Macroeconomic Theory

Econ 4310 Lecture 15

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Announcements

1. Course evaluation. Please fill in form after exam
2. Stephen Nickell lectures on ”The European Unemployment Challenge” November 1 in Aud 3, Eilert Sundt building, at 15:15-16

Ricardian equivalence. The main assumptions

1. Present value of taxes equals present value of government expenditure plus initial government debt.
2. Consumers have rational expectations of future taxes and expenditures.
3. Taxes and transfers are lump-sum
4. Dynastic consumers, no migration

Ricardian equivalence. Implications

1. Government borrowing and the timing of taxes (and transfers) do not matter for aggregate demand
2. Government debt creates its own demand

Ricardian equivalence. Cases where it may fail

- Taxpayers who come and go
- Inoperative bequest motives
- Borrowing constraints?
- Precautionary saving?
- Income taxes, income dependent transfers
- Involuntary unemployment
- Myopic behavior
- Fear of government default

Ricardian equivalence. Summary view

- Ricardian equivalence does not hold exactly
- Expectations of future tax increases or benefits cuts do depress present consumption demand, but to a varying degree
- Expectations of future increases in distortionary taxes may also depress investment demand today
- Government borrowing do raise real interest rates, but to what extent is not clear
- Some examples where it seems that cutting deficits had expansionary effects on economy

Debt dynamics

$$b_{t+1}(1+\gamma) = b_t(1+r) + g - \tau$$

b = debt/GDP, g= government consumption / GDP, τ = net taxes/GDP, r = real interest rate, γ = growth rate of GDP

Primary surplus required to keep $b_{t+1} = b_t = b$:

$$\tau - g = (r - \gamma)b$$

Primary surplus required to stop growth in nominal debt:

$$\tau - g = ib$$

i = nominal interest rate

Primary surplus required to stop debt ratio from growing

	$r-\gamma$			
Debt ratio	0	1	2	4
60	0.0	0.6	1.2	2.4
100	0.0	1.0	2.0	4.0
120	0.0	1.2	2.4	4.8
150	0.0	1.5	3.0	6.0

$\tau - g = (r - \gamma)b$, figures in per cent

Debts and deficits 2009

	Greece	Italy	UK
Gross debt	115.1	115.9	68.1
Net debt	87.0	101.0	43.5
Budget deficit	13.5	5.2	11.3
Primary deficit	8.8	0.8	9.6
Current account	11.2	3.1	1.3

Debt crisis

- Interest rate increases in probability of default
- Probability of default increases in interest rate
- Multiple equilibriums possible
- Small shocks can lead to big increases in interest rates
- Rolling over debt may become impossible

Default or not?

- Default may reduce the need for cuts now
- Default makes it more expensive to borrow in the future
- Default may create a general financial crisis, loss of output

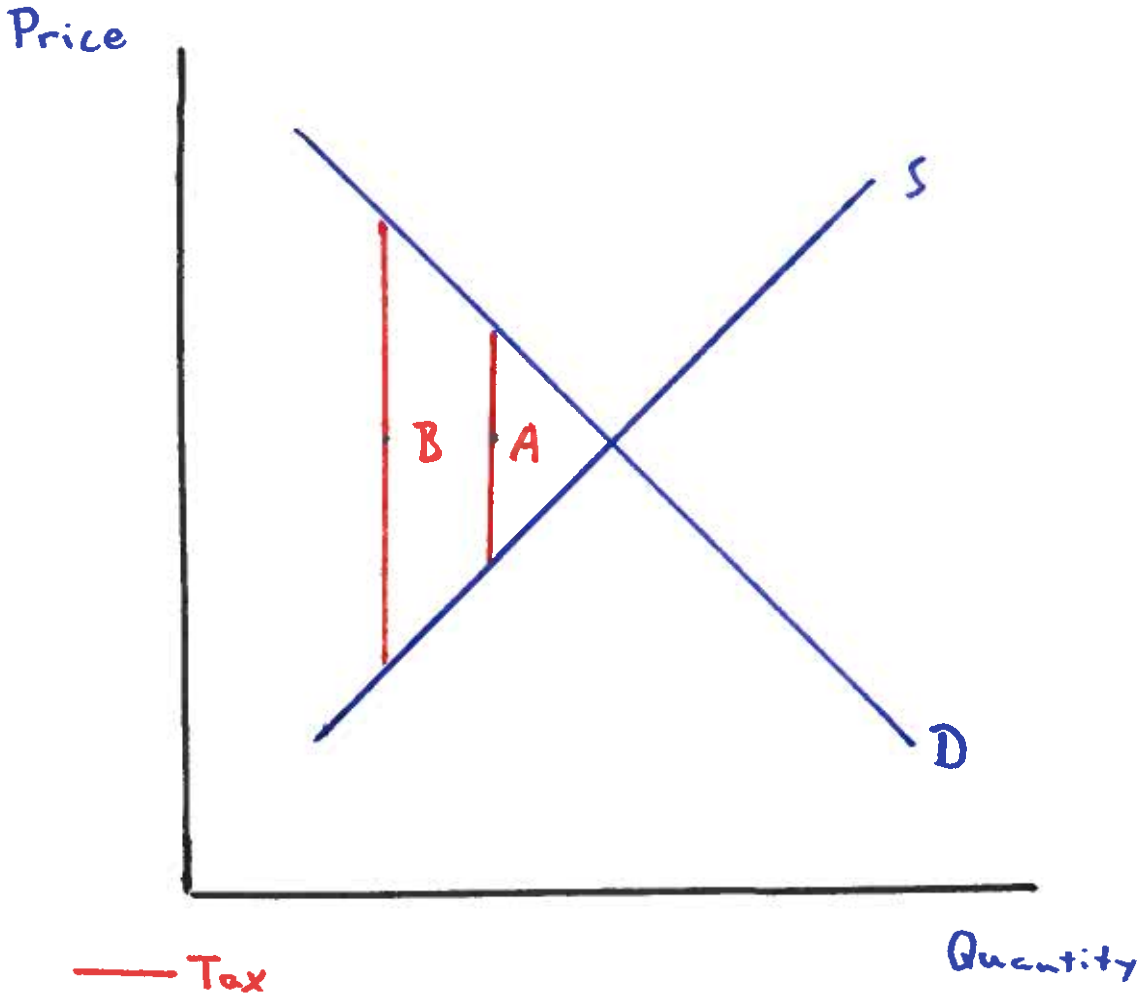
- A defaulting country has to eliminate its primary deficit immediately

Open economy issues

- Governments that have borrowed in their own currency can choose to reduce the debt through inflation rather than outright default
- Government debt problems may result in currency crises
- Governments that have borrowed from their own citizens can sustain more debt, since part of the interest comes back as taxes

Saving oil revenues: Three reasons

- Intergenerational distribution
- Minimizing the costs of structural change
- Smoothing taxes and government consumption



— Tax

A, B deadweight loss

$A + B > 2A$

Fiscal rule 1: Keeping tax rates constant

$$a_{t+1}(1+\gamma) = (1+r)a_t + \tau - g$$

Condition for $a_{t+1} = a_t$

$$g - \tau = (r - \gamma)a$$

Spend the part of the real return on wealth that exceeds the underlying growth rate

Actual fiscal rule

$g - \tau = ra_f$

$a = a_f + a_g =$ oil revenues in *f*und plus in *g*round

- In fund: NOK 2 640 bn (1.1 GDP)
- In ground: NOK 4 090 bn (1.7GDP)

The two rules compared

$g - \tau = ra_f$ versus $g - \tau = (r - \gamma)(a_f + a_g)$

Actual rule has

- less spending initially
- more spending in an intermediate period
- less spending in the long run

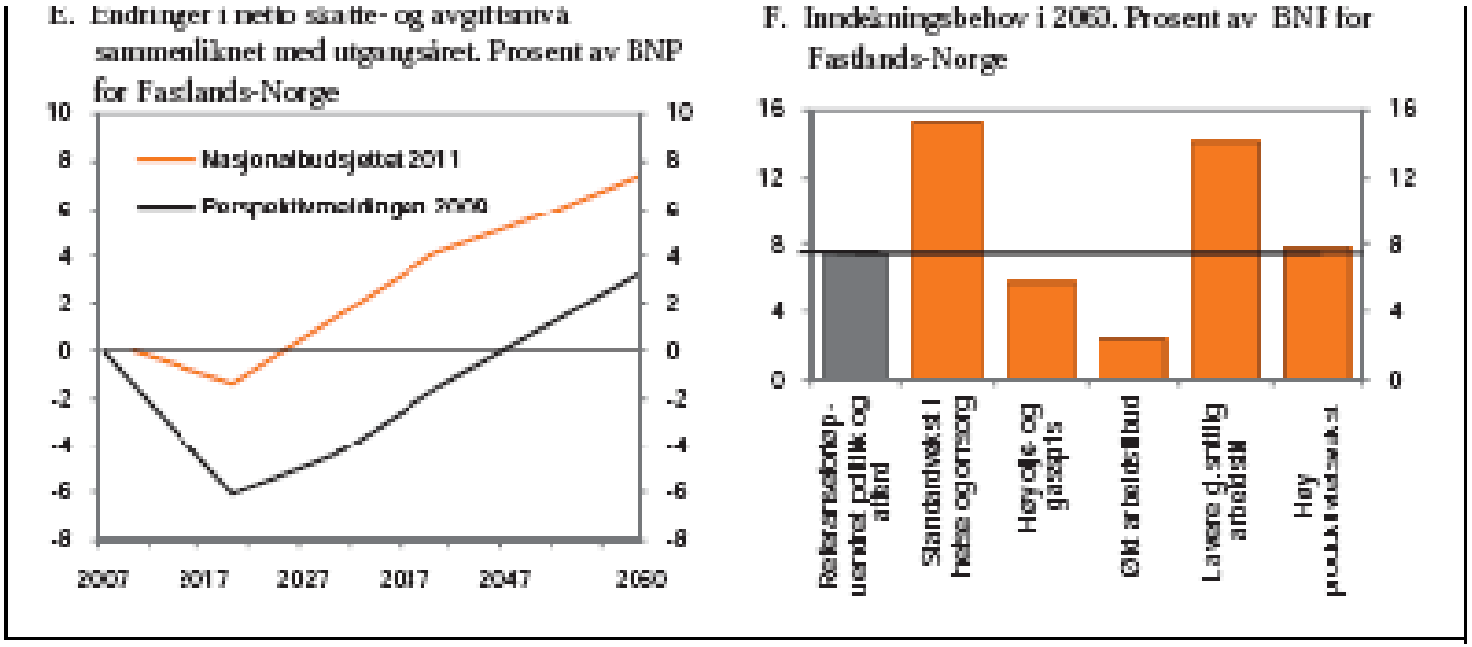
- constant expected value of fund after all oil and gas has been produced
- ratio of fund to GDP that approaches zero in the long-run

Some further considerations

- Risks related to future oil revenues
- Aging, pension reforms
- Immigration
- Other reforms

Projections of future budget scenarios needed

Budget projection 2010



Figur 3.1 Langsiktige utfordringer

Kilder: Statistisk sentralbyrå og Finansdepartementet.

Intergenerational distribution

In projections:

- Private consumption per capita expected to grow
- Government consumption: Same standard more users
- Tax rates increasing

Some questions:

- Does the real interest rate justify the increasing consumption path?
- Can we count on positive real income growth forever?
- To what extent can the government actually influence the intergenerational distribution?
- Do future generations have rights in the resources?