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Lothar Lammersen · Robert Schwager

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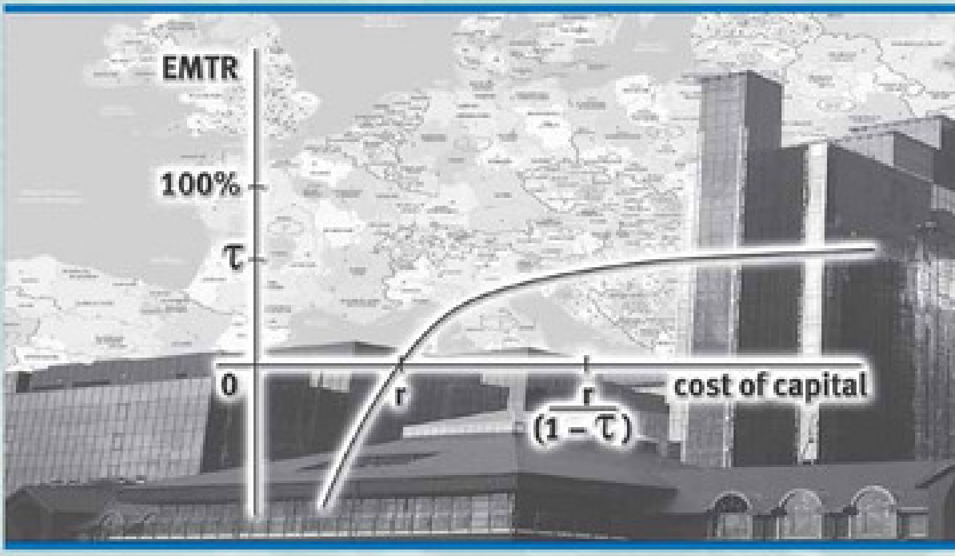
The Effective Tax Burden of Companies in European Regions



An International Comparison

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With 48 Figures
and 36 Tables

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Preface

This book is the result of a research project commissioned by the «IBC BAK International Benchmark Club»®, an initiative by BAK Basel Economics, and carried out by Zentrum für Europäische Wirtschaftsforschung (ZEW – Centre for European Economic Research), Mannheim. It contributes to the IBC's effort to evaluate and compare economic performance and location factors across European regions. The report provides the background to the headline figures presented at the International Benchmark Forum on June 11th and 12th, 2003, in Basel, as well as a large number of additional results.

This work has benefited from the help of many institutions and individuals. Above all, we are indebted to the sponsors for financing the project in times of limited fiscal resources. We also would like to thank the members of the Steering Committee of the IBC module on taxation for their enduring support. Special thanks go to Kurt Dütschler of the Swiss Federal Tax Administration who was always ready to provide information on detailed aspects of the Swiss tax system. We are grateful to Christoph Koellreuter and Martin Eichler from BAK Basel for organising and promoting research on taxation inside the IBC. Our colleagues Christina Elschner and Gerd Gutekunst, ZEW, gave many detailed and very helpful comments. Finally, we owe thanks to Ulrike Nicolaus and Monika Jackmann who provided able help in preparing the final draft of this report. Of course, all remaining errors are our sole responsibility.

Mannheim and Göttingen, June 2004
Lothar Lammersen and Robert Schwager

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List of Abbreviations

A	Austria
App.	appendix
B	Belgium
CH	Switzerland
D	Germany
DB	declining balance
DE	debt
DK	Denmark
E	Spain
EATR	effective average tax rate
Ed.	editor
Eds.	editors
e.g.	for example
EMTR	effective marginal tax rate
et al.	and others
EU	European Union
F	France
f./ff.	following
FIFO	First-In-First-Out
fig.	figure
FIN	Finland
GB	United Kingdom
GR	Greece
I	Italy
IBC	International Benchmark Club®
ICI	imposta comunale immobiliare
i.e.	that is
IR	Ireland
IRAP	imposta regionale sulle attività produttive
IRPEF	imposta sul reddito delle persone fisiche
IRPEG	imposta sul reddito delle persone giuridiche
L	Luxembourg
LIFO	Last-In-First-Out
Max	maximum
Med	median
Min	minimum
NE	new equity
NL	The Netherlands
No.	number
OECD	Organisation for Economic Co-operation and Development
p.	page
pp.	pages
P	Portugal
q.sh.	qualified shareholder
RE	retained earnings
Rk	ranking
S	Sweden
SL	straight line
sh.	shareholder
StHG	Steuerharmonisierungsgesetz
ufd	until fully depreciated
UK	United Kingdom
U.S./US	United States
ZEW	Zentrum für Europäische Wirtschaftsforschung GmbH

List of Symbols

EATR	effective average tax rate
EMTR	effective marginal tax rate
i	nominal interest rate
m^i	personal income tax rate on interest income
p	pre-tax real rate of return
$\widetilde{p}$	cost of capital
p_s	post-tax real rate of return
R	post-tax net present value
R^*	pre-tax net present value
r	real interest rate
s	marginal post-tax rate of return
w	tax wedge
w_c	corporate tax wedge
w_p	personal tax wedge
π	rate of inflation
τ	combined statutory corporate tax rate

Executive Summary

Companies pay taxes on profits and capital. Also, under competitive labour markets for highly skilled employees, companies have to compensate these employees for international differences in labour tax burdens. Both elements thus constitute a tax burden on companies and influence the attractiveness of a particular region as a location for investment.

This study presents estimates of the effective tax burden of companies located in 143 regions of eight European countries and the United States. It accompanies a study on the effective tax burden on highly qualified employees, which follows the same spirit.

The study was prepared for the «IBC BAK International Benchmark Club»® of BAK Basel Economics, which evaluates and compares economic performance and location factors across European regions. The headline figures of this report represent the IBC Taxation Index (see table 0.1.). This Index will be updated regularly in the future so as to illustrate trends in the effective tax burdens of companies and on highly qualified employees. The scope of the study is threefold:

- First, due to a great number of relevant tax rules, effective tax burdens may differ significantly from statutory tax burdens. Therefore, the analysis comprises meaningful quantitative estimates of effective tax burdens. These estimates take into account the most important rules of all the relevant taxes. The main part of the study focuses on taxation at the corporate level. A supplementary chapter also considers shareholder taxation.
- Second, taxation is considered to be an important location factor. In order to compare the attractiveness of different locations from a tax perspective, the study compares effective tax burdens inter-regionally and internationally.
- Third, an effective tax rate is always the result of each particular case. To identify the general context, and to find out the most relevant tax provisions in different economic constellations, the so-called tax drivers, the study examines the impact of important tax provisions on effective tax burdens.

In order to quantify and compare effective company tax burdens, we calculate effective average tax rates (EATRs), effective marginal tax rates (EMTRs), and costs of capital based on the approach developed by Devereux and Griffith. This approach builds on and extends the approach by King and Fullerton, which Gutekunst and Schwager (2002) applied for the study on company taxation presented at the International Benchmark Forum in 2001. Despite its novelty, a number of international tax burden comparisons have already used the approach by Devereux and Griffith. These comparisons include studies by the Bertelsmann-Stiftung, the European Commission, and the German Council of Economic Experts (*Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung*).

In the base case, which defines the IBC Taxation Index for companies, we refer to a corporation in the manufacturing sector. That corporation undertakes a particular mix of investments and uses a particular combination of sources of finance. The types of investment considered are intangibles, industrial buildings, machinery, financial assets, and inventories. The sources of finance are new equity capital, retained earnings, and debt. We vary the parameters defining the base case to check the sensitivity of the results.

The tax rates computed for each region comprise taxes levied at the national, the state and the municipal level. In compliance with the structure of the International Benchmark Report, the study uses as geographical units all nine Austrian states, 19 French departments, 63 German labour office districts, 33 provinces of Northern Italy, four Dutch cities, twelve cantons in Switzerland, and one municipality of each Ireland, Massachusetts (United States), and the United Kingdom. In order to have a measure for the taxes levied by municipalities, we choose one major city in each of these geographical units.

The main part of the study focuses on the effective tax burden at the corporate level, which is especially relevant for the choice of location of international corporations. Therefore, taxes on corporate income and capital are included. The provided estimates include the corporation tax with surcharges, other profit related taxes, real estate taxes, and specific taxes based on capital. The calculations consider the statutory tax rates of these taxes as well as the interaction of different kinds of taxes and the most important rules for the definition of the tax base, e.g. differences in depreciation allowances and inventory valuation.

We express the headline results and thus the IBC Taxation Index for companies by EATRs. EATRs indicate the effective tax burden on a very profitable investment; they are an important indicator for the attractiveness of a location for international companies.

The results indicate that there is considerable dispersion of the EATRs between the countries of the Extended Alpine Space (see table 0.1. and, in more detail, table 5.1., p. 54 f.). The EATRs range over 23.5 percentage points, from 13.8 per cent in Zug, Switzerland, to 37.3 per cent in Frankfurt, Germany. Whereas Ireland and Switzerland display comparatively low effective tax burdens, locations in France, Germany, and the United States show the highest EATRs. This finding suggests that the attractiveness of particular locations from a tax perspective differs dramatically, with Switzerland and Ireland as especially attractive countries.

Statutory profit tax rates are deemed important tax drivers for profitable investments. However, tax burdens always depend on the individual characteristics of each investment, thus special rules regarding the tax base or non-profit taxes may be very relevant in particular cases. French corporations carry an extra tax burden in form of the French trade tax, the *taxe professionnelle*, whereas Italian corporations take advantage of a comparatively favourable definition of the corporate tax base. Although the combined statutory profit tax rate in Italy (38.25 per cent) is significantly higher than the one in France (35.43 per cent), effective tax burdens are lower in Italy than in France. In Austria, corporations can take advantage of a dual income tax regime that provides a reduced tax rate on part of the profits if equity is added to the company. Furthermore, Austria grants an incremental investment tax credit (*Investitionszuwachsprämie*) for additional investments. If Austrian companies can take full advantage of these measures, they reduce effective average tax burdens by about four percentage points.

The study examines not only the international variation of effective tax burdens, but also inter-regional differences within each country. There is great inter-regional variation among the assessed Swiss cantons, with the cantons of Zug, Nidwalden, and Schwyz ahead of the others. Whereas the EATR for Zug is 13.8 per cent, it is 22.8 per cent for Basel-Landschaft. Moderate inter-regional variation exists in Germany, where the levels of the trade tax (*Gewerbesteuer*) and the real estate tax (*Grundsteuer*) vary between municipalities. Effective tax burdens range from 32.9 per cent in Weilheim to 37.3 per cent in Frankfurt. We find a smaller degree of inter-regional variation in France (32.1 per cent, Paris, to 35.7 per cent, Isère). In Austria (30.4 per cent), Italy (31.6 per cent to 31.8 per cent), and the Netherlands (30.2 per cent to 30.3 per cent), inter-regional variation is not, or almost not, relevant, as regional and local governments do not have autonomy over important corporate taxes, or do not make use of it. In general, however, the study finds that – with the exception of Switzerland – national tax legislation dominates the size of effective tax burdens.

We express a second set of results in terms of the EMTR. Although EMTRs are less relevant than EATRs for international location decisions, these figures provide some useful supplementary information on effective tax burdens of companies. In contrast to EATRs, EMTRs indicate the effective tax burden on an investment that is marginal in an economic sense, i.e. an investment that earns a net present value of zero. Such an investment limits the profitable investment opportunities of a company. The lower the EMTR at the corporate level, the larger the theoretically optimal level of investment. Moreover, a firm that faces a lower EMTR on its investment is deemed to have a competitive advantage over its competitors who face greater EMTRs.

The dispersion of effective marginal tax rates between the assessed regions is even greater than the dispersion of effective average tax rates. It ranges over almost 33 percentage points from 3.3 per cent in Austria in the case where the incentives fully apply up to 36.2 per cent in Isère, France (see table C.1., pp. 119 ff.). These results suggest that the optimal level of investment and the competitiveness of companies located in different regions also differ dramatically from a tax perspective. The impact of local and regional taxes – which are non-profit taxes in most cases – on the EMTRs is generally stronger than their impact on EATRs. There is also a strong impact of targeted measures like investment tax credits or the dual income tax. Therefore, Austrian companies that can take full advantage of such measures display a very low EMTR. On the other side, there is a disadvantage for companies that have to pay substantial non-profit taxes. Non-profit taxes weigh especially heavily on investments with a low rate of return. Consequently, the attractiveness of France as expressed by the EMTR is even lower than the one expressed by the EATR.

The headline figures of the study present effective tax burdens as of 2003. For all regions, we also calculate measures of the effective tax burden for the tax rules as effective in 2001 and 2002. Among those countries that display comparatively high effective tax burdens, Germany temporarily increased tax burdens in 2003, whereas France has reduced its tax burden in 2002, thus closing the gap that previously existed between both countries. In addition, there were significant changes in the Italian tax system during that period. At the lower end of the scale, Ireland has slightly increased the tax burden for manufacturing companies, thereby closing the gap between Ireland and the most favourable Swiss location, the canton of Zug.

Sensitivity analyses reveal some interesting mechanics of the impact of taxation on effective tax burdens. E.g., the impact of French non-profit taxes heavily depends on the relative importance of fixed assets in the investment mix. French regions significantly improve their position compared with German regions when corporations are considered which hardly invest in buildings and machinery, as e.g. in the service sector. However, although some notable changes in the rankings occur, these changes are not strong enough to challenge the main conclusions from the base case fundamentally. With respect to EMTRs, the impact of the economic assumptions on the ranking is stronger than with respect to EATRs: Compared with the weight of the statutory profit tax rate, the weight of various other tax drivers increases. Specific tax rules, e.g. the generosity of depreciation allowances, play a more prominent role, and the particular features of each individual investment become more important in determining the most tax efficient location.

A supplementary chapter also considers shareholder taxation, i.e. the personal income tax on dividends, interest payments, and capital gains on the disposal of shares, the surcharges on the personal income tax, and individual net wealth taxes on shareholding and lending. We assume that the owners of a company are domestic resident shareholders who reside at the location of the company. The objective of this investigation is to evaluate the impact of shareholder taxation on the effective tax burdens presented above. The estimates provide valuable insights into the distortionary effects of domestic personal tax systems, especially with respect to financing decisions. Their meaning for the attractiveness of a location for an investment is very limited, however.

In that constellation, effective marginal tax burdens are much more important than effective average tax rates. Consequently, we focus on the calculation of effective marginal tax burdens, which we express in terms of the cost of capital and the EMTR. In this setting, costs of capital are indicators for the optimal level of domestic investment and the competitiveness of companies. EMTRs indicate the proportion of the pre-tax rate of return of the marginal investment that is taken by taxation; they mix information on the distortion of investment and financing decisions and information on the distortion of the saving decision of households; therefore, they have to be interpreted with great care.

Our results suggest that effective tax burdens at the overall level heavily depend on the tax status of the relevant shareholder. Whereas for zero-rate shareholders there is often a bias in favour of debt financing, top-rate shareholders frequently prefer to finance an investment with retained earnings. For zero-rate shareholders, the effective tax burden at the corporate level remains the single most important factor in determining the size of the tax burden. For top-rate shareholders, also the tax treatment of capital gains and interest payments is very important in our calculations.

For all types of shareholders, there is a considerable correlation between effective marginal tax rates at the corporate level and at the overall level. Although we cannot conclude straightforwardly from these results that locations that impose a low level of corporate taxes also impose a low level of personal taxes, we find that in most cases personal taxes on capital income at least do not compensate the tax burdens at the corporate level. However, there are substantial exceptions to this finding: Especially those Swiss cantons which impose relatively high top personal income tax and net wealth tax rates display comparatively low corporate-level EMTRs but high overall-level EMTRs in an international comparison.

Another way to explore the correlation between corporate and personal tax burdens is to compare the headline figures of this study with those from the aforementioned study on the taxation of highly qualified employees, which are expressed in terms of the IBC Taxation Index for highly qualified employees. Due to a number of conceptual differences, we cannot compare the IBC Taxation Index for companies directly with the IBC Taxation Index for highly qualified employees. Especially, both concepts of effective tax burdens do not permit straightforward conclusions on distributional issues. Nevertheless, we can compare the rankings and the relative differences in effective tax burdens between both studies.

With the exception of Switzerland, the tax burden on highly skilled employees does not – or almost not – vary at the regional level in most countries. Therefore, the IBC Taxation Index for highly skilled employees has been calculated on a regional basis for the twelve Swiss cantons and on a national basis for the eight other countries included in the present study, adding up to twenty different geographical entities. Based on the situation in 2003, fig. 0.1. combines those results with the IBC Taxation Index for companies. In addition to the results for Switzerland, that figure includes the median regional values for those countries where the present study assesses more than one region. To make sure that one can compare the results, we divide the effective tax burdens by the average of the included Swiss cantons. By definition, this average corresponds to an indexed effective tax burden of 100. We add a trend line which is based on the 20 observations included in order to illustrate the correlation between the tax burden on capital and on highly skilled employees. Table 0.1. finally compares the headline results of both studies. To give an impression on the inter-regional variation of company tax burdens, that table additionally presents the figures for the region that displays the lowest tax burden and the region that displays the highest tax burden out of all the regions that have been assessed for each country.

Indeed, it is striking that effective tax burdens appear to be closely correlated for most locations. This suggests that countries that impose large corporate tax burdens usually also impose large tax burdens on comparatively high personal incomes. A notable exception to these findings is the United States (Massachusetts). There, the tax burden on companies is among the highest of all regions considered, while qualified employees are taxed quite moderately. On the other hand,