Sustainability of Public Finances and Monetary Union

Banco de Portugal
EUROSISTEMA

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Vítor Constâncio

Outline of the presentation

1. Historical development of public finance: from dominance to sustainability issues
2. The concept of sustainability: limits to debt, solvency and the Present Value Budget Constraint (PVBC)
3. Tests and indicators
   a) “Backward looking” tests
   b) Sustainability indicators
   c) Generational accounting
4. Sustainability and Monetary Union
   a) From Maastricht to the reformed Stability Pact
   b) The Stability Pact and sustainability
   c) Challenges to sustainability
      i. Globalization and taxation
      ii. Ageing and expenditure pressure
   d) The analysis of sustainability by the European Commission
5. The Portuguese case

Historical development of public finance

1. Historical development of public finance: from dominance to sustainability issues
   - Decades of functional finance and fine tuning. The «real resources» view of public debt..
   - Oil shocks, stagflation and increase in public debt
   - Inflation fighting in the eighties and positive real interest rates
   - Criticism of the stabilization role of fiscal policy:
     - Revival of «Ricardo equivalence» and irrelevance of the deficit
     - Rational expectations plus flexible prices: impotence of macroeconomic policy and dynamic inconsistency
     - General doctrinal evolution
     - Recent comeback of fiscal policy ? (Japan, USA)
   - Challenges to fiscal policy: from ageing to globalization

2. The concept of sustainability (1)

2. The concept of sustainability: limits to debt, solvency and the Present Value Budget Constraint (PVBC)

- **An elusive concept: from concern with an explosive debt ratio to solvency and liquidity considerations. General intuition is straightforward: fiscal policy is sustainable if government solvency is guaranteed in the long run, but the concept is difficult to formalize and there is no agreed theoretical benchmark to assess sustainability**
- **Earlier discussions placed the question in terms of the effects of public debt accumulation on the economy and the existence of limits to that accumulation, as well as the generational distribution of the debt burden (Domar (1944))**
- **Modern analytical discussions frame the problem in terms of representative agent models, in which government has to fulfill a static budget constraint, in each period, and an intertemporal budget constraint (McCallum (1984).**

2. The concept of sustainability (2)

- The static budget constraint is : $B_t = i_t B_{t-1} + D_t$
- Solving forward gives:

$$B_t = -\sum_{j=0}^{\infty} \frac{1}{(1+i)^j} D_{t+j} + \lim_{j\to\infty} \frac{1}{(1+i)^j} B_{t+1+j}$$

- Solvency requires that terminal (Assets – Liabilities) equal zero in present value and that implies that the last term must equal zero, which means that the sum of all future primary deficits must be equal and offset completely the present level of debt. This means that no Ponzi games are admissible: no issue of debt to pay for interest.
- With variables in ratio of GDP the discount rate becomes (r-g) and the transversality condition is now

$$\lim_{j\to\infty} \frac{1}{[1+(r-g)]^j} b_{t+1+j} = 0$$

2. The concept of sustainability (3)

- The PVBC view of sustainability has several limitations:
  - Contrary to the more common view that sustainability should imply a non-increasing debt ratio, the PVBC definition allows the Debt to increase at a rate lower than the interest rate or the debt ratio to grow at a rate smaller than (r-g);
  - Permanent total deficits are allowed provided that primary balances are sufficiently positive to pay for interest rate charges.
  - The condition allows the interpretation that distant future positive primary balances will emerge to make the present public finance program sustainable
  - If $r<g$ there is no sustainability problem and the debt can be rolled over.
  - Associated with representative agent models, the analysis implies that government expenditures are total waste as they don't influence economic growth or welfare (dependent only of private consumption)

2. The concept of sustainability (4)

- The PVBC view has no general welfare meaning and has no relation with the level of expenditure or taxation. Is related to solvency (and prudence) in a partial equilibrium analysis. With infinite successive lenders and uncertainty there may be rational Ponzi games.
- In a realistic framework sustainability also depends from willingness of markets to continue to buy and hold public debt. So, a more realistic notion should include considerations of liquidity and composition of debt. Sustainability should refer to a public finance program that can be implemented in the future without major sudden adjustments in terms of dramatic expenditure cuts or difficult tax increases. This means that any analysis of sustainability must carry out realistic projections of all public finance variables. This means that fiscal sustainability does not have an exact meaning.

3) Tests and indicators: “backward looking” tests

Econometric tests on PVBC:

- **Hamilton & Flavin (1986): if the primary deficit is stationary, debt stationarity is a sufficient condition for the PVBC to hold**
- **Trehan & Walsh (1988): if the primary deficit and debt are non-stationary and I(1) [and interest rate constant] than cointegration between the two is a necessary and sufficient condition for the PVBC to hold**
- **Ahmed & Rogers (1995): if revenue and expenditure with interest are non-stationary and I(1), cointegration between the two is a necessary and sufficient condition for the PVBC to hold**

3) Tests and indicators: “backward looking” tests

- **Limitations common to most empirical work based on unit roots and cointegration tests:**
  - **Results are sensitive to how the hypothesis is specified as well as the test used, and to the sample period considered**
  - **Results depend on the precise definition of variables (e.g. variables in real and per capita terms *vs*. GDP ratios; nominal value *vs*. market value debt)**

- **Test results are based on past data and former fiscal regimes, being only partially informative in terms of future solvency**

3.a) “Backward looking” tests: limitations

- More recently, Bohn (2006) challenges these tests on theoretical grounds: very weak assumptions about the fiscal variables are sufficient for the non-violation of the PVBC. Bohn suggests, as an alternative, to base the analysis on the reaction function of government - to check whether the primary deficit is sufficiently “responsive” to debt - or to incorporate into the econometric analysis stronger constraints on policy, like upper bounds on debt.
- Estimates of this test show that in general developed countries have maintained sustainable public finance programs as the primary deficit has adjusted to offset increases in the debt ratio. Giannitsarou and Scott(2006) show that developed countries removed fiscal imbalances through adjustments in the primary deficit and not through inflation.

3.b) Practical sustainability indicators (1)

- Blanchard *et al*. (1990) and Buiter (1985) developed sustainability indicators based on the intuitive notion that a sustainable policy should maintain debt or net worth at its current level. If debt ratio tends to a stable finite value the PVBC criterion is also satisfied.
- Blanchard et al. proposed also the following indicators:
  - "primary gap indicator": difference between the *current* and the *permanent* primary deficit i.e. the one that stabilizes the debt ratio in the target value
  - "tax-gap indicator": difference between the *current* and the *permanent tax* ratio i.e. the one that stabilizes the debt ratio
  - "medium-term tax gap indicator" : difference between the *current* and the *permanent* tax ratio over *N* years [assuming constant interest rates and growth and projecting spending figures]

3.b) Practical sustainability indicators (2)

- Debt stabilization condition is sufficient (but not necessary) for the verification of PVBC: this is a “prudent” approach to sustainability
- Although there is no sound theoretical argument for choosing a certain debt level and not another, indicators of this kind have been used because they are simple and intuitive (v.g. Commission uses convergence to 60% in 2050)
- In practice, it depends on the actual situation of a country whether the stabilization of debt at the original level is advisable from a sustainability viewpoint, but flexibility can be introduced by varying the debt targets

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3.c) Generational accounting

- General idea: describe the generational stance of policy, calculating the net taxes and transfers flows *to be paid* by each generation (i.e. group of citizens of a given age) and those yet unborn
- Current policies are kept unchanged and government has to fulfill the PVBC
- Main conclusion: the structure of taxes and transfers is biased in favour of living older generations and against younger and future generations. Questions the sustainability of public finance if ratio of burden of future generations is too big.
- This situation does not show up fully in yearly national accounts of government

3.c) Generational accounting: theoretical limitations

- Disregards the micro impact of current policy on labour, consumption, investment decisions which can shift burdens and benefits
- Disregards macro consequences of policy
- Assumes that current policies last forever and costs of intertemporal balance are, by assumption, only borne by future generations
- Does not consider the benefits of the remaining public expenditure, like on education and infrastructure, part of which accrue to future generations.
- In general, the limitations tend to bias the exercise in the direction of showing an «upward bias» in assessing the costs of solvency for future generations of current fiscal policy

3.c) Generational accounting: empirical difficulties

- Rests on many contingent empirical assumptions: regarding demographic developments, future economic growth, paths of taxes and transfers, relative prices, the discount rate used to calculate present values,…
- Assignment of taxes and transfers to individuals by age (and sex) is an extremely difficult task, based on controversial assumptions
- Alternative empirical assumptions often lead to considerable changes in the results

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4. Sustainability of public finances and monetary union (1)

Fiscal soundness is especially necessary in a Monetary Union where sovereign states retain responsibility for fiscal policies in order to avoid undue pressures on monetary policy. This is not related with coordination between the two macro policies. In fact, as monetary policy fulfils an anti-cyclical role in order to maintain inflation on target coordination is less justified. The unwelcome pressures on monetary policy are mostly related with sustainability issues:

1) Necessity to avoid default risk concerns in case a country attains an excessive debt ratio because that could create pressure to unduly ease monetary policy.

2) Imposing limits to debt ratio gives credibility to the «non bail-out» of the Treaty.

3) …

4. Sustainability of public finances and monetary union (2)

…

3) Controlling the debt ratio and removing substantial reasons for any «bail-out» holds back interest rates and risk premia thus ensuring stability of the bond market. This has positive consequences for banking sector assets, therefore removing pressures on monetary policy to ensure financial stability.

4) Besides financial stability considerations, excessive and increasing debt ratios could have spillover effects on the whole area in terms of higher medium and long term market interest rates which would increase the costs of monetary policy and create «free rider» incentives for some countries to keep lax policies.

4. Sustainability of public finances and monetary union (3)

In a Monetary Union financial markets are not sufficient to exert the necessary discipline on fiscal policies:

- **With the disappearance of exchange rate risks the sanctioning role of financial markets *via* bond yield spreads declines;**

- **Even with the "no-bail out" clause included in the Treaty, interest rate risk *premia* react slowly to rising fiscal imbalances.**

Therefore, a binding mechanism for national governments in a form of a fiscal rule is necessary.

4. Sustainability of public finances and monetary union (4)

The Maastricht Treaty introduced limits on the debt ratio (60%) but also on the annual deficit (<3%). With time, the deficit criterion became the important one and focus on the debt was partially lost for a number of years. The rationale to have also a limit to the annual deficit seems to be associated with the fact that debt ratios move very slowly and, as Domar (44) showed, limiting the deficit leads to the stabilization of the debt ratio. If deficit equal to 3% and GDP nominal growth of 5% the debt stabilizes on 60%.

The initial version of the SGP increased the focus on the deficit, as it did not call explicitly for the use of a long-term analytical framework and demanded that in the «medium term» the nominal deficit should be «in balance or in surplus». With the new rule the debt ratio will tend to zero.

4. Sustainability of public finances and monetary union (5)

The Lisbon Council of 2000 «called for the emphasis of public finances at EU level to be broadened from its focus on stability to include the contribution it can make to growth and employment. To this end, the Commission and Council in joint Report to the European Council of Stockholm in 2001 agreed on a three-pronged strategy for addressing the budgetary consequences of ageing populations, i.e. reducing debt at a fast pace, raising employment rates … and reforms of pensions and health-care systems … Moreover, the European Council in Stockholm agreed that "the Council should regularly review the long-term sustainability of public finances, including the expected strains causes by demographic changes ahead.» (EU Commission, 2002).

4. Sustainability of public finances and monetary union (6)

The medium target for the deficit in the initial Pact was not defined with precision. Fortunately, the reformed Pact, approved in 2005, corrected this and reinforced the importance of sustainability issues.

The Medium Term Objective (MTO) is now defined in terms of the deficit adjusted to the cycle (not the simple nominal deficit) , may also be different across countries, and is to be determined by the following objectives:

«- provide a safety margin with respect to the 3% limit.

- ensure rapid progress towards sustainability, and

- taking the first two objectives into account, allow room for budgetary manoeuvre, in particular taking into account the needs for public investment».

The latest MTO vary between -1% and +2% of GDP for the cyclically adjusted overall deficit.

4. Sustainability of public finances and monetary union (7)

The revised SGP puts an explicit emphasis on sustainability issues, within a long-term analytical

- **The medium-term objectives (MTOs) for individual Member States are differentiated on the basis of their current debt ratio and potential growth.**
- **Implicit government liabilities associated with ageing populations should also be taken into account in the definition of MTOs, as soon as the appropriate methodology is agreed.**
- **The Commission assesses fiscal sustainability in the context of the analysis of stability/convergence programmes updates.**
- **Deviations from the MTO or the adjustment path towards this objective are allowed if a Member state introduces a major reform that directly leads to long-term budgetary savings but has a short-term budgetary cost.**

4. Sustainability of public finances and monetary union (8)

Synthetic indicators of sustainability currently used by the Commission:

- **Projections of gross debt, with sensitivity analysis.**
- **S1 indicator, which is the permanent change in the revenue and/or primary expenditure as a ratio to GDP required to reach a debt ratio of 60 per cent in 2050.**
- **S2 indicator, which is the change in the permanent revenue and/or primary expenditure as a ratio to GDP that ensures that the present discounted value of future primary balances equals the current stock of gross debt. (PVBC)**
- **Primary balance required in the first five years of the projections to ensure the fulfilment of the inter-temporal budget constraint.**

S1 and S2 indicators are calculated for two points in time: starting at the end of the previous year and at the end of the stability/convergence programme assuming its budgetary targets are fulfilled.

4. Sustainability of public finances and monetary union (9)

Sustainability indicators rely or long-term projections which have important limitations:

- They are based on assumptions that involve considerable uncertainty, like those concerning demographic developments (in particular migrations), employment, productivity growth and real interest rates.
- They are not elaborated in a general equilibrium framework, missing key interactions between demographics, labour market pension systems and macroeconomics developments.
- They also include the assumption that non-age related expenditure and tax revenues stay constant as a % of GDP for the period of the projections.

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4.c.i) Globalization and taxation (1)

Some effects of globalization on public finances:

- **Governments may feel international pressure to reduce the taxation on capital income (in particular, corporate income tax rates), since firms' location choices are sensitive to local tax rates. *Ceteris paribus*, this will lead to a reduction in public receipts.**
- **The increase in the degree of openness in the economy may lead to an overall rise in income that will foster tax collection.**
- **Some sectors of advanced economies may be unfavourably affected by changes in comparative advantages on a global scale, putting pressure on governments to increase social expenditure. This is also more relevant in smaller countries.**

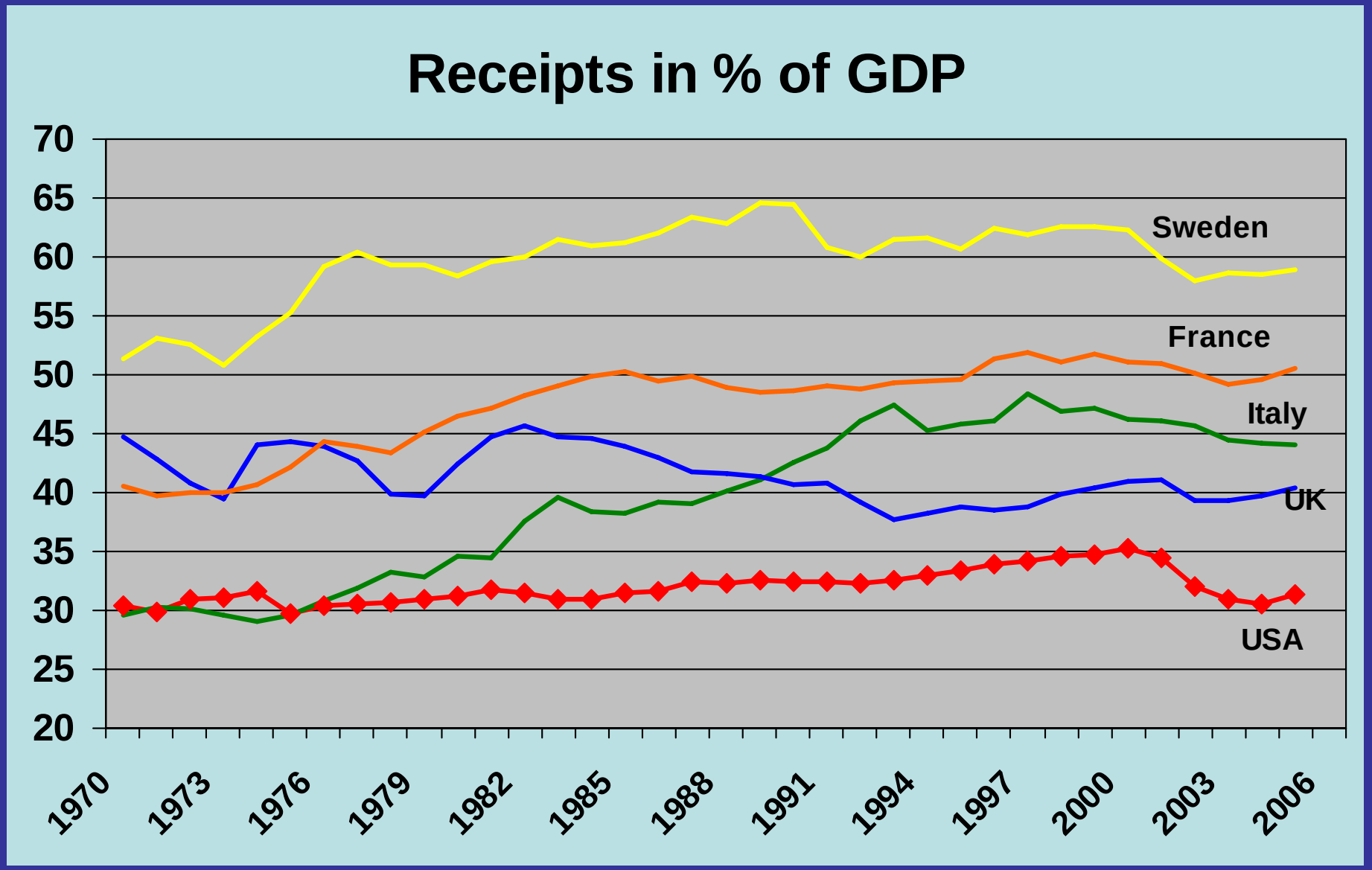
Individual countries will be affected very differently by these factors, which means that the net impact of globalization on public finances is uncertain.

4.c.i) Globalization and taxation (2)

Most of the literature in this area focused on tax competition. Some arguments were presented to justify why international tax competition needs to be assessed in a broader context:

- **The dimension of the country matters. Small countries are believed to face more elastic corporate tax bases.**
- **The design of tax policies matters. Tax policies are often used to correct economic distortions that cannot be easily addressed some other way.**
- **The competition on the supply of public goods matters. Capital taxation enables the government to provide public goods, such as infrastructure, which are in turn used as factors of production by firms. This has a favourable impact on marginal productivity.**
- **Other factors affecting location decisions matter. Some surveys show that corporate taxation is not a primary criterion for location decisions. Beyond infrastructures, factors like institutional arrangements, labour costs, R&D,…may also be important.**

4.c.i) Globalization and taxation (3)



4.c.i) Globalization and taxation (4)

But even if capital tax rates are affected, public spending does not have to be reduced below efficient levels since:

- **The existence of other revenue sources, based on less mobile tax bases, also matters.**

Tax structures in the OECD-area

	1965	1975	1985	1995	2004
Personal income tax	26	30	30	27	25
Corporate income tax	**9**	**8**	**8**	**8**	**10**
Social security contributions	18	22	22	25	26
Payroll taxes	1	1	1	1	1
Property taxes	8	6	5	6	6
General consumption taxes	14	14	16	18	19
Specific consumption taxes	24	18	16	13	11
Other taxes	1	1	1	3	3
Total	**100**	**100**	**100**	**100**	**100**

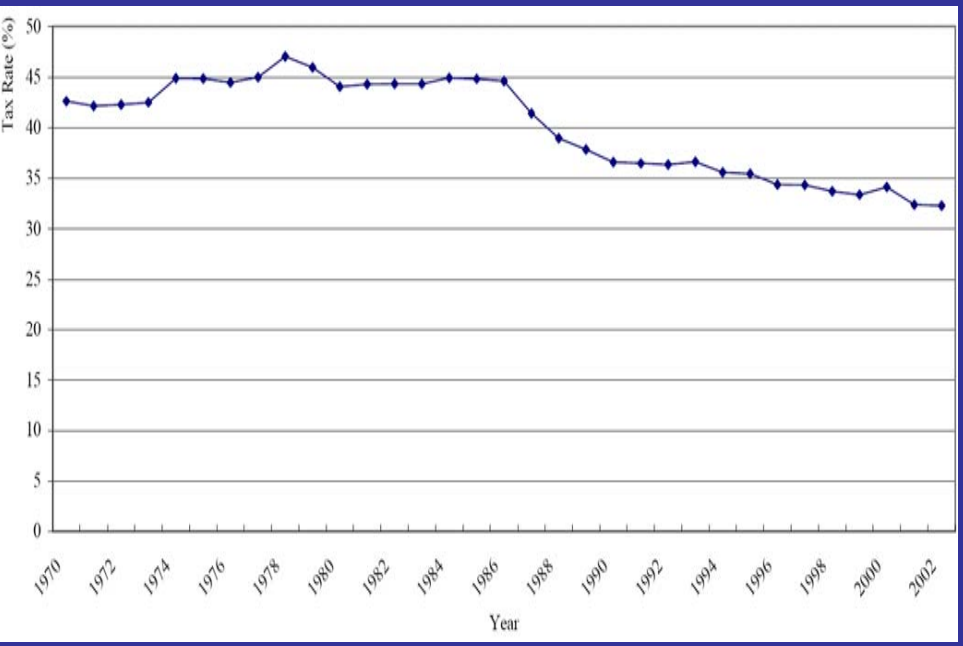
- **The weight of corporate income tax receipts on the overall fiscal burden is not very significant and has remained broadly stable in the last decades.**

4.c.i) Globalization and taxation (5)

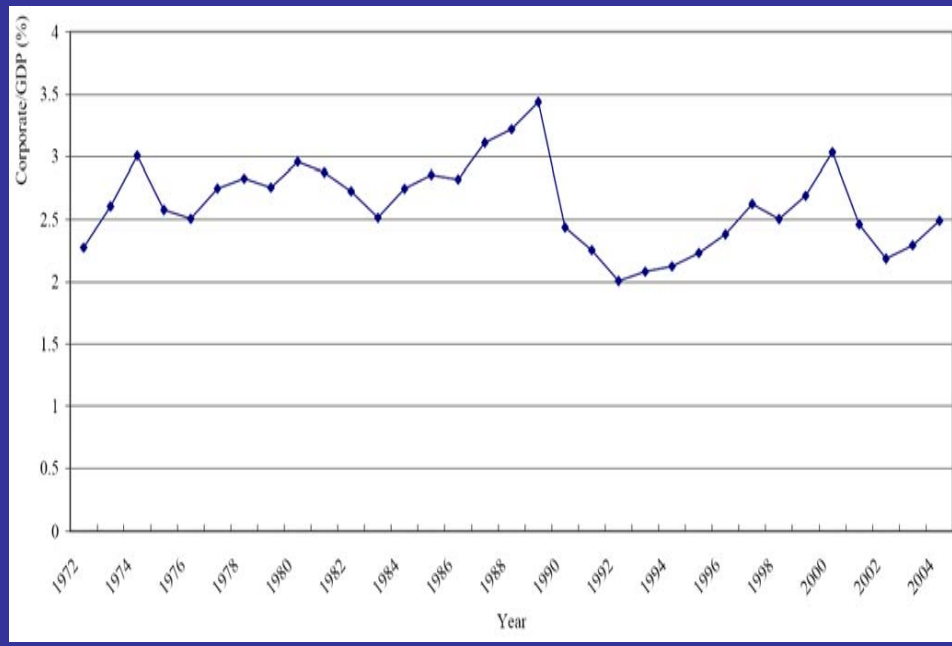
Is there evidence of growing international tax competition?

- In practice, it is very difficult to identify the existence of tax competition and to measure its effects.
- Several authors have argued that in the eighties and the nineties governments have followed rate-cutting base-broadening corporate tax reforms.

Weighted mean of top corporate tax rate, OECD



Weighted mean of corporate taxes/GDP, OECD



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4.c.ii) Ageing and expenditure pressure (1)

The first long-term projections of public expenditure taking into account the effect of ageing populations were made public in the second half of the eighties by international organisations. Two references are:

- **Heller et al. (1986), "*Ageing and social expenditure in the major industrial countries, 1980-2025*", IMF occasional paper;**
- **Hagemann and Nicoletti (1989), "*Ageing populations: economic effects and implications for public finance*", OECD working paper.**

The limitations of the partial equilibrium models used were soon highlighted by several authors drawing attention to the dangers and limitations of purely mechanical analysis of the effect of population changes on public spending.

4.c.ii) Ageing and expenditure pressure (2)

Currently, in the European Union context, long-term projections for age-related expenditure (pensions, health and long-term care, unemployment benefits, education) are elaborated regularly by the Ageing Working Group of the Economic Policy Committee:

- **An effort was made in the harmonisation of the underlying assumptions of the projections, but the results still lack comparability.**
- **The pension projections were essentially elaborated by national experts using their own models, under the guidance of the Ageing Working Group.**
- **The last report was published in 2006. New projections maybe submitted by countries and are subject to a peer review process. The new report is due in 2009.**
- **These results are used by the European Commission services to assess the sustainability of public finances in the context of the Stability and Growth Pact.**

4.c.ii) Ageing and expenditure pressure (3)

- Population projections were based on the EUROPOP2004 projection released by Eurostat in May 2005:

- For the EU25, fertility rates are projected to rise from 1.48 in 2004 to 1.60 by 2030 and stay constant around that level until 2050.

- Males life expectancy at birth would rise gradually from 75.3 in 2004 (81.5 for females) to 81.6 in 2050 (86.6 for females), in the EU25.

- For the EU25 as a whole, annual net migration inflows are projected to fall from an estimated 1.3 million people in 2004 (0.3% of the population) to some 800.000 people by 2015 and hovering around 850.000 people thereafter (0.2% of the population).

-Overall, participation rates in the EU25 are projected to increase by about 6 percentage points over the period 2003-2050 (from 69.4% in 2003 to 74.6% in 2025 and to 75.2% in 2050).

-In aggregate terms, unemployment rates in the EU25 are assumed to fall from 9.3% in 2003 to 7.8% in 2010 and to 6.1% by 2025.

- For the EU25, the annual average potential GDP growth rate is projected to decline from 2.4% in the period from 2004 to 2010 to 1.2% in the period 2031-2050.

4.c.ii) Ageing and expenditure pressure (5)

Population projections: Variations in % from 2004 to 2050

	Population Total	Population 0-14 years of age	Population 15-64 years of age	Population over 65 years of age
EU 25	**-1 %**	**-19%**	**-16%**	**+77%**
Portugal	**-4%**	**-21%**	**-22%**	**+83%**
Greece	**-3%**	**-18%**	**-21%**	**+80%**
Italy	**-7%**	**-24%**	**-24%**	**+64%**
France	**+9%**	**-7%**	**-4%**	**+77%**
Sweden	**+13%**	**+4%**	**+4%**	**+60%**
Spain	**+1%**	**-19%**	**-21%**	**+111%**
Belgium	**+4%**	**-11%**	**-8%**	**+67%**
Germany	**-3%**	**-22%**	**-21%**	**+80%**
Ireland	**+36%**	**+4%**	**+16%**	**+219%**
Austria	**+1%**	**-24%**	**-15%**	**+95%**
Netherlands	**+8%**	**-9%**	**-4%**	**+91%**

4.c.ii) Ageing and expenditure pressure (6)

Population projections: Dependency ratios (%)

	Population over 65 / Employed population		Total non active population / Employed population	
	2004	2050	2004	2050
EU 25	**37 %**	**70%**	**136%**	**147%**
Portugal	**30%**	**73%**	**118%**	**149%**
Greece	41%	88%	150%	181%
Italy	49%	93%	162%	179%
France	39%	66%	144%	156%
Spain	40%	88%	144%	+162%
Sweden	35%	50%	111%	117%
Belgium	43%	88%	144%	162%
Germany	39%	69%	127%	135%
Ireland	23%	56%	125%	132%

4.c.ii) Ageing and expenditure pressure (7)

Main results of the EPC 2006 projections

Change in age-related expenditures from 2005 until 2050 (%GDP)

	Total	Pensions	Health care	Long-term care	Unemployment	Education
EU 25	3.4	2.2	1.6	0.6	-0.3	-0.6
EU 15	3.7	2.3	1.6	0.7	-0.2	-0.6
Portugal	9.7	9.7	0.5	-	-0.1	-0.4
Spain	8.5	7.1	2.2	0.2	-0.4	-0.6
Italy	1.7	0.4	1.3	0.7	-0.1	-0.6
France	2.9	2.0	1.8	-	-0.3	-0.5
Sweden	2.2	0.6	1.0	1.7	-0.2	-0.9
Belgium	6.3	5.1	1.4	1.0	-0.5	-0.7
Germany	2.7	1.7	1.2	1.0	-0.4	-0.9
Netherlands	5.0	3.5	1.3	0.6	-0.2	-1.0

Source: EC "The Long-term Sustainability of Public Finances in the European Union", 2006 EE n.4.

S1 Sustainability gap

(in % of GDP)	Total	IBP	DR	LTC
Base in 2005				
EU 25	2.1	0.2	0	1.9
EU 15	2.3	0.1	0.1	2.1
Portugal	7.9	3.6	0.3	4.1
Spain	0.2	-2.7	-0.6	3.5
Italy	3.4	1.3	0.8	1.3
Germany	3.5	1.5	0.2	1.7
Base MTO (2008-2010)				
EU 25	0.2	-1.6	-0.1	1.9
EU 15	0.3	-1.8	0	2.1
Portugal	2.5	-1.7	0	4.1
Spain	2.2	-0.8	-0.5	3.5
Italy	-1.0	-2.9	0.6	1.3
Germany	0.1	-1.7	0.1	1.7

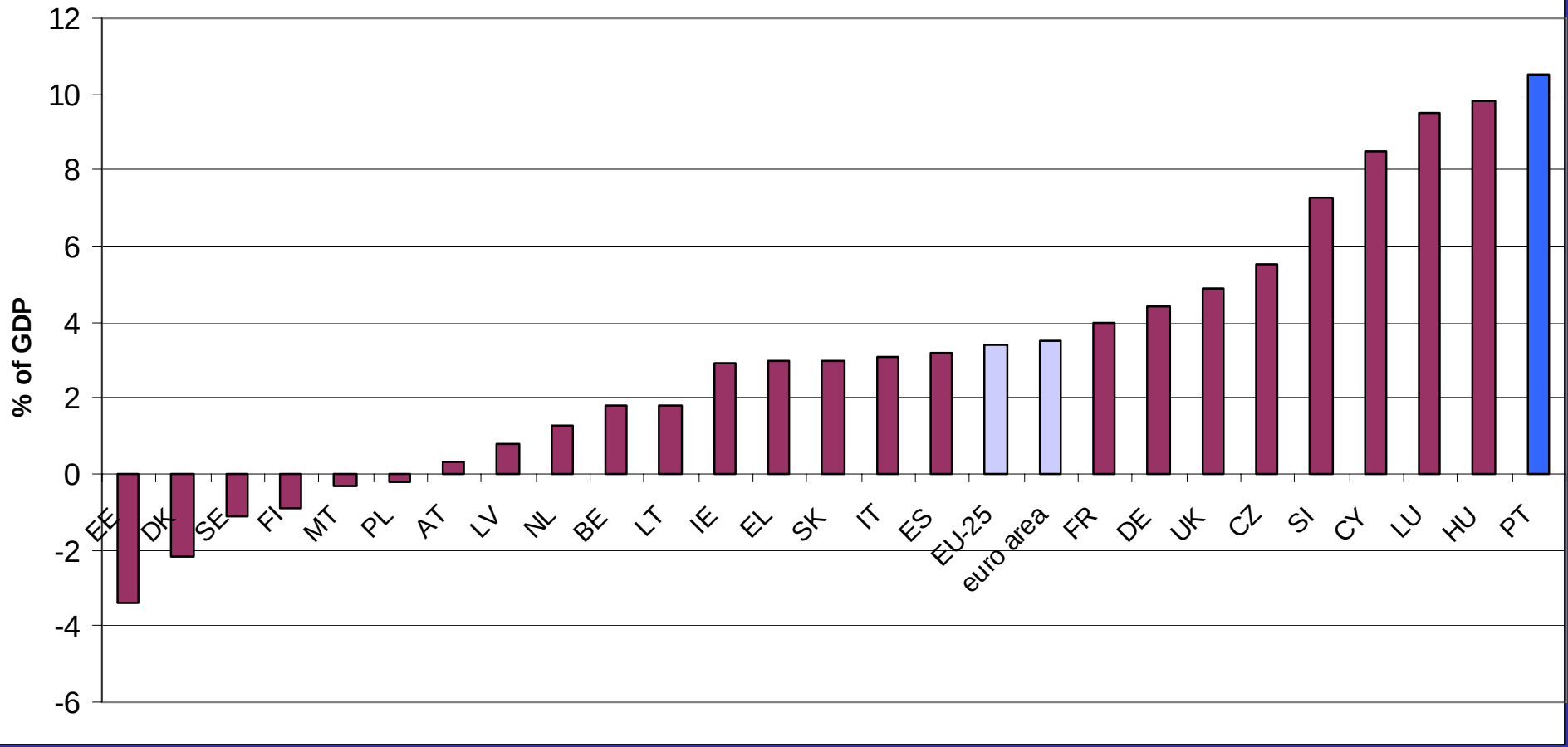
Source: EC “The Long-term Sustainability of Public Finances in the European Union”, 2006 EE n.4.

S2 Sustainability gap

(in % of GDP)	Total	IBP	LTC
Base in 2005			
EU 25	3.4	0.3	3.0
EU 15	3.5	0.2	3.3
Portugal	10.5	3.8	6.7
Spain	3.2	-2.7	5.9
Italy	3.1	1.3	1.8
Germany	4.4	1.6	2.8
Base MTO (2008-2010)			
EU 25	1.6	-1.5	3.0
EU 15	1.6	-1.7	3.3
Portugal	5.2	-1.5	6.7
Spain	5.2	-0.7	5.9
Italy	-1.1	-2.9	1.8
Germany	1.2	-1.6	2.8

Source: EC “The Long-term Sustainability of Public Finances in the European Union”, 2006 EE n.4.

S2 Sustainability gap calculated by the EC:
Large variations across the EU



Source: EC "The Long-term Sustainability of Public Finances in the European Union", 2006 EE n.4.

Sustainability analysis by the EC:

Risk Category	Country
Low	Denmark, Estonia, Latvia, Lithuania, the Netherlands, Austria, Poland, Finland and Sweden
Medium	Belgium, Germany, Spain, France, Ireland, Italy, Luxembourg, Malta, Slovakia and the United Kingdom
High	The Czech Republic, Greece, Cyprus, Hungary, Portugal, Slovenia

Source: EC (2006)

5. Portuguese Social Security Reform

- Agreement reached in October 2006 between Government and Social Partners
- New legal framework published in early 2007
- Applies also to civil servants subsystem

Measures effects estimated using "MISS":

a BP model for evaluating the Portuguese social security sustainability.

5. Portuguese Social Security Reform

a) New rule for pension indexation (indexed to CPI and part of GDP growth according to pension level);

b) Additional penalty for early retirement (from 4.5% a year to 6%);

c) Statutory pension taking into account all career length and accrual rate according to the reference wage (transitory rules in the period 2007-2016);

d) “Sustainability factor”: indexation of retirement age to the increase of life expectancy at 65

hip. A: postponing retirement

hip. B: accepting financial penalty.

5. Portuguese Social Security Reform: Effects on age-related expenditure

Unit: GDP percentage points

	Change 2050-2010
	Before Reform
Age-related expenditure	
Portugal	9.7
EU12 (excl. Greece)	4.4
Pension expenditure	
Portugal	8.9
EU12 (excl. Greece)	2.8
	After Reform
Pension expenditure	
Portugal - hip. A	2.0
- hip. B	5.2

Sources: EC (2006) for figures "Before Reform" and BP calculations for figures "After Reform".

S1 Sustainability gap: Effects of the 2006 Reform of the Portuguese Social Security System

	Total	IBP	DR	LTC
Baseline scenario (2005)	**(in % of GDP)**			
1. EC calculations:				
Average of EU -12 (exc. G)	2.3	0.1	0.1	2.1
Portugal	7.9	3.6	0.3	4.1
2. BP calculations after reform				
Portugal – HIP A	4.7	3.6	0.3	0.9
Portugal – HIP B	6.0	3.6	0.3	2.1
MTO scenario (2010)	**(in % of GDP)**			
1. EC calculations:				
Average of EU -12 (exc. G)	0.3	-1.8	0	2.1
Portugal	2.5	-1.7	0	4.1
2. BP calculations after reform				
Portugal – HIP A	-0.8	-1.7	0	0.9
Portugal – HIP B	0.5	-1.7	0	2.1

S2 Sustainability gap: Effects of the 2006 Reform of the Portuguese Social Security System

	Total	IBP	LTC
Baseline scenario (2005)	**(in % of GDP)**		
1. EC calculations:			
Average of EU -12 (exc. G)	3.5	0.2	3.3
Portugal	10.5	3.8	6.7
2. BP calculations after reform			
Portugal – HIP A	5.5	3.8	1.8
Portugal – HIP B	7.7	3.8	4.0
MTO scenario (2010)	**(in % of GDP)**		
1. EC calculations:			
Average of EU -12 (exc. G)	1.6	-1.7	3.3
Portugal	5.2	-1.5	6.7
2. BP calculations after reform			
Portugal – HIP A	0.3	-1.5	1.8
Portugal – HIP B	2.5	-1.5	4.0

Sustainability gaps: Effects of the 2006 Reform of the Portuguese Social Security System

Main results:

a) The recent Social Security Reform may allow an upgrading of Portugal in the overall sustainability classification from "high" to "medium" risk;

b) The contribution of pension expenditure to the sustainability gaps (LTC component) becomes close to the one of the euro area average;

c) These results are, of course, dependent on the fulfilment of the MTO by 2010 (IBP component).

Sustainability of public finances and monetary union

- Long term sustainability of public finances is an important condition for a successful monetary union and for the preservation of the State's future role in the european social model.

- The surveillance of sustainability by the competent european authorities is fulfilling its role in fostering the process of structural reforms that will deliver stability and conditions for economic progress.

Sustainability of Public Finances and Monetary Union

Banco de Portugal
EUROSISTEMA

Lisbon 9th of May 2007Vítor Constâncio