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Christoph Spengel
Andreas Oestreicher

Common Corporate Tax Base in the EU

Impact on the Size of Tax Bases and
Effective Tax Burdens

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Wirtschaftsforschung GmbH



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Preface

Our book presents a report which was prepared in 2007 and 2008 for the Taxation and Customs Union Directorate General of the European Commission, under contract no. TAXUD-2007 DE325.

The results are intended to serve the evaluation of the potential tax consequences arising from the introduction of a harmonised tax base for EU-resident companies, as contemplated by the European Commission. A harmonised tax base or common corporate tax base can help to eliminate the most important tax obstacles to cross-border EU-wide activities (compliance costs, denial of group wide consolidation of profits and losses, transfer pricing problems and double taxation caused by cross-border re-organisation and conflicting taxing rights) stemming from the great diversity of the Member States' tax systems.

A Common Corporate Tax Base (CCTB) as a policy option would replace the current 27 different tax codes for the calculation of taxable income across EU Member States with a single and common set of corresponding tax rules. The principle aim of the report is to provide an analysis of the consequences which an adoption of a CCTB would have on the size of the corporate tax bases and tax burden of EU companies located in each of the 27 Member States using the model of the "European Tax Analyzer". As the concept of the CCTB is narrower compared to the concept of a Common Consolidated Corporate Tax Base (CCCTB) which in addition takes into account consolidation, cross-border loss compensation and allocation of the tax bases to different Member States, the latter three elements of a CCCTB, are not addressed in this report.

On March 16th 2011, the European Commission published a proposal for a Council Directive on a Common Consolidated Corporate Tax Base (CCCTB). The findings of this report are included in the impact assessment to the proposal for the Council Directive. The permission to publish this report was granted in April 2011. Nevertheless, we explicitly state that the opinions expressed in this report are our own and do not represent the Commission's official position.

The report was carried out jointly by the ZEW, the University of Göttingen, and the University of Mannheim. Especially important roles were played by *Dr. Timo Meister, Christof Ernst, Katharina Finke and Michael Grünewald* who contributed to the project by supporting the quantitative parts and preparing the report.

Reinald Koch and *Jens Prassel* made further substantial contributions with respect to the statistical analyses and related elements of the work. In addition we gratefully acknowledge the excellent help and advice of *Dr. Christina Elschner*.

Mannheim and Göttingen, April 2011

Christoph Spengel and Andreas Oestreicher

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Executive Summary

Introduction

EU companies face many obstacles in their cross-border activities as a result of the various corporate tax systems operated in different member states. These tax obstacles include high compliance costs, the lack of cross-border loss offset provisions and the risk of double taxation due to conflicting rights between tax jurisdictions. To address these problems, the European Commission envisages putting forward a proposal for a tax reform that would improve the efficiency and simplicity of corporate income tax systems across the EU. The most comprehensive approach would be a Common Consolidated Corporate Tax Base (CCCTB), encompassing all elements of cross-border consolidation and loss compensation. A less far reaching approach – the Common Corporate Tax Base (CCTB) – covers all other non consolidation and non loss-compensation related provisions defining the domestic tax bases of EU companies.

Purpose and Structure of the Report

This report assesses the impact of a CCTB on the size of the corporate tax bases of EU companies. The results of the report will help to evaluate the economic consequences of the introduction of a harmonised set of tax accounting rules for EU-based companies, as promoted by the European Commission and related Working Groups. The proposals for a CCTB covered in this report include the following elements: (A) depreciation on intangibles, machinery, buildings, furniture and fixture, (B) simplified valuation of inventories, (C) determination of production costs for stocks, (D) treatment of costs for R&D as part of production costs, (E) provisions for future pension payments, (F) provisions for legal obligations (e.g. warranty claims), (7) avoidance of double taxation regarding dividend income, and (G) loss relief. While all proposed elements of a CCTB could be applied separately or simultaneously (Option I), the idea of a CCTB is clearly based on a simultaneous application of all eight elements in all 27 member states.

The European Tax Analyzer was used to produce estimates on the impact that a CCTB would have on the size of corporate tax bases. The European Tax Analyzer uses a computer-based model-firm approach for the computation and comparison of international company tax burdens. The estimates on both corporate tax base sizes and effective average tax burdens are derived by simulating the growth of a

corporation over a ten year period. The study looks first at the effects of a CCTB on two different model firms: (1) an average EU-27 large corporation and (2) an average EU-27 small and medium-sized corporation (SME). The analysis is based on tax regulations as they stood in the year 2006 and takes into account the CCTB options specified by the Commission's Steering Group. In a second step, the effects of alternate assumptions concerning economic data on the model companies are examined. To this end, various sensitivity analyses as well as computations for model companies from different economic sectors and geographical regions (EU-15/EU-12) are presented. Finally, in the last section, the effects of major tax reforms in five member states (Germany, France, Italy, the Netherlands and Spain) during 2006 and 2008 are explored.

Results for the Benchmark Case Scenarios

Our calculations show that with the introduction of a CCTB, the tax base of the EU-27 large model company would increase on average by 6.20% (see [Table 1](#)).

Table 1: Changes in the value of the tax base in case of a CCTB (large company)

	National GAAP		CCTB Options (all)		Deviation in %	Rank
	Future Value Tax Base in € Millions	Rank	Future Value Tax Base in € Millions	Rank		
AT	81.19	5	86.02	5	5.9	0
BE	78.55	4	80.93	4	3.0	0
BG	94.64	14	107.00	27	13.1	-13
CY	104.98	27	97.97	13	-6.7	14
CZ	95.97	21	105.51	24	9.9	-3
DE	74.05	3	77.58	3	4.8	0
DK	91.36	8	94.81	8	3.8	0
EE	103.22	26	105.90	26	2.6	0
ES	85.05	6	88.98	6	4.6	0
FI	95.06	17	104.03	18	9.4	-1
FR	55.43	2	60.86	2	9.8	0
GR	95.90	20	104.65	21	9.1	-1
HU	41.70	1	46.82	1	12.3	0
IE	101.06	25	99.50	14	-1.5	11
IT	94.72	16	103.01	17	8.8	-1
LT	93.70	12	104.08	19	11.1	-7
LU	93.42	9	96.92	10	3.7	-1
LV	93.84	13	104.44	20	11.3	-7
MT	98.18	24	101.95	16	3.8	8
NL	95.66	19	97.80	12	2.2	7
PL	97.46	23	104.95	23	7.7	0
PT	94.67	15	104.67	22	10.6	-7
RO	95.16	18	99.86	15	4.9	3
SE	93.60	11	97.69	11	4.4	0
SK	96.26	22	105.69	25	9.8	-3
SL	89.26	7	96.91	9	8.6	-2
UK	93.45	10	93.67	7	0.2	3
Ø	89.91		95.27		6.20	

On a country-by-country basis, the change in the tax base varies between 13.1% in Bulgaria and -6.7% in Cyprus. Countries affected most include Hungary, Latvia, Lithuania and Portugal. Aside from Cyprus, Ireland is the only country that registers a decline in the tax base (-1.5%).

Of all eight CCTB options, common depreciation rules have the greatest impact on the size of the tax base. Rules concerning future warranty liabilities rank second in significance. A relatively minor impact, by contrast, is exerted by common rules for the determination of production costs, the treatment of R&D-related costs as production costs and the proposed provisions for offsetting losses.

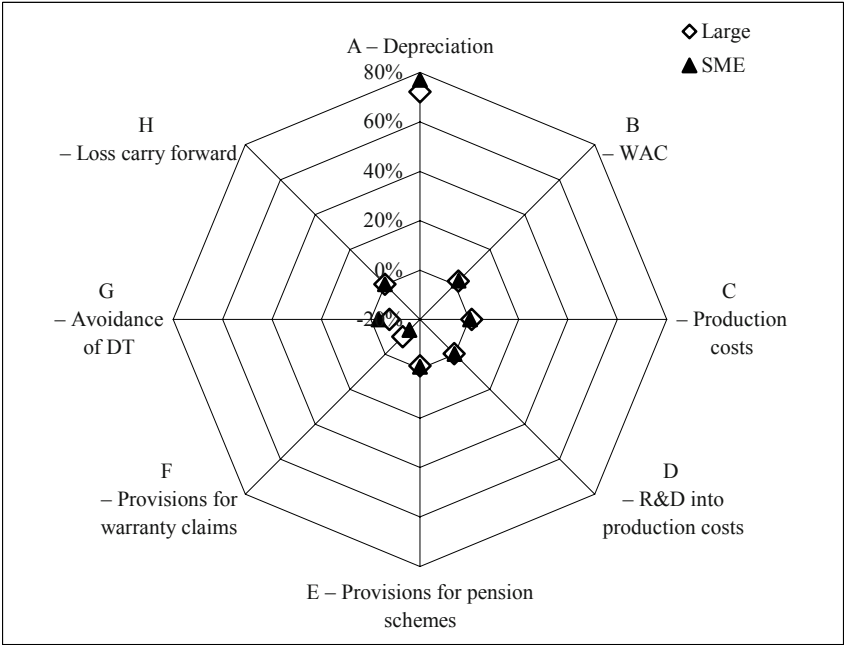
In order to gauge the effects of a CCTB on companies of different sizes, a model SME is also included in the analysis. In this case, as well, our calculations show that the proposed CCTB would increase the size of the tax base in almost all member states (see [Table 2](#)). Compared to the large model company, the EU-wide increase for the SME is slightly lower at 5.57%. Yet the considerable variation between member states remains. Hungary witnesses the largest increase (15.4%), and Cyprus the largest decline (-6.9%). In this case as well, depreciation rules have the greatest positive impact on the size of the tax base.

Table 2: Changes in the value of the tax base in case of a CCTB (SME)

	National GAAP		CCTB Options (all)			
	Future Value Tax Base in € Millions	Rank	Future Value Tax Base in € Millions	Rank	Deviation in %	Rank
AT	2.87	4	2.99	4	4.3	0
BE	2.94	5	2.99	4	1.5	1
BG	3.43	19	3.83	27	11.8	-8
CY	3.74	27	3.49	13	-6.9	14
CZ	3.45	21	3.78	25	9.5	-4
DE	2.68	3	2.76	3	2.9	0
DK	3.29	8	3.36	7	2.4	1
EE	3.60	26	3.67	17	1.8	9
ES	3.07	6	3.15	6	2.6	0
FI	3.42	18	3.73	19	9.2	-1
FR	2.36	2	2.48	2	5.3	0
GR	3.41	15	3.76	23	10.3	-8
HU	1.08	1	1.25	1	15.4	0
IE	3.54	25	3.52	14	-0.8	11
IT	3.39	13	3.69	18	8.8	-5
LT	3.38	12	3.74	20	10.5	-8
LU	3.35	9	3.43	9	2.3	0
LV	3.40	14	3.75	21	10.4	-7
MT	3.46	22	3.65	16	5.4	6
NL	3.41	15	3.46	12	1.3	3
PL	3.46	22	3.77	24	8.8	-2
PT	3.41	15	3.75	21	9.9	-6
RO	3.44	20	3.53	15	2.5	5
SE	3.36	10	3.45	11	2.7	-1
SK	3.46	22	3.79	26	9.5	-4
SL	3.17	7	3.44	10	8.3	-3
UK	3.36	10	3.38	8	0.7	2
Ø	3.22		3.39		5.57	

The radar chart presented in [Figure 1](#) illustrates the impact of each individual CCTB option on the value of the tax base for the EU-27 large company and SME. The impact is measured as the proportion of the increase resulting from each single option against the overall increase from all options combined. It demonstrates that the influence of the isolated options is similar for the large company and the SME. In both cases depreciation has the strongest impact on the increase in the tax base. Provisions for warranty claims and the avoidance of double taxation have a notable influence as well, and in isolation lead to a decrease in the tax base. The isolated variation of the other options exerts only minor influence and is similar for the large company and the SME.

Figure 1: Proportion of EU-27 average overall increase of the value of the tax base for each option



Sensitivity Analyses

The above findings are relevant for model companies that represent the EU average companies. Alternately structured firms with different financial ratios were also investigated in the study. Sensitivity analyses were conducted to gauge the impact of a CCTB under varying economic data assumptions and on model firms from different industries and regions.

To see how changes in economic model assumptions influence the effects of the proposed CCTB, sensitivity analyses on the firms' capital intensity,

profitability, labour intensity and inventory intensity were carried out. Our calculations show that the direction of impact exerted by alternate economic assumptions is the same under both the national GAAP and the CCTB accounting systems. An increase in capital intensity and labour intensity reduces the value of the tax base. By contrast, greater profitability and inventory intensity increase the size tax base. Looking at the magnitude of the deviation between accounting systems under alternate data assumptions, we find that higher capital intensity results in an increasing deviation. The deviation between the accounting systems decreases, however, with higher profitability, labour intensity and inventory intensity. The results of the sensitivity analysis are confirmed by a multiple regression analysis, which reveals that changing profitability and capital intensity have a significant impact on the value of the tax base.

Sector Specific Analyses

To enlarge the spectrum of analysis, additional calculations were conducted for sector-specific companies. These sectors are: construction, commerce, energy manufacturing, service/trade transport. The sector analysis can be understood as an analysis considering a simultaneous variation of the financial ratios from the benchmark case. Composite model companies were assembled for each sector using data from all 27 member states. [Table 3](#) displays the average increase in the size of the tax base induced by the introduction of a CCTB.

Table 3: Value of the tax base under national GAAP and increase in % with the introduction of a CCTB (sector averages)

	Average future value of the tax base under national GAAP (in € millions)	Average increase of the future value of the base with a CCTB (%)
Large Company		
EU-27 (benchmark)	89.91	6.20
Commerce	84.26	4.73
Construction	56.00	4.46
Energy	228.76	12.34
Manufacturing	119.69	7.21
Service	47.45	9.44
Transport	21.77	51.72
Small Company		
EU-27 (benchmark)	3.22	5.57
Commerce	4.82	1.99
Construction	2.19	4.70
Energy	4.73	32.71
Manufacturing	3.41	5.98
Service	1.75	3.31
Transport	3.08	11.49

The main findings for the sector-specific sensitivity analyses can be summarised as follows. With the introduction of a CCTB, the value of the tax base

would increase for all sector-specific EU-27 model companies. There is a considerable variation between sectors, however. The increase for the large companies varies between 4.46% (construction) and 51.72% (transport). For the SME companies there is again considerable but – compared to the large sector-specific model companies – less variation between sectors. Here the increases vary between 1.99% (commerce) and 32.71% (energy). Aside from commerce and construction (in the case of the large model company), and commerce, construction and service (in the case of the model SME), the increase in the tax base is always higher for the sector-specific companies than in the relevant benchmark case, which is composed of data from all sectors.

As was the case for the benchmark companies, alternate depreciation rules have the largest impact of all CCTB options on the value of the tax base. For this reason, varying levels of capital intensity among the sector-specific companies is a key factor in accounting for the observed changes in the tax base values. High capital intensity is, for example, decisive in the large increases witnessed for the energy-sector SME and the transport-sector large company. Another important factor is profitability.

The countries most affected by the introduction of a CCTB are again Bulgaria, Hungary, Lithuania, Latvia and Portugal. But also France (service), Greece (manufacturing), Slovakia (energy) show a considerable increase in the value of the tax base. Ireland and particularly Cyprus show declining tax base values for most sector-specific companies.

EU-15 and EU-12 Companies

An additional analysis was conducted of model firms representing an average large company and SME from the EU-15 and EU-12 regions. EU-15 denotes the original 15 EU member states and EU-12 the accession countries which joined the EU in 2004 and 2007.

Table 4: Value of the tax base under national GAAP and deviation in case of a CCTB

	Average future value of the tax base under national GAAP (in € millions)	Average increase in the future value of the base with a CCTB (%)
Large Company		
EU-27 (benchmark)	89.91	6.20
EU-15	115.72	3.95
EU-12	31.57	7.30
Small Company		
EU-27 (benchmark)	3.22	5.57
EU-15	4.02	3.14
EU-12	2.48	6.34

As was the case in the sector analysis, the model companies differ in their balance sheet structure and financial ratios. Both company models are applied to