Discussion Paper No. 12-039

A Common Corporate Tax Base for Europe: An Impact Assessment of the Draft Council Directive on a CC(C)TB

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Centre for European
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Non-Technical Summary

On March 16, 2011, the European Commission released the long-awaited Draft Council Directive on a Common Consolidated Corporate Tax Base (CCCTB). With the Draft Council Directive the Commission aims to constitute a fundamental change of corporate taxation in Europe in order to reduce existing inefficiencies and distortions resulting from the co-existence of 27 different tax regimes. In a nutshell, the CCCTB provides groups of companies with the opportunity to determine taxable income according to a common set of tax rules throughout the EU. Moreover, the common tax base would be consolidated and apportioned to all Member States in which the group of companies is operating. Member States would then be allowed to tax their share of the consolidated tax base at their national tax rate.

While not all of the national positions are known to date, some EU Member States, e.g. Ireland or the Baltic Member States, have clearly expressed skepticism about this proposal. In particular, convincing evidence on the economic impact of the introduction of the consolidation and sharing mechanism is found to be missing. Thus, we recommend a strategy that would introduce the CCCTB gradually. The first step merely comprises the replacement of the 27 national tax accounting regulations across Member States by a single set of harmonized tax rules along the line of the Draft Council Directive (CC(C)TB); the consolidation and allocation of the common tax base would initially be omitted.

Based on a unique survey on the corporate tax systems in all 27 EU-Member States, Switzerland and the U.S. made available by Ernst & Young, the study provides a comprehensive analysis on the determination of corporate taxable income under such a CC(C)TB in a cross-country setting. Analyzing more than 80 tax accounting regulations, the international comparison illustrates that the proposed Council Directive generally concurs with international standards and commonly accepted principles of tax accounting. Overall, the proposal provides detailed rules for a CC(C)TB that are well established in the 27 EU Member States, Switzerland and the U.S. Obviously, individual Member States' current tax accounting practices deviate from the proposed set of autonomous tax accounting rules in several ways. However, most of the differences are of technical or formal nature and are expected to have only a minor impact on the actual amount of taxable income. Indeed, the results of quantitative analyses confirm that the effective tax burden would, on an EU-27 average, remain largely unchanged (-0.06%). In Europe's largest economies, Germany (-0.16%) and France (0.15%), businesses would hardly be affected by an adoption of a CC(C)TB, whereas effective tax burdens would considerably increase in Portugal (2.76%) or Romania (3.12%). The largest reductions are determined for Cyprus (-4.04%), Ireland (-2.39%) and Italy (-2.43%).

Table: Changes in effective tax burden induced by the adoption of a CC(C)TB (fiscal year 2011)

Country	National Tax Code (EUR)	CC(C)TB (EUR)	Deviation (%)	Country	National Tax Code (EUR)	CC(C)TB (EUR)	Deviation (%)
AT	41,594,191	41,617,188	0.06%	BE	30,909,699	30,785,456	-0.40%
BG	10,177,426	10,248,026	0.69%	CY	17,107,222	16,416,675	-4.04%
CZ	18,654,528	18,706,271	0.28%	DE	31,567,872	31,518,174	-0.16%
DK	27,004,247	26,852,232	-0.56%	EE	19,931,512	19,931,512	0.00%
ES	33,587,989	34,182,859	1.77%	FI	26,679,203	26,444,721	-0.88%
FR	56,875,023	56,961,345	0.15%	GR	19,978,687	19,968,464	-0.05%
HU	39,954,054	40,272,436	0.80%	IE	14,039,249	13,704,239	-2.39%
IT	41,541,581	40,530,482	-2.43%	LT	15,814,055	16,025,496	1.34%
LU	29,369,857	29,131,635	-0.81%	LV	16,158,545	16,153,245	-0.03%
MT	33,662,021	33,578,268	-0.25%	NL	24,630,894	24,396,697	-0.95%
PL	19,909,383	19,821,842	-0.44%	PT	26,814,815	27,555,805	2.76%
RO	16,291,219	16,799,292	3.12%	SE	25,902,849	25,979,967	0.30%
SI	19,217,146	19,395,551	0.93%	SL	19,608,490	19,841,409	1.19%
UK	28,598,258	28,309,382	-1.01%				
EU-27 ø	**26,132,593**	**26,115,877**	**-0.06%**				
CH	19,007,090	21,680,470	14.07%	US	46,335,360	45,999,435	-0.72%

Referring to both the results of the qualitative and the quantitative analysis, we conclude that a CC(C)TB as established by the proposed Council Directive is appropriate to replace the existing rules for the determination of corporate taxable income governed by national tax accounting regulations in the 27 EU Member States. Although some open questions remain that have to be addressed in more detail once the Draft Council Directive is to be implemented into the tax law of the Member States, it provides a carefully prepared and comprehensive framework for the determination of corporate taxable income that can be expected to reach consensus in the EU.

Das Wichtigste in Kürze

Nach umfangreichen Vorarbeiten hat die Europäische Kommission am 16. März 2011 einen Richtlinienvorschlag über eine Gemeinsame Konsolidierte Körperschaftsteuer-Bemessungsgrundlage (GKKB) vorgelegt. Durch den GKKB-Richtlinienvorschlag sollen wesentliche mit der grenzüberschreitenden Besteuerung zusammenhängende Wachstumshindernisse im Binnenmarkt beseitigt werden. Diesbezüglich sieht der Vorschlag der Kommission einen dreistufigen Ansatz vor, der neben der Gewinnermittlung nach harmonisierten Vorschriften auch die Konsolidierung und die formelhafte Aufteilung der gemeinsamen Bemessungsgrundlage umfasst. Dabei wirft der Richtlinienvorschlag hinsichtlich der letztgenannten Punkte jedoch eine Vielzahl noch ungeklärter Problempunkte auf. Insbesondere fehlt es derzeit an belastbaren Folgenabschätzungen einer formelhaften Gewinnaufteilung. Die Skepsis einiger EU Mitgliedstaaten (u.a. Irland und die baltischen Staaten) erscheint daher verständlich. Ob der Richtlinienvorschlag in seiner jetzigen Form die Zustimmung aller Mitgliedstaaten findet, ist somit fraglich. Folglich ist eine abgestufte Strategie anzuraten, welche die Bereiche Gewinnermittlung und Gewinnaufteilung voneinander trennt. Dabei werden in einer ersten Stufe lediglich die Gewinnermittlungsvorschriften harmonisiert (GK(K)B) und erst zu einem späteren Zeitpunkt in einer zweiten Stufe die Konsolidierung und Gewinnaufteilung umgesetzt (GKKB).

Der Fokus dieses Beitrags liegt daher auf einer Harmonisierung der steuerlichen Gewinnermittlungsvorschriften. Basierend auf einer umfangreichen Befragung von Steuerexperten im internationalen Ernst & Young Firmennetzwerk werden die Regelungen zur Ermittlung der steuerlichen Bemessungsgrundlage unter der GK(K)B mit den entsprechenden Regelungen der nationalen Steuergesetzgeber in den 27 EU Mitgliedstaaten, der Schweiz und den USA verglichen. Es zeigt sich, dass die vorgeschlagenen Gewinnermittlungsvorschriften des Richtlinienvorschlags mit den vorherrschenden Grundprinzipien und Rahmengrundsätzen der steuerlichen Gewinnermittlung in Deutschland und Europa vereinbar sind. Der Großteil der Abweichungen zwischen dem Richtlinienvorschlag und der internationalen Steuerpraxis sind technischer oder formeller Natur und sollten keinen größeren Einfluss auf die Höhe der Steuerbelastung von Unternehmen in der EU haben. So zeigt auch die quantitative Analyse, dass ein Übergang auf eine GK(K)B nahezu belastungsneutral (im Basisfall ca. -0,06% im EU-Durchschnitt) wäre. Für die großen europäischen Volkswirtschaften Deutschland (-0,16%) und Frankreich (0,15%) ergeben sich beispielsweise kaum Veränderungen der effektiven Steuerbelastung im Vergleich zur nationalen Gewinnermittlung. Größere Entlastungen können hingegen in Zypern (-4,04%), Irland (-2,39%) und Italien (-2,43%) festgestellt werden, während Mehrbelastungen insbesondere für Unternehmen in Portugal (2,76%) und Rumänien (3,12%) zu erwarten sind.

Table: Veränderungen der effektiven Steuerbelastung durch die Übernahme harmonisierter Gewinnermittlungsvorschriften (Jahr 2011)

Land	Nationale Gewinn-ermittlung (EUR)	GK(K)B (EUR)	Abweichung (%)	Land	Nationale Gewinn-ermittlung (EUR)	GK(K)B (EUR)	Abweichung (%)
AT	41.594.191	41.617.188	0,06%	BE	30.909.699	30.785.456	-0,40%
BG	10.177.426	10.248.026	0,69%	CY	17.107.222	16.416.675	-4,04%
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FR	56.875.023	56.961.345	0,15%	GR	19.978.687	19.968.464	-0,05%
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UK	28.598.258	28.309.382	-1,01%				
EU-27 ø	**26.132.593**	**26.115.877**	**-0,06%**				
CH	19.007.090	21.680.470	14,07%	US	46.335.360	45.999.435	-0,72%

Sowohl die Ergebnisse der quantitativen als auch der qualitativen Analyse deuten darauf hin, dass die derzeitigen Bemessungsgrundlagenunterschiede zwischen den Mitgliedstaaten und dem GKKB-Richtlinienvorschlag verhältnismäßig gering sind. Obwohl einige offene Fragen ungeklärt bleiben, sind die Überlegungen der EU-Kommission zur Schaffung einer GK(K)B grundsätzlich mit den Zielen der steuerlichen Gewinnermittlung in der EU kompatibel und stellen einen konsensfähigen Vorschlag zur Harmonierung der Besteuerung in Europa dar.

A Common Corporate Tax Base for Europe: An Impact Assessment of the Draft Council Directive on a CC(C)TB

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Abstract: After intensive and extensive preparation, the European Commission released the long-awaited proposal for a Council Directive on a Common Consolidated Corporate Tax Base (CCCTB) on March 16, 2011. In the context of the Europe 2020 Strategy, major objectives of the proposed CCCTB are the elimination of transfer pricing concerns, the removal of double taxation due to conflicting tax claims between Member States and, of course, the reduction of tax compliance costs. However, as the second and the third step of the proposed CCCTB, i.e. the consolidation and the allocation mechanism, still suffer from considerable shortcomings, we recommend introducing the CCCTB in two steps. In this context, our paper focuses on the first step of a CCCTB, i.e. the common corporate tax base (CCTB). The paper combines qualitative and quantitative analyses on the key differences and similarities between the proposed CCTB and current tax accounting practice in all 27 Member States, Switzerland and the U.S. It offers not only a broad geographical scope, but also great detail in analyzing the differences in tax accounting and quantifying the change in tax burden induced by the introduction of a CCTB in each Member State, Switzerland and the U.S.

JEL Classification: H20, H25

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1 Introduction

On March 16, 2011, the European Commission released the long-awaited Draft Council Directive on a Common Consolidated Corporate Tax Base (CCCTB).[1] The current initiative restarted the long-lasting public debate on harmonizing corporate taxation in the European Union (EU), which had already been launched by the Commission in 2001.[2] In the context of the Europe 2020 Strategy, it aims at constituting a fundamental change of corporate taxation in Europe in order to reduce existing inefficiencies and distortions resulting from the co-existence of 27 different tax regimes and to create an integrated single market for doing business in Europe.[3] Major benefits from the introduction of the proposed CCCTB are seen in the elimination of transfer pricing concerns, the removal of double taxation due to conflicting tax claims between Member States and, of course, in the reduction of administrative burdens and tax compliance costs. To this end, the proposed CCCTB would imply a three-step approach:

(1) Determination of corporate taxable income under a harmonized set of tax accounting regulations;

(2) Consolidation of the individual corporate tax bases to the common tax base;

(3) Allocation of the consolidated tax base to group members located in the different Member States by formula apportionment.

As the Commission seeks for the proposed Council Directive to be approved by the EU Council in 2013, now is the time for Member States to discuss these issues and assess the economic benefits from corporate tax harmonization. While not all of the national positions are known to date, some EU Member States have clearly expressed skepticism.[4] In particular, what is found to be missing from the European Commission and, of course, the academic literature is convincing evidence on the economic and revenue impact from introducing a consolidation and sharing mechanism.[5] In this respect, further discussion and consideration, which is not likely to be available within the near future, seems necessary in order to fully understand and evaluate the consequences of any consolidation and sharing mechanism and convince Member States that the gains from harmonization are worth the cost of giving up sovereignty in corporate tax policy.

[1] The full Draft Council Directive on a Common Consolidated Corporate Tax Base (CCCTB) is available for download under http://ec.europa.eu/taxation_customs/resources/documents/taxation/company_tax/common_tax_base/com_2011_121_en.pdf.

[2] See Commission of the European Communities (2001).

[3] See for a discussion of tax obstacles to cross-border economic activities in the internal market Devereux (2004), pp. 72-74.

[4] See von Brocke/Rottenmoser (2011), pp. 623-625. However, the first reactions of the European Parliament and the Danish Presidency proposal seem to be promising (see Gilleard (2012), p. 1).

[5] Please note that Fuest/Hemmelgarn/Ramb (2007), Devereux/Loretz (2008) and Oestreicher/Koch (2011) provide first promising assessments of the change from separate accounting to formula apportionment and the consequences of the implementation of a CCCTB.

While it is therefore at least questionable whether all or even some Member States (via enhanced cooperation) will adopt the CCCTB system in its current coverage,[6] the European Commission should also consider a strategy that would introduce the CCCTB in two consecutive steps. The first step simply includes the replacement of the 27 national tax accounting regulations across Member States by a single set of harmonized tax rules.[7] Such a Common Corporate Tax Base (CCTB) would merely affect the calculation of the corporate tax base. The second step, i.e. the consolidation of individual group members' income and the subsequent allocation of the consolidated tax base, would be omitted for the present and reconsidered at a later stage. Although some of the fundamental advantages of the CCCTB would, of course, not be realized by the introduction of a CCTB,[8] such a two-step approach seems more likely to succeed through the political process in the EU and appears to be a promising starting-point for corporate tax harmonization in Europe. In this respect, also the promoted convergence of the French and German tax systems, on which the two tax administrations are currently working, could have a substantial impact on the other Member States.[9]

Against this background, the objective of this paper is twofold. First, we contribute to the ongoing evaluation of the proposed Council Directive by analyzing the determination of corporate taxable income under a CCTB in a cross-country setting. For the first time, we compare the proposed CCTB with prevailing tax accounting practice in all 27 EU Member States, Switzerland and the U.S. In doing so, Ernst & Young tax experts in all 29 considered countries have been asked to provide detailed information on the fundamental concepts of tax accounting, the recognition of revenue and expenses and the loss relief under the national tax codes currently in practice.[10] In detail, Ernst & Young member firms in the respective countries have received and responded to a jointly developed questionnaire that includes more than 80 questions concerning all important matters regulated by the Draft Council Directive. The information provided allows for a detailed and comprehensive comparison of the CCTB and the rules on the determination of corporate taxable income across the considered countries as of January 1, 2011. The international comparison, however, neither intends to evaluate the tax rules proposed in the Draft Council Directive or in the considered countries nor does it aim to review and discuss all elements and items of the currently implemented tax systems in Europe in full detail. Rather, the main characteristics of the national tax regulations and the most im-

6 See also Fuest (2008), p. 738.
7 Similarly, Röder (2012), p. 1.
8 See Spengel/Zöllkau (2012), pp. 8-10, Spengel (2008), pp. 28-30.
9 See Franco-German green paper on convergence in business taxation (2012). For a discussion see Eilers et al. (2012), pp. 535-542.
10 In this publication, "Ernst & Young" and "we" refer to all member firms of Ernst & Young Global Limited. Neither Ernst & Young Germany nor any other member of the global Ernst & Young organization can accept any responsibility. On any specific matter, reference should be made to appropriate advisor.

portant origins of differences between the proposed CCTB regulations and national tax practices will be identified and analyzed.[11]

Second, we apply the model-firm simulation *European Tax Analyzer* to quantify the change in effective tax burdens induced by the introduction of a CCTB in each of the 27 EU Member States, Switzerland and the U.S. In contrast to approaches computing tax burdens solely on pre-tax returns, our approach allows us to include and account separately for many important regulations foreseen by the Draft Council Directive in great detail. In doing so, we document the impact on EU companies' effective tax burden of moving from the prevailing system to the proposed CCTB and analyze how the tax burden in different industries will be affected by the proposed CCTB regulations. Overall, the findings not only extend the scope of prior literature on the impact of a CCTB on corporate tax burdens, but may also be seen as an important update of the comprehensive impact assessment report accompanying the Draft Council Directive.[12] In doing so, the findings may support policymakers in evaluating the economic consequences of introducing a harmonized set of accounting rules for EU-based companies.

The remainder of this paper is structured as follows: Section 2 briefly overviews the methodology and the scope of the survey underlying this study. Based on the detailed information on the corporate tax systems in all 27 EU-Member States, Switzerland and the U.S., Section 3 compares the regulations on the determination of corporate taxable income currently in practice in the considered countries with the proposed regulations of the Draft Council Directive. Section 4 summarizes the results of this qualitative analysis. Afterwards, Section 5 introduces the methodology and the underlying database for the numerical impact assessment. Results are presented in Section 6. Finally, Section 7 concludes the discussion.

2 Methodology and Scope of the Survey

The comparison of national tax regimes is a challenging task, as taxes on corporate income and the underlying accounting standards are complex and subject to frequent changes. Available tax databases usually cover just some of the main features of the tax system like statutory rates or general elements of the tax base (e.g. depreciation rules, treatment of losses etc.). Regulations on the fundamental concepts and principles underlying the determination of taxa-

[11] For more detailed discussion see Spengel/Zöllkau (2012).

[12] See for example Oestreicher/Reister/Spengel (2009), pp. 46-66; Spengel/Ernst/Finke (2010), pp. 283-299; Spengel/Oestreicher (2012). The impact assessment, which is partially based on the European Tax Analyzer (pp. 24-25 and 100-102), is available for download under http://ec.europa.eu/taxation_customs/resources/documents/taxation/company_tax/common_tax_base/com_sec_2011_315_ impact_assesment_en.pdf.

ble income are, however, scarcely documented or only available in the language of the countries concerned. Overall, there is only little work available specifically addressing cross-country differences in the determination of corporate taxable income. While Kahle/Schulz (2011a) and Scheffler/Krebs (2011) compare the proposed Council Directive with tax accounting regulations in Germany, an international study is conducted by Endres/Oestreicher/Scheffler/Spengel (2007).[13] The latter provides detailed information on differences between IAS/IFRS and national tax regulations in 25 EU Member States as of the fiscal year 2006.[14] We use this study as guidance when exploring the major differences between the proposed Council Directive and the national tax regulations. In doing so, we not only extend the scope of existing literature by providing up-to-date information on the proposed Council Directive and tax accounting in Europe (fiscal year 2011), but also enlarge the geographical spectrum of other studies. Besides tax accounting regulations in all 27 EU Member States, we especially take the determination of corporate taxable income in Switzerland and the U.S. into account.

In order to obtain detailed information and avoid uncertainties with respect to the interpretation of the national tax codes in all 27 EU Member States, Switzerland and the U.S., we have collected all necessary tax data from Ernst & Young (EY) accountants and tax experts in all 29 considered countries. In detail, EY member firms in the respective countries have received and responded to a jointly developed questionnaire concerning all important matters regulated by the proposed Council Directive. The received survey data were double-checked with various publications and information provided by the International Bureau for Fiscal Documentations (IBFD).[15] Discrepancies have been addressed through a second country-specific questionnaire and further discussion with EY country offices. Overall, the questionnaire included more than 80 questions concerning all matters regulated by the proposed Council Directive with respect to the determination of taxable income under the CCCTB. In accordance with the purpose of the study, all sections of the proposal solely dealing with the entry and exit from the CCCTB system (Articles 44 to 53 and 61 to 69), the consolidation (Articles 54 to 60) and the apportionment of the consolidated tax base (Articles 86 to 103) have been omitted from the questionnaire. Furthermore, since the implementation of a mere CCTB would only concern national tax authorities, administrative issues (Article 104 to 126) are not addressed. In addition, it is important to note that all questions asked refer to the regular determination of

[13] See also Oestreicher/Spengel (2007), pp. 437-451.
[14] In addition, Kahle/Schulz (2011b) compare tax accounting regulations in France, Poland and the United Kingdom with IAS/IFRS. Furthermore, Panayi (2011) compares selected elements of the proposed Council Directive with the tax system of the United Kingdom.
[15] www.ibfd.org.

taxable income of incorporated companies under the national tax regimes as of January 1, 2011. Therefore, the taxation of groups or transparent partnerships, special or simplified rules for SMEs, exceptional rules as well as special incentives (regional, sectional etc.) have been disregarded. Finally, no attention is paid to transitional rules and the general features of the national tax regulations, such as corporate income tax rates or the taxation of shareholders, as this is done in several other papers and studies.[16]

3 CCTB and Determination of Corporate Taxable Income

Before going into detail on how the tax base is determined under the proposed Council Directive, two important points should be clarified: First, the proposed Council Directive introduces autonomous rules for computing and determining the tax base of companies and does not interfere with financial accounts. While the debate in preliminary stages has focused on the questions whether and to what extent accounting principles as reflected in the IFRS/IAS could be relied upon (Schön (2004), pp. 426 ff.),[17] the proposed Council Directive cuts all formal connections between financial and tax accounting. Of course, reviewing the individual regulations similarities to IAS/IFRS are readily identifiable; however, it is important to note that the Council Directive does not provide a formal link or a reference either to national tax accounting principles (GAAP) or to IAS/IFRS. Second, since a formal starting point is missing, it is essential that the proposed Council Directive provides a comprehensive set of general principles and rules that will cover all aspects of determining the common tax base in order to ensure its uniform application across all 27 EU Member States. A default to national GAAP or national tax rules in matters where uniform treatment is not regulated by the proposed Council Directive - as one may infer from Article 7 - is undesirable and would jeopardize the overall objectives of the CCCTB project (Freedman/Macdonald (2008)).

3.1 Fundamental Concepts and General Principles of a CC(C)TB

As described above, the CCTB system would introduce autonomous rules for the determination of the tax base of companies. Although the general principles, e.g. the accrual principle, underlying the proposed CCTB reflect common accounting principles and practice, the lack of a formal link with IAS/IFRS or national GAAP constitutes one of the most fundamental difference between the proposed Council Directive and the prevailing national rules on tax ac-

[16] For an overview of these general features of the national tax regulations, see Spengel/Zinn (2011), pp. 494-497, and http://ec.europa.eu/taxation_customs/resources/documents/common/publications/studies/etr_company_tax.pdf.

[17] Other studies analyzing the ability of IFRS/IAS to serve as a starting point for tax accounting purposes include Spengel (2003), pp. 253-266 and Herzig (2004).

counting, which more or less all refer to financial accounts as a starting point for the computation of taxable profits and losses (Table 1). In detail, 27 of the 29 considered national tax legislations are based or at least rely on the annual income computed for financial accounting purposes, which are subsequently adjusted by specific tax regulations (non-deductible expenses, exemption of specific revenues etc.) in order to determine taxable income. Only Poland and the U.S. stipulate a strict separation of tax and commercial accounts.[18] In doing so, the majority of Member States as well as Switzerland do not allow the application of IAS/IFRS as a starting point, but rather determine taxable income on the basis of accounts prepared in accordance with national GAAP. However, as national GAAPs and IAS/IFRS have converged to a considerable extent during the last decade, differences between the national tax systems cannot be found in the starting point of determining taxable income, but rather in the number and extent of prescribed deviations between financial and tax accounting.

Table 1: Fundamental Concepts and General Principles of a CCTB and Deviation from International Tax Practice

Fundamental Concepts and General Principles	Article	Deviation from Current Practice in the 27 EU Member States, Switzerland and the U.S.	
		Major	Minor
Determination of the Tax Base: Starting Point			
Autonomous Tax Law	Explanatory Memorandum	✓	
Profit and Loss Account Approach	Article 10		✓
Basic Principles Underlying the Determination of the Tax Base			
Realisation Principle (Applied)	Article 9 (1)		✓
Item-by-Item Principle (Applied)	Article 9 (2)		✓
Consistency Requirement (Applied)	Article 9 (3)		✓
Anti-abuse Regulation (Applied)	Article 80		✓

Note: Column (1) lists the considered regulations and - in brackets - the proposed treatment under a CCTB. The corresponding Article of the Draft Council Directive can be found in Column (2). Column (3) and (4) mark whether a major or minor difference between the proposed CCTB and current tax accounting practice exists. In this regard, not only the number of countries deviating from the proposed CCTB is considered, but attention is also paid to the significance of differences.

Besides the accrual principle and realization principle (Article 9 (1)), which will be discussed in more detail in Section 3.2.1, Article 9 of the proposed Council Directive defines two general principles underlying the determination of the tax base: First, the item-by-item principal (Article 9 (2)), which states that all transactions and taxable events shall be measured individually and, second, the consistency requirement (Article 9 (3)), stating that the determination of the tax base shall be carried out in a consistent manner. As displayed in Table 1, these basic principles of tax accounting are in line with the general principles and fundamental criteria of tax accounting within the European Union, Switzerland and the U.S. However, whether they

[18] Taxable income in the US, however, should be computed under the method of accounting on the basis of which the taxpayer regularly computes his income in keeping his books (Sec. 446 (a) Internal Revenue Code); for details, see Schön (2004), pp. 426 ff.

are sufficient enough to maintain consistency across all Member States and operate as a tool for the interpretation of all relevant Articles provided by the proposed Council Directive remains questionable.[19] In view of the complexity of tax accounting, further regulations and authoritative interpretation appear to be necessary, if the proposed Council Directive should serve as an autonomous set of rules for the determination of a harmonized tax base across Member States.[20] In fact, it is impossible to create a Council Directive that will cover all necessary details, but more clarity is particularly needed in areas where national tax accounting practice is currently following accounting practice. For instance, clear legal concepts and authoritative interpretations have to be provided for special areas of accounting, e.g. leasing arrangements or the recognition requirements for provisions for contingent losses.

3.2 Elements of the Tax Base

The determination of the items that are included in the tax base is the central question of all corporate income tax systems.[21] In regard to this, Article 10 foresees that the tax base under the proposed CCTB is to be calculated as revenues less exempt revenues, deductible expenses and other deductible items. Accordingly, profit is defined as the excess of revenues over deductible expenses and other deductible items in a tax year (Article 4 (9)) and loss is defined as the excess of deductible expenses and other deductible items over revenue in a tax year (Article 4 (10)). In the following subchapters, each element of the tax base is analyzed in more detail and compared to international tax accounting practice.

3.2.1 Revenue

The recognition of revenue on an accrual basis and the more or less strict application of the realization principle for tax purposes under the proposed Draft Council Directive follow common and internationally accepted tax practice. As displayed in Table 2, there is no significant difference between the proposed Council Directive and international tax practice with regard to the recognition criteria for sales of goods, dividends or interest income. For example, sales revenues are generally recognized when the right to receive them arises and the corresponding amount can be quantified with reasonable accuracy, regardless of whether actual payment is deferred (Article 18). However, the detailed implementation of the realization principle takes several forms in the countries under consideration. Most important, the extent

[19] For a detailed discussion on the role of tax principles and a CCCTB, see Freedman/Macdonald (2008), p. 227.

[20] For a non-exhaustive list of concerns about the practical application of the proposed Council Directive that require further consideration in the ongoing evaluation process, see Spengel/Zöllkau (2012), pp. 92-96.

[21] See Ault/Arnold (2010), p. 199.

of deviations from the general realization principle differs, i.e. the taxation of unrealized revenues or the recognition of losses before realization. In this regard, the proposed CCTB and international tax accounting practice vary preliminarily in the tax effective revaluation of financial assets and liabilities held for trading. Furthermore, differences arise with respect to the generous opportunities to defer the taxation of capital gains under the proposed CCTB, i.e. the rollover relief for individually depreciable replacement assets provided by Article 38.

Table 2: Revenue Recognition under the proposed Council Directive and Deviation from International Tax Practice

Revenue	**Article**	**Deviation from Current Practice in the 27 EU Member States, Switzerland and the U.S.**	
		Major	**Minor**
Timing of Revenue			
General Principle (Accrual Principle)	Article 17/18		✓
Sales (Economic Ownership)	Article 17/18		✓
Profit Distributions (Shareholder's Resolution)	Article 17/18		✓
Interest (Accrual Basis)	Article 17/18		✓
Unrealised Revenue (Generally not Taxed)	Article 17/18		✓
Exceptions from the General Realization Principle			
Financial Assets and Liabilities held for Trading (Taxed)	Article 23	✓	
Long-Term Contracts (Percentage-of-Completion)	Article 24		✓
Controlled Foreign Company (Applicable)	Article 82/83		✓
Taxation of Capital Gains			
General Principle (Taxable without Relief)	Article 4 (8)		✓
Replacement Assets (Rollover Relief)	Article 38	✓	

Note: Column (1) lists the considered regulations and - in brackets - the proposed treatment under a CCTB. The corresponding Article of the Draft Council Directive can be found in Column (2). Column (3) and (4) mark whether a major or minor difference between the proposed CCTB and current tax accounting practice exists. In this regard, not only the number of countries deviating from the proposed CCTB is considered, but attention is also paid to the significance of differences.

In line with the general realization principle described above, unrealized revenues, e.g. revaluation gains, are generally not recognized as taxable income under the proposed Council Directive and in almost all considered countries.[22] Notwithstanding this general rule, Article 23 states that financial assets held for trading have to be valued on a mark-to-market basis as any differences between the fair market value at the end of the tax year and the fair market value at the beginning of the same tax year have to be included in the tax base. In this regard, similarities to financial accounting practice, e.g. IAS 39, are readily identifiable. Given the proceeding implementation of IAS/IFRS in many EU Member States, the taxation of financial assets and liabilities on a fair value base under the proposed Council Directive seems to be reasonable. However, as mentioned before, international tax practice is generally based on the realization principle and, therefore, rejects the tax effective revaluation of financial assets. As

[22] By contrast, revaluation gains, which may arise from the revaluation of depreciable and financial assets, are generally treated as operating profits subject to corporate income tax in France.

a result, only the Czech Republic, Denmark, Finland, Hungary, Portugal, Slovenia, Spain, Sweden and the United Kingdom are in line with the proposed Council Directive and allow for tax effective revaluations of financial assets held for trading.

Besides the mark-to-market valuation for financial assets held for trading, the Draft Council Directive provides special recognition criteria for foreign-source income if the conditions of the controlled foreign company regulations are met (Articles 72 and 73) as well as for revenues and expenses in relation to long-term contracts. According to Article 24 (1), revenues relating to long-term contracts are to be recognized based on the percentage-of-completion method. In other words, revenues are not recognized when the right to receive them actually arises, but every year by the stage of completion at the end of the tax year, defined by the ratio of costs to the overall estimated costs or by reference to an expert valuation (Article 24 (2)). Although accounting for long-term contracts based on the percentage-of-completion may conflict with the realization principle, it constitutes common tax practice in most of the 27 EU Member States and the U.S. Put another way, only Austria, the Czech Republic, Germany and Switzerland strictly apply the completed-contract method, i.e. revenue is deemed to be realized only when the contract work is finished.

In terms of capital gains taxation, proceeds from the disposal of tangible and intangible assets are generally taxed as ordinary income under the proposed Draft Council Directive.[23] While most of the considered countries concur with the proposed Council Directive in this regard and do not provide specific tax treatment of capital gains,[24] differences arise with respect to the mentioned rollover relief for individually depreciable replacement asset foreseen by Article 38. In short, capital gains on the disposal of individually depreciable fixed assets (other than assets in the asset pool)[25] that have been owned for at least three years may be rolled over into the costs of the new asset, if the proceeds are to be reinvested within two years in an asset used for the same or similar purposes. In other words, the amount by which the proceeds exceed the value for tax purposes is to be deducted from the tax base in the year of disposal and the depreciation base of the replacement asset is correspondingly reduced by the same amount. As a result, capital gains taxation is deferred and subsequently caught up in the tax years following the purchase of the replacement assets through a reduction in the amount of depreciation. Although some form of rollover relief is know in 12 of the 29 considered coun-

[23] According to Article 11 (b) and (d), only proceeds from the disposal of shares and pooled assets are tax exempt. For details, see Section 3.2.2.

[24] By contrast capital gains are subject to specific rules in Cyprus, Ireland, Malta, the United Kingdom and the US. In addition, France and the Netherlands provide special rules of the taxation of capital gains from the disposal of intangible assets.

[25] For details on the asset pool, see Section 3.2.4.

tries,[26] the regulations provided by Article 38 are far more generous than any form of rollover relief currently in practice in any considered country. Accordingly, the rollover relief constitutes a major difference between the proposed CCTB and current international tax practice that may act as a yet unknown incentive for companies opting for the CCTB system to continue to invest.

3.2.2 Exempt Revenue

As a general rule, all revenue is taxable unless explicitly exempt under the proposed CCTB. To this end, Article 11 lists the following items as exempt revenues: Subsidies directly linked to the acquisition, construction or improvement of fixed assets, proceeds from the disposal of pooled assets referred to in Article 39, received profit distributions, proceeds from the disposal of shares and income from a permanent establishment in a third country. While the first two revenue items can be classified as temporary exemptions or deferred taxation,[27] the last three items involve genuine exemptions in order to avoid double taxation of income and diverge from international tax accounting practice in several regards.

Table 3: Exempt Revenue under the proposed Council Directive and Deviation from International Tax Practice

Exempt Revenue	Article	Deviation from Current Practice in the 27 EU Member States, Switzerland and the U.S.	
		Major	Minor
Profit Distributions (Exempt, 95%)	Article 11 (c)	✓	
Proceeds from Disposal of Shares (Exempt, 95%)	Article 11 (d)	✓	
Income of a Foreign Permanent Establishment (Exempt, 100%)	Article 11 (e)		✓

Note: Column (1) lists the considered regulations and - in brackets - the proposed treatment under a CCTB. The corresponding Article of the Draft Council Directive can be found in Column (2). Column (3) and (4) mark whether a major or minor difference between the proposed CCTB and current tax accounting practice exists. In this regard, not only the number of countries deviating from the proposed CCTB is considered, but attention is also paid to the significance of differences.

Generally, double taxation of received dividends, capital gains from the disposal of shares and income from foreign permanent establishments, is avoided by the strict application of the exemption method (Article 11).[28] Notably, the deduction of costs incurred in connection with exempt income is not allowed. Like in Belgium, France[29], Germany, Italy and Slovenia, such costs are fixed at 5% of the exempt income in any given year, unless the taxpayer demonstrates that the actual costs are lower (Article 14 (1) (g)). In this regard, it is important to note that exemption is granted irrespective of any minimum shareholding requirement and covers

[26] For example, the German rollover relief merely covers capital gains arising from the sale of land and buildings as well as the produce of agricultural and forestry enterprises.
[27] While the exempt subsidy is deducted against the depreciation base of the relevant fixed assets, the proceeds from the disposal of pooled assets reduce the balance of the asset pool.
[28] Please note that the exemption method is replaced by a tax credit (Article 73), if the level of foreign taxation is considered too low, i.e. lower than 70% (please note the committee amended the original proposal in this regard on April 19th, 2012) of the average corporate tax rate applicable in the Member States.
[29] Please note that an add-back of 10% applies for the disposal of substantial shareholdings in France.

both domestic and all foreign shareholding. While revenues derived from domestic or foreign substantial shareholdings qualify for preferential tax treatment in almost all countries under consideration,[30] major differences between the proposed Council Directive and international tax practice arise with respect to the taxation of portfolio dividends and the disposal of portfolio shares. This especially holds true for revenues received from portfolio investment in entities resident in foreign countries. In contrast to the proposed regulation of Article 11, relief from double taxation of foreign portfolio dividends is not available in the majority of countries under consideration and the number of countries that provide a tax relief on the disposal of portfolio shares (e.g. Cyprus) is rather small. Similar to the proposed CCTB, a general exemption of dividends derived by corporate shareholders and capital gains on the disposal of shares - irrespective of the source of income and any minimum shareholding requirement - is only applicable in Cyprus, Germany and Italy.

3.2.3 Deductible Expenses

The fundamental concept underlying the definition of deductible expenses is provided in Article 12. Accordingly, all costs of sales and expenses net of deductible value added tax incurred by the taxpayer with a view of obtaining or securing income qualify as deductible expenses, while private expenses are not deductible.[31] Although this general principle constitutes the main criteria for the deduction of expenses in all considered countries, the detailed implementation differs. At the heart of these differences are questions regarding the valuation (e.g. the initial measurement of costs) and the timing (e.g. the treatment of provisions) of relevant business expenses. As presented in Table 4, minor differences arise in this regard from the valuation of stock items and work-in-progress (Articles 21 and 29) and from the treatment of bad debt receivables (Article 27). By contrast, major differences are identified for the recognition and measurement of provisions for legal obligations (Article 25) and pension provisions (Article 26).

[30] For example, all considered countries except Greece prevent double taxation of profit distributions received from substantial domestic or EU ownership interest either by way of exemption or imputation credit (e.g. Ireland, Malta).

[31] Please note that the proposed Council Directive distinguishes between expenses that reduce taxable income of the current period and capital expenditures. The latter are, in general, taken into account as other deductible items and are discussed in detail in Section 3.2.4.

Table 4: Deductible Expenses under the proposed Council Directive and Deviation from International Tax Practice

Deductible Expenses	Article	Deviation from Current Practice in the 27 EU Member States, Switzerland and the U.S.	
		Major	Minor
General Principle (Obtaining / Securing Income)	Article 12		✓
Stocks and Work-in-Progress			
Initial Measurement (Direct Cost / Option to Include Indirect Cost)	Article 21/29 (2)		✓
Simplifying Valuation (FiFo, Weighted-Average)	Article 29 (1)		✓
Subsequent Measurement (Lower of Cost & Market)	Article 29 (4)		✓
Bad Debt Receivables			
Specific Allowance (Permitted)	Article 27		✓
General Allowance (Permitted)	Article 27	✓	
Provisions			
Provisions for Liabilities			
Recognition (Permitted, Legal Obligation)	Article 25 (1)	✓	
Measurement	Article 25 (2)	✓	
Provisions for Contingent Losses (Permitted)	Article 25 (1)	✓	
Provision for Deferred Repair and Maintenance Costs (Prohibited)	Article 25 (1)		✓
Warranty Provision (Permitted)	Article 25 (1)		✓
Pension Payments			
Direct Pension Scheme			
Recognition (Permitted)	Article 25/26	✓	
Measurement	Article 26	✓	
Indirect Pension Scheme (Permitted)	Article 12		✓

Note: Column (1) lists the considered regulations and - in brackets - the proposed treatment under a CCTB. The corresponding Article of the Draft Council Directive can be found in Column (2). Column (3) and (4) mark whether a major or minor difference between the proposed CCTB and current tax accounting practice exists. In this regard, not only the number of countries deviating from the proposed CCTB is considered, but attention is also paid to the significance of differences.

As the majority of countries under consideration generally prohibit tax deductions for provisions, the recognition and measurement of provisions clearly form a major difference between national tax accounting practice and the Draft Council Directive. For reasons of objectivity, the latter limits the recognition of provisions to legal obligations. Nonetheless, the recognition requirements remain unclear in detail. For example, it is - from our perspective - questionable whether contingent losses fall under the criteria of Article 25.[32] In most of the EU Member States, Switzerland and the U.S., provisions for contingent losses may not be recorded for tax purposes. In other respects, the recognition of provisions under national tax accounting regulations tends, however, to be less restrictive than the proposed Council Directive. For instance, in countries that generally recognize provisions for tax purposes, provisions are not only admitted for legal obligations, but also in case of constructive obligations e.g. if there is

[32] See also Scheffler/Krebs (2011), p. 22.

an established pattern of past practice, or for future payments for which the taxpayer has no legal obligations, e.g. for deferred repair and maintenance. With regard to the measurement of provisions, the proposed Council Directive is consistent with international tax practice. Provisions are to be measured at the expected expenditure required to settle the obligation in all countries under consideration. However, considerable differences arise with respect to the subsequent measurement of provisions at present values under the proposed CCTB, i.e. provisions for legal obligations are recorded at the estimated amount to settle the obligation taking into consideration the time value of money. By contrast, provisions are based on undiscounted values, rather than present values, in half of the countries that recognize provisions for tax purposes. For the other half, further differences arise with respect to the discount rate. While a rate that reflects the current market conditions and the risks specific to the provision - rather than a fixed rate - should be applied in most countries under consideration, Article 25 foresees that provisions are to be discounted at the yearly average of the Euro Interbank Offered Rate (Euribor) for obligations with a maturity of 12 months. Currently, this would imply a discount rate of 1.364%.[33] By contrast, a statutory fixed rate of 5.5% is stipulated in Germany.

Article 26 complements the general rules provided in Article 25 and sets out supplementary regulations for pension provisions. Similar to the discussion above, differences to international tax accounting practice arise with respect to the measurement of such provisions. For example, unlike international tax practice, future events, e.g. increases in salary, are taken into account when measuring pension provisions under the proposed Council Directive. In addition, pension provisions are to be discounted by reference to the yearly average of Euribor for obligations with a maturity of 12 months. Considering the long-term character of pensions, the application of a short-term discount rate is not only economically questionable, but also conflicts with international tax practice. Here, fixed discount rates ranging from 4% (the Netherlands) to 6% (Austria and Germany) are applicable.

3.2.4 Other Deductible Expenses

The proposed Draft Council Directive distinguishes between expenses that reduce taxable income of the current period and capital expenditures, i.e. depreciation expense. The latter are taken into account as other deductible items. Although some general principles, e.g. the determination of the taxpayer being entitled to depreciation, and the determination of the depreciation base deviate from international tax practice in detail, the proposed depreciation regulations are often similar in general principles and are expected to reach consensus among Mem-

[33] See http://www.euribor-rates.eu (18.4.2012).

ber States. However, important differences arise due to the combination of the individual and the pool depreciation method for tangible assets (Article 39) and the regulations of Article 41 governing exceptional depreciation.

Table 5: Depreciation under the proposed Council Directive and Deviation from International Tax Practice

Other Deductible Items: Depreciation	**Article**	**Deviation from Current Practice in the 27 EU Member States, Switzerland and the U.S.**	
		Major	**Minor**
General Principles and Depreciation Base			
Entitlement to Depreciation (Economic Owner)	Article 34/4 (20)	✓	
Timing of Depreciation (Full Years' Depreciation)	Article 37 (1)	✓	
Depreciation Base (Full Cost)	Article 33 (1)	✓	
Research Costs (not Capitalised)	Article 12		✓
Development Costs (not Capitalised)	Article 12	✓	
Improvement Costs (Capitalised)	Article 35/4 (18)		✓
Regular Depreciation			
Low-Value Assets (EUR 1,000; Immediately Expensed)	Article 13/4 (14)		✓
Internally Developed Intangibles (Immediately Expensed)	Article 36 (1) / 4 (14)		✓
Individually Depreciable Assets (Buildings, Acquired Intangibles, Machinery & Equipment (Useful Life >15years))	Article 33(1)/36 (1)		✓
Asset pool (Machinery & Equipment (Useful Life ≤15years))	Article 39	✓	
Exceptional Depreciation			
Depreciable Assets (Prohibited)	Article 41		✓
Assets not Subject to Depreciation (Permitted)	Article 41	✓	

Note: Column (1) lists the considered regulations and - in brackets - the proposed treatment under a CCTB. The corresponding Article of the Draft Council Directive can be found in Column (2). Column (3) and (4) mark whether a major or minor difference between the proposed CCTB and current tax accounting practice exists. In this regard, not only the number of countries deviating from the proposed CCTB is considered, but attention is also paid to the significance of differences.

In line with almost all countries under consideration, buildings, tangible assets with a useful life of more than 15 years and acquired intangible assets are depreciated individually under the proposed CCTB (Article 36). In this regard, it is also common tax practice in the EU, Switzerland and the U.S. to prescribe - or at least allow for - straight-line depreciation. However, unlike the proposed Council Directive, several considered countries allow for the declining-balance method, e.g. Belgium, Greece and the U.S., or provide other accelerated depreciation schemes, e.g. the Czech Republic and Romania.[34] In addition, there is a remarkable dispersion of depreciation rates in the countries under consideration. For example, depreciation periods for office buildings vary from 8 years in Lithuania to up to 100 years in the Netherlands, while according to Article 36 buildings should be depreciated over a useful life of 40

[34] For details, see Spengel/Zöllkau (2012), pp. 55-59.

years.[35] Similarly, tangible assets with a useful lifetime of more than 15 years are depreciated over a period of 15 years. In this regard, almost all countries are in line with the proposed Council Directive and require companies to depreciate each asset separately on an individual basis. However, international tax practice determines the useful life of assets of individual assets separately. Consequently, there is a remarkable dispersion of rates in the countries under consideration. In short, straight-line depreciation periods range from 2 years in Hungary up to 33.33 years in Greece. Yet, as the specific ranges are applicable for a number of different tangible assets, a general cross-country comparison in this area is difficult and might provide misleading results. More importantly, however, differences between the proposed Council Directive and national tax practices arise with respect to depreciation of tangible assets with a useful life of 15 years and less. While such short-term tangible assets are depreciated individually on either a straight-line or declining-balance basis in most considered countries, they are to be depreciated together in one asset pool at an annual rate of 25% of the depreciation base under the proposed CCTB. To this end, Article 39 defines the depreciation base as the pool value for tax purposes at the end of the previous year, adjusted for assets entering (which shall be added) and leaving (which shall be deducted) the pool during the current year. Consistent with the general rollover relief for individually depreciable fixed assets (Article 38), the pool method thereby ensures that the taxation of gains on the disposal of assets is spread over the lifetime of replacement assets. In fact, the international comparison shows that only Denmark (25%), Finland (25%) and the United Kingdom (20%) currently follow a similar approach. Moreover, due to the comparatively high depreciation rate of 25%, the proposed Council Directive tends to be more generous for short-term tangible assets than depreciation regulations in most countries under consideration. In particular, this holds true for fixed assets with a useful life at the upper range of the asset pool. While differences between the two methods are smaller for short-term machinery and equipment (e.g. computers, tools etc.), significant differences arise, for example, for heavy machinery and trucks. Thus, the economic implication of the implementation of an asset pool may - depending on the asset structure - differ considerably across companies or industry segments.

Finally, differences between current international tax practice and the proposed CCTB are identified for the regulations on exceptional depreciation. According to Article 41, exceptional depreciation is limited to non-depreciable assets that have permanently decreased in value and are taxed upon disposal under the proposed CCTB. While prevailing tax accounting prac-

[35] Please note that depreciation of office buildings is generally prohibited in Denmark, Ireland, Malta and the United Kingdom.

tice is heterogeneous in this regard, i.e. approximately one third of countries generally take exceptional depreciation for assets which have permanently decreased in value into account when determining the tax base, the strict limitation to non-depreciable assets under the proposed Council Directive cannot be justified from an economic point of view as it places severe limits on the deduction of actual losses. Furthermore, in practice, the limitation is likely to force taxpayers to dispose of depreciable assets, but to retain a beneficial interest in them in order to benefit from loss relief immediately.

3.2.5 Non-Deductible Expenses

Differences in the determination of the tax base also arise in distinguishing between deductible expenses and private / non-deductible expenses. In this respect, the proposed Council Directive provides a comprehensive list of non-deductible expenses in Article 14, including, for example, distributed profits, taxes paid or fines and penalties. In addition, Article 15 governs that benefits granted to controlling shareholders, their descendants or associated enterprises[36] are treated as non-deductible to the extent that they would not be granted to an independent third party. In the following, these non-deductible expenses are classified into four different groups and discussed in more detail in the cross-country setting.

Table 6: Non-Deductible Expenses under the proposed Council Directive and Deviation from International Tax Practice

Non-deductible Expenses	Article	Deviation from Current Practice in the 27 EU Member States, Switzerland and the U.S.	
		Major	Minor
Group 1: Benefits Granted, Profit Distributions etc. (non-deductible)	Article 14 (1)/15		✓
Group 2: Fines, Entertainment, Exempt Income (non-deductible)	Article 14 (1)		✓
Group 3: Tax Payments (non-deductible)	Article 14 (1)	✓	
Group 4: Interest Expenses (deductible, but limitations)	Article 81	✓	

Note: Column (1) lists the considered regulations and - in brackets - the proposed treatment under a CCTB. The corresponding Article of the Draft Council Directive can be found in Column (2). Column (3) and (4) mark whether a major or minor difference between the proposed CCTB and current tax accounting practice exists. In this regard, not only the number of countries deviating from the proposed CCTB is considered, but attention is also paid to the significance of differences.

The first category includes profit distributions, repayments of debt and expenditures incurred for the benefits of shareholders. The non-deductibility of these expenses follows commonly accepted taxation principles and, therefore, applies to all considered tax systems. Similar, only minor differences can be identified for the second category that covers expenses that are classified as (partially) non-deductible expenses, even though they may be incurred with a view to obtain or secure business income, e.g. fines or entertainment expenses. Most importantly, Ar-

36 For a detailed definition of the terms controlling shareholder and associated enterprise, please refer to Article 15 and Article 78 of the proposed Council Directive.

ticle 14 (1) (g) provides that costs incurred by a company for the purpose of deriving tax exempt income (e.g. dividends received, proceeds from the disposal of shares) are non-deductible. In this regard, the proposed Council Directive concurs with current tax practice in most of the countries under consideration. Only in Belgium, Bulgaria, Denmark, France, Latvia, the Netherlands, Portugal and Spain expenses related to tax-exempt income are generally deductible, if they do not fall into the general category of non-deductible expenses. In the United Kingdom, however, the deductibility of expenses is determined on an individual basis, i.e. there is no specific rule linking costs to exempt income.

The third group of non-deductible expenses includes taxes. In short, neither corporate income taxes nor non-profit taxes, e.g. real estate taxes, qualify for tax deduction under the proposed CCTB (Article 14 (1) (d)).[37] While corporate income taxes are not deductible under both the proposed CCTB and current tax regulations in all considered countries except Switzerland, differences arise with respect to the treatment of local income taxes and non-profit taxes. In this regard, the vast majority of countries under consideration allow the deduction of real estate taxes for corporate income tax purposes. In addition, local income taxes are deductible in Italy, Hungary, Spain, Switzerland and the U.S., while Germany and Luxembourg treat such tax payments as non-deductible expenses. However, the non-deductibility of taxes under the proposed Council Directive has to be seen in the overall context of the proposal. Rather than allowing local taxes to be deducted from the (consolidated) tax base, local taxes might be deducted after the common (consolidated) tax base has been allocated to the respective Member States, thereby preventing an undesired impact on the apportionment of the CCCTB for Member States that do not levy local taxes. Accordingly, it is expected that Member States would retain their prevailing regulations, if only a harmonized tax base (CCTB) would be introduced.

Finally, the fourth group of non-deductible expenses includes interest expenses paid to an associated enterprise resident in a third country. While interest paid by a company with a view of obtaining or securing income is generally deductible from taxable income under the proposed Council Directive (Article 12), Article 81 limits the deductibility of such interest payments under certain conditions, e.g. the general statutory tax rate in the third country is lower than 40% of the average statutory corporate tax rate applicable in the Member States. While it is far beyond the scope of this study to analyze and discuss the deductibility of interest expenses and thin-capitalization rules applied in all considered countries in full detail, it is im-

[37] Please see Annex III of the proposed Council Directive for a list of all non-deductible taxes for each Member State.

portant to note that thin-capitalization regulations under national tax law are much more restrictive than the regulations foreseen by Article 81. However, it is again important to note that Article 81 has been designed in the overall context of the CCCTB assuming consolidation and allocation of the common tax base across Member States, i.e. profit shifting within the CCCTB group would be inherently eliminated in the system.

3.3 Treatment of Losses

Losses are incurred when deductible expenses and other deductible items exceed revenues in the tax year (Article 4 (10)). According to Article 43 (1) taxpayers that incur losses are able to deduct these losses in subsequent tax years, thereby reducing future taxable income. In other words, losses are eligible for an indefinite carryforward, but there is no carryback of losses to previous years under the proposed Council Directive.

Table 7: Treatment of Losses under the proposed Council Directive and Deviation from International Tax Practice

Losses	Article	Deviation from Current Practice in the 27 EU Member States, Switzerland and the U.S.	
		Major	Minor
Loss Carryforward (no Restrictions; neither Amount nor Timing)	Article 43	✓	
Lass Carryback (Prohibited)	Article 43		✓
Loss Trafficking Rules (not applicable)	Article 71	✓	

Note: Column (1) lists the considered regulations and - in brackets - the proposed treatment under a CCTB. The corresponding Article of the Draft Council Directive can be found in Column (2). Column (3) and (4) mark whether a major or minor difference between the proposed CCTB and current tax accounting practice exists. In this regard, not only the number of countries deviating from the proposed CCTB is considered, but attention is also paid to the significance of differences.

In terms of the treatment of losses, major differences between the regulations provided by Article 43 and international tax practice are identified with respect to the unlimited loss carryforward. Although losses may generally be carried forward and off-set against taxable income in all countries, certain restrictions apply in more than half of the considered countries. For instance, in Bulgaria, the Czech Republic, Finland, Greece, the Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Switzerland and the U.S. the loss carryforward is limited in time. In this regard, the carryforward periods range from four years (e.g. in Portugal) to twenty years (e.g. in the U.S.). Furthermore, Austria, France, Germany, Italy and Poland restrict the loss carryforward to certain amounts. In France and Germany, for example, loss carryforwards exceeding EUR 1,000,000 may only be off-set against 60% of total taxable income, i.e. a minimum taxation of 40% of income applies. By contrast, international tax practice and the proposed Council Directive generally concur regarding the carryback of losses. Overall, only in 6 of the 29 considered countries may incurred losses be carried back to previous years. While France, Germany,[38] Ireland and the United Kingdom strictly limit the carryback to one year, longer carryback periods can be found in the Netherlands (three years)[39] and the U.S. (two years).

3.4 Interim Results

After intensive and extensive preparation, the European Commission released the long-awaited proposal for a Council Directive on a Common Consolidated Corporate Tax Base (CCCTB) on March 16, 2011. As the second and the third step of the proposed CCCTB, i.e. the consolidation and the allocation mechanism, still suffer from considerable shortcomings, we recommend introducing the CCCTB in two steps. The first step simply includes the replacement of the 27 national tax accounting regulations across Member States by a single set of harmonized tax rules. Such a Common Corporate Tax Base (CCTB) would merely affect the calculation of the corporate tax base. The second step, i.e. the consolidation of individual group members' income and the subsequent allocation of the consolidated tax base, would be omitted for the present and reconsidered at a later stage.

Considering solely the regulations for the determination of taxable income, the international comparison conducted in this study illustrates that the proposed Council Directive generally concurs with international standards and commonly accepted principles of tax accounting. Overall, the proposal provides detailed rules for a CCTB that are not new to the 27 EU Member States, Switzerland and the U.S. Obviously, individual Member States' current tax accounting practices deviate from the proposed set of autonomous tax accounting rules in several ways. However, most of the differences are of technical or formal nature and are expected to have only a minor impact on the actual amount of taxable income. Major differences can, in particular, be identified in the following areas:

(1) Taxation of unrealized revenues from financial assets and liabilities held for trading (Article 23). In this regard, current international tax practice follows the realization principle and generally does not recognize revaluation gains as taxable income.

(2) Rollover relief for individually depreciable replacement assets (Article 38). While capital gains taxation is deferred under the CCTB, proceeds from the disposal of replacement assets are, in general, immediately taxed in almost all countries considered.

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[38] Please note that Germany limits the absolute amount of the loss carryback to EUR 511,500.

[39] Please note that from 1 January 2007, losses incurred in the current fiscal year may be carried back only to the preceding year and forward for 9 years. For tax years 2009 to 2011 companies may opt for a loss carryback of 3 years. In such a case, the loss carryforward is restricted to 6 years.

(3) Tax exemption of portfolio dividends and revenues from the disposal of portfolio shares (Article 11). While revenues from substantial shareholdings are generally exempt, revenues from portfolio investments are taxed in most countries under consideration.

(4) Recognition and measurement of provisions for legal obligation (Article 25) and pension provisions (Article 26). The majority of countries considered deny the recognition of provisions for tax purposes. Furthermore, differences arise with respect to the measurement of provisions at present values. Most importantly, the application of a short-term discount rate is not only economically questionable, but also conflicts with international tax practice.

(5) Pool depreciation of tangible assets with a useful life of 15 years and less at a rate of 25% (Article 39). Such tangible assets are depreciated individually on either a straight-line or declining-balance basis in most considered countries. Moreover, tangible assets with a useful lifetime of more than 15 years are depreciated over a period of 15 years. By contrast, international tax practice determines the useful life of assets of individual assets separately.

(6) Unlimited carryforward of incurred losses (Article 43 (1)). In this regard, more than half of the considered countries limit the carryforward of losses either in time or to a certain amount.

Taken as a whole, the proposal by the European Commission provides a carefully prepared and comprehensive framework for the determination of corporate taxable income that can be expected to reach consensus in the EU. Nevertheless, it also needs to be emphasized that some open questions remain that have to be addressed in more detail once the Council Directive is to be implemented into the tax law of the Member States. Given the complexity of tax accounting, further regulations and authoritative interpretation appear to be necessary, if the proposed Council Directive should serve as an autonomous set of tax rules that does not interfere with financial accounting standards. In fact, it is impossible to create a Council Directive that will cover all necessary details, but more clarity is particularly needed in areas where national tax accounting practice is currently following financial accounting practice.

However, in order to finally evaluate the Draft Council Directive and assess the economic impact of common tax accounting regulations, quantitative analyses of changes in effective tax burdens induced by the introduction of a CCTB are necessary. In the next part of this article we, therefore, apply the *European Tax Analyzer* to assess the impact of the proposed

CCTB on the effective tax burden of companies in all 27 EU Member States, Switzerland and the U.S.

4 Methodology: The European Tax Analyzer

4.1 Measurement and Computation of Effective Tax Burdens

Measures of effective tax burdens comprise the most important elements of tax systems. They are not only useful for business managers, but also for policy makers demanding simplified but sophisticated information on tax burdens beyond statutory tax rates (Schreiber/Spengel/Lammersen (2002)). Over the last decades, various measures for comparing the effective tax burdens for the effects of taxation on investment decisions have been developed.[40] Depending on the purpose of the comparison, it is possible to distinguish between the effective marginal tax burden and the effective average tax burden. The first measures the additional tax of marginal investments which are just worthwhile, i.e. they do not earn more than the cost of capital. Investment decisions, however, often concern inframarginal, profitable investments, i.e. those earning more than the cost of capital. A multinational corporation, for example, would expect to earn an economic rent when deciding over the location of a new plant. Information on the impact of taxation on investment decisions of this type can be derived from the effective average tax burden. Devereux/Griffith (2003) find that average effective tax rates are a determinant of foreign direct investment decisions and other empirical studies confirm the high relevance of this measure for location decisions of multinationals and hence for the overall allocation of capital.

The approach of Devereux/Griffith (Devereux/Griffith 2003), building on the well established approach by King/Fullerton (King/Fullerton 1984), can be seen as the standard model for the calculation of the effective average tax burden. On the other hand, model-firm approaches like the *European Tax Analyzer* have been developed to overcome certain constraints of this standard measure. Indeed, both approaches provide consistent measures of the effective average tax burden and reliable information on the influence of taxes on investment decisions. However, the purpose of this paper is not to discuss the general differences or strength and weaknesses of different tax measures, as this is done in a range of other papers.[41] Instead, the focus is on a detailed and comprehensive modulation and interpretation of the proposed regulations on the determination of taxable income of the Draft Council Directive. To this end,

[40] Jacobs/Spengel (2000), pp. 334-351.
[41] See, for example, Jacobs/Spengel (2000), Nicodème (2001) and (2007).

model-firm approaches allow accounting for all major elements of the tax base at any time during the period of simulation and can, in contrast to models which compute tax burdens solely on pre-tax returns, include complex tax regulations, such as different depreciation schemes or loss-carryovers, in great detail.

4.2 The Model: General Concept, Database and Economic Assumptions

The *European Tax Analyzer* is a computer-based model-firm approach, calculating and comparing effective average tax burdens for companies facing different tax systems in Europe. The effective average tax burden is derived by simulating the development of a company over a period of ten years. It is expressed as the difference between the pre-tax and post-tax value of the company at the end of the simulation period and states the central outcome variable of the model. The value of the company is represented by its equity including the capital stock and the cumulative net income generated in each of the ten simulation periods. In order to determine the post-tax value, the tax liabilities of each of the ten periods are derived taking all taxes that may be influenced by investments and financing decisions at the corporate level into account.

Depending on the prevailing tax rules, the tax value of assets and liabilities may differ from their fair value at the end of period ten. These unrealized profits and liabilities, which are computed as the difference between the tax book-value of the assets and its replacement cost,[42] are added to the taxable income in period ten and are taxed accordingly. Therefore, only the effects of different tax accounting rules on liquidity are taken into account. In order to fully capture the effects of different loss relief and thin-capitalization rules, remaining carryforwards stemming from losses, non-deductible interest or EBIT(DA) are liquidated at the end of the simulation period. A devaluation of 50% of its nominal value is applied if there are no restrictions for the use of the carryforwards and a devaluation of 75% if there are any restrictions.

Within this conceptual framework, the model uses empirical data mainly taken from the AMADEUS database to determine an EU-27 average company.[43] We use data from 19,211 companies comprising financial data for the years 1994 to 2004. All other observations are not relevant in terms of size, legal forms (e.g. partnerships), industries (e.g. mining) or ownership (e.g. publicly owned). The implemented EU-27 average company thus represents a mod-

[42] For details see Gutekunst (2005). Similar assumptions are made by Knirsch (2005).
[43] The AMADEUS database (Bureau van Dijk Electronic Publishing (http://www.bvdep.com/de/AMADEUS.html)) provides financial and supplementary information for about 6.74 million companies in the European Union (Update 125 as of February 2005).

el of a firm ignoring country and industry-specific effects on pre-tax data. In other words, the balance sheet, the profit and loss account and the corporate planning of this model company are given and independent from country-specific taxation rules. For the sake of comparability, it is assumed that this model-firm shows identical financial ratios before any tax effects in each considered country. As a consequence, differences between the pre-tax and post-tax data can be solely attributed to differing tax rules in the considered countries.

Table 8 Tax Balance Sheet of the Implement EU-27 Model-firm (Period 6 of 10)

ASSETS	EUR	EQUITY AND LIABILITIES	EUR
A. Fixed Assets		A. Equity	
I. Intangible Assets	2,875,872	I. Subscribed capital	18,207,742
II. Tangible Assets		II. Revenue reserves	21,082,562
1. Land, similar rights and buildings	16,129,763	III. Net profit/Net loss	4,124,827
2. Technical equipment and machinery	15,870.976	B. Provisions	
3. Factory and office equipment	5,792,704	I. Provisions for pensions and similar obligations	0
III. Financial Assets			
1. Participating interests	8,075,041	II. Other provisions	6,185,594
2. Long-term receivables	897,227		
		C. Creditors	
B. Current Assets		I. Long-term bank loans	21,248,099
I. Stocks	22,936,037	II. Amounts owed to shareholders	21,248,099
II. Trade debtors	15,945,781		
III. Securities	37,910,648	III. Trade creditors	10,070,619
IV. Cash, deposits		IV. Short-term bank loans and overdrafts	24,266,507
TOTAL	**126,434,049**	**TOTAL**	**126,434,049**

Table 8 illustrates the balance sheet of the generated EU-27 average company. It depicts the different types of investments and their sources of finance and highlights the relative weight of these investments as well as the source of finance. Moreover, the structure of the model-firm and its characteristics, expressed in common financial ratios, are presented in Table 9 (Base Case).

Table 9: Financial Ratios of the Implemented EU-27 Model-firm and Different Industries (period 6 of 10)

	Base Case	Commerce	Construction	Energy	Manufacturing
Net profit/Net loss for period (EUR)	4,124,827	4,100,087	2,589,102	14,038,918	5,087,719
Total assets (EUR)	126,434,049	106,491,860	92,198,048	507,777,252	158,673,640
Sales (EUR)	159,457,817	235,488,844	100,372,294	296,484,315	169,088,711
Share of tangible fixed assets (*capital intensity*)	29.89%	22.37%	19.03%	42.85%	33.66%
Return on sales (*profitability*)	2.59%	1.74%	2.58%	4.74%	3.01%
Return on equity	9.50%	13.75%	9.88%	6.60%	8.07%
Equity ratio	34.34%	28.00%	28.44%	41.87%	39.75%
Inventories to capital	18.14%	26.66%	18.11%	5.10%	19.20%

The procedure of the *European Tax Analyzer* computation requires various estimates and assumptions in order to define and describe the model-firm and the economic conditions which are assumed to prevail.[44] For the production and sales, acquisition of goods, staff expenditures, other receipts and expenses (e.g. expenses for R&D), investments, distribution, and costs of financing, we derive all required information from EUROSTAT and BACH Database. Regarding the macroeconomic data, different inflation rates, credit and debit interest rate as well as exchange rates are considered as follows:

- expected economic lifetime for assets: 50 years for both production buildings and office buildings; 5 years for patents and concessions; 4 years for plant and 5 to 10 years for machinery; 9 years for office furniture and fixtures; zero for both financial assets and stocks;
- depreciable assets are assumed to be run down at the end of their expected economic life and replaced by new assets, based on the historical cost of the deposited assets adjusted for inflation. Thus, the initial capital stock remains at least constant;
- the goods produced are assumed to be either stocked or sold on the market in the period of production, i.e. multi-period production is possible;
- inflation rates: 2.2% of consumer price index, 4.8% of price index for basic material, 0.8% of price index for wages, and 2.3% of price index for investment goods;
- interest rates for creditors and debtors: 3% for short term credit, 3.9% for long term credit, 5.9% for short term debt, and 5.1% for long term debt.

4.3 Tax Regulation Incorporated into the Model

In order to calculate the tax burden in each of the 27 EU Member States, Switzerland and the U.S., the *European Tax Analyzer* accounts for all taxes that may be influenced by investments at the corporate level. Besides the corporate income tax and country-specific surcharges, consideration is also given to real estate taxes, payroll taxes, various types of trade taxes and net wealth taxes. Since only the corporate income tax is subject to tax harmonization under the proposed CCTB, all non-profit taxes remain unchanged when computing the reform-induced changes in effective tax burdens.

As mentioned before, the *European Tax Analyzer* allows accounting for all major elements of the tax base. It not only considers the most relevant revenues and expenses, but also the effects of corporate tax planning. In this regard, it allows for the selection of several accounting

44 For a detailed description of the estimates and assumptions see Spengel/Oestreicher (2012).

options (tax electives) that enable a company to influence its taxable profits. The following elements of the tax base are considered:

- depreciation (e.g. pool and individual depreciation schemes, depreciation periods for all relevant assets, extraordinary depreciation);
- stock valuation (i.e. last-in, first-out (LIFO), first-in, first-out (FIFO), and weighted average cost method; inflation reserves; production costs);
- research and development costs (i.e. immediately expensed or capitalized);
- employee pension schemes (i.e. deductibility of pension costs, contributions to pension funds; book reserves);
- provisions for bad debt and guarantee accruals;
- elimination and mitigation of double taxation on foreign-source income (i.e. exemption and foreign tax credit, deduction of foreign taxes);
- thin-capitalization rules, earning stripping rules;
- notional interest deductions; and
- loss relief (carryback and carryforward).

5 Results: Effective Company Tax Burdens in the EU Member States, Switzerland and the U.S.

In order to estimate the impact of the common tax accounting regulations under the proposed Council Directive on the total tax burden, the international comparison of effective tax burdens is first undertaken for the EU-27 average company representing the base case. However, it has to be kept in mind that the base case results are valid only for the model-firm characterized by the specific set of financial ratios illustrated in Table 8 and Table 9. Since corporate income taxes might affect investments in various industry sectors differently, the comparison of the effective average tax burdens is extended to corporations characterized by specific sets of financial ratios representing different industries (Section 6.3). Finally, the results of this study are compared with findings reported in the impact assessment accompanying the Draft Council Directive. In this regard, a direct comparison of results seems promising, as not only the same methodology, but also the same economic assumptions and data base are applied in both studies (Section 6.4).

5.1 National Tax Accounting

As the results displayed in Table 10 reveal, there is a remarkable dispersion of effective tax burdens across the 27 EU Member States in 2011. Overall, effective tax burdens range from EUR 56,875,023 in France to EUR 10,177,426 in Bulgaria. The average tax burden of all 27 EU Member States amounts to EUR 26,132,593.

Table 10: Effective Tax Burden and Impact of Particular Tax Categories (National Tax Accounting, Fiscal Year 2011)

Country	Statutory Tax Rate (%)[45]	EATB (EUR)	Rank (EATB)	Impact of particular tax categories on the effective tax burden in %				
				Profit taxes		Non-profit taxes		
				Corporate Income Tax	Trade/Local Income Tax	Real Estate Tax	Payroll Tax	Net Wealth Tax / Trade Tax on Capital/others
AT	25.00%	41,594,191	26	57.24%	0.00%	0.88%	41.88%	0.00%
BE	33.99%	30,909,699	20	89.15%	0.00%	10.85%	0.00%	0.00%
BG	10.00%	10,177,426	1	95.95%	0.00%	4.05%	0.00%	0.00%
CY	10.00%	17,107,222	6	59.33%	0.00%	3.84%	36.84%	0.00%
CZ	19.00%	18,654,528	7	98.64%	0.00%	1.36%	0.00%	0.00%
DE	15.83%	31,567,872	21	48.45%	49.87%	1.69%	0.00%	0.00%
DK	25.00%	27,004,247	17	89.71%	0.00%	10.29%	0.00%	0.00%
EE	21.00%	19,931,512	11	95.78%	0.00%	4.22%	0.00%	0.00%
ES	30.00%	33,587,989	22	83.75%	14.74%	1.51%	0.00%	0.00%
FI	26.00%	26,679,203	15	94.59%	0.00%	5.41%	0.00%	0.00%
FR	34.43%	56,875,023	27	56.90%	29.36%	3.37%	10.37%	0.00%
GR	20.00%	19,978,687	12	97.13%	0.00%	2.87%	0.00%	0.00%
HU	19.00%	39,954,054	24	40.71%	55.71%	3.58%	0.00%	0.00%
IE	12.50%	14,039,249	2	90.30%	0.00%	9.70%	0.00%	0.00%
IT	27.50%	41,541,581	25	65.00%	33.98%	1.01%	0.00%	0.00%
LT	15.00%	15,814,055	3	91.30%	0.00%	8.70%	0.00%	0.00%
LU	22.05%	29,369,857	19	76.43%	20.60%	2.96%	0.00%	0.00%
LV	15.00%	16,158,545	4	89.35%	0.00%	10.65%	0.00%	0.00%
MT	35.00%	33,662,021	23	100.00%	0.00%	0.00%	0.00%	0.00%
NL	25.00%	24,630,894	13	97.77%	0.00%	2.23%	0.00%	0.00%
PL	19.00%	19,909,383	10	92.91%	0.00%	7.09%	0.00%	0.00%
PT	25.00%	26,814,815	16	93.61%	5.07%	1.32%	0.00%	0.00%
RO	16.00%	16,291,219	5	92.81%	0.00%	7.19%	0.00%	0.00%
SE	26.30%	25,902,849	14	97.30%	0.00%	2.70%	0.00%	0.00%
SI	20.00%	19,217,146	8	100.00%	0.00%	0.00%	0.00%	0.00%
SL	19.00%	19,608,490	9	92.91%	0.00%	7.09%	0.00%	0.00%
UK	26.00%	28,598,258	18	88.43%	0.00%	11.57%	0.00%	0.00%
EU-27 ø		26,132,593						
CH	8.50%	19,007,090		31.37%	66.79%	0.00%	0.00%	1.84%
US	35.00%	46,335,360		71.00%	19.82%	9.18%	0.00%	0.00%

The large Member States France, Germany, Italy and Spain impose a relatively high tax burden on corporations. By contrast, a relatively low tax burden can be identified in those Member States which joined the European Union recently, e.g. Bulgaria and Romania. Conse-

[45] Corporate income tax rate incl. surcharges.

quently, the average tax burden in the EU-12 Member States (EUR 20,540,467) is considerably lower than the one in the 15 old Member States (EUR 30,606,294). Ireland is the only country among the old Member States ranking in the upper third of the country comparison. The effective average tax burden in Switzerland[46] amounts to EUR 19,007,090 and is significantly lower than the EU-27 average (27.27%). By contrast, the U.S.[47] must be considered as a high-tax country. Its effective tax burden amounts to EUR 46,335,360 and exceeds the EU-27 average by approximately 77%. Overall, only France levies higher taxes on corporations than the U.S.

As displayed in Table 10, the effective tax burden is influenced by different kinds of taxes. All EU Member States except Malta and Slovenia as well as Switzerland and the U.S. levy additional income and / or non-profit taxes besides corporate income tax; however, the corporate income tax generally constitutes the main share of the overall tax burden. Its share ranges from 31.37% in Switzerland to 100% in Malta and Slovenia. Accordingly, the corporate income tax rates shown in Column 2 of Table 10 are a key driver for the effective tax burdens. The impact of other taxes on the overall tax burden is relatively low in most of the considered countries. A different picture is, however, seen in those countries levying local taxes on corporate income. For example, the overall tax burden in Germany (49.87%), Hungary (55.71%), Italy (33.98%) or Switzerland (66.79%) is substantially determined by local (business) taxes on income. Furthermore, in Belgium, Denmark, Latvia, and the United Kingdom as well as Austria, Cyprus, and France non-profit taxes play an important role in the overall tax burden. While the impact of real estate taxes on the overall tax burden is comparatively high in Belgium (10.85%), Denmark (10.29%), Latvia (10.65%) and the United Kingdom (11.57%), Austria, Cyprus, and France impose taxes on payroll, which are neither withheld from employee's wages nor directly related to social security contributions. We therefore assume that those taxes are being paid from corporate funds, which, at least in the short run, bear their burden. Their fraction of the overall corporate tax burden varies between 10.37% in France and 41.88% in Austria.

5.2 Common Corporate Tax Base

The changes of the effective tax burdens induced by an adoption of the proposed CCTB regulations are displayed in Table 11. It is assumed that the rules outlined in Section 3 regarding

46 Switzerland levies taxes at the federal, cantonal and local level, with cantons setting their own rates. Here, we consider the regulations applicable for a corporation based in the canton of Zurich.

47 In the U.S. taxes are imposed at the federal, state and local level. Here, we consider the regulation applicable for a corporation based in New York.

- depreciation (Articles 36 and 39),
- inventory valuation (Articles 21 and 29),
- provisions for legal obligations (here: warranties) (Article 25),
- provisions for pensions (Article 26),
- exemption of dividend income (Article 11) and
- the loss relief (Article 43) are implemented simultaneously.

Since it seems at least questionable whether Member States are likely to follow the less restrictive thin-capitalization rules of Article 81 under a CCTB (see Section 3.2.5), the national thin-capitalization rules are assumed to remain applicable. Similarly, all local income taxes and non-profit taxes remain unchanged and deductible from the CCTB if so foreseen by national tax law. Although these assumptions may at first glance oppose the regulation of Article 14, such treatment of local taxes has to be seen in the overall context of the proposed CCCTB. Rather than allowing local taxes to be deducted from the (consolidated) tax base, local taxes might be deducted after the common (consolidated) tax base has been allocated to the respective Member States, provided that national tax law allows such deductions. As local taxes are therefore deducted from each individual Member State's share of the consolidated tax base, an undesired impact on the apportionment of the CCCTB for Member States that do not levy local taxes is prohibited. Finally, it is also assumed that local income taxes take over the harmonized tax base if taxable income for local income tax purposes is computed in reference to corporate income taxes under national tax regulations, e.g. in Germany, Switzerland and the U.S. However, country-specific add-backs and deductions remain applicable.

Table 11 presents the effective tax burdens in case of a CCTB and the change in tax burdens induced by the introduction of common tax accounting regulations in all considered countries. In the European Union, the changes in effective tax burdens range from an increase of 3.12% in Romania to a decrease of 4.04% in Cyprus. Since there is no intention to extend harmonization to corporate income tax rates,[48] the spread between effective tax burdens in the 27 EU Member States remains remarkably high. Even under a common tax base, the overall effective tax burden in France (EUR 56,961,345) is nearly 5.6 times larger than the one in Bulgaria (EUR 10,248,026).

[48] See Explanatory Memorandum on the Draft Council Directive on a Common Consolidated Corporate Tax Base (CCCTB).

Table 11: Changes in Effective Tax Burdens Induced by the Adoption of the Proposed CCTB and Isolated Impact of Specific Regulations (Fiscal Year 2011)

Country	National Tax Code (EUR)	CCTB (EUR)	Deviation (%)	Isolated impact of specific rules of a CCTB on the effective tax burden in %				
				Depreciation	Valuation of Inventory	Pension Scheme	Warranty Provisions	Profit Distributions
AT	41,594,191	41,617,188	0.06%	0.82%	0.17%	-1.15%	0.00%	0.13%
BE	30,909,699	30,785,456	-0.40%	-0.32%	-0.09%	0.00%	0.00%	0.00%
BG	10,177,426	10,248,026	0.69%	3.44%	-1.36%	0.00%	-1.34%	0.22%
CY	17,107,222	16,416,675	-4.04%	-2.20%	-2.41%	0.00%	-2.38%	0.13%
CZ	18,654,528	18,706,271	0.28%	2.93%	-1.24%	0.00%	-1.24%	0.23%
DE	31,567,872	31,518,174	-0.16%	1.19%	0.25%	-1.48%	0.00%	0.00%
DK	27,004,247	26,852,232	-0.56%	0.29%	-0.02%	0.00%	-1.04%	0.21%
EE	19,931,512	19,931,512	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
ES	33,587,989	34,182,859	1.77%	1.67%	-0.10%	0.00%	0.00%	0.20%
FI	26,679,203	26,444,721	-0.88%	0.01%	-0.02%	0.00%	-1.08%	0.22%
FR	56,875,023	56,961,345	0.15%	0.84%	-0.90%	0.00%	0.00%	0.00%
GR	19,978,687	19,968,464	-0.05%	3.95%	0.17%	0.00%	-2.28%	-2.57%
HU	39,954,054	40,272,436	0.80%	2.86%	0.00%	0.00%	-1.44%	0.09%
IE	14,039,249	13,704,239	-2.39%	-1.08%	0.00%	0.00%	0.00%	-1.95%
IT	41,541,581	40,530,482	-2.43%	-0.97%	1.11%	-0.63%	-1.50%	0.00%
LT	15,814,055	16,025,496	1.34%	2.37%	-0.02%	0.00%	-1.22%	0.21%
LU	29,369,857	29,131,635	-0.81%	1.08%	0.36%	-2.49%	0.00%	0.21%
LV	16,158,545	16,153,245	-0.03%	0.88%	0.36%	0.00%	-0.37%	0.21%
MT	33,662,021	33,578,268	-0.25%	1.28%	-1.02%	0.00%	-1.00%	0.23%
NL	24,630,894	24,396,697	-0.95%	1.01%	-0.73%	-1.36%	0.00%	0.22%
PL	19,909,383	19,821,842	-0.44%	0.45%	0.32%	0.00%	-1.17%	0.21%
PT	26,814,815	27,555,805	2.76%	2.53%	0.00%	0.00%	0.00%	0.24%
RO	16,291,219	16,799,292	3.12%	2.60%	0.22%	0.00%	0.00%	0.22%
SE	25,902,849	25,979,967	0.30%	1.16%	-1.09%	0.00%	0.00%	0.22%
SI	19,217,146	19,395,551	0.93%	0.94%	-0.01%	0.00%	0.00%	0.00%
SL	19,608,490	19,841,409	1.19%	2.15%	0.00%	0.00%	-1.18%	0.22%
UK	28,598,258	28,309,382	-1.01%	-1.21%	0.00%	0.00%	0.00%	0.20%
EU-27 ø	26,132,593	26,115,877	-0.06%	1.06%	-0.22%	-0.26%	-0.64%	-0.03%
CH	19,007,090	21,680,470	14.07%	11.98%	1.77%	0.00%	0.00%	0.05%
US	46,335,360	45,999,435	-0.72%	1.51%	-0.58%	0.00%	-0.82%	0.21%

While the effective tax burden is decreasing in 14 Member States, we find a broader tax base and, therefore, an increasing effective tax burden in 13 Member States. However, in line with the findings of the qualitative analyses (see Section 3), differences between the proposed CCTB and national tax accounting regulations have only a minor impact on the amount of taxable income. Consequently, changes in the effective tax burdens exceed 2% in only 5 Member States (Cyprus, Ireland, Italy, Portugal and Romania). In contrast to the announcement by the European Commission, which expects that a "common base would lead to an average EU base that is broader than the current one",[49] the effective tax burden remains, on an EU-27 average, largely unchanged (-0.06%). The same holds true for the position of coun-

[49] See Explanatory Memorandum on the Draft Council Directive on a Common Consolidated Corporate Tax Base (CCCTB).

tries in the international country ranking. While Cyprus, Denmark, Malta and Poland improve their rank, Portugal, Romania, the Slovak Republic and Spain, fall back by one position, if the regulations of the CCTB would be adopted. However, a significant increase of 14.07% is determined for Switzerland. As a result, the gap between the average EU-27 and the Swiss tax burden decreases to 16.98%. By contrast, the effective tax burden decreases by 0.72% in the U.S., if the regulations governing the CCTB would be implemented. Finally, it needs to be emphasized that both Belgium and Latvia provide for a "notional interest deduction" under national tax accounting, enabling corporations to deduct from their taxable income a fictitious interest expense on the adjusted equity capital. While it is assumed that the tax deduction for the cost of capital remain applicable in both countries in the base case, additional calculations reveal that an abolishment of the "notional interest deduction" would remarkably increase the effective tax burden in both countries. In detail, the effective tax burdens in case of a CCTB without a "notional interest deduction" would increase to EUR 35,556,551 (15.03%) in Belgium and EUR 17,531,734 (8.50%) in Latvia, respectively.

Up to this point, the cumulative effects of the proposed CCTB have been analyzed. In the following, the effects of some elements of the CCTB are considered in isolation. Each simulation is based on a particular regulation of the proposed Council Directive being harmonized, while national accounting rules continue to apply for all other elements of the tax base. This analysis allows us not only to identify the origins and causes of the overall change in effective tax burdens, but also to determine the importance of specific elements of the proposed CCTB. However, it needs to be emphasized that the changes caused by the isolated application of a single CCTB regulation cannot be summed up to receive the cumulative results reported in Column 4 of Table 11. This is due to timing effects caused by the interdependencies between different tax accounting regulations that may intensify or weaken the impact of changing accounting regulations on the tax base.

First, Column 5 of Table 11 presents the impact of the common depreciation rules on buildings, tangible fixed assets and intangibles as governed by Article 36 and 39 on the effective tax burden. The results indicate that the impact of common tax depreciation rules is highly relevant for the changes in the effective tax burdens. In this regard, the extent to which deviations between current national depreciation rules and the proposed Council Directive translate into a change in the effective tax burden is mainly driven by different depreciation methods and rates for buildings as well as for tangible fixed assets (machinery and equipment). By contrast, depreciation of acquired intangibles is of less importance. In line with the proposed

Council Directive, acquired intangibles are generally depreciated on a straight-line basis over their useful life, i.e. the period for which the intangible enjoys legal protection or for which the right is granted, in most countries under consideration.

In total, the impact of the common depreciation rules is very heterogeneous. In the European Union, changes in the effective tax burden induced by common depreciation regulations range from a 2.20% decrease in Cyprus to a 3.95% increase in Bulgaria. Again, Switzerland stands out with the highest increase of 11.98%, which is mainly due to generous depreciation options in the Canton of Zurich, i.e. an immediate write off of 80% of the acquisition or production cost of certain tangible assets is applicable in the year in which the assets are put into use. Similarly, the increases in Bulgaria, the Czech Republic, Greece and Romania are mainly explained by accelerated depreciation schemes provided for machinery and equipment. For example, a triple declining-balance method may be applicable to plant, machinery and equipment in Greece. Vice versa, the sharp decline in the effective average tax burden in Cyprus is explained by rather restrictive depreciation regulations. Here, depreciation rates for machinery and equipment are considerably smaller than the one reflected by the standard depreciation rate for the asset pool of 25% under the proposed CCTB. While this holds true for several other countries under consideration, the effect is partially mitigated by the rather restrictive depreciation regulations for buildings under the proposed CCTB. In this regard, Article 36 sets the statutory useful life for buildings to 40 years, which applies regardless of the type of building, i.e. a distinction between office and industrial buildings is not made. By contrast, most considered countries prescribe different depreciation periods for different types of buildings and allow for shorter depreciation periods for industrial buildings. Thus, the adoption of the common depreciation rules for buildings generally causes an increase in the effective tax burden. However, it is worth mentioning that the decline of the tax burden calculated for the United Kingdom (-1.21%) is mainly attributable to the depreciation regulations for buildings. Here, the industrial buildings allowance was abolished in 2011, i.e. neither office nor industrial buildings qualify for capital allowances under national tax accounting. Similarly, office buildings do generally not qualify for depreciation in Denmark, Ireland and Malta.

Second, Column 6 of Table 11 shows the effect of common rules for the initial and subsequent measurement of costs of stock items and work-in-progress. In this regard, we assume the strict application of the direct cost approach as foreseen by Article 29 (2). Even though taxpayers are entitled to continue to apply the indirect cost approach if they included indirect costs before opting for the CCTB (Article 29 (2)), only direct costs are capitalized in our calculations. Moreover, in line with Article 29 (1) the weighted-average-cost method (WAC) was chosen as an option for the CCTB. Compared to the LIFO method, which is allowed in 11 of the 29 considered countries, the WAC method leads to a higher tax burden. For example, Austria, Germany and Poland show an increase of up to 0.32% when the WAC is applied. By contrast, in countries applying only the FIFO method (e.g. Finland and Lithuania) the tax burden is moderately reduced. Additionally, the tax base is affected by the initial measurement of inventories. Depending on the rules for the determination of inventory costs, expenses are deductible either in the period in which they occur or they are deferred to the period in which the stock item is sold. As only direct costs are capitalized under the proposed CCTB, the tax burden decreases in countries demanding certain indirect costs to be capitalized, e.g. Bulgaria or Malta. By contrast, the tax burden in Switzerland is increasing, as national tax accounting regulations allow to deduct one third of the acquisition or production cost in computing the book value of the inventory (*Warenreservedrittel*). Furthermore, decreases in the effective tax burden can be observed in those countries demanding research and development cost to be capitalized, e.g. Cyprus and Spain. For the purpose of the CCTB, however, all research and development costs are expensed immediately in order to provide incentives for companies to invest in research and development.[50]

Altogether, the impact of initial and subsequent measurement of costs of stock items and work-in-progress, with an overall EU-average decrease of 0.22%, is rather small. However, it should be noted that the country-specific impact on the effective tax burden ranges from -2.41% in Cyprus to 1.77% in Switzerland.

Third, Column 7 of Table 11 presents the impact of common rules regarding the determination of pension liabilities (Article 26). In this regard, contributions to external pension funds are not only treated as tax-deductible expenses under the proposed Council Directive, but also in all Member States, Switzerland and the U.S.[51] As a result, the effective tax burdens remain unchanged in most countries under consideration. By contrast, considerable deviations in effective tax burdens are identifiable in countries where companies frequently pay pension benefits directly and set up tax-deductible pension provisions under national tax accounting regulations that differ from the regulations foreseen by Article 26. In short, accounting for pension provisions under the rules provided by Article 26 would reduce the effective tax burdens considerably in Austria (-1.15%), Germany (-1.48%), Italy (-0.63%), Luxemburg (-2.49%) and

[50] See Explanatory Memorandum on the Draft Council Directive on a Common Consolidated Corporate Tax Base (CCCTB).
[51] Currently, the state pension, which is tax-deductable, is the only pension scheme recognised in Malta.

the Netherlands (-1.36%). These reductions stem mainly from different discount rates. While national tax accounting regulations provide fixed discount rates in the range of 4% (the Netherlands) to 6% (Austria and Germany), pension provisions are discounted by reference to the annual average of Euribor for obligations with a maturity of 12 months under the proposed CCTB (here: 1.364%).[52] For reasons of objectivity, the prescription of an explicit discount rate for pension provisions is to be welcomed. However, the results reveal that the application of a short-term discount rate is economically questionable and conflicts with international tax practice. Considering the long-term character of pensions we, therefore, recommend to review the regulations of Article 26 and replace the average of Euribor for obligations with a maturity of 12 months with a statutory fixed long-term discount rate.

Fourth, the results presented in Column 8 of Table 11 and the following descriptions analyze the effect of common rules regarding the tax deductibility for provision for legal obligations (here: warranty provisions). Under the regulations of Article 25, any expenditure required to settle legal obligations which can be reliably estimated shall be tax-deductible, provided that the eventual settlement of the amount is expected to result in a deductible expense. Therefore, contributions to warranty provisions are generally treated as tax deductible. By contrast, about half of the considered countries do not generally allow the recognition of warranty provisions under their national tax regulations, i.e. expenses for product warranties cannot be recognized before they have actually been paid. In these countries, the introduction of a CCTB would lead to a reduction in the effective tax burden, because expenditures could be recognized before the liability is effectively due. In this regard, the largest reductions in effective tax burdens are determined for Cyprus (-2.38%), Greece (-2.28%) and Italy (-1.50%), but also other countries, e.g. Bulgaria, Denmark and the U.S., show a significant decrease in effective tax burdens. Overall, the EU-27 average effective tax burden would decrease by 0.64%, if common rules for warranty provisions were to be introduced.

The changes induced by the tax exemption of dividend distributions from substantial ownership interest are displayed in Column 9 of Table 11. In line with Article 11, all EU Member States except Greece prevent double taxation of profit distributions received from substantial domestic or EU ownership interest either by way of exemption or imputation credit (e.g. Ireland, Malta). As a result, the effective tax burdens remain largely unchanged in most counties under consideration. Overall, the EU-27 average effective tax burden decreases by -0.03%. This reduction is mainly due to the decrease in tax burdens in Greece and Ireland. While do-

[52] See http://www.euribor-rates.eu (18.4.2012).

mestic dividends distributed are subject to withholding tax at a rate of 21% in Greece, the decrease in Ireland is mainly attributable to the substitution of the credit method for foreign substantial shareholdings by the exemption method foreseen by Article 11. By contrast, due to the 5% add-back rule, which represents non-deductible business expenses, effective tax burdens are increasing in most other countries under consideration. Only in Belgium, France, Germany, Italy and Slovenia, which are in line with the proposed Council Directive and add-back a lump sum of 5% of the dividends to taxable income, effective tax burdens remain unchanged.

Finally, it should be noted that the model-firm considered in the base case scenario is a profitable company that incurs no losses during the simulation period. As a result, the (untabulated) application of the loss relief regulations laid down in Article 43 does not result in a change of the effective tax burden of the model-firm.

5.3 Robustness Test: Industry Analysis

As mentioned above, the results presented in the previous section are determined for a model-firm representing an average model-firm of different industries. However, common tax accounting regulations might affect tax burdens in various industry sectors differently. To enhance the scope of the analysis and check the robustness of the base case results, we analyze the change in tax burden induced by the introduction of a CCTB for different model-firms operating in certain industry sectors. The industries considered are: commerce, construction, energy and manufacturing. The companies representing these industry sectors are characterized by the specific set of financial ratios shown in Table 9.

Table 12 offers some insights into the characteristics of the industry sectors that benefit to a higher or lower degree from the introduction of a CCTB as proposed by the European Commission. At first glance, results for the base case are confirmed by the industry-specific analysis. Irrespective of the industry, the findings reveal that the changes on EU companies' effective tax burden of moving from the prevailing system to the proposed CCTB are rather small. In other words, the deviations of the overall EU-27 average are less than 1% in all sectors.

Table 12: Effective Tax Burdens under National Tax Accounting Regulations and Changes in Effective Tax Burdens Induced by the Application of the CCTB for Different Industry Sectors (Fiscal Year 2011)

	Commerce		Construction		Energy		Manufacturing	
Country	National Tax Code (EUR)	Deviation (%)	National Tax Code (EUR)	Deviation (%)	National Tax Code (EUR)	Deviation (%)	National Tax Code (EUR)	Deviation (%)
AT	37,315,012	-0.05%	26,776,648	0.01%	83,543,067	1.29%	50,467,534	0.67%
BE	30,184,406	-0.32%	18,175,327	-0.34%	88,640,722	1.93%	40,136,521	-0.43%
BG	9,786,015	-2.00%	6,169,360	0.27%	28,785,213	3.43%	13,457,452	1.36%
CY	15,291,887	-3.77%	10,886,178	-3.81%	37,622,434	-6.60%	21,252,665	-5.35%
CZ	18,094,995	-1.93%	11,469,594	-0.25%	49,886,388	2.74%	24,657,609	0.71%
DE	29,750,223	-0.28%	19,383,166	-0.23%	87,201,156	1.36%	41,509,698	0.09%
DK	25,241,317	-1.24%	15,838,748	-0.73%	87,447,004	0.86%	36,096,434	-0.42%
EE	18,816,533	0.00%	12,106,887	0.00%	56,406,534	0.00%	26,685,807	0.00%
ES	31,894,616	1.08%	20,568,041	1.72%	91,328,973	2.28%	44,589,946	1.76%
FI	25,145,728	-1.55%	16,012,188	-0.94%	82,270,100	-4.00%	35,438,135	-0.57%
FR	63,598,995	-0.67%	35,027,814	0.01%	131,598,700	1.75%	70,231,240	0.50%
GR	19,097,257	-1.80%	12,145,221	-0.16%	53,436,668	5.80%	26,475,844	0.26%
HU	55,698,045	-0.53%	23,830,626	-0.04%	90,426,956	4.48%	47,570,891	3.48%
IE	12,918,629	-1.74%	8,254,362	-2.58%	45,920,456	-2.83%	18,825,683	-2.55%
IT	37,895,604	-2.28%	25,352,334	-2.54%	105,139,417	-7.91%	53,010,265	-3.36%
LT	14,966,422	-0.47%	9,343,779	1.27%	47,252,386	7.88%	20,974,371	2.13%
LU	27,170,658	-0.68%	17,955,119	-0.84%	84,190,411	0.88%	39,271,628	-0.30%
LV	14,712,882	0.71%	9,131,811	0.22%	57,619,261	3.68%	21,965,872	-0.18%
MT	32,239,579	-1.14%	20,743,362	-0.20%	88,078,380	0.24%	44,471,108	0.03%
NL	23,235,058	-1.35%	14,992,681	-1.16%	68,384,559	0.67%	32,775,820	-0.72%
PL	18,700,540	-1.14%	11,842,047	-0.46%	61,376,865	-0.09%	26,529,905	-0.28%
PT	25,552,360	1.59%	16,224,543	2.61%	72,742,236	4.77%	35,715,251	2.91%
RO	15,409,040	1.61%	9,458,072	5.64%	49,589,480	4.72%	21,607,244	3.77%
SE	24,588,315	-0.63%	15,795,868	-0.02%	72,062,761	1.61%	34,384,100	0.41%
SI	18,221,987	0.44%	11,830,816	0.92%	51,308,850	0.43%	25,457,651	1.00%
SL	18,551,186	-0.25%	11,729,523	0.67%	59,480,965	2.85%	26,095,991	1.47%
UK	26,379,903	-0.59%	16,609,333	-0.86%	100,092,213	-4.82%	38,358,555	-1.08%
EU-27 ø	25,572,489	-0.65%	15,839,017	-0.14%	71,549,339	0.75%	34,000,490	0.20%
CH	18,403,075	9.54%	11,624,245	13.99%	50,540,064	13.93%	25,043,499	15.25%
U.S.	43,677,741	-1.79%	27,281,388	-0.75%	150,989,490	-1.08%	61,885,137	-0.46%

However, it may not be ignored that the country-specific impact of common accounting regulations strongly depends on the economic structure of companies. This holds especially true for the model-firms representing the energy and manufacturing sector. Both industry sectors show significant changes in the relative deviations between tax burdens determined under national tax regimes on the one hand and the proposed CCTB on the other. By contrast, the results of the average company representing the commerce and the construction sector, which show similar financial ratios to the base case (Table 9), remain largely unchanged compared to the base case. The average effective tax burden in the EU-27 decreases in both sectors, on average, by 0.65% and 0.14%, respectively. In the commerce sector, the larger decrease in the effective tax burden induced by the introduction of a CCTB is mainly attributable to the high rate of inventories to capital, i.e. the initial and subsequent measurement of inventories become more important. As a result, considerably larger decreases in the effective tax burden are determined in those countries deferring a higher fraction of inventory costs to the period in which assets are sold or applying the FIFO method, e.g. Cyprus and Finland. Vice versa, the increase in the effective tax burden in Switzerland (9.54%) is considerably lower than the one calculated in the base case. Focusing on the construction sector, the decrease in effective tax burden is mainly explained by the lower share of tangible fixed assets in total assets (*capital intensity*). Thus, depreciation rules become less important and country-specific deviations generally decrease. Only Romania stands out with an increase in its effective tax burden of 5.64%.

As presented in Columns (6) and (7) of Table 12, the energy sector clearly stands out from the other considered sectors, as the deviation between national tax accounting and a CCTB are considerably larger than for the base case. In more than half of the considered countries deviations exceed 2%. For the 27 EU Members States, changes in effective tax burdens range from an increase of 7.88% in Lithuania to a decrease of -7.91% in Italy. In Switzerland and the U.S. tax burdens change by 13.93% and -1.08%, respectively. Compared to the base case, the energy sector yields evidently higher annual profits. As a result, corporate income taxes play a more important role in the overall tax mix, thus explaining the strengthened impact of common tax accounting regulations on the effective tax burden. More importantly, however, the average company representing the energy sector is characterized by particularly high capital intensity. Higher capital intensity means that depreciation rules become more important since the proportion of depreciable tangible assets and immovable assets in total assets increases. As depreciation rules are one of the key drivers for the deviation between national tax accounting and the proposed CCTB (see Section 6.2), country-specific deviations increase significantly. In particular, due to the high share of immovable property in the energy sector, the tax burden in the United Kingdom decreases by 4.82%. By contrast, considerable increases are determined in the countries granting more generous depreciation schemes for machinery and equipment than the proposed CCTB, e.g. Greece (5.80%), Portugal (4.77%) and Romania (4.72%).

Finally, the results determined for the manufacturing sector (Columns (8) and (9)) confirm the results of the energy sector. The average company of the manufacturing sector yields higher profits and a higher capital intensity than the base case company, but lower profits and a lower capital intensity than the model-firm representing the energy sector. As a result, the determined changes in effective tax burdens induced by the introduction of a CCTB range between the two other sectors. Again, the largest increases in the effective tax burden are identified for Lithuania (2.13%), Portugal (2.91%), Romania (3.77%) and Switzerland (15.25%), while reductions are most pronounced in Cyprus (-5.35%) and Italy (-3.36%).

To conclude, the analyses for industry-specific model-firms confirm the results for the base case, which are based on an industry average. Irrespective of the concrete industry, the findings reveal that the changes on EU companies' effective tax burden of moving from the prevailing system to the proposed CCTB are rather small. In total, the deviations of the overall EU-27 average are less than 1% in all considered sectors. Furthermore, the industry analysis confirms that the changes in effective tax burdens are mainly driven by differences in depreciation rules for short-term machinery and equipment (asset pool) and buildings. Depending on the firm-specific asset structure the economic implications of the CCTB may, therefore, differ considerably across individual companies.

5.4 A Review of the Impact Assessment

As mentioned before, the proposed Draft Council Directive is accompanied by a broad and comprehensive impact assessment, which analysis, inter alia, the impact of common tax accounting regulation on the size of the taxable bases in all 27 EU-Member States. Based on this impact assessment the European Commission expects that a "common base would lead to an average EU base that is broader than the current one".[53] In terms of a comparison of this result with the findings presented above, it is worth mentioning that the impact assessment is not only derived from the same model-firm approach (*European Tax Analyzer*), but also that the same data base and economic assumptions were applied to compute effective tax burdens and the future value of the tax base, i.e. the sum of all yearly tax bases evaluated at the end of the simulation period of 10 years. [54] Hence, the results presented above may, on the one hand, be seen as an important update of the impact assessment. On the other hand, they allow for a direct comparison with the impact assessment. This comparison offers not only a deeper understanding of the key drivers of the change in tax burden induced by the implementation of the proposed Council Directive, but also provides valuable information on recent developments in tax accounting in Europe.

[53] See Explanatory Memorandum on the Draft Council Directive on a Common Consolidated Corporate Tax Base (CCCTB).
[54] See for the full study underlying the impact assessment Spengel/Oestreicher (2012) and Oestreicher/Reister/Spengel (2009), pp. 46-66.

Comparing the findings of the impact assessment with the results discussed above the assumption that a CCTB would lead on average and for most EU-based companies to tax bases broader than the one determined under national tax accounting regulations has been proven untenable. While the base case results reported in the impact assessment suggest an increase in the future value of the tax base of 6.20% and the effective tax burden of 5.15%, respectively, the effective tax burden remains, on an EU-27 average, largely unchanged (-0.06%) if the current Draft Council Directive and national tax accounting regulations as of January 1st 2011 are taken into account. As displayed in Table 13, this finding holds true irrespectively of the industry considered.

Table 13: Comparison of Changes in Effective Tax Burdens Induced by the Application of the CCTB (Draft Council Directive / Impact Assessment)

	Base Case	Commerce	Construction	Energy	Manufacturing
EU-27 ø (Draft Council Directive, 2011)	-0.06%	-0.65%	-0.14%	0.75%	0.20%
EU-27 ø (Impact Assessment, 2006)	5.15%	3.21%	4.10%	9.15%	6.11%

Note: For the results of the study underlying the impact assessment see Oestreicher/Reister/Spengel (2009), p. 64.

More specifically, based on the national tax accounting regulations as of the financial year 2006 the study underlying the impact assessment determines a higher effective tax burden in all Member States, except Cyprus and Estonia. For the base case, the change in the effective tax burden ranges from -3.82% in Ireland (here: -4.04%) to 11.12% in Latvia (here: -0.03%). By contrast, the changes in effective tax burdens are considerably smaller and range from a decrease of 4.04% in Cyprus to an increase of 3.12% in Romania, if the current Draft Council Directive and national tax accounting regulations as of January 1st 2011 are taken into account. Overall, for all 27 EU-Member States the increase in effective tax burden induced by the adoption of a common tax base become smaller or even turn into a decrease. This is due to at least two reasons: First, the common tax base under the proposed tax accounting regulations of the current Draft Council Directive is much narrower than the one determined for the impact assessment. For example, while the current study takes a discount rate of 1.364%, i.e. the Euribor for obligations with a maturity of 12 months, into account when measuring pension provisions, the results of the impact assessment are based on a discount rate of 3%, which corresponded to the short-term credit interest rate at that time. Moreover, according to the state of the discussion at that time the impact assessment assumes a depreciation rate of 20% for the asset pool, rather than an annual rate of 25%.[55] Second, while the results of the

[55] Please note that additional calculations with a 25% depreciation rate for the asset pool have been carried out. Overall, these calculations to an increase in the future value of the tax base of 1.09% and the effective tax burden of, respectively.

impact assessment are based on the national tax regulations as of 2006, the current study takes national tax law as of the fiscal year 2011 into account. In this regard, not only Spengel/Zinn (2011) show that European tax policy over the last decade is characterized by a noticeable tendency to finance tax rate cuts by substantial tax base broadening policies, e.g. by means of reduced depreciation allowances, tightened loss offset or interest deduction regulations. For example, the industrial buildings allowance was abolished with effect from 2011in the United Kingdom, while the declining-balance method of depreciation is no longer applicable for assets purchased or manufactured after 2007 in Germany.[56] Accordingly, compared to the results for the fiscal year 2006, we determine a considerable broader tax base in all ten simulation periods under national tax accounting regulations as of 2011. At the same time, due to the considerably decreases in corporate tax rates in some countries under consideration during the last decade, e.g. the Czech Republic cuts its rate from 24% in 2006 to the current rate of 19%, the effects of different tax accounting rules on liquidity became less important. That is, differences between the proposed regulations for the determination of taxable income under the proposed Council Directive and international tax practice became generally smaller. As a result, rather than increasing, the tax base and consequentially the effective tax burden remains, on an EU-27 average, largely unchanged.

6 Conclusion

(1) The European Commission released a Draft Council Directive on a Common Consolidated Corporate Tax Base (CCCTB) on March 16, 2011. In the context of the Europe 2020 Strategy, major objectives of the proposed CCCTB are the elimination of transfer pricing concerns, the removal of double taxation due to conflicting tax claims between Member States and, of course, the reduction of tax compliance costs

(2) As the second and the third step of a CCCTB, i.e. the consolidation and the allocation of the common tax base, still suffer from considerable shortcomings, we recommend introducing the CCCTB in two steps. The first step comprises the replacement of the national tax accounting regulations across Member States by a single set of harmonised tax rules. Such a Common Corporate Tax Base (CCTB) would merely affect the calculation of the corporate tax base. Consolidation of individual incomes and the allocation

[56] Please note that as part of an economic stimulus package, the declining balance method was temporarily reintroduced for movable fixed assets acquired or produced in 2009 and 2010.

of the consolidated tax base would, however, be omitted for the present and considered at a later stage as a second step of tax harmonization in Europe.

(3) Based on a unique survey on the corporate tax systems in all 27 EU-Member States, Switzerland and the U.S. made available by Ernst & Young, this article provides a comprehensive analysis on the determination of corporate taxable income under a CCTB in a cross-country setting. The results reveal that the majority of differences between the regulations for the determination of taxable income under the proposed Council Directive and current international tax practice are of minor importance. Moreover, many deviations from prevailing tax accounting practices are of formal or technical nature and are expected to have an insignificant impact on the actual amount of taxable income.

(4) Significant and substantial differences are identified with respect to the taxation of unrealized revenues from financial assets and liabilities held for trading (Article 23), rollover relief for individually depreciable replacement assets (Article 38), tax exemption of portfolio dividends and revenues from the disposal of portfolio shares (Article 11), recognition and measurement of provisions for legal obligations (Article 25) and pension provisions (Article 26), pool depreciation of tangible assets with a useful life of 15 years and less at a rate of 25% (Article 39) and unlimited carryforward of incurred losses (Article 43 (1)).

(5) The results of the quantitative analyses confirm the findings of the international comparison of tax accounting regulations with the proposed CCTB. Overall, the effective tax burden remains, on an EU-27 average, largely unchanged (-0.06%) conforming that differences between the regulations for the determination of taxable income under the proposed Council Directive and current international tax practice are rather small. While the effective tax burden is decreasing in 14 Member States, we find a broader tax base and, therefore, an increasing effective tax burden in 13 Member States. However, without a harmonization of corporate income tax rates, the spread between effective tax burdens in the 27 EU Member States remains remarkably high.

(6) The introduction of the proposed CCTB, however, would have a considerable impact on the effective tax burden in some countries under consideration. While effective tax burdens would considerably increase in Portugal, Romania and Switzerland, the largest reductions are determined for Cyprus, Ireland and Italy. In line with the results of the qualitative analysis, these deviations are mainly driven by differences in depreciation

rules (EU-27 average: 1.06%) and in the measurement and recognition of provisions (EU-27 average: -0.64%).

(7) Separate analyses for industry-specific model-firms confirm the results for the base case, which are based on an industry average. The industry-specific findings reveal that the changes on EU companies' effective tax burden of moving from the prevailing system to the proposed CCTB are rather small. In total, the deviations of the overall EU-27 average are less than 1% in all considered industries. Moreover, the results confirm that the changes in effective tax burdens are mainly driven by differences in depreciation rules for short-term machinery and equipment (asset pool) and buildings. Depending on the firm-specific asset structure the economic implications of the CCTB may, therefore, differ considerably across individual companies.

(8) Comparing the findings of the impact assessment accompanying the Draft Council Directive with the results discussed above the assumption that a CCTB would lead on average and for most EU-based companies to tax bases broader than the one determined under national tax accounting regulations has been proven untenable. While the base case results reported in the impact assessment, which are based on the national tax accounting regulations as of the financial year 2006, suggest an increase in the effective tax burden of up to 9.15%, the effective tax burden remains, irrespective of the considered industry, largely unchanged, if the current Draft Council Directive and national tax accounting regulations as of January 1st 2011 are taken into consideration.

(9) Referring to both the results of the qualitative and the quantitative analysis, we conclude that a CCTB as established by the proposed Council Directive is appropriate to replace the existing rules for the determination of corporate taxable income governed by national tax accounting regulations in the 27 EU Member States. Although some open questions remain that have to be addressed in more detail once the Draft Council Directive is to be implemented into the tax law of the Member States, it provides a carefully prepared and comprehensive framework for the determination of corporate taxable income that may - from our perspective - be expected to reach consensus in the EU.

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