{Y} = 75\%$$

$$\frac{B}{Y} = -1\% \Rightarrow \frac{D}{Y} = -25\%$$

$$\frac{B}{Y} = -2\% \Rightarrow \frac{D}{Y} = -50\%$$

$$\frac{B}{Y} = -3\% \Rightarrow \frac{D}{Y} = -75\%$$

$$\frac{B}{Y} < 0 \quad \text{implies a budget surplus}$$

$$\frac{D}{Y} < 0 \quad \text{implies positive financial wealth}$$

Sweden today

Surplus target of 1 percent of GDP, i.e. $B/Y = -0.01$

The net financial wealth-to-GDP ratio $D/Y \approx -0.20$

$g = 0.03$

$\pi = 0.02$

$$\frac{B/Y}{D/Y} = \frac{-0.01}{-0.20} = 0.05 = g + \pi$$

Thus, living up to the surplus target means we maintain an unchanged ratio between net government financial wealth and GDP.

Fiscal sustainability and the primary budget deficit

$$\frac{D}{Y} = \frac{B}{Y} \cdot \frac{1}{(g + \pi)}$$

$$\frac{B}{Y} = (g + \pi)\frac{D}{Y}$$

$$\frac{iD + G - T}{Y} = (g + \pi)\frac{D}{Y}$$

$$\frac{G - T}{Y} = (g + \pi)\frac{D}{Y} - \frac{iD}{Y}$$

$$\frac{G - T}{Y} = (g + \pi - i)\frac{D}{Y}$$

$$r = i - \pi \Leftrightarrow i = r + \pi$$

$i =$ nominal interest rate

$r =$ real interest rate

$\pi =$ inflation rate

Thus:

$$\frac{G-T}{Y} = (g + \pi - r - \pi)\frac{D}{Y}$$

$$\frac{G-T}{Y} = (g - r)\frac{D}{Y}$$

If we aim for $\dfrac{D}{Y} = d > 0,$ it must hold that:

$$\frac{G-T}{Y} = (g - r)d$$

The primary deficit must equal the difference between the real growth rate and the real interest rate times the target debt-to-GDP ratio.

- **If $g = r$, then $\dfrac{G-T}{Y} = 0$**

- **If $g < r$, then $\dfrac{G-T}{Y} < 0,$ i.e. we must have a primary surplus.**

- **If $g > r$, then $\dfrac{G-T}{Y} > 0,$ i.e. we must have a primary deficit.**

The EU fiscal rules

- The no-bail-out clause
- Government budget deficits below three per cent of GDP
- Gross government debt below 60 per cent of GDP or approaching this level "at a satis-factory pace"
- Medium-term objective of budget "close to balance or in surplus"

The fiscal rules

- Maastricht Treaty
- The stability and growth pact
  - preventive arm
  - corrective arm

The earlier working of the fiscal rules

- Empirical evidence that the rules have reduced deficits
- Initially the rules were observed
- But later a large number of violations
  - Portugal (2001, 2005-07)
  - France (2002-04)
  - Germany (2002-2005)
  - Netherlands (2003)
  - Greece (1997-2005)
  - Italy (2003-)
  - UK (2003-04)
  - Several of the new member states (Hungary 10.1 per cent of GDP in 2006)

2005 revision of the stability pact

- Changes strengthening fiscal discipline refer mainly to the soft
  parts of the pact
  - increased emphasis on the debt criterion
  - "commitment" to enhanced budgetary discipline
   in good times
  - minimum fiscal efforts

- The crucial changes are those that apply to the hard parts: the
  excessive deficit procedure
  - extension of deadlines

Table 9 Theoretically possible scenarios for the excessive deficit procedure in case of non-compliance (time until first fine)

Year	Old pact as originally envisaged and strict application of new pact	Lax application of new pact	Very lax application of new pact	Super-lax application of new pact	Maximum laxity according to new pact
t	Budget deficit above 3 % of GDP	Budget deficit above 3 % of GDP	Budget deficit above 3 % of GDP	Budget deficit above 3 % of GDP	Budget deficit above 3 % of GDP
t+1	Council decision on excessive deficit and recommendation	Council decision on excessive deficit and recommendation	Council decision on excessive deficit and recommendation	Council decision on excessive deficit and recommendation	Excessive deficit exception
t+2	Deadline for correction				Council decision on excessive deficit and recommendation
t+3	First deposit	Extended initial deadline	Extended initial deadline	Extended initial deadline	
t+4	Second deposit	First deposit	Repeated recommendation and new extension of deadline	Repeated recommendation and new extension of deadline	Extended initial deadline
t+5	First deposit converted into fine	Second deposit	First deposit	Repeated notice and further extension of deadline	Repeated recommendation and new extension of deadline
t+6		First deposit is converted into fine	Second deposit	First deposit	Repeated notice and further extension of deadline
t+7			First deposit converted into fine	Second deposit	First deposit
t+8				First deposit converted into fine	Second deposit
t+9					First deposit converted into fine

Note: The table has been constructed under the assumption that a deficit above three per cent of GDP is identified the year after its occurrence. Later identification would lengthen the period before fines should be imposed according to the new rules.

Widened scope for discretionary decision-making in the excessive deficit procedure

- Very far from the original German proposal of automatic sanctions
- The idea was to constrain discretionary fiscal policy decisions at the national level
- But discretionary decisions are now back at the enforcement level – endogenous response to violations on the part of large countries
- Discretionary political decision-making is the root of the enforcement problem
- More discretion cannot be the solution: it will only aggravate the enforcement problem
- Fiscal balances improved during the 2006-08 upswing, but are starting to deteriorate now.
- This means the real test of the revised stability pact will come now.

Indicators of the public budgets in the EU27

Table 1.3

	Gross debt[a]				Fiscal balance[a]			
	2005	2006	2007	2008	2005	2006	2007	2008
Germany	67.8	67.5	64.7	62.6	-3.4	-1.6	0.1	-0.1
France	66.7	64.2	64.3	64.1	-2.9	-2.5	-2.6	-2.6
Italy	106.2	106.8	104.3	102.9	-4.2	-4.4	-2.3	-2.3
Spain	43.0	39.7	36.3	34.6	1.0	1.8	1.8	1.2
Netherlands	52.3	47.9	46.8	44.8	-0.3	0.6	-0.4	0.5
Belgium	92.2	88.2	84.6	81.7	-2.3	0.4	-0.3	-0.4
Austria	63.4	61.7	60.0	58.4	-1.6	-1.4	-0.8	-0.7
Greece	98.0	95.3	93.7	91.1	-5.1	-2.5	-2.9	-1.8
Ireland	27.4	25.1	25.2	26.9	1.2	2.9	0.9	-0.2
Finland	41.4	39.2	35.7	32.4	2.7	3.8	4.6	4.2
Portugal	63.7	64.8	64.4	64.7	-6.1	-3.9	-3.0	-2.6
Slovenia	27.4	27.1	25.6	24.5	-1.5	-1.2	-0.7	-1.0
Luxembourg	6.2	6.6	6.6	6.0	-0.1	0.7	1.2	1.0
Cyprus	69.1	65.2	60.5	53.3	-2.4	-1.2	-1.0	-0.8
Malta	70.8	64.7	63.1	61.3	-3.1	-2.5	-1.8	-1.6
Euro area	**70.3**	**68.6**	**66.5**	**65.0**	**-2.5**	**-1.5**	**-0.8**	**-0.9**
United Kingdom	42.1	43.2	43.6	44.8	-3.3	-2.7	-2.8	-3.0
Sweden	52.2	47.0	41.1	35.7	2.4	2.5	3.0	2.8
Denmark	36.3	30.3	25.0	20.9	4.6	4.6	4.0	3.0
Poland	47.1	47.6	46.8	47.1	-4.3	-3.8	-2.7	-3.2
Czech Republic	30.2	30.1	30.2	30.3	-3.5	-2.9	-3.4	-2.8
Hungary	61.6	65.6	66.1	66.3	-7.8	-9.2	-6.4	-4.2
Romania	15.8	12.4	12.5	12.8	-1.4	-1.9	-2.7	-3.2
Slovakia	34.2	30.4	30.8	30.7	-2.8	-3.7	-2.7	-2.3
Lithuania	18.6	18.2	17.7	17.2	-0.5	-0.6	-0.9	-1.4
Bulgaria	29.2	22.8	19.3	15.9	2.0	3.2	3.0	3.1
Latvia	12.5	10.6	10.2	7.8	-0.4	-0.3	0.9	0.8
Estonia	4.4	4.0	2.8	2.3	1.9	3.6	3.0	1.9
EU27	**62.7**	**61.4**	**59.5**	**58.3**	**-2.4**	**-1.6**	**-1.1**	**-1.2**

[a] As a percentage of gross domestic product; definitions according to the Maastricht Treaty.

Source: European Commission.

The three-percent-of-GDP deficit ceiling in the current recession

- Several countries will violate it

- But there exists "severe cyclical downturn exemption"

  - negative growth

  - accumulated loss of output during a protracted period of very low growth relative to potential growth

Possible "technical" solutions

- Depoliticisation of the enforcement procedure
  - EEAG proposal to transfer decisions on sanctions
    in the EDP to the European Court of Justice

- Stronger political incentives to employ sanctions
  - member states with excessive deficits should
    not be allowed to vote in the EDPs for others
  - smaller and more gradual deposits (fines)
    would strengthen the incentives to use sanctions
  - non-pecuniary sanctions (loss of voting power?)

Table 8 The size of deposits/fines

Deficit (per cent of GDP)	Deposit/fine (per cent of GDP)	
	Year 1	Subsequent years
3-4	0.3	0.1
4-5	0.4	0.2
5-6	0.5	0.3
6-7	0.5	0.4
7-	0.5	0.5

Stronger incentives for fiscal discipline may have to be established at the national level

- Too weak incentives for governments to adhere to own fiscal objectives

- National fiscal policy councils
  - monitor that *ex post* government policy is consistent with *ex ante* objectives
  - recommendations on the fiscal policy stance
  - forecasts forming the basis for the government budget proposal
  - evaluation of government budget proposal
  - basis for the parliamentary decision-making process
  - increased transparency of the budget process and higher reputation costs of fiscal profligacy

Instruction of the Swedish Fiscal Policy Council

- Have the government's fiscal policy objectives been achieved?
  - long-run sustainability
  - budget surplus
  - expenditure ceiling

- Are developments in line with sustainable growth and sustainable employment?

- Clarity of budget proposal

- Government economic forecasts and underlying models

The Council shall also stimulate the public debate on economic policy

Composition: six academic economists + two ex politicians

<u>First report by the Swedish Fiscal Policy Council 2008</u>

- **Focus on the government budget surplus target –
  1 percent of GDP**

- **Criticism of unclear motivations**
  - **intergenerational equity**
  - **social efficiency: tax smoothing**
  - **precautionary motive**

- **Prime motivation: Future demographic cost pressures**
  - **computation of sustainability indicator (S2)**
  - **the magnitude of permanent budget improvement
    (tax increase relative to GDP) necessary to pay for
    forecasted future government expenditures**
  - **currently stronger fiscal balance than needed**
  - **but a combination of adverse developments could
    easily make fiscal policy unsustainable: government
    consumption (health and old-age care), employment,
    working time**

- **Under current policies annual government net lending of
  2.5-3 percent of GDP 2008-10**
  - **do not use up the whole margin to the surplus target of
    1 percent of GDP**

- **The surplus target applies to 2015**
  - **gradual loosening after that to pay for demographic pressures**
  - **lower surpluses and eventually deficits up to 2 percent of GDP**
  - **need for plan how the surplus target should be revised**

The Swedish fiscal policy framework in the current downturn

- **Government net lending over the cycle = 1 percent of GDP**

- **Observe ceiling for central government expenditure ("utgiftstaket")**
  - **set three years ahead in nominal terms**
  - **budget margin between ceiling and planned expenditures**

- **The surplus target does not prevent a fiscal stimulus, since it does not apply to an individual year but over the cycle**

- **But the expenditure ceiling could become a binding constraint on temporary expenditure increases**
  - **budget margin around 1.1 percent of GDP**
  - **automatic increases because of higher costs for unemployment benefits, labour market policy etc.**

- **Temporary exception from expenditure ceiling to meet recession?**

Tabell 4.1 Finansiellt sparande i offentlig sektor samt indikatorer för avstämning mot överskottsmålet

Procent av BNP, om annat ej anges

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Finansiellt sparande	3,7	1,7	-1,4	-1,2	0,6	2,0	2,2	3,5	2,8	1,1	1,6	2,5
Finansiellt sparande, genomsnitt från 2000	3,7	2,7	1,3	0,7	0,7	0,9	1,1	1,4	1,5	1,5	1,5	1,6
7-års indikatorn				0,9	0,9	1,0	1,4	1,8	2,1			
Strukturellt sparande	1,9	2,2	-0,7	-0,4	0,4	1,1	0,8	2,1	2,8	1,9	2,2	2,7
BNP-gap	0,8	-1,0	-0,9	-1,0	-0,2	0,5	1,6	1,2	-0,7	-1,7	-1,4	-0,5
BNP-gap, genomsnitt från 2000	0,8	-0,1	-0,4	-0,5	-0,5	-0,3	0,0	0,1	0,0	-0,2	-0,3	-0,3
BNP-gap, 7-årssnitt				0,0	0,0	0,1	-0,1	-0,1	-0,1			

Källor: Statistiska centralbyrån och Finansdepartementet.

<u>Golden rule for fiscal policy?</u>

- **The surplus target applies to financial saving (net lending) of general government**
    - **risk that this lowers government investment**
    - **benefits apply partly to future generations; current generations pay via taxes**
    - **easier to reduce government investment than government transfers**

- **Could the fiscal target instead apply to total saving of the general government (the golden rule of public finance)?**
    - **equivalent to distinguishing between current budget and capital budget with fiscal target only for the current budget**
    - **loan financing of capital expenditures**

- **Example of golden rule**
    - **UK**
    - **Germany**
    - **New Zealand**
    - **US states**
    - **Swedish local government**
    - **Sweden in the 1950s**

Figur 2.4 Den offentliga sektorns bruttoinvesteringar i Sverige, EU12 och USA (procent av BNP)
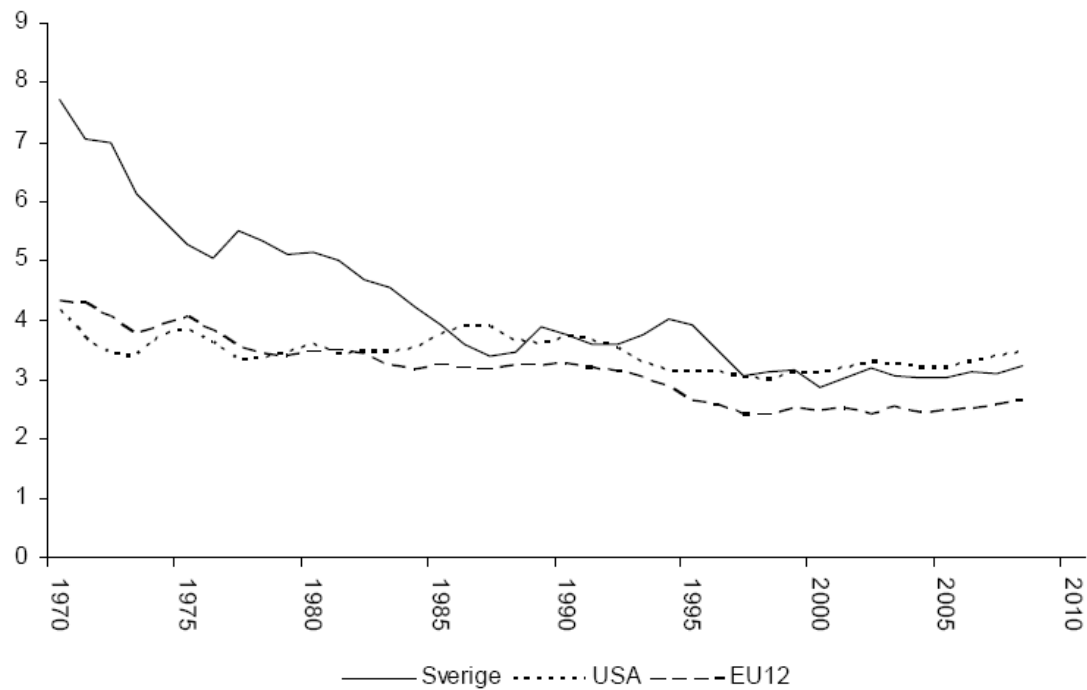
The golden rule of public finance

F = net lending (financial saving) of the government

T = tax revenue

G = government expenditure

I = government gross investment

D = depreciation of government capital

N = government net investment

S = total saving of the government

Current surplus target

$F = T - G - I$

$I = D + N$

Golden rule target

$S = F + N = T - G - I + N = T - G - D - N + N = T - G - D$

Problems with golden rule

- **What government investment should be included?**
    - **not all investment gives a pecuniary return**
    - **intergenerational equity or tax smoothing?**
    - **human capital investment: R&D, education, health care?**

- **Risks of manipulation**
    - **current expenditures could be reclassified as capital expenditures**
    - **cheating with the amount of depreciation**

- **Combination with other fiscal rules as in the UK?**
    - **borrowing only to finance net investment**
    - **ceiling for government net debt (40 percent of GDP)**

- **External auditing?**