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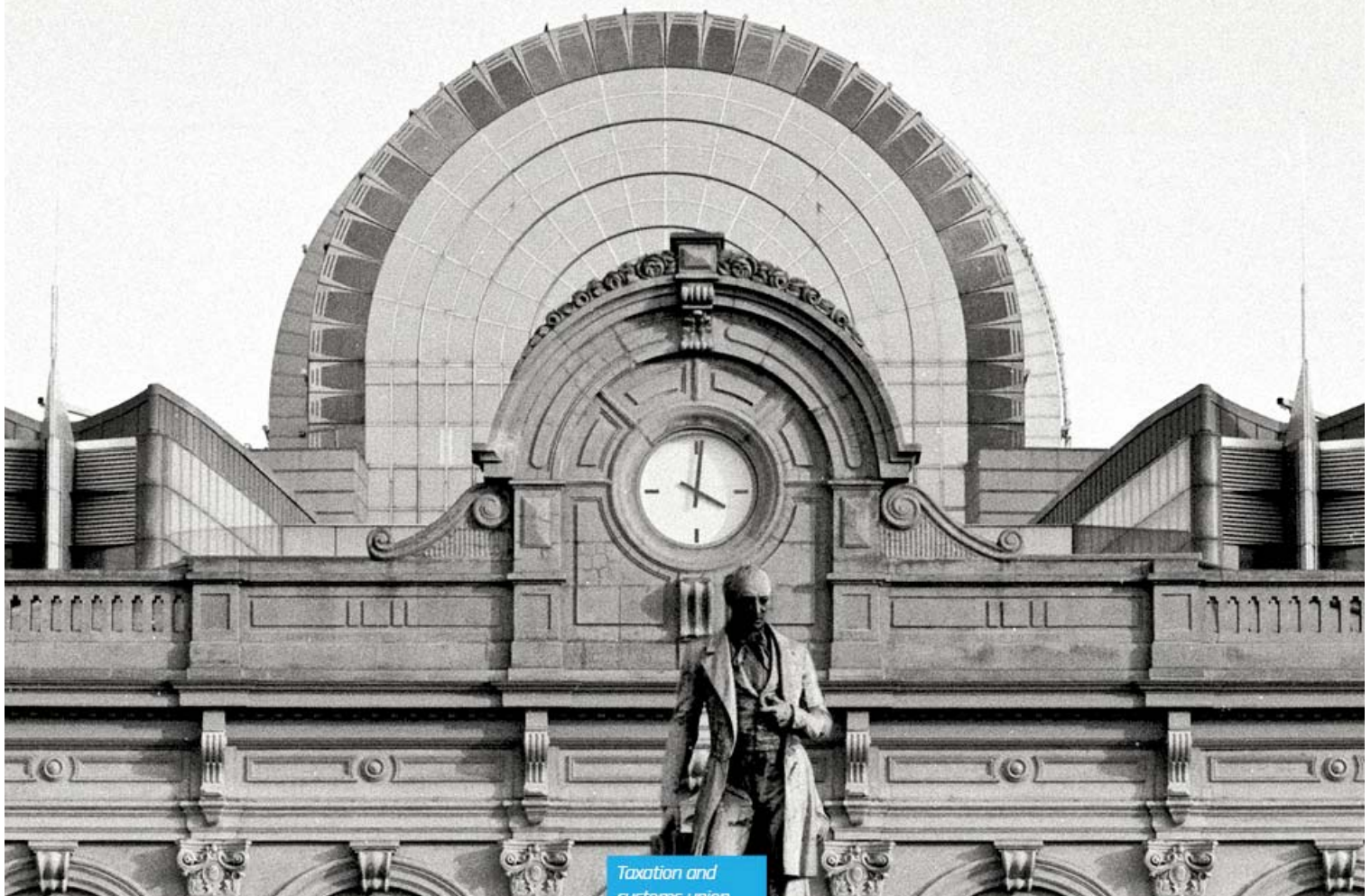## TAXATION PAPERS

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Modelling corporate tax reform in the EU:

New calibration and simulations with the CORTAX model

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Modelling corporate tax reform in the EU:
New calibration and simulations
with the CORTAX model

October 2016

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Contents

Acronyms

ACC	Allowance for corporate capital
ACE	Allowance for corporate equity
AGI	Allowance for growth and investment
BEPS	Base erosion and profit shifting
CBIT	Comprehensive business income tax
CBLO	Cross-border loss offset
CCTB	Common corporate tax base
CCCTB	Common consolidated corporate tax base
CES	Constant elasticity of substitution
CGE	Computable general equilibrium
CIT	Corporate income tax
CORTAX	A CORporate TAXation-focused computable general equilibrium model
CPB	Centraal Planbureau, Netherlands
EATR	Effective average tax rate
MNE	Multinational enterprise
METR	Marginal effective tax rate
SPE	Special purpose entity

Summary

- This report investigates the economic impact of the European Commission proposal for a common corporate tax base (CCTB) and a common consolidated corporate tax base with formula apportionment (CCCTB) within the EU. Furthermore, on top of the common base, it considers proposals to reduce the debt bias in corporate taxation. To do so, we employ an applied general equilibrium model (CORTAX) covering all EU Member States, featuring different firm types and modelling many key features of corporate tax regimes, including multinational profit shifting, investment decisions, loss compensation and the debt-equity choice of firms.

- First, the economic impact of C(C)CTB is assessed, restricting the scope of the reforms to multinationals only. Harmonising the tax base results in a base broadening for some countries and a narrowing for others. On the EU-average, the net effect is a narrowing of the tax base. The corporate tax rate is adjusted to maintain constant corporate tax revenues ex-ante, i.e. prior to behavioural changes.

- Macroeconomic results show that the common tax base simulations directly affect the cost of capital, which on average falls across the EU, boosting investment, and therefore driving the increase in GDP. This is particularly the case under CCTB. Wages and employment also rise, further stimulating GDP and welfare. Results vary across countries.

- Second, C(C)CTB is simulated together with proposals to reduce or eliminate the debt bias in corporate taxation, principally: the comprehensive business income tax (CBIT), the allowance for corporate equity (ACE) and the allowance for corporate capital (ACC). From a financing prospective, all proposals incentivise firms to rely less on debt-financing. From a macroeconomic perspective, the simulations which narrow the tax base by introducing addition deductions, i.e. ACE and ACC, raise GDP, despite the fact that the (ex-ante) CIT revenue is maintained by adjusting the CIT rate. The opposite is the case for the CBIT, which causes a fall in GDP.

- Third, a group of sensitivity simulations are presented to check for robustness. The sensitivity covers the following areas: (i) broadening the scope of the proposals to include domestic firms as well as multinationals, (ii) altering interpretations of the common tax base, (iii) stricter control on profit shifting, (iv) altering capital-labour substitutability, (v) less compliance cost saving, (vi) compensating CIT revenue changes with labour taxes, (vii) introducing discrete location choice for firms, (viii) adding an ACE on top of the CCTB with cross-border loss offset, (ix) altering the deductibility share for the ACE, and (x) raising the cap on the CIT rate adjustment.

- The sensitivity analysis allows robustness testing of areas where the model parameters are uncertain, and generally demonstrates the robustness of the main results in this respect. Furthermore, the sensitivity analysis gives insights into variations to the main policy choices that could be considered.

- Among the insights from the sensitivity simulations, one notes that the inclusion of domestic firms in the CCCTB proposal somewhat increases the positive impact on GDP. A broader harmonised tax base results in lower welfare and GDP outcomes than a narrower harmonised tax base, because it more directly impacts the marginal investment decision. Reducing profit shifting slightly lowers investment, though on balance does not negatively impact welfare. The model results are robust to varying the capital-labour substitutability. Reducing the compliance cost savings from introducing the CCCTB, dampens the positive macroeconomic impacts. Balancing the government budget by raising or lowering labour taxes, on balance, lowers employment and hence GDP compared to the standard method.

- The results are robust to whether firms make discrete investment decisions, rather than marginal investment decisions. Allowing for a cross-border loss offset somewhat lowers the cost of capital, relative to CCTB alone, boosting GDP. Alternative deductibility shares for an ACE system show a smooth transition, with higher deductibility resulting in stronger increases in macroeconomic outcomes. Lastly, allowing countries to adjust their CIT rate to very high levels to compensate for revenue losses (ex-ante to behavioural changes) raises the overall CIT burden in a handful of countries, and dampens the macroeconomic outcomes in these cases.

- In summary, the results of this economic modelling evaluation suggest that a fairer and more efficient tax system can be introduced whilst maintaining, and perhaps improving, GDP and welfare in the EU.

1. Introduction

Corporate tax reforms are motivated by concerns about the fairness and efficiency of the current regimes. Uncoordinated national tax regimes may have loopholes and inconsistencies in the treatment of corporate profits across borders that give rise to strategic tax planning often by large multinationals operating. Some multinational corporations are devoting substantial resources to identifying and exploiting such inconsistencies in ways that minimise their overall tax liabilities. Economic inefficiency arises as companies may divert productive resources to rent-seeking activities, competition is distorted and excessive compliance costs imposed on both companies and public authorities. In addition, governments are deprived of public revenues, causing an additional inefficiency. Furthermore, tax planning can be unfair as it effectively shifts the tax burden on other taxpayers, such as consumers or small and medium-size enterprises (SMEs) which operate at local level.

There is growing recognition of these issues and a renewed impetus to address them. International coordination of national corporate taxation policies has improved under the framework of OECD work on Base Erosion and Profit Shifting (BEPS). Its aim is to address the inconsistencies that facilitate avoidance and to find solutions to contemporary tax challenges, including those raised by the digital economy. The European Commission has undertaken measures to integrate the results of BEPS work at EU level and has also put forward ambitious plans for a Common Consolidated Corporate Tax Base (CCCTB) within the EU.

The CCCTB is envisaged to be a holistic solution to the problem of tax avoidance due to profit shifting. Plans for CCCTB involve a common tax base, aimed at eliminating mismatches between national systems which aggressive tax planners often exploit, and consolidated reporting at the level of a multinational group, aimed at reducing administrative burden. Unlike a previous proposal by the Commission, the CCCTB currently under consideration would be mandatory, at least for multinational enterprises. Consolidation implies that intra-group transactions would be ignored and the consolidated group profits apportioned by a formula to the jurisdictions where the corresponding economic activity took place. Under the CCCTB, cross-border companies would be able to offset losses in one Member State against profits in another. EU member states would enjoy the benefits from a common tax base and still be free to set their individual corporate tax rates.

Evidence from existing studies suggests that the CCCTB can be expected to result in important benefits in specific contexts (such as reducing compliance cost, see Spengel et al., 2012, for a recent analysis). However, the overall economic impact of the reform, not least in terms of economic growth and jobs, cannot be known *ex ante* without a comprehensive assessment of behavioural changes. The changes in relative prices brought about by tax reforms propagate within the economy in ways that are difficult to anticipate. Given the choices companies have when confronted with changes in their respective environments, it is important to assess the effects of the reform under a general framework, which takes into account the interactions between different parts of the economy.

The present report uses CORTAX (short for CORporate TAXation), a computable general equilibrium (CGE) model, describing the 28 countries of the European Union, the US, Japan and a tax haven to provide an initial economic impact assessment of the proposals under consideration. The CORTAX model was originally built by the Centraal Planbureau (CPB) in the Netherlands (see Bettendorf and

van der Horst, 2006 and Bettendorf et al., 2009) based on the OECD Tax model built by Sorensen (2001). The model was also used for the impact assessment of the 2011 CCCTB reform proposal by the European Commission. This report provides an update on the calibration of the CORTAX model with recent data and provides results on policy reforms proposed under the Action Plan for a "Fair and Efficient Corporate Tax System in the European Union: 5 Key Areas for Action" proposed by the European Commission in June 2015 (European Commission, 2015a).

The report is structured as follows. Section 2 describes the properties of CORTAX at some length and shows the key calibrated baseline values. Section 3 describes the main two common tax base scenarios (CCTB and CCCTB implemented for multinationals only). Section 4 describes the common tax base scenarios combined with policies to reduce the debt bias in corporate taxation. Section 5 provides multiple sensitivity analyses regarding the parameter values and policy choices. Lastly, Appendix A gives the key macroeconomic results at the EU level for all main and sensitivity simulations, and Appendix B gives the full country tables again for all main and sensitivity simulations.

2. Properties of CORTAX

In this section, the justification and the structure of the CORTAX model are detailed in sections 2.1 and 2.2, respectively. The calibration of the model is described in section 2.3 and it covers the data sources used and their preparation and the description of the European tax systems in the model baseline.

2.1 Justification for using CORTAX

In order to model the impact of differing corporate tax regimes, a number of key features need to be incorporated. Such a model must be based on sound economic theory and be capable of estimating the response of firms to changes in the tax regime. Though rarely adapted to analyse corporate tax in any detail, applied general equilibrium models provide a solid basis for doing so, in as much as they provide macroeconomic responses driven by microeconomic theory. The model would need to distinguish between domestic firms, multinational headquarters and subsidiaries as each of these firm types will respond differently to changes in the corporate tax regime. The model would also need to address the impact of taxation on firms' investment decisions, and preferably include features such as transfer pricing, that multinationals employ to reduce their tax burden. Currently only two such models meet these criteria: OECDTAX (Sorensen, 2001) and CORTAX. The latter was in fact derived from the former. As the most recently developed corporate tax-focused applied general equilibrium model, CORTAX was chosen for this analysis given that it offers state of the art modelling of tax shifting activities and investment of multinational companies at global level. Importantly, with such model the behaviour of multinationals can be analysed in interaction with companies operating only at domestic level, thus providing ground for a comparative analysis regarding the way each firm type would gain or lose with an EU-wide tax reform. In the following sections, numerous additional desirable features of the model are outlined.

2.2 Structure of CORTAX

The CORTAX model has been designed to simulate the economic impact of national and international tax policy reforms, as well as the international harmonisation of national tax policies. CORTAX allows simulations of the effects of corporate tax changes within a framework that takes into account the transactions between firms (including MNEs), households and governments. In the model, each country is assumed to have the same structure in terms of consumption, savings, production and public finances (though the data are country-specific, see below). Countries are linked to each other via international trade in goods markets, international goods markets and investment by MNEs. Firms are divided into three categories: MNE´s headquarter, their subsidiaries located abroad and domestic firms that only produce in their country of residence. Multinationals and domestic firms differ to the extent that the former optimise profits globally and are engaged in profit shifting activities across borders. Domestic firms pay their corporate taxes in their country of residence according to the revenues generated in this country only. The effects of reforms can be expressed as changes in GDP, household consumption, business investment and fiscal revenue.

The model is elaborated using data from different data sources. In the present exercise, the model has been constructed with a database for the year 2012. The structural descriptions offered here, as well as aspects of the calibration, borrow heavily from Bettendorf et al. (2009).

The data sources used are Eurostat, the OECD, UN, ZEW-Mannheim (for tax codes, including asset-specific corporate tax credit and allowances) and company-level information on investment by asset

type and source of financing from the Bureau van Dijk Orbis database (explained in section 2.3.1). Company behaviour in the model with respect to e.g. profit shifting closely corresponds to insights offered by empirical literature. Likewise, the model incorporates empirical insights on tax compliance costs, which are set at 4% of corporate tax revenue for all firms.

The model captures the economic behaviour of all the agents in the economy: households, firms (domestic, multinationals headquarters and subsidiaries), the government and the foreign sector (see, Bettendorf et al., Oct 2009, Section 2.1). The following addresses the main elements of each of these in turn.

Households. There are two types of households: old and young. Their lifetime is 40-year periods each and their behaviour remains the same during the whole period. Households maximise their intra-temporal utility function $U(t)$ with v^y being the utility of young generation and v^0 the utility of old generation:

$$U(t) = \frac{1}{1 - 1/\sigma_u} \left[\sum_{\tau=0}^{T-1} \frac{v^y(t+\tau)^{1-1/\sigma_u}}{\rho_u^\tau} + \frac{\rho_0}{\rho_u^\tau} \sum_{\tau=0}^{T-1} \frac{v^0(t+T+\tau)^{1-1/\sigma_u}}{\rho_u^\tau} \right]$$

$$= \frac{1}{1-1/\sigma_u} \left[v^y(t)^{1-1/\sigma_u} + \frac{\rho_0}{\rho_u^\tau} v^0(t+T)^{1-1/\sigma_u} \right] \sum_{\tau=0}^{T-1} \left(\frac{1+g_a}{\rho_u} \right)^\tau \tag{1.1}$$

where ρ_u^τ is the rate of time preference, σ_u the intertemporal substitution elasticity and g_a is the productivity growth rate.

This maximisation is subject to an intra-temporal budget constraint, described by Equation (2), where net savings from young workers (wages, current transfers and negative consumption), in the left side of the equation, are equal to negative value of net savings from old households. Young households receive income from labour $\overline{w}(t)l$ and other transfers while old households do not work and only receive income from transfers $\left(tr^0(t) \right)$ and the fixed factor $\left(\pi^0(t) \right)$.

$$\overline{w}(t)l + tr^y(t) - (1+\tau_c)c^y(t) = -\left(\frac{1+g_a}{\rho_s} \right)^\tau \left[\pi^0(t) + tr^0(t) - (1+\tau_c)c^0(t) \right] \tag{1.2}$$

The intra-temporal utility function is composed by consumption (c^y) and leisure $(\hat{l})$ included in Equation 3:

$$v^y(\tau) = \begin{cases} \left[c^y(\tau)^{\frac{\sigma_l-1}{\sigma_l}} + \alpha_l \left(A_l(\tau)\hat{l}(\tau) \right)^{\frac{\sigma_l-1}{\sigma_l}} \right]^{\frac{\sigma_l}{\sigma_l-1}} & \sigma_l \neq 1 \\ c^y(\tau)^{\frac{1}{1+\alpha_l}} \left(A_l(\tau)\hat{l}(\tau) \right)^{\frac{\alpha_l}{1+\alpha_l}} & \sigma_l = 1 \end{cases} \tag{1.3}$$

where α_l is the weight of leisure in utility and σ_l is the intra-temporal substitution elasticity.

The optimal consumption path and labour supply can be obtained from the first order conditions (FOC). In accordance with the empirical literature, the model assumes that substitution effects dominate and the uncompensated elasticity of labour supply is positive. Households´ savings are allocated to bonds and stocks, which are imperfect substitutes and have different rates of return. The returns to assets are determined on world markets and are assumed to be the same irrespective

of the residence of their owner. Total bonds and stock holdings are derived from the maximisation of total assets CES combination of bonds (b) and equities (e) subject to their total value:

$$A = \left[\alpha^{\frac{-1}{\sigma_s}} b^{\frac{\sigma_s+1}{\sigma_s}} + \alpha^{\frac{-1}{\sigma_s}} e^{\frac{\sigma_s+1}{\sigma_s}}\right]^{\frac{\sigma_s}{\sigma_s+1}} \tag{1.4}$$

such that $\rho_s A = \rho_b b + \rho_e e$

A is total assets and σ_s the substitution elasticity bonds/equities and ρ_s is the gross revenue from assets.

The effects on welfare are calculated using the compensating variation. This is calculated as the difference in transfers received by young households required to compensate the change in utility. It is presented as a percentage of GDP.

Firms. In CORTAX there are two types of firms, domestic and multinationals, with the latter disaggregated into headquarters and subsidiaries. Each country has one representative domestic firm, one multinational headquarter and several subsidiaries, which are owned by headquarters in other countries.[2] Firms maximise their value $V_t^n(j)$, subject to the possibilities of the production function and accumulation constraints on physical capital and fiscal depreciation:

$$V_t^n(j) = \sum_{s=t}^{\infty} \Lambda(j) Div_s^n(j) R_s(j) \tag{1.5}$$

with n=domestic, multinational headquarters or subsidiary and R_s representing the overall effect of discounting:

$$R_s(j) \equiv \frac{1}{\left(1 + \bar{r}_e(j)\right)^{s-t+1}}$$

$$\bar{r}_e(j) \equiv \frac{r_e(jj)}{\left(1 - \tau_g(j)\right)}$$

$$\Lambda(j) \equiv \frac{\left(1 - \tau_d(j)\right)}{\left(1 - \tau_g(j)\right)}$$

Where Div_s^n are the dividends, $\bar{r}_e(j)$ represents the discount rate relevant for firms in making decisions and r_e is net return on equity. $\tau_g(j)$ is the tax rate on capital gains and $\tau_d(j)$ is the tax rate on dividends.

Aggregate production. The aggregate production is calculated as the sum of production in all industries net of intermediate inputs in foreign subsidiaries:

$$Y(i) = q\left[Y^{dg}(i) + Y^{mg}(i) + \sum_{j \neq i} Y^{fg}(i,j)\right] + (1-q)\left[Y^{db}(i) + Y^{mb}(i) + \sum_{j \neq i} Y^{fb}(i,j)\right] +$$
$$- \sum_{j \neq i} p_q(j,i) Q(j,i) \tag{1.6}$$

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[2] Note that the number of firms is not modelled in CORTAX. This simplification still allows the interpretation of the results of the policy simulations by comparing MNEs with domestic firms´ situation.

Where (q) is the probability of a good event (shock) and $(1-q)$ the probability of a bad event. $Y^{dg}(i)$ represents domestic production, $Y^{mg}(i)$ the production of parent companies and $\sum_{j \neq i} Y^{fg}(i,j)$ the production of subsidiaries.

The production function is a Cobb Douglas combination of the fixed factor $(\omega^n N^y)$ and the value added, (VA^{nx}), which is a CES aggregate of labor (L^n) and capital (K^n). The only difference between domestic (d) and multinational headquarters (m) and the subsidiaries (f) is the role of intermediate inputs.

The production function for domestic firms and multinational can be defined as:

$$Y^{nx} = A^{nx}(VA^{nx})^{\alpha_v^n} \tag{1.7}$$

With:

$$A^{nx} = (A_{0x}\omega^n N^y)^{1-\alpha_v^n}$$

$$VA^{nx} = A_{0x}\left[\alpha_{vl}^n(L^n)^{\frac{\alpha_v^n-1}{\alpha_v^n}} + \alpha_{vk}^n(K^n)^{\frac{\alpha_v^n-1}{\alpha_v^n}}\right]^{\frac{\sigma_v^n}{\alpha_v^n-1}}$$

With n=d for domestic and n=m for headquarters.

While for subsidiaries it is:

$$Y^{fx}(j) = A^{fx}(j)A_0^{\alpha_q}Q(j)^{\alpha_q}(VA^{fx})^{\alpha_v^f} \qquad \text{with } 0 < \alpha_q + \alpha_v^f < 1 \tag{1.8}$$

And with :

$$A^{fx} = (A_{0x}\omega^f N^y)^{1-\alpha_v^f-\alpha_q}$$

$$VA^{fx}(j) = A_{0x}\left[\alpha_{vl}^f(L^f)^{\frac{\alpha_v^f-1}{\alpha_v^f}} + \alpha_{vk}^f(K^f)^{\frac{\alpha_v^f-1}{\alpha_v^f}}\right]^{\frac{\sigma_v^f}{\alpha_v^f-1}}$$

Where Y^{-x} is total output, A^{-x} the output contribution of the fixed factor and Q intermediate inputs. σ_v^- is the substitution elasticity between productive factors.

Multinationals. Multinationals aim at maximising the sum of the value of headquarters and all their subsidiaries. In addition to labour and capital, the production function also includes a fixed, location-specific production factor (which can be considered as representing land). While labour and the land are immobile factors, capital and capital revenues are perfectly mobile across countries. The return to capital (after source taxes) is fixed by world capital markets. The supply of the location-specific production factor (i.e. land) is inelastic and revenues generated are accounted as economic rents. Additionally, multinationals are wholly owned by households in the home country, which implies that countries can partly export the tax burden to foreign households by taxing subsidiaries. Therefore the efficiency loss of tax shifting activities also affects households´ disposable income.

Profit shifting. Multinationals differ from domestic firms as they use intermediate inputs in the production process. In particular, the intermediate inputs are supplied by the parent company to the foreign subsidiaries. The model allows the parent company to charge a transfer price for intra-firm deliveries of intermediate inputs that deviates from the equivalent price that would be charged if it had been an inter-firm transaction (the 'arms-length' price). Specifically, there is an incentive in place to set an artificial price in order to shift profits from high-to-low tax countries and minimise the overall tax contribution. In order to ensure an interior solution, a convex cost function is specified to describe the organisational costs associated with the manipulation of transfer prices and that make profit shifting increasingly costly at the margin:

$$\frac{\partial c_q}{\partial p_q} = sign(p_q - 1)|p_q - 1|^{\varepsilon_q} \tag{1.9}$$

From equation (9), it follows that multinationals artificially shift profits to countries with the lowest tax rate, since $p_q(j) > (<)1$ if $\tau_\pi^f(j) > (<)\tau_\pi^m$

$$\frac{\partial c_q}{\partial p_q}(1 - \tau_\pi^m) = \tau_\pi^f(j) - \tau_\pi^m \tag{1.10}$$

FDI. On the other hand, bilateral foreign direct investment (FDI) stocks determine the initial size of subsidiaries. FDI is defined as the equity-financed part of foreign capital and are defined as follows:

$$FDI(i,j) = \left(1 - d_b^f(i,j)\right) K^f(i,j) \tag{1.11}$$

With d_b^f being the debt ratio.

Corporate investment is financed by either retained earnings or by issuing bonds. CORTAX does not allow the issuing of new shares. Decisions on the source of finance are based on the difference between the after-tax cost of debt and equity. The marginal cost of debt finance increases alongside the debt share.

Among the alternative corporate tax specifications, the model incorporates the compliance costs incurred by firms for attending their corporate tax obligations. These costs are included as the amount of new workers required to carry out these tasks. Consequently there are two types of labour: workers production output and workers for tax administration. The latter are measured as a fixed share of the productive labour force. They increase in proportion to the size of the firm's payroll.

Losses and loss carry forward. At the benchmark, all firms are all equal and there are no negative extra profits, but there are random shocks affecting their revenues that can be attributed to, e.g., business cycle evolutions. These shocks may result in losses that can be carried forward in the model. Firms' decisions on inputs are made before knowing whether they will be subject to a random shock and are therefore based only on expected output values and expected marginal productivities. The probabilities of profit and loss are assumed to be independent across years because shocks are not correlated over time. CORTAX allows for losses to be carried forward for one year. While this underestimates the actual opportunities for loss compensation over more than one year, at the same time the assumption of independent shocks tends to overestimate losses that can be offset. Appendix A in Bettendorf et al. (2009) discusses this issue in further detail.

Public Sector. Government is an intermediate agent in CORTAX. There is a balanced budget where consumption and public debt are a fixed proportion of GDP and lump-sum transfers are also fixed. In this case, the issue of new debt due to economic growth covers the increase of public deficit. On the other hand, tax revenues include indirect taxes on consumption and direct taxes of income from corporate and labour, dividends, capital gains and interest. Government consumption and government debt as a share of GDP are maintained constant after a reform.

Equilibrium. In the model, all markets are in equilibrium in the base year. There is only one representative homogeneous good, which is traded in a perfect competitive world market. Therefore countries cannot exert market power and their terms of trade are fixed. The price of this good is the "numeraire" in the model. With respect to asset markets, bonds (and equities) of different origins are perfect substitutes and are freely traded on world markets. The return to these assets is therefore fixed for every country. At the same time, debt and equity are not perfect substitutes. Regarding the foreign sector, the current account equals the change in the net foreign asset position for each country so that the balance of payments is equal to zero.

2.3 Calibration of CORTAX

The model has been calibrated using different data sources that have been adjusted. The adjustment procedure is described in the following subsection and the European tax systems are described in section 2.3.2.

2.3.1 Data sources and preparation

For the sake of continuity we generally used the same data sources as in the original calibration undertaken by the CPB, see Bettendorf and van der Horst (2006). The 2012 data was used as the reference year for the calibration, as it represented a good compromise between timeliness and completeness. Following the initial calibration (Bettendorf and van der Horst, 2006) the countries covered include the EU's 28 member states, the United States and Japan. An initial attempt has been made to collect information on an expanded set of countries, including many non-EU OECD members and China, but due to unequal coverage in the original data sources this possibility will have to be more fully explored in subsequent expansions of CORTAX. In a small number of cases alternative data sources or reference year were used or missing values imputed. These differences are all documented below.

Population and Employment

Population and employment statistics used in the calibration come from the United Nations. Figures for population aged 20+ have been summed from the five year age groups reported in UNECE (2015) (EU countries and USA) and UNESCAP (2015) (Japan). Figures for population aged 15-64 have been summed from the five year age groups reported under the medium fertility projections of the World Population Prospects (UN 2013).

Additional employment statistics, on annual hours worked, number of employees, number of self-employed and total employment are from Eurostat (database tables lfsi_emp_a, lfsq_eegaed, lfsq_esgaed, lfsq_ewhan2), except for the United States and Japan for which we use 2011 values (latest available) from the OECD (2009). Data on number of persons engaged, number of employees, total hours worked by persons engaged and total hours worked by employees are from the World Input Output Database (2015) (the successor of KLEMS) as documented in Timmer et al. (2015).

National accounts

National accounts data using the expenditure and income approaches are from the OECD (2015) and Eurostat (database tables: gov_a_main, nama_gdp_c, gov_10dd_edpt1 and ert_bil_eur_a for exchange rates). Purchasing power parity (PPPs) exchange rates are from the IMF (2015) and Eurostat (database table prc_ppp_ind). General government consolidated gross debt as a percentage of GDP is from DG ECFIN's Ameco Database.

National accounts data on labour and capital income shares determine the capital and labour parameters for the calibration of the model. The location-specific production factor is set at 2.5% of value added in each country, a value which was necessary for CORTAX to produce a reasonable result in terms of the corporate tax to GDP ratio. A sensitivity analysis with a lower share (1.5%) was not found to produce qualitatively distinct results (reported in Bettendorf et al., 2009).

Foreign Direct Investment

The CORTAX model requires bilateral FDI positions as part of the calibration. For these, we start with the Eurostat bilateral positions. Data on Foreign Direct Investment (FDI) flows by country of origin and country of receipt are from Eurostat (financial account, direct investment, reporting economy, database table bop_fdi_pos_r2). However, Germany, Luxembourg, Iceland, Switzerland, Cyprus and Japan do not report the country of origin for about half of the 30 countries considered. For the remaining countries information is missing only for about 2-4 countries of origin, typically those from outside the EU. Following the original calibration practice (Bettendorf and van der Horst, 2006):

> (a) Missing values on inwards FDI were filled using the corresponding relationship from the outwards FDI table. In effect, information on FDI that is not reported by the receiving economy is obtained using information reported by the originating economy.

> (b) For a small number of country pairs where neither inward nor outward information was available, FDI was approximated using information on the FDI behaviour of similarly-sized and/or neighbouring countries. For instance, inwards FDI to Luxembourg from Germany has been approximated by looking at the corresponding relationship between Luxembourg and Austria: First calculating Austrian FDI into Luxembourg as a share of total Austrian FDI in the EU and then multiplying this share by the total amount of German FDI in the EU.

For some countries, however the FDI data raised concern given the relative importance of special purpose entity (SPE) activity. While SPEs are typically used by companies to isolate the firm from financial risk, they can also be used for debt shifting purposes between related parties, see Dharan (2002). We check all country aggregates and, in our case, there is concern about the values obtained for Cyprus, Malta, Luxembourg and the Netherlands.[3] In order to correct for this, we use non-SPE data where available. The first choice of source for this data is the OECD Benchmark Definition 4 (BMD4), which provides data on FDI specifically for SPEs and non-SPEs.[4] The most recent data set

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[3] Ireland was also considered, but the UNCTAD non-SPE data did not suggest that the Eurostat figures were excessive, and the OECD BMD4 data are not given.
[4] The OECD data claim to set "the world standard for collecting direct investment statistics". Based on the arguments made (see http://www.oecd.org/investment/fdibenchmarkdefinition.htm for details), we consider this our preferred source for non-SPE FDI data aggregates.

was released in March 2015, and currently provides data for 2013 only at an aggregate level (bilateral flows are not given). Furthermore data is only available for select countries. Of the four countries, only Luxembourg has non-SPE FDI data listed for OECD BMD4,[5] and the inward and outward positions are adjusted based on these data. The UNCTAD FDI data also removes SPEs. For the remaining three countries, we check against the UNCTAD non-SPE totals.[6] [7] Based on these figures, adjustments are made to the inward position for Cyprus and the outward position for Cyprus, Malta and the Netherlands. Figure 2.1 shows bilateral FDI stocks by country as % of GDP.

Figure 2.1 Inward and outward FDI in % of GDP in EU countries, 2012
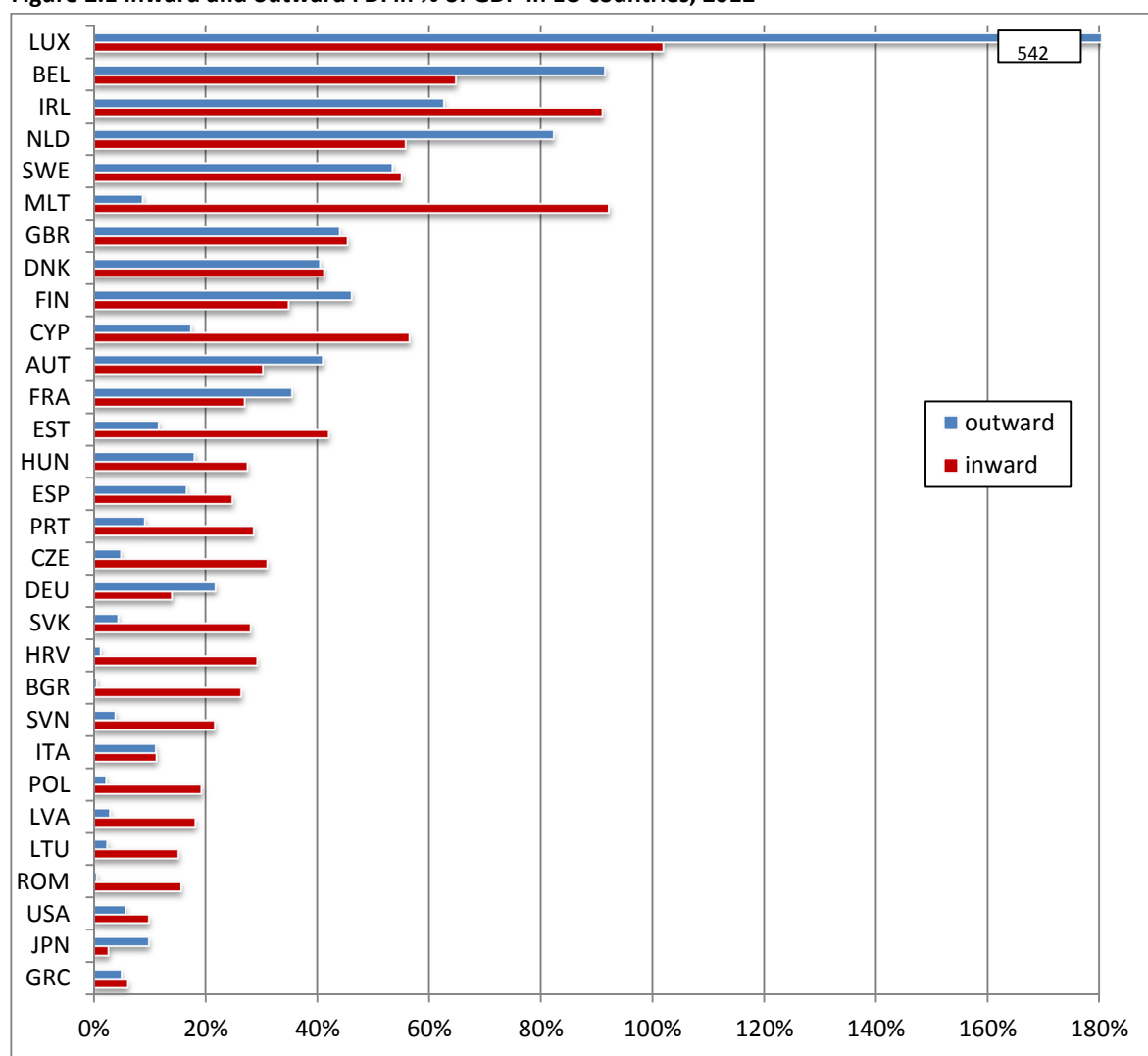
Source: Eurostat, adjusted for CYP, MLT, LUX and NLD according to non-SPE figures by the OECD and UNCTAD.
Note: Countries ranked by the total of inward FDI plus outward FDI.

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[5] We use the directional principle data, which is adjusted to 2012 using the growth/reduction in assets over this period. The figures are total inward and outward positions with the rest of the world. Therefore, these are adjusted for the share of positions for the EU and USA and Japan out of the rest of the world, based on UNCTAD shares estimates http://unctad.org/Sections/dite_fdistat/docs/webdiaeia2014d3_LUX.pdf.
[6] The inward and outward FDI stocks are available here:
http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx.
[7] As for Luxembourg, the data are adjusted by the share of the inward and outward positions for the EU and USA and Japan out of the world totals.

Tax information

CIT receipts as a percentage of GDP are from European Commission (2014, Table 18). Additional tax revenue statistics, expressed in national currency and as a percentage of GDP, are from the OECD (Dataset: Revenue Statistics - Comparative tables). Implicit tax rates on consumption are from Eurostat (2014, p.255). Statutory Corporate Income Tax (CIT) rates are from ZEW (2012, p.2) Tax rates on dividends, interest and capital gains upon disposal of shares are from ZEW (2012, pp. A24-A26). Implicit tax rate on labour income have been estimated using the EUROMOD microsimulation model.

Firm-level data from the Orbis database

Information on balance sheets and ownership structure from the Orbis database provided by Bureau Van Dijk was used. Although Orbis is a firm-level database, for the purposes of the calibration it is only used to produce national-level estimates of debt shares and of corporate investment shares (by type of asset) so as to calculate relevant corporate tax parameters such as the cost of capital (financed via equity or debt).

In keeping with an earlier calibration of CORTAX (Bettendorf et al, 2009) the sample was narrowed down to firms reporting total assets larger than two million US dollars and to firms who had complete information on investment on tangibles and intangibles. This leaves 1,005,188 companies based in the EU28, the United States and Japan. Many of these companies are subsidiaries belonging to multinational groups. Unconsolidated accounts are used as these best describe the actual investment behaviour of multinational enterprise subsidiaries across EU member states. If necessary (e.g. to test specific hypotheses) the companies accounts can be consolidated at the level of multinational groups making use of information on each company's Global Ultimate Owner (GUO).

For these companies we obtained data on their asset structure, including inventories (Orbis variable name "Stock"), fixed tangible assets, fixed intangible assets, total assets. While in principle Orbis contains information on corporate investments in buildings and machinery (Orbis variables "Plant and Machinery", "Transport Equipment"), in practice this information was missing for many companies. As information on the shares of investment directed into these two assets is necessary for the estimation of tax parameters, we estimate them using information on the Orbis-derived total quantity of investment on tangibles, multiplied by the sector-shares on buildings and machinery provided by Eurostat (Eurostat variable codes sbs_na_con_r2, sbs_na_dt_r2, sbs_na_ind_r2, sbs_is_inv_r2). For those countries and sectors for which this information was not available in Eurostat (principally France, Latvia and Malta) in common with established practice (Egger et al., 2008; Devereux and Loretz, 2008; Bettendorf et al. 2009) we estimate them by multiplying Orbis-derived total quantity of investment on tangibles by the sector-shares on buildings and machinery provided by McKenzie et al. (1998). Table 2.1 provides summary statistics on the Orbis data used.

Orbis was also used to approximate corporate debt shares, calculated as the ratio of the sum of current and non-current liabilities over total assets.

Table 2.1. Summary Statistics of Orbis Investment Shares, 2012

	Buildings	Machinery	Intangibles	Stocks	Land	No. of companies
Austria	31.6%	27.0%	5.1%	25.3%	11.0%	25,316
Belgium	28.2%	32.8%	5.2%	23.1%	10.6%	41,077
Bulgaria	30.7%	24.3%	2.8%	30.6%	11.6%	8,735
Cyprus	22.5%	26.9%	3.7%	40.1%	6.8%	134
Czech Republic	28.2%	32.9%	2.6%	25.7%	10.7%	15,120
Germany	23.8%	30.3%	4.0%	32.1%	9.9%	124,911
Denmark	15.6%	31.5%	5.4%	40.8%	6.6%	9,619
Spain	27.0%	23.7%	5.2%	32.3%	11.7%	98,010
Estonia	27.7%	28.4%	5.1%	30.6%	8.2%	2,222
Finland	27.1%	24.5%	9.3%	29.8%	9.2%	11,314
France	18.8%	24.8%	19.5%	30.6%	6.4%	84,491
United Kingdom	34.3%	21.0%	7.2%	23.3%	14.2%	100,189
Greece	26.6%	28.9%	5.5%	29.5%	9.6%	10,524
Croatia	34.7%	23.2%	3.5%	28.4%	10.2%	5,303
Hungary	26.1%	31.5%	4.4%	28.3%	9.6%	9,305
Ireland	35.7%	20.9%	6.0%	23.7%	13.7%	9,393
Italy	19.8%	25.3%	9.9%	37.2%	7.8%	167,922
Lithuania	28.1%	25.9%	3.2%	35.4%	7.4%	1,522
Luxembourg	33.1%	20.7%	14.5%	20.3%	11.5%	3,027
Latvia	30.7%	27.8%	2.6%	27.4%	11.5%	3,154
Malta	29.6%	25.9%	7.6%	26.2%	10.6%	749
Netherlands	24.1%	43.5%	7.4%	16.1%	8.8%	59,580
Poland	28.9%	28.3%	3.8%	31.0%	8.0%	21,741
Portugal	21.2%	27.7%	4.3%	37.9%	8.9%	19,508
Romania	28.6%	30.4%	2.1%	26.8%	12.0%	13,616
Slovak Republic	35.2%	25.7%	2.6%	23.4%	13.0%	8,178
Slovenia	25.8%	36.6%	4.1%	26.4%	7.1%	2,774
Sweden	27.3%	24.8%	8.3%	30.1%	9.6%	10,989
Japan	22.1%	38.5%	3.2%	27.4%	8.8%	105,429
USA	29.0%	14.5%	2.4%	41.9%	12.1%	31,336
EU (weighted average)	25.5%	27.1%	7.7%	29.9%	9.8%	868,423
Total	**27.4%**	**27.6%**	**5.7%**	**29.4%**	**9.9%**	**1,005,188**

Source: Orbis

2.3.2 European Tax Systems and Model Baseline

In a model designed to appraise the impact of tax reforms, the initial structure of the tax systems concerned is extremely important. In the present calibration CORTAX is using tax data for 2012, implying that subsequent simulations of EU reforms produce outcomes relative to tax systems as they were in 2012. The baseline also describes economic changes induced by these reforms, as simulated by the model.

Corporate tax rates

Figure 2.2 presents prevalent corporate income tax rates across the EU. These averaged at 23 percent in 2012, but with considerable variation across the EU, from a high 37 percent in France to a low 10 percent in Cyprus and Bulgaria.

Figure 2.2 Corporate tax rates in EU countries, 2012
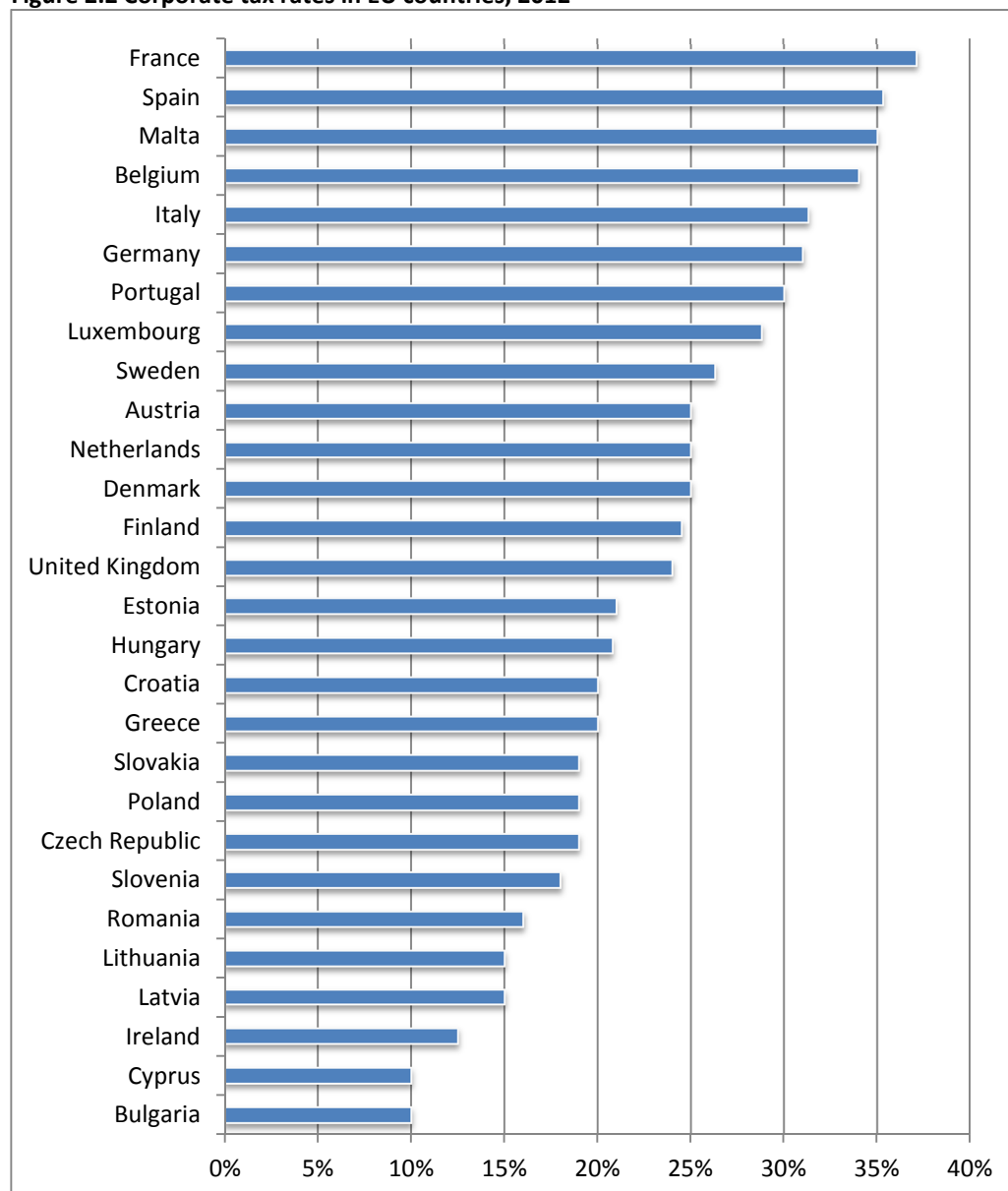
Source: ZEW (2014), "Effective Tax Levels Using Devereux/Griffith Methodology", p. 2

Fiscal depreciation

Differences in depreciation rules and inventory valuation mean that tax bases vary considerably across the EU. We have used information on tax laws of EU countries reported in ZEW (2012) to calculate relevant parameters such as the cost of capital. Table 2.2 summarises this information, presenting both rates and the rules for the calculation of annual allowances (declining balance [DB] or straight line [SL]). In 2012 most countries allowed SL depreciation for investments in buildings and intangibles (corresponding to prevalent rules for the depreciation of a patent), whereas for

machinery the rules are more varied. Estonia has no depreciation scheme applicable, due to its unique corporate taxation rules.

Table 2.2 Depreciation schemes and inventory valuation in corporate tax systems in the EU, 2012

	Buildings (number of years in brackets)	Machinery (number of years in brackets)	Intangibles (number of years in brackets)	Inventory valuation
Austria	SL 3% (33.33)	SL 14.29% (7)	SL 10% (10)	LIFO
Belgium	DB 10% (7) SL 5% (9.6)	DB 28.57%(2) SL 14.29% (3)	SL 20% (5)	LIFO
Bulgaria	SL 4% (25)	SL 30% (3.33)	SL 15% (6.67)	average
Croatia	SL 10% (10)	SL 50% (2)	SL 50% (2)	average
Cyprus	SL 4% (25)	SL 20% (5)	SL 20% (5)	FIFO
Czech Republic	DB 30 years	DB 6 years	SL 16.66% (6)	average
Denmark	SL 4% (25)	DB 25% (n.a.)	SL 100% (1)	FIFO
Estonia	n.a.	n.a.	n.a.	LIFO
Finland	DB 7% (n.a.)	DB 25% (n.a.)	SL 10% (10)	FIFO
France	SL 5% (20)	DB 32.14% (4) SL 7.07% (3)	SL 20% (5)	average
Germany	SL 3% (33.33)	SL 14.29% (7)	SL 20% (5)	LIFO
Greece	SL 8% (12.5)	DB 42.86% (4) SL 10.7% (1)	SL 10% (10)	LIFO
Hungary	SL 2% (50)	SL 50% (2)	SL 50% (2)	average
Ireland	SL 4% (25)	SL 12.5% (8)	SL 10% (10)	average
Italy	SL 2% (1) SL 4% (24.5)	SL 12.5% (7.5) SL 6.25% (1)	SL 33.33% (3)	LIFO
Latvia	DB 10% (n.a.)	DB 40% (n.a.)	SL 20% (5)	average
Lithuania	DB 25% (n.a.)	DB 40% (n.a.)	DB 66.66% (n.a.)	LIFO
Luxembourg	SL 4% (25)	DB 30% (4) SL 8% (3)	SL 20% (5)	LIFO
Malta	SL 12% (1) SL 2% (44)	SL 20% (5)	SL 10% (10)	FIFO
Netherlands	SL 2.5% (40)	SL 14.29% (7)	SL 20% (5)	LIFO
Poland	SL 2.5% (40)	SL 10% (10)	SL 20% (5)	LIFO
Portugal	SL 5% (20)	DB 35.71% (n.a.)	SL 10% (10)	average
Romania	SL 2.5% (40)	SL 50% (1) SL 8.33% (6)	SL 50% (1) SL 5.55% (9)	LIFO
Slovak Republic	DB 20 years	DB 6 years	SL 20% (5)	average
Slovenia	SL 3% (33.33)	SL 20% (5)	SL 10% (10)	average
Spain	SL 3% (33.33)	DB 28.57% (4) SL 8.68% (3)	DB 25% (6) SL 4.45% (4)	average
Sweden	SL 4% (25)	DB 30% (n.a.)	DB 30% (n.a.)	FIFO
United Kingdom	n.a.	DB 18% (n.a.)	SL 10% (10)	FIFO

Source: ZEW (2014), pp. A15-A21.

Using information reported in Table 2.2 we calculate for each asset the net present value of the depreciation allowances as a share of the purchase price of the investment. Higher percentages denote more generous fiscal depreciation rules for that particular type of asset. Using shares of investment by different classes of assets from Orbis (as reported in Table 2.1) we then calculate a weighted average of these values for each of the one million firms considered. Finally, we calculate country-level medians to use in CORTAX. The choice of medians over means is in keeping with the previous calibration and has the attractive feature of minimising the influence of outliers. Table 2.3 presents country-level medians of firm-specific allowances, for the first year and net present value. The calculations require estimates for long-run inflation and rates of return. The estimates used are an inflation rate of 1.875%, a risk-free real interest rate of 1.5% and a return on equity of 3%. These values are one-quarter lower than those used in Bettendorf et al. (2009), so as to better represent contemporary conditions. Net present values vary considerably, from a low 12% in the United Kingdom to just over 60% in the Netherlands, though most countries are in the 40-50% range.

Table 2.3 Summary information about the NPV of fiscal depreciation schemes in % of the purchase price

	First year tax depreciation	Net present value of allowances
Austria	3.92%	43.10%
Belgium	5.17%	57.01%
Bulgaria	6.89%	49.01%
Croatia	13.89%	62.52%
Cyprus	7.01%	44.04%
Czech Republic	4.98%	49.68%
Denmark	6.55%	45.11%
Estonia	0.00%	0.00%
Finland	7.88%	49.41%
France	5.05%	53.00%
Germany	3.95%	43.10%
Greece	6.32%	57.04%
Hungary	16.43%	39.93%
Ireland	4.24%	47.84%
Italy	2.02%	46.73%
Latvia	11.91%	55.40%
Lithuania	20.57%	59.70%
Luxembourg	3.57%	48.47%
Malta	10.07%	41.76%
Netherlands	8.51%	60.74%
Poland	3.84%	38.99%
Portugal	8.32%	49.83%
Romania	16.50%	41.43%
Slovak Republic	5.46%	54.81%
Slovenia	8.85%	52.05%
Spain	3.07%	43.45%
Sweden	6.88%	48.61%
United Kingdom	2.71%	12.42%
Europe – weighted average	4.92%	43.03%
Standard deviation	4.79%	13.10%

Source: National-level median values using ZEW depreciation schemes and weighted by Orbis investment shares.

Effective marginal tax rates

The relationship between corporate taxation and investment in CORTAX is determined by the cost of capital. The effective marginal tax rate (EMTR) is a measure of the cost of capital, defined as the difference in the cost of capital in the presence and in the absence of tax, as a percentage of the tax-inclusive cost of capital. The EMTR effectively summarises several parameters of the tax system, such as the statutory tax rate, depreciation allowances, treatment of inventories and depreciation of financial costs. CORTAX calculates the EMTR for both equity- and debt-financed investment. The mode of financing is very important. Unlike equity finance, nominal interest is deductible for the corporate tax base allowing for more generous EMTR for debt-financed investment. To get a handle on how investment was actually financed by firms in 2012 we use Orbis to calculate average debt-share of investment across countries (Figure 2.3). These range from a high of almost 0.7 in Italy to a low of 0.4 in Lithuania.

Figure 2.3 Average debt-to-asset ratio of firms in EU countries, 2012
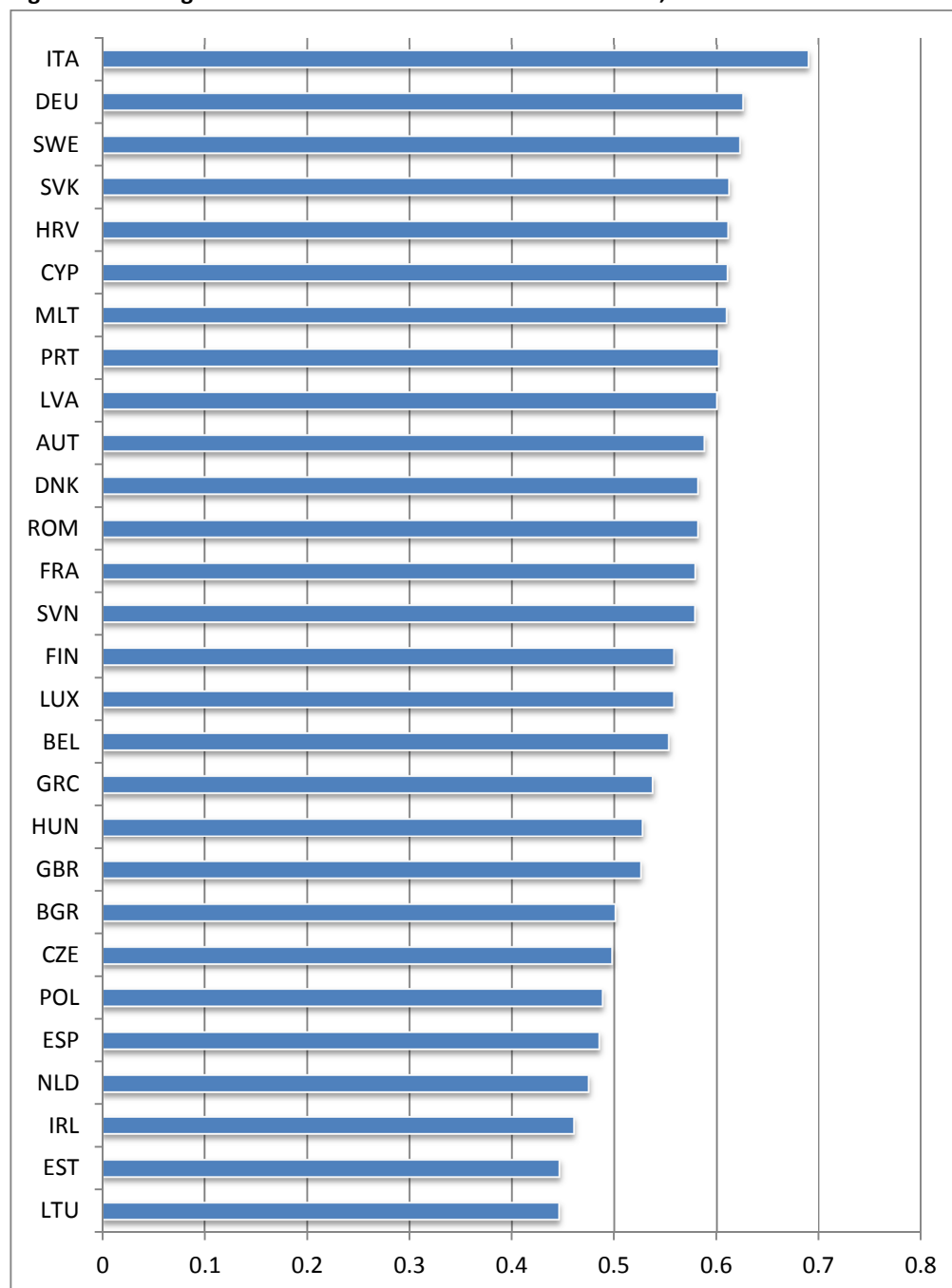
Source: National-level averages from Orbis

Using information on the debt-share of each country, CORTAX calculates a weighted average of EMTRs for debt and equity finance (Figure 2.4). This can be interpreted as a summary indicator of how distortionary the corporate tax system is for marginal investment decisions. On one end, the United Kingdom and Spain have the highest average EMTR whereas on the other end, Croatia has a negative EMTR.

Figure 2.4 Average EMTR in EU countries, 2012
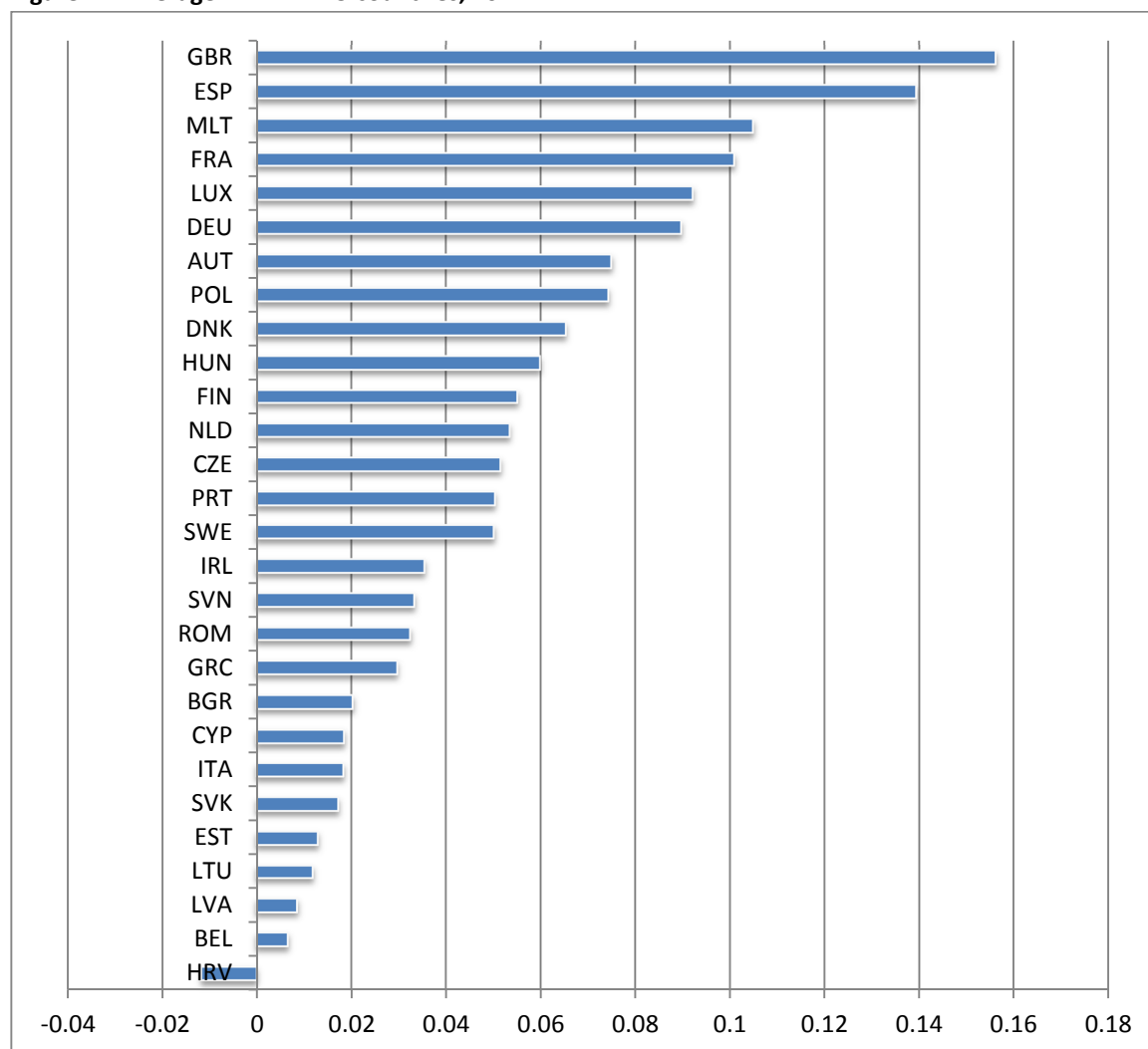
Source: CORTAX

Corporate tax revenue

The CORTAX baseline simulates corporate tax revenues in each country. The corporate tax base is defined in the following way. We firstly take national accounts data on gross value added minus total labour income, thereby correcting for the income from the self-employed. The share of economic rents is set at 2.5% of value added. To calculate deductible costs we use capital shares from national accounts, fiscal depreciation rates from Table 2.3, a nominal interest rate of 3.4% and debt shares from Figure 2.3. In addition, we account for the possibility of firms to carry loss forward as well as for capital allowances (see equation 4.1).

Figure 2.5 shows the calibrated values in CORTAX for the corporate tax-to-GDP ratio versus those reported by Eurostat for 2012. Comparing CORTAX estimates with EUROSTAT data, we find that on simple averages of the corporate tax-to-GDP ratio are close with 2.69% in CORTAX compared with 2.61% in Eurostat. Taking the GDP-weighted averages, the CORTAX figure is 3.69%, which is higher than the Eurostat figure of 2.46%.

Figure 2.5 Corporate tax revenue in percentage of GDP: CORTAX and Eurostat 2012
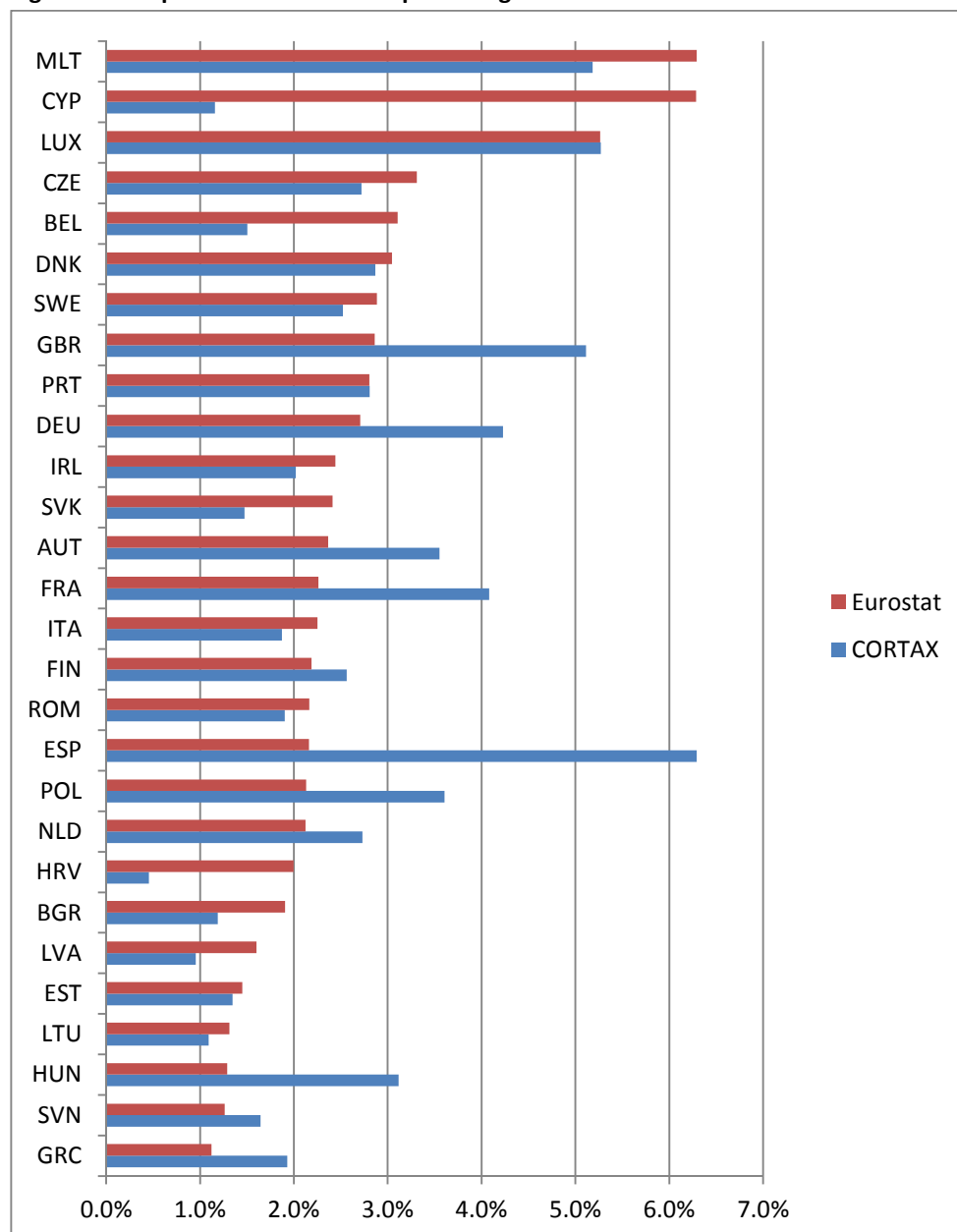
Source: Eurostat and CORTAX

There are several factors that may cause the differences between the CORTAX and Eurostat estimates.[8] The CORTAX baseline includes profit shifting between countries parameterised according to available estimates, but naturally precise data does not exist. Furthermore, these figures are produced using the standard version of CORTAX *without* the tax haven, and some of the overestimation in CORTAX is likely due to the use of tax havens. Another relevant factor in determining the fit between Eurostat and CORTAX values is the use in CORTAX of a simplified definition of the tax base in terms of deductions and allowances. At country level a variety of

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[8] Some sensitivity analysis was carried out to investigate if one could more closely match the CORTAX and Eurostat revenue totals by adjusting the probability of a good event, in case the differences were due to this factor. The results were varied with the differences becoming somewhat smaller for some countries and somewhat larger for others. It was decided there was not sufficient evidence that this improved the calibration.

exceptions to the general rules apply, which may cause an overestimation of revenues in certain countries where particular deductions are not accounted for (such as the various incentives for innovative investment in Hungary or the Innovation Box in the Netherlands). Lastly, in addition to profit shifting by some firms, there is always a degree of other forms of tax evasion and tax avoidance that is not fully accounted for.

3. Common Tax Base Simulations

In this section we present the core simulations, which are chosen to reflect potential policy options for the harmonisation of the corporate tax bases in the EU. Following the EC proposal (European Commission, 2015a) two main reforms are considered: the common corporate tax base (CCTB), and the common consolidated corporate tax base (CCCTB). Both reforms are assumed to be mandatory for multinationals only, which means that only multinationals will participate in the harmonised tax base (hereafter CCTB-MNEs and CCCTB-MNEs). Following the current discussion on the proposal, an additional option, namely the CCTB with cross-border loss offset (CBLO) is also accounted for in the impact assessment.

The macroeconomic effects for each of two reforms are reported separately in this section for the so-called CCTB25 definition of tax base harmonisation (see definition below), which represents our core interpretation of the proposal legislation. For convenience, the data for both the core simulations, as well as the sensitivity simulations (Section 5) are repeated together in Appendix A and the country-by-country results are shown in Appendix B.

The simulations are coded to ensure that the government budget remains balanced.[9] This is achieved in two ways. First, it is assumed that governments will adjust the corporate tax rates to maintain constant corporate tax revenue, prior to any behavioural response (i.e. ex-ante to the simulation). Any revenue changes due to the behavioural responses (i.e. ex-post to the simulation) are accounted for by the government adjusting transfers to retirees. We place bounds on the minimum and maximum CIT rate of 10 percent and 37.5 percent to reflect the likely limits of policy choices. Sensitivity analysis is performed on the maximum rate in Section 5.

According to our interpretation of the legislation, the CCTB25 harmonised tax base, which is the central policy reform scenario, is defined as follows: a 12.5 percent straight line depreciation rate for machinery (8 years), a 4 percent rate for industrial buildings (25 years), a 6.67 percent rate for intangibles (15 years) and an average value for inventories. In the sensitivity analysis presented in section 5, the same simulations are performed for alternative interpretations of the base harmonisation.

The net present values of depreciation allowances are calculated in line with the Devereux/Griffith methodology (2003). For the harmonised tax base, two values are calculated: the first year allowance and the net present value of other depreciation allowances for each asset class. ORBIS data are then used to calculate the median values by country, based on firm-specific data on asset structures. The resulting summary indicators for depreciation are shown in Table 3.1. Note that tax base harmonisation does not result in identical tax bases for all countries, as each country has a different asset structure. Under the reform scenario, the corporate tax base tends to shrink at EU level relative to the base scenario.

The effects of the CCTB25 proposal on the first year allowance show that the most significant decreases in percentage points in relation to the base occur in Lithuania (16.30 pp), Hungary (11.86 pp) and Romania (11.71 pp), while the largest increases occur in Italy (2.23 pp), United Kingdom (1.52 pp), Spain (1.16 pp) and the particular case of Estonia. Turning to the effect of the proposal on

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[9] This is reasonable from a policy perspective, and also ensures that the simulations are comparing otherwise similar alternatives (rather than capturing the impact of, say, an overall rise or fall in government borrowing).

the NPV of tax depreciation, significant cuts to the initial values are recorded in Croatia, Lithuania and Greece (ranging from 14 to 9 pp), while significant increases are recorded in United Kingdom, Poland and Hungary.

All EU countries harmonise tax base at the reform scenario CCTB25, which entails the traditional debt bias. Therefore, the ACE systems in Italy and Belgium are removed in the reform scenarios.

Table 3.1 Effect of the CCTB25 proposal on the net present value of tax depreciation allowances

Country	base		CCTB25	
	1st year	NPV-other	1st year	NPV-other
Austria	3.92%	43.10%	4.24%	47.84%
Belgium	5.17%	57.01%	4.24%	47.84%
Bulgaria	6.89%	49.01%	4.24%	47.28%
Croatia	13.89%	62.52%	4.26%	47.84%
Cyprus	7.01%	44.04%	4.61%	41.32%
Czech Republic	4.98%	49.68%	4.34%	47.84%
Denmark	6.55%	45.11%	4.35%	43.20%
Estonia	0.00%	0.00%	4.58%	47.84%
Finland	7.88%	49.41%	4.24%	47.84%
France	5.05%	53.00%	4.86%	48.19%
Germany	3.95%	43.10%	4.24%	47.80%
Greece	6.32%	57.04%	4.41%	47.84%
Hungary	16.43%	39.93%	4.57%	47.84%
Ireland	4.24%	47.84%	4.24%	47.84%
Italy	2.02%	46.73%	4.25%	47.84%
Latvia	11.91%	55.40%	4.24%	47.84%
Lithuania	20.57%	59.70%	4.27%	46.08%
Luxembourg	3.57%	48.47%	4.24%	47.84%
Malta	10.07%	41.76%	4.24%	47.84%
Netherlands	8.51%	60.74%	6.67%	64.84%
Poland	3.84%	38.99%	4.60%	47.84%
Portugal	8.32%	49.83%	4.24%	45.53%
Romania	16.50%	41.43%	4.79%	47.84%
Slovakia	5.46%	54.81%	4.24%	47.84%
Slovenia	8.85%	52.05%	6.11%	51.75%
Spain	3.07%	43.45%	4.24%	47.78%
Sweden	6.88%	48.61%	4.24%	47.84%
United Kingdom	2.71%	12.42%	4.24%	47.84%
Average (weighted)	4.92%	43.03%	4.47%	48.46%
Standard deviation	4.79%	13.10%	0.57%	3.73%

Note: First year means the value of first-year tax allowances in percent of the purchase price of the investment. NPV-other means the net present value of other allowances in percent of the purchase price of the investment. *Source*: Own computations using ORBIS

3.1 Common Corporate Tax Base (CCTB)

The first simulation performed deals with the implementation of the CCTB-Multinationals only proposal. The main economic results are presented in Table 3.2.

Table 3.2 Economic effects for the EU of the CCTB reform (Multinationals only)

	CCTB-MNEs
Cost of capital (% points change)	-0.043
Investment (percentage change)	1.364
Wage (percentage change)	0.368
Employment (percentage change)	0.162
GDP (percentage change)	0.401
Welfare (% GDP)	0.082

Harmonising tax bases across member states entails a new set of depreciation rules for multinationals that operate across countries. Domestic firms, on the contrary, are not directly affected by the harmonised tax base, therefore for such firm type depreciation rates remain at the values used in the baseline scenario. The harmonised tax base for multinational only results in a narrowing of the tax base on average in the EU. Under the assumption of ex-ante revenue neutrality, corporate tax rates faced by multinational headquarters (adjusted for profit shifting to tax haven) slightly rise in several countries (especially United Kingdom, +10.92 percent) to compensate for the loss in the collected revenues due to the narrowing of the tax base, while opposite effects occur in countries like Belgium (-16.88 percent), Croatia and Estonia (around -10 percent). High corporate tax rates increase the burden on capital, which distorts firm decisions, and on pure rents, which is non-distortionary. Bigger tax allowances reduce marginal effective tax rates (METRs), and therefore the distortive impact of the corporate tax rate on the cost of capital, which, as reported in Table 3.2, slightly falls. However, the marginal effective tax rate is different for domestic and multinational firms and consequently, there is a distortion in the allocation of resources among countries, as investment are favourable in the firm type where the marginal effective tax rate is lower. The overall reduction of the cost of capital boosts investment, which records a positive change of +1.36 percent, favours capital accumulation and exerts a positive impact on the marginal product of labour. As the model features perfect competitive markets, higher marginal product of labour translates into a slight increase in the real wage (+0.37 percent), this, in turn, drives the increase in labour supply and level of employment (+0.16 percent). As a consequence, GDP and welfare rise.

The impact on welfare varies across countries. In particular, countries that experience a fall in the cost of capital also face a welfare gain. The United Kingdom (+0.32 percent of GDP), Spain (+0.26 percent of GDP) and Germany (+0.09 percent of GDP) are among the most favoured countries by the implementation of the common tax base, contrarily to other countries like Estonia (-0.63 percent of GDP) or Lithuania (-0.35 percent of GDP).

An important element CORTAX is able to capture is the distortion brought about by profit shifting (see Equations 1.9 and 1.10). The extent to which profit shifting affects the tax base depends on the

size of the bilateral FDI stocks (See Figure 2.1), as they represent a proxy of intra-firm trades, and the bilateral difference between the tax rates. Therefore, tax revenues in countries with important FDI stocks are significantly affected by profit shifting, and transfer pricing in countries with small FDI stocks have a negligible effect on the collection of tax revenues. Similarly, countries with very different tax rates from their main investment partners are more affected by profit shifting.

To disentangle the impact of profit shifting we report a figure on profit shifting to and from subsidiaries by country, before and after the CCTB-MNEs reform (Table 3.3). Column "IN" indicates inbound profits to the subsidiary in country i, contrarily to column "OUT" that indicates outbound profits from the country.

Table 3.3 Profit shifting to subsidiary within EU, by host county (Millions of Euro)

	BASELINE		CCTB-MNEs	
	OUT	IN	OUT	IN
Austria	-9.7	338.7	-139.8	181.9
Belgium	-585.4	376.5	-0.6	3,223.8
Denmark	-26.5	146	-29.9	435.9
Finland	-3.6	115	-8.1	294.2
France	-3865	0	-2,144.2	2,718.4
Germany	-725.1	443.9	-1,604.7	0.0
Greece	-0.6	77.6	0.0	223.1
Croatia	-1.5	80.4	0.0	358.1
Ireland	-0.1	1077.9	-0.1	1,396.5
Italy	-427.1	352.6	-181.6	613.6
Luxembourg	-85.3	66	-108.2	115.4
Netherlands	-227.6	1364.4	-828.6	1,103.6
Portugal	-90.6	122.8	-11.0	855.9
Spain	-1174.7	67.7	-1,500.6	0.0
Sweden	-199.7	201.8	-197.9	925.7
UK	-179.7	3453	-2,689.8	0.0
Cyprus	0	46.9	0.0	52.1
Czech Rep	-1.8	362.9	-19.4	637.3
Estonia	-2.2	26.8	0.0	94.8

Hungary	-1.2	261.6	-8.7	392.4
Latvia	-0.3	32.1	0.0	53.8
Lithuania	-0.1	43.4	0.0	80.4
Malta	-44.9	0.3	-29.6	0.0
Poland	-6.1	870	-100.9	216.1
Slovakia	-1.7	139.1	0.0	416.5
Slovenia	-0.1	75.1	-3.2	135.3
Bulgaria	0	163.3	0.0	211.7
Romania	-1.6	279.5	-8.7	352.4

In the baseline scenario, profit shifting is largely driven by the statutory corporate tax rates shown in Figure 2.2. France experiences the highest outflow of profits as the country features the highest tax rate in the EU and has large absolute values of inward and outward investment, whereas Cyprus and Ireland record zero or near-zero outward profit shifting, due their tax rates being among the lowest. The highest inflow of profits is to the UK, due to the combination of high absolute levels of inward and outward investment and lower CIT rates than its main investment partners.

When implementing the CCTB-MNEs reform, statutory tax rates for multinationals change across countries due to an ex-ante closure that keeps total (ex-ante) corporate tax revenues constant. This is the main driver of the changes relative to the baseline, and they affect both the magnitude and the direction of profit shifting.

The amount of profit shifted (as reported in Table 3.3) can be compared with the size of the tax base in each country. One can calculate the share of the tax base that has been either shifted to the country or out of the country, which suggests the magnitude of profit shifting for each country. In Table 3.4, we report a profit shifting index, which is calculated according to this formula:

$$Profit\ Shifting\ Index = \frac{\sum_{ms}\left|(taxBase_{withTP,ms} - taxBase_{withoutTP,ms})\right|}{\sum_{ms} taxBase_{withoutTP,ms}} \quad (3.1)$$

Where $taxBase_{withTP}$ is the tax base for multinational firms in the model, which includes transfer pricing, $taxBase_{withoutTP}$ is the hypothetical tax base for multinational firms were all transfer pricing to be eliminated. These are calculated for the multinational headquarters and on a bilateral basis between each multinational headquarters and subsidiary, ms. This value can be negative, implying that the country is losing some of its tax base to the subsidiary's country, or positive, implying that it's gaining some of the tax base of subsidiary's country. The sign of the index (gain or loss) depends on which country has the lower tax rate and the magnitude increases with the difference in the rates (see Section 2.2 for the profit-shifting equations). The full profit shifting index is calculated by summing the modulus value of both negative and positive values. The values are reported in Table 3.4.

For example, we see Austria has outward profit shifting to other countries of 0.88% of the no-profit-shifting tax base and inward profit shifting from other countries of 2.28%. The absolute sum of these is 3.16%, which gives the total share of the no-profit-shifting tax base that is shifted either to or from Austria. Comparing with Ireland, for example, whose profit shifting index is 17.29%, this implies that there is much more profit shifting to or from Ireland than Austria. In the case of Ireland, nearly all of the profit shifting is inward due to it having one of the lowest CIT rates.

The profit shifting index has been recalculated after the introduction of the CCTB-MNEs. Taking Austria again as an example, with the CCTB-MNEs the profit shifting index increases by 6.02 percentage points to 9.18%. By contrast, the profit shifting index for France falls by -5.45 percentage points to 4.56%. Whether the profit shifting index rises or falls depends primarily on the new relative tax rates.[10] Overall the direction of change is split almost evenly with 18 countries showing a rise and 12 countries showing a fall. This is in line with expectations, and consistent with the Euro values for changes in profit shifting previously shown in Table 3.3.

Table 3.4 Profit Shifting Index – Share of tax base shifted to or from country (baseline v CCTB; see text)

	BASELINE			CCTB-MNEs			Difference	
	(1) Profit shifting index - negative values (outward profit shifting)	(2) Profit shifting index - positive values (inward profit shifting)	(3) Profit shifting index (sum of modulus values)	(4) Profit shifting index - negative values (outward profit shifting)	(5) Profit shifting index - positive values (inward profit shifting)	(6) Profit shifting index (sum of modulus values)	(7) Percentage points $(6) - (3)$	(8) Percentage change $\dfrac{(6) - (3)}{(3)}$
Austria	-0.34%	2.65%	2.99%	-7.48%	1.69%	9.18%	6.19%	206.95%
Belgium	-8.96%	2.91%	11.87%	0.00%	23.95%	23.95%	12.08%	101.83%
Denmark	-0.25%	4.36%	4.61%	-0.24%	8.01%	8.25%	3.64%	78.97%
Finland	-0.04%	2.91%	2.95%	-0.09%	5.06%	5.15%	2.19%	74.22%
France	-7.73%	0.09%	7.82%	-1.73%	2.83%	4.56%	-3.25%	-41.61%
Germany	-1.13%	0.67%	1.80%	-5.96%	0.03%	5.99%	4.20%	233.63%
Greece	-0.23%	1.41%	1.64%	0.00%	2.61%	2.61%	0.97%	59.49%
Croatia	-0.22%	11.56%	11.78%	0.00%	14.37%	14.37%	2.59%	21.94%
Ireland	0.00%	16.49%	16.50%	0.00%	19.10%	19.10%	2.60%	15.77%
Italy	-1.48%	0.94%	2.42%	-0.35%	2.95%	3.31%	0.89%	36.91%
Luxembourg	-1.84%	8.64%	10.48%	-12.98%	2.63%	15.61%	5.13%	48.89%
Netherlands	-0.66%	11.13%	11.79%	-2.74%	6.02%	8.76%	-3.03%	-25.71%
Portugal	-1.04%	1.82%	2.86%	-0.08%	8.29%	8.37%	5.51%	192.46%

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[10] Recall that the CIT rates for multinationals change as part of the ex-ante closure. See above for details.

Spain	-2.48%	0.14%	2.62%	-3.73%	0.01%	3.74%	1.12%	42.77%
Sweden	-1.09%	3.24%	4.33%	-0.98%	7.69%	8.67%	4.34%	100.40%
UK	-0.09%	6.14%	6.22%	-6.95%	0.13%	7.08%	0.86%	13.75%
Cyprus	0.00%	9.97%	9.97%	0.00%	9.64%	9.64%	-0.33%	-3.31%
Czech Rep	-0.01%	3.49%	3.50%	-0.13%	4.85%	4.98%	1.48%	42.28%
Estonia	-1.05%	4.68%	5.73%	0.00%	5.52%	5.52%	-0.21%	-3.59%
Hungary	-0.01%	4.15%	4.16%	-0.09%	4.57%	4.66%	0.50%	12.02%
Latvia	-0.05%	4.91%	4.96%	0.00%	4.36%	4.36%	-0.60%	-12.06%
Lithuania	-0.01%	3.56%	3.57%	0.00%	2.74%	2.74%	-0.84%	-23.41%
Malta	-4.96%	0.03%	5.00%	-4.12%	0.00%	4.12%	-0.88%	-17.59%
Poland	-0.01%	2.19%	2.20%	-0.36%	0.90%	1.25%	-0.95%	-43.11%
Slovakia	-0.05%	4.52%	4.57%	0.00%	8.38%	8.38%	3.80%	83.18%
Slovenia	-0.01%	4.89%	4.90%	-0.17%	7.49%	7.66%	2.77%	56.52%
Bulgaria	0.00%	4.57%	4.57%	0.00%	5.25%	5.25%	0.68%	14.97%
Romania	-0.01%	2.71%	2.72%	-0.07%	3.25%	3.32%	0.60%	22.07%
USA	-1.10%	0.01%	1.11%	-0.55%	0.01%	0.56%	-0.54%	-49.14%
Japan	-0.88%	0.00%	0.88%	-0.56%	0.00%	0.56%	-0.32%	-36.78%
EU (wei. ave.)	**-1.51%**	**5.51%**	**7.02%**	**-3.60%**	**6.22%**	**9.82%**	**2.81%**	**39.97%**

Table 3.5 presents changes in tax revenues by tax type by country with respect to the base scenario. Total tax revenues somewhat contract on average, mainly driven down by the fall in corporate tax revenues, due to behavioural responses to the reform. In particular, for the ex-ante CIT revenue neutrality to hold, the narrowing of the tax base entails a rise in the EU-average tax rate, directly impacting profit shifting, which is driven by tax rates differentials. A small positive change is recorded for tax on labour due to the higher level of employment and wages.

Table 3.5 Effect of the CCTB-MNEs on total tax revenues by tax type (% GDP change)

	Corporate tax	Labour tax	Consumption tax	Tax on bonds	Tax on dividends	Tax on capital gains	Total tax revenues
Austria	-0.24	0.12	0.01	0.01	0.00	0.01	-0.09
Belgium	0.45	-0.27	-0.01	-0.02	-0.01	0.00	0.14

Denmark	0.09	-0.02	0.00	0.00	0.00	0.00	0.07
Finland	0.05	-0.04	-0.01	0.00	0.00	0.00	0.00
France	0.09	-0.02	0.00	0.00	0.00	0.00	0.07
Germany	-0.33	0.18	0.03	0.02	0.00	0.01	-0.09
Greece	0.20	-0.17	-0.04	-0.02	0.00	0.00	-0.03
Croatia	0.72	-0.32	-0.11	-0.05	0.00	0.00	0.24
Ireland	0.03	0.02	0.01	0.00	0.00	0.00	0.06
Italy	-0.02	0.00	0.01	0.00	0.00	0.00	-0.01
Luxembourg	-0.62	0.02	0.02	0.00	0.00	0.00	-0.58
Netherlands	-0.20	0.10	0.01	0.01	0.00	0.01	-0.07
Portugal	0.11	-0.05	-0.02	0.00	0.00	0.00	0.04
Spain	-0.39	0.25	0.04	0.02	0.00	0.01	-0.07
Sweden	0.10	-0.02	0.01	-0.01	0.00	0.00	0.08
UK	-1.47	0.51	0.11	0.14	0.03	0.05	-0.63
Cyprus	0.14	-0.06	-0.01	0.00	0.00	0.00	0.07
Czech Rep	0.03	-0.01	0.00	0.00	0.00	0.00	0.02
Estonia	0.79	-0.52	-0.15	0.00	-0.01	-0.02	0.09
Hungary	-0.01	0.00	0.00	0.00	0.00	0.00	-0.01
Latvia	0.40	-0.25	-0.05	-0.01	0.00	-0.01	0.08
Lithuania	0.75	-0.41	-0.08	-0.02	-0.01	-0.02	0.21
Malta	-0.08	0.04	0.02	0.00	0.00	0.00	-0.02
Poland	-0.27	0.12	0.02	0.01	0.00	0.01	-0.11
Slovakia	0.14	-0.11	-0.03	0.00	0.00	0.00	0.00
Slovenia	0.03	-0.01	0.00	0.00	0.00	0.00	0.02
Bulgaria	0.11	-0.04	-0.01	0.00	0.00	0.00	0.06
Romania	0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01
EU (wei. ave.)	-0.28	0.12	0.02	0.02	0.00	0.01	-0.10

Note: the changes refer to modelled changes relative to the calibrated CORTAX baseline.

With the aim of highlighting the impact of the reforms on tax revenues, insights on the evolution of revenues for corporate taxes and other taxes (taxes on labour, consumption, dividends and capital gains) in each step of the CCTB-MNEs simulation are provided in Table 3.6. The columns show first the Eurostat estimate for CIT and other taxes combined, and second the CORTAX baseline values. The third column shows the new baseline values for CIT revenue taking into account only the change in the tax base (before CIT rates adjustment). The fourth column shows the values with the CIT rates adjusted ex-ante (designed to return to the initial CIT revenue), and the fifth column shows the changes to CIT and other tax revenues following the simulation. Any remaining rise or fall in government revenue leads to increase or decrease in public spending (which is modelled an adjustment in the transfers to old people) so as to maintain budget neutrality, which is shown in the final column.

Table 3.6 Evolution of the effect of the CCTB-MNEs on corporate and other taxes revenues

CCTB-MNEs		EUROSTAT 2012 (% of GDP)	CORTAX (% of GDP)	Common tax base (% change of GDP)	Adjusted CIT rates	New Equilibrium (% change of GDP)	Change in public transfers (% change of GDP)
Austria	CIT	2.37	3.2	-0.25	0.00	-0.24	-0.13
	Other Tax	40.73	38.4	0.00	0.00	0.15	
Belgium	CIT	3.11	1.7	0.86	0.00	0.45	0.19
	Other Tax	42.29	39.5	0.00	0.00	-0.31	
Denmark	CIT	3.04	2.6	0.13	0.00	0.09	0.07
	Other Tax	45.06	40.2	0.00	0.00	-0.02	
Finland	CIT	2.19	2.3	0.15	0.00	0.05	0.00
	Other Tax	41.91	40.8	0.00	0.00	-0.05	
France	CIT	2.26	3.4	0.27	0.00	0.09	0.08
	Other Tax	42.74	38.3	0.00	0.00	-0.02	
Germany	CIT	2.71	3.7	-0.29	0.00	-0.33	-0.13
	Other Tax	36.39	34.7	0.00	0.00	0.24	
Greece	CIT	1.12	1.8	0.49	0.00	0.20	-0.04
	Other Tax	32.58	29.6	0.00	0.00	-0.23	
Croatia	CIT	2.00	0.4	0.69	0.00	0.72	0.31
	Other Tax	33.70	36.1	0.00	0.00	-0.48	
Ireland	CIT	2.44	1.9	0.00	0.00	0.03	0.07
	Other Tax	26.26	28.3	0.00	0.00	0.03	
Italy	CIT	2.25	2.1	0.10	0.00	-0.02	-0.02
	Other Tax	41.75	37.4	0.00	0.00	0.01	
Luxembourg	CIT	5.26	4.5	0.03	0.00	-0.62	-0.80
	Other Tax	34.04	32.8	0.00	0.00	0.04	
Netherlands	CIT	2.13	2.4	-0.13	0.00	-0.20	-0.09
	Other Tax	36.87	37.5	0.00	0.00	0.13	
Portugal	CIT	2.80	2.5	0.35	0.00	0.11	0.05
	Other Tax	29.60	29.7	0.00	0.00	-0.07	
Spain	CIT	2.16	5.4	-0.32	0.00	-0.39	-0.10
	Other Tax	30.34	29.3	0.00	0.00	0.32	

Sweden	CIT	2.88	2.2	0.09	0.00	0.10	0.09
	Other Tax	41.32	40.7	0.00	0.00	-0.02	
UK	CIT	2.86	4.6	-1.18	0.00	-1.47	-0.87
	Other Tax	32.54	31.9	0.00	0.00	0.84	
Cyprus	CIT	6.29	1.1	0.10	0.00	0.14	0.09
	Other Taxes	29.01	27.5	0.00	0.00	-0.07	
Czech Rep	CIT	3.31	2.5	0.10	0.00	0.03	0.02
	Other Tax	31.69	31.3	0.00	0.00	-0.01	
Estonia	CIT	1.45	1.3	1.10	0.00	0.79	0.16
	Other Tax	31.05	33	0.00	0.00	-0.70	
Hungary	CIT	1.29	2.9	-0.05	0.00	-0.01	-0.01
	Other Tax	37.91	37.8	0.00	0.00	0.00	
Latvia	CIT	1.60	0.9	0.42	0.00	0.40	0.14
	Other Tax	26.30	29.4	0.00	0.00	-0.32	
Lithuania	CIT	1.31	1	0.75	0.00	0.75	0.33
	Other Tax	25.89	27.3	0.00	0.00	-0.54	
Malta	CIT	6.29	4.2	-0.18	0.00	-0.08	-0.01
	Other Tax	27.31	23.8	0.00	0.00	0.06	
Poland	CIT	2.13	3.4	-0.42	0.00	-0.27	-0.14
	Other Tax	30.37	27.7	0.00	0.00	0.16	
Slovakia	CIT	2.41	1.4	0.36	0.00	0.14	0.00
	Other Tax	25.89	29.6	0.00	0.00	-0.14	
Slovenia	CIT	1.26	1.5	0.06	0.00	0.03	0.03
	Other Tax	36.34	36.5	0.00	0.00	-0.01	
Bulgaria	CIT	1.91	1.2	0.08	0.00	0.11	0.08
	Other Tax	25.99	25.5	0.00	0.00	-0.05	
Romania	CIT	2.16	1.8	-0.25	0.00	0.01	-0.01
	Other Tax	26.14	29.5	0.00	0.00	-0.02	

3.1.1 Common Corporate Tax Base (CCTB) with Cross-border Loss Offset (CBLO)

In the staged approach foreseen for implementing the proposal, one of the options is the common consolidated tax base multinationals only with cross-border loss offset (CCTB-MNEs-CBLO). The exact policy could be legislated in various ways, but a core feature would include a loss made at the subsidiary level being claimable at the level of the multinational headquarters. This would be beneficial to multinationals as they would have the possibility to claim losses occurring in one country in another.

The simulation takes the core idea of the proposal giving the multinational-headquarter the possibility to claim losses made at the subsidiary level. This possibility is introduced into a system where losses by subsidiaries are already claimed in the country where they occur because of the loss carry forward regime, conditional, however, to the fact that the subsidiary makes a profit.

Under CBLO, multinationals face options in addition to the loss carry forward regime, as summarised in the decision tree of figure 3.1 and modelled in equation 3.2. The tree starts by accounting for the proportion of subsidiaries making a profit (with frequency, q) or a loss (with frequency, 1-q)in period 1. If the headquarter makes a profit in the same period, then the option is between claiming the loss

at the headquarter level in the current period or keeping the loss until the next period. This choice depends on sign1, described in equation 3.2.a. In period 2, the loss is claimed by the subsidiary, if it makes a profit. If not, the loss is claimed by the headquarters, if profitable. If in period 1 the headquarter makes a loss, the possibility to claim the loss in the same period is ruled out and the only option is to claim the loss made at the subsidiary level in period 2. The choice is then between claiming it at headquarter or subsidiary level depending on the tax rates differential, ruled by sign2 (equation 3.2.b).

Figure: 3.1. Cross-Border Loss Offset decision tree
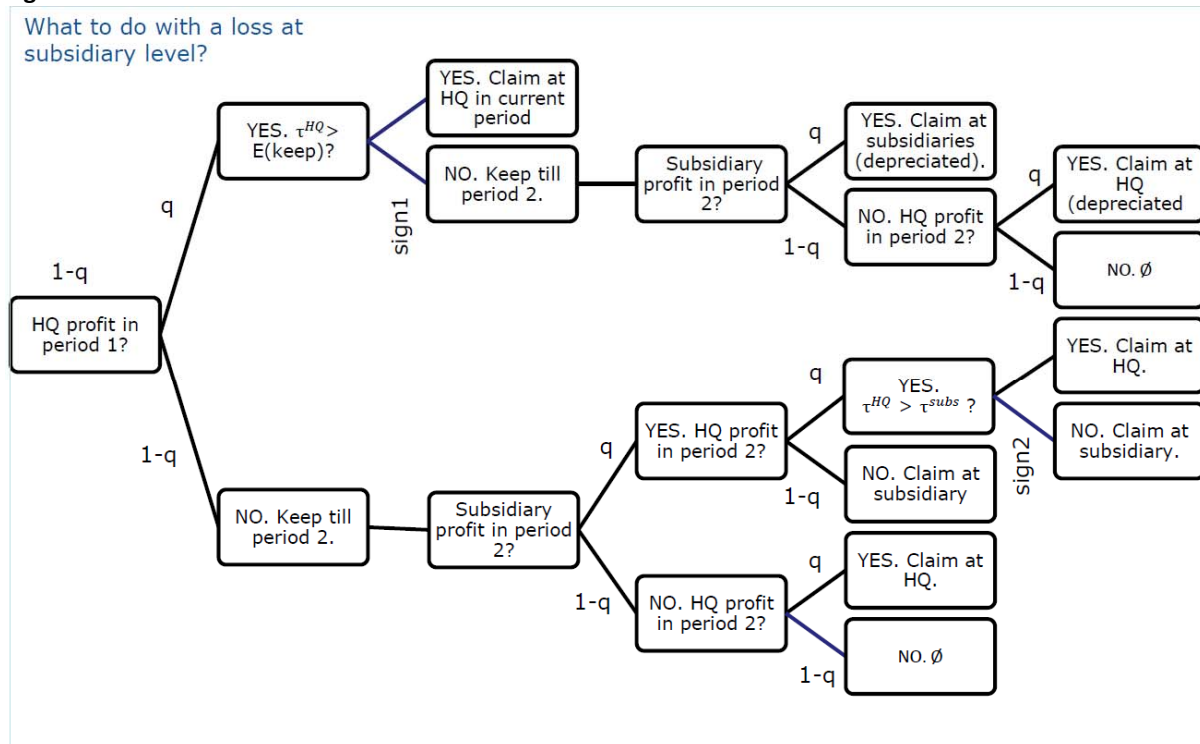
$$CBLO(m, ms) = \left(1 - q_{f(ms)}\right)$$

$$* \left(q_{fm} \right.$$

$$* \left(CBLO_{sign1} * lcf_m + CBLO_{sign1} * (1 - q_{fm}) * q_{fm} * \frac{lcf_m}{(1 + g_y)(1 + g_p)} \right) \right)$$

$$+ \left((1 - q_{fm}) \right.$$

$$* \left(\left(q_{fm} * q_{fm} * CBLO_{sign2} * \frac{lcf_m}{(1 + g_y)(1 + g_p)} \right) \right.$$

$$+ \left((1 - q_{fm}) * q_{fm} * \frac{lcf_m}{(1 + g_y)(1 + g_p)} \right) \right) \right) \qquad (3.2)$$

With

$$CBLO_{sign1} = \tau_\pi^m - \left(q_{fm} * \frac{\tau_\pi^f}{(1 + g_y)(1 + g_p)} \right)$$

$$+ \left((1 - q_{fm}) * q_{fm} * \frac{\tau_\pi^m}{(1 + g_y)(1 + g_p)} \right) \qquad (3.2.a)$$

$$CBLO_{sign2} = \tau_\pi^m - \tau_\pi^f \qquad (3.2.b)$$

In these equations, CBLO is the cross-border loss offset, q_f is the probability of making a profit, lcf_m is the loss carried forward, g_y is the economic growth rate, g_p is the inflation rate, and τ_π^m and τ_π^f are the CIT rates of the multinational headquarters and the subsidiary. $CBLO_{sign1}$ and $CBLO_{sign2}$ take a value of +1 if the expression is positive and -1 if negative. As result of the tree decision, a portion of the subsidiary loss carry forward gets claimed by the multinational headquarters, thereby reducing their tax base (equation 3.3).

$$TaxBase_{MNE-HQ} = yl - w(1 + cc_{lm}) - \beta_{be} \times db_m \times rwn_b \times kl_m$$

$$- \frac{(\delta_{te} + \beta_{ee} \times (1 - db_m) \times rwn_b) \times (g_y + \delta_k) \times (1 - \varphi_e) \times kl_m}{(1 + g_y)(1 + g_p) - 1 + \delta_{te}}$$

$$- \varphi_e \times (g_y + \delta_k) \times kl_m + \sum_{ms} \left\{ (p_{qe} - 1 - c_{qe}) \times ql \times \frac{l_{m,(m,ms)}}{l_{m,(m,m)}} \right\}$$

$$- \frac{(1 - q_f) \times lcf_m}{(1 + g_y)(1 + g_p)}$$

$$- \sum_{ms} \left\{ CBLO_{m,ms} \frac{l_{m,(m,ms)}}{l_{m,(m,m)}} \right\} \qquad (3.3)$$

Essentially, equation 3.3 states that the tax base is comprised of output, *yl*, less the costs, where the explanation of the costs is as follows: (i) wages (w …), (ii) cost of debt financing (β_{be} …), (iii) cost of equity financing, other than immediate expensing (δ_{te} …), (iv) immediate expensing (ϕ_e …), (v) adjustments due to transfer pricing ($\Sigma\{(p_e$ …), (vi) loss carried forward from the previous period by the multinational headquarters (($1-q_f$) …), and (vii) loss carried forward from the previous period by the subsidiaries that is not claimed at the subsidiary level ($\Sigma\{CBLO_{m,ms}$ …). The full list of variables are in the footnote below.[11] The first six terms are standard CORTAX code, whereas the final, (vii), is the cross-border loss offset (equation 3.2). The adjustment for different labour demand, l_m, is simply to place the loss, lcf_{ms}, in the correct units. The adjustment for growth, g_y, and inflation, g_p, is to deflate the value from the previous period. Results for CCTB-MNEs with CBLO are shown in Table 3.7.

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[11] yl = output per worker; w = wage; cc_{lm} = ratio compliance costs; β_{be} = deductible fraction of corporate interest payments; db_m = debt share of financing; rwn_b = world rate of return on bonds (nominal); kl_m = capital-labour ratio; δ_{te} = depreciation rate of capital for tax purposes; β_{ee} = deductible fraction of corporate return on equity (if any); g_y = economic growth rate; δ_k = depreciation rate of capital; ϕ_e = immediate expensing; g_p = inflation rate; pq_e = price of intermediate inputs; cq_e = cost of profit shifting; ql = intermediate input per worker; l_m = labour demand; lcf_m = loss carried forward; CBLO = cross-border loss offset.

Table3.7: Macroeconomic results CCTB-MNEs with Cross-border Loss Offset (multinationals only)

	CCTB-MNEs-CBLO
Cost of capital (% points change)	-0.055
Investment (percentage change)	1.469
Wage (percentage change)	0.412
Employment (percentage change)	0.191
GDP (percentage change)	0.451
Welfare (% GDP)	0.077

In order to understand the results, recall the main impact of the simulation, which is to expand the deduction for multinational headquarters. This narrows the tax base for multinational, and therefore the cost of capital falls more than under the CCTB-MNES, putting upward pressure on investment and therefore GDP.

3.2 Common Consolidated Corporate Tax Base (CCCTB)

The CCCTB proposal offers a holistic solution to profit shifting. It combines a common tax base together with consolidation of each multinational group's profit, removing the incentive to engage in profit shifting. Under this reform, the consolidated tax base must then be apportioned to each country according to an agreed formula. This formula apportionment can be done in different ways. The formula used in these simulations is based on the EC proposal, and is shown in equation 3.4.

$$\omega_{ij} = \left\{\frac{1}{6}\frac{WL_{ij}}{WL_i} + \frac{1}{6}\frac{L_{ij}}{L_i}\right\} + \frac{1}{3}\frac{K_{ij}}{K_i} + \frac{1}{3}\frac{Y_{ij}}{Y_i} \tag{3.4}$$

From Equation 3.4, it follows that the share of the tax base of a multinational from country i in country j, ω_{ij}, is an average of the share of labour, capital (K_{ij}) and output[12] (Y_{ij}) in that country j relative to the labour, capital and output of the multinational from country i. The labour component is split between payroll (WL_{ij}) and number of employees (L_{ij}). The main economic effects of the CCCTB for multinationals only are presented in Table 3.8.

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[12] Output is used as a proxy for sales, as sales data by multinational subsidiary is not available.

Table 3.8 Economic effects for the EU of the CCCTB reform (multinationals only)

	CCCTB-MNEs
Cost of capital (% points change)	-0.042
Investment (percentage change)	0.571
Wage (percentage change)	0.399
Employment (percentage change)	0.187
GDP (percentage change)	0.163
Welfare (% GDP)	0.073

As for the CCTB simulation, the CCCTB proposal results in positive GDP and welfare outcomes via reduced cost of capital and increased investment. As before, this traces back to the relative benefits of a reduced dispersion in the EMTRs across countries, with the effect of reducing the distortion in the allocation of mobile capital. On balance, the shift of the tax burden from capital to economic rent occurs, with the result of reducing economic distortions. Countries that experience a broadening of the tax base due to smaller allowances record a negative change in GDP, and the opposite holds for countries where the tax base narrows.

In addition to the effect resulting from a harmonised tax base, the CCCTB proposal yields extra effects from the consolidated corporate tax base via formula apportionment. In particular, consolidation via formula apportionment entails: effects on compliance costs, the shift from separate accounting to formula allocation, and the shift from loss carry forward to loss consolidation. We briefly expand on each of these elements below.

Tax compliance costs are expected to fall in the long run, as firms will only need to use one method to calculate their tax base. In terms of modelling, this translate in setting tax compliance costs for multinational subsidiaries equal to zero, while leaving the compliance costs for multinational headquarters unchanged. As compliance costs are modelled as variable costs, the resulting reduction in tax compliance costs exerts a positive impact on production, partly explaining the increase in welfare and GDP.

Next, the shift from separate accounting to formula apportionment has allocative implications, as it directly affects the distribution of the corporate tax base between countries, both ex-ante and ex-post behavioural responses. In particular, it causes a shift to a new type of distortion associated with the formula factors, an ex-ante redistribution of corporate tax bases across countries, and the removal of profit-shifting from high-to-low-tax regimes within EU. The redistributive effect of the formula depends on three main factors: the capital/labour ratio, the statutory corporate tax rate which drives profit shifting and the dimension of the multinational sector as consolidation applies to multinational only.

Under consolidation national tax rates exert less of an effect on the cost of capital, as the location of the investment does not determine the tax base that, under this regime, is consolidated and the tax rate levied is a weighted average of the tax rates in the different countries. However, the new system introduces another distortion through the shares in the formula apportionment. In

particular, countries face a new incentive to relocate their inputs from high to low-tax countries in order to change the relative weights in the formula.

Under consolidation any losses from subsidiaries can be immediately deducted in the consolidated base, in contrast to the base case or the CCTB's loss carry forward regime. This tends to lower the tax burden and the cost of labour, boosting employment. Table 3.8 suggests the cost of capital falls, boosting investment, capital and GDP.

As mentioned, one of the benefits of consolidation of the tax base is that profit shifting becomes futile. This can be seen clearly by recalculating the profit shifting index, which compares the amount of the tax base that is shifted inward to or outward from each country (explained in detail in section 3.1). Profit shifting between EU countries falls to zero (as consolidation make profit shifting irrelevant), and the remaining profit shifting occurs only with the USA and Japan. As such the profit shifting index improves dramatically in all countries. The results are shown in Table 3.9. One clearly sees that under CCCTB nearly all profit shifting is inward to EU countries, as profit shifting only occurs with the USA and Japan, which both have high tax rates.

Table 3.9 Profit Shifting Index – Share of tax base shifted to or from country (baseline & CCCTB; see text)

	BASELINE			CCCTB-MNEs			Difference	
	(1) Profit shifting index - negative values (outward profit shifting)	(2) Profit shifting index - positive values (inward profit shifting)	(3) Profit shifting index (sum of absolute values)	(4) Profit shifting index - negative values (outward profit shifting)	(5) Profit shifting index - positive values (inward profit shifting)	(6) Profit shifting index (sum of absolute values)	(7) Percentage points change $(6) - (3)$	(8) Percent change $\dfrac{(6) - (3)}{(3)}$
Austria	-0.34%	2.65%	2.99%	0.00%	0.22%	0.22%	-2.77%	-92.78%
Belgium	-8.96%	2.91%	11.87%	0.00%	1.45%	1.45%	-10.41%	-87.77%
Denmark	-0.25%	4.36%	4.61%	0.00%	0.95%	0.95%	-3.66%	-79.43%
Finland	-0.04%	2.91%	2.95%	0.00%	0.38%	0.38%	-2.57%	-87.06%
France	-7.73%	0.09%	7.82%	0.00%	0.72%	0.72%	-7.10%	-90.83%
Germany	-1.13%	0.67%	1.80%	0.00%	0.17%	0.17%	-1.62%	-90.40%
Greece	-0.23%	1.41%	1.64%	0.00%	0.27%	0.27%	-1.37%	-83.30%
Croatia	-0.22%	11.56%	11.78%	0.00%	0.23%	0.23%	-11.55%	-98.04%
Ireland	0.00%	16.49%	16.50%	0.00%	0.80%	0.80%	-15.69%	-95.12%
Italy	-1.48%	0.94%	2.42%	0.00%	0.28%	0.28%	-2.14%	-88.45%
Luxembourg	-1.84%	8.64%	10.48%	0.00%	2.25%	2.25%	-8.24%	-78.56%
Netherlands	-0.66%	11.13%	11.79%	0.00%	1.91%	1.91%	-9.88%	-83.81%

Portugal	-1.04%	1.82%	2.86%	0.00%	0.17%	0.17%	-2.70%	-94.22%
Spain	-2.48%	0.14%	2.62%	0.00%	0.03%	0.03%	-2.59%	-98.84%
Sweden	-1.09%	3.24%	4.33%	0.00%	1.65%	1.65%	-2.68%	-61.92%
UK	-0.09%	6.14%	6.22%	0.00%	0.29%	0.29%	-5.93%	-95.36%
Cyprus	0.00%	9.97%	9.97%	0.00%	2.12%	2.12%	-7.85%	-78.73%
Czech Rep	-0.01%	3.49%	3.50%	0.00%	0.19%	0.19%	-3.31%	-94.43%
Estonia	-1.05%	4.68%	5.73%	0.00%	0.43%	0.43%	-5.29%	-92.41%
Hungary	-0.01%	4.15%	4.16%	0.00%	0.78%	0.78%	-3.38%	-81.21%
Latvia	-0.05%	4.91%	4.96%	0.00%	0.26%	0.26%	-4.69%	-94.66%
Lithuania	-0.01%	3.56%	3.57%	0.00%	0.07%	0.07%	-3.50%	-97.95%
Malta	-4.96%	0.03%	5.00%	0.00%	0.00%	0.00%	-4.99%	-99.99%
Poland	-0.01%	2.19%	2.20%	0.00%	0.06%	0.06%	-2.15%	-97.36%
Slovakia	-0.05%	4.52%	4.57%	0.00%	0.14%	0.14%	-4.43%	-96.85%
Slovenia	-0.01%	4.89%	4.90%	0.00%	0.04%	0.04%	-4.86%	-99.17%
Bulgaria	0.00%	4.57%	4.57%	0.00%	0.17%	0.17%	-4.39%	-96.18%
Romania	-0.01%	2.71%	2.72%	0.00%	0.10%	0.10%	-2.61%	-96.17%
USA	-1.10%	0.01%	1.11%	-0.42%	0.01%	0.42%	-0.68%	-61.68%
Japan	-0.88%	0.00%	0.88%	-0.40%	0.00%	0.40%	-0.48%	-54.55%
EU wei. ave.	**-1.51%**	**5.51%**	**7.02%**	**0.00%**	**0.96%**	**0.96%**	**-6.06%**	**-86.31%**

Focussing on the collection of tax revenues, shown in Table 3.10, the CCCTB-MNEs reform exerts a negative impact on total tax revenues, and in particular on corporate tax revenues, with the exception of labour tax revenues that go up due to the increase in employment and wages. Changes in other tax types are small. Compared to the CCTB, though there are differences at the country level, the EU weighted averages for corporate tax revenues and for labour tax revenues are similar.

Table 3.10 Effect of the CCCTB-MNEs on total tax revenues by tax type (% GDP change)

	Corporate tax	Labour tax	Consumption tax	Tax on bonds	Tax on dividends	Tax on capital gains	Total tax revenues
Austria	-0.14	0.05	0.00	0.00	0.00	0.00	-0.09
Belgium	-0.08	0.09	0.06	-0.01	0.00	0.00	0.06

Denmark	-0.12	0.03	0.00	0.01	0.00	0.00	-0.08
Finland	-0.07	0.08	0.02	0.00	0.00	0.00	0.03
France	-0.13	0.06	0.01	0.00	0.00	0.00	-0.06
Germany	-0.24	0.09	0.01	0.01	0.00	0.01	-0.12
Greece	0.03	-0.02	0.00	0.00	0.00	0.00	0.01
Croatia	0.19	0.06	0.05	-0.01	0.00	0.00	0.29
Ireland	-0.14	0.10	0.02	0.02	0.01	0.01	0.02
Italy	-0.04	0.03	0.01	0.00	0.00	0.00	0.00
Luxembourg	-1.01	0.03	0.03	0.00	0.00	0.00	-0.95
Netherlands	-0.19	0.29	0.12	0.00	0.00	0.00	0.22
Portugal	-0.03	0.07	0.03	0.00	0.00	0.00	0.07
Spain	-0.61	0.31	0.03	0.04	0.01	0.02	-0.20
Sweden	-0.12	0.15	0.06	0.00	0.00	0.00	0.09
UK	-0.88	0.30	0.04	0.11	0.02	0.04	-0.37
Cyprus	-0.02	0.03	0.00	0.00	0.00	0.00	0.01
Czech Rep	-0.05	0.06	0.00	0.00	0.00	0.00	0.01
Estonia	0.04	0.02	0.01	0.00	0.00	0.00	0.07
Hungary	-0.08	0.08	0.00	0.01	0.00	0.00	0.01
Latvia	0.03	0.02	0.00	0.00	0.00	0.00	0.05
Lithuania	0.08	-0.03	-0.01	0.00	0.00	0.00	0.04
Malta	-0.55	0.20	0.04	0.06	0.01	0.04	-0.20
Poland	-0.14	0.10	0.01	0.01	0.00	0.01	-0.01
Slovakia	0.02	0.06	0.01	0.00	0.00	0.00	0.09
Slovenia	-0.01	0.08	0.02	0.00	0.00	0.00	0.09
Bulgaria	0.00	0.10	0.03	0.01	0.00	0.00	0.14
Romania	-0.01	0.05	0.01	0.00	0.00	0.00	0.05
EU	-0.27	0.13	0.02	0.02	0.00	0.01	-0.08

As was done for the CCTB simulation (in Table 3.6), Table 3.11 highlights the impact of the reforms for corporate taxes and other taxes (taxes on labour, consumption, bonds, dividends and capital gains) in each step of the CCCTB simulation. The columns show first the Eurostat estimate for CIT and other taxes combined, and second the CORTAX baseline values. The third column shows the new baseline values for CIT revenue taking into account only the change in the tax base (before CIT rates adjustment). The fourth column shows the values with the CIT rates adjusted ex-ante (designed to return to the initial CIT revenue), and the fifth column shows the changes to CIT and other tax revenues following the simulation. Any remaining increase or decrease in government revenue is adjusted for with a rise or fall in public spending (which is modelled as an adjustment in the transfers to old people), which is shown in the final column. Thereby, budget neutrality is maintained.

Table 3.11 Evolution of the effect of the CCCTB-MNEs on corporate and other taxes revenues

CCCTB-MNEs		EUROSTAT 2012 (% of GDP)	CORTAX (% of GDP)	Common tax base (% change of GDP)	Adjusted CIT rates	New Equilibrium (% change of GDP)	Change in public transfers (% change of GDP)
Austria	CIT	2.37	3.2	-0.30	0.00	-0.14	-0.12
	Other Tax	40.73	38.4	0.00	0.00	0.05	
Belgium	CIT	3.11	1.7	0.90	0.00	-0.08	0.07
	Other Tax	42.29	39.5	0.00	0.00	0.14	
Denmark	CIT	3.04	2.6	-0.12	0.00	-0.12	-0.10
	Other Tax	45.06	40.2	0.00	0.00	0.04	
Finland	CIT	2.19	2.3	-0.01	0.00	-0.07	0.06
	Other Tax	41.91	40.8	0.00	0.00	0.1	
France	CIT	2.26	3.4	0.13	0.00	-0.13	-0.07
	Other Tax	42.74	38.3	0.00	0.00	0.07	
Germany	CIT	2.71	3.7	-0.21	0.00	-0.24	-0.15
	Other Tax	36.39	34.7	0.00	0.00	0.12	
Greece	CIT	1.12	1.8	0.10	0.00	0.03	0.01
	Other Tax	32.58	29.6	0.00	0.00	-0.02	
Croatia	CIT	2.00	0.4	0.42	0.00	0.19	0.42
	Other Tax	33.70	36.1	0.00	0.00	0.1	
Ireland	CIT	2.44	1.9	-0.34	0.00	-0.14	0.04
	Other Tax	26.26	28.3	0.00	0.00	0.16	
Italy	CIT	2.25	2.1	0.14	0.00	-0.04	-0.01
	Other Tax	41.75	37.4	0.00	0.00	0.04	
Luxembourg	CIT	5.26	4.5	-1.20	0.00	-1.01	-1.29
	Other Tax	34.04	32.8	0.00	0.00	0.06	
Netherlands	CIT	2.13	2.4	-0.03	0.00	-0.19	0.29
	Other Tax	36.87	37.5	0.00	0.00	0.41	
Portugal	CIT	2.80	2.5	0.18	0.00	-0.03	0.09
	Other Tax	29.60	29.7	0.00	0.00	0.1	
Spain	CIT	2.16	5.4	-0.26	0.00	-0.61	-0.28
	Other Tax	30.34	29.3	0.00	0.00	0.41	
Sweden	CIT	2.88	2.2	0.08	0.00	-0.12	0.13

	Other Tax	41.32	40.7	0.00	0.00	0.21	
UK	CIT	2.86	4.6	-0.84	0.00	-0.88	-0.52
	Other Tax	32.54	31.9	0.00	0.00	0.51	
Cyprus	CIT	6.29	1.1	-0.09	0.00	-0.02	0.03
	Other Tax	29.01	27.5	0.00	0.00	0.03	
Czech Rep	CIT	3.31	2.5	-0.10	0.00	-0.05	0.03
	Other Tax	31.69	31.3	0.00	0.00	0.06	
Estonia	CIT	1.45	1.3	0.54	0.00	0.04	0.12
	Other Tax	31.05	33	0.00	0.00	0.03	
Hungary	CIT	1.29	2.9	-0.17	0.00	-0.08	0.02
	Other Tax	37.91	37.8	0.00	0.00	0.09	
Latvia	CIT	1.60	0.9	0.12	0.00	0.03	0.08
	Other Tax	26.30	29.4	0.00	0.00	0.02	
Lithuania	CIT	1.31	1	0.23	0.00	0.08	0.07
	Other Tax	25.89	27.3	0.00	0.00	-0.04	
Malta	CIT	6.29	4.2	-0.30	0.00	-0.55	-0.30
	Other Tax	27.31	23.8	0.00	0.00	0.35	
Poland	CIT	2.13	3.4	-0.30	0.00	-0.14	-0.01
	Other Tax	30.37	27.7	0.00	0.00	0.13	
Slovakia	CIT	2.41	1.4	0.12	0.00	0.02	0.13
	Other Tax	25.89	29.6	0.00	0.00	0.07	
Slovenia	CIT	1.26	1.5	-0.04	0.00	-0.01	0.13
	Other Tax	36.34	36.5	0.00	0.00	0.1	
Bulgaria	CIT	1.91	1.2	0.00	0.00	0.00	0.19
	Other Tax	25.99	25.5	0.00	0.00	0.14	
Romania	CIT	2.16	1.8	-0.06	0.00	-0.01	0.07
	Other Tax	26.14	29.5	0.00	0.00	0.06	

To conclude, results on growth in production by type of firm indicate a shift in favour of multinational headquarters and subsidiaries (Table 3.12) under the CCCTB proposal. The key benefits to multinationals are (as stated previously) lower compliance costs, full use of loss carry forward allowances and real change in production factors. Benefits that more than offset the additional costs resulting from the removal of profit shifting within EU. For comparison, the figures for the CCTB are included. As can be seen, the impact of the CCTB reform is small with regards to production by type of firm.

Table 3.12 Effect on production by category of firm – CCTB-MNEs and CCCTB-MNEs

Category of firm	CCTB-MNEs percentage growth in production	CCCTB-MNEs percentage growth in production
Domestic	5.59	-9.89
Multinational headquarters	-7.50	9.59
Multinational subsidiary	-4.05	19.39

4. Common Tax Base with Debt-Bias Simulations

This section presents simulations that combine the common tax base proposals with different designs for treating the tax-induced debt-bias, which is present in most corporate tax regimes. In particular, we simulate the effects of introducing a comprehensive business income tax (CBIT), an allowance for corporate capital (ACC) and an allowance for corporate equity (ACE) reform in EU 28 member states on top of CCTB and CCCTB and compare the macroeconomic outcomes under different model specifications. Sensitivity analysis and extensions are presented in Section 5.

4.1 Introduction

The design of corporate tax systems in most countries allows for the full deductibility of interest payments, while disallows it for dividend payments. The rationale for this asymmetric treatment of the sources of investment is rooted in the traditional view that interest payments are just another cost of production, thus they must be subtracted, together with all the other costs (for labour, land use, etc.), from the revenues in order to compute profits. Taxation should then be levied on profits, as this is the income produced by firms' activities.

Economists view debt and equity financing as imperfect substitute forms of capital use, and their different tax treatment introduces an obvious distortion (so-called debt bias) in the way firms and investors choose to invest funds. Moreover, shareholders might exploit ways to reduce taxes paid, either by providing themselves debt capital to the participated firm, or by making the firm pay interest to participating parent companies located in low-tax jurisdictions.

In order to reduce the debt bias several proposals have been discussed in the last decades. One came from the U.S. Department of Treasury (1992) called a Comprehensive Business Income Taxation (CBIT) and suggested to fully disallow the deductibility of interest. While a CBIT eliminates any debt bias and tax loophole, it has been criticized on the grounds that a CBIT taxes all returns to investment including the "normal" return and thus it negatively impacts on the total level of investment.[13] In addition, a CBIT is sensitive to the definition of amortizations and depreciations.

A different proposal was formalized by Boadway and Bruce (1984): an Allowance for Corporate Capital (ACC) would provide an imputed return to investment, regardless of its form (debt or equity). Deductions would be equal to said imputed return. An ACC therefore eliminates the debt bias, but does not distort marginal investments (as long as the imputed return is set not smaller than the "normal" return). A variant of the proposal is the Allowance for Corporate Equity (ACE; see Devereux and Freeman 1991) which keeps the deductibility of interest (like in the traditional corporate tax design), but adds a deductible imputed return for equity investments. An ACE therefore reduces, without necessarily eliminating, the debt bias. Unlike the CBIT proposal, ACC and ACE are not sensitive to the definition of amortizations and depreciations.

Nevertheless, ACC and ACE proposals have been criticized for two reasons. First, in order to collect the same revenues, the statutory corporate tax rate has to rise. Multinational companies tend to be more sensitive to average tax rates than to marginal tax rates (Devereux and Griffith 1998), thus an ACC/ACE might reduce inward FDI (if introduced unilaterally by an open country). This might make a

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[13] In theory, though, a CBIT might have a complete cash-flow tax design. But in practice such a design is hard to achieve: see among others Kleinbard (2015).

CBIT preferable (Devereux and De Mooij 2011). Second, company groups might exploit the allowance together with transfer pricing activities to more easily avoid corporate tax. This problem could be reduced or eliminated by reforming taxation of personal investment income or by levying a withholding tax on expatriated corporate income.

4.2 Simulation design

In the baseline of the CORTAX model an economic environment is set which features an ACE system in place in Italy and Belgium, with all other countries facing the traditional debt bias (where interest payments are deductible and equity financing is not). In the reform scenario, ACE, CBIT and ACC are implemented at corporate level.

All reforms directly enter the tax base, described by the following equation:

$$\Pi = Y - wL - \beta_b\, d_b R_b K - (\delta_t + \beta_e(1 - d_b)R_e)D - \varphi I - PQ - \frac{(1-q)}{(1+\pi)(1+g_y)} F_{t-1} \qquad (4.1)$$

Where the taxable corporate income, Π, is the total output, Y, less labour cost (wage, w, times employment, L), less deduction for the cost of debt (the deductible fraction of debt, β_b, times the share of debt financing, d_b, times the interest rate, R_b, times the quantity of capital, K), less depreciation allowances (the depreciation of capital for tax purposes, δ_t, times the stock of capital net of amortizations and depreciations D), less equity allowances (the deductible fraction of equity, β_e, times the share of equity financing, $1 - d_b$, times the opportunity cost of equity, R_e, times the stock of depreciation allowances, D), less the amount of investments that can be expensed immediately (the rate of immediate expensing, φ, times the investment level, I), less value of intermediate inputs (of price, P, and quantity, Q), less the value of losses carried forward (the probability of having made a loss in the previous period, $1 - q$, times the loss made in that period, F_{t-1}, depreciated by inflation, π, and the growth rate, g_y).

The quantity $d_b\, R_b\, K$ represents total financial costs paid to lenders, in nominal terms. The quantity $(1-d_b)\, R_e\, D$ is obtained by multiplying the stock of depreciated equity capital invested in the company, $(1-d_b)\, D$, by its opportunity cost R_e. More precisely, $(1-d_b)\, D$ represents the stock of equity capital valued according to the definitions for depreciations, amortizations and immediate expensing for the purpose of calculating taxable bases. Key parameters for the debt-bias simulations are β_b and β_e, which are the deductible fraction of the cost of debt capital and the deductible fraction of the opportunity cost of equity capital respectively. Their value ranges from 0, in case no allowance is granted, to 1, in case of full deductibility.

The traditional debt bias is introduced into the model by setting β_b at 1 and β_e at 0 in equation 1:

$$\Pi = Y - wL - d_b R_b K - (\delta_t)D - \varphi I - PQ - \frac{(1-q)F_{t-1}}{(1+\pi)(1+g_y)} \qquad (4.1a)$$

Under ACE and ACC, firms are entitled to deduct a notional rate on the cost of equity, that is somewhere below the full deductibility. Devereux and De Mooij (2011) model the ACE through an allowance for equity capital such that $\beta_e\, R_e$ is made equal to the risk-free rate of return to investment. The evidence on existing ACE policies is however varied. In Europe, Italy and Belgium feature ACE systems with different characteristics (see Zangari, EU paper 2014): the ACE rate is based on the average long-term (10y) Treasury bonds' rates with a cap of 3% in Belgium; and on the

average Treasury bonds' rate augmented up to 3 percentage points as a compensation for greater risk in Italy (however, the rate was set at 3% in 2012 for the first three years of the new regime).

In CORTAX, as explained, the notional deduction is modelled as a share of the cost of equity that is deducted from the tax base and is set at a value strictly lower than 1. Accounting for the evidence on ACE from Italy and Belgium and using EUROSTAT data on EU Treasury bond rates and World Bank data on lending rates, we set β_e at 0.7 (alternative deductibility shares are carried out in the sensitivity simulations, Section 5.9). This choice for the parameter β_e means that for any rate of return to equity, 70% of it is made deductible. Given the rate of return to equity employed in our simulations (which is set equal to the interest on debt), this value for β_e roughly corresponds to a notional rate of 2.4%. Such a way to model an ACE would imply that the notional rate for equity is not defined as a fixed rate (e.g. 2.4%), but rather, it is defined as a fixed percentage of the observed rate of return (e.g. 70% of a rate of return of 3.4%) and thus the notional rate may in principle vary over time function of the business cycle. Theoretically this way of setting the notional rate is better as it also accounts for changes in the risk premia over time. However, as CORTAX simulates steady-state equilibria where the interest and returns to equity rates remain fixed, our modelling choice is equivalent, in terms of simulation results, to setting a fixed notional rate.

By setting β_e equal to 0.7 and keeping β_b at 1, equation 1 reads:

$$\Pi = Y - wL - d_b R_b K - (\delta_t + 0.7(1 - d_b)R_e)D - \varphi I - PQ - \frac{(1-q)F_{t-1}}{(1+\pi)(1+g_y)} \qquad (4.1b)$$

CBIT is modelled by setting β_b equal to 0, together with β_e equal to 0 for those countries with an ACE system in place:

$$\Pi = Y - wL - (\delta_t)D - \varphi I - PQ - \frac{(1-q)F_{t-1}}{(1+\pi)(1+g_y)} \qquad (4.1c)$$

ACC is modelled by setting a common value for β_b and β_e, that is $\beta_b = \beta_e = 0.7$:

$$\Pi = Y - wL - 0.7 d_b R_b K - (\delta_t + 0.7(1 - d_b)R_e)D - \varphi I - PQ - \frac{(1-q)F_{t-1}}{(1+\pi)(1+g_y)} \qquad (4.1d)$$

4.3 Simulation results

The purpose of the debt-bias reforms is twofold: reducing or removing the debt bias, and reducing distortions on the investment decision. Therefore, when evaluating the results, we account for the impact of the reform on the main macroeconomic variables, as well as on the financing decision. Simulations are performed by allowing country-specific tax rates to adjust to maintain revenue-neutrality. The aim is to allow for a full comparability of the results with the baseline.

Macroeconomic results for CCTB-MNEs and for CCCTB-MNEs with ACE, CBIT and ACC are presented in Table 4.1 and Table 4.2 respectively.

Table 4.1: Macroeconomic results – CCTB-MNEs with debt bias options

	CCTB-MNEs	CCTB-MNEs ACE	CCTB-MNEs CBIT	CCTB-MNEs ACC
Cost of capital (% points change)	-0.043	-0.288	0.584	-0.068
Investment (percentage change)	1.364	3.058	-0.536	1.535
Wage (percentage change)	0.368	0.883	-0.527	0.391
Employment (percentage change)	0.162	0.400	-0.078	0.167
GDP (percentage change)	0.401	1.055	-0.604	0.445
Welfare (% GDP)	0.082	0.190	-0.274	0.093

Table 4.2: Macroeconomic results – CCCTB- MNEs with debt bias options

	CCCTB-MNEs	CCCTB- MNEs ACE	CCCTB- MNEs CBIT	CCCTB- MNEs ACC
Cost of capital (% points change)	-0.042	-0.320	0.140	-0.141
Investment (percentage change)	0.571	3.363	-0.900	1.410
Wage (percentage change)	0.399	1.256	-0.022	0.707
Employment (percentage change)	0.187	0.649	-0.146	0.298
GDP (percentage change)	0.163	1.165	-0.368	0.483
Welfare (% GDP)	0.073	0.184	0.131	0.163

First, ACE reduces the tax-induced bias in the financing decision, which was favouring debt over equity. Second, ACE makes the CIT rate less distortionary with respect to the marginal investment choice, reducing the cost of capital and boosting investment. This, in turn, raises the productivity of labour, lifting the demand for the production factor, which implies a lift in wages to stimulate workers to supply more labour. More employment means more production, which results in a rise in GDP, higher than the change in welfare. Welfare, in fact, while benefiting from the increase in employment, it also accounts for the cost opportunity represented by leisure, and the distortion brought about by tax on labour.

CBIT removes altogether the deductibility of interest costs, causing the cost of capital to rise. This reduces investment, labour productivity and wages. The resulting fall in capital and employment drags GDP down. On the other side, removing the allowance broadens the tax base, which allows the CIT rate to fall and the CIT revenue collection to increase, and hence transfers rise, causing the fall in welfare to be less than the fall in GDP. However, this appealing feature of the reform only mitigates the negative impact the debt-bias removal exerts on the marginal investment decision, as CBIT taxes all returns to investment. The result is an overall fall in GDP.

Under the ACC, firms are entitled to a common allowance on the cost of the equity and debt-financed investment. The result is a reform that is neutral with respect to the financing decision, and

less distortionary with respect to the marginal investment decision. This translates into a fall in the cost of capital, which stimulates investment, and therefore GDP.

Comparing results across simulations with alternative debt-bias reforms, the results show that ACE records the best performance in terms of GDP and welfare, followed by ACC and CBIT, with the ranking mainly driven by changes in the cost of capital. Results are persistent across scenarios. In particular, comparing results of CC(C)TB with debt-bias across sections suggests that CCCTB outperforms the CCBT proposals.

Table 4.3: Share of debt-financed investment over total financial investment: CCTB MNEs only simulations

	base	CCTB-mnes +ACE	CCTB-mnes +CBIT	CCTB-mnes +ACC
AUT	0.586	0.578	0.578	0.571
BEL	0.519	0.503	0.491	0.493
DNK	0.574	0.554	0.551	0.545
FIN	0.565	0.551	0.543	0.542
FRA	0.568	0.532	0.532	0.521
DEU	0.616	0.601	0.615	0.597
GRC	0.536	0.518	0.519	0.516
HRV	0.603	0.582	0.584	0.58
IRL	0.479	0.473	0.46	0.464
ITA	0.644	0.649	0.649	0.646
LUX	0.547	0.519	0.514	0.505
NLD	0.498	0.491	0.464	0.473
PRT	0.588	0.559	0.56	0.553
ESP	0.494	0.472	0.472	0.458
SWE	0.586	0.563	0.564	0.555
GBR	0.512	0.505	0.507	0.494
CYP	0.581	0.57	0.575	0.567
CZE	0.504	0.494	0.487	0.487
EST	0.470	0.451	0.443	0.445
HUN	0.532	0.524	0.518	0.517
LVA	0.596	0.584	0.586	0.582
LTU	0.452	0.441	0.438	0.438
MLT	0.611	0.581	0.585	0.566
POL	0.494	0.491	0.484	0.484
SVK	0.605	0.587	0.589	0.585
SVN	0.578	0.569	0.565	0.564
BGR	0.503	0.498	0.495	0.495
ROM	0.579	0.573	0.571	0.569
Weighted average %change from the base for EU		-2.74%	-3.27%	-4.17%

Results on the financing structure across simulations, provided in Table 4.3 and Table 4.4, show modest changes, mainly due to fact that domestic and multinational firm behave differently.

Changes in the debt-equity ratio are driven by alternative values set for β_e and β_b, which are meant to represent different tax designs. The channel is via the impact of the allowances on the returns to equity and debt and therefore on the taxable base. Implementing an ACE affects the return on equity with a certain percentage, moving from a situation with no deductions, but with still some debt-bias in place. Next, implementing a CBIT means moving from a situation of full deductibility of interest payments to a situation where this tax advantage is completely removed. Finally, under an ACC, the impact is equal on the equity and the debt components. Results suggest that when the debt-bias is reduced/removed for multinationals only, ACC seems to be the most effective reform in moving the economy towards a lower debt-equity ratio. On the contrary, ACE results to be the least effective in rebalancing the financing structure of firms.

Table 4.4: Share of debt-financed investment over total financial investment: CCCTB MNEs only simulations

	base	CCCTB-mnes +ACE	CCCTB-mnes +CBIT	CCCTB-mnes +ACC
AUT	0.586	0.579	0.564	0.567
BEL	0.519	0.515	0.495	0.498
DNK	0.574	0.56	0.545	0.546
FIN	0.565	0.556	0.539	0.543
FRA	0.568	0.534	0.524	0.523
DEU	0.616	0.597	0.593	0.59
GRC	0.536	0.53	0.523	0.523
HRV	0.603	0.587	0.588	0.58
IRL	0.479	0.491	0.461	0.471
ITA	0.644	0.646	0.633	0.634
LUX	0.547	0.517	0.511	0.498
NLD	0.498	0.5	0.462	0.479
PRT	0.588	0.57	0.552	0.554
ESP	0.494	0.474	0.454	0.452
SWE	0.586	0.565	0.544	0.546
GBR	0.512	0.51	0.487	0.489
CYP	0.581	0.577	0.574	0.567
CZE	0.504	0.5	0.486	0.488
EST	0.470	0.467	0.446	0.455
HUN	0.532	0.528	0.514	0.516
LVA	0.596	0.59	0.587	0.584
LTU	0.452	0.451	0.441	0.444
MLT	0.611	0.581	0.56	0.562
POL	0.494	0.494	0.476	0.48
SVK	0.605	0.597	0.59	0.587
SVN	0.578	0.572	0.561	0.562
BGR	0.503	0.506	0.495	0.498
ROM	0.579	0.575	0.566	0.567
Weighted average %change from the base for EU		-1.79%	-4.37%	-4.31%

A comparison on the scope of the C(C)CTB proposals suggests that making the reforms mandatory for all firms, i.e. domestic firms as well as multinationals, exerts larger positive (negative) effects, as shown in Tables 4.5 and 4.6.

Table 4.5: Macroeconomic results – CCTB-all firms with debt bias options

	CCTB-All ACE	CCTB-All CBIT	CCTB-All ACC
Cost of capital (% points change)	-0.295	0.122	-0.139
Investment (percentage change)	4.240	-1.708	1.828
Wage (percentage change)	1.317	-0.391	0.573
Employment (percentage change)	0.464	-0.328	0.136
GDP (percentage change)	1.493	-0.704	0.598
Welfare (% GDP)	0.388	0.065	0.220

Table 4.6: Macroeconomic results – CCCTB-all firms with debt bias options

	CCCTB-All ACE	CCCTB-All CBIT	CCCTB-All ACC
Cost of capital (% points change)	-0.341	0.133	-0.177
Investment (percentage change)	4.780	-2.054	2.166
Wage (percentage change)	1.836	-0.328	1.006
Employment (percentage change)	0.689	-0.322	0.305
GDP (percentage change)	1.764	-0.796	0.786
Welfare (% GDP)	0.515	0.108	0.343

Similarly, when all firms are impacted by the reforms, as shown in Table 4.7 and Table 4.8, there is a greater fall in the share of debt financing. This happens to be particularly the case under CBIT, which makes the debt-equity ratio to fall by the biggest percentage. Combined with a CCTB, policies to reduce the debt bias reduce the share of debt financing by between -4.34 percent (an ACE system) and -9.56 percent (a CBIT system), taking a weighted average across all EU countries. When combined with a CCCTB, similar reductions are found ranging from -3.54 percent (an ACE system) to -9.51 percent (a CBIT system).

Table 4.7: Share of debt-financed investment over total financial investment: CCTB All firms simulations

	base	CCTB-all +ACE	CCTB-all +CBIT	CCTB-all +ACC
AUT	0.586	0.566	0.530	0.540
BEL	0.519	0.504	0.480	0.484
DNK	0.574	0.544	0.516	0.521
FIN	0.565	0.540	0.510	0.518
FRA	0.568	0.516	0.486	0.489
DEU	0.616	0.588	0.552	0.563
GRC	0.536	0.511	0.489	0.494
HRV	0.603	0.571	0.559	0.563
IRL	0.479	0.466	0.444	0.451
ITA	0.644	0.647	0.617	0.625
LUX	0.547	0.512	0.48	0.486
NLD	0.498	0.481	0.432	0.452
PRT	0.588	0.557	0.52	0.53
ESP	0.494	0.451	0.403	0.421
SWE	0.586	0.558	0.522	0.532
GBR	0.512	0.495	0.451	0.466
CYP	0.581	0.568	0.554	0.556
CZE	0.504	0.482	0.456	0.462
EST	0.470	0.431	0.410	0.415
HUN	0.532	0.511	0.482	0.489
LVA	0.596	0.578	0.563	0.566
LTU	0.452	0.427	0.411	0.415
MLT	0.611	0.575	0.541	0.551
POL	0.494	0.478	0.445	0.454
SVK	0.605	0.586	0.564	0.57
SVN	0.578	0.559	0.537	0.543
BGR	0.503	0.494	0.477	0.482
ROM	0.579	0.565	0.543	0.549
Weighted average %change from the base for EU		-4.34%	-9.56%	-8.19%

Table 4.8: Share of debt-financed investment over total financial investment: CCCTB All firms simulations

	base	CCCTB-all +ACE	CCCTB-all +CBIT	CCCTB-all +ACC
AUT	0.586	0.569	0.531	0.542
BEL	0.519	0.509	0.481	0.486
DNK	0.574	0.548	0.516	0.522
FIN	0.565	0.545	0.511	0.52
FRA	0.568	0.516	0.486	0.489
DEU	0.616	0.587	0.551	0.562
GRC	0.536	0.513	0.489	0.495
HRV	0.603	0.571	0.556	0.559
IRL	0.479	0.489	0.448	0.462
ITA	0.644	0.646	0.614	0.621
LUX	0.547	0.512	0.479	0.486
NLD	0.498	0.492	0.438	0.462
PRT	0.588	0.555	0.514	0.525
ESP	0.494	0.456	0.404	0.424
SWE	0.586	0.557	0.519	0.529
GBR	0.512	0.501	0.452	0.471
CYP	0.581	0.570	0.552	0.554
CZE	0.504	0.488	0.457	0.465
EST	0.470	0.446	0.414	0.426
HUN	0.532	0.517	0.484	0.493
LVA	0.596	0.580	0.562	0.566
LTU	0.452	0.435	0.412	0.42
MLT	0.611	0.575	0.541	0.551
POL	0.494	0.485	0.446	0.458
SVK	0.605	0.587	0.562	0.568
SVN	0.578	0.562	0.537	0.543
BGR	0.503	0.500	0.478	0.486
ROM	0.579	0.566	0.542	0.548
Weighted average %change from the base for EU		-3.54%	-9.51%	-7.86%

4.4 Closing remarks

This section addresses the common corporate tax base proposals with debt-bias options in corporate taxation, using a general equilibrium model for the EU, USA, Japan and a tax haven. In particular, the section assesses the economic impact of implementing CCTB and CCCTB under alternative debt-bias reform proposals, namely: ACE, CBIT and ACC. The focus is on the capacity of these reforms to rebalance firms' financial structures and to generate positive effects on GDP and welfare. Results point to positive expected gains from the policy reforms discussed here. The gains both in terms of welfare and GDP are larger with an ACE design. This latter brings economic benefits in terms of a reduction of leverage and increase in GDP and welfare. The overall conclusion is that debt-bias reforms directly impact the tax base and the cost of capital exerting a multiplicative effect

on GDP and welfare. A series of sensitivity analyses are performed in section 5 to support evidence from core simulations.

5. Common Tax Base Sensitivity Simulations

This section covers the 10 groups of sensitivity simulations that have been run. These simulations provide additional insights into the consequences of altering the model assumptions and offer a strong test of the robustness of the results. The 10 groups of sensitivity analysis evaluate the impact of altering:

1. All firms – CCTB and CCCTB
2. Broader / EU average common tax base
3. Stricter control on profit shifting
4. Capital-labour substitutability
5. Less compliance cost saving
6. Compensate CIT revenue with labour taxes
7. Discrete location choice for firms with ACE
8. CCTB with cross-border loss offset – All firms and with ACE
9. Deductibility shares for the ACE
10. Cap to the ex-ante CIT rate adjustment

Here we mostly focus on presenting the key aggregate results for the EU as a whole; with additional tables being included as necessary to explain the results. The full country-level results are included in Appendix B.

5.1 All firms – CCTB and CCCTB

This first set of simulations consists of running the CCTB and CCCTB simulations but affecting all firms, multinational and domestic. The scope of harmonization of corporate tax bases, through a common corporate tax base (CCTB) and a common consolidated corporate tax base (CCCTB), is extended to all firms. The main results are presented in Table 5.1 together with the base case scenarios for multinationals only.

Table 5.1 CCTB and CCCTB for all firms

	CCTB Multinationals only	CCTB All firms	CCCTB Multinationals only	CCCTB All firms
Cost of capital (% points change)	-0.043	-0.054	-0.042	-0.068
Investment (percentage change)	1.364	0.730	0.571	0.743
Wage (percentage change)	0.368	0.167	0.399	0.444
Employment (percentage change)	0.162	0.065	0.187	0.194
GDP (percentage change)	0.401	0.198	0.163	0.262
Welfare (% GDP)	0.082	0.043	0.073	0.102

In both reform simulations for all firms, there is a reduction in the cost of capital that boosts investment. However, the impact on the labour market is quite different which leads to a different increase in GDP and welfare. When comparing reforms for multinational only and all firms, we draw opposite conclusions. For multinationals only, CCTB outperforms CCCTB and, when the scope is extended to all firms, results are reversed.

Table 5.2 shows the change in production by firm type across the EU. One sees that when the CCTB is also implemented for domestic firms, there are only small changes in production by firm type, and less than when the CCTB is implemented only for multinationals. On the other hand when the CCCTB is implemented for all firms, the changes in production are similar to when it is implemented for multinationals only, but the changes are somewhat larger.

Table 5.2 Effect on production by category of firm – CCTB-All firms and CCCTB-All firms

Category of firm	CCTB-MNEs percentage growth in production	CCTB-All firms percentage growth in production	CCCTB-MNEs percentage growth in production	CCCTB-All firms percentage growth in production
Domestic	5.59	-0.38	-9.89	-12.22
Multinational headquarters	-7.50	0.08	9.59	11.03
Multinational subsidiary	-4.05	2.23	19.39	25.95

5.2 Broader and EU average common tax bases

In this second set of simulations for multinationals only, the depreciation period of capital is extended, which leads to a broader tax base. We use the shorthand CCTB40 to describe an alternative interpretation of the legal reform proposal, which assumes that all buildings are commercial (rather than industrial as in CCTB25) and therefore the depreciation period for buildings is extended to 40 years. Similarly, machinery is assumed to be all long-life rather than medium-life, and therefore subject to a broader base: 15-year straight line depreciation, instead of 8-year straight line depreciation; inventory valuation is assumed to be first-on, first out (FIFO), instead of a weighted average of first and last. The depreciation for intangibles remains unchanged at 15-year straight line depreciation, as there is no variation in the proposal. We used the shorthand EUav to describe a simulation in which the average of the net present values of depreciation allowances across the EU does not change from its 2012 levels[14], but there is a homogenization of the base across countries. This case is between the CCTB25 and the CCTB40.

The broader common tax base for multinationals (only) reduces tax rates on the fixed factor (tax on rents) for multinationals and the positive effects associated to the CIT fall seem to affect the cost of capital more than the negative impact of expanding the base, which leads to a slightly higher reduction of the cost of capital compared to the standard CCTB25 (Table 5.3). In both cases, the

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[14] Several possible combinations of depreciation allowances can produce the (weighted) EU NPV of 0.44. Here this is achieved with the following combination: Industrial buildings SL at 3% for 33.33 years, plant and machinery DB at 25% for 3 years followed by SL at 10% for 4.2 years and intangibles SL at 10% for 10 years.

CCTB reform slightly increases employment. Depending on the effect on capital, GDP would increase or fall. The fall in labour income and consumption reduces welfare. The same results hold under the CCCTB proposal. In both the EUav and CCTB40 cases, the direction of the effects on employment and GDP depend on the trade-off effects among multinationals and domestic firms. The country effects are included in Appendix B.

Table 5.3 Broader common tax bases – "CCTB40" and EUav – CCTB and CCCTB for MNEs only

	CCTB-MNEs	CCTB-MNEs	CCTB-MNEs	CCCTB-MNEs	CCCTB-MNEs	CCCTB-MNEs
	"cctb25" tax base	"cctb40" tax base	"EUav" tax base	"cctb25" tax base	"cctb40" tax base	"EUav" tax base
Cost of capital (% points change)	-0.043	-0.069	-0.029	-0.042	0.095	0.018
Investment (percentage change)	1.364	-0.151	0.382	0.571	-0.485	0.042
Wage (percentage change)	0.368	-0.196	-0.038	0.399	0.068	0.231
Employment (percentage change)	0.162	0.054	0.044	0.187	-0.011	0.086
GDP (percentage change)	0.401	-0.123	0.047	0.163	-0.192	-0.020
Welfare (% GDP)	0.082	-0.146	-0.007	0.073	0.055	0.064

5.3 Stricter control on profit shifting

The stricter control on profit shifting is reflected in the model through an increase in the cost for transfer pricing for multinationals. In the model, these costs are assumed to vary in a convex way and, under this scenario, costs are increased sufficiently to reduce profit shifting by approximately one half.

The effects of increasing the control on profit shifting are fairly small in general in comparison to the CCTB alone. Reducing profit shifting very slightly lowers investment, and is coupled with a slight fall in wages, causes a reduction in GDP relative the CCTB alone. The impacts are more varied and more pronounced at a country level. Those countries where the change in the CIT rates raises the cost of capital and significantly reduces capital, such as Estonia and Lithuania, show the largest falls in GDP. Note that stricter controls on profit shifting have been only simulated for CCTB, since under CCCTB, the consolidation of MNE profits makes profit shifting futile within the EU.

Table 5.4 Stricter controls on profit shifting – CCTB for multinationals

	CCTB-MNEs Standard profit shifting	CCTB-MNEs Less profit shifting
Cost of capital (% points change)	-0.043	-0.043
Investment (percentage change)	1.364	1.353
Wage (percentage change)	0.368	0.358
Employment (percentage change)	0.162	0.159
GDP (percentage change)	0.401	0.355
Welfare (% GDP)	0.082	0.081

5.4 Capital-labour substitutability

The elasticity of substitution between capital and labour is usually a key parameter in CGE modelling. In the baseline, this parameter is set to 0.7 and in sensitivity analyses we evaluate the effects of changing this parameter by 0.2 up and down for the two central scenarios. In Table 5.5, it can be observed that the increase of the elasticity boosts GDP in a lower percentage than in the simulations where the elasticity falls, when CCCTB is in place. When firms substitute labour for capital with high elasticity of substitution, there are lower returns to labour and they are replaced with returns to capital, there are slightly higher savings, lower consumption and reduced demand, prices and production. The effects by country are reported in Appendix B.

Table 5.5 Variation in capital-labour substitutability – CCTB and CCCTB multinationals only

	CCTB High K-L subst: 0.9	CCTB Stnd K-L subst: 0.7	CCTB Low K-L subst: 0.5	CCCTB High K-L subst: 0.9	CCCTB Stnd K-L subst: 0.7	CCCTB Low K-L subst: 0.5
Cost of capital (% points change)	-0.042	-0.043	-0.043	-0.039	-0.042	-0.042
Investment (percentage change)	1.483	1.364	1.025	0.508	0.571	0.488
Wage (percentage change)	0.257	0.368	0.366	0.325	0.399	0.398
Employment (percentage change)	0.113	0.162	0.169	0.138	0.187	0.189
GDP (percentage change)	0.324	0.401	0.323	0.078	0.163	0.149
Welfare (% GDP)	0.061	0.082	0.074	0.080	0.073	0.070

5.5 Less compliance cost saving in CCCTB

The main CCCTB simulation assumes that, as multinationals only need to produce a single set of tax records, the corporate tax compliance costs for multinational subsidiaries falls to zero. This sensitivity simulation investigates the consequences if this saving is only partially realised, such that the corporate tax compliance costs for multinational subsidiaries is reduced by half.

Table 5.6 CCCTB with less compliance cost saving for multinationals

	CCCTB Standard compliance cost saving	CCCTB Less compliance cost saving
Cost of capital (% points change)	-0.042	-0.039
Investment (percentage change)	0.571	0.515
Wage (percentage change)	0.399	0.352
Employment (percentage change)	0.187	0.191
GDP (percentage change)	0.163	0.115
Welfare (% GDP)	0.073	0.036

The savings in compliance costs is a fairly important benefit to multinationals. In this case when the saving is only half realised, the benefits are lower. Both investment and wages register a small fall compared to the baseline. Consequently, GDP shows a fall from a gain of 0.163% to 0.115%, and the welfare gain also shrinks from 0.073% of GDP to 0.036% of GDP.

5.6 Compensate revenue gains and losses with labour taxes

The main CCTB and CCCTB simulations assume that the government maintains budget neutrality by adjusting public spending (which is modelled as adjusting transfers to the old generation). An alternative response from government would be to adjust the labour tax rate to ensure revenue neutrality (and budget neutrality). If the country government faces a revenue shortfall as a result of the CCTB or CCCTB simulation, the labour tax rate is raised to maintain total tax revenues unchanged. On the other hand, in those countries where the government receives higher revenues from the CCTB or CCCTB simulation, the labour tax rate is lowered to maintain government budget neutrality.

Table 5.7 CCTB & CCCTB with closure on the labour tax rate

	CCTB Standard closure on transfers	CCTB Closure on labour tax rate	CCCTB Standard closure on transfers	CCCTB Closure on labour tax rate
Cost of capital (% points change)	-0.043	-0.043	-0.042	-0.042
Investment (percentage change)	1.364	1.165	0.571	0.397
Wage (percentage change)	0.368	0.375	0.399	0.405
Employment (percentage change)	0.162	-0.030	0.187	0.012
GDP (percentage change)	0.401	0.214	0.163	-0.006
Welfare (% GDP)	0.082	0.021	0.073	0.009

In the EU, there is still an increase in GDP under the CCTB simulation, though this is smaller than in the main simulation. This is due to the fact that labour taxes are relatively distortionary, compared with changes in transfer payments. Under CCCTB, GDP turns negative, because of the increase in labour tax rates in some countries, employment and welfare fall in both simulations relative to those simulations with the standard closure. Table 5.8 shows the changes in the labour tax rate by country for the CCTB simulation and compares it to the rise or fall in GDP relative to the standard closure.

Columns (1) and (2) compare the standard labour tax rates with those for the labour tax closure simulation. One notices that generally the differences are modest. This is for two reasons. First, the simulations adjust the corporate income tax rate prior to behavioural changes (ex-ante), and therefore, there are not major changes in total revenues. Second, the labour tax base is typically large, and therefore, even small adjustments in the rates can have some impact on total revenue collected. The largest rise is 3.590 percentage points (Luxembourg) and the largest fall in -0.7 percentage points (Lithuania). The changes in GDP due to the labour tax closure demonstrate the relatively distortionary nature of labour tax. Indeed, wherever the labour tax rate rises due to this closure, this causes a fall in GDP (relative to the standard closure), and vice versa.

Table 5.8 Labour tax rate changes under "CCTB with closure on the labour tax rate" by country

Country	(1) Labour tax rate - standard closure	(2) Labour tax rate - Labour tax closure	(3) Rise (fall) in labour tax rate (2) – (1)	(4) Rise (fall) in GDP - standard closure (%)	(5) Rise (fall) in GDP - labour tax closure (%)	(6) Diff in GDP between standard & labour tax closures (5) – (4)
Austria	42.69%	43.17%	0.480	0.215	-0.183	-0.398
Belgium	42.54%	42.56%	0.020	0.323	0.809	0.486

Bulgaria	25.79%	25.65%	-0.140	-0.131	-0.048	0.083
Croatia	29.20%	28.61%	-0.590	-0.684	-0.374	0.311
Cyprus	30.77%	30.59%	-0.180	-0.189	-0.057	0.131
Czech Rep.	36.13%	36.10%	-0.030	0.091	0.105	0.013
Denmark	34.43%	34.27%	-0.160	0.155	0.242	0.087
Estonia	36.92%	36.58%	-0.340	-1.485	-1.288	0.197
Finland	40.18%	40.21%	0.030	0.021	-0.013	-0.034
France	38.57%	38.48%	-0.090	0.245	0.255	0.010
Germany	36.47%	36.84%	0.370	0.554	0.263	-0.291
Greece	35.12%	35.23%	0.110	-0.590	-0.680	-0.090
Hungary	41.49%	41.57%	0.080	0.097	0.024	-0.073
Ireland	28.54%	28.40%	-0.140	0.318	0.358	0.039
Italy	42.58%	42.79%	0.210	-0.004	-0.412	-0.408
Latvia	35.53%	35.22%	-0.310	-0.824	-0.588	0.236
Lithuania	31.88%	31.18%	-0.700	-1.592	-1.134	0.458
Luxembourg	29.33%	32.92%	3.590	0.192	-2.841	-3.033
Malta	21.91%	22.00%	0.090	0.470	0.394	-0.076
Netherlands	38.55%	38.95%	0.400	0.120	-0.225	-0.345
Poland	30.18%	30.52%	0.340	0.419	0.182	-0.237
Portugal	28.21%	28.13%	-0.080	0.268	0.291	0.023
Romania	32.33%	32.35%	0.020	-0.001	-0.024	-0.023
Slovakia	36.10%	36.10%	0.000	-0.072	-0.110	-0.038
Slovenia	35.27%	35.22%	-0.050	0.128	0.134	0.006
Spain	33.64%	33.93%	0.290	0.883	0.644	-0.239
Sweden	38.01%	37.82%	-0.190	0.240	0.354	0.115
UK	25.74%	27.57%	1.830	1.388	0.227	-1.161

5.7 Discrete location choice for firms

In the main simulations, CORTAX assumes that firms expand or contract their operations effectively at the margin, based on the marginal effective tax rate (METR). However, it is possible to consider that some of these decisions are to either open in a new location or not, i.e. it is a discrete choice rather than a marginal choice. To model this, this sensitivity simulation considers the firm decision to be based on the effective average tax rate (EATR).[15] This modifies the incentives for multinationals to produce in each subsidiary, which may grow or shrink in response to the change. The sensitivity analysis is performed for C(C)CTB with debt-bias options. Note that the discrete location possibility is added to both the base and the simulation.

Table 5.9 CCTB & CCCTB with ACE without & with discrete location choice

	CCTB+ACE without discrete location choice	CCTB+ACE with discrete location choice	CCCTB+ACE without discrete location choice	CCCTB+ACE with discrete location choice
Cost of capital (% points change)	-0.288	-0.288	-0.320	-0.316
Investment (percentage change)	3.058	3.137	3.363	3.842
Wage (percentage change)	0.883	0.918	1.256	1.645
Employment (percentage change)	0.400	0.412	0.649	0.625
GDP (percentage change)	1.055	1.111	1.165	1.543
Welfare (% GDP)	0.190	0.201	0.184	0.486

The aggregate differences at the EU level are significant with CCTB showing high benefits (e.g. GDP rising by 1.111 instead of 1.055) and CCCTB showing even greater benefits (e.g. GDP rising by 1.543 instead of 1.165) due to the introduction of discrete location choice. To understand the mechanism at work, Table 5.10 shows the METR, EATR and changes in investment by country for simulations without ACE but with and without discrete location.

The EATR is more driven by the statutory rate than the METR. In all cases, the EATR exceeds the METR. The absolute percentage point difference is given in column (3), which ranges from 0.038 (Cyprus and Bulgaria) to 0.124 (Malta and Italy) percentage points.

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[15] The methodology used for these calculations follows Devereux and Griffith (2003).

Table 5.10 METR, EATR and investment for 'CCTB without & with discrete location choice' by country

Country	(1) Marginal effective tax rate (METR) – w/out discrete location	(2) Effective average tax rate (EATR) – w/ discrete location	(3) EATR less METR (2) - (1)	(4) Investment change (%) - standard model	(5) Investment change (%) - discrete choice model	(6) Diff in invt between standard & discrete choice models (5) – (4)
Austria	0.060	0.152	0.093	0.943	0.721	-0.222
Belgium	0.057	0.193	0.136	-2.305	-1.111	1.194
Bulgaria	0.023	0.062	0.038	-0.421	-0.548	-0.093
Croatia	0.032	0.115	0.082	-3.627	-3.439	0.188
Cyprus	0.023	0.061	0.038	-0.545	-0.548	-0.003
Czech Rep.	0.055	0.121	0.066	-0.162	-0.193	-0.031
Denmark	0.072	0.159	0.086	-0.350	-0.284	0.066
Estonia	0.064	0.136	0.071	-3.930	-3.231	0.699
Finland	0.063	0.152	0.088	-0.388	-0.277	0.111
France	0.117	0.238	0.121	-0.341	0.218	0.559
Germany	0.069	0.185	0.116	1.587	1.549	-0.038
Greece	0.051	0.124	0.073	-1.411	-1.257	0.154
Hungary	0.058	0.131	0.073	0.004	-0.178	-0.182
Ireland	0.035	0.080	0.045	0.089	-0.041	-0.130
Italy	0.025	0.165	0.124	0.077	0.063	-0.014
Latvia	0.027	0.088	0.061	-1.957	-1.936	0.021
Lithuania	0.044	0.096	0.052	-3.498	-3.512	-0.014
Luxembourg	0.090	0.186	0.095	0.108	-0.475	-0.583
Malta	0.090	0.215	0.124	0.680	0.069	-0.611
Netherlands	0.043	0.144	0.101	0.804	0.299	-0.505
Poland	0.055	0.121	0.066	1.358	1.201	-0.157
Portugal	0.072	0.182	0.110	-0.866	-0.362	0.504
Romania	0.033	0.096	0.062	-0.115	-0.152	-0.037

Slovakia	0.034	0.110	0.077	-0.985	-0.579	0.406
Slovenia	0.036	0.107	0.071	-0.157	-0.187	-0.030
Spain	0.115	0.228	0.113	2.165	1.902	-0.263
Sweden	0.055	0.156	0.101	-0.344	-0.324	0.020
UK	0.067	0.151	0.084	8.154	8.047	-0.107

The country-level changes in investment due to the introduction of CCTB are shown in column (4) for the standard model and column (5) for the discrete location model. In most of the cases, there is a change of sign for investment and the introduction of discrete location has a positive effect. Differences do occur, and the absolute percentage point difference is given in column (6). The variations in investment at the country level are reflected in changes in GDP (see Appendix B for detailed country-level tables).

The introduction of CBIT in the analysis, shown in Table 5.11, changes the effects on all macroeconomic variables. As in the case without discrete location choice, the expansion of the base reduces the CIT rate but the cost of capital increases due to the distortionary impact between domestic and multinationals and it reduces investment, output and welfare. The negative macroeconomic effects with discrete location are somewhat less strong for both the CCTB and CCCTB cases.

Table 5.11 CCTB & CCCTB for multinationals with CBIT without & with discrete location choice

	CCTB+CBIT without discrete location choice	CCTB+CBIT with discrete location choice	CCCTB+CBIT without discrete location choice	CCCTB+CBIT with discrete location choice
Cost of capital (% points change)	0.584	0.586	0.140	0.174
Investment (percentage change)	-0.536	-0.469	-0.900	-0.835
Wage (percentage change)	-0.527	-0.491	-0.022	0.110
Employment (percentage change)	-0.078	-0.069	-0.146	-0.178
GDP (percentage change)	-0.604	-0.541	-0.368	-0.259
Welfare (% GDP)	-0.274	-0.262	0.131	0.264

As is the case without discrete location choice, the introduction of ACC in the analysis, shown in Table 5.12, has positive effects, although less than the impact of an ACE. In the case of CCCTB-mnes, including an ACC reduces the cost of capital in all countries (except Italy) and this has a significant positive effect on investment. In turn, the marginal productivity of labour increases, and so does the demand for labour. For CCTB and CCCTB with discrete location choice, the values of GDP increase with the inclusion of ACC by 0.49 and 0.66 respectively, which are higher than the values for without discrete location choice.

Table 5.12 CCTB & CCCTB for multinationals with ACC without & with discrete location choice

	CCTB+ACC without discrete location choice	CCTB+ACC with discrete location choice	CCCTB+ACE without discrete location choice	CCCTB+ACC with discrete location choice
Cost of capital (% points change)	-0.068	-0.067	-0.141	-0.126
Investment (percentage change)	1.535	1.589	1.410	1.621
Wage (percentage change)	0.391	0.407	0.707	0.887
Employment (percentage change)	0.167	0.183	0.298	0.284
GDP (percentage change)	0.445	0.489	0.483	0.660
Welfare (% GDP)	0.093	0.085	0.163	0.311

5.8 CCTB with Cross-border Loss Offset – All firms and with ACE

One additional option is to enlarge the scope of the common consolidated tax base (CCTB) to all firms and assess it under cross-border loss offset (CCTB-CBLO). We recall that CBLO allows multinationals to claim losses occurring in one country in another, in particular a loss made at the subsidiary level is claimable at the level of the multinational headquarters. Recall that CBLO for the standard CCTB-MNEs case was reported in section 3.

The results compared with the standard CCTB are shown in the table below.

Table 5.13: Macroeconomic results CCTB all firms with Cross-border Loss Offset (CCTB-CBLO)

	CCTB-all	CCTB-All-CBLO
Cost of capital (% points change)	-0.054	-0.057
Investment (percentage change)	0.730	0.827
Wage (percentage change)	0.167	0.207
Employment (percentage change)	0.065	0.102
GDP (percentage change)	0.198	0.249
Welfare (% GDP)	0.043	0.027

In order to understand the results, recall the main impact of the simulation, which is to expand the options available for all firms. Firms can now shift some of the tax base from the subsidiary to the multinational headquarters. As they have more opportunities to adjust their tax structure, there is a net benefit overall in terms of a higher level of investment and GDP.

The small additional reduction in the cost of capital increases investment (relative to the CCTB), and the higher returns to labour puts upward pressure on the wage rate (though note an uptick in overall employment). Consequently, GDP rises more under the CCTB with CBLO (0.198 vs 0.249).

Table 5.14: CCTB for multinationals with ACE and Cross-border Loss Offset (CCTB-MNEs-CBLO-ACE)

	CCTB-MNEs- CBLO	CCTB-MNEs-ACE	CCTB-MNEs-CBLO-ACE
Cost of capital (% points change)	-0.055	-0.288	-0.345
Investment (percentage change)	1.469	3.058	3.619
Wage (percentage change)	0.412	0.883	1.105
Employment (percentage change)	0.191	0.400	0.515
GDP (percentage change)	0.451	1.055	1.308
Welfare (% GDP)	0.077	0.190	0.219

Lastly, the CBLO is introduced in combination with an ACE system. One notes from the comparisons in Table 5.14 that both the CBLO and the ACE exert positive effects on all the macro variables.

5.9 Alternative deductibility shares and rates for ACE

To simulate the options for debt-bias (section 4), a choice was made about the deductibility of equity in the case of the allowance for corporate equity (ACE). In those simulations, a 0.7 share of deductibility was chosen, which refers to the value given to β_e in equation 4.1.

Nevertheless, an ACE system could be designed in another way. As the introduction of an ACE involves narrowing the tax base, a share of deductibility less than 0.7 may be considered. Table 5.15 shows the results for deductibility shares ranging from zero, the traditional system, to 0.7, the value applied in our standard ACE simulations, in increments of 0.1. In addition, the values for a deductibility of 1.0 are also included. Note that all simulations are run in conjunction with the CCCTB for multinationals.

Table 5.15 CCCTB-mnes + different deductibility shares for ACE

	CCCTB-MNEs no deduct. for equity	CCCTB-MNEs 0.1 deduct. for equity	CCCTB-MNEs 0.2 deduct. for equity	CCCTB-MNEs 0.3 deduct. for equity	CCCTB-MNEs 0.4 deduct. for equity	CCCTB-MNEs 0.5 deduct. for equity	CCCTB-MNEs 0.6 deduct. for equity	CCCTB-MNEs 0.7 deduct. for equity (stnd)	CCCTB-MNEs 1.0 deduct. for equity
Cost of capital (% points ch.)	-0.042	-0.072	-0.105	-0.142	-0.183	-0.226	-0.271	-0.320	-0.498
Investment (% change)	0.571	0.844	1.146	1.502	1.900	2.339	2.821	3.363	5.465
Wage (% change)	0.399	0.488	0.584	0.696	0.820	0.952	1.096	1.256	1.879
Employment (% change)	0.187	0.233	0.284	0.342	0.407	0.479	0.559	0.649	0.999
GDP (% change)	0.163	0.264	0.374	0.503	0.647	0.803	0.974	1.165	1.914
Welfare (% GDP)	0.073	0.086	0.099	0.116	0.134	0.151	0.167	0.184	0.246

One sees that the key results change smoothly as one increases the deductibility from zero to 0.7. For example, the cost of capital with only the CCCTB for MNEs falls by 0.042 percentage points, rising to 0.072 percentage points with a 0.1 deductibility share, to 0.105 with a 0.2 share, and so on until 0.320 with a 0.7 share, and 0.498 with a 1.0 share. This fall in the cost of capital encourages investment, which also rises steadily as the deductibility share increases. Similarly wages, employment, GDP and welfare all rise with the deductibility share.

The same idea of adjusting the deductibility of the ACE can be used to approximate the idea of an allowance for growth and investment (AGI). Unlike an ACE, an AGI would be granted only on equity increases (rather than on the full stock of equity). In order to mimic the effect of an AGI, one can impose a restriction of the share of equity stock that qualifies for the allowance. Based on the assumptions of a 2 percent annual economic growth rate and that the average company also grows at this pace, equity also grows at 2 percent per year. If the AGI were granted for a period of 10 years, the share of the equity stock that qualified for the AGI would correspond to about 20%, corresponding to the increase in equity over this period, i.e. equivalent to a 0.2 deductibility share.

Furthermore, the deductibility for the AGI may involve an additional component corresponding to a deduction for a risk premium. This would be a declared risk premium related to the AGI, and need not be identical to the risk premium in the economy or any particular industry. An additional deduction related to a risk premium can be simulated by increasing the deductibility by the appropriate amount. Table 5.16 shows the values for a replicated AGI with various risk premia, given these assumptions. For completeness, the change in the share of financing using debt (as opposed to equity) is also shown.

Table 5.16 CCCTB-mnes + "AGI" with various risk premia (see text)

	CCCTB-MNEs	CCCTB-MNEs	CCCTB-MNEs	CCCTB-MNEs	CCCTB-MNEs	CCCTB-MNEs	CCCTB-MNEs
	no deduct. for equity	0.2 deduct. for equity	0.26 deduct. for equity	0.29 deduct. for equity	0.32 deduct. for equity	0.35 deduct. for equity	0.38 deduct. for equity
Replicates		0.2 deduct. + 0% risk premium	0.2 deduct. + 1.0% risk premium	0.2 deduct. + 1.5% risk premium	0.2 deduct. + 2.0% risk premium	0.2 deduct. + 2.5% risk premium	0.2 deduct. + 3.0% risk premium
Cost of capital (% points ch.)	-0.042	-0.105	-0.127	-0.138	-0.150	-0.162	-0.175
Investment (% change)	0.571	1.146	1.352	1.464	1.578	1.696	1.817
Wage (% change)	0.399	0.584	0.649	0.684	0.720	0.757	0.794
Employment (% change)	0.187	0.284	0.318	0.336	0.355	0.374	0.394
GDP (% change)	0.163	0.374	0.449	0.490	0.531	0.574	0.617
Welfare (% GDP)	0.073	0.099	0.109	0.114	0.120	0.125	0.131
Debt share (% ch. from CCCTB-mnes)	-	-0.68%	-0.93%	-1.06%	-1.19%	-1.33%	-1.47%

As expected, one sees the same pattern in Table 5.16 as for Table 5.15, as this is the method by which the AGI with risk premium is replicated. One sees that the higher the risk premium (modelled as a higher deductibility), the greater is the reduction in the cost of capital, and the greater is the increase in all macroeconomic outcomes. Regarding the debt share of financing, this reduces with a higher risk premium, as the debt bias in the traditional system is reduced.

5.10 Alternative cap to CIT rate ex-ante adjustment

The core simulations are performed under the assumption that CIT rates adjust in order to maintain CIT revenues neutrality ex-ante. However, in the design of the simulations we set a cap to these adjustments to reflect the idea that countries would not raise their rates above a certain threshold. This ceiling was set at 37.5%.

In this section we soften this boundary and let the CIT rate to further adjust to the higher values of 45% and 50% respectively, as shown in Table 5.17 and 5.18. Results for CCTB, CCCTB and CCCTB with an ACE for multinationals only suggest that some countries make use of the additional adjustment, causing the macro results to be slightly dampened relative to the original scenarios. In particular, the

higher the adjustment the lower is the increase in the macro variables. Finally, barely unchanged results (especially the case of CCCTB-mnes) indicate that the cap on the CIT rate is not holding and therefore no additional impact is recorded when moving from a 45% cap to a 50% cap.

Table 5.17 Maximum CIT rate 45%

Maximum CIT rate 45%		CCTB-mnes	CCCTB-mnes	CCCTB-mnes+ACE
Cost of capital	(percentage point ch.)	0.022	-0.022	-0.27
Investment	(percentage change)	1.157	0.368	2.804
Wage	(percentage change)	0.231	0.327	1.079
Employment	(percentage change)	0.162	0.155	0.591
GDP	(percentage change)	0.321	0.086	0.969
Welfare	(% GDP change)	-0.016	0.054	0.116

Table 5.18 Maximum CIT rate 50%

Maximum CIT rate 50%		CCTB-mnes	CCCTB-mnes	CCCTB-mnes+ACE
Cost of capital	(percentage point ch.)	0.030	-0.022	-0.242
Investment	(percentage change)	1.152	0.368	2.474
Wage	(percentage change)	0.218	0.326	0.971
Employment	(percentage change)	0.168	0.155	0.559
GDP	(percentage change)	0.319	0.086	0.858
Welfare	(% GDP change)	-0.034	0.054	0.072

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Appendix A: Summary Tables

Summary tables for all CCTB and CCCTB reforms and sensitivity analyses

CCTB		MNEs	MNEs+CBLO	All firms
Cost of capital	(percentage point change)	-0.043	-0.055	-0.054
Investment	(percentage change)	1.364	1.469	0.73
Wage	(percentage change)	0.368	0.412	0.167
Employment	(percentage change)	0.162	0.191	0.065
GDP	(percentage change)	0.401	0.451	0.198
Welfare	(% GDP change)	0.082	0.077	0.043
CCCTB		**MNEs**		**All firms**
Cost of capital	(percentage point change)	-0.042		-0.068
Investment	(percentage change)	0.571		0.743
Wage	(percentage change)	0.399		0.444
Employment	(percentage change)	0.187		0.194
GDP	(percentage change)	0.163		0.262
Welfare	(% GDP change)	0.073		0.102
CCTB - MNEs		**+ ACE**	**+ CBIT**	**+ ACC**
Cost of capital	(percentage point change)	-0.288	0.584	-0.068
Investment	(percentage change)	3.058	-0.536	1.535
Wage	(percentage change)	0.883	-0.527	0.391
Employment	(percentage change)	0.4	-0.078	0.167
GDP	(percentage change)	1.055	-0.604	0.445
Welfare	(% GDP change)	0.19	-0.274	0.093
CCCTB - MNEs		**+ ACE**	**+ CBIT**	**+ ACC**
Cost of capital	(percentage point change)	-0.32	0.14	-0.141
Investment	(percentage change)	3.363	-0.9	1.41
Wage	(percentage change)	1.256	-0.022	0.707
Employment	(percentage change)	0.649	-0.146	0.298
GDP	(percentage change)	1.165	-0.368	0.483
Welfare	(% GDP change)	0.184	0.131	0.163
CCTB - All		**+ ACE**	**+ CBIT**	**+ ACC**
Cost of capital	(percentage point change)	-0.295	0.122	-0.139
Investment	(percentage change)	4.24	-1.708	1.828
Wage	(percentage change)	1.317	-0.391	0.573
Employment	(percentage change)	0.464	-0.328	0.136
GDP	(percentage change)	1.493	-0.704	0.598
Welfare	(% GDP change)	0.388	0.065	0.22

CCCTB - All		+ ACE	+ CBIT	+ ACC
Cost of capital	(percentage point change)	-0.341	0.133	-0.177
Investment	(percentage change)	4.78	-2.054	2.166
Wage	(percentage change)	1.836	-0.328	1.006
Employment	(percentage change)	0.689	-0.322	0.305
GDP	(percentage change)	1.764	-0.796	0.786
Welfare	(% GDP change)	0.515	0.108	0.343
CCTB -MNEs		**CCT40 tax base**	**EU ave tax base**	
Cost of capital	(percentage point change)	-0.069	-0.029	
Investment	(percentage change)	-0.151	0.382	
Wage	(percentage change)	-0.196	0.038	
Employment	(percentage change)	0.054	0.044	
GDP	(percentage change)	-0.123	0.047	
Welfare	(% GDP change)	-0.146	-0.007	
CCCTB -MNEs		**CCT40 tax base**	**EU ave tax base**	
Cost of capital	(percentage point change)	0.095	0.018	
Investment	(percentage change)	-0.485	0.042	
Wage	(percentage change)	0.068	0.231	
Employment	(percentage change)	-0.011	0.086	
GDP	(percentage change)	-0.192	-0.02	
Welfare	(% GDP change)	0.055	0.064	
CCTB-MNEs – stricter control on profit shifting				
Cost of capital	(percentage point change)	-0.043		
Investment	(percentage change)	1.353		
Wage	(percentage change)	0.358		
Employment	(percentage change)	0.159		
GDP	(percentage change)	0.355		
Welfare	(% GDP change)	0.081		
CCTB -MNEs– Capital-labour substitutability		**Higher 0.9**	**Lower 0.5**	
Cost of capital	(percentage point change)	-0.042	-0.043	
Investment	(percentage change)	1.483	1.025	
Wage	(percentage change)	0.257	0.366	
Employment	(percentage change)	0.113	0.169	
GDP	(percentage change)	0.324	0.323	
Welfare	(% GDP change)	0.061	0.074	
CCCTB-MNEs – Capital-labour substitutability		**Higher 0.9**	**Lower 0.5**	
Cost of capital	(percentage point change)	-0.039	-0.042	
Investment	(percentage change)	0.508	0.488	
Wage	(percentage change)	0.325	0.398	
Employment	(percentage change)	0.138	0.189	
GDP	(percentage change)	0.078	0.149	
Welfare	(% GDP change)	0.08	0.07	

CCCTB -MNEs– Less compliance cost saving

Cost of capital	(percentage point change)	-0.039
Investment	(percentage change)	0.515
Wage	(percentage change)	0.352
Employment	(percentage change)	0.191
GDP	(percentage change)	0.115
Welfare	(% GDP change)	0.036

Compensate revenue w/ labour taxes		CCTB -MNEs	CCCTB -MNEs
Cost of capital	(percentage point change)	-0.043	-0.042
Investment	(percentage change)	1.165	0.397
Wage	(percentage change)	0.375	0.405
Employment	(percentage change)	-0.03	0.012
GDP	(percentage change)	0.214	-0.006
Welfare	(% GDP change)	0.021	0.009

CCTB - MNEs – discrete location		+ ACE	+ CBIT	+ ACC
Cost of capital	(percentage point change)	-0.288	0.586	-0.067
Investment	(percentage change)	3.137	-0.469	1.589
Wage	(percentage change)	0.918	-0.491	0.407
Employment	(percentage change)	0.412	-0.069	0.183
GDP	(percentage change)	1.111	-0.541	0.489
Welfare	(% GDP change)	0.201	-0.262	0.085

CCCTB – MNEs – discrete location		+ ACE	+ CBIT	+ ACC
Cost of capital	(percentage point change)	-0.316	0.174	-0.126
Investment	(percentage change)	3.842	-0.835	1.621
Wage	(percentage change)	1.645	0.11	0.887
Employment	(percentage change)	0.625	-0.178	0.284
GDP	(percentage change)	1.543	-0.259	0.66
Welfare	(% GDP change)	0.486	0.264	0.311

Cross-border loss offset (CBLO)		CCTB-All-CBLO	CCTB-MNEs-ACE-CBLO
Cost of capital	(percentage point change)	-0.057	-0.345
Investment	(percentage change)	0.827	3.619
Wage	(percentage change)	0.207	1.105
Employment	(percentage change)	0.102	0.515
GDP	(percentage change)	0.249	1.308
Welfare	(% GDP change)	0.027	0.219

Varying deductibility for ACE		CCTB-MNEs +ACE (0.5 ded.)	CCTB-MNEs +ACE (0.9 ded.)	CCCTB-MNEs +ACE (0.9 ded.)
Cost of capital	(percentage point change)	-0.206	-0.444	-0.436
Investment	(percentage change)	2.407	4.985	4.694
Wage	(percentage change)	0.693	1.544	1.654
Employment	(percentage change)	0.305	0.818	0.87
GDP	(percentage change)	0.809	1.927	1.641
Welfare	(% GDP change)	0.159	0.216	0.226
CCCTB-MNEs + ACE varying deductibility shares		**0.1 ded.**	**0.2 ded.**	**0.3 ded.**
Cost of capital	(percentage point change)	-0.072	-0.105	-0.142
Investment	(percentage change)	0.844	1.146	1.502
Wage	(percentage change)	0.488	0.584	0.696
Employment	(percentage change)	0.233	0.284	0.342
GDP	(percentage change)	0.264	0.374	0.503
Welfare	(% GDP change)	0.086	0.099	0.116
CCCTB-MNEs + ACE varying deductibility shares		**0.4 ded.**	**0.5 ded.**	**0.6 ded.**
Cost of capital	(percentage point change)	-0.183	-0.226	-0.271
Investment	(percentage change)	1.9	2.339	2.821
Wage	(percentage change)	0.82	0.952	1.096
Employment	(percentage change)	0.407	0.479	0.559
GDP	(percentage change)	0.647	0.803	0.974
Welfare	(% GDP change)	0.134	0.151	0.167
CCCTB-MNEs + ACE varying ACE rates		**0.26 rate**	**0.29 rate**	**0.32 rate**
Cost of capital	(percentage point change)	-0.127	-0.138	-0.150
Investment	(percentage change)	1.352	1.464	1.578
Wage	(percentage change)	0.649	0.684	0.720
Employment	(percentage change)	0.318	0.336	0.355
GDP	(percentage change)	0.449	0.490	0.531
Welfare	(% GDP change)	0.109	0.114	0.120
CCCTB-MNEs + ACE varying ACE rates		**0.35 rate**	**0.38 rate**	**1 rate**
Cost of capital	(percentage point change)	-0.162	-0.175	-0.498
Investment	(percentage change)	1.696	1.817	5.465
Wage	(percentage change)	0.757	0.794	1.879
Employment	(percentage change)	0.374	0.394	0.999
GDP	(percentage change)	0.574	0.617	1.914
Welfare	(% GDP change)	0.125	0.131	0.246

Maximum CIT rate 45%		CCTB-mnes	CCCTB-mnes	CCCTB-mnes+ACE
Cost of capital	(percentage point change)	0.022	-0.022	-0.27
Investment	(percentage change)	1.157	0.368	2.804
Wage	(percentage change)	0.231	0.327	1.079
Employment	(percentage change)	0.162	0.155	0.591
GDP	(percentage change)	0.321	0.086	0.969
Welfare	(% GDP change)	-0.016	0.054	0.116

Maximum CIT rate 50%		CCTB-mnes	CCCTB-mnes	CCCTB-mnes+ACE
Cost of capital	(percentage point change)	0.030	-0.022	-0.242
Investment	(percentage change)	1.152	0.368	2.474
Wage	(percentage change)	0.218	0.326	0.971
Employment	(percentage change)	0.168	0.155	0.559
GDP	(percentage change)	0.319	0.086	0.858
Welfare	(% GDP change)	-0.034	0.054	0.072

Appendix B: Country Tables

The tables in this appendix show the country-specific outcomes for the 58 simulations: the two main reform scenarios, namely for the common corporate tax base, without consolidation (CCTB) and with consolidation (CCCTB), and various sensitivity analyses (described in the list of tables below).

The results here show the following variables:

- CIT-rate = percentage point change in the corporate tax rate faced by multinational headquarters (accounting for profit shifting to tax haven and, in the case of CCCTB, consolidation of corporate accounts)
- CoC = percentage point change in the cost of capital, average across all firms
- Capital = percentage change in total capital stock
- Wage = percentage change in the wage rate
- Employm. = percentage change in total employment
- GDP = percentage change in gross domestic product
- Rev_CIT = change in the corporate tax revenue in % of GDP
- Rev_tax = change in total tax revenue in % of GDP
- Welfare = change in compensating variation in % of GDP (positive value reflects a welfare gain)

Country code:

AUT	Austria	GBR	United Kingdom
BEL	Belgium	CYP	Cyprus
DNK	Denmark	CZE	Czech Rep
FIN	Finland	EST	Estonia
FRA	France	HUN	Hungary
DEU	Germany	LVA	Latvia
GRC	Greece	LTU	Lithuania
HRV	Croatia	MLT	Malta
IRL	Ireland	POL	Poland
ITA	Italy	SVK	Slovakia
LUX	Luxembourg	SVN	Slovenia
NLD	Netherlands	BGR	Bulgaria
PRT	Portugal	ROM	Romania
ESP	Spain	USA	USA
SWE	Sweden	JPN	Japan

The tables are presented in the following order:

- Table B.1: CCTB MNEs only
- Table B.2: CCTB MNEs only + CBLO
- Table B.3: CCCTB MNEs only
- Table B.4: CCTB all firms
- Table B.5: CCTB all firms + CBLO
- Table B.6: CCCTB all firms
- Table B.7: CCTB MNEs only + CBIT
- Table B.8: CCCTB MNEs only + CBIT
- Table B.9: CCTB all firms + CBIT
- Table B.10: CCCTB all firms + CBIT
- Table B.11: CCTB MNEs only + ACE
- Table B.12: CCCTB MNEs only + ACE
- Table B.13: CCTB all firms + ACE
- Table B.14: CCCTB all firms + ACE
- Table B.15: CCTB MNEs only + ACC
- Table B.16: CCCTB MNEs only + ACC
- Table B.17: CCTB All firms + ACC
- Table B.18: CCCTB All firms+ ACC
- Table B.19: CCTB MNEs only + ACE with discrete location
- Table B.20: CCCTB MNEs only + ACE with discrete location
- Table B.21: Broader tax base, CCTB40-CCTB MNEs only
- Table B.22: Broader tax base, CCTB40-CCCTB MNEs only
- Table B.23: EU average tax base, EUav - CCTB MNEs only
- Table B.24: EU average tax base, EUav - CCCTB MNEs only
- Table B.25: Profit shifting, stricter control - CCTB MNEs only
- Table B.26: K-L substitutability, higher - CCTB MNEs only
- Table B.27: K-L substitutability, higher - CCCTB MNEs only
- Table B.28: K-L substitutability, lower - CCTB MNEs only
- Table B.29: K-L substitutability, lower - CCCTB MNEs only
- Table B.30: Less compliance costs savings - CCCTB MNEs only
- Table B.31: Closure on labour tax - CCTB MNEs only
- Table B.32: Closure on labour tax - CCCTB MNEs only
- Table B.33: CCTB MNEs only + ACE w/ higher deductibility
- Table B.34: CCTB MNEs only + ACE w/ lower deductibility
- Table B.35: CCCTB MNEs only + ACE w/ higher deductibility
- Table B.36: CCTB MNEs only + CBLO + ACE
- Table B.37: CCTB MNEs only + CBIT with discrete location
- Table B.38: CCCTB MNEs only + CBIT with discrete location
- Table B.39: CCTB MNEs + ACC with discrete location
- Table B.40: CCCTB MNEs + ACC with discrete location
- Table B.41: CCCTB MNEs + ACE with 0.1 deductability
- Table B.42: CCCTB MNEs + ACE with 0.2 deductability

Table B.1: CCTB MNEs only

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.472	0.034	0.943	0.278	0.151	0.215	-0.243	-0.096	0.023
BEL	-16.88	0.127	-2.305	-0.436	-0.477	0.322	0.45	0.143	0.114
DNK	-2.511	-0.004	-0.35	-0.061	-0.027	0.154	0.085	0.053	-0.01
FIN	-3.316	-0.011	-0.388	-0.102	-0.034	0.021	0.052	0.001	-0.028
FRA	-6.758	-0.088	-0.341	-0.058	-0.019	0.245	0.093	0.065	-0.019
DEU	5.107	-0.005	1.587	0.508	0.258	0.554	-0.328	-0.086	0.088
GRC	-9.187	-0.04	-1.411	-0.656	-0.166	-0.59	0.198	-0.035	-0.23
HRV	-9.187	0.173	-3.627	-1.233	-0.353	-0.686	0.717	0.223	-0.364
IRL	-0.032	-0.001	0.089	0.081	0.011	0.318	0.031	0.055	0.036
ITA	-3.798	0.116	0.077	0.048	-0.032	-0.005	-0.022	-0.015	0.056
LUX	-0.261	-0.002	0.108	0.115	-0.001	0.192	-0.623	-0.587	0.081
NLD	2.674	-0.027	0.804	0.246	0.141	0.12	-0.198	-0.065	0.014
PRT	-9.119	-0.038	-0.866	-0.236	-0.017	0.267	0.109	0.037	-0.131
ESP	1.697	-0.093	2.165	0.863	0.295	0.883	-0.389	-0.063	0.26
SWE	-1.874	0.012	-0.344	-0.017	-0.067	0.24	0.099	0.071	0.06
GBR	10.923	-0.399	8.154	1.855	0.829	1.389	-1.468	-0.623	0.324
CYP	0	0.03	-0.545	-0.194	-0.094	-0.188	0.136	0.066	-0.031
CZE	-1.88	-0.018	-0.162	-0.049	-0.011	0.093	0.031	0.014	-0.015
EST	-10.066	0.114	-3.93	-1.982	-0.392	-1.485	0.791	0.09	-0.635
HUN	0.944	0.019	0.004	-0.001	0.002	0.096	-0.01	-0.009	-0.003
LVA	-4.686	0.065	-1.957	-0.855	-0.313	-0.824	0.399	0.087	-0.218
LTU	-4.686	0.123	-3.498	-1.589	-0.556	-1.591	0.754	0.218	-0.354
MLT	1.931	-0.024	0.68	0.324	0.011	0.471	-0.081	-0.004	0.161
POL	8.232	0.105	1.358	0.457	0.213	0.418	-0.267	-0.1	0.073
SVK	-8.301	-0.003	-0.985	-0.445	-0.05	-0.071	0.142	0.002	-0.193
SVN	-1.573	-0.004	-0.157	-0.02	-0.016	0.128	0.033	0.022	0.003
BGR	0	0.023	-0.421	-0.174	-0.077	-0.13	0.107	0.054	-0.028
ROM	-0.265	0.006	-0.115	-0.056	0.006	-0.001	0.01	-0.005	-0.036
USA	0	0	-0.001	-0.001	0.001	0.015	0.016	0.016	-0.001
JPN	0	0	0	0	0	0.003	0.008	0.008	-0.001
EU	0.723	-0.043	1.364	0.368	0.162	0.401	-0.276	-0.098	0.082

Table B.2: CCTB MNEs only + CBLO

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	6.995	0.078	0.824	0.162	0.21	0.138	-0.312	-0.19	-0.106
BEL	-20.869	0.023	-1.131	-0.025	-0.2	0.979	0.07	0.002	0.139
DNK	-4.223	-0.053	-0.027	0.099	-0.058	0.35	0.091	0.108	0.125
FIN	-4.732	-0.047	-0.173	0.009	-0.067	0.172	0.065	0.047	0.074
FRA	-6.992	-0.097	-0.267	-0.023	-0.019	0.213	0.069	0.053	0.002
DEU	5.107	-0.005	1.741	0.504	0.413	0.698	-0.476	-0.19	-0.053
GRC	-9.187	-0.04	-1.414	-0.657	-0.168	-0.603	0.199	-0.035	-0.229
HRV	-9.187	0.173	-3.608	-1.23	-0.335	-0.647	0.696	0.207	-0.385
IRL	-1.793	-0.041	0.377	0.308	-0.046	0.477	0.047	0.119	0.223
ITA	-4.161	0.109	0.11	0.065	-0.018	0.013	-0.039	-0.022	0.055
LUX	-16.685	-0.534	6.58	3.933	0.25	4.544	-1.596	-0.316	2.514
NLD	2.308	-0.036	0.82	0.285	0.1	0.054	-0.192	-0.057	0.07
PRT	-10.374	-0.064	-0.631	-0.132	-0.004	0.388	0.077	0.038	-0.079
ESP	1.697	-0.093	2.183	0.869	0.303	0.867	-0.399	-0.069	0.257
SWE	0.173	0.056	-0.601	-0.178	0.011	-0.041	0.015	-0.051	-0.122
GBR	10.923	-0.399	8.164	1.861	0.836	1.376	-1.483	-0.633	0.319
CYP	0	0.03	-0.58	-0.194	-0.131	-0.234	0.164	0.086	-0.002
CZE	-3.211	-0.055	0.066	0.092	-0.025	0.219	0.021	0.045	0.072
EST	-10.066	0.114	-3.939	-1.978	-0.408	-1.484	0.806	0.104	-0.617
HUN	-0.888	-0.034	0.261	0.177	-0.04	0.225	-0.004	0.052	0.135
LVA	-4.686	0.065	-1.959	-0.853	-0.317	-0.817	0.403	0.09	-0.214
LTU	-4.686	0.123	-3.503	-1.589	-0.564	-1.597	0.76	0.222	-0.347
MLT	-4.927	-0.234	2.489	1.598	-0.31	1.781	0.059	0.351	1.151
POL	6.313	0.041	1.494	0.604	0.152	0.486	-0.232	-0.038	0.209
SVK	-8.301	-0.003	-1.004	-0.444	-0.07	-0.093	0.157	0.013	-0.175
SVN	-2.875	-0.03	-0.032	0.051	-0.028	0.244	0.036	0.048	0.061
BGR	0	0.023	-0.454	-0.172	-0.112	-0.16	0.138	0.08	0.005
ROM	-0.97	-0.008	-0.053	-0.01	-0.004	0.035	0.01	0.006	-0.002
USA	0	0	0.005	0.001	0.003	0.013	0.014	0.015	-0.003
JPN	0	0	0.001	0	0.001	0.003	0.006	0.006	-0.001
EU	0.276	-0.055	1.469	0.412	0.191	0.451	-0.328	-0.124	0.077

Table B.3: CCCTB MNEs only

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	2.804	-0.057	0.08	0.086	0.079	-0.078	-0.144	-0.089	-0.024
BEL	-3.283	0.565	-2.48	0.49	-0.197	-0.529	-0.082	0.048	0.432
DNK	3.351	0.179	-0.819	0.049	0.055	-0.194	-0.118	-0.079	-0.028
FIN	0.801	0.1	-0.341	0.244	0.06	-0.045	-0.071	0.044	0.086
FRA	-4.328	0.024	-0.196	0.186	0.037	0.335	-0.129	-0.048	0.083
DEU	3.212	-0.082	0.406	0.255	0.142	0.2	-0.236	-0.111	0.034
GRC	-2.773	0.107	-0.484	-0.069	-0.008	-0.214	0.029	0.007	-0.032
HRV	-8.605	0.185	-1.389	0.336	-0.04	-0.518	0.19	0.299	0.282
IRL	13.332	0.33	-1.034	0.422	0.183	-0.984	-0.143	0.016	0.066
ITA	-2.728	0.12	-0.602	0.113	-0.018	-0.152	-0.044	-0.009	0.083
LUX	-0.199	-0.061	-0.901	0.164	-0.02	-0.095	-1.005	-0.956	0.136
NLD	4.037	-0.025	1.269	1.18	-0.075	0.007	-0.192	0.213	0.71
PRT	-1.883	0.125	-0.7	0.317	0.039	-0.052	-0.032	0.069	0.159
ESP	0.729	-0.16	1.974	0.901	0.566	0.983	-0.613	-0.197	0.06
SWE	1.16	0.076	-0.34	0.546	-0.003	0.1	-0.117	0.095	0.341
GBR	8.803	-0.529	4.176	0.938	0.654	0.499	-0.884	-0.376	-0.106
CYP	6.54	0.148	-0.773	0.08	0.071	-0.46	-0.016	0.019	-0.012
CZE	2.167	0.092	-0.46	0.138	0.116	-0.241	-0.046	0.016	-0.041
EST	-8.926	0.152	-1.099	0.105	-0.009	-0.522	0.043	0.076	0.065
HUN	2.598	0.054	-0.244	0.149	0.153	-0.132	-0.078	0.011	-0.047
LVA	-3.456	0.084	-0.447	0.056	0.035	-0.23	0.032	0.055	0.004
LTU	-4.404	0.135	-0.71	-0.118	-0.032	-0.404	0.084	0.045	-0.034
MLT	-1.283	-0.151	1.902	1.019	0.496	1.712	-0.549	-0.193	0.066
POL	6.79	0.027	0.263	0.306	0.238	0.09	-0.136	-0.005	-0.033
SVK	-2.35	0.082	-0.388	0.211	0.056	-0.219	0.021	0.095	0.065
SVN	1.303	0.052	-0.274	0.25	0.076	-0.136	-0.01	0.095	0.081
BGR	0.425	0.028	-0.023	0.464	0.161	-0.19	0.001	0.139	0.114
ROM	1.908	0.039	-0.18	0.155	0.087	-0.099	-0.012	0.05	0.019
USA	0	0	0.002	-0.004	0.011	0.026	0.023	0.025	-0.014
JPN	0	0	0.01	-0.001	0.011	0.013	0.012	0.015	-0.013
EU	1.544	-0.042	0.571	0.399	0.187	0.163	-0.27	-0.083	0.073

Table B.4: CCTB all firms

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	2.033	-0.059	0.903	0.289	0.114	0.304	-0.144	-0.004	0.067
BEL	-13.198	0.229	-3.109	-0.624	-0.681	-0.25	0.553	0.114	0.162
DNK	-1.183	0.035	-0.437	-0.075	-0.074	-0.033	0.073	0.018	0.031
FIN	-1.413	0.04	-0.493	-0.116	-0.06	-0.11	0.051	-0.014	-0.009
FRA	-2.581	0.088	-0.913	-0.177	-0.153	-0.226	0.127	0.006	0.021
DEU	2.453	-0.078	1.122	0.331	0.15	0.41	-0.149	0.003	0.074
GRC	-4.13	0.074	-1.188	-0.451	-0.175	-0.518	0.131	-0.047	-0.11
HRV	-9.187	0.173	-2.609	-0.847	-0.251	-0.502	0.341	0	-0.238
IRL	-0.019	0	0.037	0.074	-0.034	0.205	0.029	0.04	0.076
ITA	-5.611	0.084	-1.273	-0.314	-0.183	-0.44	0.088	-0.082	-0.035
LUX	-0.177	0.001	0.022	0.1	-0.068	0.06	-0.379	-0.357	0.14
NLD	1.459	-0.057	0.758	0.236	0.093	0.166	-0.129	-0.014	0.049
PRT	-3.489	0.086	-1.232	-0.332	-0.16	-0.272	0.164	0.029	-0.043
ESP	1.697	-0.093	1.536	0.489	0.225	0.587	-0.222	-0.02	0.1
SWE	-1.032	0.03	-0.362	-0.033	-0.081	0.081	0.078	0.039	0.066
GBR	8.427	-0.486	6.089	1.159	0.611	1.203	-0.773	-0.214	0.096
CYP	0	0.03	-0.571	-0.198	-0.12	-0.214	0.137	0.061	-0.013
CZE	-0.704	0.016	-0.215	-0.066	-0.029	-0.04	0.031	0.006	-0.007
EST	-9.451	0.13	-2.283	-0.885	-0.265	-0.728	0.227	-0.1	-0.189
HUN	0.344	0.002	0.03	-0.005	0.025	0.081	-0.015	-0.011	-0.024
LVA	-4.682	0.065	-1.106	-0.45	-0.138	-0.418	0.101	-0.057	-0.135
LTU	-4.686	0.123	-2.214	-0.942	-0.321	-0.974	0.343	0.026	-0.216
MLT	1.651	-0.034	0.641	0.223	0.104	0.309	-0.102	-0.026	0.019
POL	2.599	-0.074	1.219	0.425	0.175	0.52	-0.152	-0.002	0.089
SVK	-3.79	0.061	-1.019	-0.4	-0.125	-0.349	0.114	-0.03	-0.108
SVN	-0.615	0.015	-0.168	-0.032	-0.017	-0.005	0.018	0.003	-0.004
BGR	0	0.023	-0.427	-0.18	-0.077	-0.167	0.104	0.049	-0.032
ROM	-0.087	0.009	-0.118	-0.059	0.006	-0.026	0.007	-0.009	-0.039
USA	0	0	-0.007	-0.001	-0.005	0.005	0.014	0.012	0.005
JPN	0	0	-0.004	0	-0.004	-0.002	0.006	0.005	0.005
EU	0.178	-0.054	0.73	0.167	0.065	0.198	-0.109	-0.036	0.043

Table B.5: CCTB all firms + CBLO

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	2.299	-0.052	0.808	0.235	0.115	0.278	-0.131	-0.011	0.032
BEL	-20.869	0.023	-0.182	0.566	-0.193	1.492	-0.325	-0.163	0.473
DNK	-1.965	0.012	-0.182	0.066	-0.115	0.045	0.066	0.049	0.166
FIN	-2.062	0.023	-0.322	-0.008	-0.104	-0.044	0.053	0.016	0.101
FRA	-1.468	0.137	-1.275	-0.405	0.001	-0.35	0.049	-0.098	-0.251
DEU	3.547	-0.048	0.776	0.08	0.242	0.332	-0.164	-0.067	-0.163
GRC	-9.187	-0.04	0.897	0.526	0.253	0.547	-0.528	-0.304	0.089
HRV	-9.187	0.173	-2.594	-0.847	-0.236	-0.486	0.323	-0.015	-0.258
IRL	-1.106	-0.026	0.353	0.321	-0.1	0.268	0.02	0.082	0.283
ITA	-5.807	0.081	-1.216	-0.285	-0.175	-0.423	0.071	-0.086	-0.024
LUX	-16.685	-0.534	7.683	4.841	0.33	4.498	-1.958	-0.379	3.073
NLD	0.836	-0.072	0.848	0.334	0.03	0.121	-0.121	0.01	0.157
PRT	-4.065	0.072	-1.044	-0.232	-0.166	-0.216	0.142	0.034	0.027
ESP	1.697	-0.093	1.577	0.496	0.254	0.594	-0.246	-0.034	0.08
SWE	0.077	0.054	-0.602	-0.182	0.009	-0.076	0.033	-0.035	-0.121
GBR	7.752	-0.509	6.279	1.317	0.493	1.184	-0.687	-0.121	0.343
CYP	0	0.03	-0.599	-0.199	-0.148	-0.295	0.16	0.078	0.009
CZE	-1.27	-0.001	-0.019	0.079	-0.065	0.019	0.024	0.038	0.104
EST	-10.066	0.114	-2.029	-0.756	-0.23	-0.588	0.153	-0.127	-0.158
HUN	-0.333	-0.018	0.247	0.168	-0.034	0.141	-0.014	0.039	0.125
LVA	-4.686	0.065	-1.107	-0.448	-0.141	-0.416	0.104	-0.055	-0.131
LTU	-4.686	0.123	-2.218	-0.941	-0.327	-0.974	0.349	0.031	-0.21
MLT	-2.216	-0.155	1.93	1.274	-0.265	1.063	-0.025	0.204	0.933
POL	2.059	-0.09	1.404	0.58	0.119	0.562	-0.141	0.039	0.224
SVK	-8.301	-0.003	0.301	0.228	0.159	0.43	-0.33	-0.227	-0.011
SVN	-1.187	0.003	-0.05	0.039	-0.041	0.032	0.018	0.023	0.066
BGR	0	0.023	-0.46	-0.179	-0.111	-0.213	0.134	0.075	0
ROM	-0.329	0.004	-0.06	-0.014	-0.008	-0.008	0.006	0.001	-0.002
USA	0	0	0	0.001	-0.002	0.004	0.011	0.011	0.003
JPN	0	0	-0.003	0	-0.004	-0.001	0.005	0.004	0.004
EU	-0.064	-0.057	0.827	0.207	0.102	0.249	-0.159	-0.063	0.027

Table B.6: CCCTB all firms

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	0.912	-0.105	0.65	0.342	0.173	0.205	-0.219	-0.042	0.041
BEL	-3.625	0.553	-3.496	0.137	-0.246	-0.857	-0.028	-0.048	0.267
DNK	1.997	0.134	-1.002	0.043	0.113	-0.166	-0.112	-0.055	-0.093
FIN	-0.158	0.073	-0.537	0.175	0.058	-0.11	-0.06	0.027	0.046
FRA	-4.782	0.004	-0.616	0.045	0.004	0.185	-0.097	-0.08	0.024
DEU	1.895	-0.115	1.002	0.441	0.21	0.452	-0.27	-0.064	0.088
GRC	-3.548	0.089	-1.308	-0.389	-0.117	-0.591	0.111	-0.033	-0.122
HRV	-8.717	0.184	-2.897	-0.247	-0.16	-1.027	0.38	0.265	0.047
IRL	11.823	0.286	-0.89	0.602	0.365	-0.778	-0.182	0.071	-0.007
ITA	-3.537	0.106	-1.392	-0.104	-0.08	-0.432	-0.019	-0.081	0.005
LUX	-0.817	-0.083	-1.7	-0.48	-0.064	-0.391	-0.908	-1.068	-0.27
NLD	3.454	-0.039	1.347	1.161	-0.101	0.063	-0.194	0.196	0.722
PRT	-2.089	0.12	-1.356	0.091	-0.013	-0.283	0.025	0.048	0.071
ESP	0.467	-0.17	2.414	1.086	0.534	1.174	-0.611	-0.152	0.193
SWE	0.139	0.053	-0.466	0.477	-0.04	0.043	-0.104	0.07	0.338
GBR	8.264	-0.546	5.779	1.341	0.657	1.213	-0.836	-0.206	0.168
CYP	4.838	0.115	-0.934	0.05	0.103	-0.432	0.002	0.035	-0.053
CZE	0.413	0.04	-0.516	0.129	0.159	-0.235	-0.055	0.012	-0.087
EST	-8.766	0.156	-2.172	-0.425	-0.089	-1	0.115	-0.036	-0.13
HUN	0.718	-0.001	-0.118	0.198	0.236	-0.046	-0.117	0.008	-0.091
LVA	-4.002	0.076	-1.169	-0.252	-0.045	-0.547	0.092	0.009	-0.099
LTU	-4.457	0.134	-2.146	-0.76	-0.218	-1.061	0.301	0.053	-0.21
MLT	-1.835	-0.167	2.018	0.936	0.468	1.737	-0.509	-0.18	0.049
POL	3.959	-0.059	1.172	0.648	0.398	0.508	-0.264	-0.007	0.021
SVK	-2.946	0.073	-0.991	-0.07	-0.003	-0.483	0.077	0.056	-0.035
SVN	0.095	0.027	-0.336	0.214	0.082	-0.15	-0.009	0.085	0.053
BGR	0.231	0.025	-0.266	0.316	0.12	-0.298	0.052	0.147	0.069
ROM	0.608	0.014	-0.226	0.121	0.11	-0.102	-0.016	0.041	-0.019
USA	0	0	-0.01	-0.003	-0.001	0.01	0.02	0.019	0
JPN	0	0	-0.001	-0.001	-0.001	0.001	0.01	0.01	0
EU	0.581	-0.068	0.743	0.444	0.194	0.262	-0.265	-0.065	0.102

Table B.7: CCTB MNEs only + CBIT

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	5.472	0.761	-0.772	-0.792	0.043	-0.894	0.079	-0.196	-0.532
BEL	-16.88	0.378	-4.223	-1.212	-0.523	-0.403	0.964	0.346	-0.295
DNK	-2.511	0.458	-2.879	-0.97	-0.261	-0.872	0.626	0.163	-0.343
FIN	-3.316	0.398	-2.883	-0.969	-0.317	-0.973	0.598	0.118	-0.265
FRA	-6.758	0.512	-3.765	-1.112	-0.53	-1.025	0.847	0.248	-0.237
DEU	5.107	0.943	0.258	-0.476	0.178	-0.373	-0.057	-0.161	-0.452
GRC	-9.187	0.136	-2.752	-1.162	-0.471	-1.241	0.565	0.1	-0.269
HRV	-9.187	0.376	-4.982	-1.687	-0.592	-1.33	1.051	0.355	-0.357
IRL	-0.032	0.197	-1.682	-0.741	-0.238	-0.802	0.439	0.181	-0.199
ITA	-3.798	0.803	-0.871	-0.728	-0.053	-0.687	0.209	-0.067	-0.394
LUX	-0.261	0.593	-3.064	-2.117	0.89	-0.831	0.463	-0.089	-2.375
NLD	2.674	0.468	-2.069	-0.816	-0.165	-1.094	0.38	0.033	-0.305
PRT	-9.119	0.364	-3.532	-1.166	-0.476	-0.938	0.745	0.292	-0.241
ESP	1.697	0.604	-0.856	-0.38	-0.291	-0.639	0.225	0.036	0.015
SWE	-1.874	0.561	-3.002	-1.05	-0.263	-0.849	0.686	0.192	-0.371
GBR	10.923	0.412	6.45	1.046	0.69	0.379	-1.254	-0.702	-0.074
CYP	0	0.241	-1.672	-0.744	-0.27	-0.855	0.423	0.17	-0.188
CZE	-1.88	0.274	-1.979	-0.836	-0.376	-0.971	0.451	0.131	-0.075
EST	-10.066	0.255	-5.688	-2.594	-0.789	-2.353	1.25	0.294	-0.552
HUN	0.944	0.437	-1.874	-0.89	-0.326	-1.058	0.372	-0.024	-0.226
LVA	-4.686	0.268	-3.243	-1.4	-0.617	-1.552	0.723	0.19	-0.281
LTU	-4.686	0.27	-4.638	-2.032	-0.824	-2.194	1.044	0.336	-0.356
MLT	1.931	0.885	-5.394	-2.716	-1.196	-3.202	1.101	0.194	-0.326
POL	8.232	0.645	0.397	-0.237	0.119	-0.358	-0.167	-0.206	-0.236
SVK	-8.301	0.201	-2.618	-1.095	-0.428	-0.979	0.563	0.148	-0.227
SVN	-1.573	0.326	-1.683	-0.566	-0.282	-0.63	0.361	0.099	-0.074
BGR	0	0.195	-1.52	-0.641	-0.331	-0.79	0.354	0.151	-0.06
ROM	-0.265	0.328	-1.562	-0.75	-0.303	-0.883	0.331	0.055	-0.187
USA	0	0	0.007	-0.001	0.009	0.023	0.018	0.02	-0.011
JPN	0	0	0.013	-0.001	0.013	0.015	0.011	0.014	-0.016
EU	0.723	0.584	-0.536	-0.527	-0.078	-0.604	0.126	-0.072	-0.274

Table B.8: CCCTB MNEs only + CBIT

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	-6.17	0.126	-1.125	-0.221	-0.151	-0.511	0.109	-0.017	0.012
BEL	-11.74	0.679	-3.355	0.124	-0.396	-0.916	0.059	-0.01	0.374
DNK	-5.38	0.324	-1.686	-0.134	-0.126	-0.435	0.09	-0.007	0.049
FIN	-7.193	0.223	-1.419	-0.016	-0.146	-0.467	0.09	0.036	0.138
FRA	-13.35	0.111	-0.813	0.135	-0.224	0.132	0.095	0.06	0.275
DEU	-7.425	0.203	-1	-0.167	-0.136	-0.313	0.099	0.004	0.016
GRC	-8.823	0.163	-0.784	-0.19	-0.087	-0.368	0.072	-0.008	-0.035
HRV	-9.041	0.4	-2.283	-0.403	-0.27	-0.966	0.414	0.224	0.089
IRL	5.827	0.466	-2.552	-0.282	-0.128	-1.731	0.015	-0.093	-0.04
ITA	-13.552	0.34	-1.392	-0.14	-0.078	-0.393	0.095	0.02	-0.018
LUX	-8.522	0.055	-4.4	-1.585	-1.402	-2.488	-0.004	-0.692	0.312
NLD	-4.182	0.148	-1.055	0.509	-0.495	-0.682	0.064	0.095	0.702
PRT	-11.173	0.292	-1.602	0.114	-0.061	-0.354	0.103	0.121	0.135
ESP	-7.411	0.026	-0.916	0.017	-0.269	-0.292	0.047	-0.025	0.228
SWE	-7.267	0.317	-1.526	0.219	-0.086	-0.118	0.1	0.158	0.228
GBR	0.428	-0.264	0.834	0.18	-0.029	-0.391	-0.136	-0.091	0.158
CYP	2.518	0.363	-1.678	-0.484	-0.14	-0.985	0.217	0.059	-0.15
CZE	-4.708	0.147	-1.099	-0.103	-0.07	-0.572	0.078	0.034	0.014
EST	-9.453	0.299	-2.313	-0.611	-0.328	-1.109	0.334	0.087	0.02
HUN	-4.942	0.14	-1.088	-0.117	-0.092	-0.565	0.087	0.023	0.012
LVA	-4.447	0.292	-1.445	-0.535	-0.215	-0.821	0.252	0.052	-0.122
LTU	-4.496	0.293	-1.503	-0.575	-0.228	-0.833	0.26	0.06	-0.103
MLT	-10.888	0.091	-1.197	-0.061	-0.273	0.159	0.228	0.148	0.227
POL	-1.171	0.122	-0.741	-0.033	-0.057	-0.42	0.052	0.031	0.031
SVK	-7.801	0.233	-1.394	-0.307	-0.135	-0.72	0.173	0.053	-0.051
SVN	-5.823	0.155	-0.939	0.073	-0.04	-0.406	0.081	0.099	0.087
BGR	0.133	0.208	-1.424	-0.335	-0.235	-0.889	0.279	0.165	0.025
ROM	-5.367	0.123	-0.785	-0.082	-0.051	-0.401	0.069	0.035	-0.006
USA	0	0	0.027	0.001	0.021	-0.007	-0.013	-0.008	-0.023
JPN	0	0	0.017	0	0.017	0.008	-0.002	0.003	-0.02
EU	-7.079	0.14	-0.9	-0.022	-0.146	-0.368	0.06	0.011	0.131

Table B.9: CCTB all firms + CBIT

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	-6.376	0.103	-1.509	-0.32	-0.272	-0.654	0.168	-0.03	0.068
BEL	-18.874	0.284	-3.746	-0.8	-0.694	-0.741	0.428	-0.082	0.071
DNK	-7.849	0.168	-2.032	-0.416	-0.238	-0.514	0.202	-0.042	-0.012
FIN	-8.338	0.149	-2.09	-0.471	-0.304	-0.767	0.179	-0.103	0.023
FRA	-10.659	0.246	-2.485	-0.392	-0.475	-0.705	0.305	-0.014	0.162
DEU	-8.126	0.147	-1.923	-0.385	-0.349	-0.719	0.241	0.013	0.068
GRC	-9.187	0.136	-2.213	-0.794	-0.39	-1.047	0.252	-0.087	-0.13
HRV	-9.187	0.376	-5.685	-1.951	-0.675	-1.973	1.059	0.257	-0.427
IRL	-2.366	0.1	-1.975	-0.718	-0.391	-1.159	0.339	0.05	-0.039
ITA	-15.469	0.242	-3.312	-0.866	-0.425	-1.138	0.276	-0.166	-0.166
LUX	-6.893	0.164	-2.705	-0.352	-1.018	-1.45	-0.061	-0.309	0.798
NLD	-5.42	0.092	-1.514	-0.232	-0.386	-0.715	0.091	-0.112	0.202
PRT	-12.426	0.211	-2.75	-0.689	-0.329	-0.755	0.272	-0.007	-0.091
ESP	-6.362	0.075	-1.611	-0.068	-0.502	-0.763	0.211	0.048	0.367
SWE	-9.072	0.209	-2.065	-0.402	-0.176	-0.182	0.245	0.032	-0.061
GBR	2.277	-0.155	1.921	0.466	0.179	0.225	-0.277	-0.076	0.118
CYP	0	0.241	-4.217	-1.683	-0.768	-1.984	1.016	0.414	-0.308
CZE	-5.809	0.086	-1.392	-0.422	-0.23	-0.694	0.159	-0.009	0.002
EST	-10.066	0.255	-4.549	-1.871	-0.69	-2.049	0.776	0.068	-0.271
HUN	-5.622	0.098	-1.533	-0.454	-0.254	-0.752	0.16	-0.062	-0.04
LVA	-4.686	0.268	-4.878	-2.07	-0.956	-2.442	1.048	0.252	-0.386
LTU	-4.686	0.27	-4.978	-2.141	-0.901	-2.459	1.046	0.294	-0.346
MLT	-10.131	0.114	-1.838	-0.223	-0.441	-0.552	0.307	0.149	0.3
POL	-2.949	0.033	-0.665	-0.111	-0.186	-0.437	0.093	0.025	0.098
SVK	-8.301	0.201	-3.468	-1.419	-0.573	-1.63	0.602	0.06	-0.281
SVN	-6.469	0.115	-1.407	-0.368	-0.168	-0.548	0.12	-0.047	-0.063
BGR	0	0.195	-3.788	-1.611	-0.795	-2.004	0.934	0.429	-0.19
ROM	-5.6	0.106	-1.788	-0.65	-0.319	-0.879	0.249	-0.002	-0.117
USA	0	0	0.02	0.004	0.006	-0.02	-0.025	-0.023	-0.005
JPN	0	0	0.008	0.001	0.008	0	-0.009	-0.007	-0.009
EU	-7.342	0.122	-1.708	-0.391	-0.328	-0.704	0.19	-0.028	0.065

Table B.10: CCCTB all firms + CBIT

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	-6.824	0.094	-2.072	-0.425	-0.299	-0.851	0.207	-0.037	0.029
BEL	-11.365	0.701	-4.887	-0.29	-0.51	-1.419	0.145	-0.116	0.224
DNK	-5.849	0.298	-2.829	-0.368	-0.198	-0.736	0.182	-0.029	-0.025
FIN	-7.406	0.213	-2.485	-0.309	-0.286	-0.863	0.183	-0.031	0.103
FRA	-12.905	0.14	-2.232	-0.247	-0.454	-0.446	0.225	-0.034	0.235
DEU	-7.891	0.179	-2.363	-0.467	-0.326	-0.825	0.228	-0.019	-0.004
GRC	-8.871	0.161	-2.331	-0.735	-0.348	-1.098	0.227	-0.082	-0.131
HRV	-9.08	0.398	-6.246	-1.649	-0.692	-2.293	1.172	0.471	-0.197
IRL	5.102	0.431	-3.204	-0.324	-0.05	-1.809	0.073	-0.027	-0.139
ITA	-13.749	0.332	-3.795	-0.768	-0.363	-1.299	0.257	-0.131	-0.159
LUX	-8.528	0.055	-5.574	-1.846	-1.379	-2.546	-0.038	-0.805	0.104
NLD	-4.144	0.15	-1.507	0.368	-0.626	-0.89	0.12	0.06	0.737
PRT	-11.111	0.295	-3.348	-0.35	-0.248	-0.982	0.245	0.082	0.038
ESP	-7.318	0.032	-1.758	-0.131	-0.459	-0.694	0.152	-0.017	0.296
SWE	-7.608	0.3	-2.575	0.002	-0.182	-0.409	0.182	0.125	0.195
GBR	0.407	-0.266	1.339	0.339	-0.031	0.073	-0.047	0.044	0.272
CYP	1.994	0.34	-4.547	-1.535	-0.576	-2.051	0.887	0.362	-0.375
CZE	-5.191	0.124	-1.954	-0.363	-0.171	-0.935	0.175	0.034	-0.025
EST	-9.56	0.294	-4.841	-1.69	-0.631	-2.243	0.755	0.114	-0.236
HUN	-5.471	0.114	-2.006	-0.397	-0.203	-0.954	0.182	-0.008	-0.051
LVA	-4.502	0.29	-5.068	-1.988	-0.906	-2.527	1.037	0.275	-0.38
LTU	-4.555	0.29	-5.114	-2.079	-0.861	-2.531	1.035	0.307	-0.348
MLT	-11.118	0.078	-1.683	-0.269	-0.357	-0.06	0.291	0.143	0.196
POL	-2.108	0.075	-1.105	-0.09	-0.13	-0.593	0.106	0.055	0.061
SVK	-7.899	0.23	-3.738	-1.239	-0.491	-1.781	0.576	0.105	-0.253
SVN	-6.023	0.146	-1.783	-0.155	-0.14	-0.706	0.156	0.07	0.043
BGR	0.108	0.207	-3.97	-1.386	-0.719	-2.112	0.926	0.487	-0.131
ROM	-5.505	0.118	-1.953	-0.496	-0.242	-0.942	0.221	0.03	-0.09
USA	0	0	0.014	0.002	0.007	-0.02	-0.019	-0.017	-0.006
JPN	0	0	0.009	0	0.009	0	-0.006	-0.004	-0.01
EU	-7.243	0.133	-2.054	-0.328	-0.322	-0.796	0.189	-0.009	0.108

Table B.11: CCTB MNEs only + ACE

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	10.072	-0.212	2.541	0.795	0.4	0.875	-0.549	-0.139	0.097
BEL	-11.286	0.044	-1.884	-0.237	-0.697	0.573	0.601	0.306	0.397
DNK	3.126	-0.143	0.729	0.189	0.055	0.401	-0.026	0.066	0.062
FIN	2.38	-0.142	0.613	0.144	0.046	0.369	-0.04	0.031	0.04
FRA	0.306	-0.264	1.123	0.209	0.254	0.491	-0.192	-0.022	-0.088
DEU	5.107	-0.362	3.832	1.322	0.584	1.554	-0.716	-0.11	0.302
GRC	-9.187	-0.142	-0.4	-0.302	0.066	-0.082	-0.067	-0.131	-0.218
HRV	-9.187	0.093	-2.899	-0.979	-0.234	-0.061	0.57	0.185	-0.35
IRL	3.445	-0.097	0.843	0.407	-0.037	0.7	-0.001	0.1	0.271
ITA	4.865	-0.014	0.682	0.209	0.072	0.215	-0.1	-0.003	0.066
LUX	5.836	-0.187	2.633	0.637	0.696	1.16	-1.536	-1.239	-0.273
NLD	8.821	-0.245	2.36	0.612	0.34	0.38	-0.501	-0.173	0.043
PRT	-2.934	-0.154	0.223	0.039	0.117	0.543	-0.031	0.009	-0.098
ESP	1.697	-0.561	6.606	2.251	1.036	2.676	-1.227	-0.293	0.452
SWE	4.783	-0.133	0.934	0.267	0.097	0.424	-0.106	0.03	0.062
GBR	10.923	-0.827	10.562	2.573	1.015	2.395	-1.692	-0.564	0.601
CYP	1.22	-0.045	0.158	0.093	0.057	0.277	0.001	0.037	0.005
CZE	3.563	-0.129	0.646	0.21	0.094	0.42	-0.069	0.011	0.019
EST	-10.066	-0.007	-2.517	-1.451	-0.125	-0.547	0.446	-0.043	-0.632
HUN	7.256	-0.116	0.913	0.259	0.146	0.419	-0.135	-0.008	0.021
LVA	-4.686	-0.016	-1.199	-0.561	-0.128	-0.307	0.223	0.034	-0.201
LTU	-4.686	0.01	-2.44	-1.195	-0.324	-0.995	0.493	0.108	-0.348
MLT	1.931	-0.413	5.643	2.251	0.792	2.891	-0.996	-0.281	0.432
POL	15.283	-0.089	2.199	0.729	0.328	0.798	-0.348	-0.085	0.127
SVK	-6.451	-0.072	-0.235	-0.162	0.099	0.471	0.008	-0.016	-0.166
SVN	3.223	-0.111	0.444	0.147	0.039	0.388	-0.012	0.048	0.054
BGR	1.559	-0.059	0.255	0.086	0.058	0.3	-0.013	0.016	-0.004
ROM	5.398	-0.083	0.487	0.146	0.105	0.287	-0.051	0.012	-0.001
USA	0	0	-0.026	-0.001	-0.021	0.01	0.026	0.021	0.023
JPN	0	0	-0.01	0	-0.01	-0.001	0.013	0.011	0.011
EU	4.512	-0.288	3.058	0.883	0.4	1.055	-0.552	-0.132	0.19

Table B.12: CCCTB MNEs only + ACE

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	7.214	-0.302	2.695	1.076	0.523	0.981	-0.699	-0.149	0.148
BEL	0.845	0.255	-1.115	0.706	-0.281	-0.206	-0.209	-0.02	0.621
DNK	9.127	-0.051	0.679	0.407	0.22	0.271	-0.364	-0.129	0.025
FIN	7.581	-0.083	0.898	0.518	0.174	0.357	-0.235	0.024	0.135
FRA	-0.916	-0.315	2.57	1.05	0.536	1.342	-0.745	-0.162	0.187
DEU	4.756	-0.417	3.933	1.522	0.845	1.596	-1.022	-0.273	0.192
GRC	4.446	0.007	0.062	0.132	0.082	0.039	-0.04	0.021	0.008
HRV	-8.011	0.098	-0.353	0.63	0.094	-0.136	0.035	0.272	0.299
IRL	17.988	0.051	0.763	0.928	0.206	-0.342	-0.303	-0.002	0.337
ITA	4.589	-0.058	0.35	0.35	0.109	0.205	-0.179	-0.019	0.119
LUX	4.246	-0.329	3.858	2.745	0.375	1.88	-2.146	-1.225	1.541
NLD	8.633	-0.313	2.628	1.285	-0.048	0.317	-0.407	0.045	0.744
PRT	5.628	-0.073	0.691	0.498	0.174	0.404	-0.202	-0.016	0.132
ESP	1.583	-0.626	8.496	3.058	1.829	3.348	-2.029	-0.634	0.257
SWE	7.106	-0.131	1.238	0.782	0.115	0.521	-0.315	0.028	0.361
GBR	10.505	-0.922	9.526	2.437	1.402	2.121	-1.892	-0.669	0.05
CYP	11.889	0.038	0.038	0.363	0.171	-0.119	-0.093	0.038	0.06
CZE	10.131	-0.048	0.597	0.432	0.252	0.217	-0.186	-0.01	-0.02
EST	-4.86	0.065	-0.155	0.444	0.093	-0.163	-0.057	0.1	0.136
HUN	10.543	-0.101	0.902	0.422	0.323	0.369	-0.248	-0.021	-0.04
LVA	2.083	0.017	0.123	0.243	0.106	0.024	-0.008	0.084	0.049
LTU	-0.99	0.05	-0.073	0.131	0.069	-0.116	-0.003	0.046	0.008
MLT	0.724	-0.486	7.548	3.599	1.495	4.211	-1.804	-0.601	0.457
POL	15.173	-0.164	1.791	0.791	0.527	0.76	-0.385	-0.064	-0.011
SVK	4.602	-0.019	0.535	0.49	0.163	0.183	-0.061	0.118	0.124
SVN	8.116	-0.079	0.582	0.398	0.172	0.163	-0.109	0.07	0.078
BGR	5.172	-0.042	0.853	0.65	0.249	0.189	-0.068	0.127	0.138
ROM	9.421	-0.072	0.693	0.43	0.239	0.303	-0.122	0.05	0.054
USA	0	0	-0.014	-0.003	-0.005	0.028	0.03	0.029	0.004
JPN	0	0	0.004	-0.001	0.004	0.011	0.016	0.017	-0.005
EU	5.814	-0.32	3.363	1.256	0.649	1.165	-0.852	-0.227	0.184

Table B.13: CCTB all firms + ACE

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	8.432	-0.237	3.594	1.08	0.455	1.29	-0.474	0.058	0.219
BEL	-6.335	0.125	-1.977	-0.345	-0.592	-0.064	0.546	0.24	0.255
DNK	4.442	-0.119	1.572	0.424	0.111	0.556	-0.105	0.097	0.152
FIN	4.408	-0.11	1.443	0.41	0.116	0.559	-0.11	0.087	0.129
FRA	0.306	-0.264	3.065	1.056	0.272	1.144	-0.484	0.002	0.419
DEU	5.107	-0.362	5.736	1.966	0.752	2.257	-0.918	-0.05	0.551
GRC	1.672	-0.015	0.236	0.071	0.038	0.131	-0.001	0.03	0.009
HRV	-7.48	0.1	-1.459	-0.426	-0.123	0.135	0.151	-0.02	-0.123
IRL	3.818	-0.093	1.464	0.617	0.058	0.827	-0.086	0.095	0.301
ITA	1.66	-0.043	0.648	0.207	0.063	0.274	-0.045	0.049	0.072
LUX	5.607	-0.193	3.691	0.832	1.179	1.91	-1.104	-0.68	-0.638
NLD	7.058	-0.266	3.065	0.858	0.347	0.793	-0.428	-0.008	0.171
PRT	3.945	-0.072	1.115	0.323	0.123	0.451	-0.07	0.054	0.074
ESP	1.697	-0.561	9.101	3.582	1.125	3.757	-1.578	-0.244	1.149
SWE	5.356	-0.126	1.812	0.485	0.168	0.626	-0.162	0.082	0.12
GBR	10.923	-0.827	10.861	2.297	0.979	2.47	-1.361	-0.33	0.453
CYP	2.517	-0.034	0.645	0.258	0.079	0.423	-0.039	0.046	0.077
CZE	4.901	-0.106	1.576	0.583	0.159	0.713	-0.161	0.046	0.15
EST	-4.469	0.072	-1.43	-0.527	-0.193	-0.293	0.185	-0.014	-0.076
HUN	6.02	-0.139	2.077	0.694	0.256	0.92	-0.237	0.074	0.173
LVA	0.185	0.012	-0.165	-0.077	0.001	0.047	0.035	0.013	-0.041
LTU	-1.909	0.042	-0.755	-0.321	-0.076	-0.234	0.08	-0.021	-0.103
MLT	1.931	-0.413	6.43	2.793	0.705	3.097	-1.134	-0.315	0.805
POL	8.137	-0.23	3.692	1.263	0.475	1.577	-0.421	0.017	0.3
SVK	2.321	-0.02	0.404	0.157	0.057	0.299	-0.004	0.055	0.035
SVN	4.392	-0.098	1.259	0.38	0.114	0.535	-0.095	0.065	0.125
BGR	3.146	-0.045	0.86	0.33	0.12	0.493	-0.075	0.024	0.077
ROM	5.314	-0.084	1.488	0.519	0.242	0.717	-0.154	0.044	0.103
USA	0	0	-0.025	-0.002	-0.019	0.012	0.026	0.022	0.02
JPN	0	0	-0.009	0	-0.009	-0.001	0.014	0.011	0.01
EU	4.227	-0.295	4.24	1.317	0.464	1.493	-0.628	-0.052	0.388

Table B.14: CCCTB all firms + ACE

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.974	-0.317	3.816	1.38	0.541	1.417	-0.657	0.01	0.318
BEL	0.095	0.24	-1.394	0.517	-0.124	-0.182	-0.198	-0.035	0.391
DNK	7.079	-0.092	1.425	0.61	0.344	0.579	-0.381	-0.024	0.021
FIN	5.456	-0.118	1.698	0.773	0.265	0.641	-0.304	0.084	0.196
FRA	-1.538	-0.331	3.625	1.454	0.521	1.651	-0.849	-0.124	0.45
DEU	4.269	-0.423	6.248	2.459	0.94	2.558	-1.237	-0.152	0.687
GRC	2.341	-0.02	0.267	0.191	0.117	0.131	-0.052	0.037	0.012
HRV	-8.078	0.097	-1.143	0.261	0.041	-0.394	0.072	0.171	0.122
IRL	15.723	0.019	1.715	1.338	0.496	0.204	-0.408	0.076	0.289
ITA	2.584	-0.074	0.823	0.508	0.192	0.422	-0.216	0.026	0.144
LUX	3.09	-0.353	4.762	2.713	0.989	2.589	-2.065	-1.07	0.869
NLD	7.422	-0.324	3.596	1.619	0.111	0.777	-0.497	0.125	0.79
PRT	4.036	-0.093	1.398	0.73	0.268	0.684	-0.261	0.016	0.179
ESP	1.313	-0.631	10.28	4.393	1.546	4.358	-2.087	-0.397	1.265
SWE	5.202	-0.152	2.011	0.991	0.192	0.781	-0.376	0.074	0.407
GBR	9.946	-0.93	12.071	3.274	1.323	3.054	-1.938	-0.489	0.721
CYP	9.086	0.012	0.427	0.475	0.271	0.115	-0.124	0.057	0.042
CZE	6.457	-0.11	1.656	0.863	0.394	0.692	-0.314	0.019	0.066
EST	-4.13	0.076	-0.855	0.024	0.022	-0.453	0.008	0.019	-0.011
HUN	6.6	-0.168	2.281	0.972	0.518	0.972	-0.414	0.057	0.103
LVA	0.961	0.01	0.012	0.165	0.112	-0.014	0.002	0.073	0.003
LTU	-1.374	0.045	-0.54	-0.115	0.034	-0.31	0.037	0.013	-0.091
MLT	-0.125	-0.498	8.048	4.004	1.282	4.366	-1.808	-0.563	0.88
POL	9.914	-0.255	4.061	1.645	0.79	1.76	-0.639	-0.033	0.24
SVK	3.151	-0.028	0.753	0.543	0.199	0.287	-0.084	0.119	0.122
SVN	5.313	-0.107	1.34	0.637	0.26	0.438	-0.182	0.102	0.139
BGR	3.896	-0.052	1.309	0.803	0.313	0.412	-0.126	0.116	0.166
ROM	6.377	-0.099	1.643	0.773	0.39	0.753	-0.225	0.076	0.128
USA	0	0	-0.019	-0.003	-0.01	0.018	0.028	0.025	0.01
JPN	0	0	-0.002	-0.001	-0.002	0.004	0.015	0.014	0.002
EU	4.331	-0.341	4.78	1.836	0.689	1.764	-0.952	-0.134	0.515

Table B.15: CCTB MNEs only + ACC

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	10.072	0.052	0.832	0.164	0.165	0.128	-0.199	-0.09	-0.061
BEL	-11.286	0.155	-2.863	-0.605	-0.738	0.209	0.833	0.385	0.216
DNK	3.126	0.042	-0.694	-0.244	-0.09	-0.094	0.26	0.135	-0.06
FIN	2.38	0.025	-0.798	-0.279	-0.127	-0.141	0.252	0.102	-0.039
FRA	0.306	-0.021	-0.743	-0.294	-0.021	-0.112	0.195	0.081	-0.164
DEU	5.107	-0.085	1.984	0.702	0.289	0.81	-0.32	-0.005	0.18
GRC	-9.187	-0.09	-0.939	-0.484	-0.061	-0.33	0.081	-0.072	-0.219
HRV	-9.187	0.154	-3.417	-1.137	-0.325	-0.295	0.697	0.242	-0.336
IRL	3.445	-0.019	-0.071	0.032	-0.176	0.178	0.203	0.168	0.189
ITA	4.865	0.296	-0.329	-0.272	-0.05	-0.283	0.118	0.006	-0.122
LUX	5.836	0.046	0.616	-0.403	0.894	0.546	-0.913	-0.92	-1.199
NLD	8.821	-0.047	0.679	0.099	0.119	-0.228	-0.165	-0.092	-0.048
PRT	-2.934	0.018	-1.339	-0.436	-0.147	-0.074	0.321	0.159	-0.122
ESP	1.697	-0.36	3.879	1.51	0.492	1.633	-0.66	-0.095	0.473
SWE	4.783	0.097	-0.659	-0.241	-0.046	-0.112	0.226	0.117	-0.1
GBR	10.923	-0.592	9.005	2.176	0.853	1.864	-1.463	-0.512	0.517
CYP	1.22	0.026	-0.365	-0.128	-0.024	0.011	0.135	0.095	-0.05
CZE	3.563	-0.006	-0.424	-0.191	-0.12	-0.13	0.172	0.093	0.016
EST	-10.066	0.035	-3.163	-1.664	-0.269	-0.863	0.615	0.036	-0.595
HUN	7.256	0.058	-0.355	-0.219	-0.091	-0.222	0.123	0.023	-0.046
LVA	-4.686	0.044	-1.746	-0.761	-0.264	-0.596	0.364	0.089	-0.205
LTU	-4.686	0.053	-2.918	-1.358	-0.44	-1.234	0.617	0.165	-0.333
MLT	1.931	-0.149	1.785	0.845	0.075	1.148	-0.177	0.036	0.378
POL	15.283	0.133	1.191	0.295	0.163	0.241	-0.199	-0.086	0.026
SVK	-6.451	0.002	-1.004	-0.439	-0.079	0.068	0.205	0.06	-0.165
SVN	3.223	0.025	-0.392	-0.114	-0.104	0.016	0.16	0.097	0.033
BGR	1.559	0.001	-0.284	-0.112	-0.071	0.002	0.112	0.075	0.002
ROM	5.398	0.057	-0.472	-0.233	-0.109	-0.226	0.158	0.069	-0.046
USA	0	0	-0.024	-0.001	-0.018	0.012	0.026	0.022	0.02
JPN	0	0	-0.004	-0.001	-0.004	0.004	0.014	0.013	0.005
EU	4.512	-0.068	1.535	0.391	0.167	0.445	-0.233	-0.051	0.093

Table B.16: CCCTB MNEs only + ACC

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	4.598	-0.115	0.279	0.165	0.058	0.001	-0.139	-0.062	0.046
BEL	-1.427	0.416	-1.842	0.722	-0.274	-0.397	-0.126	0.071	0.625
DNK	5.251	0.096	-0.333	0.196	0.074	-0.036	-0.143	-0.041	0.046
FIN	2.806	0.027	-0.007	0.367	0.055	0.049	-0.094	0.067	0.165
FRA	-2.496	-0.125	0.676	0.432	0.118	0.616	-0.246	-0.045	0.167
DEU	3.865	-0.144	1.068	0.556	0.285	0.53	-0.349	-0.083	0.094
GRC	-0.472	0.063	-0.276	0.026	0.012	-0.121	0.009	0.019	0.005
HRV	-8.524	0.165	-1.164	0.472	-0.003	-0.44	0.16	0.324	0.324
IRL	15.127	0.184	-0.445	0.669	0.093	-0.804	-0.175	0.028	0.296
ITA	-1.868	0.136	-0.553	0.15	0.019	-0.07	-0.014	0.046	0.075
LUX	1.436	-0.184	1.079	1.306	0.121	0.783	-1.416	-0.986	0.793
NLD	5.748	-0.155	1.383	1.168	-0.215	-0.044	-0.241	0.115	0.824
PRT	-0.03	0.076	-0.214	0.432	0.089	0.147	-0.064	0.082	0.179
ESP	1.107	-0.423	4.6	1.897	1.018	1.932	-1.202	-0.374	0.263
SWE	2.899	0.05	0.23	0.67	0.067	0.324	-0.146	0.138	0.344
GBR	9.493	-0.7	6.087	1.591	0.887	1.172	-1.214	-0.429	0.073
CYP	7.903	0.133	-0.482	0.213	0.142	-0.261	-0.021	0.064	0.003
CZE	4.98	0.009	-0.027	0.307	0.132	-0.064	-0.083	0.034	0.032
EST	-7.652	0.082	-0.701	0.309	0.016	-0.372	-0.012	0.09	0.146
HUN	5.03	-0.027	0.148	0.293	0.161	0.021	-0.111	0.033	0.028
LVA	-2.544	0.071	-0.315	0.127	0.057	-0.165	0.027	0.076	0.024
LTU	-3.701	0.07	-0.368	0.057	0.022	-0.243	0.019	0.038	0.011
MLT	-0.663	-0.252	3.158	1.717	0.65	2.269	-0.771	-0.216	0.288
POL	10.087	-0.067	0.726	0.494	0.275	0.278	-0.188	0.001	0.041
SVK	-1.206	0.07	-0.199	0.31	0.087	-0.123	0.015	0.124	0.091
SVN	2.848	0.011	-0.037	0.33	0.09	-0.057	-0.021	0.116	0.118
BGR	1.951	0	0.248	0.543	0.178	-0.075	-0.012	0.148	0.144
ROM	3.499	0.012	0.023	0.248	0.112	-0.001	-0.023	0.071	0.052
USA	0	0	-0.012	-0.003	-0.003	0.019	0.025	0.024	0.002
JPN	0	0	0.007	-0.001	0.007	0.012	0.014	0.016	-0.009
EU	2.885	-0.141	1.41	0.707	0.298	0.483	-0.412	-0.091	0.163

Table B.17: CCTB All firms + ACC

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	3.442	-0.117	1.635	0.582	0.146	0.579	-0.184	0.072	0.216
BEL	-10.392	0.176	-2.638	-0.464	-0.713	-0.141	0.585	0.198	0.278
DNK	0.567	-0.027	0.37	0.167	-0.017	0.233	0.015	0.072	0.125
FIN	0.226	-0.025	0.194	0.12	-0.044	0.094	0.004	0.037	0.118
FRA	-0.035	-0.034	0.402	0.195	-0.015	0.174	-0.019	0.047	0.133
DEU	3.374	-0.129	1.864	0.629	0.181	0.708	-0.161	0.099	0.23
GRC	-2.201	0.033	-0.567	-0.191	-0.108	-0.243	0.074	-0.012	-0.02
HRV	-9.187	0.154	-2.287	-0.723	-0.215	-0.299	0.285	-0.006	-0.202
IRL	1.648	-0.051	0.641	0.354	-0.06	0.424	-0.014	0.066	0.262
ITA	-5.255	0.087	-1.255	-0.29	-0.192	-0.359	0.162	-0.002	-0.013
LUX	1.987	-0.09	1.635	0.548	0.357	0.893	-0.598	-0.376	0.016
NLD	3.279	-0.159	1.426	0.515	0.008	0.288	-0.179	0.01	0.274
PRT	-1.999	0.037	-0.439	-0.047	-0.087	0.05	0.111	0.075	0.061
ESP	1.697	-0.36	5.219	2.16	0.503	2.08	-0.805	-0.055	0.841
SWE	0.364	0.002	0.323	0.173	0.008	0.406	0.053	0.123	0.099
GBR	10.327	-0.61	7.652	1.509	0.679	1.575	-0.879	-0.191	0.259
CYP	0.022	0.008	0.027	0.048	0.041	0.247	0.022	0.042	-0.006
CZE	1.666	-0.05	0.642	0.29	0.025	0.283	-0.055	0.038	0.127
EST	-7.241	0.087	-1.794	-0.642	-0.247	-0.549	0.173	-0.072	-0.081
HUN	2.425	-0.066	0.885	0.344	0.07	0.396	-0.095	0.046	0.135
LVA	-3.995	0.053	-0.872	-0.344	-0.109	-0.287	0.083	-0.039	-0.1
LTU	-4.235	0.06	-1.118	-0.448	-0.138	-0.438	0.096	-0.052	-0.115
MLT	1.931	-0.149	2.031	0.93	0.136	0.925	-0.264	-0.017	0.364
POL	4.943	-0.154	2.321	0.862	0.249	0.953	-0.245	0.038	0.27
SVK	-3.154	0.045	-0.705	-0.25	-0.098	-0.169	0.098	0.003	-0.051
SVN	0.622	-0.022	0.273	0.113	0.007	0.15	-0.009	0.032	0.064
BGR	0.655	-0.012	0.21	0.099	0.018	0.153	-0.008	0.019	0.039
ROM	1.061	-0.018	0.312	0.126	0.041	0.174	-0.02	0.025	0.039
USA	0	0	-0.023	-0.001	-0.019	0.002	0.019	0.014	0.021
JPN	0	0	-0.006	0	-0.006	-0.001	0.011	0.009	0.006
EU	1.563	-0.139	1.828	0.573	0.136	0.598	-0.205	0.012	0.22

Table B.18: CCCTB All firms+ ACC

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	1.846	-0.176	1.597	0.761	0.218	0.574	-0.315	0.028	0.256
BEL	-2.412	0.387	-2.337	0.488	-0.25	-0.526	-0.13	-0.016	0.472
DNK	2.994	0.031	0.166	0.426	0.173	0.205	-0.228	-0.003	0.086
FIN	1.02	-0.016	0.376	0.509	0.084	0.172	-0.168	0.058	0.221
FRA	-3.532	-0.163	1.045	0.577	0.109	0.709	-0.283	-0.033	0.264
DEU	2.559	-0.175	2.003	0.875	0.302	0.864	-0.362	0.013	0.276
GRC	-1.939	0.034	-0.525	-0.055	-0.026	-0.241	0.01	-0.013	-0.009
HRV	-8.69	0.163	-2.456	-0.1	-0.111	-0.874	0.311	0.255	0.082
IRL	13.074	0.14	0.228	1.009	0.318	-0.392	-0.278	0.073	0.274
ITA	-3.819	0.1	-1.149	0.035	-0.028	-0.273	-0.015	-0.011	0.044
LUX	0.19	-0.22	1.091	0.989	0.253	0.852	-1.323	-0.975	0.433
NLD	4.449	-0.178	2.003	1.383	-0.156	0.236	-0.332	0.121	0.892
PRT	-1.428	0.046	-0.208	0.478	0.109	0.166	-0.107	0.057	0.187
ESP	0.647	-0.436	6.117	2.815	0.84	2.63	-1.245	-0.211	0.942
SWE	1.016	0.01	0.555	0.795	0.099	0.45	-0.215	0.128	0.386
GBR	8.664	-0.721	8.334	2.188	0.854	1.97	-1.226	-0.271	0.524
CYP	5.339	0.089	-0.387	0.268	0.22	-0.112	-0.05	0.065	-0.028
CZE	2.438	-0.05	0.628	0.599	0.222	0.232	-0.19	0.032	0.096
EST	-7.07	0.093	-1.465	-0.13	-0.071	-0.696	0.029	-0.024	0.005
HUN	2.282	-0.092	0.995	0.663	0.289	0.396	-0.248	0.059	0.127
LVA	-3.607	0.057	-0.793	-0.086	0.012	-0.37	0.04	0.018	-0.054
LTU	-3.981	0.065	-0.999	-0.244	-0.038	-0.513	0.051	-0.022	-0.096
MLT	-1.472	-0.273	3.483	1.795	0.545	2.337	-0.739	-0.191	0.43
POL	6.112	-0.163	2.504	1.203	0.498	1.063	-0.418	0.008	0.247
SVK	-2.617	0.05	-0.486	0.169	0.069	-0.245	0.007	0.072	0.032
SVN	0.915	-0.023	0.283	0.419	0.128	0.057	-0.081	0.096	0.135
BGR	0.992	-0.013	0.437	0.578	0.203	0.026	-0.055	0.116	0.14
ROM	1.434	-0.022	0.389	0.39	0.182	0.176	-0.091	0.057	0.077
USA	0	0	-0.02	-0.003	-0.012	0.005	0.021	0.017	0.012
JPN	0	0	0	-0.001	0	0.003	0.012	0.011	0
EU	1.351	-0.177	2.166	1.006	0.305	0.786	-0.454	-0.044	0.343

Table B.19: CCTB MNEs only + ACE with discrete location

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	10.072	-0.212	2.115	0.49	0.341	0.464	-0.557	-0.275	-0.032
BEL	-10.071	0.063	-0.866	1.6	-0.94	2.569	0.666	1.001	1.648
DNK	3.093	-0.144	0.64	0.072	0.097	0.295	-0.03	0.032	-0.057
FIN	2.32	-0.143	0.526	0.072	0.067	0.297	-0.048	0.002	-0.024
FRA	0.306	-0.264	1.492	0.425	0.312	0.772	-0.249	0.023	-0.005
DEU	5.107	-0.362	3.843	1.304	0.602	1.55	-0.72	-0.115	0.275
GRC	-9.187	-0.142	-0.088	-0.114	0.174	0.402	-0.086	-0.066	-0.2
HRV	-9.187	0.093	-2.396	-0.372	-0.1	1.161	0.564	0.417	-0.118
IRL	3.443	-0.097	0.608	0.144	-0.03	0.255	-0.022	0.009	0.113
ITA	4.865	-0.014	0.677	0.076	0.057	0.035	-0.117	-0.072	-0.003
LUX	5.651	-0.192	1.709	-0.075	0.41	0.149	-1.739	-1.707	-0.475
NLD	8.729	-0.246	1.443	0.067	0.203	-0.269	-0.475	-0.389	-0.136
PRT	-2.764	-0.152	0.591	0.469	0.182	1.224	-0.027	0.153	0.105
ESP	1.697	-0.561	7.402	2.557	1.185	3.147	-1.315	-0.252	0.503
SWE	4.757	-0.133	0.755	-0.026	0.125	0.121	-0.116	-0.086	-0.149
GBR	10.923	-0.827	10.468	2.487	1.005	2.274	-1.699	-0.601	0.554
CYP	1.119	-0.046	0.179	0.064	0.104	0.28	-0.005	0.032	-0.046
CZE	3.527	-0.129	0.473	0.099	0.047	0.197	-0.072	-0.034	0.006
EST	-10.066	-0.007	-1.127	-0.599	0.121	0.863	0.327	0.151	-0.441
HUN	7.288	-0.116	0.552	0.031	0.067	0.015	-0.151	-0.124	-0.04
LVA	-4.686	-0.016	-1.024	-0.392	-0.069	0.024	0.223	0.096	-0.156
LTU	-4.686	0.01	-2.294	-1.105	-0.294	-0.824	0.487	0.131	-0.328
MLT	1.931	-0.413	6.224	2.935	0.748	3.517	-1.022	-0.159	0.834
POL	15.283	-0.089	1.89	0.542	0.275	0.519	-0.36	-0.157	0.068
SVK	-6.858	-0.074	0.483	0.406	0.298	1.614	-0.021	0.166	-0.031
SVN	3.193	-0.111	0.326	0.051	0.006	0.178	-0.024	-0.005	0.027
BGR	1.502	-0.059	0.202	0.055	0.046	0.217	-0.015	0.005	-0.011
ROM	5.422	-0.083	0.389	0.059	0.079	0.118	-0.059	-0.026	-0.03
USA	0	0	-0.027	-0.001	-0.021	0.009	0.026	0.021	0.023
JPN	0	0	-0.01	0	-0.01	-0.002	0.014	0.011	0.011
EU	4.532	-0.288	3.137	0.918	0.412	1.111	-0.572	-0.135	0.201

Table B.20: CCCTB MNEs only + ACE with discrete location

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	8.723	-0.282	2.597	1.103	0.459	0.899	-0.697	-0.156	0.229
BEL	1.774	0.275	-1.833	1.072	-1.023	-0.672	-0.26	-0.15	1.405
DNK	9.603	-0.042	0.353	0.24	0.062	-0.082	-0.343	-0.23	0.087
FIN	8.449	-0.069	0.485	0.327	0.025	-0.009	-0.213	-0.077	0.172
FRA	-0.841	-0.313	3.753	2.163	0.625	2.554	-0.971	0.052	0.797
DEU	4.932	-0.415	4.314	1.875	0.908	2.035	-1.08	-0.196	0.355
GRC	5.32	0.019	-0.064	0.084	0.01	-0.091	-0.04	-0.014	0.038
HRV	-5.287	0.108	-0.577	0.001	-0.082	-0.641	0.004	-0.011	0.11
IRL	18.475	0.058	-1.122	-0.4	-0.695	-2.479	-0.259	-0.538	0.438
ITA	4.681	-0.058	0.286	0.486	0.049	0.288	-0.185	0.004	0.251
LUX	5.018	-0.312	1.398	3.744	-2.708	-0.378	-2.354	-1.542	5.587
NLD	9.268	-0.307	2.143	1.304	-0.515	-0.133	-0.403	-0.091	1.161
PRT	5.672	-0.072	0.673	0.644	0.09	0.463	-0.204	0.003	0.312
ESP	1.642	-0.625	11.594	4.572	2.254	5.251	-2.337	-0.383	0.764
SWE	7.883	-0.122	1.071	0.74	-0.001	0.338	-0.306	-0.017	0.459
GBR	10.746	-0.919	10.627	3.201	1.419	2.946	-2	-0.539	0.558
CYP	14.268	0.062	-0.414	-0.114	-0.329	-1.079	-0.114	-0.208	0.195
CZE	10.549	-0.041	0.16	0.106	0.096	-0.265	-0.149	-0.1	-0.038
EST	-1.081	0.123	-1.075	-0.06	-0.261	-0.813	-0.012	-0.07	0.241
HUN	11.627	-0.081	0.471	0.177	0.224	-0.018	-0.209	-0.094	-0.093
LVA	3.873	0.028	-0.25	-0.01	-0.113	-0.366	-0.01	-0.037	0.08
LTU	0.681	0.07	-0.536	-0.113	-0.124	-0.432	0.007	-0.048	0.05
MLT	1.287	-0.477	9.862	7.102	1.066	7.034	-1.917	-0.003	2.741
POL	15.257	-0.163	1.393	0.608	0.425	0.467	-0.354	-0.102	-0.025
SVK	5.201	-0.016	0.087	0.116	-0.001	-0.275	-0.065	-0.032	0.062
SVN	8.819	-0.072	0.319	0.105	0.053	-0.232	-0.109	-0.06	0.013
BGR	6.36	-0.032	0.065	0.084	-0.022	-0.376	-0.069	-0.051	0.069
ROM	9.61	-0.07	0.458	0.215	0.138	0.016	-0.122	-0.033	0.012
USA	0	0	-0.009	-0.003	0	0.035	0.031	0.031	-0.002
JPN	0	0	0.006	-0.001	0.007	0.015	0.017	0.019	-0.008
EU	6.144	-0.316	3.842	1.645	0.625	1.543	-0.935	-0.172	0.486

Table B.21: Broader tax base, CCTB40-CCTB MNEs only

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	-5.648	-0.064	-0.527	-0.157	-0.084	-0.294	-0.053	-0.136	-0.015
BEL	-20.869	0.119	-3.108	-0.793	-0.579	-0.477	0.277	-0.197	-0.013
DNK	-7.947	-0.04	-0.894	-0.235	-0.038	0.023	0.022	-0.081	-0.109
FIN	-11.463	-0.095	-0.738	-0.328	0.027	-0.125	-0.09	-0.208	-0.224
FRA	-15.963	-0.254	0.504	0.018	0.292	0.744	-0.309	-0.193	-0.239
DEU	-8.408	-0.126	-0.329	-0.118	0.04	-0.041	-0.089	-0.116	-0.109
GRC	-9.187	0.052	-3.732	-1.783	-0.548	-1.834	0.701	0.04	-0.551
HRV	-9.187	0.256	-5.557	-2.001	-0.551	-1.832	1.098	0.301	-0.624
IRL	-2.366	0.03	-1.117	-0.404	-0.211	-0.47	0.152	-0.009	-0.03
ITA	-18.719	-0.024	-1.556	-0.468	-0.092	-0.306	0.039	-0.157	-0.204
LUX	-5.633	0.041	-3.216	-0.18	-2.309	-2.227	-0.74	-1.108	2.247
NLD	-5.95	0.015	-1.161	-0.282	-0.271	-0.415	0.017	-0.169	0.076
PRT	-17.667	-0.129	-0.536	-0.355	0.34	0.529	-0.259	-0.275	-0.579
ESP	-6.742	-0.143	0.315	-0.025	0.22	0.039	-0.249	-0.192	-0.193
SWE	-9.216	0.017	-1.337	-0.254	-0.112	0.272	0.114	-0.021	-0.038
GBR	10.853	-0.011	4.417	0.801	0.499	0.091	-1.094	-0.681	-0.021
CYP	0	0.089	-1.665	-0.64	-0.325	-0.812	0.372	0.136	-0.09
CZE	-8.301	-0.095	-0.618	-0.411	0.12	-0.162	-0.023	-0.129	-0.331
EST	-10.066	0.206	-5.819	-3.038	-0.602	-2.717	1.197	0.124	-0.976
HUN	-7.808	-0.101	-0.411	-0.305	0.141	-0.083	-0.092	-0.171	-0.294
LVA	-4.686	0.154	-4.073	-1.816	-0.707	-1.985	0.879	0.208	-0.435
LTU	-4.686	0.199	-5.236	-2.41	-0.858	-2.564	1.152	0.337	-0.528
MLT	-6.67	-0.002	-0.376	-0.166	0.216	-0.082	-0.063	-0.049	-0.293
POL	-1.464	-0.025	-0.109	-0.059	0.02	-0.14	-0.011	-0.023	-0.051
SVK	-8.301	0.085	-3.323	-1.585	-0.405	-1.525	0.635	0.085	-0.503
SVN	-7.408	-0.029	-1.006	-0.356	-0.022	-0.283	0.097	-0.035	-0.204
BGR	0	0.104	-1.988	-0.867	-0.368	-1.051	0.454	0.189	-0.154
ROM	-5.6	0.001	-1.572	-0.725	-0.184	-0.736	0.256	0.012	-0.267
USA	0	0	0.026	0.004	0.011	-0.004	-0.018	-0.014	-0.01
JPN	0	0	0.007	0.001	0.006	-0.001	-0.01	-0.008	-0.006
EU	-7.608	-0.069	-0.151	-0.196	0.054	-0.123	-0.178	-0.201	-0.146

Table B.22: Broader tax base, CCTB40-CCCTB MNEs only

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	-8.93	-0.173	2.904	1.907	1.038	1.565	-1.227	-0.215	0.146
BEL	-7.54	0.697	-3.191	0.182	-0.237	-0.759	0.015	0.016	0.286
DNK	-0.89	0.237	-1.145	-0.005	-0.046	-0.274	0.015	-0.003	0.046
FIN	-3.487	0.204	-1.113	0.017	-0.041	-0.316	0.036	0.03	0.052
FRA	-8.838	0.113	-0.643	0.115	-0.096	0.213	0.02	0.026	0.153
DEU	-2.35	0.092	-0.634	-0.121	-0.07	-0.199	0.01	-0.05	-0.014
GRC	-6.343	0.153	-0.721	-0.18	-0.057	-0.327	0.059	-0.008	-0.054
HRV	-8.853	0.274	-1.8	-0.135	-0.167	-0.723	0.289	0.211	0.133
IRL	9.633	0.453	-2.038	-0.019	0.064	-1.404	-0.029	-0.019	-0.073
ITA	-8.62	0.245	-1.146	-0.089	-0.081	-0.344	0.049	-0.008	0.015
LUX	-4.294	0.075	-3.747	-1.568	-0.749	-1.865	-0.186	-0.782	-0.338
NLD	-0.076	0.244	-0.713	0.501	-0.173	-0.404	-0.013	0.115	0.422
PRT	-6.323	0.212	-1.257	0.215	-0.041	-0.249	0.069	0.12	0.178
ESP	-2.399	0.067	-0.576	-0.006	-0.054	-0.067	-0.018	-0.036	0.04
SWE	-3.16	0.224	-1.222	0.288	-0.066	-0.08	0.025	0.117	0.249
GBR	5.154	-0.32	1.648	0.312	0.2	-0.174	-0.341	-0.178	-0.014
CYP	3.778	0.186	-0.968	0.026	0.023	-0.501	0.04	0.052	-0.004
CZE	-1.819	0.153	-0.932	-0.081	0.006	-0.469	0.038	0.014	-0.048
EST	-9.28	0.249	-1.89	-0.34	-0.175	-0.864	0.206	0.07	0.004
HUN	-1.672	0.135	-0.853	-0.094	0.01	-0.425	0.03	-0.002	-0.062
LVA	-4.341	0.169	-0.969	-0.229	-0.083	-0.506	0.127	0.043	-0.059
LTU	-4.455	0.217	-1.158	-0.361	-0.134	-0.628	0.18	0.056	-0.072
MLT	-5.598	0.044	-0.412	-0.035	-0.043	0.557	0.035	0.016	0.023
POL	2.356	0.122	-0.498	0.023	0.064	-0.264	-0.008	0.012	-0.042
SVK	-6.236	0.142	-0.869	-0.036	-0.014	-0.432	0.058	0.045	-0.007
SVN	-2.854	0.11	-0.568	0.058	-0.008	-0.293	0.037	0.056	0.045
BGR	0.186	0.112	-0.819	0.017	-0.055	-0.55	0.145	0.142	0.061
ROM	-2.111	0.101	-0.596	-0.042	-0.005	-0.308	0.042	0.029	-0.02
USA	0	0	0.005	-0.002	0.009	0.003	0.004	0.006	-0.011
JPN	0	0	0.008	-0.001	0.008	0.004	0.002	0.004	-0.009
EU	-2.937	0.095	-0.485	0.068	-0.011	-0.192	-0.053	-0.026	0.055

Table B.23: EU average tax base, EUav - CCTB MNEs only

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	0.001	0	0.021	0.027	-0.015	-0.085	-0.066	-0.061	0.031
BEL	-19.532	0.105	-2.433	-0.512	-0.419	0.348	0.34	0.021	0.027
DNK	-3.428	-0.007	-0.494	-0.101	-0.041	0.03	0.059	0.005	-0.021
FIN	-7.25	-0.04	-0.731	-0.24	-0.037	-0.064	0.042	-0.063	-0.107
FRA	-8.875	-0.12	-0.323	-0.069	0.013	0.251	0.029	0.009	-0.054
DEU	0.027	0.001	0.017	0.01	0.009	-0.012	-0.023	-0.017	-0.001
GRC	-9.187	-0.002	-2.404	-1.13	-0.33	-1.114	0.413	-0.001	-0.362
HRV	-9.187	0.209	-4.48	-1.573	-0.439	-1.213	0.883	0.255	-0.48
IRL	-1.605	0.003	-0.297	-0.072	-0.017	0.164	0.055	0.032	-0.026
ITA	-11.565	0.061	-0.997	-0.238	-0.153	-0.237	0.116	-0.017	-0.015
LUX	-2.799	0.025	-1.343	-0.071	-0.859	-0.723	-0.524	-0.662	0.833
NLD	1.881	-0.019	0.566	0.195	0.071	-0.093	-0.237	-0.145	0.046
PRT	-12.208	-0.065	-0.899	-0.286	0.064	0.358	0.033	-0.033	-0.247
ESP	0.149	0.001	0.134	0.042	0.038	0.009	-0.045	-0.023	-0.006
SWE	-5.423	0.024	-0.944	-0.154	-0.107	0.271	0.162	0.067	0.019
GBR	10.923	-0.229	6.473	1.382	0.677	0.816	-1.265	-0.616	0.174
CYP	0	0.035	-0.641	-0.233	-0.119	-0.28	0.148	0.062	-0.032
CZE	-5.453	-0.063	-0.36	-0.179	0.045	0.049	0.008	-0.039	-0.137
EST	-10.066	0.153	-4.755	-2.438	-0.483	-2.024	0.968	0.107	-0.782
HUN	-3.173	-0.025	-0.408	-0.186	0.002	-0.049	0.023	-0.044	-0.107
LVA	-4.686	0.104	-2.891	-1.277	-0.484	-1.335	0.61	0.14	-0.314
LTU	-4.686	0.15	-4.117	-1.881	-0.662	-1.948	0.894	0.258	-0.416
MLT	-1.961	0.006	-0.206	-0.037	0.022	0.099	0.029	0.025	-0.04
POL	3.648	0.055	0.534	0.188	0.078	0.115	-0.101	-0.035	0.039
SVK	-8.301	0.035	-2.033	-0.951	-0.208	-0.722	0.361	0.039	-0.33
SVN	-2.25	-0.007	-0.23	-0.059	-0.006	-0.037	0.017	-0.005	-0.032
BGR	0	0.057	-1.072	-0.462	-0.196	-0.519	0.249	0.108	-0.082
ROM	-4.822	-0.035	-0.455	-0.211	0.003	-0.114	0.025	-0.035	-0.123
USA	0	0	0.007	0.001	0.004	0.007	0.008	0.009	-0.004
JPN	0	0	0.002	0	0.002	0.001	0.003	0.004	-0.002
EU	-2.539	-0.029	0.382	0.038	0.044	0.047	-0.134	-0.094	-0.007

Table B.24: EU average tax base, EUav - CCCTB MNEs only

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	-7.785	-0.229	3.761	2.251	1.206	1.85	-1.428	-0.238	0.189
BEL	-4.872	0.648	-2.953	0.265	-0.22	-0.684	-0.044	-0.006	0.321
DNK	1.692	0.159	-0.743	0.116	0.004	-0.179	-0.064	-0.018	0.07
FIN	-1.163	0.155	-0.769	0.11	0.015	-0.188	-0.021	0.027	0.051
FRA	-6.018	0.015	-0.179	0.234	-0.017	0.331	-0.077	0.001	0.159
DEU	0.673	0.01	-0.265	-0.015	0.002	-0.071	-0.084	-0.088	-0.012
GRC	-4.543	0.128	-0.607	-0.128	-0.035	-0.274	0.044	-0.003	-0.043
HRV	-8.719	0.224	-1.555	0.031	-0.105	-0.607	0.225	0.216	0.163
IRL	12.026	0.405	-1.64	0.152	0.129	-1.232	-0.095	-0.023	-0.036
ITA	-5.71	0.183	-0.907	-0.005	-0.053	-0.26	0.005	-0.014	0.041
LUX	-1.729	0.024	-2.303	-0.644	-0.289	-0.853	-0.666	-0.909	-0.156
NLD	2.484	-0.031	1.176	1.202	-0.156	-0.037	-0.122	0.266	0.792
PRT	-3.573	0.149	-0.889	0.325	0.006	-0.116	0.013	0.108	0.199
ESP	0.093	-0.018	0.298	0.283	0.185	0.317	-0.231	-0.099	0.014
SWE	-0.717	0.155	-0.856	0.386	-0.028	-0.013	-0.055	0.087	0.269
GBR	7.626	-0.409	2.672	0.527	0.416	0.083	-0.598	-0.296	-0.115
CYP	5.415	0.135	-0.703	0.155	0.049	-0.42	0.005	0.056	0.045
CZE	0.275	0.123	-0.701	0.012	0.061	-0.357	-0.007	0.007	-0.053
EST	-9.091	0.193	-1.494	-0.11	-0.085	-0.68	0.115	0.066	0.031
HUN	0.543	0.092	-0.547	0.018	0.081	-0.278	-0.026	-0.002	-0.059
LVA	-4.272	0.115	-0.671	-0.06	-0.007	-0.338	0.06	0.041	-0.027
LTU	-4.426	0.164	-0.887	-0.209	-0.075	-0.489	0.122	0.051	-0.045
MLT	-2.585	-0.028	0.365	0.187	0.139	0.946	-0.144	-0.068	-0.033
POL	4.765	0.076	-0.143	0.157	0.153	-0.093	-0.072	0.002	-0.043
SVK	-4.341	0.112	-0.65	0.056	0.016	-0.336	0.037	0.057	0.016
SVN	-0.378	0.031	-0.121	0.196	0.031	-0.141	-0.001	0.076	0.093
BGR	0.219	0.061	-0.412	0.233	0.056	-0.355	0.06	0.126	0.081
ROM	-0.063	0.07	-0.395	0.041	0.037	-0.209	0.014	0.033	-0.006
USA	0	0	0.003	-0.003	0.011	0.017	0.016	0.018	-0.014
JPN	0	0	0.01	-0.001	0.01	0.01	0.008	0.011	-0.012
EU	-0.429	0.018	0.042	0.231	0.086	-0.02	-0.168	-0.056	0.064

Table B.25: Profit shifting, stricter control - CCTB MNEs only

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.472	0.034	0.916	0.275	0.126	0.164	-0.208	-0.07	0.047
BEL	-16.88	0.127	-2.14	-0.498	-0.263	-0.059	0.299	0.031	-0.084
DNK	-2.511	-0.004	-0.301	-0.078	0.033	0.008	0.025	0.007	-0.085
FIN	-3.316	-0.011	-0.363	-0.111	0	-0.08	0.016	-0.027	-0.066
FRA	-6.758	-0.088	-0.34	-0.071	-0.005	0.19	0.081	0.053	-0.039
DEU	5.107	-0.005	1.548	0.507	0.219	0.552	-0.288	-0.058	0.121
GRC	-9.187	-0.04	-1.417	-0.666	-0.163	-0.649	0.193	-0.042	-0.238
HRV	-9.187	0.173	-3.639	-1.268	-0.346	-0.976	0.695	0.19	-0.397
IRL	-0.032	-0.001	0.163	0.003	0.137	-0.066	-0.067	-0.033	-0.13
ITA	-3.798	0.116	0.092	0.046	-0.017	-0.015	-0.035	-0.024	0.042
LUX	-0.261	-0.002	-0.037	0.085	-0.122	0.032	-0.465	-0.455	0.185
NLD	2.674	-0.027	0.82	0.226	0.176	0.048	-0.225	-0.089	-0.027
PRT	-9.119	-0.038	-0.837	-0.26	0.023	0.061	0.063	-0.005	-0.188
ESP	1.697	-0.093	2.104	0.857	0.247	0.913	-0.346	-0.035	0.295
SWE	-1.874	0.012	-0.303	-0.036	-0.018	0.09	0.05	0.03	-0.003
GBR	10.923	-0.399	8.094	1.848	0.775	1.414	-1.406	-0.581	0.382
CYP	0	0.03	-0.51	-0.227	-0.061	-0.371	0.107	0.033	-0.074
CZE	-1.88	-0.018	-0.164	-0.069	0.005	-0.062	0.009	-0.011	-0.041
EST	-10.066	0.114	-3.958	-2.009	-0.384	-1.723	0.774	0.066	-0.658
HUN	0.944	0.019	0.019	-0.014	0.031	-0.017	-0.037	-0.035	-0.034
LVA	-4.686	0.065	-1.96	-0.866	-0.308	-0.919	0.39	0.076	-0.228
LTU	-4.686	0.123	-3.51	-1.6	-0.555	-1.673	0.749	0.209	-0.361
MLT	1.931	-0.024	0.593	0.307	-0.066	0.58	-0.008	0.047	0.226
POL	8.232	0.105	1.359	0.455	0.217	0.407	-0.27	-0.104	0.069
SVK	-8.301	-0.003	-1.003	-0.474	-0.043	-0.278	0.125	-0.021	-0.214
SVN	-1.573	-0.004	-0.151	-0.037	0.001	-0.035	0.009	-0.004	-0.024
BGR	0	0.023	-0.435	-0.193	-0.074	-0.255	0.096	0.039	-0.041
ROM	-0.265	0.006	-0.112	-0.064	0.013	-0.07	0	-0.016	-0.048
USA	0	0	-0.014	-0.002	-0.008	0.02	0.025	0.023	0.008
JPN	0	0	-0.005	0	-0.005	0.003	0.014	0.013	0.006
EU	0.723	-0.043	1.353	0.358	0.159	0.355	-0.269	-0.096	0.081

Table B.26: K-L substitutability, higher - CCTB MNEs only

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	5.21	0.026	1.129	0.249	0.139	0.246	-0.229	-0.091	0.019
BEL	-16.441	0.142	-2.923	-0.409	-0.526	0.218	0.499	0.178	0.172
DNK	-2.355	0.001	-0.476	-0.06	-0.032	0.126	0.09	0.055	-0.005
FIN	-2.947	0	-0.527	-0.085	-0.033	0.008	0.052	0.005	-0.019
FRA	-6.428	-0.072	-0.558	-0.058	-0.065	0.215	0.14	0.092	0.02
DEU	5.107	-0.007	1.846	0.424	0.226	0.557	-0.295	-0.08	0.069
GRC	-9.187	-0.037	-1.532	-0.39	-0.112	-0.393	0.138	-0.03	-0.159
HRV	-9.187	0.172	-4.159	-0.928	-0.261	-0.526	0.573	0.177	-0.307
IRL	-0.025	-0.001	0.078	0.07	0.006	0.3	0.036	0.056	0.035
ITA	-3.735	0.118	0.036	0.029	-0.04	-0.009	-0.007	-0.009	0.056
LUX	-0.231	-0.001	0.125	0.088	0.047	0.22	-0.605	-0.57	0.014
NLD	2.507	-0.031	0.959	0.224	0.137	0.154	-0.18	-0.054	0.007
PRT	-7.95	-0.012	-1.245	-0.198	-0.049	0.217	0.139	0.064	-0.083
ESP	1.697	-0.094	2.475	0.682	0.236	0.83	-0.325	-0.046	0.222
SWE	-1.801	0.013	-0.453	-0.026	-0.069	0.206	0.105	0.073	0.058
GBR	10.923	-0.406	8.971	1.159	0.583	0.803	-1.097	-0.509	0.143
CYP	0	0.03	-0.552	-0.093	-0.056	-0.1	0.096	0.054	-0.009
CZE	-1.797	-0.015	-0.218	-0.045	-0.012	0.08	0.032	0.015	-0.013
EST	-10.066	0.109	-4.748	-1.847	-0.365	-1.724	0.741	0.078	-0.607
HUN	0.868	0.017	0.006	0.006	-0.001	0.108	-0.007	-0.005	0.005
LVA	-4.686	0.065	-2.286	-0.745	-0.273	-0.863	0.361	0.075	-0.204
LTU	-4.686	0.124	-4.1	-1.397	-0.492	-1.676	0.69	0.195	-0.33
MLT	1.931	-0.026	0.649	0.21	-0.022	0.441	-0.021	0.028	0.155
POL	7.97	0.094	1.587	0.4	0.178	0.446	-0.235	-0.084	0.077
SVK	-8.301	-0.003	-1.25	-0.438	-0.048	-0.171	0.137	-0.001	-0.192
SVN	-1.446	-0.002	-0.209	-0.017	-0.015	0.122	0.032	0.022	0.005
BGR	0	0.023	-0.485	-0.143	-0.065	-0.127	0.096	0.049	-0.024
ROM	-0.257	0.006	-0.15	-0.051	0.005	-0.013	0.009	-0.005	-0.035
USA	0	0	-0.004	-0.001	-0.002	0.016	0.021	0.02	0.002
JPN	0	0	-0.001	0	-0.001	0.001	0.01	0.01	0.002
EU	0.784	-0.042	1.483	0.257	0.113	0.324	-0.205	-0.074	0.061

Table B.27: K-L substitutability, higher - CCCTB MNEs only

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	2.828	-0.054	-0.042	0.039	0.076	-0.142	-0.137	-0.098	-0.053
BEL	-3.117	0.577	-3.248	0.39	-0.19	-0.701	-0.081	0.017	0.386
DNK	3.742	0.194	-1.217	0.004	0.062	-0.304	-0.119	-0.095	-0.066
FIN	1.097	0.112	-0.522	0.293	0.064	-0.085	-0.072	0.072	0.122
FRA	-4.733	0.017	-0.205	0.237	0.03	0.378	-0.124	-0.021	0.129
DEU	3.107	-0.079	0.39	0.212	0.117	0.17	-0.211	-0.102	0.031
GRC	-2.465	0.12	-0.612	-0.003	0.006	-0.203	0.017	0.018	-0.008
HRV	-8.522	0.186	-1.77	0.415	-0.009	-0.558	0.148	0.3	0.318
IRL	13.882	0.345	-1.552	0.18	0.193	-1.215	-0.15	-0.054	-0.082
ITA	-2.654	0.126	-0.787	0.123	-0.011	-0.17	-0.046	-0.002	0.092
LUX	-0.096	-0.067	-0.913	0.264	0.285	0.055	-1.215	-1.093	-0.109
NLD	4.351	-0.019	1.246	0.924	-0.048	-0.02	-0.183	0.145	0.567
PRT	-1.967	0.128	-0.92	0.378	0.05	-0.065	-0.045	0.086	0.208
ESP	0.528	-0.155	1.946	0.699	0.399	0.855	-0.474	-0.14	0.089
SWE	1.473	0.083	-0.62	0.386	0.017	-0.007	-0.119	0.039	0.224
GBR	8.153	-0.538	4.492	0.644	0.415	0.115	-0.621	-0.262	-0.033
CYP	7.674	0.173	-1.208	0.243	0.063	-0.605	-0.017	0.075	0.101
CZE	2.357	0.1	-0.696	0.111	0.108	-0.334	-0.047	0.008	-0.049
EST	-8.892	0.148	-1.389	0.094	0.007	-0.609	0.021	0.053	0.042
HUN	2.533	0.056	-0.418	0.151	0.139	-0.207	-0.077	0.017	-0.036
LVA	-3.237	0.088	-0.596	0.057	0.036	-0.281	0.028	0.053	0.004
LTU	-4.379	0.136	-0.887	-0.094	-0.023	-0.446	0.072	0.041	-0.031
MLT	-2.641	-0.169	1.733	0.831	0.153	1.474	-0.271	-0.011	0.35
POL	6.988	0.037	0.162	0.256	0.215	0.027	-0.126	-0.008	-0.043
SVK	-2.053	0.087	-0.556	0.148	0.054	-0.29	0.016	0.071	0.034
SVN	1.447	0.057	-0.438	0.228	0.073	-0.205	-0.013	0.089	0.076
BGR	0.553	0.032	-0.097	0.418	0.148	-0.23	0	0.133	0.11
ROM	2.084	0.043	-0.285	0.129	0.083	-0.146	-0.015	0.041	0.008
USA	0	0	-0.004	-0.004	0.01	0.027	0.027	0.029	-0.015
JPN	0	0	0.01	-0.001	0.01	0.012	0.014	0.017	-0.013
EU	1.457	-0.039	0.508	0.325	0.138	0.078	-0.219	-0.063	0.08

Table B.28: K-L substitutability, lower - CCTB MNEs only

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.471	0.034	0.728	0.28	0.155	0.148	-0.248	-0.099	0.02
BEL	-16.828	0.128	-1.778	-0.439	-0.484	0.466	0.458	0.147	0.118
DNK	-2.511	-0.004	-0.248	-0.062	-0.028	0.18	0.087	0.054	-0.009
FIN	-3.314	-0.01	-0.277	-0.104	-0.035	0.052	0.054	0.002	-0.027
FRA	-6.759	-0.088	-0.243	-0.059	-0.023	0.269	0.097	0.067	-0.017
DEU	5.107	-0.005	1.219	0.51	0.267	0.444	-0.336	-0.091	0.081
GRC	-9.187	-0.04	-1.067	-0.663	-0.174	-0.465	0.204	-0.033	-0.228
HRV	-9.187	0.173	-2.707	-1.249	-0.358	-0.434	0.725	0.224	-0.368
IRL	-0.033	-0.001	0.083	0.081	0.012	0.316	0.031	0.055	0.036
ITA	-3.789	0.116	0.047	0.047	-0.032	-0.014	-0.021	-0.014	0.056
LUX	-0.261	-0.002	0.103	0.115	0	0.191	-0.618	-0.582	0.081
NLD	2.671	-0.027	0.631	0.248	0.142	0.071	-0.199	-0.065	0.014
PRT	-9.122	-0.038	-0.622	-0.24	-0.022	0.334	0.113	0.039	-0.129
ESP	1.697	-0.093	1.651	0.864	0.313	0.724	-0.406	-0.074	0.246
SWE	-1.875	0.011	-0.251	-0.018	-0.068	0.262	0.101	0.072	0.061
GBR	10.923	-0.399	6.036	1.843	0.862	0.958	-1.499	-0.646	0.276
CYP	0	0.03	-0.41	-0.197	-0.095	-0.143	0.138	0.066	-0.031
CZE	-1.88	-0.018	-0.113	-0.05	-0.012	0.11	0.032	0.015	-0.014
EST	-10.066	0.114	-2.939	-2.009	-0.4	-1.114	0.807	0.097	-0.641
HUN	0.943	0.019	0.009	-0.001	0.002	0.098	-0.009	-0.009	-0.002
LVA	-4.686	0.065	-1.496	-0.864	-0.318	-0.654	0.404	0.088	-0.22
LTU	-4.686	0.123	-2.683	-1.609	-0.568	-1.29	0.767	0.223	-0.354
MLT	1.931	-0.024	0.519	0.325	0.016	0.416	-0.086	-0.007	0.158
POL	8.229	0.105	1.041	0.459	0.221	0.307	-0.274	-0.105	0.068
SVK	-8.301	-0.003	-0.718	-0.45	-0.053	0.027	0.145	0.003	-0.193
SVN	-1.573	-0.004	-0.11	-0.021	-0.016	0.14	0.033	0.022	0.003
BGR	0	0.023	-0.32	-0.176	-0.078	-0.093	0.108	0.054	-0.028
ROM	-0.265	0.006	-0.078	-0.056	0.005	0.013	0.01	-0.005	-0.036
USA	0	0	-0.001	-0.001	0	0.015	0.016	0.016	-0.001
JPN	0	0	0	0	0	0.003	0.008	0.008	-0.001
EU	0.725	-0.043	1.025	0.366	0.169	0.323	-0.283	-0.103	0.074

Table B.29: K-L substitutability, lower - CCCTB MNEs only

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	2.807	-0.057	0.106	0.084	0.079	-0.069	-0.143	-0.089	-0.025
BEL	-3.28	0.566	-1.769	0.487	-0.2	-0.322	-0.077	0.052	0.435
DNK	3.356	0.179	-0.536	0.044	0.054	-0.12	-0.115	-0.078	-0.03
FIN	0.804	0.1	-0.186	0.243	0.059	-0.002	-0.069	0.045	0.086
FRA	-4.324	0.024	-0.097	0.185	0.036	0.36	-0.128	-0.047	0.083
DEU	3.211	-0.082	0.345	0.256	0.144	0.182	-0.238	-0.112	0.032
GRC	-2.775	0.107	-0.347	-0.072	-0.011	-0.164	0.031	0.007	-0.031
HRV	-8.608	0.185	-0.967	0.325	-0.041	-0.398	0.19	0.296	0.275
IRL	13.323	0.329	-0.635	0.408	0.182	-0.84	-0.14	0.015	0.06
ITA	-2.7	0.12	-0.427	0.11	-0.02	-0.098	-0.042	-0.009	0.084
LUX	-0.198	-0.061	-0.562	0.164	-0.017	0.03	-1.003	-0.953	0.133
NLD	4.039	-0.025	0.957	1.183	-0.071	-0.079	-0.196	0.212	0.708
PRT	-1.861	0.125	-0.463	0.307	0.037	0.017	-0.03	0.068	0.155
ESP	0.736	-0.16	1.606	0.905	0.575	0.869	-0.621	-0.201	0.055
SWE	1.16	0.076	-0.189	0.539	-0.003	0.138	-0.116	0.094	0.337
GBR	8.802	-0.529	3.207	0.938	0.665	0.298	-0.896	-0.385	-0.119
CYP	6.534	0.148	-0.508	0.07	0.069	-0.369	-0.014	0.018	-0.016
CZE	2.171	0.092	-0.273	0.134	0.114	-0.173	-0.044	0.017	-0.041
EST	-8.933	0.152	-0.758	0.1	-0.01	-0.396	0.046	0.077	0.063
HUN	2.604	0.054	-0.107	0.147	0.151	-0.085	-0.076	0.012	-0.047
LVA	-3.452	0.084	-0.295	0.052	0.034	-0.173	0.032	0.055	0.002
LTU	-4.407	0.135	-0.507	-0.121	-0.034	-0.329	0.085	0.046	-0.035
MLT	-1.286	-0.151	1.6	1.023	0.5	1.606	-0.554	-0.196	0.065
POL	6.79	0.027	0.275	0.306	0.239	0.095	-0.136	-0.005	-0.033
SVK	-2.342	0.082	-0.238	0.206	0.055	-0.164	0.022	0.094	0.063
SVN	1.316	0.053	-0.147	0.246	0.075	-0.1	-0.009	0.094	0.08
BGR	0.424	0.028	0.057	0.461	0.161	-0.159	0.002	0.138	0.113
ROM	1.915	0.039	-0.091	0.152	0.086	-0.066	-0.012	0.05	0.018
USA	0	0	0.004	-0.004	0.011	0.027	0.023	0.025	-0.014
JPN	0	0	0.01	-0.001	0.011	0.013	0.012	0.015	-0.013
EU	1.549	-0.042	0.488	0.398	0.189	0.149	-0.272	-0.084	0.07

Table B.30: Less compliance costs savings - CCCTB MNEs only

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	2.969	-0.053	0.013	0.028	0.089	-0.127	-0.131	-0.094	-0.07
BEL	-3.318	0.564	-2.497	0.361	-0.132	-0.585	-0.069	0.031	0.308
DNK	3.455	0.183	-0.88	-0.029	0.07	-0.258	-0.105	-0.091	-0.093
FIN	0.927	0.103	-0.436	0.163	0.07	-0.112	-0.058	0.028	0.027
FRA	-4.175	0.031	-0.289	0.115	0.032	0.26	-0.108	-0.054	0.043
DEU	3.299	-0.079	0.399	0.241	0.154	0.187	-0.235	-0.111	0.013
GRC	-2.764	0.108	-0.489	-0.078	-0.009	-0.221	0.03	0.006	-0.036
HRV	-8.638	0.185	-1.401	0.28	-0.044	-0.564	0.183	0.272	0.248
IRL	13.25	0.327	-1.103	0.312	0.205	-1.067	-0.135	-0.001	-0.018
ITA	-2.693	0.12	-0.6	0.087	-0.013	-0.172	-0.041	-0.014	0.063
LUX	-0.127	-0.058	-0.716	0.01	0.324	0.072	-0.983	-0.936	-0.326
NLD	4.07	-0.025	1.132	1.053	-0.03	-0.058	-0.177	0.196	0.601
PRT	-1.874	0.125	-0.723	0.259	0.036	-0.107	-0.03	0.053	0.126
ESP	0.788	-0.158	1.868	0.866	0.558	0.926	-0.602	-0.198	0.046
SWE	1.235	0.077	-0.393	0.434	0.026	0.02	-0.11	0.068	0.241
GBR	8.929	-0.525	4.052	0.875	0.656	0.407	-0.881	-0.392	-0.153
CYP	6.404	0.145	-0.772	0.032	0.074	-0.505	-0.015	0.007	-0.04
CZE	2.227	0.094	-0.511	0.094	0.105	-0.295	-0.041	0.006	-0.053
EST	-8.975	0.15	-1.153	0.055	-0.015	-0.565	0.046	0.061	0.045
HUN	2.72	0.057	-0.307	0.104	0.144	-0.187	-0.071	-0.001	-0.065
LVA	-3.447	0.084	-0.466	0.03	0.029	-0.256	0.031	0.046	-0.005
LTU	-4.418	0.135	-0.73	-0.136	-0.038	-0.421	0.084	0.04	-0.039
MLT	-1.113	-0.146	1.715	0.871	0.499	1.54	-0.539	-0.217	-0.015
POL	6.828	0.029	0.204	0.275	0.226	0.046	-0.131	-0.01	-0.04
SVK	-2.339	0.082	-0.424	0.17	0.05	-0.261	0.021	0.081	0.049
SVN	1.367	0.054	-0.317	0.203	0.067	-0.192	-0.01	0.077	0.06
BGR	0.432	0.028	-0.068	0.424	0.149	-0.229	0.001	0.127	0.103
ROM	1.931	0.039	-0.201	0.134	0.08	-0.127	-0.012	0.042	0.012
USA	0	0	0.001	-0.004	0.01	0.026	0.023	0.025	-0.014
JPN	0	0	0.01	-0.001	0.01	0.013	0.012	0.015	-0.012
EU	1.616	-0.039	0.515	0.352	0.191	0.115	-0.263	-0.09	0.036

Table B.31: Closure on labour tax - CCTB MNEs only

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.472	0.034	0.642	0.29	-0.155	-0.081	-0.252	-0.001	-0.098
BEL	-16.88	0.127	-1.904	-0.451	-0.057	0.73	0.458	0.009	0.274
DNK	-2.511	-0.004	-0.232	-0.065	0.095	0.272	0.088	0.004	0.041
FIN	-3.316	-0.011	-0.388	-0.102	-0.034	0.021	0.052	0	-0.027
FRA	-6.758	-0.088	-0.16	-0.064	0.167	0.426	0.099	0.006	0.056
DEU	5.107	-0.005	1.33	0.518	-0.003	0.301	-0.336	0.004	-0.005
GRC	-9.187	-0.04	-1.497	-0.653	-0.255	-0.675	0.197	-0.005	-0.256
HRV	-9.187	0.173	-3.305	-1.245	-0.012	-0.356	0.72	-0.005	-0.267
IRL	-0.032	-0.001	0.2	0.076	0.126	0.428	0.032	0.005	0.061
ITA	-3.798	0.116	0.031	0.05	-0.079	-0.05	-0.023	-0.001	0.038
LUX	-0.261	-0.002	-1.383	0.179	-1.535	-1.288	-0.689	-0.024	-0.389
NLD	2.674	-0.027	0.647	0.252	-0.019	-0.035	-0.202	-0.001	-0.048
PRT	-9.119	-0.038	-0.808	-0.239	0.043	0.325	0.11	0.003	-0.116
ESP	1.697	-0.093	1.972	0.871	0.1	0.693	-0.399	0.009	0.2
SWE	-1.874	0.012	-0.204	-0.022	0.077	0.379	0.102	0.007	0.117
GBR	10.923	-0.399	6.946	1.894	-0.323	0.267	-1.503	0.004	-0.018
CYP	0	0.03	-0.411	-0.2	0.044	-0.055	0.138	-0.001	0
CZE	-1.88	-0.018	-0.139	-0.05	0.012	0.115	0.032	0.002	-0.008
EST	-10.066	0.114	-3.73	-1.991	-0.178	-1.282	0.795	-0.025	-0.577
HUN	0.944	0.019	-0.029	0.001	-0.031	0.063	-0.011	0.001	-0.016
LVA	-4.686	0.065	-1.719	-0.865	-0.064	-0.586	0.402	-0.01	-0.156
LTU	-4.686	0.123	-3.045	-1.609	-0.076	-1.133	0.763	-0.019	-0.25
MLT	1.931	-0.024	0.662	0.325	-0.008	0.453	-0.082	0.007	0.158
POL	8.232	0.105	1.129	0.466	-0.019	0.194	-0.274	0.003	0.014
SVK	-8.301	-0.003	-0.979	-0.445	-0.044	-0.065	0.142	-0.001	-0.191
SVN	-1.573	-0.004	-0.12	-0.022	0.023	0.165	0.033	0.003	0.016
BGR	0	0.023	-0.328	-0.178	0.02	-0.037	0.108	-0.001	-0.011
ROM	-0.265	0.006	-0.127	-0.055	-0.007	-0.013	0.01	0	-0.039
USA	0	0	0.021	-0.002	0.023	0.036	0.018	0	0.001
JPN	0	0	0.012	-0.001	0.012	0.014	0.008	0	0.002
EU	0.723	-0.043	1.165	0.375	-0.03	0.214	-0.283	0.003	0.021

Table B.32: Closure on labour tax - CCCTB MNEs only

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	2.79	-0.058	-0.185	0.096	-0.193	-0.34	-0.152	-0.005	-0.132
BEL	-3.3	0.565	-2.321	0.482	-0.032	-0.37	-0.08	-0.004	0.492
DNK	3.342	0.179	-0.996	0.055	-0.129	-0.371	-0.122	-0.006	-0.107
FIN	0.795	0.099	-0.236	0.24	0.168	0.06	-0.069	0.001	0.131
FRA	-4.339	0.024	-0.348	0.191	-0.12	0.182	-0.134	0.002	0.018
DEU	3.205	-0.082	0.094	0.267	-0.178	-0.11	-0.247	-0.002	-0.08
GRC	-2.776	0.107	-0.459	-0.07	0.017	-0.19	0.029	-0.002	-0.024
HRV	-8.607	0.185	-0.967	0.32	0.397	-0.096	0.192	-0.001	0.404
IRL	13.313	0.329	-0.979	0.418	0.241	-0.929	-0.142	-0.01	0.078
ITA	-2.734	0.12	-0.625	0.114	-0.041	-0.175	-0.044	-0.002	0.074
LUX	-0.22	-0.061	-3.316	0.27	-2.531	-2.51	-1.09	-0.046	-0.633
NLD	4.019	-0.026	1.772	1.159	0.436	0.501	-0.181	0.007	0.9
PRT	-1.891	0.125	-0.58	0.312	0.163	0.067	-0.029	0.001	0.189
ESP	0.723	-0.161	1.433	0.922	0.017	0.45	-0.638	0.006	-0.105
SWE	1.149	0.076	-0.146	0.538	0.196	0.292	-0.113	0.005	0.419
GBR	8.79	-0.529	3.477	0.961	-0.039	-0.17	-0.908	-0.002	-0.308
CYP	6.53	0.148	-0.723	0.078	0.122	-0.41	-0.015	-0.006	-0.001
CZE	2.166	0.092	-0.425	0.136	0.152	-0.206	-0.045	-0.003	-0.031
EST	-8.929	0.152	-0.956	0.098	0.14	-0.379	0.045	-0.007	0.105
HUN	2.594	0.054	-0.208	0.147	0.19	-0.096	-0.077	-0.001	-0.032
LVA	-3.457	0.084	-0.308	0.05	0.178	-0.092	0.033	-0.002	0.039
LTU	-4.406	0.135	-0.613	-0.122	0.068	-0.307	0.085	-0.005	-0.012
MLT	-1.295	-0.151	1.531	1.035	0.118	1.344	-0.562	0.02	-0.003
POL	6.789	0.027	0.249	0.306	0.224	0.077	-0.137	0.001	-0.037
SVK	-2.353	0.082	-0.168	0.201	0.283	-0.001	0.024	0	0.122
SVN	1.3	0.052	-0.092	0.243	0.262	0.045	-0.008	0.001	0.141
BGR	0.424	0.028	0.211	0.453	0.402	0.043	0.004	0.001	0.158
ROM	1.908	0.039	-0.058	0.15	0.213	0.022	-0.01	0	0.052
USA	0	0	0.035	-0.005	0.045	0.059	0.025	0.001	-0.01
JPN	0	0	0.032	-0.002	0.033	0.034	0.013	0	-0.009
EU	1.536	-0.042	0.397	0.405	0.012	-0.006	-0.278	0	0.009

Table B.33: CCTB MNEs only + ACE w/ higher deductibility

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	10.072	-0.328	3.755	1.182	0.699	1.124	-1.012	-0.369	0.039
BEL	-8.736	0.001	-1.583	-0.167	-0.71	0.359	0.511	0.238	0.448
DNK	5.376	-0.207	1.355	0.324	0.166	0.427	-0.233	-0.049	0.03
FIN	4.699	-0.202	1.156	0.269	0.116	0.468	-0.181	-0.038	0.044
FRA	0.306	-0.412	2.663	0.601	0.574	0.839	-0.649	-0.215	-0.122
DEU	-18.477	-0.631	7.42	2.746	1.378	3.829	-1.899	-0.587	0.468
GRC	-9.187	-0.172	-0.08	-0.2	0.143	0.003	-0.159	-0.172	-0.223
HRV	-9.187	0.07	-2.681	-0.923	-0.191	-0.075	0.507	0.151	-0.369
IRL	4.834	-0.139	1.209	0.53	-0.023	0.579	-0.107	0.03	0.329
ITA	4.865	-0.105	1.261	0.418	0.212	0.474	-0.298	-0.082	0.073
LUX	6.899	-0.298	4.641	1.134	1.439	2.092	-3.602	-3.046	-0.7
NLD	10.072	-0.349	3.429	0.876	0.62	0.457	-1.052	-0.541	-0.054
PRT	-0.287	-0.21	0.942	0.201	0.319	0.401	-0.287	-0.149	-0.208
ESP	-21.887	-0.973	13.838	4.831	2.636	6.392	-3.413	-1.269	0.592
SWE	7.535	-0.201	1.75	0.433	0.307	0.443	-0.439	-0.171	-0.06
GBR	10.923	-0.957	11.79	2.873	1.223	2.654	-2.027	-0.735	0.562
CYP	2.46	-0.066	0.355	0.158	0.087	0.322	-0.026	0.034	0.017
CZE	5.876	-0.181	1.135	0.344	0.205	0.424	-0.184	-0.044	-0.019
EST	-10.066	-0.042	-2.066	-1.283	-0.042	-0.237	0.334	-0.088	-0.629
HUN	9.881	-0.181	1.558	0.421	0.334	0.425	-0.307	-0.079	-0.049
LVA	-4.686	-0.04	-0.952	-0.472	-0.064	-0.164	0.162	0.012	-0.201
LTU	-4.686	-0.023	-2.095	-1.076	-0.244	-0.86	0.4	0.062	-0.356
MLT	1.931	-0.532	8.272	3.173	1.602	2.845	-1.869	-0.738	0.128
POL	15.283	-0.227	3.102	1.066	0.506	1.168	-0.521	-0.13	0.163
SVK	-4.828	-0.095	0	-0.097	0.148	0.414	-0.038	-0.031	-0.172
SVN	5.193	-0.159	0.764	0.22	0.092	0.392	-0.07	0.028	0.046
BGR	3.07	-0.083	0.458	0.147	0.095	0.319	-0.044	0.005	-0.004
ROM	7.902	-0.127	0.846	0.251	0.184	0.376	-0.109	0	-0.005
USA	0	0	-0.005	0.003	-0.014	-0.004	-0.004	-0.007	0.017
JPN	0	0	-0.006	0.001	-0.007	-0.003	0.001	0	0.009
EU	-1.145	-0.444	4.985	1.544	0.818	1.927	-1.188	-0.415	0.216

Table B.34: CCTB MNEs only + ACE w/ lower deductibility

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	10.072	-0.099	1.765	0.504	0.309	0.518	-0.43	-0.154	0.007
BEL	-13.3	0.075	-2.053	-0.309	-0.622	0.504	0.554	0.253	0.298
DNK	1.217	-0.093	0.317	0.095	0.018	0.3	0.022	0.065	0.042
FIN	0.432	-0.094	0.233	0.052	0.013	0.237	-0.001	0.023	0.019
FRA	-1.797	-0.189	0.472	0.079	0.13	0.34	-0.059	0.018	-0.062
DEU	5.107	-0.256	3.001	1.047	0.455	1.201	-0.565	-0.088	0.246
GRC	-9.187	-0.113	-0.712	-0.409	-0.006	-0.24	0.015	-0.101	-0.22
HRV	-9.187	0.116	-3.118	-1.051	-0.271	-0.215	0.617	0.201	-0.349
IRL	2.264	-0.063	0.565	0.289	-0.023	0.559	0.012	0.085	0.189
ITA	2.365	0.043	0.399	0.124	0.02	0.098	-0.053	-0.002	0.058
LUX	3.801	-0.121	1.639	0.444	0.386	0.751	-1.148	-0.955	-0.088
NLD	6.765	-0.168	1.767	0.478	0.251	0.27	-0.375	-0.123	0.046
PRT	-5.097	-0.111	-0.203	-0.066	0.058	0.436	0.029	0.025	-0.102
ESP	1.697	-0.423	5.006	1.779	0.767	2.051	-0.92	-0.199	0.402
SWE	2.493	-0.08	0.435	0.159	0.023	0.343	-0.015	0.054	0.074
GBR	10.923	-0.701	9.691	2.336	0.944	2.055	-1.602	-0.57	0.521
CYP	0.205	-0.028	0.012	0.039	0.04	0.216	0.016	0.034	-0.01
CZE	1.664	-0.088	0.331	0.113	0.048	0.307	-0.025	0.018	0.012
EST	-10.066	0.028	-2.951	-1.614	-0.206	-0.856	0.55	-0.004	-0.633
HUN	5.078	-0.067	0.552	0.16	0.083	0.299	-0.079	-0.002	0.019
LVA	-4.686	0.007	-1.434	-0.651	-0.185	-0.474	0.277	0.051	-0.205
LTU	-4.686	0.042	-2.772	-1.315	-0.398	-1.184	0.575	0.143	-0.347
MLT	1.931	-0.298	4.011	1.64	0.531	2.13	-0.684	-0.175	0.361
POL	13.671	0.002	1.768	0.571	0.266	0.587	-0.295	-0.087	0.092
SVK	-7.723	-0.055	-0.412	-0.224	0.075	0.375	0.026	-0.022	-0.179
SVN	1.575	-0.072	0.215	0.09	0.011	0.336	0.014	0.049	0.045
BGR	0.363	-0.04	0.104	0.035	0.035	0.231	0.003	0.016	-0.012
ROM	3.387	-0.05	0.249	0.069	0.063	0.185	-0.024	0.009	-0.011
USA	0	0	-0.018	-0.001	-0.013	0.011	0.023	0.019	0.015
JPN	0	0	-0.007	0	-0.007	0	0.012	0.01	0.007
EU	3.375	-0.206	2.407	0.693	0.305	0.809	-0.439	-0.111	0.159

Table B.35: CCCTB MNEs only + ACE w/ higher deductibility

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	8.177	-0.404	4.093	1.575	0.76	1.509	-1.008	-0.203	0.22
BEL	1.578	0.122	-0.547	0.734	-0.315	-0.077	-0.274	-0.084	0.663
DNK	9.7	-0.177	1.859	0.801	0.388	0.692	-0.607	-0.161	0.095
FIN	9.216	-0.184	1.75	0.759	0.279	0.64	-0.396	-0.008	0.173
FRA	-0.451	-0.457	3.979	1.459	0.772	1.819	-1.052	-0.23	0.236
DEU	4.932	-0.531	5.44	1.982	1.125	2.143	-1.348	-0.365	0.225
GRC	7.946	-0.048	0.399	0.252	0.147	0.194	-0.092	0.023	0.023
HRV	-6.13	0.071	-0.033	0.572	0.099	-0.02	0.013	0.231	0.253
IRL	19.234	-0.066	1.502	1.083	0.222	-0.086	-0.393	-0.046	0.41
ITA	4.703	-0.156	1.121	0.638	0.263	0.542	-0.355	-0.043	0.162
LUX	5.252	-0.446	5.604	3.655	0.341	2.431	-2.549	-1.345	2.22
NLD	9.361	-0.431	3.594	1.572	0.055	0.619	-0.632	-0.044	0.813
PRT	5.873	-0.192	1.803	0.866	0.379	0.858	-0.44	-0.096	0.147
ESP	1.64	-0.776	10.985	3.816	2.259	4.211	-2.554	-0.814	0.331
SWE	8.168	-0.231	2.2	1.031	0.226	0.832	-0.495	-0.018	0.396
GBR	10.712	-1.057	11.491	2.917	1.651	2.688	-2.255	-0.798	0.086
CYP	13.934	-0.016	0.461	0.491	0.227	0.053	-0.144	0.033	0.085
CZE	13.902	-0.122	1.18	0.597	0.345	0.464	-0.283	-0.04	-0.024
EST	-2.743	0.027	0.199	0.504	0.118	-0.013	-0.093	0.088	0.141
HUN	11.998	-0.209	1.975	0.826	0.543	0.846	-0.481	-0.057	-0.001
LVA	4.899	-0.021	0.412	0.32	0.144	0.155	-0.039	0.084	0.061
LTU	1.443	0.02	0.146	0.184	0.092	-0.013	-0.026	0.042	0.016
MLT	1.114	-0.603	9.604	4.436	1.819	5.071	-2.242	-0.761	0.577
POL	15.219	-0.31	3.365	1.346	0.866	1.434	-0.723	-0.181	0.005
SVK	7.993	-0.074	0.996	0.615	0.227	0.386	-0.121	0.11	0.137
SVN	11.405	-0.144	1.007	0.47	0.229	0.311	-0.17	0.047	0.066
BGR	7.527	-0.078	1.226	0.715	0.294	0.361	-0.114	0.104	0.134
ROM	13.072	-0.133	1.202	0.586	0.34	0.533	-0.201	0.036	0.061
USA	0	0	-0.019	-0.003	-0.01	0.025	0.031	0.028	0.01
JPN	0	0	0.002	-0.001	0.002	0.01	0.017	0.017	-0.003
EU	6.531	-0.436	4.694	1.654	0.87	1.641	-1.134	-0.309	0.226

Table B.36: CCTB MNEs ONLY + CBLO + ACE

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.737	-0.277	3.033	1.075	0.416	1.196	-0.669	-0.152	0.254
BEL	-20.869	-0.091	-0.143	0.365	-0.239	1.233	-0.189	-0.119	0.392
DNK	-4.223	-0.266	1.896	0.685	0.135	1.036	-0.281	0.028	0.293
FIN	-4.732	-0.242	1.467	0.514	0.096	0.72	-0.275	-0.043	0.212
FRA	-7.301	-0.455	2.914	0.853	0.422	1.3	-0.549	-0.081	0.164
DEU	5.107	-0.362	4.044	1.322	0.789	1.687	-0.943	-0.277	0.118
GRC	-9.187	-0.142	-0.413	-0.308	0.058	-0.142	-0.067	-0.136	-0.216
HRV	-9.187	0.093	-2.903	-1.013	-0.219	-0.352	0.537	0.144	-0.393
IRL	-1.793	-0.157	1.535	0.841	0.043	1.116	-0.212	0.026	0.445
ITA	4.865	-0.014	0.83	0.211	0.224	0.298	-0.257	-0.111	-0.062
LUX	-16.685	-0.643	7.249	4.657	-0.529	4.287	-2.005	-0.606	3.868
NLD	1.856	-0.325	2.7	0.957	0.211	0.73	-0.593	-0.18	0.341
PRT	-10.374	-0.229	1.234	0.442	0.302	1.19	-0.316	-0.113	-0.038
ESP	1.697	-0.561	6.65	2.267	1.048	2.558	-1.266	-0.325	0.452
SWE	0.093	-0.184	1.639	0.54	0.27	0.814	-0.427	-0.129	0.046
GBR	10.923	-0.827	10.649	2.588	1.079	2.311	-1.814	-0.659	0.536
CYP	0	-0.055	0.242	0.151	0.053	0.291	-0.022	0.029	0.039
CZE	-3.211	-0.232	1.68	0.701	0.271	0.981	-0.351	-0.089	0.102
EST	-10.066	-0.007	-2.603	-1.491	-0.156	-0.895	0.454	-0.052	-0.621
HUN	-0.888	-0.252	2.066	0.848	0.273	1.061	-0.382	-0.011	0.245
LVA	-4.686	-0.016	-1.221	-0.574	-0.139	-0.426	0.224	0.03	-0.199
LTU	-4.686	0.01	-2.47	-1.208	-0.338	-1.112	0.498	0.107	-0.343
MLT	-5.035	-0.524	6.554	3.208	0.24	3.557	-0.657	0.142	1.481
POL	6.277	-0.263	3.24	1.335	0.417	1.352	-0.522	-0.077	0.392
SVK	-8.301	-0.082	-0.117	-0.116	0.128	0.412	-0.051	-0.054	-0.166
SVN	-2.875	-0.169	0.897	0.339	0.118	0.643	-0.15	-0.003	0.095
BGR	0	-0.072	0.342	0.136	0.06	0.261	-0.035	0.007	0.022
ROM	-0.97	-0.14	1.014	0.4	0.231	0.594	-0.224	-0.063	0.043
USA	0	0	-0.01	0.001	-0.012	-0.001	0.011	0.008	0.015
JPN	0	0	-0.006	0	-0.006	-0.004	0.005	0.003	0.007
EU	1.289	-0.345	3.619	1.105	0.515	1.308	-0.757	-0.223	0.219

Table B.37: CCTB MNEs + CBIT with discrete location

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.482	0.761	-0.59	-0.926	0.11	-1.034	-0.041	-0.345	-0.679
BEL	-15.968	0.423	-3.629	1.298	-0.966	2.228	1.157	1.369	1.492
DNK	-2.52	0.457	-2.819	-0.961	-0.208	-0.807	0.614	0.175	-0.394
FIN	-3.34	0.397	-2.833	-0.903	-0.32	-0.892	0.589	0.134	-0.223
FRA	-6.469	0.532	-3.768	-0.869	-0.532	-0.695	0.879	0.367	-0.085
DEU	5.107	0.943	0.357	-0.551	0.218	-0.428	-0.098	-0.214	-0.534
GRC	-9.187	0.136	-2.603	-1.036	-0.419	-0.955	0.568	0.153	-0.241
HRV	-9.187	0.376	-4.808	-1.271	-0.527	-0.576	1.091	0.552	-0.16
IRL	-0.03	0.197	-1.528	-0.721	-0.153	-0.722	0.399	0.167	-0.271
ITA	-4.163	0.783	-0.961	-0.786	-0.072	-0.76	0.228	-0.075	-0.413
LUX	-0.253	0.594	-3.481	-2.529	0.647	-1.559	0.041	-0.678	-2.444
NLD	2.67	0.468	-2.189	-1.095	-0.178	-1.443	0.255	-0.197	-0.448
PRT	-8.984	0.37	-3.42	-0.601	-0.417	0.055	0.839	0.562	0.055
ESP	1.697	0.604	-1.119	-0.546	-0.356	-0.867	0.217	-0.037	-0.028
SWE	-1.873	0.561	-2.947	-1.112	-0.216	-0.887	0.657	0.153	-0.459
GBR	10.923	0.412	6.815	0.864	0.759	0.178	-1.385	-0.864	-0.279
CYP	0	0.241	-1.602	-0.73	-0.226	-0.798	0.409	0.168	-0.215
CZE	-1.922	0.272	-1.936	-0.782	-0.384	-0.907	0.446	0.141	-0.039
EST	-10.066	0.255	-4.836	-1.993	-0.643	-1.455	1.207	0.467	-0.384
HUN	0.964	0.438	-1.863	-0.951	-0.336	-1.186	0.323	-0.099	-0.253
LVA	-4.686	0.268	-3.18	-1.294	-0.597	-1.373	0.737	0.238	-0.24
LTU	-4.686	0.27	-4.569	-1.979	-0.813	-2.11	1.044	0.352	-0.337
MLT	1.931	0.885	-5.359	-3.698	-1.012	-4.075	0.893	-0.195	-1.014
POL	8.375	0.654	0.518	-0.289	0.173	-0.386	-0.227	-0.269	-0.311
SVK	-8.301	0.201	-2.235	-0.618	-0.328	-0.129	0.604	0.349	-0.058
SVN	-1.623	0.324	-1.641	-0.525	-0.279	-0.575	0.355	0.108	-0.051
BGR	0	0.195	-1.479	-0.631	-0.316	-0.769	0.344	0.145	-0.069
ROM	-0.269	0.328	-1.532	-0.751	-0.291	-0.88	0.321	0.047	-0.197
USA	0	0	0.006	-0.001	0.008	0.023	0.018	0.02	-0.01
JPN	0	0	0.013	-0.001	0.013	0.015	0.012	0.016	-0.015
EU	0.747	0.586	-0.469	-0.491	-0.069	-0.541	0.1	-0.078	-0.262

Table B.38: CCCTB MNEs only + CBIT with discrete location

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	-4.586	0.206	-1.286	-0.292	-0.181	-0.667	0.107	-0.054	-0.004
BEL	-10.647	0.743	-4.354	0.305	-1.028	-1.51	0.049	-0.136	0.964
DNK	-4.487	0.375	-1.955	-0.343	-0.29	-0.837	0.079	-0.157	0.09
FIN	-6.239	0.271	-1.907	-0.217	-0.444	-1.003	0.073	-0.155	0.318
FRA	-13.091	0.128	-0.351	0.908	-0.172	0.95	0.044	0.308	0.71
DEU	-6.887	0.232	-0.94	-0.033	-0.073	-0.109	0.101	0.069	0.044
GRC	-7.857	0.206	-0.909	-0.239	-0.165	-0.507	0.064	-0.052	-0.001
HRV	-8.743	0.411	-1.839	-0.774	-0.268	-1.195	0.27	-0.049	-0.166
IRL	6.623	0.506	-3.129	-1.313	-0.82	-3.306	-0.054	-0.608	0.022
ITA	-12.03	0.411	-1.701	-0.097	-0.176	-0.541	0.089	-0.001	0.09
LUX	-7.466	0.116	-7.113	-1.549	-4.1	-5.044	-0.128	-1.164	3.058
NLD	-3.125	0.195	-1.823	0.247	-0.981	-1.416	0.049	-0.164	0.974
PRT	-9.795	0.359	-1.735	0.012	-0.201	-0.631	0.092	0.045	0.217
ESP	-7.254	0.036	0.005	0.533	-0.033	0.557	0.002	0.141	0.335
SWE	-6.173	0.371	-1.712	0.001	-0.175	-0.433	0.09	0.035	0.187
GBR	1.032	-0.23	1.196	0.43	0.066	-0.005	-0.135	0.017	0.223
CYP	4.127	0.438	-1.691	-0.826	-0.347	-1.538	0.146	-0.144	-0.173
CZE	-4.012	0.181	-1.282	-0.401	-0.221	-0.979	0.065	-0.096	0.004
EST	-7.717	0.379	-2.52	-0.874	-0.46	-1.457	0.279	-0.073	0.018
HUN	-4.506	0.162	-1.324	-0.396	-0.236	-0.955	0.073	-0.124	-0.023
LVA	-3.662	0.323	-1.461	-0.69	-0.292	-1.02	0.212	-0.048	-0.147
LTU	-3.895	0.318	-1.534	-0.683	-0.272	-0.951	0.229	-0.009	-0.122
MLT	-10.29	0.124	0.312	2.259	-0.427	2.374	0.242	0.658	1.618
POL	-0.906	0.135	-0.928	-0.189	-0.144	-0.664	0.043	-0.038	0.017
SVK	-7.204	0.257	-1.47	-0.581	-0.257	-1.037	0.14	-0.088	-0.096
SVN	-5.094	0.186	-1.025	-0.254	-0.163	-0.804	0.048	-0.078	0.004
BGR	0.623	0.228	-1.429	-0.629	-0.312	-1.117	0.206	0.008	-0.071
ROM	-5.036	0.137	-0.83	-0.273	-0.151	-0.625	0.055	-0.054	-0.035
USA	0	0	0.026	0.001	0.021	-0.003	-0.01	-0.005	-0.024
JPN	0	0	0.018	0	0.018	0.009	-0.001	0.004	-0.02
EU	-6.413	0.174	-0.835	0.11	-0.178	-0.259	0.043	0.039	0.264

Table B.39: CCTB MNEs + ACC with discrete location

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	10.072	0.052	0.637	-0.096	0.162	-0.196	-0.263	-0.249	-0.218
BEL	-10.071	0.183	-2.04	1.224	-0.977	2.265	0.953	1.134	1.458
DNK	3.093	0.041	-0.732	-0.361	-0.023	-0.182	0.244	0.098	-0.206
FIN	2.32	0.024	-0.857	-0.352	-0.098	-0.21	0.233	0.064	-0.114
FRA	0.306	-0.021	-0.516	-0.142	0.027	0.102	0.159	0.118	-0.11
DEU	5.107	-0.085	1.984	0.661	0.312	0.785	-0.324	-0.016	0.134
GRC	-9.187	-0.09	-0.607	-0.271	0.051	0.21	0.064	0.003	-0.19
HRV	-9.187	0.154	-2.884	-0.435	-0.182	1.11	0.705	0.519	-0.051
IRL	3.443	-0.019	-0.137	-0.127	-0.124	-0.068	0.165	0.1	0.046
ITA	4.865	0.296	-0.309	-0.417	-0.046	-0.462	0.097	-0.067	-0.212
LUX	5.651	0.039	-0.04	-1.125	0.809	-0.308	-1.183	-1.433	-1.625
NLD	8.729	-0.049	-0.001	-0.4	0.03	-0.808	-0.198	-0.334	-0.244
PRT	-2.764	0.021	-1.067	-0.043	-0.083	0.568	0.342	0.309	0.06
ESP	1.697	-0.36	4.158	1.655	0.538	1.848	-0.682	-0.063	0.518
SWE	4.757	0.096	-0.75	-0.542	0.012	-0.404	0.193	-0.015	-0.347
GBR	10.923	-0.592	8.936	2.061	0.858	1.714	-1.483	-0.566	0.433
CYP	1.119	0.025	-0.295	-0.085	0.041	0.139	0.129	0.114	-0.077
CZE	3.527	-0.007	-0.522	-0.268	-0.15	-0.29	0.157	0.05	0.005
EST	-10.066	0.035	-1.64	-0.686	-0.013	0.737	0.498	0.273	-0.347
HUN	7.288	0.059	-0.569	-0.404	-0.136	-0.546	0.077	-0.101	-0.113
LVA	-4.686	0.044	-1.537	-0.547	-0.194	-0.177	0.369	0.17	-0.145
LTU	-4.686	0.053	-2.723	-1.235	-0.4	-0.994	0.61	0.199	-0.304
MLT	1.931	-0.149	1.976	1.133	0.055	1.44	-0.168	0.106	0.549
POL	15.283	0.133	1.101	0.166	0.167	0.076	-0.244	-0.165	-0.05
SVK	-6.858	-0.003	-0.237	0.207	0.126	1.345	0.185	0.274	0.005
SVN	3.193	0.024	-0.45	-0.181	-0.125	-0.136	0.141	0.05	0.012
BGR	1.502	0	-0.271	-0.105	-0.064	0.005	0.108	0.073	-0.001
ROM	5.422	0.058	-0.517	-0.3	-0.116	-0.348	0.142	0.033	-0.078
USA	0	0	-0.025	-0.002	-0.019	0.011	0.026	0.021	0.021
JPN	0	0	-0.005	-0.001	-0.005	0.004	0.015	0.014	0.005
EU	4.532	-0.067	1.589	0.407	0.183	0.489	-0.251	-0.06	0.085

Table B.40: CCCTB-MNEs + ACC with discrete location

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	7.084	-0.056	0.145	0.081	0.096	-0.122	-0.126	-0.068	-0.044
BEL	-0.007	0.46	-2.561	0.82	-0.793	-0.942	-0.149	-0.068	1.082
DNK	6.314	0.127	-0.677	-0.042	-0.069	-0.463	-0.129	-0.17	0.047
FIN	4.088	0.059	-0.536	0.135	-0.187	-0.474	-0.087	-0.095	0.271
FRA	-2.367	-0.121	1.4	1.189	0.221	1.526	-0.354	0.161	0.545
DEU	4.423	-0.131	1.322	0.762	0.403	0.854	-0.373	-0.005	0.116
GRC	0.832	0.089	-0.424	-0.029	-0.078	-0.276	0.004	-0.027	0.046
HRV	-6.751	0.185	-1.131	-0.211	-0.15	-0.883	0.089	-0.012	0.059
IRL	16.047	0.205	-1.944	-0.668	-0.762	-2.851	-0.176	-0.543	0.344
ITA	-0.727	0.159	-0.692	0.24	-0.059	-0.133	-0.031	0.037	0.194
LUX	2.719	-0.145	-1.195	1.658	-2.3	-1.371	-1.588	-1.375	3.597
NLD	6.987	-0.132	0.571	0.907	-0.661	-0.755	-0.231	-0.108	1.067
PRT	1.01	0.099	-0.348	0.427	-0.036	-0.043	-0.074	0.039	0.307
ESP	1.239	-0.42	6.472	2.81	1.365	3.222	-1.382	-0.193	0.499
SWE	4.329	0.081	-0.024	0.468	-0.024	-0.009	-0.14	0.035	0.315
GBR	10.021	-0.687	6.658	1.982	0.947	1.637	-1.259	-0.334	0.273
CYP	10.866	0.189	-0.891	-0.235	-0.325	-1.143	-0.047	-0.172	0.126
CZE	5.802	0.029	-0.421	-0.064	-0.047	-0.578	-0.064	-0.092	0.012
EST	-3.423	0.167	-1.46	-0.137	-0.33	-0.974	0.01	-0.083	0.273
HUN	5.902	-0.005	-0.327	-0.056	-0.003	-0.483	-0.086	-0.107	-0.029
LVA	-0.199	0.103	-0.641	-0.129	-0.177	-0.553	0.019	-0.056	0.065
LTU	-1.821	0.102	-0.734	-0.171	-0.163	-0.527	0.02	-0.059	0.055
MLT	-0.037	-0.235	4.974	4.251	0.446	4.55	-0.843	0.249	1.833
POL	10.254	-0.062	0.373	0.292	0.165	-0.04	-0.175	-0.062	0.022
SVK	-0.127	0.085	-0.593	-0.104	-0.118	-0.61	0.004	-0.054	0.042
SVN	3.895	0.03	-0.263	-0.035	-0.053	-0.513	-0.037	-0.062	0.032
BGR	3.426	0.021	-0.35	-0.044	-0.103	-0.574	-0.025	-0.049	0.07
ROM	3.91	0.019	-0.168	0.002	-0.009	-0.3	-0.03	-0.031	0.009
USA	0	0	-0.01	-0.003	-0.001	0.025	0.026	0.026	-0.001
JPN	0	0	0.008	-0.001	0.008	0.014	0.015	0.016	-0.01
EU	3.586	-0.126	1.621	0.887	0.284	0.66	-0.455	-0.063	0.311

Table B.41: CCCTB-MNEs + ACE w/ 0.1 deductability

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	3.607	-0.079	0.204	0.112	0.088	-0.036	-0.162	-0.094	-0.017
BEL	-2.546	0.537	-2.341	0.534	-0.199	-0.491	-0.096	0.051	0.459
DNK	4.104	0.156	-0.692	0.073	0.065	-0.159	-0.134	-0.083	-0.023
FIN	1.565	0.081	-0.219	0.273	0.07	-0.005	-0.085	0.044	0.093
FRA	-3.559	-0.002	-0.068	0.2	0.051	0.369	-0.149	-0.058	0.08
DEU	3.499	-0.123	0.762	0.404	0.217	0.355	-0.319	-0.123	0.059
GRC	-2.027	0.098	-0.435	-0.05	-0.001	-0.191	0.024	0.009	-0.027
HRV	-8.559	0.173	-1.277	0.389	-0.022	-0.475	0.172	0.303	0.293
IRL	13.955	0.299	-0.843	0.486	0.184	-0.914	-0.157	0.02	0.102
ITA	-1.868	0.102	-0.517	0.136	-0.008	-0.12	-0.054	-0.008	0.089
LUX	0.451	-0.088	-0.357	0.475	0.063	0.175	-1.145	-0.986	0.268
NLD	4.681	-0.057	1.429	1.201	-0.075	0.043	-0.212	0.2	0.721
PRT	-1.057	0.104	-0.555	0.334	0.049	-0.005	-0.046	0.062	0.159
ESP	0.9	-0.221	2.684	1.157	0.717	1.257	-0.774	-0.242	0.084
SWE	1.864	0.054	-0.176	0.573	0.006	0.143	-0.135	0.091	0.347
GBR	9.099	-0.578	4.8	1.131	0.75	0.7	-1.005	-0.407	-0.084
CYP	7.123	0.136	-0.694	0.109	0.079	-0.427	-0.022	0.023	-0.004
CZE	3.016	0.079	-0.36	0.168	0.128	-0.197	-0.057	0.016	-0.037
EST	-8.821	0.134	-0.943	0.184	0.019	-0.457	0.012	0.075	0.077
HUN	3.45	0.038	-0.133	0.175	0.167	-0.084	-0.092	0.01	-0.044
LVA	-2.904	0.078	-0.392	0.076	0.041	-0.206	0.029	0.06	0.009
LTU	-4.386	0.118	-0.603	-0.067	-0.011	-0.353	0.062	0.042	-0.025
MLT	-1.022	-0.193	2.57	1.347	0.626	2.026	-0.704	-0.24	0.114
POL	7.741	0.01	0.391	0.347	0.26	0.147	-0.154	-0.007	-0.029
SVK	-1.631	0.072	-0.298	0.242	0.066	-0.18	0.015	0.1	0.073
SVN	2.037	0.039	-0.19	0.269	0.085	-0.105	-0.019	0.096	0.084
BGR	0.909	0.021	0.073	0.489	0.171	-0.15	-0.004	0.141	0.12
ROM	2.685	0.028	-0.1	0.183	0.1	-0.061	-0.021	0.052	0.024
USA	0	0	-0.001	-0.004	0.009	0.027	0.024	0.026	-0.012
JPN	0	0	0.009	-0.001	0.01	0.013	0.013	0.015	-0.012
EU	2.122	-0.072	0.844	0.488	0.233	0.264	-0.326	-0.095	0.086

Table B.42: CCCTB-MNEs + ACE w/ 0.2 deductability

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	4.469	-0.103	0.344	0.142	0.1	0.012	-0.183	-0.101	-0.011
BEL	-1.761	0.507	-2.187	0.581	-0.2	-0.449	-0.111	0.053	0.487
DNK	4.908	0.131	-0.551	0.1	0.077	-0.119	-0.154	-0.087	-0.018
FIN	2.399	0.06	-0.083	0.305	0.082	0.039	-0.101	0.045	0.1
FRA	-2.745	-0.031	0.075	0.216	0.069	0.409	-0.173	-0.068	0.074
DEU	3.785	-0.166	1.162	0.564	0.302	0.525	-0.41	-0.137	0.083
GRC	-1.207	0.087	-0.38	-0.029	0.008	-0.166	0.018	0.012	-0.022
HRV	-8.508	0.161	-1.155	0.443	-0.003	-0.43	0.152	0.306	0.304
IRL	14.613	0.267	-0.633	0.555	0.187	-0.836	-0.173	0.023	0.139
ITA	-0.938	0.083	-0.421	0.162	0.004	-0.084	-0.066	-0.007	0.095
LUX	1.135	-0.117	0.237	0.805	0.153	0.462	-1.293	-1.017	0.407
NLD	5.358	-0.091	1.606	1.226	-0.071	0.083	-0.236	0.187	0.732
PRT	-0.168	0.082	-0.397	0.353	0.062	0.046	-0.063	0.054	0.158
ESP	1.063	-0.283	3.467	1.431	0.879	1.552	-0.949	-0.293	0.108
SWE	2.624	0.03	0.004	0.602	0.018	0.191	-0.155	0.086	0.353
GBR	9.405	-0.628	5.471	1.335	0.851	0.912	-1.136	-0.44	-0.062
CYP	7.755	0.124	-0.606	0.141	0.09	-0.39	-0.029	0.026	0.006
CZE	3.941	0.064	-0.247	0.201	0.142	-0.147	-0.071	0.015	-0.033
EST	-8.423	0.123	-0.825	0.234	0.034	-0.413	-0.003	0.078	0.087
HUN	4.375	0.022	-0.01	0.205	0.184	-0.03	-0.108	0.009	-0.042
LVA	-2.29	0.071	-0.331	0.098	0.049	-0.178	0.026	0.064	0.015
LTU	-4.361	0.101	-0.489	-0.013	0.012	-0.299	0.039	0.038	-0.017
MLT	-0.756	-0.238	3.28	1.69	0.761	2.352	-0.867	-0.291	0.166
POL	8.772	-0.01	0.538	0.393	0.286	0.212	-0.175	-0.01	-0.025
SVK	-0.84	0.062	-0.197	0.277	0.077	-0.136	0.008	0.106	0.082
SVN	2.837	0.025	-0.097	0.291	0.096	-0.071	-0.028	0.096	0.087
BGR	1.442	0.014	0.178	0.517	0.182	-0.107	-0.011	0.143	0.125
ROM	3.537	0.016	-0.01	0.214	0.115	-0.019	-0.031	0.054	0.03
USA	0	0	-0.003	-0.004	0.007	0.028	0.026	0.027	-0.01
JPN	0	0	0.008	-0.001	0.009	0.013	0.014	0.016	-0.011
EU	2.738	-0.105	1.146	0.584	0.284	0.374	-0.387	-0.109	0.099

Table B.43: CCCTB-MNEs + ACE w/ 0.3 deductability

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.194	-0.133	0.596	0.232	0.138	0.115	-0.233	-0.107	0.008
BEL	-1.228	0.464	-2.009	0.609	-0.218	-0.411	-0.126	0.044	0.517
DNK	5.715	0.103	-0.392	0.129	0.089	-0.076	-0.175	-0.094	-0.013
FIN	3.276	0.037	0.068	0.338	0.094	0.088	-0.12	0.043	0.108
FRA	-2.309	-0.079	0.438	0.341	0.138	0.551	-0.257	-0.082	0.093
DEU	4.005	-0.213	1.608	0.732	0.391	0.706	-0.511	-0.156	0.108
GRC	-0.308	0.076	-0.317	-0.006	0.017	-0.136	0.01	0.014	-0.017
HRV	-8.454	0.148	-1.016	0.49	0.016	-0.378	0.131	0.305	0.31
IRL	15.22	0.23	-0.405	0.619	0.185	-0.756	-0.191	0.022	0.178
ITA	0.023	0.06	-0.31	0.188	0.016	-0.043	-0.079	-0.007	0.1
LUX	1.721	-0.153	0.854	1.153	0.198	0.721	-1.446	-1.054	0.605
NLD	5.966	-0.129	1.776	1.235	-0.074	0.12	-0.26	0.165	0.739
PRT	0.779	0.057	-0.222	0.372	0.076	0.102	-0.082	0.044	0.155
ESP	1.183	-0.348	4.317	1.718	1.047	1.865	-1.136	-0.35	0.135
SWE	3.41	0.003	0.204	0.63	0.031	0.243	-0.178	0.079	0.357
GBR	9.629	-0.683	6.182	1.538	0.951	1.13	-1.27	-0.478	-0.039
CYP	8.435	0.11	-0.508	0.176	0.101	-0.349	-0.038	0.029	0.016
CZE	4.94	0.047	-0.12	0.236	0.156	-0.092	-0.085	0.013	-0.029
EST	-7.86	0.114	-0.719	0.269	0.043	-0.374	-0.01	0.084	0.097
HUN	5.377	0.003	0.128	0.236	0.202	0.03	-0.126	0.006	-0.04
LVA	-1.615	0.063	-0.262	0.121	0.056	-0.148	0.022	0.068	0.021
LTU	-4.146	0.087	-0.388	0.031	0.031	-0.253	0.021	0.036	-0.011
MLT	-0.482	-0.284	4.037	2.043	0.899	2.693	-1.037	-0.345	0.219
POL	9.892	-0.032	0.703	0.444	0.314	0.284	-0.199	-0.015	-0.022
SVK	0.023	0.049	-0.085	0.311	0.089	-0.087	0	0.11	0.091
SVN	3.696	0.009	0.009	0.31	0.107	-0.034	-0.039	0.095	0.088
BGR	2.029	0.005	0.291	0.541	0.192	-0.058	-0.018	0.143	0.129
ROM	4.471	0.003	0.092	0.246	0.132	0.029	-0.042	0.055	0.035
USA	0	0	-0.005	-0.004	0.005	0.028	0.027	0.027	-0.007
JPN	0	0	0.008	-0.001	0.008	0.013	0.014	0.016	-0.01
EU	3.297	-0.142	1.502	0.696	0.342	0.503	-0.462	-0.127	0.116

Table B.44: CCCTB-MNEs + ACE w/ 0.4 deductability

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	5.67	-0.172	1.031	0.419	0.219	0.305	-0.33	-0.112	0.044
BEL	-0.749	0.416	-1.814	0.632	-0.239	-0.37	-0.141	0.031	0.546
DNK	6.568	0.071	-0.213	0.16	0.104	-0.027	-0.201	-0.102	-0.009
FIN	4.215	0.011	0.237	0.375	0.109	0.142	-0.142	0.04	0.116
FRA	-1.971	-0.134	0.895	0.502	0.225	0.728	-0.364	-0.097	0.118
DEU	4.194	-0.262	2.104	0.91	0.489	0.902	-0.621	-0.179	0.132
GRC	0.684	0.062	-0.245	0.02	0.029	-0.103	0.002	0.016	-0.012
HRV	-8.395	0.136	-0.865	0.529	0.036	-0.322	0.108	0.299	0.31
IRL	15.839	0.19	-0.156	0.685	0.184	-0.67	-0.212	0.019	0.217
ITA	1.044	0.036	-0.183	0.216	0.031	0.002	-0.096	-0.009	0.104
LUX	2.302	-0.193	1.517	1.519	0.235	0.985	-1.607	-1.094	0.824
NLD	6.575	-0.171	1.956	1.242	-0.074	0.159	-0.288	0.139	0.743
PRT	1.809	0.029	-0.03	0.394	0.093	0.164	-0.104	0.032	0.152
ESP	1.289	-0.415	5.241	2.023	1.225	2.199	-1.337	-0.413	0.164
SWE	4.25	-0.025	0.423	0.661	0.046	0.301	-0.204	0.069	0.36
GBR	9.836	-0.74	6.938	1.748	1.055	1.357	-1.411	-0.52	-0.016
CYP	9.175	0.095	-0.397	0.215	0.113	-0.303	-0.048	0.032	0.026
CZE	6.035	0.028	0.024	0.273	0.173	-0.03	-0.103	0.01	-0.026
EST	-7.228	0.104	-0.601	0.308	0.053	-0.33	-0.019	0.089	0.106
HUN	6.472	-0.019	0.283	0.27	0.223	0.098	-0.148	0.001	-0.039
LVA	-0.857	0.054	-0.185	0.146	0.066	-0.113	0.017	0.073	0.028
LTU	-3.502	0.08	-0.324	0.052	0.038	-0.226	0.017	0.038	-0.007
MLT	-0.196	-0.331	4.842	2.408	1.04	3.048	-1.215	-0.402	0.275
POL	11.12	-0.057	0.892	0.501	0.348	0.367	-0.228	-0.022	-0.018
SVK	0.975	0.035	0.04	0.346	0.102	-0.033	-0.011	0.113	0.099
SVN	4.629	-0.01	0.128	0.326	0.119	0.006	-0.052	0.09	0.086
BGR	2.68	-0.004	0.411	0.563	0.203	-0.006	-0.027	0.141	0.132
ROM	5.505	-0.012	0.21	0.281	0.151	0.082	-0.056	0.055	0.039
USA	0	0	-0.007	-0.003	0.003	0.028	0.028	0.028	-0.005
JPN	0	0	0.007	-0.001	0.007	0.012	0.015	0.016	-0.008
EU	3.864	-0.183	1.9	0.82	0.407	0.647	-0.546	-0.147	0.134

Table B.45: CCCTB-MNEs + ACE w/ 0.5 deductability

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	6.163	-0.212	1.523	0.621	0.309	0.511	-0.44	-0.12	0.079
BEL	-0.245	0.366	-1.601	0.655	-0.256	-0.323	-0.16	0.016	0.573
DNK	7.491	0.037	-0.012	0.196	0.123	0.03	-0.231	-0.112	-0.006
FIN	5.238	-0.017	0.429	0.417	0.126	0.204	-0.168	0.036	0.123
FRA	-1.625	-0.191	1.4	0.674	0.32	0.919	-0.481	-0.116	0.142
DEU	4.384	-0.312	2.654	1.101	0.597	1.115	-0.742	-0.206	0.154
GRC	1.791	0.046	-0.16	0.051	0.042	-0.064	-0.009	0.018	-0.006
HRV	-8.329	0.123	-0.703	0.567	0.056	-0.262	0.084	0.291	0.309
IRL	16.502	0.147	0.119	0.759	0.187	-0.573	-0.237	0.014	0.257
ITA	2.169	0.008	-0.039	0.249	0.049	0.055	-0.116	-0.011	0.108
LUX	2.915	-0.235	2.238	1.906	0.278	1.267	-1.778	-1.136	1.051
NLD	7.222	-0.215	2.156	1.252	-0.071	0.204	-0.322	0.111	0.746
PRT	2.944	-0.001	0.182	0.422	0.114	0.233	-0.131	0.019	0.146
ESP	1.39	-0.484	6.245	2.347	1.415	2.557	-1.553	-0.481	0.193
SWE	5.164	-0.057	0.667	0.697	0.065	0.366	-0.235	0.058	0.362
GBR	10.052	-0.799	7.746	1.967	1.164	1.598	-1.562	-0.565	0.007
CYP	9.989	0.078	-0.272	0.258	0.129	-0.25	-0.06	0.035	0.037
CZE	7.249	0.006	0.187	0.317	0.194	0.04	-0.125	0.005	-0.023
EST	-6.526	0.093	-0.469	0.35	0.064	-0.282	-0.03	0.093	0.116
HUN	7.681	-0.043	0.459	0.311	0.249	0.175	-0.174	-0.005	-0.038
LVA	-0.003	0.043	-0.096	0.175	0.077	-0.074	0.01	0.077	0.035
LTU	-2.775	0.071	-0.251	0.076	0.047	-0.194	0.012	0.041	-0.002
MLT	0.102	-0.38	5.693	2.789	1.186	3.419	-1.402	-0.464	0.333
POL	12.474	-0.086	1.114	0.569	0.39	0.464	-0.263	-0.03	-0.016
SVK	2.04	0.02	0.182	0.387	0.118	0.029	-0.024	0.115	0.107
SVN	5.662	-0.03	0.261	0.346	0.133	0.052	-0.067	0.085	0.084
BGR	3.41	-0.015	0.543	0.588	0.215	0.052	-0.038	0.138	0.134
ROM	6.657	-0.029	0.345	0.322	0.175	0.144	-0.074	0.054	0.044
USA	0	0	-0.009	-0.003	0	0.028	0.028	0.028	-0.002
JPN	0	0	0.006	-0.001	0.006	0.012	0.015	0.016	-0.007
EU	4.479	-0.226	2.339	0.952	0.479	0.803	-0.638	-0.171	0.151

Table B.46: CCCTB-MNEs + ACE w/ 0.6 deductability

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	6.677	-0.256	2.077	0.84	0.411	0.737	-0.563	-0.132	0.114
BEL	0.291	0.312	-1.369	0.681	-0.27	-0.268	-0.183	0	0.598
DNK	8.5	0	0.217	0.239	0.147	0.096	-0.267	-0.123	-0.005
FIN	6.362	-0.048	0.649	0.466	0.149	0.276	-0.199	0.032	0.13
FRA	-1.267	-0.251	1.957	0.857	0.424	1.123	-0.608	-0.137	0.165
DEU	4.576	-0.364	3.264	1.305	0.716	1.346	-0.876	-0.237	0.174
GRC	3.035	0.028	-0.059	0.088	0.06	-0.017	-0.023	0.02	0.001
HRV	-8.254	0.11	-0.529	0.604	0.077	-0.199	0.058	0.283	0.306
IRL	17.221	0.101	0.425	0.84	0.194	-0.463	-0.267	0.008	0.297
ITA	3.423	-0.022	0.129	0.288	0.073	0.118	-0.141	-0.015	0.112
LUX	3.571	-0.28	3.021	2.315	0.329	1.569	-1.957	-1.179	1.285
NLD	7.915	-0.262	2.381	1.268	-0.061	0.258	-0.361	0.08	0.746
PRT	4.21	-0.035	0.421	0.456	0.141	0.313	-0.163	0.003	0.14
ESP	1.49	-0.554	7.331	2.693	1.617	2.94	-1.784	-0.554	0.224
SWE	6.167	-0.091	0.938	0.739	0.089	0.441	-0.272	0.045	0.362
GBR	10.28	-0.86	8.609	2.198	1.281	1.852	-1.722	-0.615	0.029
CYP	10.894	0.059	-0.128	0.307	0.148	-0.189	-0.075	0.037	0.048
CZE	8.604	-0.019	0.376	0.369	0.22	0.122	-0.152	-0.001	-0.021
EST	-5.74	0.08	-0.32	0.396	0.078	-0.226	-0.043	0.098	0.126
HUN	9.029	-0.07	0.663	0.361	0.282	0.264	-0.207	-0.012	-0.039
LVA	0.97	0.031	0.006	0.208	0.09	-0.028	0.002	0.081	0.042
LTU	-1.944	0.062	-0.167	0.103	0.058	-0.158	0.005	0.044	0.003
MLT	0.418	-0.432	6.595	3.187	1.338	3.806	-1.598	-0.53	0.394
POL	13.979	-0.118	1.377	0.651	0.441	0.579	-0.307	-0.041	-0.015
SVK	3.24	0.002	0.346	0.435	0.138	0.1	-0.04	0.117	0.115
SVN	6.813	-0.053	0.411	0.37	0.15	0.103	-0.086	0.078	0.082
BGR	4.233	-0.027	0.689	0.617	0.231	0.117	-0.051	0.133	0.136
ROM	7.952	-0.049	0.504	0.371	0.203	0.217	-0.095	0.053	0.049
USA	0	0	-0.012	-0.003	-0.002	0.028	0.029	0.028	0.001
JPN	0	0	0.005	-0.001	0.005	0.012	0.016	0.017	-0.006
EU	5.153	-0.271	2.821	1.096	0.559	0.974	-0.739	-0.197	0.167

Table B.47: CCCTB-MNEs + ACE w/ 0.26 ACE rate

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.007	-0.118	0.437	0.162	0.109	0.044	-0.197	-0.105	-0.007
BEL	-1.414	0.482	-2.083	0.6	-0.209	-0.425	-0.12	0.049	0.505
DNK	5.391	0.115	-0.458	0.117	0.085	-0.094	-0.166	-0.091	-0.015
FIN	2.921	0.047	0.006	0.325	0.09	0.068	-0.112	0.044	0.105
FRA	-2.442	-0.058	0.268	0.28	0.105	0.484	-0.217	-0.076	0.083
DEU	3.929	-0.194	1.424	0.664	0.355	0.632	-0.47	-0.148	0.098
GRC	-0.677	0.081	-0.344	-0.016	0.014	-0.148	0.013	0.013	-0.019
HRV	-8.476	0.153	-1.074	0.475	0.009	-0.4	0.14	0.307	0.31
IRL	14.982	0.245	-0.498	0.594	0.187	-0.789	-0.184	0.023	0.162
ITA	-0.36	0.07	-0.356	0.177	0.011	-0.06	-0.074	-0.007	0.098
LUX	1.497	-0.138	0.604	1.012	0.185	0.62	-1.384	-1.039	0.519
NLD	5.73	-0.113	1.708	1.233	-0.072	0.106	-0.25	0.175	0.736
PRT	0.392	0.067	-0.294	0.365	0.07	0.079	-0.074	0.048	0.157
ESP	1.14	-0.321	3.969	1.601	0.979	1.738	-1.06	-0.327	0.124
SWE	3.093	0.014	0.122	0.619	0.026	0.222	-0.168	0.082	0.355
GBR	9.548	-0.661	5.893	1.457	0.911	1.042	-1.216	-0.462	-0.048
CYP	8.158	0.116	-0.549	0.162	0.096	-0.366	-0.034	0.028	0.012
CZE	4.53	0.054	-0.173	0.222	0.151	-0.115	-0.079	0.014	-0.03
EST	-8.095	0.118	-0.763	0.255	0.039	-0.39	-0.007	0.082	0.093
HUN	4.967	0.01	0.07	0.224	0.195	0.006	-0.118	0.007	-0.041
LVA	-1.894	0.066	-0.291	0.111	0.053	-0.16	0.023	0.067	0.019
LTU	-4.345	0.09	-0.416	0.02	0.027	-0.266	0.024	0.035	-0.013
MLT	-0.594	-0.265	3.728	1.902	0.844	2.555	-0.969	-0.323	0.198
POL	9.432	-0.023	0.634	0.423	0.303	0.255	-0.189	-0.013	-0.023
SVK	-0.331	0.054	-0.131	0.298	0.084	-0.107	0.003	0.109	0.088
SVN	3.346	0.015	-0.035	0.304	0.103	-0.049	-0.035	0.096	0.088
BGR	1.787	0.009	0.246	0.533	0.189	-0.078	-0.015	0.143	0.128
ROM	4.087	0.009	0.05	0.233	0.125	0.009	-0.037	0.055	0.033
USA	0	0	-0.004	-0.004	0.006	0.028	0.026	0.027	-0.008
JPN	0	0	0.008	-0.001	0.008	0.013	0.014	0.016	-0.01
EU	3.081	-0.127	1.352	0.649	0.318	0.449	-0.43	-0.119	0.109

Table B.48: CCCTB-MNEs + ACE w/ 0.29 ACE rate

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.147	-0.129	0.556	0.214	0.131	0.097	-0.224	-0.106	0.004
BEL	-1.275	0.469	-2.028	0.607	-0.216	-0.415	-0.124	0.046	0.514
DNK	5.633	0.106	-0.408	0.126	0.088	-0.08	-0.173	-0.093	-0.014
FIN	3.186	0.039	0.052	0.335	0.093	0.083	-0.118	0.043	0.107
FRA	-2.342	-0.074	0.395	0.326	0.129	0.534	-0.247	-0.08	0.091
DEU	3.986	-0.208	1.561	0.715	0.382	0.688	-0.5	-0.154	0.105
GRC	-0.402	0.077	-0.324	-0.008	0.016	-0.139	0.011	0.014	-0.018
HRV	-8.459	0.15	-1.031	0.487	0.014	-0.384	0.133	0.305	0.31
IRL	15.16	0.234	-0.429	0.612	0.186	-0.765	-0.189	0.022	0.174
ITA	-0.074	0.063	-0.321	0.185	0.015	-0.047	-0.078	-0.007	0.099
LUX	1.665	-0.149	0.791	1.117	0.194	0.695	-1.431	-1.05	0.583
NLD	5.906	-0.125	1.759	1.234	-0.073	0.116	-0.258	0.167	0.738
PRT	0.681	0.059	-0.24	0.37	0.074	0.096	-0.08	0.045	0.156
ESP	1.173	-0.341	4.229	1.689	1.03	1.833	-1.117	-0.344	0.133
SWE	3.33	0.006	0.183	0.627	0.03	0.238	-0.175	0.08	0.357
GBR	9.609	-0.677	6.109	1.517	0.941	1.108	-1.256	-0.474	-0.041
CYP	8.365	0.111	-0.518	0.172	0.099	-0.353	-0.037	0.029	0.015
CZE	4.836	0.049	-0.134	0.232	0.155	-0.098	-0.084	0.014	-0.029
EST	-7.92	0.115	-0.73	0.266	0.042	-0.378	-0.009	0.083	0.096
HUN	5.273	0.005	0.113	0.233	0.2	0.024	-0.124	0.006	-0.04
LVA	-1.686	0.064	-0.269	0.118	0.056	-0.151	0.022	0.068	0.021
LTU	-4.206	0.088	-0.394	0.029	0.03	-0.256	0.022	0.035	-0.011
MLT	-0.51	-0.279	3.959	2.008	0.885	2.658	-1.02	-0.339	0.214
POL	9.775	-0.03	0.685	0.438	0.311	0.277	-0.197	-0.015	-0.022
SVK	-0.067	0.051	-0.096	0.308	0.087	-0.092	0.001	0.11	0.09
SVN	3.607	0.01	-0.002	0.308	0.106	-0.038	-0.038	0.095	0.088
BGR	1.967	0.006	0.28	0.539	0.191	-0.063	-0.017	0.143	0.129
ROM	4.374	0.005	0.082	0.243	0.13	0.024	-0.041	0.055	0.034
USA	0	0	-0.005	-0.004	0.005	0.028	0.027	0.027	-0.008
JPN	0	0	0.008	-0.001	0.008	0.013	0.014	0.016	-0.01
EU	3.242	-0.138	1.464	0.684	0.336	0.49	-0.454	-0.125	0.114

Table B.49: CCCTB-MNEs + ACE w/ 0.32 ACE rate

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.288	-0.141	0.679	0.268	0.153	0.152	-0.251	-0.108	0.015
BEL	-1.134	0.455	-1.971	0.614	-0.223	-0.403	-0.129	0.042	0.523
DNK	5.88	0.097	-0.358	0.134	0.092	-0.067	-0.18	-0.096	-0.012
FIN	3.458	0.032	0.1	0.345	0.097	0.098	-0.124	0.042	0.11
FRA	-2.241	-0.09	0.526	0.373	0.154	0.585	-0.278	-0.084	0.098
DEU	4.043	-0.223	1.703	0.767	0.41	0.744	-0.532	-0.16	0.113
GRC	-0.118	0.073	-0.304	-0.001	0.02	-0.13	0.009	0.014	-0.016
HRV	-8.443	0.146	-0.987	0.498	0.02	-0.367	0.126	0.304	0.31
IRL	15.341	0.222	-0.357	0.632	0.185	-0.74	-0.195	0.021	0.186
ITA	0.22	0.056	-0.286	0.193	0.019	-0.035	-0.082	-0.008	0.101
LUX	1.835	-0.161	0.982	1.225	0.205	0.772	-1.478	-1.062	0.648
NLD	6.085	-0.137	1.81	1.236	-0.074	0.127	-0.266	0.16	0.74
PRT	0.977	0.052	-0.185	0.376	0.079	0.114	-0.086	0.042	0.155
ESP	1.205	-0.361	4.496	1.777	1.082	1.93	-1.175	-0.362	0.141
SWE	3.573	-0.002	0.246	0.636	0.034	0.254	-0.183	0.077	0.358
GBR	9.67	-0.694	6.329	1.579	0.971	1.174	-1.297	-0.486	-0.034
CYP	8.578	0.107	-0.487	0.183	0.103	-0.34	-0.039	0.03	0.018
CZE	5.15	0.043	-0.093	0.243	0.159	-0.08	-0.089	0.013	-0.028
EST	-7.739	0.112	-0.696	0.277	0.045	-0.366	-0.012	0.085	0.098
HUN	5.588	-0.002	0.157	0.242	0.206	0.043	-0.13	0.005	-0.04
LVA	-1.471	0.061	-0.247	0.126	0.058	-0.141	0.021	0.069	0.023
LTU	-4.023	0.086	-0.376	0.035	0.032	-0.248	0.02	0.036	-0.01
MLT	-0.426	-0.293	4.195	2.115	0.927	2.763	-1.072	-0.356	0.23
POL	10.128	-0.037	0.738	0.455	0.321	0.3	-0.205	-0.016	-0.021
SVK	0.205	0.047	-0.061	0.318	0.091	-0.076	-0.002	0.111	0.092
SVN	3.875	0.005	0.032	0.313	0.109	-0.026	-0.042	0.094	0.087
BGR	2.153	0.004	0.314	0.545	0.194	-0.048	-0.02	0.142	0.13
ROM	4.669	0	0.115	0.252	0.136	0.039	-0.045	0.055	0.036
USA	0	0	-0.005	-0.004	0.004	0.028	0.027	0.027	-0.007
JPN	0	0	0.007	-0.001	0.008	0.012	0.014	0.016	-0.009
EU	3.407	-0.15	1.578	0.72	0.355	0.531	-0.478	-0.131	0.12

Table B.50: CCCTB-MNEs + ACE w/ 0.35 ACE rate

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.43	-0.152	0.807	0.324	0.177	0.208	-0.28	-0.109	0.026
BEL	-0.991	0.441	-1.913	0.62	-0.229	-0.391	-0.133	0.038	0.532
DNK	6.133	0.088	-0.305	0.144	0.096	-0.052	-0.188	-0.098	-0.011
FIN	3.736	0.025	0.15	0.356	0.101	0.114	-0.13	0.042	0.112
FRA	-2.14	-0.106	0.661	0.421	0.18	0.638	-0.309	-0.089	0.106
DEU	4.1	-0.237	1.849	0.82	0.439	0.802	-0.564	-0.167	0.12
GRC	0.175	0.069	-0.282	0.007	0.023	-0.12	0.006	0.015	-0.014
HRV	-8.425	0.142	-0.942	0.51	0.026	-0.351	0.12	0.302	0.31
IRL	15.525	0.21	-0.284	0.651	0.184	-0.714	-0.201	0.02	0.198
ITA	0.522	0.048	-0.249	0.201	0.023	-0.021	-0.087	-0.008	0.102
LUX	2.008	-0.173	1.179	1.334	0.216	0.851	-1.526	-1.074	0.714
NLD	6.266	-0.15	1.864	1.238	-0.075	0.139	-0.274	0.152	0.741
PRT	1.282	0.043	-0.128	0.383	0.084	0.132	-0.092	0.038	0.154
ESP	1.237	-0.381	4.769	1.868	1.135	2.029	-1.235	-0.381	0.15
SWE	3.822	-0.011	0.311	0.645	0.038	0.271	-0.19	0.074	0.359
GBR	9.732	-0.711	6.554	1.641	1.002	1.242	-1.339	-0.498	-0.027
CYP	8.797	0.103	-0.454	0.195	0.107	-0.326	-0.042	0.031	0.021
CZE	5.474	0.038	-0.051	0.254	0.164	-0.062	-0.094	0.012	-0.027
EST	-7.552	0.109	-0.661	0.288	0.048	-0.353	-0.014	0.086	0.101
HUN	5.912	-0.008	0.203	0.252	0.212	0.063	-0.136	0.003	-0.039
LVA	-1.247	0.058	-0.225	0.133	0.061	-0.131	0.019	0.07	0.025
LTU	-3.834	0.084	-0.357	0.041	0.034	-0.24	0.019	0.037	-0.009
MLT	-0.341	-0.307	4.434	2.224	0.969	2.869	-1.125	-0.373	0.247
POL	10.491	-0.045	0.794	0.471	0.33	0.324	-0.213	-0.018	-0.02
SVK	0.486	0.043	-0.024	0.328	0.095	-0.06	-0.005	0.111	0.095
SVN	4.151	0	0.067	0.318	0.113	-0.015	-0.045	0.092	0.087
BGR	2.346	0.001	0.35	0.552	0.197	-0.033	-0.022	0.142	0.131
ROM	4.974	-0.004	0.149	0.263	0.141	0.055	-0.049	0.055	0.037
USA	0	0	-0.006	-0.003	0.004	0.028	0.027	0.028	-0.006
JPN	0	0	0.007	-0.001	0.007	0.012	0.014	0.016	-0.009
EU	3.575	-0.162	1.696	0.757	0.374	0.574	-0.503	-0.137	0.125

Table B.51: CCCTB-MNEs + ACE w/ 0.38 ACE rate

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	5.574	-0.164	0.94	0.38	0.202	0.266	-0.31	-0.111	0.037
BEL	-0.847	0.426	-1.854	0.627	-0.235	-0.379	-0.138	0.034	0.54
DNK	6.392	0.078	-0.25	0.153	0.101	-0.037	-0.195	-0.101	-0.01
FIN	4.021	0.017	0.202	0.367	0.105	0.13	-0.137	0.041	0.114
FRA	-2.039	-0.123	0.8	0.469	0.207	0.692	-0.342	-0.094	0.113
DEU	4.157	-0.252	2	0.874	0.468	0.861	-0.598	-0.174	0.127
GRC	0.477	0.065	-0.26	0.015	0.026	-0.11	0.004	0.016	-0.013
HRV	-8.408	0.138	-0.896	0.521	0.032	-0.334	0.113	0.3	0.31
IRL	15.712	0.198	-0.208	0.672	0.184	-0.688	-0.207	0.019	0.21
ITA	0.832	0.041	-0.21	0.21	0.028	-0.007	-0.092	-0.009	0.103
LUX	2.183	-0.185	1.38	1.444	0.227	0.931	-1.575	-1.086	0.78
NLD	6.451	-0.162	1.918	1.24	-0.075	0.151	-0.282	0.144	0.743
PRT	1.595	0.035	-0.07	0.389	0.089	0.151	-0.099	0.035	0.152
ESP	1.268	-0.401	5.05	1.96	1.189	2.13	-1.296	-0.4	0.158
SWE	4.077	-0.019	0.378	0.654	0.042	0.289	-0.198	0.071	0.359
GBR	9.794	-0.729	6.783	1.705	1.034	1.311	-1.382	-0.511	-0.02
CYP	9.021	0.098	-0.421	0.206	0.111	-0.312	-0.045	0.032	0.024
CZE	5.807	0.032	-0.007	0.265	0.169	-0.043	-0.099	0.011	-0.026
EST	-7.36	0.106	-0.626	0.3	0.051	-0.34	-0.017	0.088	0.104
HUN	6.245	-0.014	0.25	0.262	0.218	0.083	-0.143	0.002	-0.039
LVA	-1.016	0.056	-0.201	0.141	0.064	-0.121	0.018	0.072	0.027
LTU	-3.637	0.081	-0.337	0.047	0.037	-0.231	0.018	0.038	-0.007
MLT	-0.254	-0.321	4.677	2.334	1.011	2.976	-1.179	-0.391	0.263
POL	10.865	-0.052	0.852	0.489	0.341	0.35	-0.222	-0.02	-0.019
SVK	0.777	0.038	0.014	0.339	0.099	-0.044	-0.009	0.112	0.097
SVN	4.435	-0.006	0.103	0.323	0.116	-0.002	-0.049	0.091	0.087
BGR	2.544	-0.002	0.386	0.558	0.201	-0.017	-0.025	0.141	0.131
ROM	5.289	-0.009	0.185	0.273	0.147	0.071	-0.053	0.055	0.038
USA	0	0	-0.007	-0.003	0.003	0.028	0.027	0.028	-0.005
JPN	0	0	0.007	-0.001	0.007	0.012	0.015	0.016	-0.009
EU	3.747	-0.175	1.817	0.794	0.394	0.617	-0.528	-0.143	0.131

Table B.52: CCCTB-MNEs + ACE w/ 1 ACE rate

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	8.612	-0.461	4.895	1.847	0.893	1.803	-1.185	-0.239	0.255
BEL	1.925	0.05	-0.232	0.742	-0.328	-0.005	-0.312	-0.124	0.679
DNK	9.79	-0.247	2.546	1.009	0.48	0.924	-0.745	-0.186	0.128
FIN	9.54	-0.247	2.387	0.961	0.367	0.852	-0.528	-0.033	0.205
FRA	-0.21	-0.533	4.778	1.68	0.903	2.082	-1.223	-0.271	0.258
DEU	4.984	-0.59	6.288	2.23	1.281	2.447	-1.532	-0.42	0.238
GRC	10.198	-0.085	0.647	0.34	0.198	0.306	-0.132	0.022	0.031
HRV	-4.838	0.054	0.141	0.537	0.103	0.043	-0.002	0.204	0.225
IRL	19.92	-0.131	1.925	1.165	0.236	0.059	-0.45	-0.077	0.444
ITA	4.755	-0.206	1.58	0.798	0.356	0.736	-0.46	-0.062	0.179
LUX	5.766	-0.511	6.558	4.14	0.316	2.721	-2.766	-1.411	2.59
NLD	9.578	-0.494	4.221	1.779	0.131	0.825	-0.783	-0.096	0.861
PRT	5.89	-0.254	2.481	1.079	0.506	1.125	-0.588	-0.15	0.147
ESP	1.66	-0.853	12.342	4.223	2.487	4.679	-2.839	-0.915	0.371
SWE	8.31	-0.288	2.884	1.244	0.316	1.068	-0.635	-0.046	0.43
GBR	10.772	-1.127	12.557	3.169	1.784	2.995	-2.452	-0.872	0.101
CYP	15.08	-0.048	0.734	0.563	0.265	0.162	-0.179	0.025	0.094
CZE	14.875	-0.186	1.774	0.819	0.458	0.727	-0.409	-0.079	-0.02
EST	-1.403	0.002	0.39	0.525	0.131	0.073	-0.115	0.075	0.138
HUN	12.336	-0.274	2.729	1.108	0.7	1.17	-0.651	-0.088	0.022
LVA	6.766	-0.046	0.601	0.372	0.172	0.241	-0.063	0.081	0.067
LTU	3.052	-0.001	0.284	0.221	0.109	0.053	-0.044	0.038	0.02
MLT	1.308	-0.664	10.711	4.873	1.991	5.529	-2.478	-0.85	0.635
POL	15.234	-0.385	4.302	1.66	1.068	1.824	-0.928	-0.259	0.004
SVK	10.131	-0.111	1.303	0.698	0.273	0.519	-0.166	0.1	0.142
SVN	13.541	-0.187	1.286	0.524	0.27	0.408	-0.213	0.032	0.058
BGR	9.068	-0.102	1.46	0.762	0.327	0.469	-0.147	0.087	0.13
ROM	15.438	-0.173	1.569	0.701	0.418	0.696	-0.261	0.025	0.064
USA	0	0	-0.021	-0.003	-0.013	0.024	0.031	0.028	0.013
JPN	0	0	0.001	-0.001	0.001	0.009	0.017	0.017	-0.001
EU	6.881	-0.498	5.465	1.879	0.999	1.914	-1.298	-0.359	0.246

Table B.53: CCTB MNEs only with max CIT rate 45%

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.472	0.034	0.943	0.282	0.148	0.291	-0.215	-0.068	0.029
BEL	-16.88	0.127	-2.263	-0.434	-0.436	0.399	0.458	0.163	0.085
DNK	-2.511	-0.004	-0.342	-0.051	-0.027	0.285	0.113	0.084	-0.004
FIN	-3.316	-0.011	-0.378	-0.099	-0.027	0.069	0.06	0.013	-0.033
FRA	-6.758	-0.088	-0.343	-0.048	-0.032	0.396	0.135	0.106	-0.002
DEU	8.684	0.1	1.269	0.279	0.27	0.382	-0.292	-0.121	-0.066
GRC	-9.187	-0.04	-1.407	-0.653	-0.165	-0.558	0.2	-0.032	-0.229
HRV	-9.187	0.173	-3.624	-1.225	-0.356	-0.609	0.723	0.231	-0.355
IRL	-0.032	-0.001	0.13	0.12	0.023	0.68	0.071	0.109	0.047
ITA	-3.798	0.116	0.076	0.05	-0.032	0.026	-0.01	-0.002	0.057
LUX	-0.261	-0.002	0.282	0.134	0.158	0.719	-0.444	-0.38	-0.068
NLD	2.674	-0.027	0.833	0.258	0.157	0.336	-0.139	0.003	0.007
PRT	-9.119	-0.038	-0.875	-0.217	-0.034	0.481	0.146	0.075	-0.101
ESP	6.888	0.132	1.053	0.308	0.165	0.327	-0.187	-0.053	0.045
SWE	-1.874	0.012	-0.352	-0.002	-0.085	0.442	0.147	0.119	0.09
GBR	16.473	-0.183	7.736	1.434	0.923	0.937	-1.569	-0.819	-0.077
CYP	0	0.03	-0.542	-0.181	-0.095	-0.064	0.149	0.081	-0.023
CZE	-1.88	-0.018	-0.16	-0.041	-0.018	0.166	0.042	0.026	-0.004
EST	-10.066	0.114	-3.924	-1.978	-0.392	-1.451	0.793	0.094	-0.633
HUN	0.944	0.019	-0.001	0.008	-0.012	0.181	0.008	0.008	0.015
LVA	-4.686	0.065	-1.956	-0.852	-0.313	-0.797	0.401	0.09	-0.216
LTU	-4.686	0.123	-3.493	-1.587	-0.556	-1.566	0.756	0.22	-0.352
MLT	2.663	0	0.35	0.2	-0.105	0.489	0.044	0.064	0.206
POL	8.232	0.105	1.355	0.459	0.209	0.443	-0.259	-0.093	0.078
SVK	-8.301	-0.003	-0.98	-0.438	-0.052	-0.01	0.146	0.008	-0.187
SVN	-1.573	-0.004	-0.158	-0.017	-0.018	0.16	0.037	0.027	0.008
BGR	0	0.023	-0.417	-0.168	-0.078	-0.078	0.112	0.06	-0.023
ROM	-0.265	0.006	-0.116	-0.053	0.003	0.023	0.013	-0.001	-0.033
USA	0	0	-0.001	0	-0.001	0.035	0.026	0.026	0.001
JPN	0	0	0.001	0	0.001	0.007	0.012	0.013	-0.001
EU	2.485	0.022	1.157	0.231	0.162	0.321	-0.25	-0.114	-0.016

Table B.54: CCTB MNEs only with max CIT rate 50%

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	5.472	0.034	0.943	0.282	0.148	0.295	-0.213	-0.066	0.029
BEL	-16.88	0.127	-2.254	-0.434	-0.428	0.409	0.458	0.167	0.078
DNK	-2.511	-0.004	-0.342	-0.05	-0.028	0.312	0.118	0.089	-0.002
FIN	-3.316	-0.011	-0.377	-0.099	-0.026	0.074	0.061	0.014	-0.034
FRA	-6.758	-0.088	-0.345	-0.047	-0.035	0.423	0.143	0.113	0.001
DEU	8.684	0.1	1.269	0.279	0.27	0.386	-0.288	-0.118	-0.065
GRC	-9.187	-0.04	-1.407	-0.653	-0.165	-0.555	0.201	-0.031	-0.229
HRV	-9.187	0.173	-3.624	-1.225	-0.356	-0.601	0.723	0.232	-0.354
IRL	-0.032	-0.001	0.135	0.128	0.023	0.767	0.081	0.121	0.052
ITA	-3.798	0.116	0.075	0.05	-0.033	0.031	-0.009	-0.001	0.058
LUX	-0.261	-0.002	0.289	0.141	0.16	0.834	-0.411	-0.344	-0.066
NLD	2.674	-0.027	0.835	0.26	0.157	0.376	-0.129	0.013	0.008
PRT	-9.119	-0.038	-0.876	-0.216	-0.037	0.498	0.149	0.078	-0.098
ESP	6.888	0.132	1.052	0.308	0.164	0.333	-0.182	-0.049	0.046
SWE	-1.874	0.012	-0.358	0.002	-0.093	0.493	0.159	0.13	0.1
GBR	18.016	-0.117	7.697	1.326	0.98	0.844	-1.639	-0.901	-0.219
CYP	0	0.03	-0.542	-0.178	-0.096	-0.026	0.153	0.086	-0.021
CZE	-1.88	-0.018	-0.161	-0.04	-0.019	0.17	0.042	0.027	-0.003
EST	-10.066	0.114	-3.924	-1.977	-0.392	-1.444	0.794	0.095	-0.633
HUN	0.944	0.019	-0.002	0.009	-0.013	0.186	0.009	0.009	0.016
LVA	-4.686	0.065	-1.956	-0.851	-0.314	-0.793	0.401	0.09	-0.216
LTU	-4.686	0.123	-3.493	-1.586	-0.556	-1.564	0.756	0.22	-0.352
MLT	2.663	0	0.349	0.2	-0.106	0.493	0.046	0.066	0.207
POL	8.232	0.105	1.355	0.459	0.209	0.446	-0.259	-0.092	0.078
SVK	-8.301	-0.003	-0.98	-0.438	-0.052	-0.008	0.146	0.008	-0.187
SVN	-1.573	-0.004	-0.158	-0.017	-0.019	0.165	0.038	0.028	0.008
BGR	0	0.023	-0.417	-0.168	-0.079	-0.068	0.113	0.061	-0.022
ROM	-0.265	0.006	-0.116	-0.053	0.003	0.024	0.013	-0.001	-0.033
USA	0	0	-0.001	0	-0.001	0.04	0.028	0.028	0.001
JPN	0	0	0.001	0	0.001	0.009	0.013	0.013	-0.001
EU	2.672	0.03	1.152	0.218	0.168	0.319	-0.255	-0.122	-0.034

Table B.55: CCCTB MNEs only with max CIT rate 45%

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	2.967	-0.053	0.083	0.102	0.095	-0.066	-0.147	-0.081	-0.03
BEL	-2.958	0.578	-2.482	0.521	-0.169	-0.51	-0.084	0.067	0.428
DNK	3.558	0.186	-0.837	0.064	0.07	-0.187	-0.12	-0.07	-0.034
FIN	0.888	0.102	-0.338	0.258	0.072	-0.037	-0.073	0.051	0.082
FRA	-4.029	0.037	-0.225	0.202	0.058	0.342	-0.133	-0.038	0.075
DEU	4.03	-0.06	0.217	0.16	0.106	0.113	-0.186	-0.102	0.005
GRC	-2.763	0.108	-0.487	-0.064	-0.005	-0.214	0.029	0.009	-0.031
HRV	-8.6	0.185	-1.412	0.367	-0.038	-0.534	0.193	0.313	0.299
IRL	13.734	0.342	-1.039	0.488	0.217	-0.961	-0.146	0.039	0.072
ITA	-2.451	0.125	-0.613	0.128	-0.009	-0.147	-0.045	-0.002	0.085
LUX	0.303	-0.043	-2.401	-0.967	-0.382	-1.027	-0.537	-0.894	-0.288
NLD	4.473	-0.015	1.361	1.251	-0.038	0.044	-0.199	0.243	0.717
PRT	-1.477	0.135	-0.798	0.391	0.06	-0.055	-0.032	0.095	0.184
ESP	3.228	-0.061	0.67	0.325	0.26	0.446	-0.275	-0.109	-0.023
SWE	1.402	0.081	-0.356	0.579	0.01	0.104	-0.121	0.109	0.348
GBR	9.651	-0.502	3.831	0.817	0.611	0.376	-0.815	-0.359	-0.141
CYP	6.61	0.149	-0.784	0.089	0.078	-0.459	-0.016	0.023	-0.012
CZE	2.176	0.092	-0.473	0.158	0.124	-0.242	-0.049	0.021	-0.038
EST	-8.923	0.152	-1.098	0.119	-0.005	-0.525	0.042	0.08	0.068
HUN	2.618	0.054	-0.246	0.17	0.163	-0.129	-0.082	0.017	-0.044
LVA	-3.456	0.084	-0.448	0.066	0.038	-0.23	0.032	0.059	0.006
LTU	-4.403	0.135	-0.706	-0.11	-0.029	-0.405	0.083	0.048	-0.033
MLT	0.256	-0.104	1.018	0.445	0.295	1.268	-0.304	-0.13	-0.045
POL	6.817	0.028	0.266	0.323	0.248	0.095	-0.139	-0.001	-0.032
SVK	-2.344	0.082	-0.389	0.23	0.061	-0.22	0.021	0.102	0.071
SVN	1.316	0.052	-0.279	0.26	0.079	-0.135	-0.011	0.099	0.085
BGR	0.437	0.028	-0.031	0.502	0.173	-0.205	0.002	0.15	0.125
ROM	1.917	0.039	-0.185	0.167	0.091	-0.099	-0.012	0.054	0.022
USA	0	0	0.002	-0.004	0.011	0.03	0.025	0.027	-0.014
JPN	0	0	0.01	-0.001	0.011	0.014	0.013	0.015	-0.013
EU	2.137	-0.022	0.368	0.327	0.155	0.086	-0.222	-0.065	0.054

Table B.56: CCCTB MNEs only with max CIT rate 50%

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	2.969	-0.053	0.083	0.102	0.095	-0.066	-0.147	-0.081	-0.03
BEL	-2.941	0.578	-2.481	0.521	-0.167	-0.509	-0.084	0.067	0.427
DNK	3.559	0.186	-0.837	0.064	0.071	-0.186	-0.12	-0.07	-0.034
FIN	0.889	0.102	-0.338	0.258	0.072	-0.037	-0.073	0.052	0.082
FRA	-4.026	0.037	-0.225	0.202	0.058	0.343	-0.134	-0.038	0.075
DEU	4.032	-0.06	0.217	0.16	0.107	0.113	-0.186	-0.102	0.005
GRC	-2.763	0.108	-0.487	-0.064	-0.005	-0.214	0.029	0.009	-0.031
HRV	-8.6	0.185	-1.412	0.367	-0.038	-0.534	0.193	0.313	0.299
IRL	13.758	0.342	-1.038	0.489	0.218	-0.96	-0.146	0.039	0.071
ITA	-2.449	0.125	-0.613	0.128	-0.009	-0.147	-0.045	-0.002	0.085
LUX	0.334	-0.042	-2.865	-1.307	-0.548	-1.379	-0.404	-0.891	-0.358
NLD	4.476	-0.015	1.363	1.252	-0.037	0.044	-0.199	0.244	0.717
PRT	-1.475	0.135	-0.798	0.391	0.06	-0.055	-0.032	0.095	0.184
ESP	3.229	-0.061	0.671	0.325	0.26	0.446	-0.275	-0.109	-0.023
SWE	1.409	0.081	-0.356	0.579	0.01	0.105	-0.121	0.109	0.348
GBR	9.662	-0.501	3.832	0.818	0.612	0.377	-0.816	-0.359	-0.141
CYP	6.61	0.149	-0.784	0.089	0.078	-0.459	-0.016	0.023	-0.012
CZE	2.176	0.092	-0.473	0.158	0.124	-0.242	-0.049	0.021	-0.038
EST	-8.923	0.152	-1.098	0.119	-0.005	-0.525	0.042	0.08	0.068
HUN	2.619	0.054	-0.246	0.17	0.163	-0.129	-0.082	0.017	-0.044
LVA	-3.456	0.084	-0.448	0.066	0.038	-0.23	0.032	0.059	0.006
LTU	-4.403	0.135	-0.706	-0.11	-0.029	-0.405	0.083	0.048	-0.033
MLT	0.256	-0.104	1.018	0.446	0.295	1.268	-0.304	-0.13	-0.045
POL	6.818	0.028	0.266	0.323	0.248	0.096	-0.139	-0.001	-0.032
SVK	-2.343	0.082	-0.389	0.23	0.061	-0.22	0.021	0.102	0.071
SVN	1.316	0.052	-0.279	0.26	0.079	-0.135	-0.011	0.099	0.085
BGR	0.437	0.028	-0.031	0.502	0.173	-0.205	0.002	0.15	0.125
ROM	1.917	0.039	-0.185	0.167	0.091	-0.099	-0.012	0.054	0.022
USA	0	0	0.002	-0.004	0.011	0.03	0.025	0.027	-0.014
JPN	0	0	0.01	-0.001	0.011	0.014	0.013	0.015	-0.013
EU	2.141	-0.022	0.368	0.326	0.155	0.086	-0.222	-0.065	0.054

Table B.57: CCCTB MNEs + ACE with max CIT rate 45%

	CIT_rate (a)	CoC (a)	Capital (r)	Wage (r)	Employm. (r)	GDP (r)	Rev_CIT (y)	Rev_tax (y)	Welfare (y)
AUT	10.358	-0.26	1.858	0.662	0.385	0.635	-0.48	-0.122	0.03
BEL	4.114	0.327	-1.064	0.977	-0.115	-0.082	-0.243	0.099	0.649
DNK	11.136	-0.009	0.468	0.367	0.255	0.226	-0.333	-0.101	-0.039
FIN	8.385	-0.07	0.989	0.606	0.243	0.423	-0.253	0.063	0.118
FRA	3.109	-0.201	1.443	0.603	0.396	0.93	-0.495	-0.128	0.033
DEU	9.546	-0.359	3.103	1.19	0.71	1.276	-0.805	-0.206	0.107
GRC	4.582	0.009	0.077	0.159	0.099	0.052	-0.043	0.031	0.009
HRV	-7.936	0.098	-0.301	0.864	0.121	-0.184	0.041	0.365	0.421
IRL	20.317	0.085	1.011	1.248	0.348	-0.17	-0.334	0.09	0.382
ITA	6.085	-0.046	0.353	0.412	0.145	0.237	-0.184	0.009	0.126
LUX	6.988	-0.269	2.884	1.884	0.76	1.786	-1.814	-1.113	0.53
NLD	11.327	-0.286	3.284	1.671	0.108	0.537	-0.463	0.177	0.822
PRT	6.722	-0.058	0.677	0.648	0.228	0.457	-0.219	0.024	0.17
ESP	6.749	-0.522	6.861	2.471	1.556	2.781	-1.621	-0.473	0.148
SWE	8.68	-0.113	1.304	0.949	0.183	0.585	-0.347	0.084	0.392
GBR	15.129	-0.851	8.333	1.983	1.277	1.674	-1.652	-0.611	-0.114
CYP	12.45	0.043	0.03	0.416	0.204	-0.099	-0.097	0.055	0.063
CZE	10.28	-0.045	0.632	0.527	0.295	0.25	-0.205	0.007	-0.012
EST	-4.735	0.067	-0.08	0.542	0.121	-0.162	-0.068	0.126	0.158
HUN	10.704	-0.098	0.978	0.524	0.38	0.421	-0.273	0.004	-0.03
LVA	2.183	0.018	0.163	0.304	0.128	0.039	-0.009	0.106	0.064
LTU	-0.954	0.051	-0.007	0.187	0.092	-0.109	-0.007	0.061	0.017
MLT	4.851	-0.421	6.176	2.885	1.268	3.622	-1.47	-0.49	0.304
POL	15.87	-0.151	1.793	0.825	0.552	0.77	-0.379	-0.044	-0.013
SVK	4.71	-0.019	0.637	0.608	0.197	0.218	-0.065	0.157	0.158
SVN	8.322	-0.077	0.605	0.485	0.201	0.191	-0.116	0.101	0.104
BGR	5.229	-0.041	1.027	0.828	0.308	0.203	-0.073	0.175	0.185
ROM	9.462	-0.072	0.729	0.494	0.266	0.329	-0.126	0.07	0.069
USA	0	0	-0.01	-0.001	-0.006	0.056	0.043	0.041	0.007
JPN	0	0	0.003	-0.001	0.004	0.019	0.022	0.023	-0.004
EU	8.728	-0.27	2.804	1.079	0.591	0.969	-0.706	-0.167	0.116

Table B.58: CCCTB MNEs + ACE with max CIT rate 50%

	CIT_rate	CoC	Capital	Wage	Employm.	GDP	Rev_CIT	Rev_tax	Welfare
	(a)	(a)	(r)	(r)	(r)	(r)	(y)	(y)	(y)
AUT	11.599	-0.242	1.569	0.519	0.354	0.523	-0.409	-0.113	-0.028
BEL	5.556	0.361	-1.03	1.125	-0.034	-0.023	-0.26	0.163	0.671
DNK	11.887	0.007	0.462	0.417	0.3	0.257	-0.347	-0.079	-0.055
FIN	8.75	-0.064	1.042	0.656	0.281	0.458	-0.262	0.086	0.109
FRA	4.804	-0.149	1.024	0.444	0.366	0.789	-0.415	-0.116	-0.04
DEU	12.309	-0.321	2.548	0.947	0.62	1.066	-0.671	-0.179	0.037
GRC	4.644	0.01	0.087	0.177	0.11	0.058	-0.045	0.038	0.011
HRV	-7.89	0.098	-0.263	1.016	0.137	-0.235	0.044	0.423	0.503
IRL	21.527	0.104	1.166	1.461	0.43	-0.075	-0.353	0.148	0.425
ITA	6.74	-0.041	0.366	0.458	0.168	0.261	-0.191	0.026	0.134
LUX	8.313	-0.238	2.179	1.282	0.936	1.638	-1.6	-1.066	-0.073
NLD	12.648	-0.272	3.692	1.915	0.191	0.654	-0.499	0.256	0.884
PRT	7.329	-0.05	0.652	0.76	0.262	0.484	-0.228	0.056	0.204
ESP	9.826	-0.452	5.736	2.043	1.365	2.396	-1.357	-0.386	0.06
SWE	9.427	-0.104	1.344	1.055	0.221	0.617	-0.366	0.118	0.415
GBR	17.809	-0.804	7.498	1.65	1.191	1.393	-1.499	-0.59	-0.243
CYP	12.759	0.046	0.022	0.452	0.225	-0.089	-0.1	0.066	0.066
CZE	10.335	-0.044	0.656	0.591	0.321	0.267	-0.218	0.019	-0.004
EST	-4.69	0.067	-0.037	0.6	0.137	-0.166	-0.074	0.141	0.172
HUN	10.77	-0.097	1.034	0.598	0.417	0.451	-0.291	0.021	-0.021
LVA	2.218	0.018	0.188	0.342	0.141	0.045	-0.01	0.119	0.074
LTU	-0.937	0.051	0.039	0.223	0.108	-0.109	-0.01	0.071	0.023
MLT	7.22	-0.38	5.249	2.354	1.127	3.229	-1.256	-0.435	0.161
POL	15.963	-0.149	1.863	0.877	0.583	0.803	-0.392	-0.036	-0.011
SVK	4.757	-0.019	0.705	0.686	0.218	0.234	-0.067	0.182	0.181
SVN	8.416	-0.076	0.619	0.534	0.216	0.203	-0.119	0.118	0.118
BGR	5.265	-0.041	1.139	0.954	0.347	0.193	-0.077	0.208	0.22
ROM	9.481	-0.072	0.752	0.537	0.283	0.342	-0.128	0.083	0.079
USA	0	0	-0.006	0.001	-0.008	0.075	0.049	0.048	0.009
JPN	0	0	0.004	0	0.004	0.025	0.025	0.026	-0.004
EU	10.254	-0.242	2.474	0.971	0.559	0.858	-0.628	-0.137	0.072

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