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Fiscal Sustainability: a Review of the Issues and New Developments

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Sustainability: an old issue

“And thou shalt lend unto many nations, but thou shalt not borrow”

Deuteronomy

*“The budget should be balanced,
the treasury should be refilled,
public debt should be reduced ”*

M.T.Cicero (??)

*“Our modern expedient is to mortgage the public revenues ... a practice which
appears ruinous”*

David Hume

*“... if a man had twenty pounds a year for his income, and spent nineteen pound
nineteen shillings and sixpence, he would be happy, but ... if he spent twenty
pounds one he would be miserable”*

Charles Dickens (David Copperfield)

Defining sustainability

Defining sustainability-1

Long debate on debt sustainability (from Ricardo to Lerner & Buchanan)

- debt finance vs. tax finance
- limits to public debt growth
- who carries the burden of public debt?

⇒ core issue: effects of debt on capital accumulation and growth

Domar (1944): discusses fear that “.. *continuous government borrowing results in an ever rising public debt, the servicing of which will require higher and higher taxes; and that the latter will eventually destroy our economy or result in outright repudiation of the debt.*”

constant deficit/gdp ⇒ debt/gdp → finite value ⇒ tax/gdp → finite value

necessary condition for sustainability: an-ever growing tax ratio is unsustainable

but what is the maximum ratio?

Defining sustainability-2

1980s: expanding public sector + ageing \Rightarrow need to evaluate future deficit path implied by current policies

Buiter: sustainable policy keeps ratio of public sector net worth to output at its current level

Blanchard: two necessary conditions for sustainability

(a) *“the ratio of debt to GNP eventually converges back to its initial level”*

(b) *“the present discounted value of the ratio of primary deficits to GNP ... is equal to the negative of the current debt to GNP ratio” (a refinement of Domar’s definition)*

to assess compliance with first definition \Rightarrow “tax-gap” (Blanchard et al.) = immediate change in tax/gdp required to keep debt/gdp at end of period equal to initial level

“recommended primary surplus” (Bogaert/Delbecque) = allows pension expenditure increases to be fully offset by decline in interest payments (\downarrow debt)

these are ad hoc solutions: e.g. – over what period should we compute the tax gap?
– why is the initial debt/gdp level a good benchmark?

Defining sustainability-3: the variables

sector of reference: should include all public bodies whose financial behaviour ultimately has an impact on central government accounts. In practice, there is a large grey area: public enterprises, central banks

net or gross debt: as assets can be sold to repay the debt, in principle a net debt measure is a better benchmark. But data on assets are often problematic (especially non-interest bearing assets). Moreover, can have liquidity problems. In practice, a gross measure of debt can sometimes be preferable

valuation of debt: market valuation is relevant only if the government buys back its debt before it falls due (no obligation to do so). Otherwise use nominal – redemption value

deficit-debt consistency: net lending/borrowing pairs with net debt, non financial transactions + transactions in assets (borrowing requirement) pairs with gross debt

The building blocks of sustainability analysis: long-term projections

Why do we need long-term projections?

to help governments and parliaments in taking into consideration long-term issues

projections:

- a) signal in advance trends potentially undermining the sustainability of public finances (and compliance with fiscal rules) or requiring unsustainable tax increases ...
- b) ... thus allowing governments to acquire the consensus for reforms ...
- c) ... and to adjust expenditure programmes to demographic developments, avoiding sudden changes (e.g. pension systems affect lifetime decisions to work & save \Rightarrow *need gradual approach to reform*)

therefore the design of institutions & procedures as important as technical aspects

Evolution of long-term projections

- **Beveridge Report (1942)**
- **Initial leading role of IMF (1986) and OECD (1985, 1988): focus on demographic changes + simple assumptions about other factors**
- **Diffusion of national forecasting models in 1990s: Ministry of finance & social protection, public economic institutes**
- **Projections initially focused on pension systems: no recent major reform without long-term projections**
- **Coverage extended to other age-related expenditures (not unproblematic)**
- **Internationally co-ordinated exercises: EC (2000, 2001, 2003,), OECD (2001). Combine national models and agreed macroeconomic and demographic assumptions**

Expenditure profiles

Estimates of expenditure profiles

estimates of the average amount spent per member of each age & sex group in the base year in terms of per capita GDP (age-related exp. profile) are the building blocks of most projections and also of generational accounting.

they are usually computed on the basis of household surveys or administrative data.

are they adequate and comparable?

several aspects should be taken into consideration:

- different age-groups
- males/females
- with/without taxes
- public/private expenditure
- comprehensiveness (pension, health, education, family allowances, etc.)
- updated?

Notes of caution on mechanical exercises

basic idea underlying long-term projections: combine present spending levels with detailed demographic scenarios. It works, but obviously:

a) assumption of constant per capita expenditure level (in % of per citizen or per worker GDP) is not equivalent to constant policies

e.g. pension reforms are usually phased in gradually

b) demographic changes affect expenditure profiles in many ways

e.g. (i) economies of scale in services
(ii) cost of labour of different age groups

c) demographic changes affect: labour & capital markets, relative prices, productivity, etc. \Rightarrow all expenditure items are affected

d) demographic changes affect revenues

e) expenditure dynamic depends on many non-demographic factors

A critical area: health & long-term care

Health expenditure growth: many factors

- Projections based on current expenditure profiles provide limited indications about future expenditure (OECD: ageing explains only a small part of past expenditure increases)
- Many factors affect spending \Rightarrow age-related profiles can shift up or down
 - household fragmentation and rising female labour participation (\uparrow)
 - new medical techniques (?)
 - health services inflation (\uparrow) [lower prod.vity growth/rising relative costs]
 - policies and reforms (\uparrow and \downarrow)
 - healthier lifestyle (\downarrow)
- Problem: how do improvements in life expectancy affect expenditure profiles? Will we live the additional years in good or bad health?
sizeable share of expenditure concentrated in final stage of life \Rightarrow \uparrow life expectancy may have limited impact on spending (\uparrow years in good health)

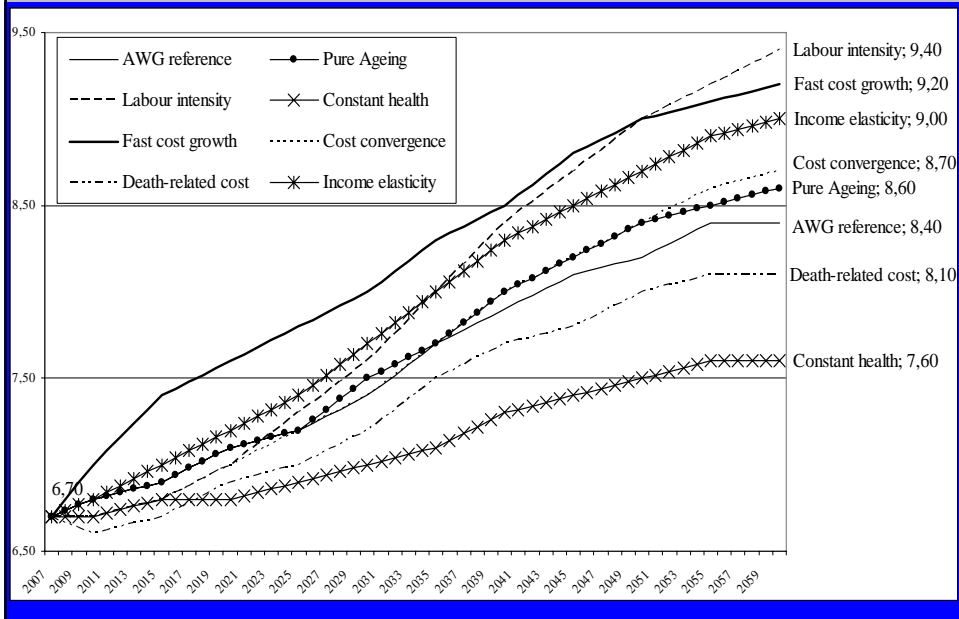
Health expenditure projections: any progress?

- IMF (1986): “long-term projections of expenditure on medical care are subject to the greatest uncertainty”, “in view of these many uncertainties, the projection model used in this study was deliberately kept simple” (pp. 37 & 39)

It assumes that costs raise as productivity or about 0.5% per year faster

- OECD (1996): assumes that: (a) costs depend either on number of elderly or number of deaths; (b) treatment cost raises as GDP, or 1% slower or 1% faster each year
- OECD (2006) assumes: (a) longevity gains translate into additional years of good health; (b) two scenarios: (i) expenditure grows every year 1% faster than income and (ii) same rate
- AWG (2009) assumes that : (a) half of the extra years of life will be spent in good health; (b) assumes an income elasticity coefficient of 1.1 converging to 1 by 2060; (c) unit costs will increase in line with per capita GDP

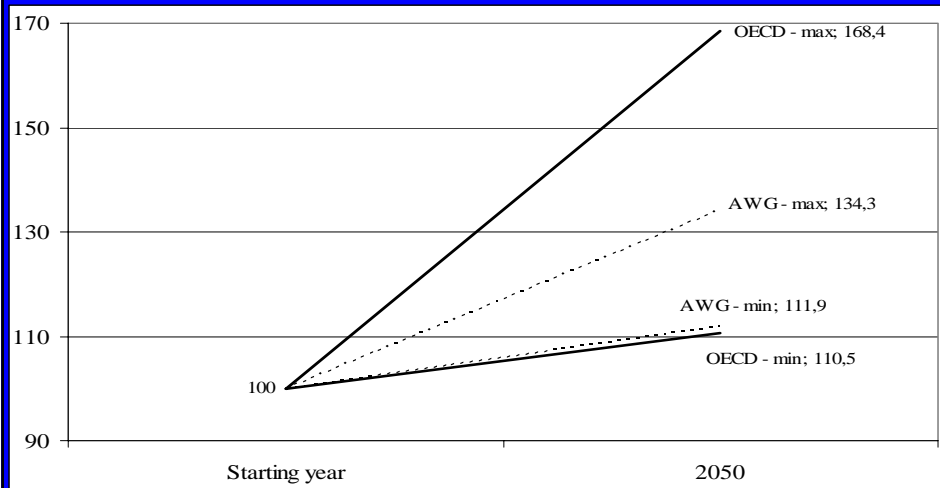
AWG health expenditure projections: a huge range



Projected increase of public health expenditure

AWG & OECD (minimum and maximum increase scenarios)

Health expenditure-to-GDP ratio in starting year (OECD: 2005; AWG: 2007) = 100



the choice of simple and rather arbitrary assumptions and the wide range of outcomes in the alternative scenarios point to the **sizeable uncertainty concerning the health expenditure outlook**

An open issue: social sustainability

Formal correctness and social sustainability

Accurate simulation of effects of rules not sufficient to assess social sustainability
- for instance:

a) pensions

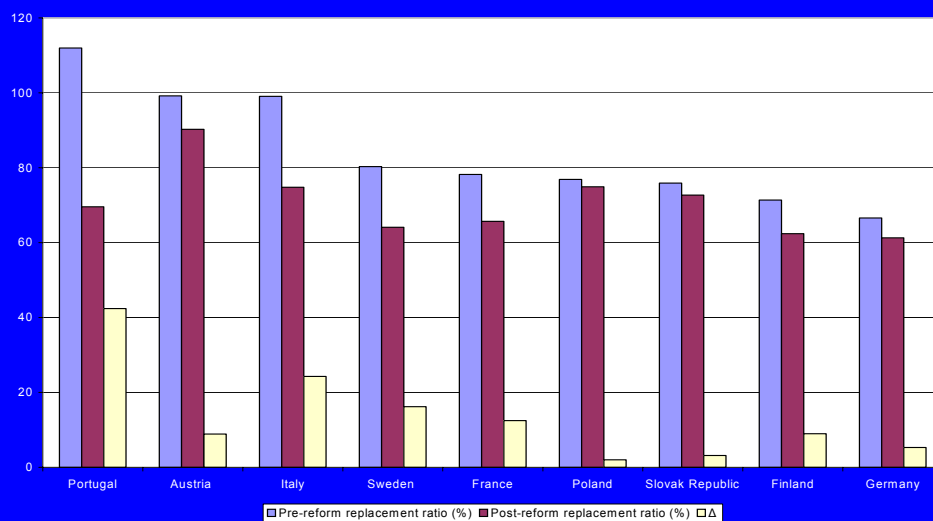
- changes in **indexation** contributed to expenditure cuts in several countries
- but: price indexing entails gradual loss of relative purchasing power of pensioners vis-à-vis workers.
- pensions of oldest citizens can turn out socially unsustainable \Rightarrow pressure for discretionary increases or shift to earnings indexation (as in the UK in 2006)

b) long-term care

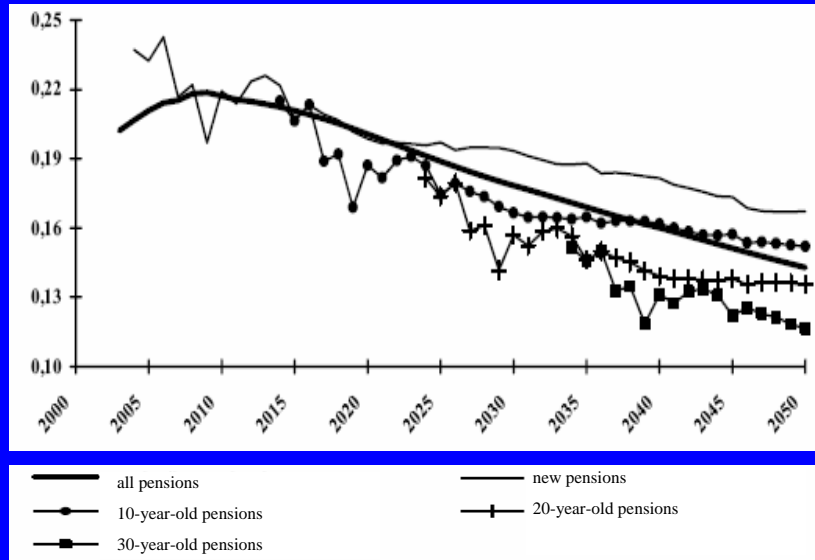
some countries have now small public schemes (most care provided within families or privately funded). Will this be sustainable in the future? (one-child families, greater women's participation to labour market, etc.)

Social sustainability: **need to consider overall income position of elderly citizens.**
Our societies reject large scale deprivation of elderly

Pension reforms are reducing replacement ratios



Italy: amount of average pension/GDP per worker (private sector employees, different generations)



Pension liabilities

Pension liabilities: definitions

- any PAYG pension scheme gives rise to unfunded liabilities: each generation pays pensions to previous generations and later receives pensions from younger generations
- debt arises with creation of scheme, first generation receives a pension without having paid any previous contribution
- *Accrued-to-date liabilities*: present value of pensions to be paid in the future on the basis of accrued rights

Current workers and pensioners' net liabilities: also include present value of future contributions of existing members and their new rights under current rules (no new entrants)

Open-system net liabilities: also include present value of contributions and pensions of new workers under current rules

Accrued liabilities and sustainability - 1

- **in steady state, the ratio of accrued liabilities to GDP** is given by the discounted value of the ratios of future pension spending to GDP: **it is proportional to the pension to GDP ratio**
 - suppose
 - (i) country A and country B devote on a permanent basis revenues amounting respectively to X and aX of GDP to their PAYG schemes;
 - (ii) revenues fully cover expenditure
- ⇒ notwithstanding the same underlying sustainability circumstances, country B pension liabilities are a times those of country A
- the size of accrued liabilities depends on the decision concerning the benefits and eligibility criteria of PAYG schemes

Accrued liabilities and sustainability - 2

- the size of accrued liabilities does not provide any information on whether the PAYG system is unbalanced or will be unbalanced in the future
- any judgement about the sustainability of pension schemes requires estimates about the resources available to pay for the accrued pensions (e.g. evolution of employment and income). Accrued liabilities do not include such estimates
- but the larger the ratio of pension rights to GDP, the higher the share of future public resources committed to pension expenditure and the higher the risk that, if GDP growth is not adequate, some adjustment will become necessary (in terms of higher tax rates, repudiation of pension rights, etc.)

Accrued liabilities and public debt

- the timing and amount of the repayment of public bonds are fixed in advance, those of pension liabilities are uncertain
- pension rights are not embodied in formal contracts: debtors can modify timing and amount of payment. While failure to repay financial liabilities can give rise to legal claims, repudiation of pension liabilities may raise only political reactions
- the acquisition of pension rights is usually compulsory. The debt is automatically renewed
- pension rights are not tradable. Changes in relative yield and relative risk comparatively to other assets have no effect on financial markets. A large pension-debt does not determine any direct pressure on financial markets

Accrued liabilities and EU public debt

- while conventional debt can be measured timely and precisely, **pension liabilities are uncertain** and very sensitive to changes in assumptions. This is problematic in a 25 countries context
 - including pension liabilities would imply a change in the deficit definition: contributions to be classified as loans to the public sector, pensions as loan repayment. This would blur the indications concerning the impact of national fiscal policies on the area fiscal stance
 - the inclusion of pension liabilities in public debt, by making citizens' entitlements more explicit, **may hamper the pension reforms needed in Europe**
- ⇒ **better not add pension liabilities to public debt definition**

Expenditure projections vs pension liabilities

pension expenditure projections (in percentage of GDP):

- provide **better indications about need for reforms and timing of problems**
 - can be better integrated with projections for other items (health, long-term care, etc.)
 - can provide more intuitive indications and are less sensitive to underlying assumptions
- but
- accrued rights measure the **cost of closing down a PAYG scheme** when fully complying with present rules
 - pension liabilities more effective to evaluate the **impact on consumption and saving ratios**

Generational accounting: useful, but not unproblematic

Generational accounting: the main aspects

GA evaluates present value of transfers, services and taxes of different generations

⇒ prospective **per capita lifetime net tax burdens** that different cohorts face under existing expenditure policies

⇒ **imbalance present/future generations** (*usually compare net tax payments of newborn citizens – current tax rates – and future generations – new “equilibrium” tax rates*)

⇒ relevant indicators are

- the percentage by which all taxes must rise to achieve balance
- the percentage by which all expenditures must fall to achieve balance

Strengths of generational accounting (but long-term project. also cope with a, b & c)

(a) considers interaction of demography, macroeconomics and policies

(b) takes into account all government's liabilities

(c) considers effects of policy changes that do not affect the conventional deficit

(d) provides estimates of distributive impact across generations of changes in policies

Generational accounting: widespread use

The use of GA has been widespread (especially in the past decade):

- initially developed by Auerbach, Gokhale and Kotlikoff (1991)
- first estimates for the US, applied to Italy and Norway in 1993
- included in US Federal Budget: US Office of Management and Budget (1992-1994)
- 1999: Generational accounting in Europe - 12 countries (Raffelhüschén)
- 1999: Generational accounting around the world - 17 countries (Auerbach, Kotlikoff & Leibfritz)
- included in UK Treasury Long-term public finance report: an analysis of fiscal sustainability (2002-2006)

Generational accounting: problematic features

But :

- GA does not provide short & medium term estimates, **does not provide information about the timing** of the effects of demographic changes and “hide the details that produce the results” (CBO, 1995).
- results are not intuitive and easy to communicate to the public
- results are very sensitive to assumptions about productivity growth and discount rates
- it is based on the same building blocks of projections. Current expenditure levels for each generation is usually assumed to remain stable in the future (e.g., health spending)

CBO (1995): “... lead the CBO to conclude that *generational accounts should not take a place with its regular budget baselines*. Instead, CBO regards the accounts as a tool for examining broad policy options, rather than as an accounting statement.”

Generational accounting: recent developments

Focus on new summary indicators for better communication

- **Intertemporal budget gap:** the gap in the Government intertemporal budget constraint (assuming constant policies)

$$\text{ITG} = \text{Net debt} + \text{PV} [\text{Expenditures} - \text{Revenues}]$$

- **Gokhale and Smetters (2003 and 2005):** amount of fiscal imbalance (explicit and implicit liabilities) that past and current generations can be held responsible for

$$\text{Fiscal gap} = \text{Net debt} + \text{PV} [\text{Expenditures} - \text{Revenues}] \text{ of currently living generations}$$

Use of micro-simulations models **to improve age-profiles** and to simulate changes over time of expenditure levels of different generations (to consider the impact of reforms)

Overall, useful but not a radical improvement

EMU Fiscal Framework and Sustainability

EMU rules and long-term sustainability

While recognising that fiscal sustainability is important for the success of EMU

Article 121 (109j(1)) requires “the sustainability of the government financial position” for a country’s eligibility to EMU

... the Treaty and the SGP took a **simple and short-sighted approach**:

- rules refer to yearly data
- monitoring refers to short & medium-term trends
- no reference to long-term indicators/prospects
- CTB or in surplus \Rightarrow debt/GDP would converge to about 0; tighter than needed for sustainability

Why this pragmatic & myopic approach rather than more intelligent long-term indicators? Intertemporal budget constraint, tax gaps, generational accounting were available also in 1992 and 1997 (*Blanchard et al., 1990; Auerbach et al., 1991*).

Why a simple short-sighted approach?

Several reasons:

- Theory-based definition of sustainability is not unambiguous. While the intuition is clear (a sustainable policy must ultimately avoid bankruptcy), **the analytical and operational definition of sustainability is not straightforward**. What is the maximum sustainable debt ratio?
- Rules must be applied to several countries: **need simple indicators that can be monitored over short periods of time**
- In the early '90s some countries were in unsustainable fiscal positions \Rightarrow **tight/simple parameters were needed to rapidly ensure EMU’s credibility**
- **Implicit assumption**: if rules are respected over short-medium term, there are no long-term problems

Long-term projections enter the framework: joint exercises a success story

- 1996: survey of national pension expenditure projections in the EU
- 1997: pension expenditures projections + projections of other age-related items \Rightarrow overall spending increases \Rightarrow tax gaps to reach 60% debt in 2030
- 1999 (December): Ecofin calls for a broadening of issues covered by stability programmes to medium and long-term sustainability problems \Rightarrow **AWG**
- 2001: first long-term projections by AWG (pension, health, LTC)
- 2005: third long-term projections by AWG (also education, unemployment)
- 2006: report on the long-term sustainability of public finances
- 2009: fourth long-term projections by AWG

Sustainability indicators

- using AWG projections EC computes sustainability gap indicators for all EU countries providing a measure of the size of a permanent budgetary adjustment (e.g. constant reduction of non age-related public expenditure or constant increase in revenues as % of GDP) that enables to meet one of the following conditions:
 - S1: reaching a debt target of 60% of GDP for the Maastricht debt in 2050
3 components: gap to debt stabilising primary balance at t_0 + adjustment required to reach 60% of GDP in 2050 + adjustment required to finance increase in age-related spending up to 2050
 - S2: fulfilling the inter-temporal budget constraint over an infinite horizon
2 components: gap to debt stabilising primary balance at t_0 + adjustment required to finance increase in age-related spending over an infinite horizon

Should we reconsider the issue?

- Now that we have the new indicators (based on standardised long-term projections), **should we introduce them in the SGP?**
- For instance, they could be used to implement rules such as the **Permanent Balance Rule** (Buiter & Grafe, 2002: fix a constant tax rate while spending fluctuates depending on cycle, interest rates, structural factors, etc. so that the discounted values of future tax revenue and spending are balanced - a strong type of tax smoothing)
- **But the reasons applying in the 1990s are still there:**
 - indicators are based on mechanical age-related expenditure projections which extrapolate existing spending programmes. **Ageing is only one of the factors affecting public finances**
 - governments can still somehow influence the projections (assumptions, etc.)
 - indicators are somewhat arbitrary (what time range? what debt level?)

EU sustainability indicators: weak points

- Sustainability indicators are based on expenditure projections and assumptions concerning revenues which are consistent with current legislation **but may not be socially and economically sustainable**. Is a sizeable decline in the amount of the average pension sustainable? Is a relatively high CIT sustainable?
 - Indicators combine analysis of demographic trends, productivity, labour market developments & fiscal policy. But the **interactions between these factors are sometimes only mechanical**
 - **Indicators do not take into account the composition of the adjustment:** lower deficits are equivalent to structural reforms. But the economic impact can be very different: e.g. higher tax rates vs. measures increasing the retirement age. Some corrections can trigger further sustainability problems
- ⇒ **indicators are only a starting point in the policy assessment**

Sustainability indicators: strong points

- **Indicators highlight the role of the timing of the adjustment**

Italy: the size of fiscal adjustment necessary to satisfy the inter-temporal budget constraint is **3.1% of GDP** (Gap to stabilizing debt from initial Budgetary Position = 1.3% + Long Term Cost = 1.8%)

If Italy delays adjustment by 5 years, size increases by 0.3p.p. This “extra bill” will affect future generations proportionally more than current generations

Delays bring greater distortions and raise equity problems

The EU is taking again a pragmatic approach

- **The 2005 reform of the SGP put greater emphasis on sustainability**
 - **medium-term objectives (MTOs): country-specific, from -1% to small surplus** (debt & potential growth); cyclically adj. & net of temporary measures
 - **implicit liabilities: to be considered in setting MTOs**
 - **consider structural reforms** with direct long-term savings when defining adjustment path and deviations from MTO
- The Commission presented a Progress report to the Council in December 2006
three main routes were put forward: (1) full frontloading; (2) partial frontloading
(3) sustainability margins
- In July 2009 the Ecofin Council agreed that new MTOs would be implemented starting from the 2009-2010 round of S & C Programmes
MTOs will be **more ambitious for high-debt countries and will imply partial frontloading of ageing costs**

National fiscal rules are taking a similar approach

- Over the last 15 years **EU countries have introduced many fiscal rules at the national level** (Ayuso et al., 2007). The EMU framework has been a catalyst
 - UK: golden rule over cycle + maximum debt (+ comprehensive spending review)*
 - Spain: balanced budget over cycle (with ex post correction) + 0.5% for investm*
 - Germany: balanced budget over cycle (max def: 0.5%) (with ex post correction)*
 - Switzerland: balanced budget corrected for cycle (with ex post correction)*
 - Sweden: 1% surplus over cycle + expenditure rule*
- **but few rules set explicit targets for public debt or explicitly consider long-term indicators.** Even the Swiss debt-brake is not really about the debt
- the main exception is (was) the UK: public sector net debt is (was) to be kept at a stable & prudent level over the cycle (indicated at below 40% of GDP)

A specific challenge: fiscal decentralisation

Fiscal decentralisation and sustainability: problems

- fiscal decentralisation is high on the policy agenda in several countries
 - different political motivations (ethnicity, income disparities, ...)
 - economic reasons are less clear-cut (allocations gains but problems with stabilisation and redistribution)
- but sub-national governments can give rise to budgetary imbalances and debt accumulation
 - common pool bias
 - bail out expectations
- fiscal crisis in Latin America in 1980s and Argentina in late 1990s
Argentina: “the spending autonomy of provinces, combined with their ability to borrow, obstructed efforts at consolidating public finances” “the revenue-sharing arrangement led to pro-cyclical provincial policies” (IMF, 2003, p. 14)

Fiscal federalism and sustainability: solutions

- a sound fiscal framework is necessary to avoid distortions:
 - broad ex-ante matching of spending needs and overall resources
 - transfers (which are unavoidable) should:
 - * reflect formula-based estimates of spending needs (avoid bargaining and soft budget constraint)
 - * provide cushion against fluctuations in own revenues (avoid procyclicality)
 - controls over borrowing
 - * market discipline insufficient
 - * golden rule: it is reasonable but should be controlled
 - no bail-out
- can have many different solutions (e.g. cooperation vs. rules-based; internal stability pacts introduced in some countries)

Socially-sensitive services and fiscal rules for sub-national governments

- in many countries regional & local governments are responsible for the provision of socially-sensitive services (health, LTC, welfare) whose expenditure dynamic reflects structural factors
 - political and financial responsibilities across different government levels are sometimes not well defined: central government provides resources, regulates & requests a certain homogeneity in services
 - if it is not conceivable that local governments are allowed to fail in providing essential services, the credibility of fiscal rules may be at stake (a policy of no bail-out policy may not be credible)
- ⇒ fiscal rules and financing models should be defined in a dynamic context
- in 2001 the Italian government allocated 6% of GDP to health care. Regions had to fund additional spending, but their margins to increase revenues were limited & GDP growth was low. The rule immediately failed

Making sustainability analysis matter

Sustainability is primarily a national issue

The economic, fiscal and social implications of ageing are primarily national.
Policy reactions (e.g. pension reforms) are 100% national

The work at EU level can help

- **Technical reasons:** quality of national projections/analysis can be improved (learning from other countries, common quality standards, regular repetition of exercises, more transparency)
- **Political reasons:** governments can put pressure on each other; better information to the European public can facilitate structural reforms

but **sustainability indicators can only be useful if they affect policy decisions at the national level** (if they help tackling the myopia of policy makers and citizenry)

How to incorporate sustainability into the policy debate?

- how to include sustainability indicators in the national policy debate?
 - sustainability reports
- **building the long-term into the budgetary process?**
 - lengthen time frame of budget?
 - introduce net worth measures?
 - have independent funds (US Social Security Trust Fund; Norway's Government Pension Fund; NZ Superannuation Fund)?
 - have independent fiscal councils advising about policy changes?
- in many countries, in spite of the extensive annual reports, general public's knowledge remains very limited. Moreover, **policy-makers do not seem to demand much sustainability analysis**

Reporting about sustainability

- Australia: first *Intergenerational Report* in 2002. “*The report provides a basis for considering the Commonwealth's fiscal outlook over the long term, and identifying emerging issues associated with an ageing population*” (foreword).
Second Report in 2007. Treasury projections
 - UK: first *Long-term public finance report* in 2002 “*with the intention of providing a comprehensive analysis of long-term socio-economic and demographic developments and their likely impact on the public finances.*” “*The Government hopes that the publication will help to stimulate a public discussion ...*” (2005, p. 1).
Reports are produced on a yearly basis on the basis of own projections
 - Germany: first Report on the *Sustainability of Public Finances* in 2005 “*to provide objective information on the effects of demographic change on fiscal policy and to point to areas where timely countermeasures can be taken.*” (2005, p. 4).
Second Report in 2008. Estimates carried out by IFO
- ⇒ Several countries have introduced similar regular reports. They are well prepared, comprehensive & clear. Do they affect the policy debate?

Improving (the impact of) long-term projections: institutions

agencies producing forecasts are frequently responsible for social security policy

to improve neutrality:

- assign forecasts to a technical agency answering directly to Parliament
- coexistence of different public and private forecasting institutions
 - no monopoly on data
 - costs of running models should be lowered (data & models made available)
- joint international projections
(common assumptions + national experts ⇒ peer pressure)

Improving (the impact of) long-term projections: communication

- make projections regular, rather than occasional: learning by doing + incentive for accurate projections
⇒ forecasts every 1 to 3 years not in connection with specific reforms
- include detailed analysis of revisions of estimates: ↓ incentive for “political considerations” in projections

can also run models backwards using actual economic and demographic variables
- **include detailed analysis of data, assumptions, model ⇒ possibility to replicate projections**

need detailed presentation of results
(e.g. pensions: number of pensions, average amount, distribution, type of benefits, etc.)
- include sensitivity analysis

Improving (the impact of) long-term projections: methodology

- base projections on micro data (e.g., career history, earnings and family status).
Consider that
(i) individuals have some freedom of choice
(ii) some reforms are increasing such freedom
- improve analysis of retirement behaviour
- improve analysis of survival rates and health status of the very old
- **evaluate overall future conditions of retirees** (public and private pensions, asset income)

The impact of the current crisis

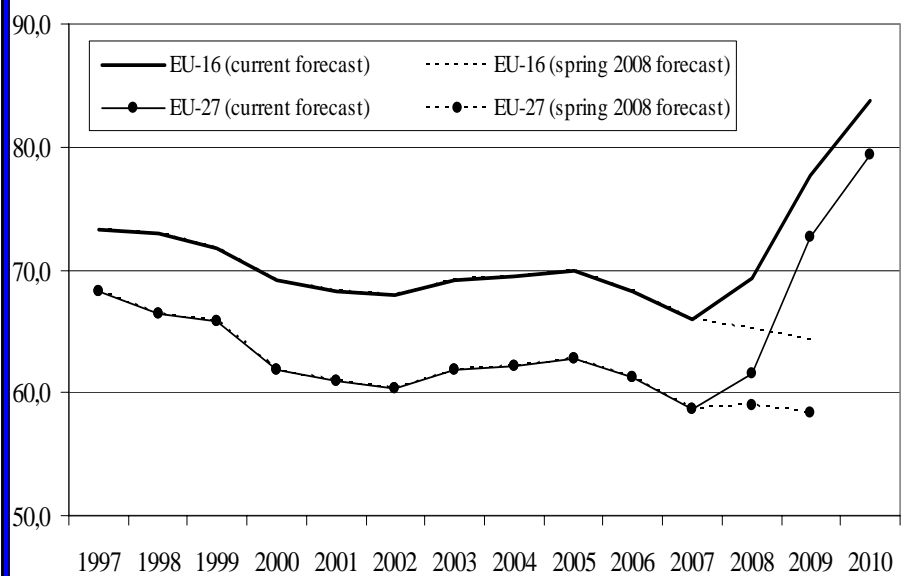
Three main channels

The downturn affects fiscal sustainability via three channels:

- it immediately **increases the debt level**, potentially increasing interest expenditure and the debt-stabilising primary balance
- it may **worsen the structural primary balance** either because of the discretionary measures taken to support the economy (which may not be fully temporary), or because of the loss of output, in a context in which a part of expenditure (e.g. pensions) is not affected by the output loss
- it may **affect potential output growth**

Moreover, there is a possibility that the crisis increases for a certain period of time the interest rate on public bonds.

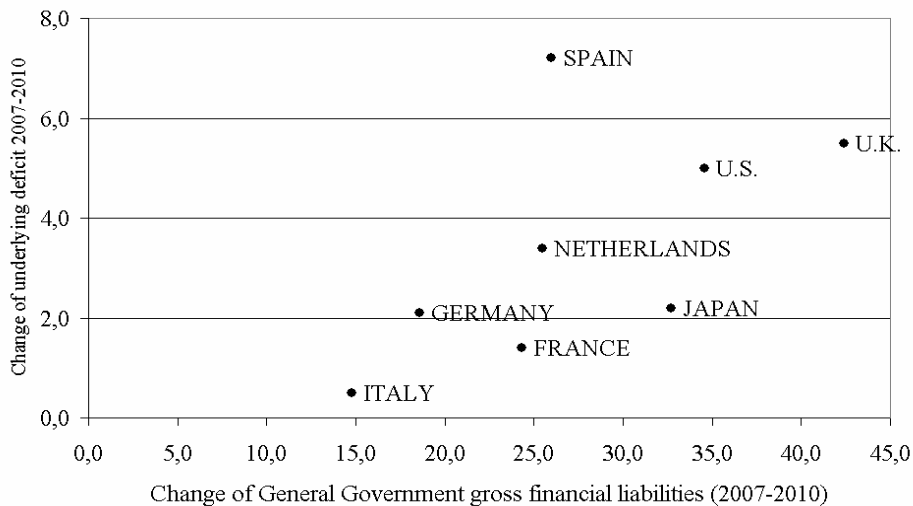
Public debt: 20 more points in three years (outcomes and European Commission's forecasts)



A worsening structural balance

- net of cyclical factors and temporary measures, in the Euro area the structural balance is estimated to deteriorate by 1.1% of GDP in 2009 and 0.8% in 2010
- the crisis may worsen the structural balances as a consequence of the fiscal stimuli, but also because of the loss of output, in a context in which a part of expenditure displays a trend of growth which is only gradually affected by the output loss. This is typically the case of age-related expenditure

Increase of debt and structural deficit: 2007-2010 (percent of GDP)



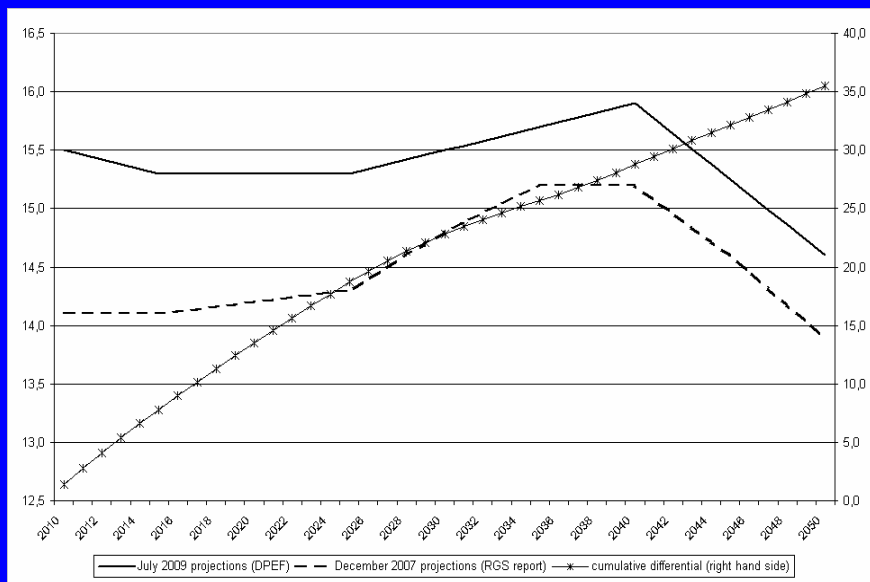
Source: OECD, Economic Outlook (June 2009)

Underlying deficit is the deficit adjusted for the economic cycle and one-off measures

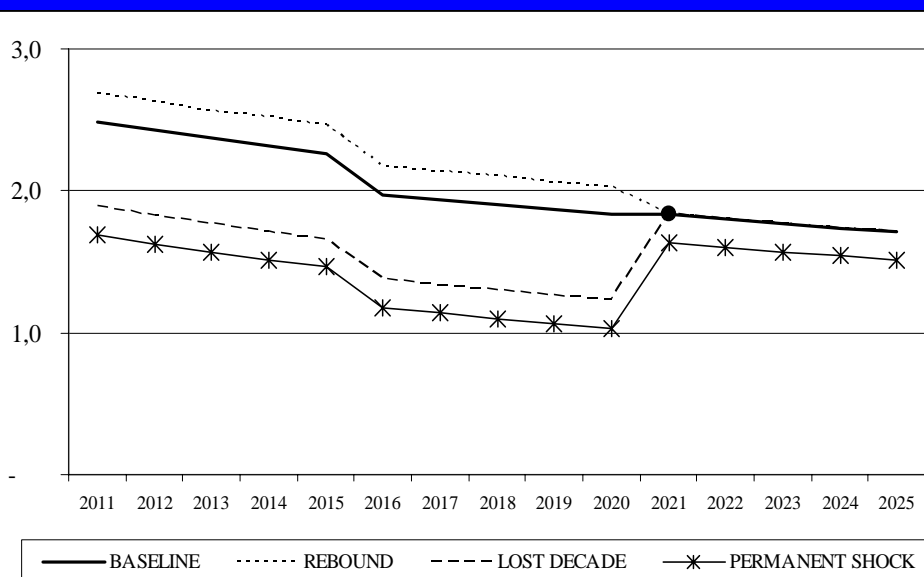
The loss of output

- the crisis can also affect fiscal sustainability through a negative impact on potential growth: the downturn reduces capital spending; higher unemployment may reduce human capital accumulation; many firms go bankrupt
- EC and AWG (2009) have envisaged three growth scenarios:
 - “rebound”: GDP growth rate overshoots pre-crisis baseline rate until 2020 so that GDP reaches its expected pre-crisis level by 2020. Age-related expenditure/GDP is the one expected before the crisis (+4.6 p.p. between 2007 and 2060)
 - “lost decade”: GDP growth rate is lower than in baseline till 2020. Age-related expenditure/GDP: + 5.6 p.p.
 - “permanent shock”: GDP growth rate permanently lower than in baseline. Age-related expenditure/GDP: +6.3 p.p.
- an example: pension expenditure in Italy. Long-term projections have been revised as in *lost decade*: while spending dynamics has not changed, pension expenditure/GDP has increased. Cumulative increase is about 35p.p.

Projections of Italian pension expenditure: before & after the crisis



AWG alternative scenarios: real GDP growth rate in Italy



Higher debt and loss of output (the case of Italy)

- *pre crisis*: primary balance required before crisis to reach a debt ratio of 60% by 2050 with AWG baseline estimates. Revenues and non age-related primary spending (% of GDP) constant at 2008 level. Interest rate 1% higher than GDP growth.
Prim. balance: 3.3 per cent
- *effect of higher debt*: only impose that the nominal value of public debt in 2009 and 2010 is the one now projected.
Prim. balance: 3.5 per cent
- *recession & higher debt*: include output loss expected for 2009-2010.
Prim. balance: 3.9 per cent
- *lost decade*: assume that GDP growth goes back to pre-crisis scenario in 2020.
Prim. balance: 5.2 per cent
- *permanent shock*: assume that GDP growth remains below pre-crisis scenario.
Prim. balance: 6.4 per cent

⇒ GDP recovery is the most important (and uncertain) aspect

Italy: primary balance requirements in different macroeconomic scenarios

SCENARIO	Primary balance required to bring the debt-to-GDP ratio at 60% in 2050		Debt to GDP ratio	
	Required primary balance in 2011	Change with respect to pre-crisis	Debt to GDP ratio in 2050	Change with respect to pre-crisis
<i>Pre-crisis</i>	3,26	-	128,5	-
<i>Pre-crisis & high debt</i>	3,54	0,3	137,8	9,4
<i>GDP loss & high debt</i>	3,86	0,6	231,8	103,4
<i>Lost decade</i>	5,19	1,9	305,4	176,9
<i>Permanent shock</i>	6,38	3,1	381,6	253,1

Actual primary balances after 2008 are projected by taking the AWG projections for age-related expenditure and by keeping all other components constant as a ratio to GDP.

Conclusions

- sustainability analysis can certainly capture the big trends and the big issues
- but we must be aware that there is a lot that we do not exactly know (in spite of our models and technical progress)
- the current crisis highlights once more the uncertainty about the future and the need for cautious policies
- it is very important to insert sustainability indicators in the public debate: what are the most useful institutions and procedures?

*“In fact, they [forecasts] almost always are wrong – sometimes just a bit wrong, but often massively wrong. **Nonetheless, forecasts are what distinguishes reasoned planning from blind action.** ... That we have to use forecasts or projections, that we know they will be wrong, and that they usually are wrong raise some difficult questions for policy analysts and policymakers.”*

Henry J. Aaron (2000), *Seeing through the Fog: Policymaking with Uncertain Forecasts*

*“It is absurd to claim that a decision is based on a valid prediction if the latter is kept secret so that public opinion cannot judge how well the decision corresponds to the prediction or criticise the prediction itself. **If a prediction serves to make “public” (i.e. “governmental”) decisions, it must be made public (i.e. made known to the public).**”*

Bertrand de Jouvenel (1964), *The Art of Conjecture*