


Implicit tax rates and tax incidence in the European Union

based on the « **Taxation trends in the European Union** » report by the European Commission, Taxation and customs union, 2009 edition

Outline

- ▶ **Implicit tax rates: base computation principles and definitions**
 - ▶ Definition
 - ▶ Base computation principles and data sources
 - ▶ Definitions of ITRs
 - ▶ **Limitations**
 - ▶ Hazardous allocation to economic functions
 - ▶ Limitations and sensitivity of the ITR on capital
 - ▶ **Evolution of ITRs over time and tax incidence**
 - ▶ **Conclusions**
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Implicit tax rates: base computation
principles and definitions

Implicit tax rates: computation

- ▶ 3 base ITRs, one by economic function:
 - ▶ ITR on consumption
 - ▶ ITR on labour
 - ▶ ITR on capital
- ▶ Base computation principle:

$$ITR(EF_i) = \text{tax revenues from } EF_i / \text{taxable base relative to } EF_i$$

where EF_i = economic function i

- ▶ Further « refinement » for the ITR on capital:
 - ▶ ITR on capital (incl. taxes on capital stock) \Rightarrow difficult to interpret
 - ▶ ITR on capital and business income (excl. taxes on capital stocks)
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Base allocation principle

- ▶ Allocate each piece of tax revenue to the most relevant economic function: « reflect the **true nature** of a tax »
- ▶ Some tax revenues need to be split between several economic functions:
 - ▶ so-called « Personal income tax » (PIT) (L/K income)
 - ▶ local business taxes (L/K income/K stocks)
 - ▶ compulsory social contributions levied on self-employed labour, social transfers and pensions (L/K income)
 - ▶ certain taxes on products* (C/K stock)
 - ▶ 2 French taxes:
 - ▶ tax on accommodations (« *taxe d'habitation* ») (C/K stock)
 - ▶ generalised social contribution & contribution for the reduction of the social security debt (« *CSG & CRDS* ») (L/K income)

* such as stamp taxes, taxes on financial and capital transactions, export duties

Data sources

- ▶ **Data sources:**

- ▶ National accounts: Eurostat public database (formerly NewCronos)
 - ▶ Disaggregated tax data: the National Tax List (NTL)
 - ▶ Details of the personal income tax: micro/macro data from national tax administrations
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ITR on consumption

- ▶ **Taxes on consumption**
 - ▶ **Value-added** type taxes (VAT)
 - ▶ Taxes and duties on **imports** (excl. VAT)
 - ▶ Other taxes on **products** (except taxes on stock exchange & real estate)
 - ▶ Other taxes on **production** (incl. taxes on pollution)
 - ▶ Other current taxes = expenditures made by households to obtain goods or services (poll taxes, licences, etc.)

 - ▶ **Taxable base**: Final consumption expenditures of households
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	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Difference	
														1995-2007	2000-2007
BE	20.6	21.3	21.6	21.4	22.5	21.8	21.0	21.4	21.3	22.0	22.2	22.3	22.0	1.4	0.1
BG	-	-	-	-	17.6	19.7	18.9	18.7	20.6	23.2	24.4	25.5	25.4	-	5.8
CZ	22.1	21.2	19.4	18.6	19.7	19.4	18.9	19.3	19.6	21.8	22.2	21.1	21.4	-0.7	2.0
DK	30.5	31.6	31.9	32.7	33.7	33.4	33.5	33.7	33.3	33.3	33.9	34.0	33.7	3.2	0.3
DE	18.8	18.3	18.1	18.3	19.0	18.9	18.5	18.5	18.6	18.2	18.1	18.3	19.8	1.0	0.9
EE	21.3	19.8	20.5	18.6	17.9	19.8	19.9	20.0	19.9	19.8	22.2	23.4	24.4	3.1	4.6
IE	24.8	24.7	25.2	25.4	25.7	25.9	23.9	24.9	24.7	25.9	26.4	26.5	25.6	0.8	-0.3
EL	-	-	-	-	-	16.5	16.7	16.1	15.5	15.3	14.8	15.2	15.4	-	-1.1
ES	14.2	14.4	14.6	15.3	15.9	15.7	15.2	15.4	15.8	16.0	16.3	16.4	15.9	1.7	0.3
FR	21.5	22.1	22.2	22.0	22.1	20.9	20.3	20.3	20.0	20.1	20.1	19.9	19.5	-2.0	-1.4
IT	17.4	17.1	17.3	17.8	18.0	17.9	17.3	17.1	16.6	16.8	16.7	17.4	17.1	-0.3	-0.8
CY	12.6	12.3	11.3	11.5	11.3	12.7	14.3	15.4	18.9	20.0	20.0	20.4	21.4	8.8	8.6
LV	19.4	17.9	18.9	21.1	19.5	18.7	17.5	17.4	18.6	18.5	20.2	20.1	19.6	0.2	0.9
LT	17.7	16.4	20.4	20.7	19.2	18.0	17.5	17.9	17.0	16.1	16.5	16.7	17.9	0.2	-0.1
LU	21.1	20.8	21.6	21.6	22.5	23.1	22.8	22.8	23.9	25.3	26.2	26.3	26.9	5.8	3.8
HU	30.8	29.5	27.2	27.6	27.9	27.5	25.6	25.4	26.0	27.6	26.4	25.8	27.1	-3.7	-0.4
MT	14.8	14.0	14.8	13.8	14.8	15.9	16.5	18.1	16.5	17.6	19.7	19.9	20.3	5.5	4.5
NL	23.3	23.4	23.6	23.5	23.9	23.7	24.4	23.9	24.2	24.8	25.0	26.5	26.8	3.5	3.0
AT	20.5	21.1	22.1	22.3	22.8	22.1	22.1	22.5	22.2	22.1	21.7	21.2	21.6	1.1	-0.5
PL	20.7	20.7	19.7	18.9	19.5	17.8	17.2	17.9	18.3	18.4	19.5	20.2	21.4	0.6	3.6
PT	19.2	19.6	19.3	19.9	20.0	19.2	19.3	19.9	19.8	19.7	20.6	21.0	20.3	1.2	1.1
RO	-	-	-	-	15.9	16.8	15.5	16.2	17.7	16.4	17.9	17.7	18.1	-	1.3
SI	24.6	24.1	22.9	24.4	25.1	23.5	23.0	23.9	24.0	23.9	23.6	23.8	24.1	-0.5	0.6
SK	26.4	24.6	23.6	23.0	21.4	21.7	18.8	19.4	21.1	21.5	22.2	20.2	20.6	-5.9	-1.1
FI	27.6	27.4	29.3	29.1	29.4	28.6	27.6	27.7	28.1	27.7	27.6	27.2	26.5	-1.2	-2.1
SE	27.6	26.9	26.7	27.2	26.9	26.3	26.6	26.8	26.9	26.9	27.5	27.4	27.8	0.2	1.6
UK	20.0	19.9	19.9	19.7	19.9	19.4	19.1	19.0	19.2	19.1	18.7	18.6	18.4	-1.5	-1.0
NO	-	-	-	-	-	-	-	29.3	27.9	28.2	28.8	29.9	30.3	-	-
EU-27	-	-	-	-	21.1	20.9	20.4	20.7	21.1	21.4	21.9	22.0	22.2	-	1.3
EU-25	21.4	21.1	21.2	21.3	21.5	21.1	20.7	21.0	21.2	21.5	21.9	22.0	22.2	0.8	1.1
EA-16	20.3	20.2	20.3	20.5	20.8	20.5	20.1	20.5	20.7	21.1	21.3	21.4	21.5	1.2	1.0

Source: Commission services

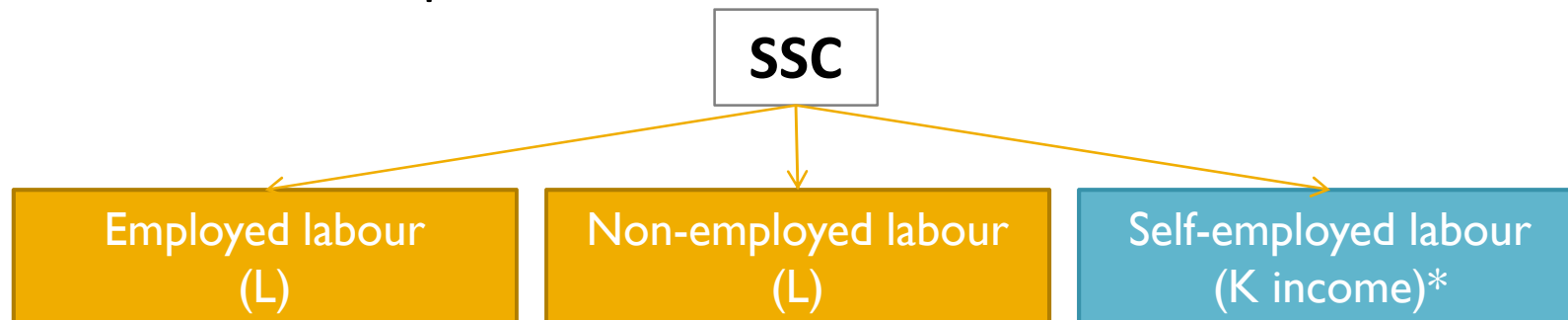
ITR on labour

- ▶ **Taxes on labour** = all taxes linked to wages
 - ▶ Compulsory social contributions* (employers' and employees')
 - ▶ Payroll taxes
 - ▶ Part of the PIT related to earned income
 - ▶ Other taxes susceptible of increasing the price of labour (state/municipality income tax, church taxes,...)
 - ▶ Taxes and social contributions levied on non-employed labour (social transfers and pensions)
- ▶ **Taxable base:**
 - ▶ Compensation of employees
 - + Wage bill and payroll taxes

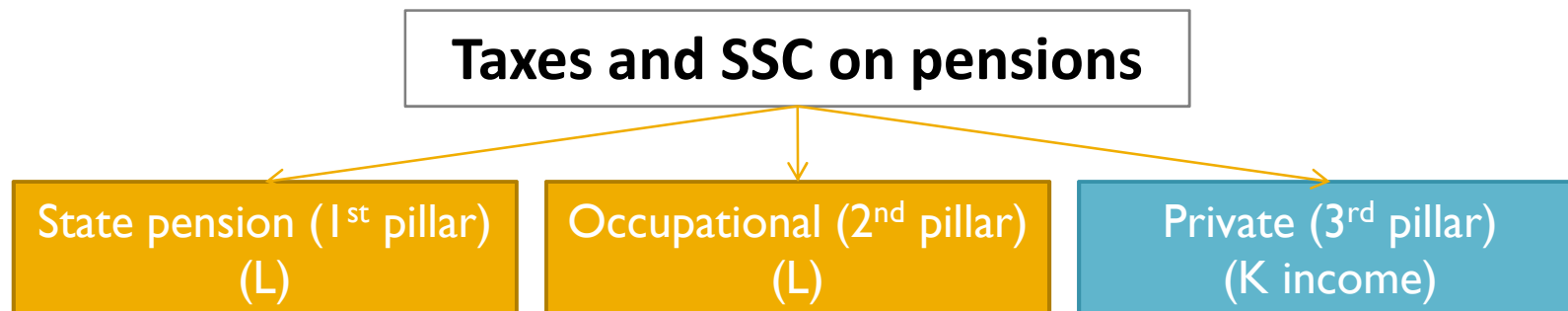
* voluntary and imputed social contributions are not included

Treatment of social transfers and pensions

- ▶ Social contributions levied on self-employed labour are allocated to capital income



- ▶ Taxes and social contributions levied on pensions are split between labour and capital income



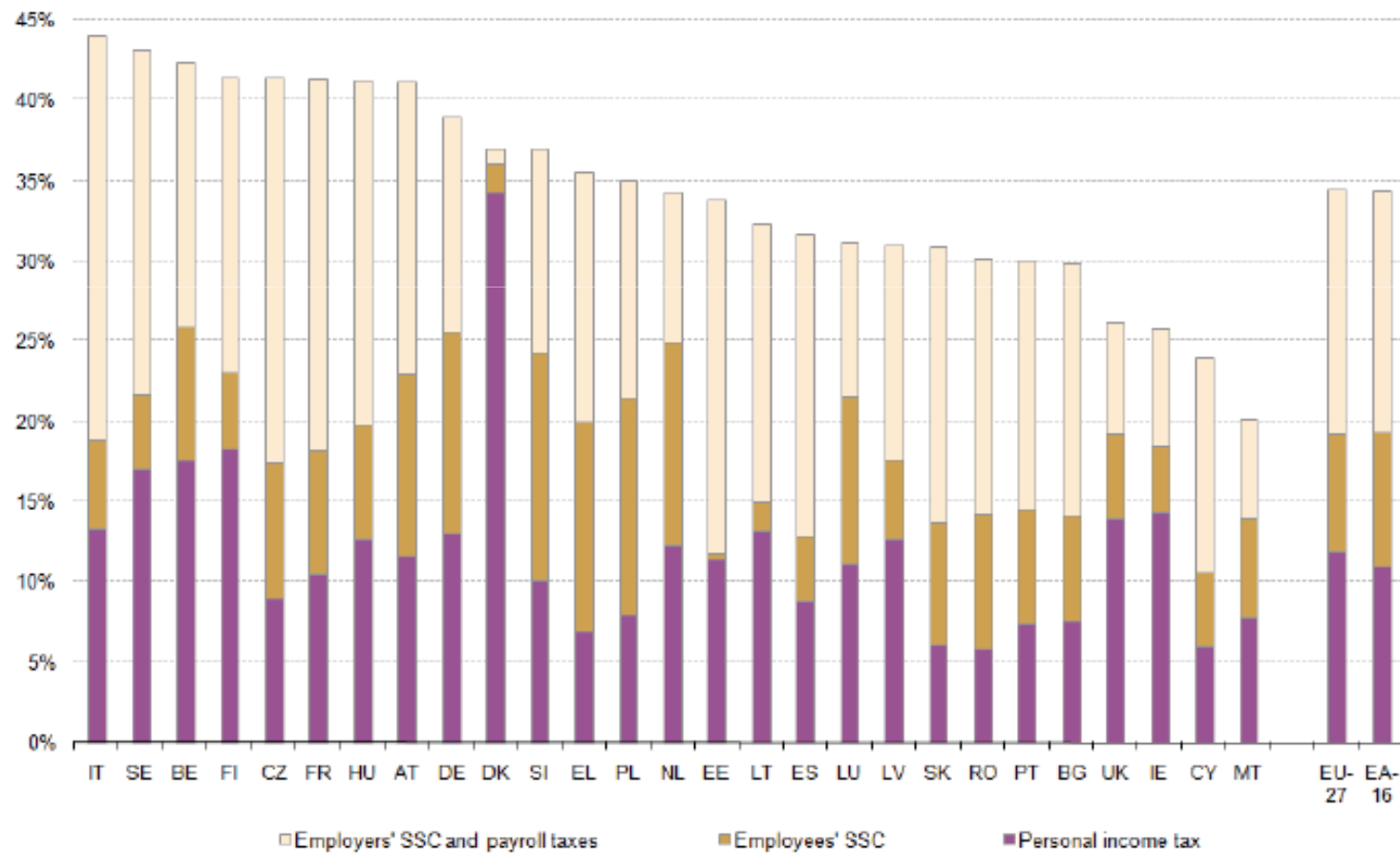
* except for Italy where it is transferred to labour (partly to employers and employees)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Difference	
														1995-2007	2000-2007
BE	43.8	43.4	43.9	44.3	43.6	43.9	43.5	43.6	43.4	44.0	43.8	42.7	42.3	-1.5	-1.6
BG	-	-	-	-	35.9	38.7	34.3	32.9	35.5	36.3	34.7	30.6	29.9	-	-8.9
CZ	40.5	39.5	40.3	40.7	40.5	40.7	40.3	41.2	41.4	41.8	41.7	41.1	41.4	0.9	0.7
DK	40.2	40.2	40.7	38.9	40.2	41.0	40.8	38.8	38.1	37.5	37.1	37.1	37.0	-3.2	-4.0
DE	39.4	39.6	40.6	40.6	40.4	40.7	40.5	40.4	40.4	39.2	38.8	39.0	39.0	-0.5	-1.8
EE	38.6	37.8	37.6	38.9	39.3	37.8	37.3	37.8	36.9	36.1	34.1	33.9	33.8	-4.8	-4.0
IE	29.7	29.3	29.5	28.6	28.7	28.5	27.4	26.0	25.0	26.3	25.4	25.4	25.7	-4.0	-2.8
EL	-	-	-	-	-	34.5	34.6	34.4	35.6	33.7	34.2	35.1	35.5	-	1.0
ES	29.0	29.5	28.7	28.6	28.3	28.7	29.5	29.8	29.9	29.9	30.3	30.8	31.6	2.6	2.9
FR	41.2	41.5	41.8	42.3	42.6	42.1	41.7	41.2	41.5	41.4	41.9	41.9	41.3	0.1	-0.8
IT	38.0	41.8	43.4	44.8	44.2	43.7	43.6	43.5	43.4	43.1	42.9	42.5	44.0	6.0	0.3
CY	22.1	21.3	21.5	22.5	21.8	21.5	22.8	22.2	22.7	22.7	24.5	24.1	24.0	1.8	2.4
LV	39.2	34.6	36.1	37.2	36.9	36.7	36.5	37.8	36.6	36.7	33.2	33.1	31.0	-8.2	-5.7
LT	34.5	35.0	38.4	38.3	38.7	41.2	40.2	38.1	36.9	36.0	34.9	33.6	32.3	-2.2	-8.9
LU	29.3	29.6	29.3	28.8	29.6	29.9	29.6	28.3	29.3	29.5	30.4	30.7	31.2	2.0	1.3
HU	42.6	43.0	43.7	42.8	42.6	41.4	40.9	41.2	39.3	38.3	38.4	38.8	41.2	-1.4	-0.2
MT	19.0	17.8	19.9	18.2	19.2	20.6	21.4	20.8	20.4	21.0	21.3	21.3	20.1	1.1	-0.5
NL	34.6	33.6	32.8	33.2	34.1	34.5	30.6	30.9	31.5	31.4	31.6	34.6	34.3	-0.4	-0.3
AT	38.5	39.4	40.7	40.3	40.5	40.1	40.6	40.8	40.8	41.0	40.8	40.8	41.0	2.5	0.9
PL	36.8	36.3	35.9	35.6	35.8	33.6	33.2	32.4	32.7	32.7	33.1	34.2	35.0	-1.9	1.4
PT	26.5	26.4	26.3	26.2	26.6	27.0	27.4	27.6	27.8	27.9	28.1	28.6	30.0	3.5	3.0
RO	-	-	-	-	37.6	32.2	31.8	31.1	29.5	28.9	28.0	30.4	30.1	-	-2.1
SI	38.5	36.8	37.0	37.5	37.8	37.7	37.5	37.6	37.7	37.5	37.6	37.4	36.9	-1.6	-0.7
SK	38.5	39.4	38.3	38.0	37.4	36.3	37.1	36.7	36.1	34.5	32.9	30.5	30.9	-7.6	-5.4
FI	44.3	45.3	43.6	43.8	43.3	44.1	44.1	43.8	42.5	41.5	41.5	41.6	41.4	-2.9	-2.7
SE	46.8	48.0	48.4	49.4	48.5	47.2	46.2	44.8	44.7	44.7	45.0	44.5	43.1	-3.7	-4.1
UK	25.7	24.8	24.4	25.0	25.1	25.3	25.0	24.1	24.3	24.8	25.5	25.8	26.1	0.3	0.8
NO	-	-	-	-	-	-	-	38.7	39.0	39.2	38.5	37.9	37.8	-	-
EU-27	-	-	-	-	36.1	35.9	35.5	35.1	35.0	34.8	34.5	34.4	34.4	-	-1.5
EU-25	35.7	35.6	36.0	36.1	36.1	35.9	35.7	35.4	35.2	34.9	34.7	34.8	34.8	-0.9	-1.1
EA-16	34.2	34.4	34.6	34.7	34.7	34.6	34.5	34.2	34.3	34.1	34.1	34.2	34.3	0.2	-0.3

Source: Commission services

Composition of the ITR on labour

Graph II-3.2 Composition of the Implicit tax rate on labour
2007, in %



ITR on capital

- ▶ **Taxes on capital and business income**
 - ▶ Part of the **PIT** related to capital and self-employed income
 - ▶ Taxes on the income or profit of **corporations**
 - ▶ Other taxes on income (taxes on winnings of lottery,...)
 - ▶ SSC paid by self-employed
 - ▶ **Taxes on capital stocks**
 - ▶ Taxes on **products** related to capital
 - ▶ Other taxes on **production** (local business taxes, other taxes on land and on the use of fixed assets, licences)
 - ▶ Other current taxes on capital (incl. wealth and inheritance taxes)
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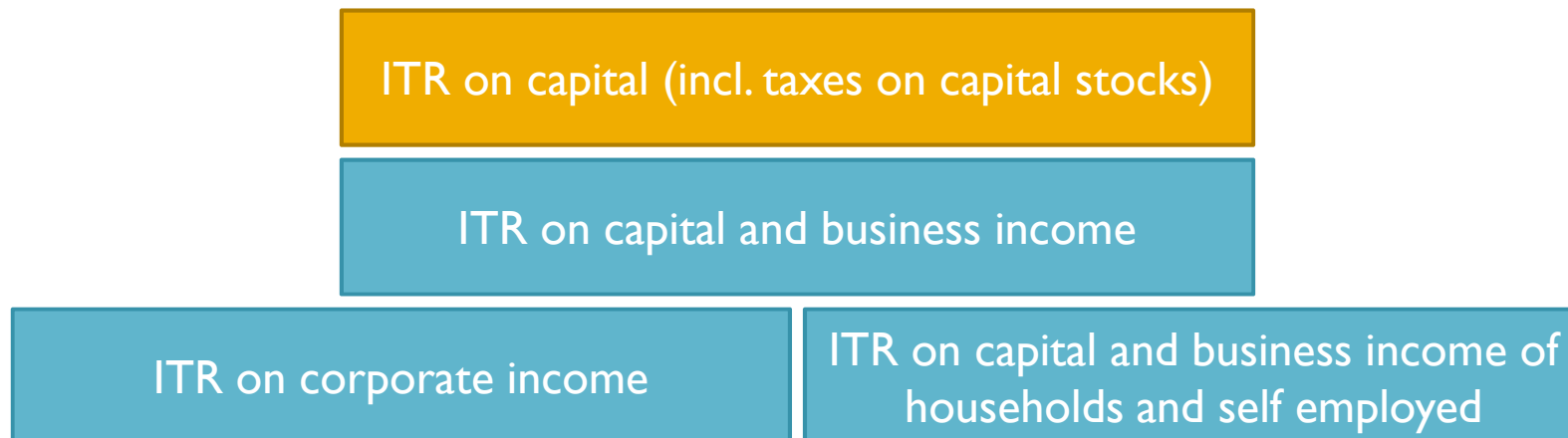
ITR on capital

▶ **Taxable base:**

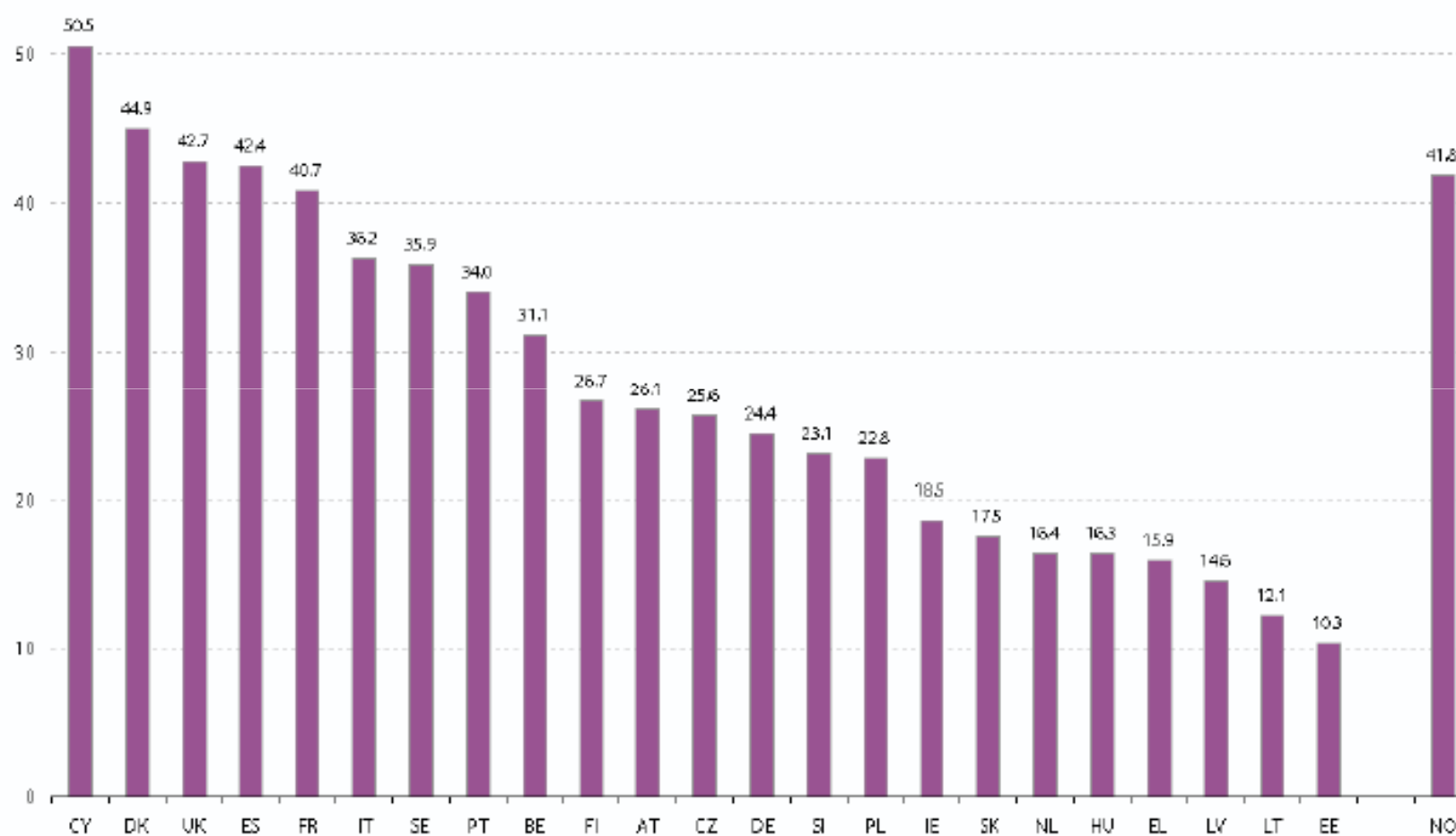
- ▶ **Net operating surplus (NOS)** of corporations
 - + Imputed rents of households and NOS of non-profit organisations
 - + **Net mixed income** of self-employed
 - + **Net interests** received by corporations, households and self-employed
(= received – paid)
 - + **Net insurance property income** (received by corp, HH and SE)
 - + **Net rents on land** (received by corp, HH and SE)
 - + Net dividends received by corporations
 - + Dividends received by government
 - + Dividends received by rest of the world
 - + Dividends received by households
-

ITR on capital

- ▶ ITR on capital and business income is further split between corporations, and households and self-employed



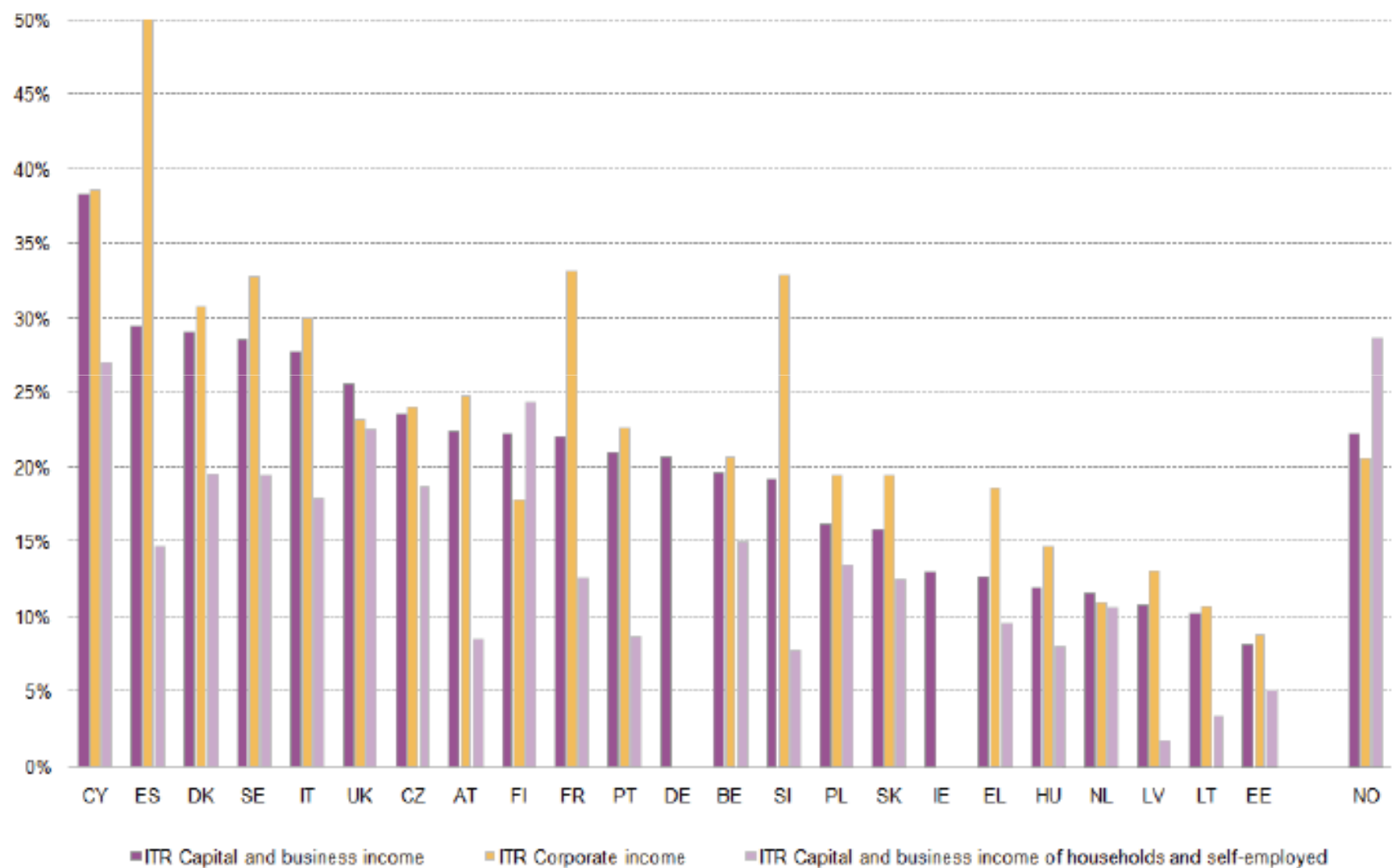
Graph II-4.3 Implicit tax rate on capital
2007, in %



Note: No data for Bulgaria, Luxembourg, Malta and Romania; data for Greece, Hungary and Poland refer to 2006.

Source: Commission services

Graph II-4.5 Implicit tax rate on capital and business income
2007



Note: No data for Bulgaria, Germany, Luxembourg, Malta and Romania; data for Greece, Hungary, Poland and Portugal refer to 2006.



Limitations

Hazardous split of the PIT

- ▶ Base principle

$$PIT_i = t(W_i - DW_i + O_i - DO_i - A_i) - C_i - CW_i - CO_i$$

$$PIT(labour)_i = \tau_i \cdot (W_i - DW_i)$$

$$PIT(other)_i = \tau_i \cdot (O_i - DO_i)$$

$$\tau_i = PIT_i / (W_i - DW_i + O_i - DO_i)$$

where $t()$ is the tax function, D denotes deductions, A allowances, C credits, W denotes labour, O other income and τ is the effective tax rate

- ▶ Micro approach: τ_i estimated at the level of individual taxpayers
 - ▶ Macro approach: τ_i estimated for the whole population of taxpayers or at the level of income classes/tax brackets
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Hazardous split of the PIT

- ▶ Assumption: one single effective tax rate accross all sources of income
 - ▶ Problem of **attribution to the related income source** for:
 - ▶ deductions, credits and allowances
 - ▶ corrections (in the case of withheld taxes)
 - ▶ Progressive vs. flat taxation schemes
 - ▶ Sensitivity to tax systems: held at source vs. tax returns
 - ▶ Tax brackets can encompass households with very different income structure
 - ▶ Effect of inflation and growth on tax brackets (« bracket creep »)
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Hazardous split of the PIT

- ▶ What is the right taxable base?
 - ▶ deductions, credits and allowances are sometimes complex and vary across:
 - ▶ household types (deductions granted to low wages, e.g. DK 95-99)
 - ▶ nature of the expenditure (e.g. mortgage interest payments)
 - ▶ nature of the taxpayer (households vs. self-employed)
 - ▶ taxable base for local taxes can differ from those for state taxes (e.g. DK 2001-present)
 - ▶ Tax system evolve over time: comparison is tricky
 - ▶ Other limitations:
 - ▶ difficulty to separate social benefits and pensions from wages
 - ▶ joint assessment of households
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Table B-1.2 Estimates for the split of personal income tax
 Personal income tax revenue allocated to employed labour income

1995–2007, in % of total revenue of personal income tax

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BE	0.749	0.741	0.747	0.740	0.744	0.750	0.747	0.749	0.748	0.765	0.765	0.767	0.767
BG	-	-	-	-	0.882	0.882	0.888	0.859	0.891	0.878	0.856	0.841	0.848
CZ	0.797	0.797	0.797	0.797	0.797	0.797	0.797	0.808	0.809	0.821	0.867	0.890	0.890
DK	0.724	0.728	0.738	0.725	0.728	0.755	0.758	0.755	0.745	0.737	0.726	0.734	0.741
DE	0.757	0.729	0.734	0.724	0.704	0.736	0.752	0.763	0.761	0.749	0.718	0.694	0.687
EE	0.959	0.959	0.937	0.945	0.936	0.929	0.938	0.915	0.913	0.902	0.864	0.886	0.904
IE	0.843	0.842	0.840	0.830	0.842	0.833	0.817	0.811	0.802	0.804	0.804	0.804	0.804
EL	0.473	0.484	0.497	0.484	0.498	0.495	0.494	0.487	0.487	0.507	0.519	0.510	0.507
ES	0.527	0.535	0.544	0.545	0.536	0.545	0.556	0.557	0.563	0.562	0.555	0.533	0.533
FR	0.603	0.603	0.603	0.603	0.603	0.583	0.603	0.593	0.593	0.593	0.594	0.582	0.584
IT	0.589	0.578	0.567	0.556	0.564	0.555	0.553	0.561	0.552	0.545	0.547	0.536	0.536
CY	0.891	0.891	0.891	0.891	0.891	0.891	0.891	0.915	0.915	0.915	0.915	0.915	0.915
LV	0.995	0.993	0.992	0.989	0.975	0.953	0.965	0.950	0.968	0.972	0.975	0.967	0.965
LT	0.917	0.917	0.917	0.917	0.917	0.908	0.904	0.900	0.912	0.913	0.901	0.896	0.880
LU	0.695	0.695	0.688	0.696	0.716	0.738	0.754	0.747	0.741	0.740	0.756	0.765	0.765
HU	0.813	0.805	0.805	0.809	0.802	0.790	0.803	0.845	0.849	0.863	0.862	0.856	0.796
MT	0.692	0.692	0.692	0.710	0.710	0.707	0.709	0.712	0.708	0.694	0.690	0.699	0.703
NL	0.655	0.651	0.647	0.659	0.670	0.682	0.643	0.659	0.674	0.688	0.702	0.702	0.702
AT	0.629	0.604	0.624	0.622	0.625	0.629	0.595	0.620	0.621	0.619	0.628	0.636	0.644
PL	0.488	0.520	0.517	0.510	0.525	0.526	0.530	0.519	0.509	0.531	0.515	0.501	0.450
PT	0.631	0.631	0.631	0.631	0.651	0.648	0.635	0.641	0.635	0.637	0.635	0.636	0.636
RO	-	-	-	0.621	0.621	0.621	0.621	0.621	0.643	0.634	0.690	0.692	0.689
SI	0.894	0.889	0.891	0.893	0.889	0.902	0.907	0.904	0.908	0.900	0.894	0.876	0.876
SK	0.819	0.819	0.819	0.819	0.819	0.819	0.830	0.830	0.873	0.826	0.848	0.854	0.864
FI	0.661	0.676	0.673	0.686	0.683	0.679	0.703	0.706	0.703	0.688	0.682	0.673	0.665
SE	0.715	0.709	0.706	0.711	0.688	0.676	0.711	0.716	0.690	0.684	0.683	0.663	0.674
UK	0.764	0.755	0.746	0.743	0.735	0.743	0.739	0.736	0.726	0.720	0.718	0.712	0.703
NO	0.743	0.742	0.746	0.754	0.752	0.738	0.741	0.754	0.763	0.756	0.736	0.750	0.750

Table B-1.3 Estimates for the split of personal income tax
 Personal income tax revenue allocated to income of the self-employed

1995–2007, in % of total revenue of personal income tax

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BE	0.127	0.130	0.122	0.129	0.132	0.129	0.125	0.121	0.122	0.125	0.125	0.127	0.127
BG	-	-	-	-	0.096	0.096	0.086	0.111	0.087	0.101	0.119	0.118	0.115
CZ	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.160	0.159	0.151	0.108	0.088	0.088
DK	0.253	0.253	0.239	0.232	0.223	0.218	0.215	0.221	0.232	0.232	0.226	0.213	0.200
DE	0.190	0.221	0.214	0.224	0.242	0.213	0.201	0.192	0.171	0.186	0.214	0.238	0.242
EE	0.022	0.022	0.025	0.033	0.021	0.020	0.023	0.024	0.022	0.018	0.020	0.021	0.015
IE	0.109	0.108	0.109	0.112	0.111	0.111	0.119	0.133	0.118	0.114	0.114	0.114	0.114
EL	0.279	0.265	0.245	0.259	0.238	0.245	0.242	0.248	0.248	0.232	0.203	0.202	0.197
ES	0.152	0.144	0.148	0.145	0.146	0.134	0.130	0.131	0.126	0.125	0.117	0.109	0.109
FR	0.159	0.159	0.159	0.159	0.159	0.179	0.174	0.169	0.169	0.168	0.168	0.157	0.154
IT	0.162	0.169	0.175	0.182	0.186	0.188	0.183	0.174	0.183	0.181	0.177	0.190	0.190
CY	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.051	0.051	0.051	0.051	0.051	0.051
LV	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.004	0.004	0.003
LT	0.062	0.062	0.062	0.062	0.062	0.067	0.054	0.041	0.027	0.014	0.013	0.031	0.032
LU	0.121	0.121	0.116	0.133	0.102	0.105	0.082	0.099	0.096	0.110	0.102	0.114	0.114
HU	0.055	0.057	0.069	0.056	0.052	0.051	0.046	0.047	0.038	0.036	0.034	0.033	0.031
MT	0.090	0.090	0.090	0.081	0.079	0.082	0.080	0.080	0.081	0.081	0.083	0.082	0.080
NL	0.185	0.196	0.207	0.216	0.225	0.234	0.234	0.208	0.184	0.162	0.141	0.141	0.141
AT	0.176	0.195	0.174	0.178	0.172	0.170	0.204	0.169	0.161	0.170	0.165	0.156	0.149
PL	0.224	0.185	0.223	0.232	0.288	0.265	0.263	0.254	0.256	0.246	0.249	0.250	0.304
PT	0.093	0.093	0.093	0.093	0.096	0.092	0.106	0.091	0.087	0.092	0.091	0.089	0.089
RO	-	-	-	0.035	0.035	0.035	0.035	0.035	0.037	0.038	0.041	0.048	0.054
SI	0.057	0.058	0.055	0.051	0.057	0.049	0.046	0.048	0.049	0.053	0.055	0.050	0.050
SK	0.131	0.131	0.131	0.131	0.131	0.131	0.122	0.135	0.095	0.150	0.137	0.128	0.118
FI	0.082	0.074	0.079	0.075	0.074	0.074	0.074	0.082	0.081	0.078	0.076	0.077	0.080
SE	0.023	0.026	0.027	0.027	0.028	0.029	0.030	0.029	0.028	0.028	0.033	0.027	0.026
UK	0.121	0.122	0.126	0.120	0.122	0.119	0.124	0.127	0.129	0.129	0.124	0.123	0.120
NO	0.105	0.094	0.095	0.095	0.085	0.089	0.090	0.091	0.082	0.088	0.099	0.078	0.078

Table B-1.4 Estimates for the split of personal income tax
 Personal income tax revenue allocated to capital income

1995–2007, in % of total revenue of personal income tax

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BE	-0.016	-0.016	-0.017	-0.016	-0.017	-0.016	-0.011	-0.011	-0.014	-0.012	-0.012	-0.015	-0.015
BG	-	-	-	-	0.022	0.022	0.025	0.030	0.022	0.022	0.025	0.041	0.037
CZ	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.032	0.031	0.028	0.025	0.022	0.022
DK	-0.034	-0.037	-0.031	-0.018	-0.014	-0.028	-0.033	-0.028	-0.029	-0.020	-0.007	-0.001	0.004
DE	0.019	0.023	0.023	0.025	0.026	0.026	0.023	0.022	0.040	0.037	0.036	0.037	0.040
EE	0.014	0.014	0.034	0.019	0.011	0.024	0.017	0.028	0.032	0.020	0.057	0.043	0.042
IE	0.033	0.035	0.038	0.045	0.038	0.046	0.056	0.048	0.068	0.072	0.072	0.072	0.072
EL	0.114	0.115	0.117	0.120	0.124	0.121	0.121	0.123	0.123	0.120	0.118	0.118	0.114
ES	0.108	0.105	0.097	0.107	0.123	0.125	0.116	0.109	0.109	0.106	0.123	0.158	0.158
FR	0.070	0.070	0.070	0.070	0.070	0.070	0.055	0.070	0.070	0.066	0.073	0.095	0.093
IT	0.048	0.049	0.049	0.050	0.057	0.059	0.054	0.055	0.057	0.061	0.061	0.061	0.061
CY	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.009	0.009	0.009	0.009	0.009	0.009
LV	0.003	0.004	0.004	0.005	0.007	0.029	0.018	0.031	0.013	0.008	0.002	0.011	0.023
LT	0.016	0.016	0.016	0.016	0.016	0.019	0.028	0.037	0.035	0.049	0.060	0.044	0.050
LU	0.057	0.057	0.061	0.055	0.067	0.049	0.066	0.058	0.057	0.049	0.040	0.027	0.027
HU	0.045	0.073	0.061	0.067	0.079	0.093	0.084	0.093	0.098	0.085	0.087	0.091	0.100
MT	0.086	0.086	0.086	0.071	0.068	0.066	0.066	0.061	0.063	0.074	0.073	0.056	0.054
NL	-0.008	-0.008	-0.008	-0.028	-0.048	-0.068	0.009	0.008	0.007	0.005	0.002	0.002	0.002
AT	0.023	0.026	0.023	0.023	0.021	0.019	0.023	0.020	0.020	0.021	0.024	0.023	0.022
PL	0.005	0.007	0.006	0.009	0.018	0.040	0.030	0.053	0.058	0.042	0.066	0.076	0.090
PT	0.189	0.189	0.189	0.189	0.161	0.165	0.156	0.154	0.154	0.137	0.132	0.126	0.126
RO	-	-	-	0.340	0.340	0.340	0.340	0.340	0.314	0.323	0.258	0.247	0.237
SI	0.016	0.020	0.020	0.019	0.019	0.017	0.017	0.020	0.018	0.022	0.027	0.051	0.051
SK	0.050	0.050	0.050	0.050	0.050	0.050	0.048	0.035	0.032	0.025	0.015	0.018	0.019
FI	0.024	0.029	0.041	0.047	0.063	0.075	0.059	0.037	0.038	0.050	0.058	0.068	0.078
SE	-0.015	0.010	0.025	0.026	0.056	0.078	0.032	0.017	0.018	0.025	0.046	0.070	0.066
UK	0.100	0.107	0.112	0.121	0.128	0.124	0.122	0.121	0.128	0.135	0.142	0.148	0.160
NO	0.061	0.070	0.066	0.051	0.062	0.075	0.070	0.061	0.058	0.056	0.067	0.073	0.073

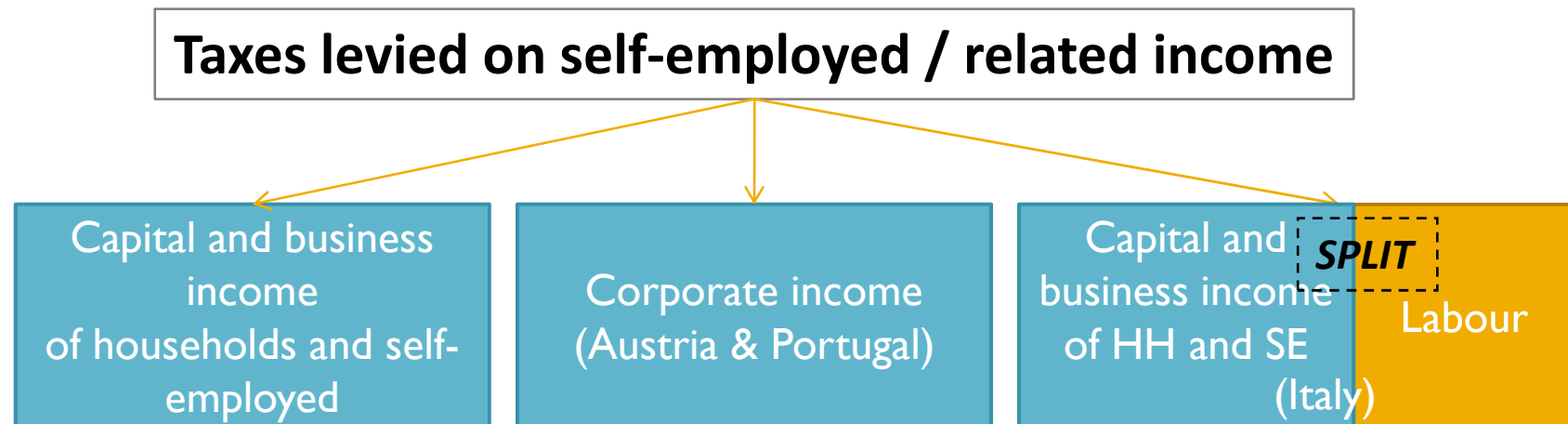
Table B-1.5 Estimates for the split of personal income tax
 Personal income tax revenue allocated to social transfers and pensions

1995–2007, in % of total revenue of personal income tax

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BE	0.140	0.145	0.147	0.146	0.141	0.137	0.139	0.140	0.144	0.122	0.122	0.122	0.122
BG	-	-	-	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CZ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DK	0.057	0.056	0.054	0.061	0.063	0.055	0.060	0.052	0.052	0.052	0.055	0.055	0.054
DE	0.033	0.027	0.029	0.027	0.028	0.025	0.024	0.023	0.028	0.028	0.032	0.031	0.031
EE	0.005	0.005	0.004	0.003	0.032	0.027	0.022	0.033	0.033	0.060	0.059	0.050	0.039
IE	0.015	0.015	0.013	0.012	0.010	0.010	0.008	0.008	0.012	0.009	0.009	0.009	0.009
EL	0.133	0.137	0.140	0.137	0.140	0.140	0.143	0.142	0.142	0.141	0.160	0.170	0.181
ES	0.213	0.216	0.211	0.203	0.195	0.195	0.197	0.204	0.202	0.207	0.206	0.200	0.200
FR	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.168	0.173	0.165	0.167	0.169
IT	0.201	0.205	0.208	0.213	0.193	0.198	0.210	0.209	0.209	0.214	0.216	0.213	0.213
CY	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.025	0.025	0.025	0.025	0.025	0.025
LV	0.000	0.000	0.001	0.004	0.015	0.016	0.016	0.016	0.016	0.017	0.019	0.018	0.009
LT	0.005	0.005	0.005	0.005	0.005	0.006	0.014	0.022	0.025	0.025	0.026	0.030	0.037
LU	0.127	0.126	0.135	0.116	0.115	0.108	0.098	0.097	0.106	0.100	0.101	0.095	0.095
HU	0.087	0.065	0.065	0.068	0.067	0.066	0.067	0.015	0.016	0.016	0.018	0.019	0.074
MT	0.132	0.132	0.132	0.138	0.143	0.145	0.145	0.146	0.148	0.151	0.154	0.163	0.162
NL	0.168	0.161	0.154	0.153	0.152	0.151	0.114	0.125	0.135	0.145	0.155	0.155	0.155
AT	0.172	0.175	0.178	0.176	0.183	0.182	0.178	0.192	0.198	0.190	0.182	0.185	0.185
PL	0.283	0.288	0.254	0.249	0.169	0.168	0.177	0.174	0.177	0.181	0.169	0.173	0.156
PT	0.087	0.087	0.087	0.087	0.091	0.096	0.104	0.113	0.124	0.135	0.142	0.149	0.149
RO	-	-	-	0.003	0.003	0.003	0.003	0.003	0.005	0.005	0.011	0.014	0.019
SI	0.034	0.033	0.034	0.037	0.036	0.032	0.030	0.028	0.026	0.025	0.025	0.023	0.023
SK	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FI	0.233	0.221	0.207	0.192	0.181	0.172	0.164	0.175	0.179	0.184	0.185	0.183	0.178
SE	0.278	0.255	0.243	0.236	0.228	0.217	0.227	0.238	0.265	0.263	0.239	0.241	0.233
UK	0.015	0.016	0.015	0.016	0.015	0.014	0.016	0.017	0.017	0.017	0.016	0.016	0.016
NO	0.092	0.093	0.093	0.100	0.100	0.098	0.099	0.095	0.097	0.099	0.098	0.099	0.099

The case of the self-employed

- ▶ The allocation of taxes (PIT + SSC) levied on the self-employed and their related mixed-income varies across countries, depending on the availability of data



- ▶ Motive: entrepreneurs incur risk of losses \Rightarrow capital income
 - ▶ BUT different situations: shopkeeper \neq doctor \neq consultant...
 - ▶ The case of Germany (partnerships), Finland and Luxembourg
-

Limitations of the ITR on corporate income

- ▶ Operating surplus \neq profit
 - ▶ true taxable base = total profits, including financial gains
 - ▶ base used for the computation of ITR = net operating surplus
 - ▶ Operating surplus recorded where it is made, not where it is « consolidated »
 - ▶ Taxation on retained earnings
 - ▶ Taxes on **capital gains** (made on the sale of financial products, real estate, companies,...) are included but the related base is not
 - ▶ Problem of double taxation of profit:
 - ▶ earnings taxed at the level of (i) the subsidiary and (ii) the holding
 - ▶ dividends
-

Sensitivity of the ITR on corporate income

- ▶ ITR on corporate income is highly sensitive to:
 - ▶ type of financing of firms (equity vs. debt)
 - ▶ incurred losses and business cycles
 - ▶ depreciation schemes
 - ▶ inclusion or exclusion of self-employed
 - ▶ NOW structural changes have happened:
 - ▶ shift from debt to equity financing (stock exchange markets)
 - ▶ economic shocks and crises: 2000 and then 2008
 - ▶ Revision of depreciation schemes to enlarge taxable base
 - ▶ Development of self-employed businesses (incl. as a labour policy)
 - ▶ Thus, comparison of the ITR on corporate income over time and accross countries is hazardous
-

What hinders comparison

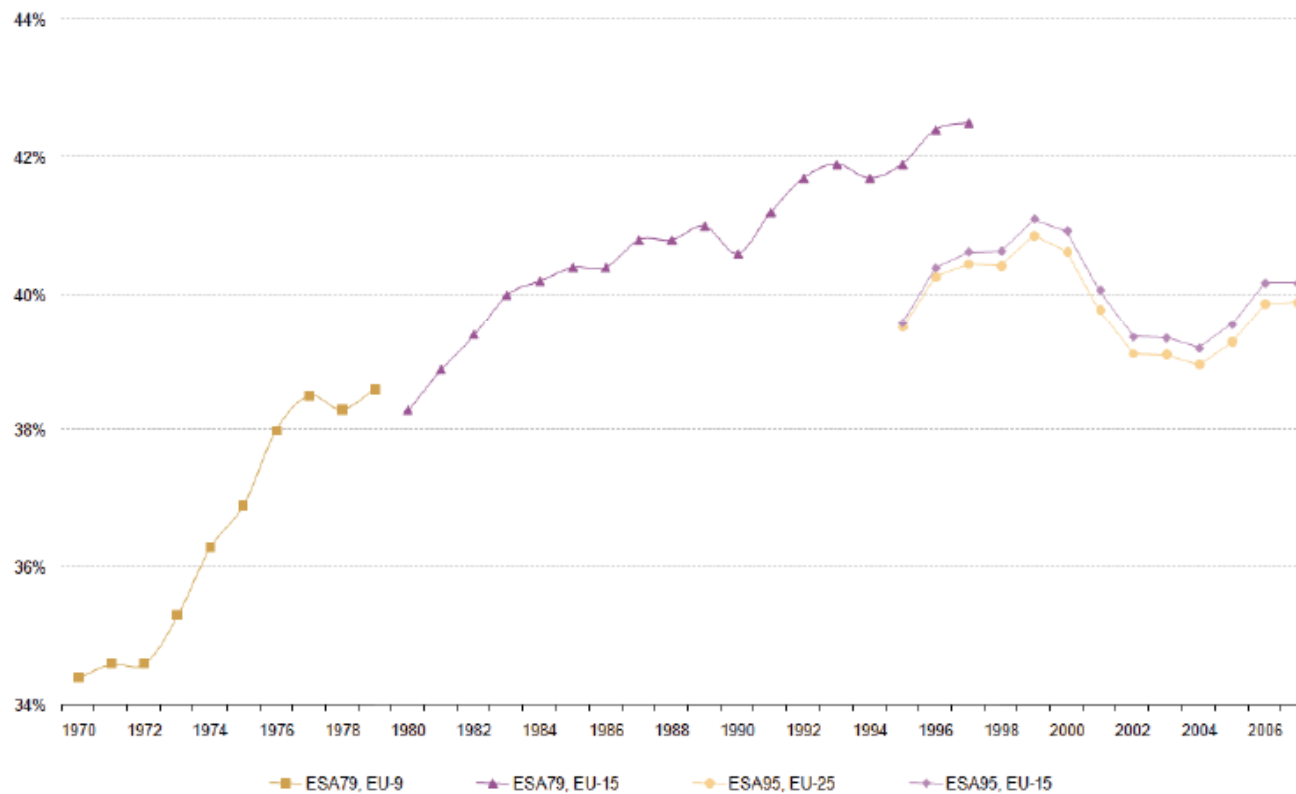
- ▶ Behavioural response to taxation (corporatization or, reversely, shift of income from corporate to non-corporate sector)
 - ▶ Variation in the treatment of self-employed income and taxes
 - ▶ Structural changes in the economy
 - ▶ Difficulty to encompass the « financial » side of the economy (see capital gains/losses)
 - ▶ Difference between EU countries both in
 - ▶ economic structure and “financiarisation”
 - ▶ tax system + taxation policy (double taxation, retained earnings,...)
-



Evolution of ITRs over time and tax
incidence

Evolution of the tax burden

Graph I-1 Long-term trends in the overall tax ratio (including SSC)
% of GDP

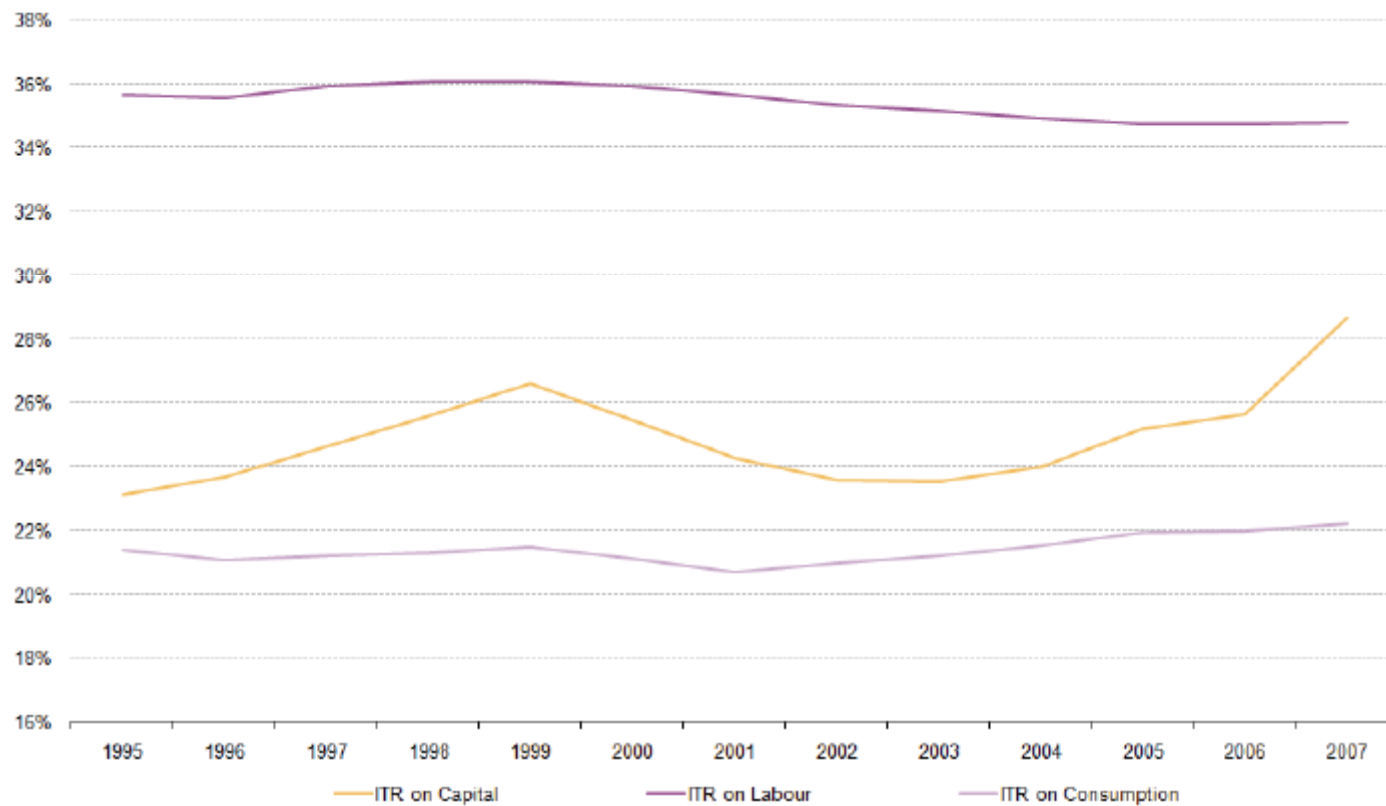


Source: Commission services

Note: The statistical break is due to a change in classification at Eurostat. All data are GDP-weighted.

Evolution of ITRs

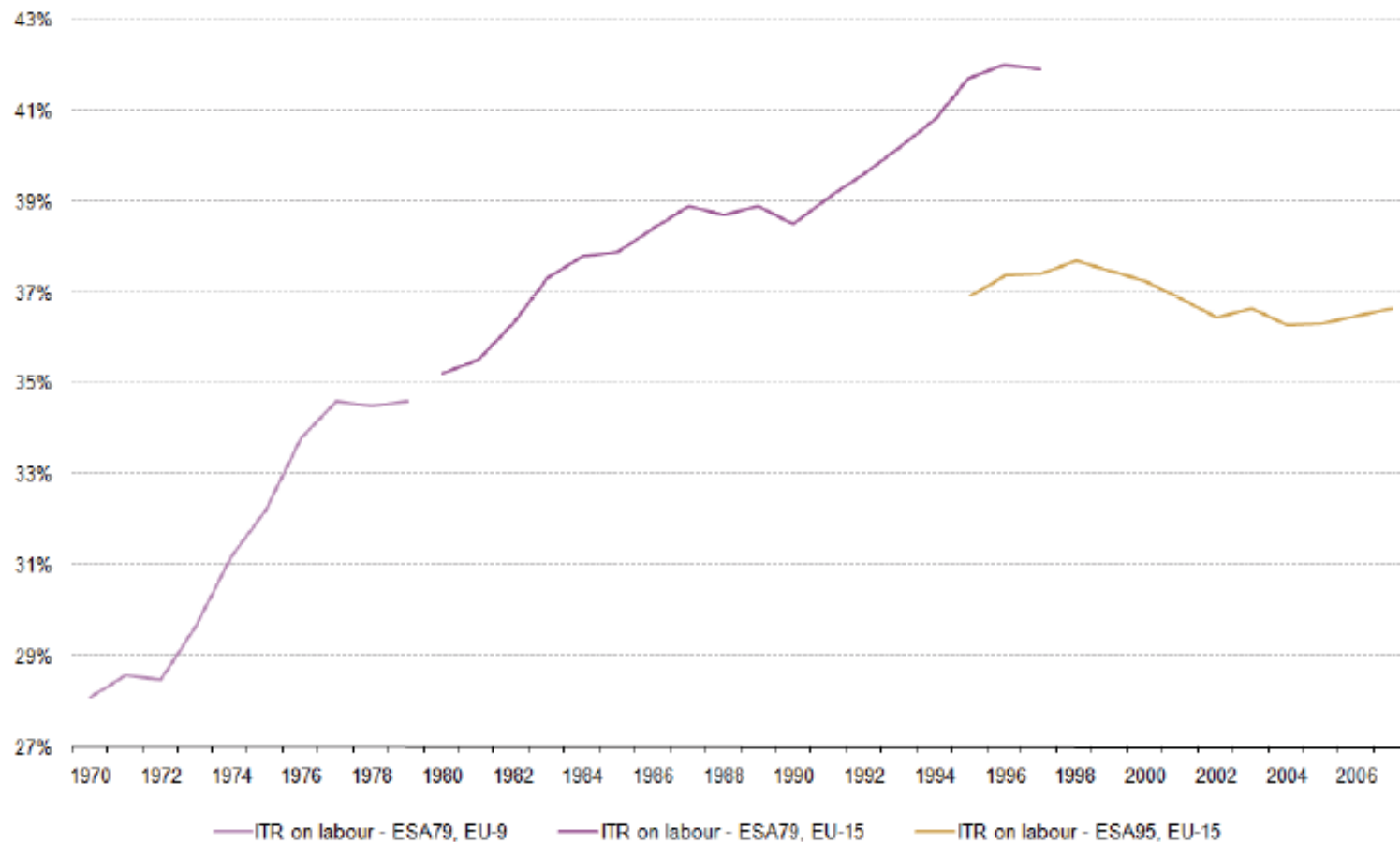
Graph II-1.4 Development of Implicit tax rates
EU-25 average, 1995-2007, in %



Source: Commission services

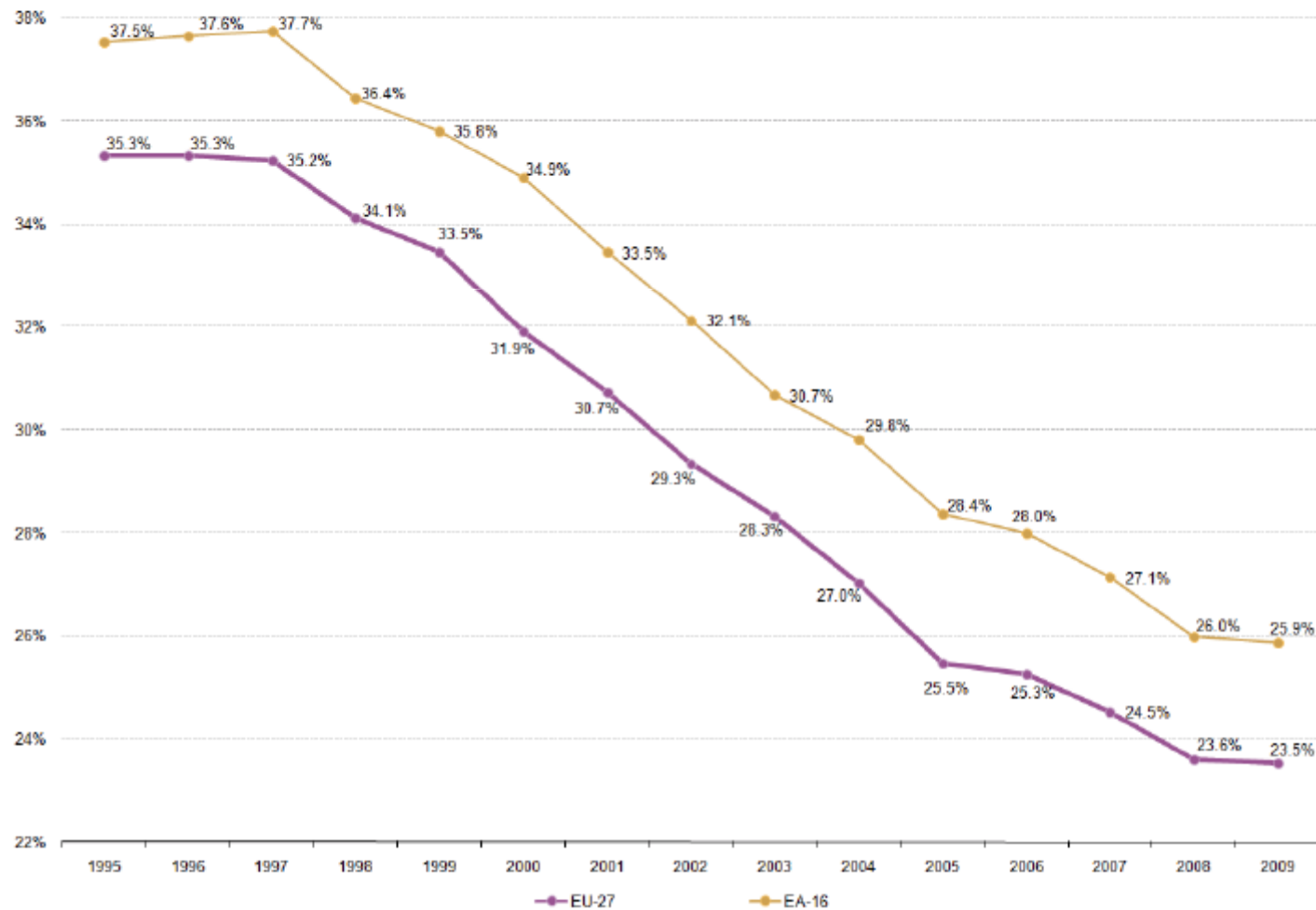
Evolution of the ITR on labour

Graph II-3.1 Time trend of ITR on labour
in % (weighted averages)



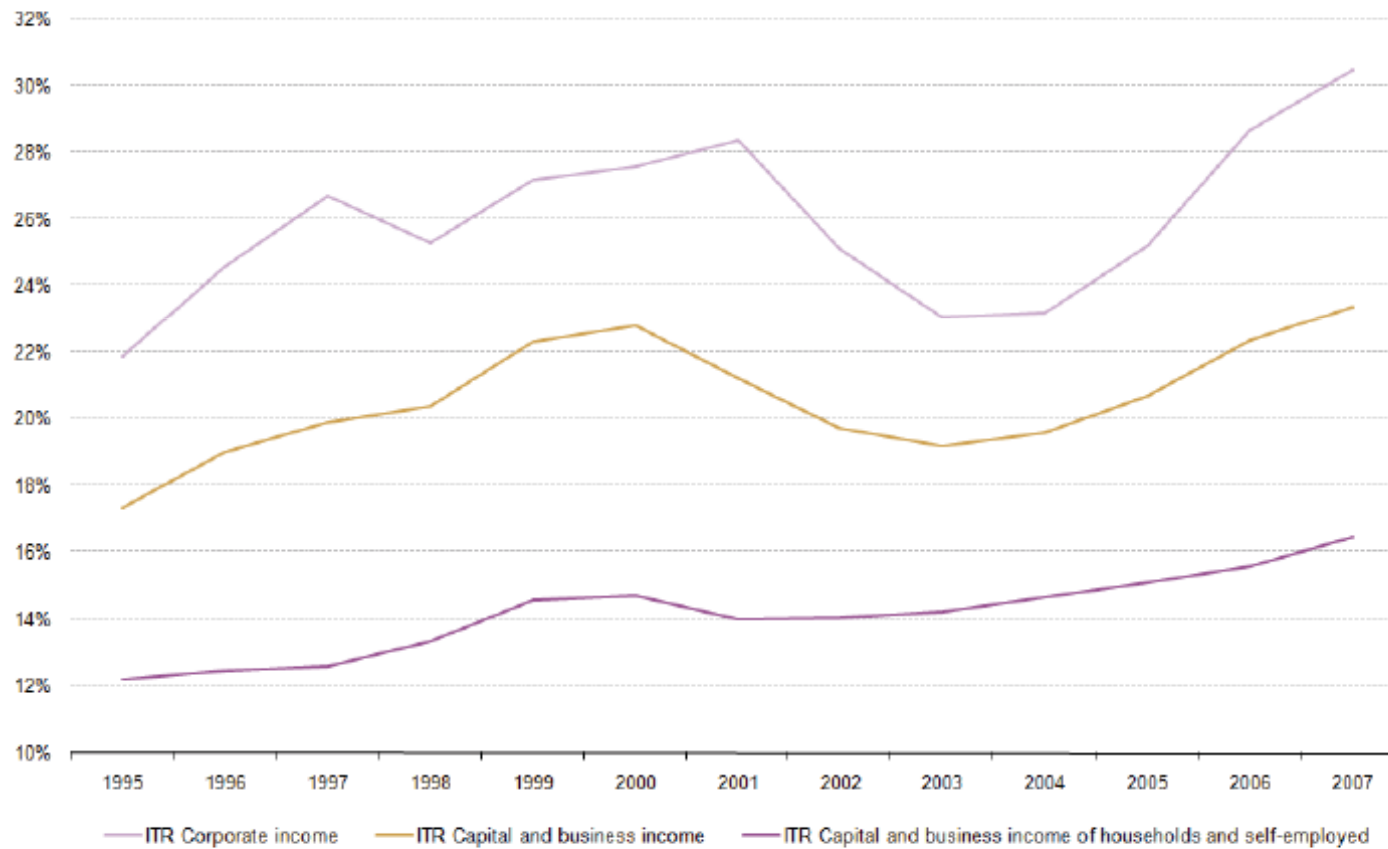
The paradox of the ITR on capital

Graph I-5 Development of adjusted statutory tax rate on corporate income
EU-27 and euro area averages; in %



The paradox of the ITR on capital

Graph II-4.4 Implicit tax rate on capital and business income in EU-25
1995–2007



Note: GDP-weighted averages of available sample.

The possible influence of capital gains

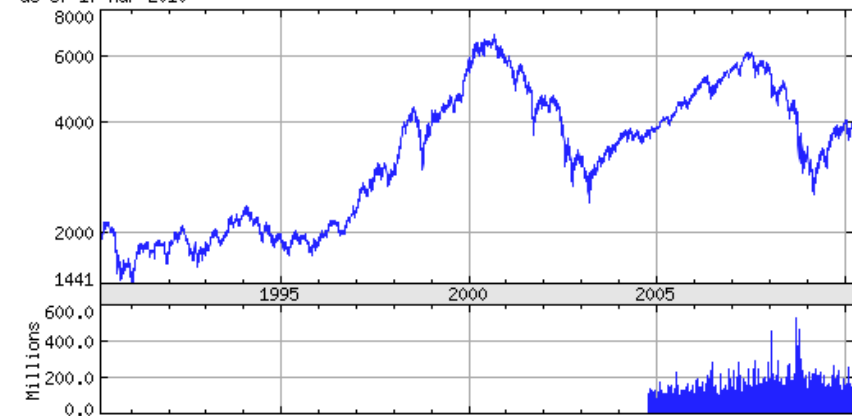
GERMANY DAX INDEX
as of 19-Mar-2010



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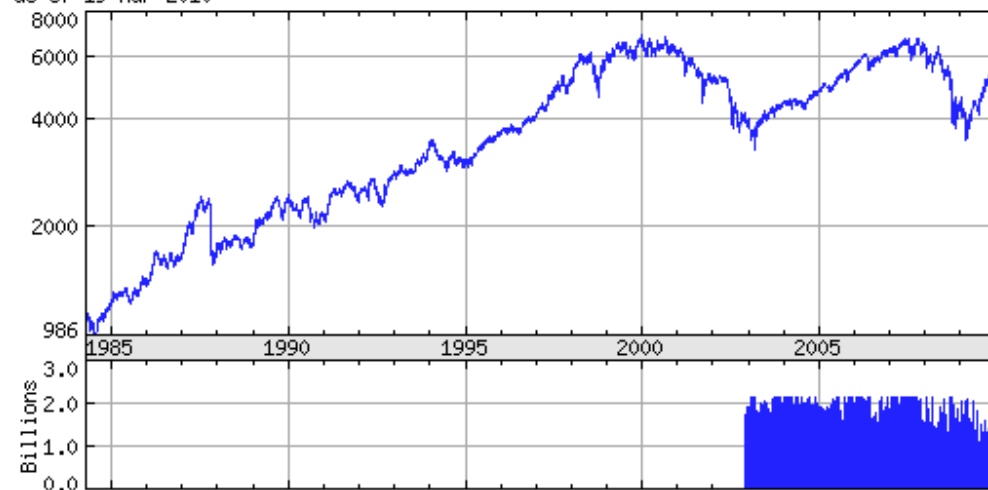
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FTSE 100 INDEX
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A dark blue background with a yellow rectangular box. The box has a thick yellow vertical bar on its left side and a thin yellow border. The word "Conclusions" is written in white text inside the box.

Conclusions

Conclusions

- ▶ Limitations of ITR comparison over time and between countries due to:
 - ▶ Difficulty to allocate taxes to the related income source
 - ▶ « unachieved » allocation between labor and capital income
 - ▶ attribution problems in allocating credits and tax corrections
 - ▶ Difficulty to encompass all relevant elements in taxable base
 - ▶ deductions and allowances vary accross countries and over time
 - ▶ mismatches between taxes and related base (e.g. capital gains, and profits of corporations)
 - ▶ Sensitivity of ITRs to tax systems, business cycles, taxation rules
 - ▶ Lack of disaggregated data and **differences of tax systems**
 - ▶ In conclusion, ITR give little information on tax incidence
-