

Boss, Alfred

Working Paper

Tax competition and tax revenues

Kiel Working Paper, No. 1256

Provided in Cooperation with:

Kiel Institute for the World Economy – Leibniz Center for Research on Global Economic Challenges

Suggested Citation: Boss, Alfred (2005) : Tax competition and tax revenues, Kiel Working Paper, No. 1256, Kiel Institute for World Economics (IfW), Kiel

This Version is available at:

<https://hdl.handle.net/10419/3670>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Kiel Institute for World Economics
Duesternbrooker Weg 120
24105 Kiel (Germany)

Kiel Working Paper No. 1256

Tax Competition and Tax Revenues

by

Alfred Boss

July 2005

The responsibility for the contents of the working papers rests with the author, not the Institute. Since working papers are of a preliminary nature, it may be useful to contact the author of a particular working paper about results or caveats before referring to, or quoting, a paper. Any comments on working papers should be sent directly to the author.

Tax Competition and Tax Revenues

Abstract

It is often feared that tax competition might lead to a “race to the bottom”. The consequence of a decline of tax rates on capital income would be shrinking capital income tax revenues and difficulties for national governments to perform their usual tasks. The paper analyzes what happened to tax revenues in a lot of OECD countries. It turns out that taxes on capital income contribute to the financing of public expenditures in a more or less unchanged extent; in addition, there are no significant changes of the level and the structure of total tax revenues.

Key words: Tax competition, „race to the bottom“, income tax revenues

JEL classification: H20, H87

Dr. Alfred Boss

Institute for World Economics

24100 Kiel

Phone: +49 (431) 8814-231

Fax: +49 (431) 8814-525

E-mail: alfred.boss@ifw.uni-kiel.de

Contents

A.	The Issue	1
B.	Do We See a “Race to the Bottom”?	1
I.	Corporate Income Tax Rates	1
II.	Corporate Income Tax Revenues	2
1.	Preliminary Result	2
2.	Taxes on Corporate Income and the Output Gap	4
3.	Taxes on Corporate Income and the Legal Status of Firms	10
4.	Profit Shifting as a Result of Tax Competition?	10
5.	Conclusion	11
C.	Tax Competition and Personal Income Taxes	11
D.	The Development of Total Tax Revenues	13
E.	Summary	15
F.	References	16

A. The Issue

Facing an increased mobility of capital it is often argued that capital income tax rates tend to be reduced to zero by national governments acting independently from each other. Due to a “race to the bottom” taxes on capital income might not any longer contribute sufficiently to the financing of public expenditures and it might become difficult or even impossible for governments to perform their usual tasks. An undersupply of public goods and/or an erosion of the welfare state are feared to be the outcome of tax competition. At least, the tax burden might be shifted away from highly mobile capital towards immobile factors such as labor; this would raise labor costs and impede the reduction of unemployment esp. in Western Europe. Harmonization of tax rates is thought to be the remedy.

In the following it will be investigated if tax competition led to a decline of corporate income tax rates in the EU and in some other countries, if it reduced the level of the income tax revenues and if it affected the structure of the income tax revenues. The analysis is mainly based on OECD data.

B. Do We See a “Race to the Bottom”?

I. Corporate Income Tax Rates

The corporate income tax rates in the EU and in many other countries have been reduced since more than 20 years (Table 1). The process gained momentum in recent years. In 2005, the maximum tax rate in the EU is about 35 percent, it was much higher in the second half of the nineties.

Table 1:

Corporate Income Tax Rates for Retained Earnings in Selected Countries (percent)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Belgium	40.17	40.17	40.17	40.17	40.17	40.17	40.17	34	34	34
Germany ^a	48.38	48.38	47.47	42.20	42.20	26.38	26.38	27.96	26.38	26.38
Denmark	34	34	34	32	32	30	30	30	30	30
Spain	35	35	35	35	35	35	35	35	35	35
France	36.66	36.66	36.66	36.66	37.77	36.43	35.4	35.4	35.4	35.4
Greece	35	35	35	35	35	35	35	35	35	35
Italy	53.2	53.2	41.25	41.25	37 ^b	36 ^b	36 ^b	34 ^b	33 ^b	33 ^b
Ireland	38	36	32	28	24	20	16	12.5	12.5	12.5
Luxembourg	34.32	33.28	31.2	31.2	31.2	31.2	30.4	30.4	30.4	30.4
Netherlands	35	35	35	35	35	35	34.5	34.5	34.5	31.5
Portugal ^c	36	36	34	34	32	32	30	30	25	25
United Kingdom	33	33	31	30	30	30	30	30	30	30
Austria	34	34	34	34	34	34	34	34	34	25
Sweden	28	28	28	28	28	28	28	28	28	28
Finland	28	28	28	28	29	29	29	29	29	26
Norway	28	28	28	28	28	28	28	28	28	28
Japan	43.98	43.98	43.98	35.19	35.19	35.19	35.19	35.19	30	30
USA ^d	40.8	40.8	40.8	40.8	40.8	40.8	39.9	39.9	39.9	39.9

^aIncluding solidarity surcharge; excluding the “Gewerbesteuer”, a specific tax on profits (and parts of the interest paid by firms). — ^bWithout local tax on the value added. — ^cWithout local surcharge. — ^dNew York.

Source: BMF (various issues); BMF (2002, 2004); DATEV (various issues).

II. Corporate Income Tax Revenues

1. Preliminary Result

In order to investigate if tax competition affected the governments’ ability to finance the production or provision of public goods and/or the ability to pursue redistribution policies, it is adequate to look at the development of the corporate income tax revenues in relation to GDP. The development of these tax revenues was very different from the development of the corporate tax rates. Taxes on corporate income in relation to GDP increased in a majority of countries and in

the EU as a whole up to 2000 (Table 2). Only recently, the ratio declined marginally on average. Apparently, the tax bases have been broadened significantly. This happened by abolishing tax expenditures, restraining generous depreciation allowances etc. The policy is generally described as “tax-cut-cum-base-broadening”.¹ With respect to taxes on corporate income it is hard to see something like a “race to the bottom”.

Table 2:

Taxes on Corporate Income in Relation to GDP in Selected Countries (percent)

	1980	1990	1995	2000	2001	2002	2003
Austria	1.4	1.4	1.5	2.0	3.1	2.3	2.0
Belgium	2.2	2.4	2.8	3.6	3.6	3.5	3.4
Czech Republic	.	.	4.9	3.8	4.4	4.6	4.8
Denmark	1.4	1.5	2.0	2.4	3.1	2.9	2.8
Finland	1.2	2.0	2.3	6.0	4.3	4.3	3.5
France	2.1	2.3	2.1	3.1	3.4	2.9	2.6
Germany	2.0	1.7	1.1	1.8	0.6	1.0	1.3
Greece	0.9	1.6	2.0	4.6	3.8	3.8	.
Hungary	.	.	1.9	2.2	2.4	2.4	.
Ireland	1.4	1.7	2.8	3.8	3.6	3.7	3.9
Italy	2.4	3.9	3.6	2.9	3.6	3.2	2.8
Luxemburg	6.6	6.5	7.5	7.2	7.5	8.6	7.9
Netherlands	2.9	3.2	3.1	4.2	4.1	3.5	3.0
Poland	.	.	2.8	2.5	1.9	2.0	.
Portugal	.	2.3	2.5	4.1	3.6	.	.
Slovak Republic	.	.	.	2.8	2.2	2.7	.
Spain	1.2	2.9	1.8	3.0	2.8	3.2	3.1
Sweden	1.2	1.7	2.8	4.0	2.9	2.4	2.0
United Kingdom	2.9	3.6	2.8	3.6	3.5	2.9	2.8
EU 15	2.1	2.6	2.7	3.8	3.6	3.4	.
EU 19	2.1	2.6	2.7	3.8	3.6	3.4	.
Japan	5.5	6.5	4.2	3.6	3.5	3.1	.
United States	2.8	2.4	2.9	2.6	1.9	1.8	2.0

Source: OECD (2004: 73; 2005b); own calculations.

¹ Cf. Sachverständigenrat (2004, text number 770). If tax competition would have been the driving force behind the development, it would have proved to be a blossom. Lower tax rates and a broader tax base are advantageous because the welfare cost of taxation is smaller under such circumstances.

However, it is argued that the figures on tax revenues in single countries eventually conceal what is going on with respect to tax competition. The figures on the tax ratios might be distorted because of an increased share of corporate profits in nominal GDP (i.e. a change in the income distribution in favor of capital income, esp. corporate profits). Cyclical influences could be one reason for such distortions; changes of the structure of firms with respect to the legal status could be another one. In addition, transfer price setting by multinationals (in such a way that taxable profits increase in low tax countries) might have prevented a decline of the ratio of corporate income tax revenues to GDP in low tax countries—a decline that would have resulted from tax rate cuts otherwise.

2. Taxes on Corporate Income and the Output Gap

In order to investigate if the degree of capacity utilization influences the ratio of taxes on corporate income to GDP, the situation for each country has to be analyzed separately. The reason is that the level of the tax ratio varies significantly between countries because of a different structure of the firms with respect to the legal status or because of a different structure of the system of taxing capital income.

For the period 1990–2003, it turns out that the output gap did not influence the corporate income tax ratio in most of the countries. For Germany, the ratio was 1.8 percent in 2000 and 1.3 percent in 2003 while the output gap was 1.6 resp. –2.2 percent (Table 3). In France, the corporate income tax ratio hardly changed in relation to changes of the output gap. In Italy, the tax ratio also did not respond to the business cycle. The situation is more or less the same in other countries (Figures 1, 2, 3 and 4).

In general, the ratio of the corporate income tax revenues to nominal GDP does not depend on the output gap which might reflect cyclical factors leading to

a change of the share of profits in GDP. The tax ratios are nearly unaffected by the degree of capacity utilization measured by the output gap calculated according to the OECD procedure.

Table 3:

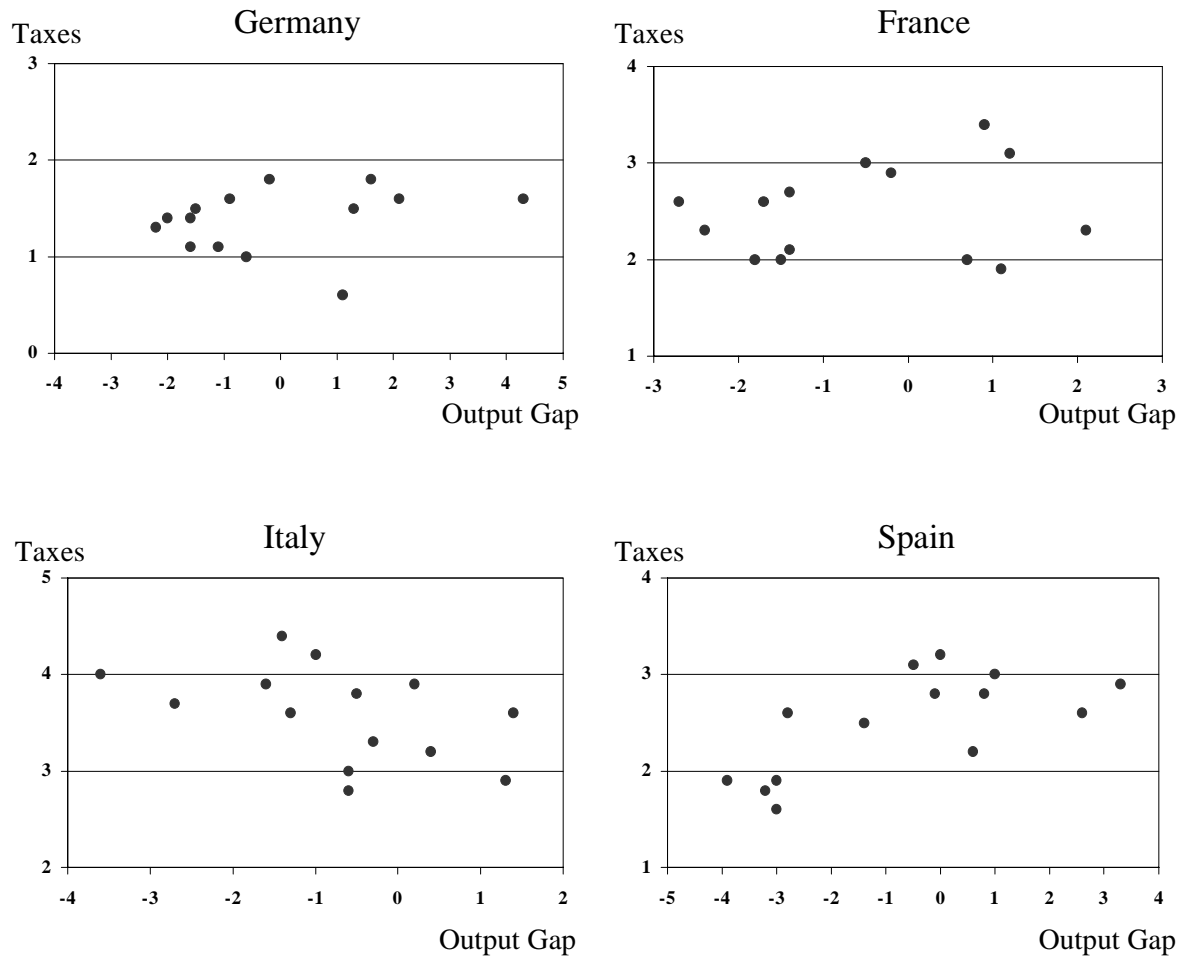
Output Gap in Selected Countries (percent)

	1990	1995	2000	2001	2002	2003
Austria	1.5	-0.8	2.7	1.0	-0.3	-1.8
Belgium	1.4	-1.6	2.0	0.8	-0.5	-1.2
Denmark	-0.8	-1.1	1.4	1.0	0.0	-1.5
Finland	3.4	-8.5	1.7	-0.3	-0.8	-1.1
France	2.1	-1.4	1.2	0.9	-0.2	-1.7
Germany	4.3	-1.1	1.6	1.1	-0.6	-2.2
Greece	0.1	-3.5	0.1	0.7	0.8	1.1
Ireland	3.6	-3.7	4.4	3.2	2.3	0.4
Italy	0.2	-1.3	1.3	1.4	0.4	-0.6
Luxemburg
Netherlands	2.7	-0.2	4.2	2.7	0.4	-2.5
Portugal	3.3	-1.6	3.0	1.5	-0.7	-3.7
Spain	3.3	-3.2	1.0	0.8	0.0	-0.5
Sweden	-0.2	-3.4	2.2	0.3	-0.3	-1.1
United Kingdom	1.8	-1.2	0.9	0.7	-0.1	-0.3
Euro area	2.7	-1.5	1.7	1.2	-0.1	-1.5
Japan	4.1	-0.3	-1.0	-2.3	-4.1	-3.3
United States	0.5	-1.7	1.1	-1.3	-2.1	-1.9

Source: OECD (2005a).

Figure 1:

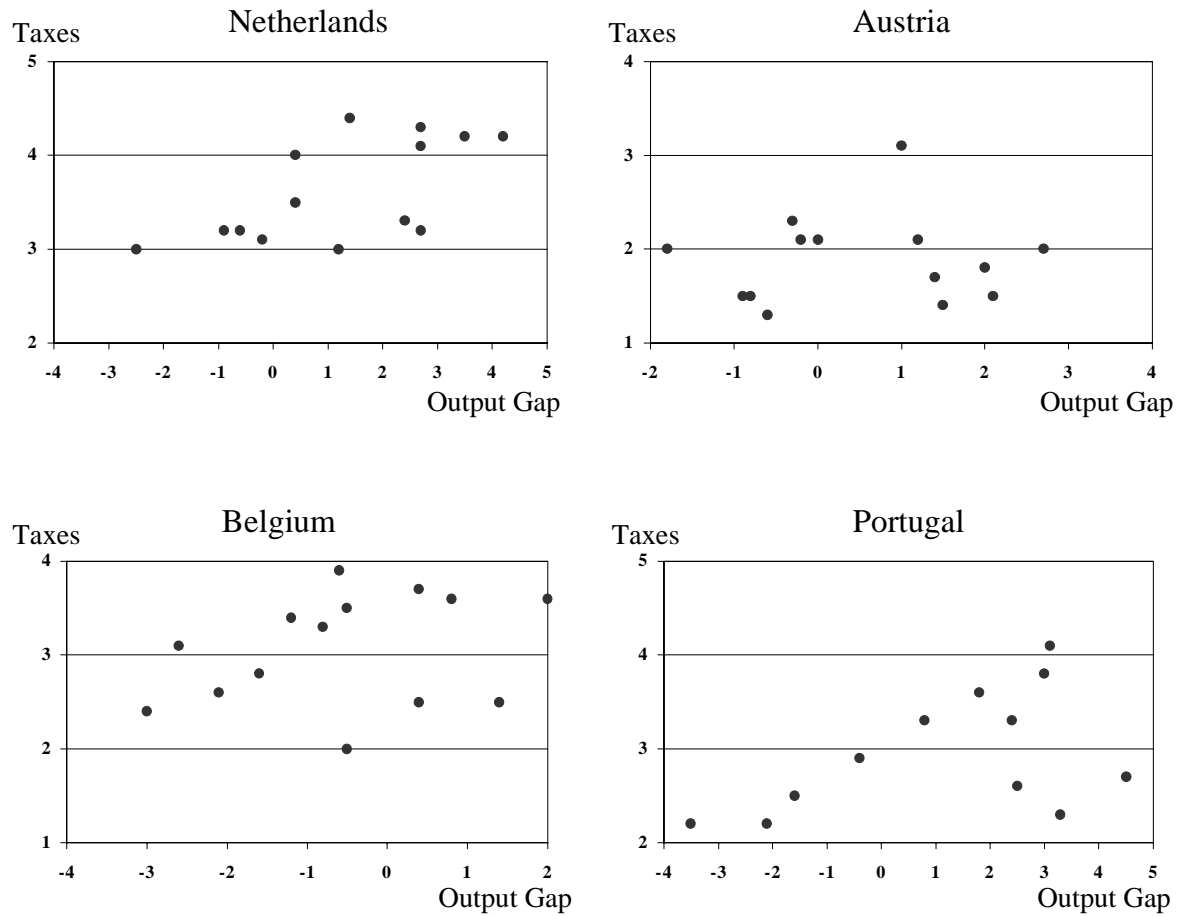
Taxes on Corporate Income (percent of GDP) and Output Gap (percent), 1990–2003



Source: OECD (2004, 2005a, 2005b).

Figure 2:

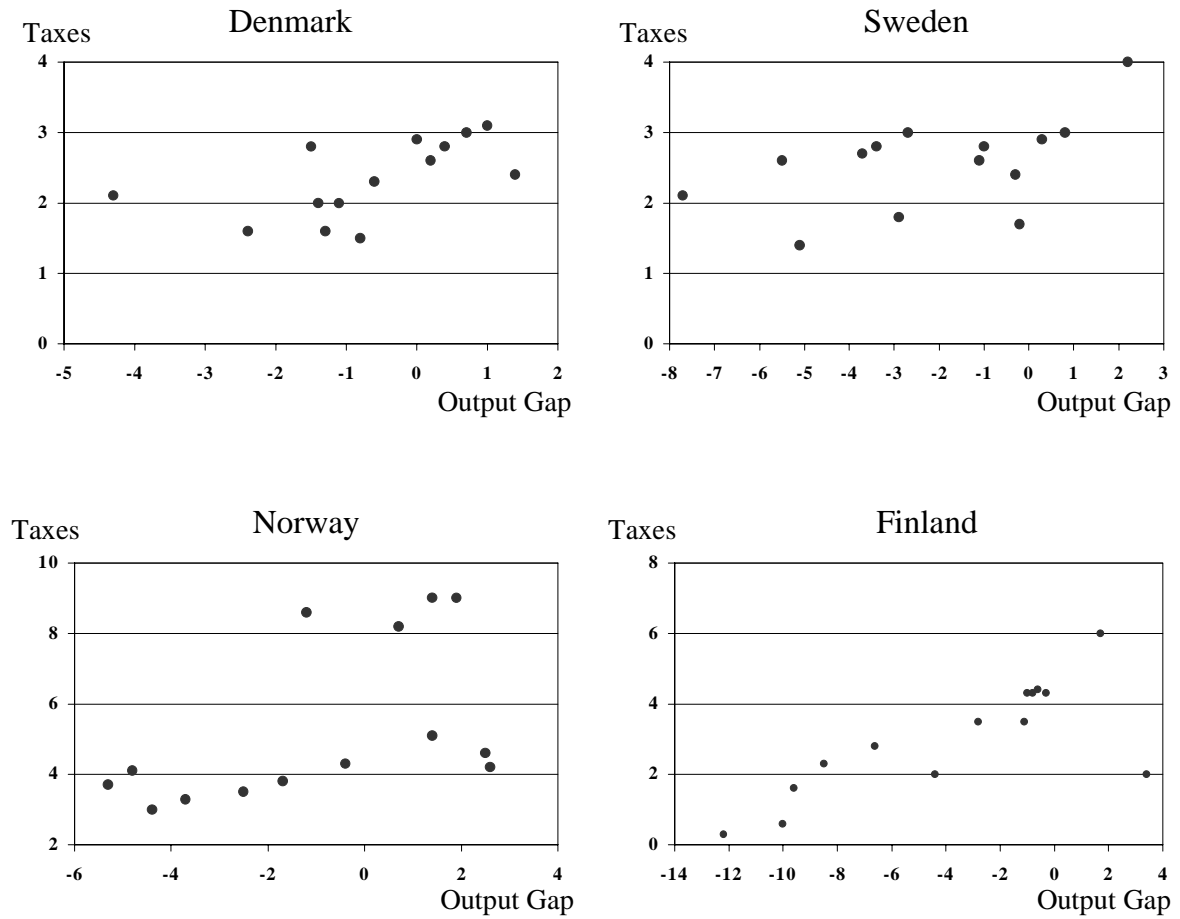
Taxes on Corporate Income (percent of GDP) and Output Gap (percent), 1990–2003



Source: OECD (2004, 2005a, 2005b).

Figure 3:

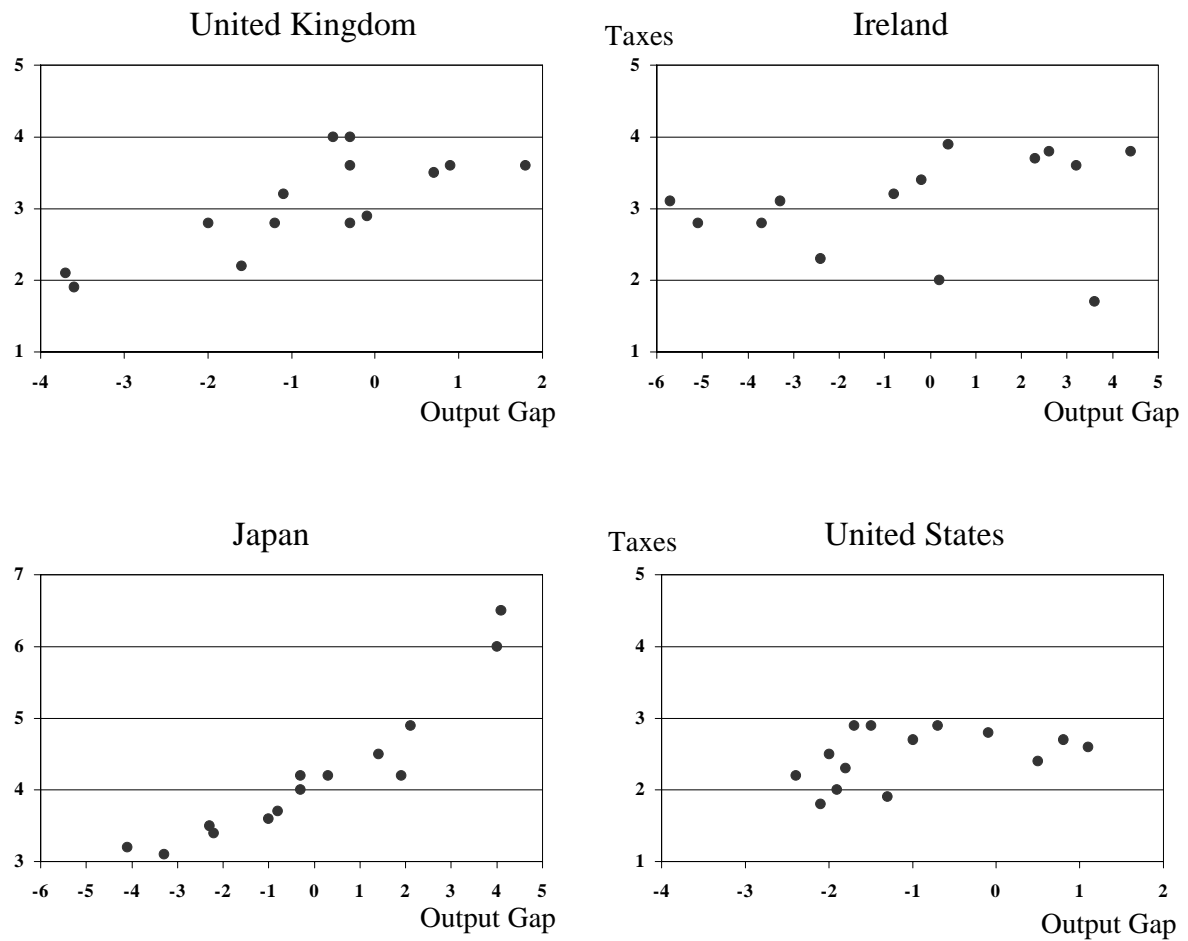
Taxes on Corporate Income (percent of GDP) and Output Gap (percent), 1990–2003



Source: OECD (2004, 2005a, 2005b).

Figure 4:

Taxes on Corporate Income (percent of GDP) and Output Gap (percent), 1990–2003



Source: OECD (2004, 2005a, 2005b).

3. Taxes on Corporate Income and the Legal Status of Firms

In principle, the figures on the tax ratios can be influenced by changes of the structure of firms with respect to their legal status. Such an effect might be significant in Germany. Here, corporations became much more important in the course of the nineties and thereafter. This should have led to a rise of the tax ratio. However, there is a tendency for taxes on corporate income to decline somewhat relative to GDP. This might be interpreted as a erosion of tax revenues as a result of tax competition.

However, the figures for 2001 and 2002 are low due to the reform of the corporate income tax in 2001. This reform included huge tax rebates for firms distributing profits which had been retained and accumulated under the old system of taxing corporations; there were significant negative effects on the revenues in 2001 and 2002. The ratio of the corporate income tax revenues to GDP rose in 2003; according to own calculations it continued to rise in 2004.

4. Profit Shifting as a Result of Tax Competition?

Transfer price setting by multinationals (in such a way that taxable profits increase in low tax countries and decline in other countries) can prevent a decline of the ratio of taxes on corporate income to GDP in low tax countries—a decline that would have resulted from tax rate cuts otherwise. If “profit shifting”—defined in this way—happens, the ratio for high tax rate countries decreases whereas the ratio for low tax rate countries rises; the overall ratio for regions, e.g. for the EU, goes down.

The hypothesis that profits are shifted is not testable in an easy way. Support by tax accountants is needed facing the complexity of taxation in a worldwide environment. Lacking such support, only the overall effect on high and low tax rate countries are looked upon. It turns out that there is hardly evidence for profit shifting within the EU. The overall ratio for the EU declined only

marginally after 2000. In addition, one should not overestimate the firms' abilities to use transfer price setting as a tax optimization measure.

5. Conclusion

According to the figures for the period ending in 2003, it can be concluded that the governments' ability to finance expenditures was not eroded by the large cuts of corporate income tax rates in the EU or in other selected countries. The broadening of the tax bases compensated the effects of tax rate cuts, at least until the beginning of the century.

C. Tax Competition and Personal Income Taxes

It is argued that tax competition leads to a shift from corporate income taxes to personal income taxes. However, there is no evidence for such a shift. The personal income tax component of the income taxes did not move very much in the single countries and in the EU as a whole in the recent decades (Table 4).

In addition, the ratio of the contributions to social security to GDP has not moved in a clear direction since 1990 (Table 5). The fear that the tax burden is shifted towards labor as an immobile factor of production does not seem to be justified.²

² An increase of the ratio would have been harmful for the attempts to reduce unemployment in the EU by lowering labor costs. However, if it had come true, the correct response of economic policy to a rise of the rate of contributions to social security would not be to impede tax competition but to reform the system of social security.

Table 4:

Taxes on Personal Income in Relation to GDP in Selected Countries (percent)

	1980	1990	1995	2000	2001	2002
Austria	9.2	8.5	8.7	9.7	10.3	10.0
Belgium	15.4	13.8	14.6	14.3	14.7	14.7
Czech Republic	.	.	5.1	5.0	4.9	5.0
Denmark	22.9	24.8	26.7	26.1	26.4	26.0
Finland	13.0	15.4	14.3	14.7	14.5	14.3
France	4.7	4.6	5.0	8.1	7.9	7.6
Germany	11.1	9.8	10.5	9.6	10.0	9.0
Greece	3.6	4.1	3.9	5.6	5.1	5.0
Hungary	.	.	6.8	7.2	7.6	7.8
Ireland	10.0	10.7	10.1	9.6	8.9	7.4
Italy	7.0	10.2	10.7	10.8	11.0	10.9
Luxemburg	11.0	9.6	9.2	7.4	7.2	6.8
Netherlands	11.4	10.6	7.9	6.2	6.5	7.2
Poland	.	.	8.5	7.5	7.5	7.5
Portugal	.	4.6	5.9	6.0	6.0	.
Slovak Republic	.	.	.	3.4	3.4	3.4
Spain	4.7	7.2	7.7	6.6	6.9	6.9
Sweden	19.4	20.5	16.2	17.6	16.5	15.3
United Kingdom	10.3	10.7	10.0	11.0	11.2	10.6
EU 15	11.0	11.0	10.8	10.9	10.9	10.8
EU 19	11.0	11.0	10.1	9.8	9.8	9.7
Japan	6.2	8.1	6.0	5.6	5.5	4.7
United States	10.3	10.1	10.0	12.5	12.3	10.0

Source: OECD (2004: 72).

Table 5:

Contributions to Social Security in Relation to GDP in Selected Countries (percent)

	1980	1990	1995	2000	2001	2002	2003
Austria	12.3	13.3	15.1	14.8	14.8	14.7	14.6
Belgium	12.3	14.3	14.7	14.1	14.4	14.7	14.5
Czech Republic	.	.	16.5	17.2	16.9	17.4	17.3
Denmark	0.8	1.4	1.5	2.3	2.2	1.7	1.7
Finland	8.4	11.4	14.2	12.1	12.4	12.2	12.0
France	17.4	18.9	18.6	16.2	16.2	16.3	16.7
Germany	12.9	13.4	14.9	14.8	14.6	14.5	14.7
Greece	7.9	8.9	10.5	11.8	11.7	11.8	.
Hungary	.	.	15.1	11.4	11.6	11.6	.
Ireland	4.5	5.0	4.7	4.3	4.3	4.3	4.5
Italy	11.6	12.8	13.0	12.4	12.3	12.5	12.9
Luxemburg	11.7	11.0	11.2	9.9	10.9	11.2	11.5
Netherlands	16.6	16.0	17.6	16.0	14.4	13.9	14.1
Poland	.	.	11.3	9.5	9.6	9.5	.
Portugal	7.1	7.9	10.1	10.9	11.0	9.2	.
Slovak Republic	.	.	.	14.0	14.1	14.3	.
Spain	11.2	11.8	11.9	12.3	12.5	12.6	12.6
Sweden	13.6	14.5	13.4	14.8	15.3	15.1	14.7
United Kingdom	5.9	6.2	6.2	6.3	6.3	6.1	6.4
EU 15	10.3	11.1	11.8	11.5	11.6	11.4	.
EU 19	10.3	11.1	12.2	11.8	11.9	11.8	.
Japan	7.4	8.7	10.1	9.9	10.3	9.9	.
United States	5.8	6.9	6.9	6.9	7.0	6.9	6.8

Source: OECD (2004: 74, 98).

D. The Development of Total Tax Revenues

The overall tax ratio (total tax revenues in relation to GDP) increased in the EU until 2000 (Table 6). It declined somewhat in 2001 and 2002.³ However, it cannot be concluded that there is a significant downward movement of the level of taxation in the EU or in specific EU countries. It is the EU for which tax

³ There are not yet data for 2003 or even 2004.

harmonization is strongly recommended by many observers. If a downward movement had really set in, it would not be at all clear that it had to do with tax competition.

Table 6:

Total Tax Revenues in Relation to GDP (percent)

	1980	1990	1995	2000	2001	2002
Austria	39.8	40.4	41.6	43.4	45.2	44.0
Belgium	42.4	43.2	44.8	45.7	45.9	46.4
Czech Republic	.	.	39.8	39.0	38.5	39.3
Denmark	43.9	47.1	49.4	49.6	49.9	48.9
Finland	36.2	44.3	46.0	48.0	46.0	45.9
France	40.6	43.0	43.9	45.2	44.9	44.0
Germany	37.5	35.7	38.2	37.8	36.8	36.0
Greece	24.2	29.3	32.4	38.2	36.6	35.9
Hungary	.	.	42.4	39.0	39.0	38.3
Ireland	31.4	33.5	32.8	32.2	30.1	28.4
Italy	30.4	38.9	41.2	43.2	43.0	42.6
Luxemburg	40.8	40.8	42.3	40.2	40.7	41.8
Netherlands	43.6	42.9	41.9	41.2	39.8	39.2
Poland	.	.	37.0	32.5	31.9	32.6
Portugal	24.1	29.2	33.6	36.4	35.6	33.9
Slovak Republic	.	.	.	34.0	31.6	33.1
Spain	23.1	33.2	32.8	35.2	35.0	35.6
Sweden	47.3	53.2	48.5	53.8	51.9	50.2
United Kingdom	35.2	36.5	35.0	37.4	37.2	35.8
EU 15	36.0	39.4	40.3	41.8	41.2	40.6
EU 19	36.0	39.4	40.2	40.6	40.0	39.6
Japan	25.3	30.2	27.8	27.1	27.4	25.8
United States	26.4	27.3	27.9	29.9	28.9	26.4

Source: OECD (2004: 67–68).

E. Summary

Corporate income tax rates declined in many countries in the recent years. However, it seems to be justified to argue that taxes on corporate income contribute to the financing of public expenditures in a more or less unchanged extent. There is no “race to the bottom”. In addition, there are no other significant changes of the structure of the income tax revenues.⁴ Measures to reduce tax competition cannot be justified by the observation that there is an erosion of the tax revenues in the EU.⁵

⁴ The data presented do not only reflect the effects of tax competition. There are other influences, too. Demographic factors or the labor market development e.g. might be important.

⁵ For a discussion of the advantages of tax competition cf. Boss et al. (2004) and Boss (1999).

F. References

- BMF (Bundesministerium der Finanzen) (2002). *Die wichtigsten Steuern im internationalen Vergleich*. Berlin.
- BMF (Bundesministerium der Finanzen) (2004). *Die wichtigsten Steuern im internationalen Vergleich*. Berlin.
- BMF (Bundesministerium der Finanzen) (various issues). *Informationsdienst zur Finanzpolitik des Auslands*. Bonn.
- Boss, A. (1999). Do We Need Tax Harmonization in the EU? Kiel Working Papers 916. Institute for World Economics, Kiel.
- Boss, A., K.-J. Gern, C.-P. Meier and J. Scheide (2004). *Mehr Wachstum in Europa durch eine Koordination der Wirtschaftspolitik?* Kieler Studie 330. Berlin: Springer.
- DATEV (various issues). *Tabellen und Informationen für den steuerlichen Berater*. Nürnberg.
- OECD (2004). *Revenue Statistics 1965–2003*. Paris.
- OECD (2005a). *Economic Outlook 76* database. Paris.
- OECD (2005b). *Revenue Statistics*. Via Internet <<http://titania.sourceoecd.org>>, accessed on July 18, 2005.
- Sachverständigenrat (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung) (2003). *Staatsfinanzen konsolidieren – Steuersystem reformieren. Jahresgutachten 2003/04*. Wiesbaden.
- Sachverständigenrat (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung) (2004). *Erfolge im Ausland – Herausforderung im Inland. Jahresgutachten 2004/05*. Wiesbaden.