Profit Allocation and Corporate Taxing Rights: Global and Unilateral Perspectives

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Paris School of Economics - June, 2020

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Abstract

By drawing from public data on the location of profits and economic activity of European Union multinationals (Foreign Affiliate Statistics (FATS) and bilateral balance of payments), this paper provides an evaluation of the impact of the introduction of a formulary apportionment system and a global minimum effective corporate tax rate. Tax havens are the main losers from this transition to formulary apportionment. Developing countries can benefit from gains in tax base as large as €0.5 and €1 trillion, but this requires the introduction of population in the apportionment formula (rather than sales and/or employees). Otherwise, most benefits accrue to rich countries. This paper also looks at the possibility of unilateral strategies. If a country like France unilaterally adopts a minimum effective tax equal to 35%, including trade tariffs to multinationals operating at low-tax countries, I estimate that its tax revenues increase by a 2% of its national income (before possible retaliation strategies by other countries), as compared with a 1.4% under international cooperation. These estimates provide insights on the implications of the different proposed international tax reforms and shed light on tax policy design against profit shifting practices. In the absence of cooperation, it can be tempting for countries to adopt unilateral strategies to induce a move towards international cooperation.

Keywords: Taxing rights, formulary apportionment, minimum tax rate, profit shifting

JEL codes: H25, H26, F23, F68

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1 Introduction

Profit shifting by multinationals creates sizeable tax revenue loses for non-haven countries. Recent estimates indicate that, in 2015, 40% of multinationals' profits were shifted to tax havens, generating a global loss in tax revenues of 10% of the actual tax revenue collected (Tørsløv, Wier, and Zucman (2018)). Following this research, non-haven European Union (EU) countries are the main losers from this phenomenon, with a reduction in their tax revenue of around a 2%. Tax avoidance practices also contribute to the rise of inequality between countries, by disproportionally undermining economic resources for low-income countries, or more broadly developing countries, that are more reliant on this source of revenues than advanced economies. The prospects of an increase in tax competition (IMF (2019)) poses the question of the future of corporate income tax and the subsequent raise of profit shifting practices.

As a response, corporate tax policy reforms have been proposed by both international institutions and academics. The main claim is that the current international tax system, known as separate accounting, is not adapted to the challenges that globalisation and digitalisation raises to multinational's taxation. A proposal, is the design of a taxation system that allocates taxing rights to countries where multinationals' economic activity is located[2]. This system is more commonly known as formulary apportionment, and it has different variants which depend on the economic activity variables considered as apportionment factor[3], for example sales, or employees, or the definition of the tax base[4]. The objective of it is to reduce the incentive of shifting profits to low-tax jurisdictions by allocating income where it is generated. The OECD,[5] with the Base Erosion and Profit Shifting (BEPS) project, the IMF, the EU with the Common Consolidated Corporate Tax Base (CCCTB) or the Independent Commission for the International Corporate Taxation (ICRICT) and academics as Avi-Yonah and Clausing (2007) have advocated in favour of this taxation model. Another mechanism is the definition of a global minimum corporate effective tax rate to limit international tax competition for attracting profits.

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[2]Countries as the United States, Canada or Germany have long relied in this type of systems to allocate corporate profits within their territory. For example, the United States, as an answer to the high economic integration of the 50 states, defined a system that apportioned profits based on multinationals' location of property, payroll, and sales (Avi-Yonah and Clausing (2007)).

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[4]For example, the IMF proposes an apportionment system based on the re-allocation of residual profit (i.e. the economic rent derived by the multinational from its market power). This is known as residual profit allocation (Beer et al. (2020)).

[5]The BEPS project is designed around two pillars. Pillar One refers to the need to reallocate profits to destination markets. Pillar Two defines the implementation of a global minimum effective tax rate (OECD (2020)).

This paper aims to evaluate the associated outcomes from a transition to a formulary apportionment system, or Global Formulary Apportionment (GFA) as defined in this paper, and the adoption of a minimum effective tax rate, considering both the existence and absence of international cooperation. For answering these questions, this paper draws from publicly available data on EU multinationals' activity (Foreign Affiliates Statistics or FATS) combined with bilateral balance of payments statistics. After a systematic correction of these statistics to allow comparability across them (see Section 3), the resulting data set allows us to link the location of economic activity and pre-tax profits by multinationals' nation of origin. With this data set, the evaluation of the systems considered is focused on the resulting profit allocation and the associated tax revenues under the different models. To assess the true extent of profit redistribution, the analysis is based on a division of countries by both income and development level. This approach is relatively novel in this literature. Cobham, Faccio, and FitzGerald (2019) introduce it as well in their analysis of the redistribution of the tax base for US multinationals.

Related empirical evidence on formulary apportionment is mostly focused on the United States thanks to publicly available multinationals' data published by the Bureau of Economic Analysis (BEA) and the Internal Revenue Service (IRS) (Cobham and Janský (2019)). In the case of the EU, existent evidence is limited and mostly for Germany (Fuest (2007)). Most of the studies rely on private data sources as Orbis, or Amadeus at the EU level, from Bureau Van Dijk (De Mooij, Liu, and Prihardini (2019)). The main drawback of these data sets is that companies' subsidiaries data is incomplete[6]. This paper contributes to this literature by providing evidence for the EU and by basing its results on publicly available data. The advantages of applying these statistics, apart from their public status, are their broader coverage as compared with private sources and their consistency with current profit shifting estimates based on macroeconomic data (Tørsløv, Wier, and Zucman (2018)). However, these data sets are not perfect and face different limitations. These limitations are in terms of their data availability for low income and tax haven countries, or the existence of bilateral divergencies between countries' reported data (see Section 3 for a detailed discussion).

The definition of the apportionment factor, or economic activity variable, for a formulary apportionment scheme and its both adequacy and redistributive impact, is one of the core questions in this area of research. Cobham and Loretz (2014) asses the resulting redistribution across countries by defining factors as tangible assets, the number of employees or their costs. The authors find that if the number of employees is the unique apportionment factor, the highest redistribution is achieved.

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[6]Tørsløv, Wier, and Zucman (2018) provide a more in depth analysis of Orbis limitations. For example, in 2016 Apple reported a global consolidated profit of 55.3 billion of EUR but the total sum by subsidiary just represented around a 4% of the total.

Eichfelder, Hechtner, and Hundsdoerfer (2018) analyse the definition of payroll as a factor, following the design of the German local business tax. An interesting insight of their research is the conclusion that firms manipulate payroll expenses to save tax payments. The distortions introduced by this taxation system have also been discussed by Hines Jr (2010) or Laffitte and Toubal (2019), in the case of tax havens as sales platforms for United States multinationals. In this paper, three different factors are considered: sales, number of employees and population. A tax system that defines multinationals' profit allocation based on the share of population in each of the countries where it operates, has not been considered before[7]. Empirical evidence points towards an inverse relationship between income level and population (Alvaredo et al. (2017)). With population, a larger profit redistribution could be achieved to countries at the bottom of the income distribution. This is particularly relevant for policymakers, in the current context were the Coronavirus crisis is affecting disproportionally this set of countries (Glassman (2020)).

The implementation of a global minimum effective corporate tax rate has been evaluated before. Fuest, Parenti, and Toubal (2019) evaluate different tax policy proposals for France and conclude that a worldwide minimum effective tax rate would be the best tool to contract profit shifting and raise corporate tax revenues. In the same line, OECD research[8] concluded that a minimum effective tax rate could raise global tax revenues up to 4% of the current level and reduce incentives to shift profits due to the elimination of tax differentials. A novel contribution of this paper to this area of research is the economic assessment of a unilateral transition towards the adoption of a minimum effective tax rate for a country like France.

The main results of this paper are that, if the EU were to adopt GFA system for its multinationals, all income groups would be benefited from such a transition with increased taxing rights and corporate tax revenues, especially in developing countries. I estimate that the tax base for these countries increases between €0.5 and €1 trillion, but this requires the definition of population as an apportionment factor (rather than sales and/or employees). This benefit is achieved at the expense of tax haven countries[9]. The adoption of a minimum effective tax rate of 35% by a country like France, derives sizeable tax revenues for the country, at a lower cost in terms of created import tariffs. As

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[7]In the United States, the federal income tax was apportioned across the different states according to their population. In this case, tax liability was apportioned across states, i.e., contribution were made as a function of states population. This mechanism was abolished in 1894 when it was declared unconstitutional (Saez and Zucman (2019)).

[8]https://www.oecd.org/tax/beps/presentation-economic-analysis-impact-assessment-webcast-february-2020.pdf

[9]See Table 18 for a complete list of the countries classified as tax havens in this paper. Note that, tax havens are not differentiated in terms of income level. For example, Switzerland and Puerto Rico both fall in the same tax haven category independently of their income level.

compared with an scenario with international cooperation, France derives higher tax revenue gains if it decides to adopt a minimum effective tax rate unilaterally, 2% of its national income (before potential retaliation strategies[10] by other countries), as compared with a 1.4% under cooperation. Following that, it can be tempting for countries to adopt unilateral strategies to induce a move forward to international cooperation.

As it has been previously found in the literature, the final redistributive impact of formulary apportionment is highly determined by the apportionment factor defined (Cobham and Loretz (2014)). If the number of employees is considered, low income countries perceive a higher share of profits due to multinationals outsourcing this activity to their territory. High income countries appear to be more benefited under a system with sales due to their concentration of final consumers. Apportioning profits by population achieves the highest redistributive outcome across income group. These results are obtained in a framework that assumes no behavioural responses from both firms and governments to a change in tax policy. As aforementioned, multinationals could manipulate the allocation of factors to lower tax payments. In the case of sales and population, this may not be a concern due to the immobility of the factors. However, it might not be the same for employees (Cobham, Faccio, and FitzGerald (2019)) or even sales (Laffitte and Toubal (2019)). Empirical evidence based on the US experience suggests that these behavioural responses could be limited (Clausing (2016)) or even result in a null redistributive impact as compared with separate accounting (Altshuler and Grubert (2010)).

The rest of the paper is organized as follows. Section 2 formally describes the different tax models evaluated and their underlying mechanisms. Section 3 contains an explanation of the methodology applied, the data corrections and sources for both EU multinationals' corporate profits and economic activity, and its descriptive statistics. Sections 4 and 5, present the results for both the GFA approach and the adoption of a minimum effective tax rate, respectively. Section 6 concludes[11].

2   International Corporate Taxation Models

This Section formally describes the international corporate taxation models evaluated in this paper: (i) Separate Accounting (SA), (ii) Global Formulary Apportionment (GFA) and (iii) the mechanism for

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[10] As defined in Section 2, the proposed mechanism for the unilateral adoption of a minimum effective tax rate involves the creation of trade tariffs. In this context, retaliation strategies refer to actions taken by countries so as to punish for the costs levied on them. For example, reciprocal trade tariffs or other type of economic sanctions.

[11] All the data and code needed to reproduce this paper can be found at https://www.dropbox.com/sh/fhyvy9xinumpe92/AAA-Htjcqk7R_1U2siy-Ujx3a?dl=0.

the unilateral implementation of a minimum effective tax rate. Through the description of the different alternative models, as in previous literature, the main assumption is the absence of behavioural response from multinational enterprises (MNE) or governments to changes in tax policy.

Separate accounting (SA). The current international tax scheme, separate accounting, treats each affiliate[12] of a MNE as independent. Taxing rights are allocated to the jurisdiction of residence of MNE's affiliates (a). Under this scheme, the corporate tax base for country (i) of MNE (m), Y_i^m, is equal to the sum of the positive pre-tax corporate profits π_i^a declared by affiliates (a) of the MNE at its territory,

$$Y_i^m = \pi_i^m = \sum_a^N \pi_i^a \tag{1}$$

where π_i^m are the pre-tax profits registered by m at i with $\pi_i^a > 0$ and $a = \{1, 2, 3..., N\}$ is the vector of affiliates. Defining t_i ($t_i \geq 0$) as country's i effective corporate tax rate, $T_i^m = Y_i^m \times t_i$ is the tax revenue collected by i from the MNE (m).

Global Formula Apportionment (GFA). Under GFA, the MNE is treated as a single unit and its consolidated pre-tax profit Π^m is considered. These profits are equal to the total income generated by all the MNE's affiliates, $\Pi^m = \sum_i^J \sum_a^N \pi_i^a$ where π_i^a can be either positive or negative and $i = \{1, 2, 3, ...J\}$ denotes the vector of countries where affiliates are located. This implies that the MNE can immediately offset losses in one affiliate against gains in others. By construction, this so-called *international loss consolidation* leads to a reduction of the corporate tax base as compared with separate accounting[13].

In this framework, the tax base allocated to country i is based on a weight or apportionment factor (w_i^m),

$$Y_i^m = \pi_i^m = w_i^m \times \Pi^m \tag{2}$$

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[12]The term affiliate enterprise is broad concept that englobes subsidiaries, associates, branches or fellow enterprises (OECD (2016b)). In this context, affiliates that operate at the country where the MNE is headquartered are also included.

[13]For example, if a MNE registers $\pi_A^m < 0$ at country A and $\pi_B^m > 0$ at country B, under separate accounting the tax base of the multinational is π_B^m. However, if profits are consolidated, the tax base is reduced by π_A^m as profits of both jurisdictions are aggregated. The impact of international loss consolidation has been previously discussed when evaluating formulary apportionment methods. See for instance, Devereux and Loretz (2008) or Cobham and Loretz (2014).

with

$$w_i^m = \frac{z_i^m}{Z^m}$$

where $z_i^m = \sum_a^N z_i^a$ ($z_i^m > 0$) and $Z^m = \sum_i^J \sum_a^N z_i^a$ ($Z^m > 0$). In equation 2, Y_i^m corresponds to the tax base allocated at country i from m, which depends on Π^m, the consolidated profit and w_i^m, the weight with $w_i^m \in [0,1]$, z_i^m denoting the value of the factor registered by m at i and Z^m the total global value of the factor for the MNE. As for separate accounting, $T_i^m = Y_i^m \times t_i$ is the tax revenue for i arising from the MNE allocated profits at its jurisdiction.

In this framework, the parameter that determines the amount of profits allocated at i is the weight w_i^m. It corresponds to i's share of a factor related with the economic activity of the MNE at its territory. In this paper, the GFA scheme considered defines weights based on both destination sales and employees separately or an average of the two (ICRICT (2018)). With sales, the weight becomes $w_i^{m,s} = s_i^m/S^m$ where s_i^m are the sales of the MNE at country i and $S^m = \sum_i^N s_i^m$ are global sales. Equivalently for employees, $w_i^{m,e} = e_i^m/E^m$ with e_i^m as the number of MNE's employees located at i and $E^m = \sum_i^N e_i^m$ as the total labour force of m. A hybrid of both, is specifying $w_i^{m,se} = 0.5 \times (w_i^{m,s} + w_i^{m,e})$ and setting an equal weight for both factors. Population could also be defined as an apportionment factor. This GFA scheme would correspond to a solidarity tax on MNEs profits (Chancel (2020))[14]. In this case, the weight is defined as $w_i^{m,p} = p_i^m/P^m$ where p_i^m is the population of country i and P^m is the total population where m has registered profits

Note that the separate accounting system could be re-expressed under a GFA framework by defining w_i^m of Equation 2 equal to $w_i^{m,SA} = \sum_a^N \pi_i^a/\Pi^m$. A country i will gain (lose) tax base with a transition to GFA if $w_i^{m,SA} < w_i^{m,GFA}$ ($w_i^{m,SA} > w_i^{m,GFA}$) where $w_i^{m,GFA}$ is the weight considered under GFA with the different apportionment factors (sales and/or number of employees and population).

Unilateral adoption of a minimum effective tax rate.[15]. To limit tax strategic setting by countries, a global minimum effective tax rate has been proposed by international institutions as the OECD (Pillar 2, OECD (2019)) or academics (e.g. Fuest, Parenti, and Toubal (2019)). As argued by Saez and Zucman (2019), international cooperation might not be a requisite for its implementation. Individual or a group of countries could engage in a unilateral transition to implement a minimum

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[14]At Chancel (2020), the idea of a European solidarity tax on MNE's corporate profits is introduced. Its objective is to finance Coronavirus related expenses for EU countries. In this work, the concept of European solidarity tax on multinationals profits is adapted to a unitary taxation framework with population as the apportionment factor.

[15]This model is based on the system described at Saez and Zucman (2019), Chapter 6. Note that, as mentioned by the authors, this proposed model does not violate any existing international treaty (for example, double-taxation treaty).

tax rate. This mechanism would effectively tax MNE's profits at a pre-defined minimum tax rate and incentivize other countries to cooperate.

Define t^* as the minimum effective corporate tax rate. If MNE's affiliates (a), register profits at a jurisdiction (i) and are taxed an effective tax rate t_i lower than t^* $(t^* > t_i)$, a *tax deficit* is created. This tax deficit (d_i^m) is the corporate tax revenue not paid by affiliates due to its profits being allocated at a tax jurisdiction with an effective tax rate lower than the minimum t^*.

Formally,

$$d_i^m = \begin{cases} (t^* - t_i) \times \sum_a^N \pi_i^a, & \text{if } t_i < t^* \\ 0, & \text{if } t_i \geq t^* \end{cases} \tag{3}$$

with $\pi_i^a > 0$ and $t_i, t^* \geq 0$. From equation 3, the *global tax deficit* of the MNE is $d^m = \sum_i^J d_i^m$. This global tax deficit would be collected by an individual or group of countries (c), that adopt the role of *tax collector of last resort* and define t^* as its effective tax rate. For MNEs headquartered at its jurisdiction c collects their entire tax deficit. For MNEs headquartered outside c, their global tax deficit is allocated following a GFA formula. This system is described at equation 4.

$$B_c^m = \begin{cases} d^m, & \text{if } m \text{ headquartered at c} \\ w_c^m \times d^m, & \text{otherwise} \end{cases} \tag{4}$$

In equation 4, B_c^m is the tax deficit collected by c from m, d^m is the global tax deficit of the MNE and w_c^m is the weight defined as in equation 2. This weight could be a function of sales $(w_c^{m,s})$, employees $w_c^{m,e}$ or both $(w_c^{m,se})$. A simpler version of this system is to allocate the global tax deficit independently of where the MNE's headquarters are located. Note that under this scheme, the separate accounting system is maintained, the only modification is that an individual or group of countries collect the MNE's global tax deficit. Therefore, tax revenues under this scheme are $T_{c,u}^m = B_c^m + t^* \times \pi_c^m$, as profits booked at country c are taxed at the minimum effective tax rate t^* and are not part of the global tax deficit of the MNE. This assumes that if the country where to adopt the minimum effective tax rate, profits allocation will not be altered as compared with the current international tax system. Note that, as $t^* > t_i$ by definition, a country will always have the incentive to adopt this mechanism in front of a separate accounting system.

Following this system, the tax deficit could also be collected by imposing an sales tariff (τ_s^m) (or more broadly imports) and a per employee tax (τ_e^m) to the so-called tax deficitary MNEs. The tariff on imports is equal to $\tau_s^m = T_c^m/s_c^m$, where T_c^m corresponds to MNE tax deficit collected by c and s_c^m is the value of imports from m registered at c. In other words, the MNE will have to pay a tariff rate equal to τ_s^m for its sales at c due to its activity at low-tax jurisdictions. Re-arranging terms[16], $\tau_s^m = d^m/S^m$. Therefore, τ_s^m is increasing with the global tax deficit of the MNE (d^m), as the tax collected will be higher, and it decreases the larger its total value of sales (S^m), as the fraction apportioned to c would be lower. Equivalently, in the case of employees, $\tau_e^m = T_c^m/e_c^m$, where e_c^m are the total number of employees registered by the multinational at c.

This unilateral adoption contraposes with the implementation of a minimum effective tax rate under international cooperation. In a scenario without tax differentials where all countries cooperate and implement a global minimum tax rate, profit shifting incentives will disappear. Following Guvenen et al. (2017), the tax base under a GFA scheme is defined as the profit allocation in absence of profit shifting[17]. In this cooperative scenario, and following previous notation, the tax revenue for country i is $T_{i,c}^m = t^* \times \Pi^m \times w_i^m$. An important question arises: When will a country i have the incentive to adopt a unilateral a minimum effective tax rate rather than cooperate for its international implementation? We assume that country i will decide its strategy based on the associated tax revenues gains for each scenario with respect to a separate accounting system. Therefore, for country i to adopt the unilateral strategy the following condition needs to hold[18]

$$B_i^m \geq t^*(\Pi^m \times w_i^m - \pi_i^m) \tag{5}$$

From Equation 5, as long as the collected tax deficit by country i from multinational m, B_i^m, is larger than tax revenue gains from international cooperation, country i will have the incentive to unilaterally adopt a minimum effective tax rate rather than cooperate.

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[16]This expression is obtained by replacing $w_c^{m,s}$ by $w_c^{m,s} = s_c^m/S^m$. Note that its corresponds to a system with just sales as a weighting factor. If sales and employees are the weights, $\tau_s^m = 0.5 \times (d^m/S^m)$ and $\tau_e^m = 0.5 \times (d^m/E^m)$ as $w_c^{m,se} = 0.5 \times (w_c^{m,s} + w_c^{m,e})$.

[17]The idea is that, if there are no tax differentials that may incentivize profit shifting, profit location should be aligned with economic activity. Note that, as argued by Guvenen et al. (2017), this procedure assumes return differentials of productive factors across locations. If not, tax base allocation would be equal for all countries.

[18]Equation 5 is derived from: $(t^*\pi_i^m + B_i^m) - t_i\pi_i^m \geq t^*(\Pi^m \times w_i^m) - t_i\pi_i^m$ where $t_i^m\pi_i^m$ is the tax base for i under a separate accounting system (see Equation 1).

3 Methodology and data

In this Section, the methodology applied to build up the data set for the economic activity and pre-tax profits of EU multinationals is explained. Then, the different sources, their limitations, and the procedures to overcome them are described.

3.1 Methodology

The objective of this paper is to evaluate the different models described at Section 2 for EU multinationals. The evaluation is focused on the static distributional impact of a transition from separate accounting to GFA, in terms of tax base re-allocation and tax revenues. For the adoption of a minimum tax rate, the analysis is on EU's MNEs global tax deficit and the associated tax revenue gains.

The objective is to measure pre-tax corporate profits of EU's MNEs at the different locations of their affiliates. For that, pre-tax corporate profits of an MNE (m) at country i are decomposed in three different components (i) net dividends paid (D)[19], (ii) reinvested earnings (V) and (iii) corporate income tax paid (T): $\pi_i^m = D_i^m + V_i^m + T_i^m$ where $X_i^m = \sum_a^N X_i^a$ with $X = \{D, V, T\}$. This is what the Corporate Income Tax (CIT) aims to tax. Dividends and reinvested earnings are the equity income that correspond to the the MNE for its investment on the affiliate. For the purpose of this paper, corporate income taxes paid by affiliates are inferred with available data for countries' effective tax rates (ETR).

The final dataset for 2015, contains the pre-tax corporate profits of EU's MNEs affiliates, the value of their sales per destination, the number of employees hired at each affiliate and an estimate of the corporate taxes paid. The data set is tabulated by country of location of the multinational headquarters or the so-called parent and its different affiliates.

3.2 Data on Affiliates Economic Activity

Foreign Affiliates Statistics (FATS). FATS describe the economic activity of non-financial corporations' affiliates. It reports indicators as value added, gross operating surplus, personnel costs, sales, or the number of persons employed by the affiliate. Statistics are classified by the country of residence of the affiliates' control unit. This control relationship is defined when the control unit holds a majority

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[19]Net dividends paid are the difference between the dividends paid out by the affiliate to its parent and the dividends received by the affiliate from its parent.

(more than 50%) of the voting power or the shares. Data is reported in a directional basis, either inward or outward FATS. Inward FATS correspond to the economic activity of foreign affiliates within the reporting economy. Outward FATS describe the economic activity of affiliates controlled by the reporting economy outside its frontier. For example, defining Spain as the reporting economy, sales of French affiliates in Spain would be recorded as inward FATS while the sales of Spanish affiliates in France would be recorded as outward FATS.

The main data source for EU countries are the FATS published by Eurostat (Eurostat (2012)). For non-EU countries, data is from the Activity of Multinational Enterprises (AMNE) database, which is the OECD's equivalent of FATS. For EU countries, the data from Eurostat's FATS and AMNE statistics are equivalent. Sales and employees data on outward FATS for EU corporations foreign affiliates is used to build up the different weights ($w_i^{m,s}$, $w_i^{m,e}$ and $w_i^{m,se}$) for the GFA approach (see Section 2). For comparability across the different international taxation models, just data for affiliates with both sales and employees data available is considered. This implies a reduction in the amount of profits of approximately a 4%. FATS do not report data of the activity of the MNE where its control unit is located, for example, data on the economic activity of Spanish multinationals in Spain. It is inferred by applying the share of sales and employees of local US MNEs with Internal Revenue Service (IRS) data to the local sales and employees of the total EU corporate sector.[20]

These statistics suffer from two main limitations. First, the existence of bilateral discrepancies between the data reported by the reporting and its counterpart economy. For example, in the case of sales, EU and OECD partners recorded sales from UK controlled affiliates €422 billion larger than what the UK reported[21]. Second, the incidence of unrecorded or unallocated values. In the case of Sweden, aggregated sales by partner just represents a 31% of total sales, or in the case of Luxembourg, a 13%. In order to reduce the impact of this limitations, EU countries outward data is corrected with mirrored EU and OECD partners inward data[22].

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[20]Data is from the Internal Revenue Service (IRS) https://www.irs.gov/pub/irs-soi/16it01acbc.xlsx. Data for the total local employees and sales for the United States is from OECD's inward FATS. The share of US local MNE sales is equal to 37% of total local sales, and the equivalent for employees is 14%. Data for the EU corporate sector is from Eurostat's inward FATS.

[21]See Table 26 at the Annex.

[22]See Table 27 and 28 at the Annex for more details.

3.3 Data for Multinationals Corporate Profits

Foreign Direct Investment (FDI) statistics. FDI statistics contain both investment position and its associated income and financial flows. Investment position is divided into equity and debt. Dividends and reinvested earnings correspond to the generated flows from an equity position, and interests are the equivalent for debt. Statistics are classified by geographical allocation of the immediate investor. They are recorded when a cross-border investment of a resident investor (or parent) in a non-resident business enterprise (or affiliate) occurs, and vice versa. According to the direction of the investment, data is classified as inward or outward FDI. For example, inward FDI would correspond to the investment reported by an affiliate located in Spain received from a French parent whereas outward FDI would be the opposite, investment reported by a French parent in a Spanish affiliate. For the parent-affiliate relationship to be established, the parent needs to have more than 10% of voting power of the affiliate.

FDI data is from three different sources: OECD, Eurostat, and IMF. For European Union countries that are members of the OECD, data is from the OECD's database on FDI statistics (OECD (2009)). In this case, priority is given to OECD data in front of Eurostat due to the unavailability of data for Special Purpose Entities (SPEs) [23] at the later source. Research indicates that both OECD and Eurostat are generally very consistent (OECD (2016a)). For non-OECD European Union members (Bulgaria, Cyprus, Malta, Romania and Croatia) data is from Eurostat tables *bop_fdi6_pos* and *bop_fdi6_inc*. When equity position data is not available at either OECD or Eurostat, data is from IMF's Coordinated Direct Investment Survey (CDIS). Equity income on outward FDI at a by partner level is used to derive the after-tax corporate profits of European MNE's affiliates by aggregating both dividends (D_i^m)[24] and reinvested earnings (V_i^m).

For the purpose of this paper, relying on FDI statistics faces different limitations. First, the incidence of confidential or unallocated data on by partner FDI statistics. This is particularly relevant for EU tax havens and low income countries.[25] For example, in the case of Cyprus, aggregated by

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[23]An SPE is (i) A formally registered or incorporated legal entity that is resident in an economy and recognised as an institutional unit with little or no employment (up to a maximum of 5 employees), little or no physical presence, and little or no physical production activities in the host economy, (ii) Directly or indirectly controlled by non-residents, (iii) established to obtain specific advantages provided by the host jurisdiction and (iv) transacting almost entirely with non-residents with large parts of the financial balance of a cross-border nature (IMF Task Force of the Balance of Payments Committee (BOPCOM))

[24]Note that these dividends are gross of any withholding taxes.

[25]See Table 23 at the Annex for more details. In the case of Luxembourg and Spain, countries do not publish by partner data, just the aggregate value.

partner equity income flows just represent a 6% of the total world published. Second, there are bilateral discrepancies between the data reported by an investor in an affiliate country and what the affiliate has reported to receive, and vice versa. For example, Netherlands reported to receive €1.15 and €2 billion higher equity income from Switzerland and the United States, respectively, that what these countries have recorded to pay[26]. Third, FDI statistics could over-estimate corporate profits due to its classification by geographical allocation. As mentioned by Wright and Zucman (2018), to the extent that multinationals use intermediate holding companies located in tax havens, FDI statistics are over-estimated in such locations. For example, corporate profits of Amazon could be included on the outward FDI income of Ireland, under a classification by geographical location, but in reality, they accrue to United States, that is where the multinational is headquartered. To overcome the first two limitations, equity income statistics are corrected in a bilateral basis with mirrored inward data[27] for EU and OECD partner countries[28] and missing values are imputed with estimated returns on investment and FDI position data[29]. To reduce the incidence of inflated FDI income due to its geographical allocation, whenever data is available, FDI statistics are systematically corrected by subtracting SPEs values. SPEs are commonly used to channel investment before reaching its final destinations (OECD (2016a)), and therefore, eliminating them would ameliorate the distortion.

Note that FATS and FDI statistics are complementary, however differences in methodology hamper a liable comparison (OECD (2005)). FATS statistics only cover a subset of the corporations included in FDI as they just describe the activity of non-financial corporations. In addition, FDI statistics are classified by the geographical allocation of the immediate parent, while FATS are classified by the residence of the control unit. Following Tørsløv, Wier, and Zucman (2018), the only systematic correction done to overcome the comparability barriers is to clean FDI data from SPEs, which are not covered by FATS. As the authors argue, the margin of error should be relatively small as there is a sizable overlap between multinationals and FDI firms.

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[26]See Tables 22 and 21 at the Annex for more details.

[27]Following the previous example with France and Spain, from an outward FDI perspective, the mirrored data for France is the inward data received from France as reported by Spain. Note that, in an ideal setting, both values should coincide.

[28]See Table 25 for more details on the resulting corrected data.

[29]In this context, return to investment (for either inward and outward FDI) corresponds to the ratio between the FDI income flows and the corresponding equity or debt position (see Table 24 at the Annex). Due to this imputation, total equity income increases in a 3%. Note that values are just imputed for observations that contain a positive value for sales but no equity income data reported.

3.4   Additional data sources

Structural Business Statistics (SBS). SBS from Eurostat contains data of the economic activity of companies with an European residence. It includes indicators as gross operating surplus, value added, number of employees or turnover. As compared with FATS, SBS contains data for all the resident companies within a territory while FATS is classified by residence of the control unit. For example, the SBS of Spain will contain the economic activity of all firms located in Spain. On the other hand, FATS will report statistics for just Spanish owned companies. SBS data is used to analyse the impact of the ownership structure on both sales and employees statistics[30].

Corporate tax rates. Statutory corporate tax rates are from KPMG and whenever they are not available, data is from per country reports of World Bank's *Doing Business*[31]. Effective Tax Rates (ETR) for non-European countries, data is from Tørsløv, Wier, and Zucman (2018) or imputed with effective-to-statutory corporate tax rate ratios[32].

Other data as corporate tax revenues is from OECD and IMF WoRLD, net national income and population statistics are from the World Inequality Database (WID) and income and development classification are from World Bank and United Nations Statistics Division (UNSTAT), respectively.

3.5   Descriptive Statistics

Table 1 presents the summary statistics of EU MNEs for 2015. EU MNEs registered a total consolidated profit of €1.5 trillion with nearly 94% at high income (70%) and tax haven (24%) countries. This represents a 15% of the corporate profits generated across the globe[33]. Corporate income taxes were a 15% of pre-tax corporate profits, accrued principally to high income countries. At tax havens, this ratio was of 10%, indicating that profits located there were taxed by a lower average effective tax rate. In global terms, taxes paid represented a 12% of world corporate income taxes[34].

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[30]See the Annex Section 8.2 for a more complete discussion.

[31]https://www.doingbusiness.org/content/dam/doingBusiness/media/Annual-Reports/English/DB15-Full-Report.pdf

[32]Imputation is based on the average ratio between effective and statutory corporate tax rate per development level (i.e. developed, developing and transition) and tax havens. Average ratio per group: (1) developed = 74%, (2) developing = 60%, (3) transition = 74% and (4) tax havens = 28%. The imputation process consists in the product between the average ratio and the statutory corporate tax rate.

[33]The total value of global pre-tax corporate profits for 2015 is approximately of €10 trillion. Source: Tørsløv, Wier, and Zucman (2018) (Table 1)

[34]Total corporate income taxes in 2015 are estimated to be equal to €1.9 trillion. Source: Tørsløv, Wier, and Zucman (2018) (Table 1)

Economic activity was mostly concentrated at high income countries that accounted for a 80% and 70% of total sales and employees, respectively. For countries at the middle and the bottom of the income distribution, the ratio of employees with respect to the total is larger than for sales. For example, 1% of affiliates sales are done at lower middle-income countries while a 5% of their employees are hired there. This indicates that at these countries the prevalent activity is employment. In respect to the location of economic activity and profits at mid and low income, the total fraction of sales and employees is generally larger than the one for profits. In the case of upper middle- income countries, while 17% of total MNEs employees are at their territory around 5% total profits were booked there. The opposite phenomena is observed at tax havens, where the total weight in economic activity, 11% for both sales and employees, is lower than its share in total profits, of approximately a 24%[35]. Lower-middle- and low-income countries concentrate half of the total population but nearly 0.12% of profits, while for high income and tax havens population accounts for a 16% and recorded profits a 95% of the total[36].

4 Redistributive Implications of Global Formulary Apportionment

In this section, the resulting profit redistribution under a GFA system as compared with separate accounting is analysed. This analysis is done with both an income and development level perspective. Table 2 and Figures 1 and 2 present the profit allocation under the different GFA systems considered (sales, employees, sales and employees and population) classified by income level. From Table 2, for all the models, tax havens are the main losers of a transition from a separate accounting system to GFA. On average, tax havens experience a reduction of more that half their initial tax base. Conversely, the mid and the bottom of the income distribution countries, concentrate the gains from such transition. Taxing rights at high income countries remain at a similar level under the different GFA schemes as with the current international tax scheme. The same pattern arises when country classification is done by development level. From Table 3 and Figures 1 and 2, transition and developing countries gain tax base under all GFA schemes while developed are positively affected at a smaller scale, expect when considering population as a weight where this set of countries lose tax base. The gains for developing countries are in between €0.5 and €1 trillion, depending on the GFA design considered.

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[35]This fact is documented as well by Garcia-Bernardo, Jansky, and others (2019) for US multinationals, were they show that lower effective corporate tax rates are associated with higher levels of profits reported if compared with measures of real economic activity.

[36]Research has previously documented the existent inverse relationship between income and the level of population. See for example, Figure 5 at Alvaredo et al. (2017) and Table 17

The distribution of the EU MNEs consolidated profits of €1.5 trillion depends on the weight defined for each of the schemes considered. From Table 2, comparing between a GFA scheme apportioning by sales or the number of employees, the later is a factor that favours the allocation of the tax base towards countries at the mid and the bottom of the income distribution. With a GFA scheme weighted by sales, high income countries increase their tax base in a 14% and tax havens experience the lowest contraction of their tax base, of 60%. Lower middle- and low-income nearly double it, and with employees it is more than tripled reaching around €0.7 trillion. In general terms, this change implies that the share of EU MNEs profits allocated at lower middle and low-income countries increases from a 0.93% of the total to a 1% and 5% when weighting by sales or employees, respectively (see Table 1). When considering both sales and employees, the resulting distributional impact is in between the results obtained when both weights are considered separately. This is due to the weight design under this scheme. With population as a weight, the 95% of profits allocated to high income economies and tax havens under separate accounting (see Table 1) drops to 16%, leaving the rest allocated to mid and low income economies. Tax havens register the higher lost, with their tax base practically re-allocated out.

To understand the economic implications of this tax base redistribution, it has to be translated to tax revenues. As in related literature, the assumption is that re-allocated profits would be taxed at the statutory corporate income tax (CIT) (Cobham, Faccio, and FitzGerald (2019)). In spite of international loss consolidation that reduce the tax base in approximately a 2% (see Table 2), from Table 4, tax revenue under all the GFA schemes is larger than under separate accounting.

Figure 3 shows the resulting tax revenues arising from the activity of EU MNEs per income and development level expressed as a percentage of net national income. Tax haven countries derive a substantial benefit from the current international tax scheme. This set of countries collected tax revenues from EU MNEs representing approximately 4% of their national income, three percentage points larger than in the case of high-income countries. This striking result is in line with the finding by Tørsløv, Wier, and Zucman (2018), that relate this phenomenon to the ability of havens to attract foreign firms' profits. Even if, from Table 2, tax havens lose more than half of their tax base under the different GFA schemes, this group is still the one with the highest ratio of revenues-to-national income, of approximately a 2% in the case of defining a weight with sales. As aforementioned, under a GFA scheme with sales, tax havens experience the lowest reduction in tax base, of nearly a 60%. What are the reasons behind this phenomenon? Research documents that the establishment of sales platforms in tax havens serves multinationals to shifts profits (Laffitte and Toubal (2019)), therefore, sales at their

territory could be more aligned with the amount of booked profits[37]. Another potential explanation is that big EU economies are included under the category of tax havens as, for example, Netherlands or Belgium. Therefore, an important share of final consumers is concentrated at their territory, and thus sales. However, this should also be reflected with larger revenue gains for high income economies, which, as it can be seen in Figure 3, is not the case.

As from Table 4, high income countries tax revenues as a percentage of national income remain stable across the different systems, at around a 1%. The mid and the bottom of the income distribution experience gains in terms of tax revenue, with an average gain between 0.2 and 0.3 percentage point for GFA schemes with sales and/or employees. Therefore, although tax base gains are large, tax revenue gains are comparatively modest. Under a GFA with population, tax revenues to national income are the highest for this set of countries arriving to a 6% in the case of low income, nearly a 6 percentage points increase. Under separate accounting, tax revenues from EU MNEs yield around €1,348 per capita for tax haven, €260 for high-income, and for the rest an average of €3 per capita. This ranking is maintained through the different GFA schemes. If a weight with population is defined, transfers in per capita terms is are harmonized across groups, with an average transfer of €60 per capita. Table 5 presents the same conclusion but with a country classification based on development level. In this case, on average, tax revenues for developing countries raise by a 0.5% of their national income.

However, note that the above presented results are derived from a framework that does not integrate the behavioural response from firms and governments from a change in tax policy. A GFA scheme that includes employees may discourage the allocation of this activity at high-tax jurisdictions in favour of tax havens, and the same phenomena could happen in the case of sales (Laffitte and Toubal (2019)). There exists a relatively tiny body of research that aims to integrate such responses through a general equilibrium model (Fuest, Parenti, and Toubal (2019)) which is not considered here. Previous research in this are suggests that the incidence of behavioural responses in this results may be limited (Clausing (2016)) or neutralize the total redistributive impact as compared with separate accounting (Altshuler and Grubert (2010)).

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[37]As explained at Section 3 sales data is from FATS. In this data set, sales are defined as market sales of goods and services to third parties. Therefore, the possibility of recorded sales with profit shifting objectives is not ruled out.

5   Unilateral Scenario: Adopting a Corporate Minimum Tax Rate

As described at Section 2, the global tax deficit is equal to the missing tax revenue due to profits being located at jurisdictions with a tax rate below a pre-defined minimum effective tax rate. Following that, Table 6 shows the global tax deficit for different levels of effective tax rates, or ETR, for MNEs headquartered at the EU and at the rest of the world. Note that, for non-EU MNEs, the tax deficit just covers lost revenues from their booked profits at the EU. In 2015, EU multinationals registered a tax deficit that ranged between a 1% to 4% of EU's national income, depending on the minimum rate specified. The corresponding share for non-EU MNEs ranged from 0.3% to 0.8%.

Which are the multinationals that register the highest tax deficit? From Figure 4, which considers a minimum effective tax rate of 25%, among the EU, Germany, Netherlands and United Kingdom MNEs are the ones with the highest deficit, representing approximately half of the total. Why are German multinationals the ones with, by far, with the highest tax deficit? A potential explanation is the low effective tax rate of Germany, of 11%[38] (see Table 19 at the Appendix). As most of German multinationals profits (approximately a 90%) are located at its territory of origin, given the difference with the minimum effective tax rate considered of 25%, a high tax deficit is recorded. From Figure's 4 bottom graph, excluding the EU, deficit is mostly due to foreign affiliates profits taxed below an effective tax rate of 25% at the United States, Hong Kong, China or Singapore. The tax deficit allocated outside the EU represents a 8% of the total, the rest located at EU countries[39]. Figure 5 top panel shows that American, Swiss and Bermudian multinationals had the highest tax deficit within the EU representing a 60% of the tax deficit of non-EU multinationals. As per the bottom of Figure 5, it was mostly recorded at Ireland, Netherlands and Luxembourg (approximately 55% of the total).

Tables 7 and 8 contain the estimated outcomes from a unilateral adoption of a 25% minimum effective tax rate for France. As explained in Section 2, this implies that France adopts the global minimum effective tax rate[40], entirely collects the tax deficit of French controlled multinationals and

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[38]Tørsløv, Wier, and Zucman (2018) discuss the reasons why the effective tax rate in Germany is this low. One reason is the distortion of corporate profits due to the inclusion of self-employed, that do not pay corporate taxes. Another explanation is the gap between tax revenues as reported by the OECD (which is the source used to compute the 11% of effective tax rate) vs. German national accounts. If national accounts data is considered, it raises to 14%. In addition, the existence of different business taxes at German territory also contribute to the low effective tax recorded, as tax revenues may fall under different categories (for example, general vs. local government).

[39]From Table 6, the tax deficit of EU headquartered multinationals is approximately equal to €150 billion. Of this tax deficit, as per authors' computation, €12 billion, or 8%, was registered at non-EU countries.

[40]In 2015, the corporate ETR for France was equal to 24%. See Table 19 at the Annex.

apportions the global deficit of non-French. Table 7 contains the tax deficit collected by France from French multinationals for different minimum effective tax rates[41]. This deficit is mostly derived from their profits in tax havens as Netherlands, Belgium, or Singapore and big economies as the United States and the United Kingdom. In an scenario with an effective tax rate of 25%, the tax collected represents approximately 0.3% of French national income for 2015. In the case case of 40%, the percentage raises up to 0.8%.

Table 8 shows the extra-tax revenue that France could obtain by collecting the tax deficit of non-French multinationals with economic activity within its territory, in an scenario with a 25% of minimum ETR. Under a GFA scheme with sales, most of the tax revenue, approximately an 80%, is derived from EU MNEs which sums up to €7 billion. In particular, from multinationals located in Germany, Luxembourg, and Netherlands, as they have both a large share of sales located in France and a global tax deficit. France could collect this deficit by setting an sales tariff of 1.3% on sales of non-French EU multinationals. In other words, as a 5% of the total sales of EU multinationals are registered in France, this country is entitled to recover a 5% of the global tax deficit or €7 billion. Conversely, a tariff rate of 1.1% would be the one needed to raise the tax deficit of €3 billion from the rest of the world. Note that this tariff is larger for tax haven multinationals as they record a higher deficit. For example, the tariff in Bermudian multinationals for selling in France would be of 9.2%, or of a 4.8% for Luxembourg. In 2017, the average tariff applied by France to all type of imported products was 4.3%[42]. Therefore, the created tariff under this scheme would be lower than the existent ones. Among the different GFA schemes, weighting by sales achieves the highest total tax deficit allocated to France, of €9.3 billion. This is related with the fact (see Table 1) that sales are mostly concentrated at high income countries, where final consumers are located. In total, under a GFA scheme with a 25% of effective tax rate, France would collect approximately a 6% of the total tax deficit (see Table 7)[43].

Considering a GFA scheme that includes the number of employees, total taxes collected range between €8.7 to €9 billion (see Table 8). In the case of just defining employees as a factor, the tax deficit could be collected by setting a per employee tax rate of 0.5% on non-French multinationals. In other words, the multinational would have to pay €0.005 per each employee in French territory. Tables

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[41]If a simpler mechanism where to be adopted, where there is no distinction between French and non-French multinationals tax deficit (see Section 2), in the case of considering sales, France will collect a 68% of the total tax deficit contained at Table 7. Note that the general conclusion of this Section does not rely on which of the approaches is considered.

[42]Source: World Trade Organization (WTO) Integrated Database (IDB). The average tariff rate of 4.3%, is computed with the by product data in the case of trade partners that fall into the category of Most Favoured Nation (MFV) for France.

[43]Note that this value is computed for a total tax deficit that includes France, as it has adopted the minimum tax rate.

9 to 13 present the same information as Table 8 but considering 30%, 35%, 40%, 45% and 50% as the minimum ETR. Due to the increase in the minimum rate, higher revenues are collected from EU and non-EU multinationals but at the cost of an increase in sales tariff and per employee tax. For the highest minimum ETR considered, 50%, the tax revenue collected by France increases to €21 billion which could be achieved by applying a tariff rate of 4%.

From Figure 6, the associated tax revenues from a unilateral transition, in the case of France, range between 0.7% to 3% of its national income, depending on the minimum rate defined. This result is equivalent for all the GFA models considered. If the raise in taxation over domestic corporate profits is also included, corporate tax revenues increase between €30 to €80 billion[44] but, it does not create a substantial change in national income terms.

But, does a country like France have the incentive to unilaterally adopt a minimum effective tax rate? Or is it better-off if there is international cooperation to set a global minimum tax rate? To answer this question, the expected tax revenue gains for France under each of these scenarios, cooperative and unilateral, must be compared. To compute the tax revenue gains under a cooperative scenario, the approach from Guvenen et al. (2017) is applied. Following their methodology, the resulting allocation under a GFA scheme is defined as the location of profits in absence of shifting incentives. In a context were there is international cooperation, the motivation to engage in profit shifting will disappear as there are not tax differentials across countries (see Section 2). For the unilateral scenario, as aforementioned, the resulting tax gains from collecting the tax deficit are shown at Table 7 and Tables 8 to 13 depending on the minimum effective tax rate considered[45]. Note that, for comparability across both scenarios, we just consider the tax revenues arising from EU multinationals' profits.

Tables 14 to 16 contain the estimated tax revenues gains as compared with separate account-ing for different GFA schemes definitions (sales, number of employees or both) and effective tax rates, for both cooperative and unilateral scenario. In the case of defining sales as an apportionment factor, independently from the effective tax rate specified, a country like France could have an incentive to unilaterally implement a minimum effective tax rate (in the absence of retaliation strategies by other countries). In the case of unilaterally fixing a tax rate of 35%, the tax revenue gains represent approx-imately 2% of its national income, as compared with the 1.4% under a cooperative strategy. For the maximum effective tax rate considered, a 50%, these percentages raise to 4% and 3%, respectively. The

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[44]These values are obtained from Table 19 at the Annex.

[45]As mentioned at Section 2, the total tax revenue gains from this unilateral scenario also include the tax gains from taxing the profits booked in France at the minimum ETR.

same phenomena arises when the GFA scheme is designed with the number of employees (Table 15) or both sales and employees (Table 16). Therefore, we can conclude, that unilaterally adopting a minimum effective tax rate under the system considered in this paper (see Section 2), is a tempting strategy for a country like France due to its associated tax revenue gains.

6 Conclusions

This paper analyses the economic impact of the introduction of a Global Formulary Apportionment (GFA) scheme at the European Union and the outcome associated with adopting a global minimum effective tax rate. The main finding is that tax havens would be the main losers from a transition out of the current international tax scheme. Profit shifting opportunities for multinationals would be reduced with a system that changes taxing rights towards countries were economic activity is located and that limits corporate tax strategic setting. This lost for tax havens is translated into sizeable benefits in terms of tax base and revenues for all the different income groups, specially for countries at the mid and the bottom of the income distribution or developing countries. For a country like France, adopting unilaterally a minimum effective tax rate, could rise taxes collected between 0.7% and 4% of its national income. In a scenario with cooperation where all countries set the same effective tax rate, tax revenue gains increase by 0.6% to 3% of national income. Following these results, a country like France could not have an incentive to cooperate towards fixing a minimum effective tax rate.

These findings have relevant policy implications for the re-design of international tax policy. First, the evaluated reforms mostly benefit lower-middle- and low-income economies, which are more reliant on corporate income tax revenues (Keen et al. (2014)). This could enable an increase in public spending which may contribute to advances in their economic development (Forstater (2015)). This resources may be crucial especially given the pessimistic forecasts of the economic aftermath following the Coronavirus crisis. Second, the present levels of tax competition are predicted to raise in the near future (IMF (2019)) which threatens the survival of the corporate income tax. Defining a minimum global effective tax rate, could limit this competition. If international coordination is not available for its implementation, countries could still adopt it and derive substantial tax revenues from it, as we have observed for a country like France.

The presented results in this paper, face limitations especially concerning both the available data and the absence of behavioural responses by firms and governments in the analysis. This paper draws from publicly available data that faces challenges of harmonization across countries and coverage for low income and tax haven countries. The OECD made an announcement that this last January 2020, aggregate statistics of multinationals would be available. As per when this paper was written, these statistics are still not published. This data will contribute to obtain a more precise picture of the policy implications of the reforms evaluated here.

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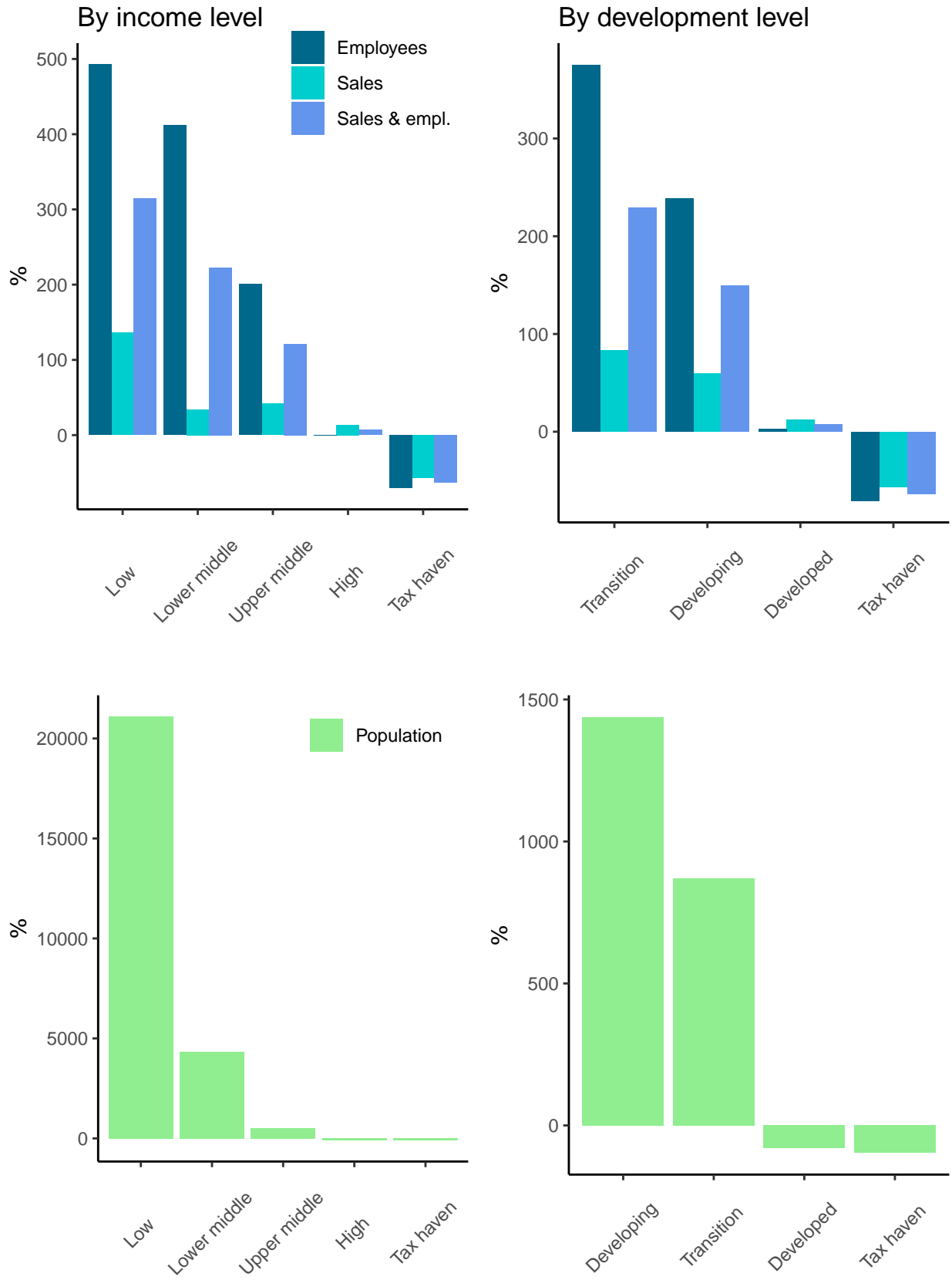
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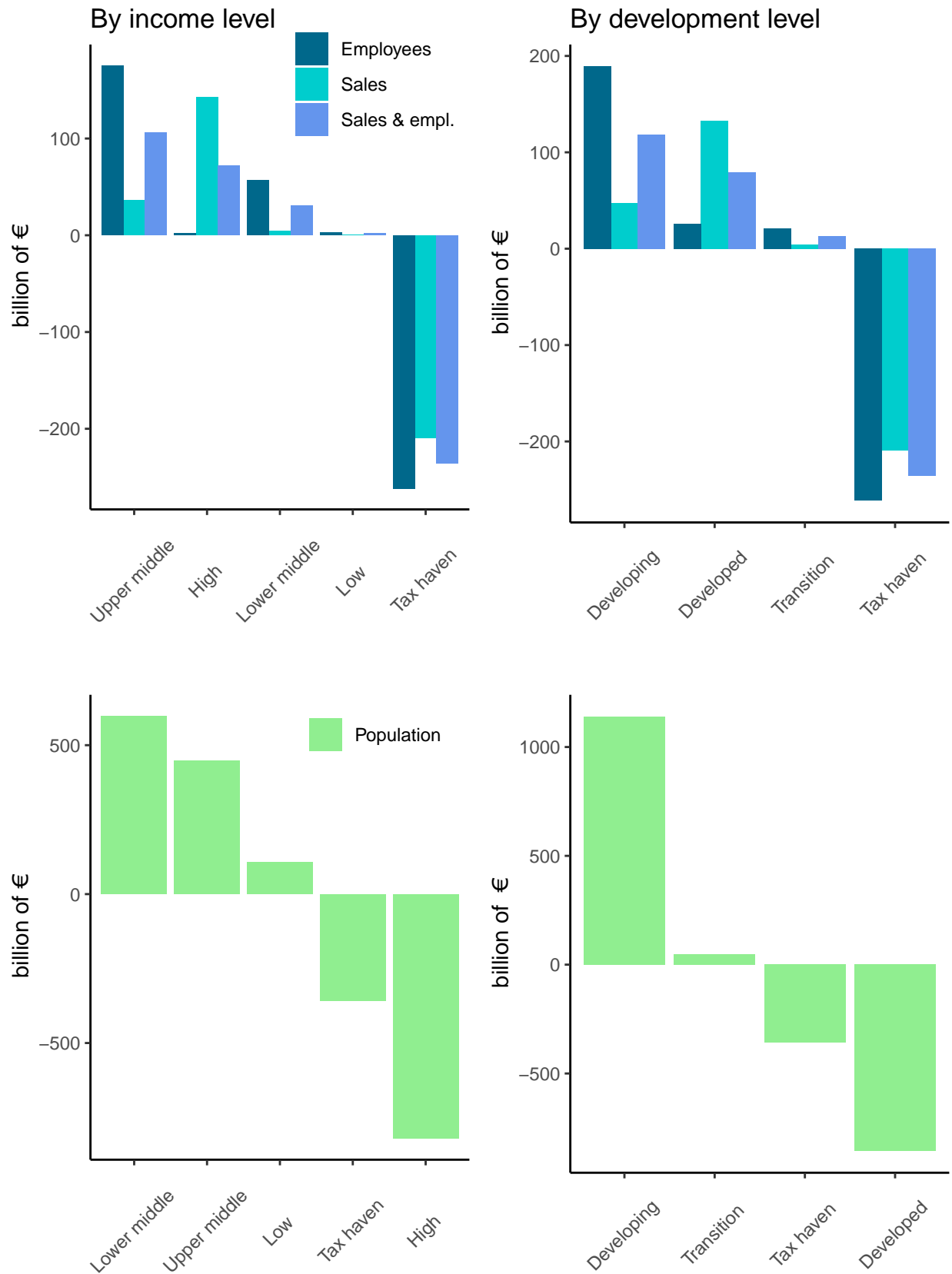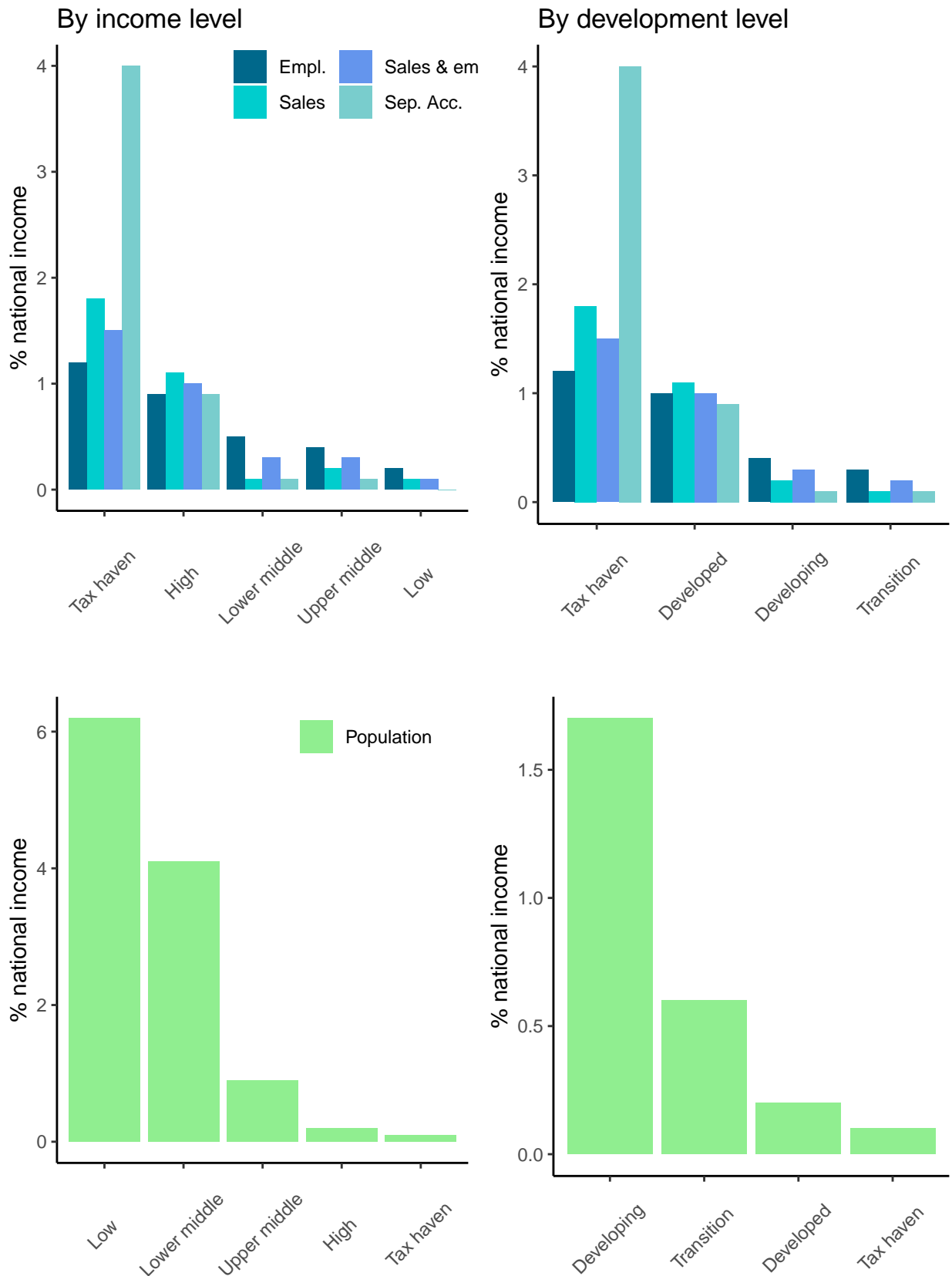
Figure 1: Estimated absolute gain for a Global Formulary Apportionment (GFA) based on sales, employees and population, bn EUR (2015)

Figure 2: Estimated relative gain for a Global Formulary Apportionment (GFA) based on sales, employees and population, in percentage (2015)

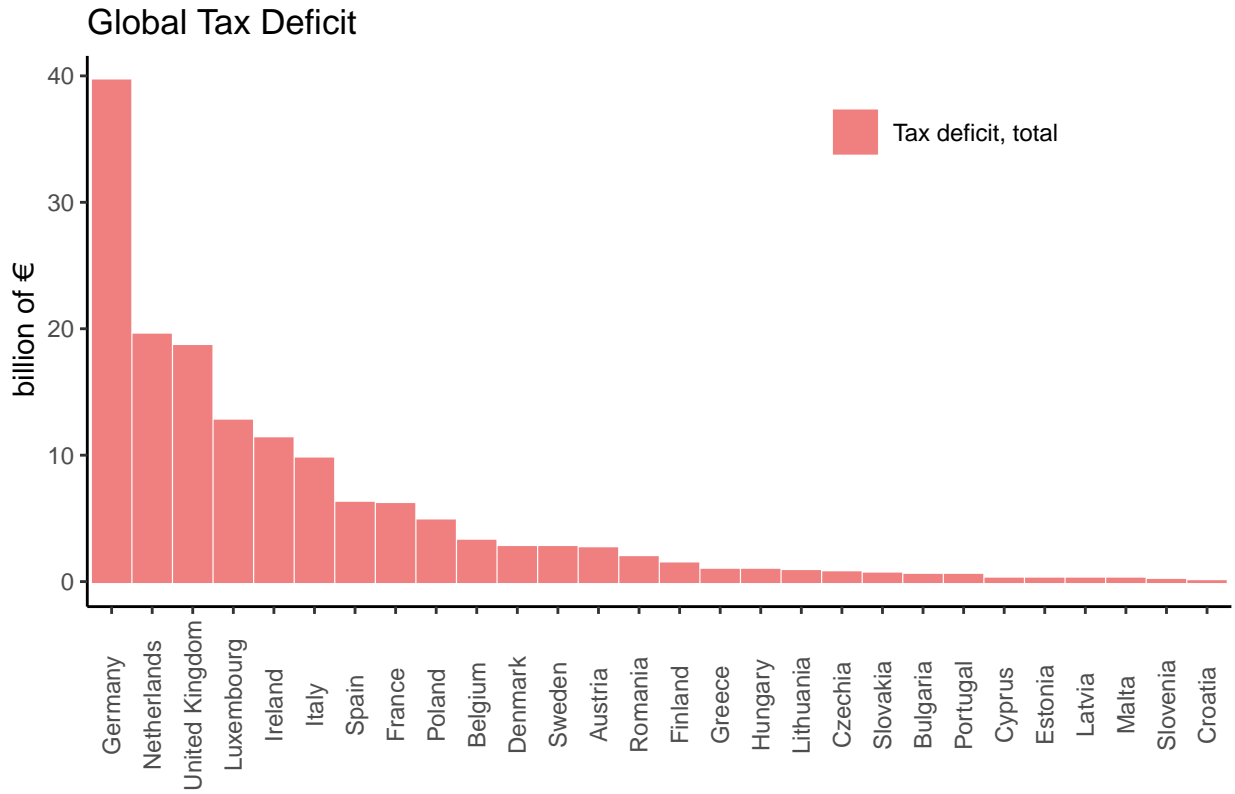**By income level**

By development level

Source: Eurostat and OECD FDI statistics and WID.world.

Figure 3: Estimated corporate tax revenue under GFA as percentage of national income (2015)

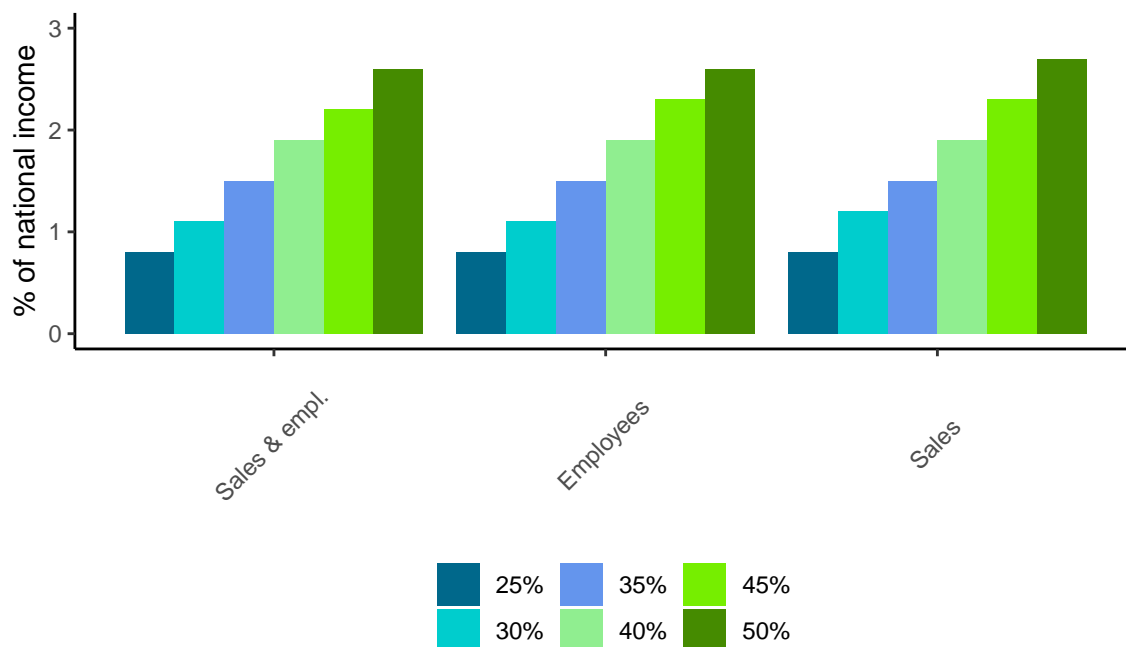## Global Tax Deficit

Tax deficit of foreign affiliates
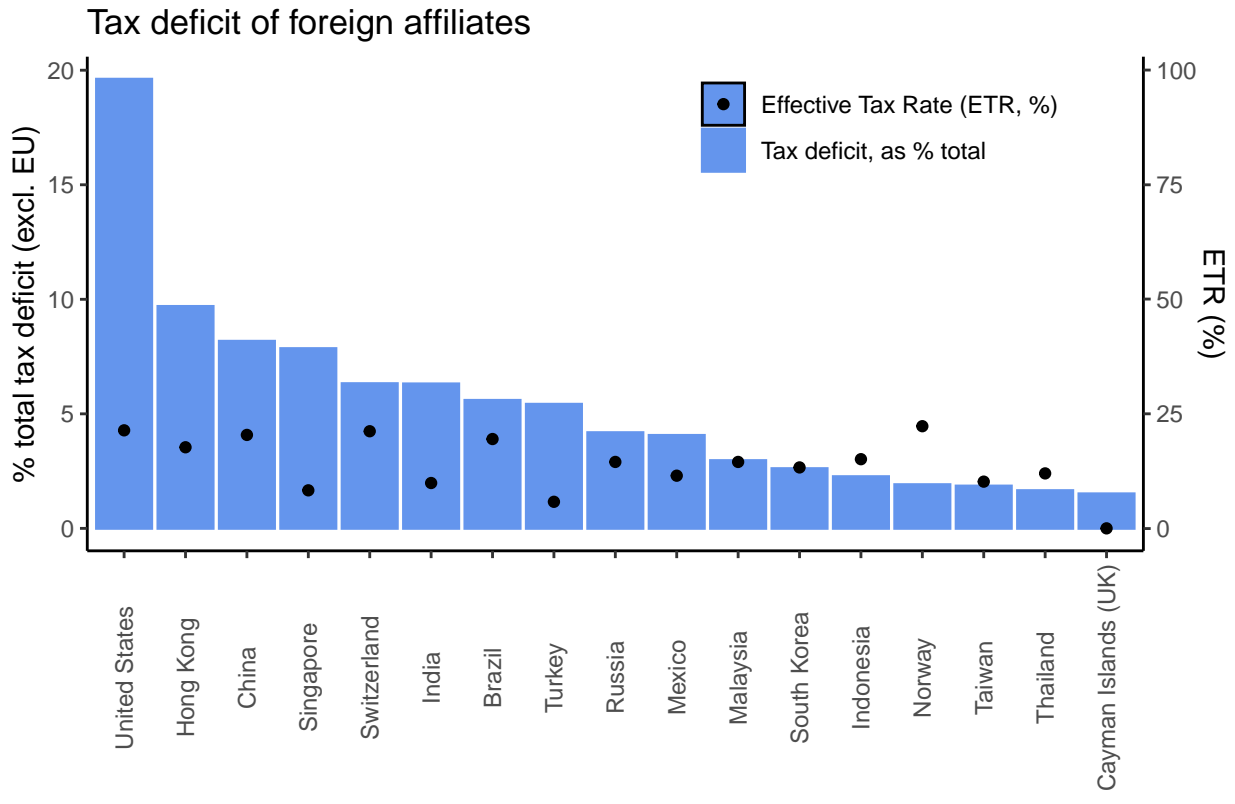
Source: Eurostat and OECD FDI statistics.

Figure 4: Tax deficit of European Union multinationals with a minimum ETR of 25, bn EUR (2015)

Figure 5: Tax deficit of non-European Union multinationals with a minimum ETR of 25, bn EUR (2015)

Tax revenues do not include the increase from taxing domestic corporate profits at the minimum ETR.

Figure 6: French tax revenue from unilaterally adopting a minimum ETR as a percenatge of national income (2015)

Table 1: Pre-tax consolidated corporate profits, sales, number of employees and population by income level, bn EUR (2015)

	Total	High	Upper middle	Lower middle	Low	Tax haven
Pre-tax corporate profits	1496	1039 (70%)	84 (5%)	13 (0.9%)	0.5 (0.03%)	358 (24%)
Corporate taxes paid	228	177 (78%)	13 (6%)	2 (0.9%)	0.1 (0.04%)	36 (16%)
% taxes-to-profits	15%	17%	15%	15%	20%	10%
Sales	15698	12497 (80%)	1299 (8%)	194 (1%)	13 (0.1%)	1695 (11%)
Number of employees (th.)	43126	30340 (70%)	7584 (17%)	2038 (5%)	87 (0.2%)	3166 (11%)
Population	7176	1091 (15%)	2567 (36%)	2936 (41%)	517 (7%)	65 (1%)

* Authors' calculations from FDI data (Eurostat and OECD), National Accounts (NASA) and Foreign Affiliates Statistics data (Eurostat and OECD). * Values in parenthesis correspond to the share with respect to the total.

Table 2: Profit allocation under Global Formulary Apportionment (GFA) by income level, bn EUR (2015)

	Initial	GFA Sales			GFA Employment			GFA Sales and empl.			GFA Population		
		Profits	Abs. gain	% Gain	Profits	Abs. gain	% Gain	Profits	Abs. gain	% Gain	Profits	Abs. gain	% Gain
High	1048.2	1190.9	142.7	13.6	1050.2	2.0	0.2	1120.5	72.3	6.9	227.5	-820.8	-78.3
Upper middle	87.3	123.8	36.5	41.9	262.5	175.3	200.9	193.2	105.9	121.4	535.0	447.8	513.2
Lower middle	13.8	18.5	4.7	34.1	70.5	56.8	411.6	44.5	30.7	222.9	612.0	598.2	4338.7
Low	0.5	1.2	0.7	136.2	3.0	2.5	492.9	2.1	1.6	314.5	107.9	107.4	21100.7
Tax haven	371.1	161.5	-209.6	-56.5	109.6	-261.5	-70.5	135.6	-235.5	-63.5	13.5	-357.6	-96.3
Total	*1520.9*	*1495.9*	*-25.0*	*33.9*	*1495.9*	*-25.0*	*207.0*	*1495.9*	*-25.0*	*120.4*	*1495.9*	*-25.0*	*5155.6*

[1] Source: Authors' calculations from FDI data (Eurostat and OECD), National Accounts (NASA) and Foreign Affiliates Statistics data (Eurostat and OECD).

[2] Initial refers to the current allocation of the tax base under a separate accounting system. The difference between total initial allocation and for the different GFA (€25 billion), is due to multinational profits being consolidated under the GFA system.

[3] The total value for the relative gain (% gain), corresponds to the average relative gain across income groups.

[4] Income classification is from World Bank.

Table 3: Profit allocation under Global Formulary Apportionment (GFA) by development, bn EUR (2015)

	Initial	GFA Sales			GFA Employment			GFA Sales and empl.			GFA Population		
		Profits	Abs. gain	% Gain	Profits	Abs. gain	% Gain	Profits	Abs. gain	% Gain	Profits	Abs. gain	% Gain
Developed	1064.9	1197.5	132.6	12.5	1091.0	26.1	2.5	1144.3	79.4	7.5	208.7	-856.2	-80.4
Transition	5.6	10.3	4.7	83.3	26.7	21.1	375.3	18.5	12.9	229.3	54.4	48.8	869.7
Developing	79.3	126.6	47.3	59.7	268.6	189.3	238.8	197.6	118.3	149.2	1219.2	1140.0	1438.0
Tax haven	371.1	161.5	-209.6	-56.5	109.6	-261.5	-70.5	135.6	-235.5	-63.5	13.5	-357.6	-96.3
Total	*1520.9*	*1495.9*	*-25.0*	*24.7*	*1495.9*	*-25.0*	*136.5*	*1495.9*	*-25.0*	*80.6*	*1495.9*	*-25.0*	*532.7*

[1] Source: Authors' calculations from FDI data (Eurostat and OECD), National Accounts (NASA) and Foreign Affiliates Statistics data (Eurostat and OECD).

[2] Initial refers to the current allocation of the tax base under a separate accounting system. The difference between total initial allocation and for the differnt GFA (€25 billion), is due to multinational profits being consolidated under the GFA system.

[3] The total value for the relative gain (% gain), corresponds to the average relative gain across development groups.

[4] Development classification is from UNCTAD.

Table 4: Estimated corporate tax revenue per income level, bn EUR (2015)

	Sep. Accounting			GFA Sales			GFA Employment			GFA Sales and empl.			GFA Population		
		% NI	Per capita		% NI	Per capita		% NI	Per capita		% NI	Per capita		% NI	Per capita
High	284.1	0.9	260.3	343.5	1.1	314.8	287.1	0.9	263.1	315.3	1.0	288.9	70.5	0.2	64.6
Upper middle	20.8	0.1	8.1	30.9	0.2	12.0	63.0	0.4	24.6	47.0	0.3	18.3	135.9	0.9	53.0
Lower middle	4.0	0.1	1.4	5.4	0.1	1.8	21.6	0.5	7.3	13.5	0.3	4.6	187.0	4.1	63.7
Low	0.2	0.0	0.3	0.4	0.1	0.7	0.9	0.2	1.8	0.6	0.1	1.2	31.0	6.2	59.8
Tax haven	87.5	4.0	1348.3	39.3	1.8	605.6	26.6	1.2	409.9	33.0	1.5	507.7	3.0	0.1	45.9
Total	*396.6*	*0.7*	*55.3*	*419.4*	*0.8*	*58.4*	*399.3*	*0.7*	*55.6*	*409.4*	*0.7*	*57.0*	*427.4*	*0.8*	*59.6*

[1] Source: Tax revenues are estimated with statutory corporate income tax from KPMG and the World Bank. Data for national income and population is from the World Inequality Database (WID).

Table 5: Estimated corporate tax revenue per development level, bn EUR (2015)

	Sep. Accounting			GFA Sales			GFA Employment			GFA Sales and empl.			GFA Population		
		% NI	Per capita		% NI	Per capita		% NI	Per capita		% NI	Per capita		% NI	Per capita
Developed	285.7	0.9	285.3	342.8	1.1	342.4	291.0	1.0	290.6	316.9	1.0	316.5	65.7	0.2	65.6
Transition	1.1	0.1	4.1	2.0	0.1	7.5	4.8	0.3	18.6	3.4	0.2	13.0	9.6	0.6	36.7
Developing	22.3	0.1	3.8	35.4	0.2	6.0	76.8	0.4	13.1	56.1	0.3	9.6	349.2	1.7	59.7
Tax haven	87.5	4.0	1348.3	39.3	1.8	605.6	26.6	1.2	409.9	33.0	1.5	507.7	3.0	0.1	45.9
Total	*396.6*	*0.7*	*55.3*	*419.4*	*0.8*	*58.4*	*399.3*	*0.7*	*55.6*	*409.4*	*0.7*	*57.0*	*427.4*	*0.8*	*59.6*

[1] Source: Tax revenues are estimated with statutory corporate income tax from KPMG and the World Bank. Data for national income and population is from the World Inequality Database (WID).

Table 6: Estimated tax deficit by multinational's territory of origin, mn EUR (2015)

	ETR = 25		ETR = 30		ETR = 35		ETR = 40		ETR = 45		ETR = 50	
	Tax deficit	% NI	Tax deficit	% NI	Tax deficit	% NI	Tax deficit	% NI	Tax deficit	% NI	Tax deficit	% NI
European Union	148.9	1.2	223.5	1.8	298.4	2.4	373.5	3.0	448.7	3.6	524.0	4.3
Rest of the world	33.0	0.3	44.9	0.4	56.8	0.5	68.7	0.6	80.7	0.7	92.8	0.8
Total	181.9	3.0	268.4	4.4	355.2	5.8	442.3	7.2	529.3	8.6	616.8	10.0

[1] Source: Authors' calculations from FDI data (Eurostat and OECD), National Accounts (NASA), World Inequality Database (WID) and effective tax rates from Torslov et al. (2018) or imputed.

[2] National Income (NI) is the total for the European Union for 2015.

[3] The tax deficit corresponds to the tax revenue not collected at a certain jurisdiction due to profits not being taxed at a minimum pre-specified ETR (in this case: 25%, 30%, 35%, 40%, 45% and 50%).

Table 7: Tax deficit of French controlled multinationals per country and minimum ETR, mn EUR (2015)

	$t^* = 25$	$t^* = 30$	$t^* = 35$	$t^* = 40$	$t^* = 45$	$t^* = 50$
European Union	**4234.1**	**6197.5**	**8160.8**	**10124.2**	**12087.6**	**14051.0**
Austria	20.8	35.3	49.7	64.2	78.7	93.2
Belgium	397.0	734.6	1072.1	1409.7	1747.3	2084.8
Bulgaria	18.7	25.2	31.7	38.2	44.7	51.2
Croatia	3.5	5.3	7.0	8.8	10.5	12.3
Czechia	61.5	122.6	183.8	245.0	306.2	367.3
Denmark	22.5	35.0	47.5	60.0	72.5	85.0
Estonia	2.5	3.3	4.2	5.1	5.9	6.8
Finland	1.8	3.2	4.5	5.9	7.3	8.6
Germany	561.9	771.0	980.0	1189.1	1398.2	1607.3
Greece	1.4	2.3	3.2	4.1	5.0	6.0
Hungary	56.2	75.6	95.1	114.5	133.9	153.4
Ireland	452.7	562.4	672.1	781.9	891.6	1001.3
Italy	281.6	457.5	633.4	809.2	985.1	1161.0
Latvia	0.8	1.1	1.4	1.6	1.9	2.2
Lithuania	3.6	4.6	5.5	6.5	7.4	8.3
Luxembourg	440.1	539.0	637.9	736.7	835.6	934.5
Netherlands	1011.9	1363.8	1715.7	2067.5	2419.4	2771.2
Poland	192.6	257.3	322.0	386.6	451.3	516.0
Portugal	15.2	48.1	81.0	114.0	146.9	179.8
Romania	54.3	75.0	95.6	116.2	136.9	157.5
Slovakia	15.8	25.3	34.7	44.2	53.6	63.1
Slovenia	3.4	5.8	8.3	10.7	13.2	15.6
Spain	195.9	322.4	448.8	575.3	701.8	828.3
Sweden	5.8	16.0	26.3	36.6	46.8	57.1
United Kingdom	412.6	706.0	999.3	1292.6	1585.9	1879.2
Rest of the world	**1383.6**	**2768.5**	**4200.8**	**5647.3**	**7093.9**	**8540.4**
Australia	0.0	1.3	22.2	43.0	63.9	84.8
Brazil	12.9	24.7	36.5	48.2	60.0	71.8
Canada	0.0	0.0	1.2	16.5	31.9	47.2
China	137.8	287.5	437.2	586.8	736.5	886.2
Hong Kong	110.9	186.4	261.9	337.4	412.9	488.5
India	58.4	77.8	97.2	116.6	136.0	155.4
Indonesia	55.1	82.8	110.5	138.3	166.0	193.7
Japan	0.0	85.5	197.8	310.0	422.3	534.6
Morocco	43.0	77.0	111.0	145.0	179.0	213.0
New Zealand	2.1	3.6	5.1	6.7	8.2	9.7
Norway	22.1	63.0	104.0	145.0	185.9	226.9
Russia	2.6	3.9	5.2	6.4	7.7	8.9
Singapore	246.3	320.0	393.7	467.5	541.2	614.9
South Korea	16.0	22.8	29.6	36.4	43.2	50.0
Switzerland	183.7	424.7	665.7	906.7	1147.7	1388.7
Turkey	66.9	84.3	101.7	119.1	136.5	153.9
United States	425.9	1023.1	1620.4	2217.6	2814.9	3412.2
World	**5617.7**	**8965.9**	**12361.7**	**15771.6**	**19181.5**	**22591.4**

[1] Source: Authors' calculations from FDI data (Eurostat and OECD), National Accounts (NASA) and effective tax rates from Torslov et al. (2018) or imputed.

[2] The tax deficit corresponds to the tax revenue not collected at a certain jurisdiction due to profits not being taxed at a minimum pre-specified ETR.

Table 8: Tax deficit collected by France from non-French multinationals with a minimum ETR of 25, mn EUR (2015)

| | Tax deficit | Sales (%) | Employees (%) | GFA Sales | | GFA Employees | | GFA Sales and Empl | | |
				Revenue	Sales tariff (%)	Revenue	Per empl. tax (%)	Revenue	Sales tariff (%)	Per empl. tax (%)
European Union	**138480.6**	**5.0**	**5.0**	**6781.3**	**1.3**	**6312.1**	**0.5**	**6546.7**	**0.7**	**0.3**
Austria	2568.9	1.1	1.0	27.7	0.8	26.3	0.2	27.0	0.4	0.1
Belgium	3175.3	14.1	15.9	446.3	0.7	503.7	0.4	475.0	0.3	0.2
Cyprus	196.0	1.5	1.0	3.0	0.5	2.0	0.1	2.5	0.2	0.0
Denmark	2728.2	2.8	3.2	75.2	0.8	87.1	0.2	81.1	0.4	0.1
Estonia	216.9	0.5	0.1	1.1	2.1	0.2	0.5	0.7	1.1	0.2
Finland	1435.7	1.4	1.6	19.9	0.6	23.1	0.2	21.5	0.3	0.1
Germany	39590.1	3.2	3.2	1281.9	1.0	1275.8	0.4	1278.8	0.5	0.2
Greece	888.9	0.1	0.0	0.7	1.1	0.4	0.3	0.6	0.5	0.1
Hungary	881.2	0.1	0.1	1.2	1.3	0.6	0.3	0.9	0.7	0.1
Ireland	11271.5	2.5	2.9	282.2	3.6	332.2	1.6	307.2	1.8	0.8
Italy	9708.2	3.4	2.4	329.5	0.7	232.6	0.3	281.0	0.3	0.1
Lithuania	841.4	0.7	0.0	5.7	3.3	0.1	0.5	2.9	1.7	0.2
Luxembourg	12722.1	16.2	14.2	2062.1	4.8	1806.5	1.7	1934.3	2.4	0.8
Netherlands	19494.4	7.0	6.2	1360.1	1.6	1212.9	0.7	1286.5	0.8	0.4
Poland	4769.6	0.2	0.2	11.3	2.5	11.1	0.7	11.2	1.2	0.4
Portugal	450.0	1.0	1.0	4.4	0.3	4.4	0.1	4.4	0.2	0.0
Slovenia	126.2	0.1	0.0	0.1	0.4	0.1	0.1	0.1	0.2	0.1
Spain	6165.1	3.0	2.5	187.6	0.8	154.0	0.3	170.8	0.4	0.1
Sweden	2710.3	3.7	4.3	99.2	0.5	116.2	0.2	107.7	0.3	0.1
United Kingdom	18540.5	3.1	2.8	582.2	0.7	522.8	0.3	552.5	0.4	0.1
Rest of the world	**30930.5**	**8.2**	**7.8**	**2529.7**	**1.1**	**2407.5**	**0.5**	**2468.6**	**0.5**	**0.2**
Bermuda (UK)	1636.0	1.0	0.1	16.5	9.2	2.4	6.5	9.5	4.6	3.3
BVI (UK)	0.5	2.7	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Canada	283.5	4.6	7.2	13.2	0.4	20.3	0.1	16.7	0.2	0.1
Guernsey	3.1	6.5	8.4	0.2	0.1	0.3	0.1	0.2	0.1	0.0
Iceland	22.2	0.8	0.1	0.2	0.4	0.0	0.1	0.1	0.2	0.1
India	131.3	1.2	1.9	1.6	0.2	2.4	0.1	2.0	0.1	0.0
Japan	938.5	6.8	7.5	63.6	0.2	70.8	0.1	67.2	0.1	0.1
Mauritius	0.2	82.3	60.6	0.2	0.0	0.1	0.0	0.2	0.0	0.0
Norway	714.3	1.8	1.9	12.8	0.6	13.8	0.3	13.3	0.3	0.1
Saudi Arabia	0.2	5.5	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Switzerland	2871.9	14.7	11.0	422.4	0.7	315.6	0.2	369.0	0.4	0.1
United States	24328.7	8.2	8.1	1999.0	1.3	1981.5	0.6	1990.2	0.7	0.3
World	**169411.2**	**0.5**	**5.0**	**9311.0**	**1.2**	**8719.6**	**0.5**	**9015.3**	**0.6**	**0.3**

Table 9: Tax deficit collected by France from non-French multinationals with a minimum ETR of 30, mn EUR (2015)

	Tax deficit	Sales (%)	Employees (%)	GFA Sales		GFA Employees		GFA Sales and Empl		
				Revenue	Sales tariff (%)	Revenue	Per empl. tax (%)	Revenue	Sales tariff (%)	Per empl. tax (%)
European Union	**202364.6**	**5.0**	**4.0**	**9672.9**	**1.9**	**9011.7**	**0.7**	**9342.3**	**0.9**	**0.4**
Austria	4081.4	1.1	1.0	44.1	1.2	41.7	0.4	42.9	0.6	0.2
Belgium	4989.7	14.1	15.9	701.4	1.1	791.5	0.6	746.4	0.5	0.3
Cyprus	307.8	1.5	1.0	4.7	0.8	3.2	0.1	4.0	0.4	0.1
Denmark	4384.9	2.8	3.2	120.9	1.3	140.0	0.3	130.4	0.6	0.2
Estonia	292.4	0.5	0.1	1.5	2.9	0.3	0.6	0.9	1.4	0.3
Finland	2363.7	1.4	1.6	32.7	1.0	38.1	0.4	35.4	0.5	0.2
Germany	55613.2	3.2	3.2	1800.7	1.4	1792.2	0.6	1796.4	0.7	0.3
Greece	1443.9	0.1	0.0	1.2	1.7	0.7	0.4	0.9	0.9	0.2
Hungary	1205.5	0.1	0.1	1.6	1.8	0.9	0.4	1.2	0.9	0.2
Ireland	14088.6	2.5	2.9	352.7	4.4	415.2	2.0	383.9	2.2	1.0
Italy	15274.0	3.4	2.4	518.4	1.1	365.9	0.4	442.2	0.5	0.2
Lithuania	1061.5	0.7	0.0	7.2	4.2	0.2	0.6	3.7	2.1	0.3
Luxembourg	16355.3	16.2	14.2	2651.0	6.1	2322.4	2.2	2486.7	3.1	1.1
Netherlands	28483.4	7.0	6.2	1987.2	2.4	1772.2	1.1	1879.7	1.2	0.5
Poland	6385.2	0.2	0.2	15.1	3.3	14.9	1.0	15.0	1.7	0.5
Portugal	1029.6	1.0	1.0	10.0	0.8	10.2	0.2	10.1	0.4	0.1
Slovenia	198.1	0.1	0.0	0.1	0.7	0.1	0.2	0.1	0.3	0.1
Spain	9964.2	3.0	2.5	303.2	1.3	249.0	0.4	276.1	0.7	0.2
Sweden	4829.3	3.7	4.3	176.7	0.9	207.0	0.3	191.9	0.5	0.2
United Kingdom	30012.8	3.1	2.8	942.5	1.2	846.2	0.5	894.3	0.6	0.2
Rest of the world	**41613.6**	**8.2**	**7.8**	**3401.9**	**1.4**	**3240.9**	**0.6**	**3321.4**	**0.7**	**0.3**
Bermuda (UK)	2034.5	1.0	0.1	20.5	11.4	3.0	8.1	11.8	5.7	4.1
BVI (UK)	1.4	2.7	7.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0
Canada	409.9	4.6	7.2	19.0	0.6	29.4	0.2	24.2	0.3	0.1
Guernsey	4.2	6.5	8.4	0.3	0.2	0.3	0.1	0.3	0.1	0.1
Iceland	32.6	0.8	0.1	0.3	0.6	0.0	0.2	0.2	0.3	0.1
India	183.1	1.2	1.9	2.2	0.3	3.4	0.1	2.8	0.1	0.1
Japan	1406.0	6.8	7.5	95.3	0.4	106.1	0.2	100.7	0.2	0.1
Mauritius	0.4	82.3	60.6	0.3	0.1	0.2	0.0	0.3	0.0	0.0
Norway	1119.0	1.8	1.9	20.1	1.0	21.7	0.5	20.9	0.5	0.2
Saudi Arabia	0.2	5.5	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Switzerland	3869.4	14.7	11.0	569.1	1.0	425.2	0.3	497.2	0.5	0.2
United States	32552.9	8.2	8.1	2674.7	1.8	2651.4	0.8	2663.0	0.9	0.4
World	**243978.1**	**5.0**	**5.0**	**13074.8**	**1.7**	**12252.6**	**0.7**	**12663.7**	**0.9**	**0.4**

Table 10: Tax deficit collected by France from non-French multinationals with a minimum ETR of 35, mn EUR (2015)

	Tax deficit	Sales (%)	Employees (%)	GFA Sales		GFA Employees		GFA Sales and Empl		
				Revenue	Sales tariff (%)	Revenue	Per empl. tax (%)	Revenue	Sales tariff (%)	Per empl. tax (%)
European Union	**266248.5**	**5.0**	**4.0**	**12564.4**	**2.4**	**11711.2**	**1.0**	**12137.8**	**1.2**	**0.5**
Austria	5593.9	1.1	1.0	60.4	1.7	57.2	0.5	58.8	0.8	0.3
Belgium	6804.0	14.1	15.9	956.4	1.5	1079.3	0.8	1017.8	0.7	0.4
Cyprus	419.6	1.5	1.0	6.5	1.0	4.3	0.2	5.4	0.5	0.1
Denmark	6041.5	2.8	3.2	166.5	1.7	192.9	0.5	179.7	0.9	0.2
Estonia	367.9	0.5	0.1	1.9	3.6	0.4	0.8	1.2	1.8	0.4
Finland	3291.7	1.4	1.6	45.6	1.4	53.0	0.5	49.3	0.7	0.3
Germany	71636.4	3.2	3.2	2319.5	1.8	2308.5	0.7	2314.0	0.9	0.4
Greece	1998.9	0.1	0.0	1.6	2.4	0.9	0.6	1.3	1.2	0.3
Hungary	1529.7	0.1	0.1	2.0	2.3	1.1	0.5	1.5	1.1	0.2
Ireland	16905.7	2.5	2.9	423.2	5.3	498.2	2.4	460.7	2.7	1.2
Italy	20839.8	3.4	2.4	707.3	1.5	499.3	0.6	603.3	0.7	0.3
Lithuania	1281.5	0.7	0.0	8.7	5.1	0.2	0.8	4.4	2.5	0.4
Luxembourg	19988.5	16.2	14.2	3239.9	7.5	2838.3	2.6	3039.1	3.7	1.3
Netherlands	37472.5	7.0	6.2	2614.4	3.1	2331.5	1.4	2472.9	1.6	0.7
Poland	8000.8	0.2	0.2	19.0	4.2	18.6	1.2	18.8	2.1	0.6
Portugal	1609.2	1.0	1.0	15.6	1.2	15.9	0.3	15.7	0.6	0.1
Slovenia	270.1	0.1	0.0	0.2	0.9	0.1	0.2	0.1	0.5	0.1
Spain	13763.4	3.0	2.5	418.8	1.8	343.9	0.6	381.4	0.9	0.3
Sweden	6948.3	3.7	4.3	254.2	1.3	297.9	0.4	276.1	0.7	0.2
United Kingdom	41485.2	3.1	2.8	1302.7	1.6	1169.7	0.6	1236.2	0.8	0.3
Rest of the world	**52296.6**	**8.2**	**7.8**	**4274.1**	**1.8**	**4074.4**	**0.8**	**4174.3**	**0.9**	**0.4**
Bermuda (UK)	2432.9	1.0	0.1	24.6	13.6	3.6	9.7	14.1	6.8	4.9
BVI (UK)	2.2	2.7	7.2	0.1	0.0	0.2	0.0	0.1	0.0	0.0
Canada	536.3	4.6	7.2	24.9	0.8	38.5	0.2	31.7	0.4	0.1
Guernsey	5.2	6.5	8.4	0.3	0.2	0.4	0.2	0.4	0.1	0.1
Iceland	43.0	0.8	0.1	0.4	0.8	0.1	0.2	0.2	0.4	0.1
India	235.0	1.2	1.9	2.8	0.4	4.4	0.1	3.6	0.2	0.1
Japan	1873.5	6.8	7.5	127.0	0.5	141.4	0.3	134.2	0.2	0.1
Mauritius	0.5	82.3	60.6	0.4	0.1	0.3	0.0	0.3	0.0	0.0
Norway	1523.6	1.8	1.9	27.4	1.4	29.5	0.6	28.4	0.7	0.3
Saudi Arabia	0.3	5.5	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Switzerland	4867.0	14.7	11.0	715.8	1.3	534.9	0.4	625.4	0.6	0.2
United States	40777.1	8.2	8.1	3350.4	2.3	3321.2	1.1	3335.8	1.1	0.5
World	**318545.1**	**5.0**	**5.0**	**16838.5**	**2.2**	**15785.6**	**0.9**	**16312.0**	**1.1**	**0.5**

Table 11: Tax deficit collected by France from non-French multinationals with a minimum ETR of 40, mn EUR (2015)

	Tax deficit	Sales (%)	Employees (%)	GFA Sales		GFA Employees		GFA Sales and Empl		
				Revenue	Sales tariff (%)	Revenue	Per empl. tax (%)	Revenue	Sales tariff (%)	Per empl. tax (%)
European Union	**330132.5**	**5.0**	**4.0**	**15455.9**	**3.0**	**14410.7**	**1.2**	**14933.3**	**1.5**	**0.6**
Austria	7106.4	1.1	1.0	76.7	2.2	72.6	0.7	74.7	1.1	0.3
Belgium	8618.4	14.1	15.9	1211.4	1.9	1367.1	1.0	1289.3	0.9	0.5
Cyprus	531.3	1.5	1.0	8.2	1.3	5.5	0.3	6.8	0.6	0.1
Denmark	7698.2	2.8	3.2	212.2	2.2	245.7	0.6	229.0	1.1	0.3
Estonia	443.4	0.5	0.1	2.3	4.3	0.4	0.9	1.4	2.2	0.5
Finland	4219.7	1.4	1.6	58.4	1.8	68.0	0.7	63.2	0.9	0.3
Germany	87659.6	3.2	3.2	2838.3	2.2	2824.9	0.9	2831.6	1.1	0.5
Greece	2553.9	0.1	0.0	2.0	3.1	1.2	0.7	1.6	1.5	0.4
Hungary	1854.0	0.1	0.1	2.4	2.7	1.3	0.5	1.9	1.4	0.3
Ireland	19722.7	2.5	2.9	493.8	6.2	581.2	2.8	537.5	3.1	1.4
Italy	26405.6	3.4	2.4	896.2	1.8	632.6	0.7	764.4	0.9	0.4
Lithuania	1501.5	0.7	0.0	10.1	5.9	0.2	0.9	5.2	3.0	0.4
Luxembourg	23621.7	16.2	14.2	3828.8	8.8	3354.2	3.1	3591.5	4.4	1.6
Netherlands	46461.5	7.0	6.2	3241.5	3.9	2890.8	1.7	3066.2	1.9	0.9
Poland	9616.3	0.2	0.2	22.8	5.0	22.4	1.4	22.6	2.5	0.7
Portugal	2188.8	1.0	1.0	21.2	1.7	21.6	0.4	21.4	0.8	0.2
Slovenia	342.1	0.1	0.0	0.2	1.2	0.1	0.3	0.2	0.6	0.2
Spain	17562.5	3.0	2.5	534.4	2.3	438.8	0.8	486.6	1.2	0.4
Sweden	9067.3	3.7	4.3	331.8	1.7	388.7	0.6	360.2	0.9	0.3
United Kingdom	52957.5	3.1	2.8	1663.0	2.1	1493.2	0.8	1578.1	1.1	0.4
Rest of the world	**62979.6**	**8.2**	**7.8**	**5146.4**	**2.2**	**4907.9**	**0.9**	**5027.1**	**1.1**	**0.5**
Bermuda (UK)	2831.3	1.0	0.1	28.6	15.9	4.2	11.3	16.4	7.9	5.6
BVI (UK)	3.1	2.7	7.2	0.1	0.0	0.2	0.0	0.2	0.0	0.0
Canada	662.7	4.6	7.2	30.8	0.9	47.5	0.3	39.1	0.5	0.1
Guernsey	6.3	6.5	8.4	0.4	0.3	0.5	0.2	0.5	0.1	0.1
Iceland	53.3	0.8	0.1	0.4	1.0	0.1	0.3	0.3	0.5	0.1
India	286.8	1.2	1.9	3.4	0.4	5.3	0.2	4.4	0.2	0.1
Japan	2341.0	6.8	7.5	158.7	0.6	176.7	0.4	167.7	0.3	0.2
Mauritius	0.6	82.3	60.6	0.5	0.1	0.4	0.0	0.4	0.1	0.0
Norway	1928.3	1.8	1.9	34.7	1.7	37.3	0.8	36.0	0.9	0.4
Saudi Arabia	0.3	5.5	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Switzerland	5864.5	14.7	11.0	862.6	1.5	644.5	0.5	753.5	0.8	0.2
United States	49001.3	8.2	8.1	4026.2	2.7	3991.1	1.3	4008.6	1.4	0.6
World	**393112.1**	**5.0**	**5.0**	**20602.3**	**2.7**	**19318.5**	**1.1**	**19960.4**	**1.4**	**0.6**

Table 12: Tax deficit collected by France from non-French multinationals with a minimum ETR of 45, mn EUR (2015)

	Tax deficit	Sales (%)	Employees (%)	GFA Sales		GFA Employees		GFA Sales and Empl		
				Revenue	Sales tariff (%)	Revenue	Per empl. tax (%)	Revenue	Sales tariff (%)	Per empl. tax (%)
European Union	**394016.4**	**5.0**	**4.0**	**18347.5**	**3.6**	**17110.2**	**1.4**	**17728.8**	**1.8**	**0.7**
Austria	8618.9	1.1	1.0	93.0	2.6	88.1	0.8	90.6	1.3	0.4
Belgium	10432.7	14.1	15.9	1466.5	2.3	1654.9	1.2	1560.7	1.1	0.6
Cyprus	643.1	1.5	1.0	9.9	1.6	6.6	0.3	8.3	0.8	0.2
Denmark	9354.8	2.8	3.2	257.8	2.7	298.6	0.7	278.2	1.3	0.4
Estonia	518.8	0.5	0.1	2.7	5.1	0.5	1.1	1.6	2.5	0.5
Finland	5147.7	1.4	1.6	71.3	2.2	82.9	0.8	77.1	1.1	0.4
Germany	103682.8	3.2	3.2	3357.1	2.6	3341.2	1.1	3349.2	1.3	0.5
Greece	3108.9	0.1	0.0	2.5	3.8	1.5	0.9	2.0	1.9	0.4
Hungary	2178.2	0.1	0.1	2.9	3.2	1.6	0.6	2.2	1.6	0.3
Ireland	22539.8	2.5	2.9	564.3	7.1	664.2	3.2	614.3	3.5	1.6
Italy	31971.4	3.4	2.4	1085.1	2.2	766.0	0.9	925.6	1.1	0.4
Lithuania	1721.5	0.7	0.0	11.6	6.8	0.3	1.0	5.9	3.4	0.5
Luxembourg	27255.0	16.2	14.2	4417.8	10.2	3870.1	3.6	4143.9	5.1	1.8
Netherlands	55450.6	7.0	6.2	3868.7	4.6	3450.0	2.1	3659.4	2.3	1.0
Poland	11231.9	0.2	0.2	26.6	5.9	26.2	1.7	26.4	2.9	0.8
Portugal	2768.4	1.0	1.0	26.9	2.1	27.3	0.5	27.1	1.1	0.2
Slovenia	414.0	0.1	0.0	0.3	1.4	0.2	0.4	0.2	0.7	0.2
Spain	21361.7	3.0	2.5	650.1	2.8	533.8	0.9	591.9	1.4	0.5
Sweden	11186.3	3.7	4.3	409.3	2.1	479.6	0.7	444.4	1.1	0.4
United Kingdom	64429.9	3.1	2.8	2023.2	2.6	1816.6	1.0	1919.9	1.3	0.5
Rest of the world	**73662.7**	**8.2**	**7.8**	**6018.6**	**2.5**	**5741.3**	**1.1**	**5880.0**	**1.3**	**0.5**
Bermuda (UK)	3229.8	1.0	0.1	32.6	18.1	4.8	12.9	18.7	9.1	6.4
BVI (UK)	4.0	2.7	7.2	0.1	0.1	0.3	0.0	0.2	0.0	0.0
Canada	789.1	4.6	7.2	36.6	1.1	56.6	0.4	46.6	0.6	0.2
Guernsey	7.4	6.5	8.4	0.5	0.3	0.6	0.2	0.6	0.2	0.1
Iceland	63.7	0.8	0.1	0.5	1.3	0.1	0.4	0.3	0.6	0.2
India	338.6	1.2	1.9	4.0	0.5	6.3	0.2	5.2	0.3	0.1
Japan	2808.5	6.8	7.5	190.4	0.7	211.9	0.4	201.2	0.4	0.2
Mauritius	0.7	82.3	60.6	0.6	0.1	0.4	0.0	0.5	0.1	0.0
Norway	2333.0	1.8	1.9	41.9	2.1	45.2	1.0	43.5	1.0	0.5
Saudi Arabia	0.4	5.5	13.7	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Switzerland	6862.1	14.7	11.0	1009.3	1.8	754.1	0.5	881.7	0.9	0.3
United States	57225.5	8.2	8.1	4701.9	3.2	4660.9	1.5	4681.4	1.6	0.7
World	**467679.1**	**5.0**	**5.0**	**24366.0**	**3.2**	**22851.5**	**1.3**	**23608.8**	**1.6**	**0.7**

Table 13: Tax deficit collected by France from non-French multinationals with a minimum ETR of 50, mn EUR (2015)

	Tax deficit	Sales (%)	Employees (%)	GFA Sales		GFA Employees		GFA Sales and Empl		
				Revenue	Sales tariff (%)	Revenue	Per empl. tax (%)	Revenue	Sales tariff (%)	Per empl. tax (%)
European Union	**457900.4**	**5.0**	**4.0**	**21239.0**	**4.1**	**19809.7**	**1.6**	**20524.3**	**2.1**	**0.8**
Austria	10131.4	1.1	1.0	109.4	3.1	103.5	0.9	106.4	1.5	0.5
Belgium	12247.1	14.1	15.9	1721.5	2.7	1942.7	1.4	1832.1	1.3	0.7
Cyprus	754.9	1.5	1.0	11.6	1.8	7.7	0.4	9.7	0.9	0.2
Denmark	11011.4	2.8	3.2	303.5	3.2	351.5	0.9	327.5	1.6	0.4
Estonia	594.3	0.5	0.1	3.1	5.8	0.6	1.2	1.9	2.9	0.6
Finland	6075.7	1.4	1.6	84.1	2.6	97.9	1.0	91.0	1.3	0.5
Germany	119705.9	3.2	3.2	3875.9	3.0	3857.6	1.2	3866.7	1.5	0.6
Greece	3663.9	0.1	0.0	2.9	4.4	1.7	1.1	2.3	2.2	0.5
Hungary	2502.5	0.1	0.1	3.3	3.7	1.8	0.7	2.5	1.9	0.4
Ireland	25356.9	2.5	2.9	634.8	8.0	747.3	3.6	691.0	4.0	1.8
Italy	37537.2	3.4	2.4	1274.0	2.6	899.3	1.0	1086.7	1.3	0.5
Lithuania	1941.5	0.7	0.0	13.1	7.7	0.3	1.1	6.7	3.8	0.6
Luxembourg	30888.2	16.2	14.2	5006.7	11.6	4386.0	4.1	4696.4	5.8	2.0
Netherlands	64439.7	7.0	6.2	4495.8	5.4	4009.3	2.4	4252.6	2.7	1.2
Poland	12847.4	0.2	0.2	30.4	6.7	29.9	1.9	30.2	3.4	1.0
Portugal	3348.1	1.0	1.0	32.5	2.5	33.0	0.6	32.8	1.3	0.3
Slovenia	486.0	0.1	0.0	0.3	1.7	0.2	0.4	0.3	0.8	0.2
Spain	25160.8	3.0	2.5	765.7	3.3	628.7	1.1	697.2	1.7	0.6
Sweden	13305.3	3.7	4.3	486.8	2.5	570.4	0.8	528.6	1.3	0.4
United Kingdom	75902.2	3.1	2.8	2383.5	3.0	2140.1	1.2	2261.8	1.5	0.6
Rest of the world	**84345.7**	**8.2**	**7.8**	**6890.8**	**2.9**	**6574.8**	**1.2**	**6732.8**	**1.4**	**0.6**
Bermuda (UK)	3628.2	1.0	0.1	36.6	20.3	5.4	14.5	21.0	10.2	7.2
BVI (UK)	4.9	2.7	7.2	0.1	0.1	0.4	0.0	0.2	0.0	0.0
Canada	915.5	4.6	7.2	42.5	1.3	65.6	0.4	54.1	0.6	0.2
Guernsey	8.5	6.5	8.4	0.6	0.4	0.7	0.3	0.6	0.2	0.1
Iceland	74.1	0.8	0.1	0.6	1.5	0.1	0.4	0.4	0.7	0.2
India	390.4	1.2	1.9	4.6	0.6	7.3	0.2	5.9	0.3	0.1
Japan	3276.0	6.8	7.5	222.1	0.9	247.2	0.5	234.7	0.4	0.3
Mauritius	0.9	82.3	60.6	0.7	0.2	0.5	0.0	0.6	0.1	0.0
Norway	2737.7	1.8	1.9	49.2	2.5	53.0	1.1	51.1	1.2	0.6
Saudi Arabia	0.4	5.5	13.7	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Switzerland	7859.6	14.7	11.0	1156.0	2.0	863.8	0.6	1009.9	1.0	0.3
United States	65449.7	8.2	8.1	5377.6	3.6	5330.8	1.7	5354.2	1.8	0.9
World	**542246.1**	**5.0**	**5.0**	**28129.8**	**3.7**	**26384.5**	**1.5**	**27257.1**	**1.9**	**0.8**

Table 14: Tax revenue gains for France from adopting a minimum ETR apportioning by sales, mn EUR (2015)

Minimum ETR (%)	25%	30%	35%	40%	45%	50%
Cooperative scenario	11184.8	19311.9	26727.8	34144.32	41560.8	48977.4
% national income	*0.6*	*1.0*	*1.4*	*1.80*	*2.2*	*2.6*
Unilateral scenario	13447.8	24935.8	36479.5	42371.90	59568.3	71117.2
% national income	*0.7*	*1.3*	*1.9*	*2.20*	*3.1*	*3.8*

[1] Source: Authors' calculations from FDI data (Eurostat and OECD), National Accounts (NASA)

[2] Under separate accounting, the profits allocated to France from EU multinationals are €105 billion. The total gain for the unilateral scenario includes the tax deficit collected and the tax revenue gain from taxing these profits at the minimum ETR.

[3] Gains for the cooperative scenario are computed with respected to the the tax revenues under a separate accounting tax system. The tax revenues are estimated with France ETR for 2015, 24%

[4] For comparability, the tax revenues under the unilateral scenario just includes the corporate profits of EU multinationals.

Table 15: Tax revenue gains for France from adopting a minimum ETR apportioning by the number of employees, mn EUR (2015)

Minimum ETR (%)	25%	30%	35%	40%	45%	50%
Cooperative Scenario	2806.1	8404.9	14003.6	19602.4	25201.2	30800.0
% national income	*0.1*	*0.4*	*0.7*	*1.0*	*1.3*	*1.6*
Unilateral scenario	12979.3	24274.5	35617.3	46974.1	58331.0	69687.9
% national income	*0.7*	*1.3*	*1.9*	*2.5*	*3.1*	*3.7*

[1] Source: Authors' calculations from FDI data (Eurostat and OECD), National Accounts (NASA)

[2] See Table 12 footnotes.

Table 16: Tax revenue gains for France from adopting a minimum ETR apportioning by sales and the number of employees, mn EUR (2015)

Minimum ETR (%)	25%	30%	35%	40%	45%	50%
Cooperative scenario	7351.6	13859.5	20367.4	26875.3	33383.2	39891.1
% national income	*0.4*	*0.7*	*1.1*	*1.4*	*1.8*	*2.1*
Unilateral scenario	18831.6	24605.1	36043.9	47497.0	58949.6	70402.5
% national income	*1.0*	*1.3*	*1.9*	*2.5*	*3.1*	*3.7*

[1] Source: Authors' calculations from FDI data (Eurostat and OECD), National Accounts (NASA)

[2] See Table 12 footnotes.

8 Annex

8.1 Additional Tables

Table 17: Net national income and corporate profits by income level and population, bn EUR (2015)

	National income	Pre-tax corp. profits	Population	Per capita	
				Income	Corp. profit
High	32559.9	1039.3	1.1	29838.9	952.4
Upper middle	14993.4	84.2	2.6	5841.4	32.8
Lower middle	4590.8	13.3	2.9	1563.6	4.5
Low	503.0	0.5	0.5	972.1	1.0
Tax haven	2208.5	358.5	0.1	34023.8	5523.6
Total	*54855.7*	*1495.9*	*7.2*	*72239.9*	*6514.4*

[1] Net national income (at market prices) and population statistics from the World Inequality Database (WID). Total value for per capita income and corporate profits corresponds to the average for all income groups.

[2] Note that the data for population just includes the set of countries where European Multinationals have registered corporate profits.

Table 18: Country classification by income level and tax haven

High income	Australia - Austria - Bouvet Island (NO) - British Indian Ocean Territory (UK) - Brunei Darussalam - Canada - Chile - Christmas Island (AU) - Cocos (Keeling) Islands (AU) - Cook Islands (NZ) - Croatia - Czechia - Denmark - Estonia - Falkland Islands (UK) - Faroes (DK) - Finland - France - French Polynesia (FR) - French Southern Territories (FR) - Germany - Greece - Greenland (DK) - Guam (US) - Heard Island and McDonald Islands (AU) - Hungary - Iceland - Israel - Italy - Japan - Kuwait - Latvia - Lithuania - Montserrat (UK) - Nauru - New Caledonia (FR) - New Zealand - Niue (NZ) - Norfolk Island (AU) - Northern Mariana Islands (US) - Norway - Oman - Pitcairn Islands (UK) - Poland - Portugal - Qatar - Saint Helena, Ascension and Tristan da Cunha (UK) - San Marino - Slovakia - Slovenia - South Georgia and the South Sandwich Islands (UK) - South Korea - Spain - Sweden - Taiwan - Tokelau (NZ) - Trinidad and Tobago - United Arab Emirates - United Kingdom - United States - United States Minor Outlying Islands - Uruguay - Vatican City State - Wallis and Futuna (FR)
Upper middle income	Albania - Algeria - American Samoa (US) - Angola - Argentina - Armenia - Azerbaijan - Belarus - Bosnia and Herzegovina - Botswana - Brazil - Bulgaria - China - Colombia - Costa Rica - Cuba - Dominica - Dominican Republic - Ecuador - Equatorial Guinea - Fiji - Gabon - Georgia - Guyana - Iran - Iraq - Jamaica - Jordan - Kazakhstan - Libya - Malaysia - Maldives - Mexico - Montenegro - Namibia - North Macedonia - Palau - Paraguay - Peru - Romania - Russia - Serbia - South Africa - Suriname - Thailand - Turkey - Turkmenistan - Tuvalu - Venezuela
Lower middle income	Bangladesh - Bhutan - Bolivia - Cabo Verde - Cambodia - Cameroon - Congo - Côte d'Ivoire - Djibouti - Egypt - El Salvador - Eswatini - Federated States of Micronesia - Ghana - Guatemala - Honduras - India - Indonesia - Kenya - Kiribati - Kosovo - Kyrgyzstan - Laos - Lesotho - Mauritania - Moldova - Mongolia - Morocco - Myanmar/Burma - Nicaragua - Nigeria - Pakistan - Palestine - Papua New Guinea - Philippines - São Tomé and Príncipe - Saudi Arabia - Solomon Islands - Sri Lanka - Sudan - Syria - Tajikistan - Timor-Leste - Tonga - Tunisia - Ukraine - Uzbekistan - Vietnam - Yemen - Zambia
Low income	Afghanistan - Benin - Burkina Faso - Burundi - Central African Republic - Chad - Comoros - Democratic Republic of the Congo - Eritrea - Ethiopia - Gambia, The - Guinea - Guinea-Bissau - Haiti - Liberia - Madagascar - Malawi - Mali - Mozambique - Nepal - Niger - North Korea - Rwanda - Senegal - Sierra Leone - Somalia - South Sudan - Tanzania - Togo - Uganda - Zimbabwe
Tax haven	Andorra - Anguilla (UK) - Antigua and Barbuda - Aruba (NL) - Bahamas - Bahrain - Barbados - Belgium - Belize - Bermuda (UK) - Bonaire, Saint Eustatius and Saba - British Virgin Islands (UK) - Cayman Islands (UK) - Curaçao - Cyprus - Former Netherlands Antilles - Gibraltar (UK) - Grenada - Guernsey - Hong Kong - Ireland - Isle Of Man - Jersey - Lebanon - Liechtenstein - Luxembourg - Macao - Malta - Marshall Islands - Mauritius - Monaco - Netherlands - Panama - Puerto Rico - Saint Kitts and Nevis - Saint Lucia - Saint Vincent and the Grenadines - Samoa - Seychelles - Singapore - Sint Maarten - Switzerland - Turks and Caicos Islands (UK) - US Virgin Islands (US) - Vanuatu

[1] Income level classification from the World Bank - World Development Indicators (2015). Tax haven classification is from Torslov et al. (2018).

Table 19: Domestic corporate profits for EU countries, bn EUR (2015)

| | Gross Operating Surplus (GOS) | | | Corporate profits | | | | | | | |
	Total	Net interest paid	Depreciation	Net dividends paid	Reinv. earnings	Corporate income tax	Recorded profits	Unrecorded foreign profits	Total profits	Corporate tax revenue	ETR (%)
Austria	83.3	0.1	40.3	22.6	12.5	7.8	42.9	0.0	42.9	7.7	17.9
Belgium	104.7	-15.0	51.6	41.1	13.1	14.0	68.1	3.2	71.3	13.6	19.1
Bulgaria	13.9	-0.1	4.9	2.6	5.6	1.0	9.1	0.0	9.1	1.0	11.0
Croatia	8.7	-0.1	4.7	1.0	2.4	0.7	4.2	0.0	4.2	0.6	14.3
Cyprus	3.8	3.7	1.1	-2.5	0.3	1.1	-1.0	3.4	2.4	1.0	41.7
Czechia	52.4	-0.9	23.0	14.7	10.1	5.5	30.3	0.0	30.3	6.1	20.1
Denmark	66.4	-9.5	28.6	10.7	28.9	7.7	47.3	0.0	47.3	7.6	16.1
Estonia	6.1	0.0	2.2	1.4	2.1	0.4	3.9	0.0	3.9	0.4	10.3
Finland	49.1	1.0	23.3	7.8	11.7	5.2	24.8	0.0	24.8	4.5	18.1
France	395.4	-29.3	236.5	52.8	80.0	55.3	188.1	0.0	188.1	45.9	24.4
Germany	731.0	-36.2	312.9	292.4	90.6	71.4	454.3	0.0	454.3	52.5	11.6
Greece	33.6	-2.0	13.8	4.4	11.0	6.3	21.8	0.0	21.8	3.8	17.4
Hungary	29.1	-1.0	11.4	7.6	9.2	2.0	18.8	0.0	18.8	2.0	10.6
Ireland	139.0	-22.5	48.2	46.3	60.0	6.9	113.2	44.0	157.2	6.9	4.4
Italy	346.2	-14.6	163.5	134.6	28.5	34.1	197.3	0.0	197.3	33.5	17.0
Latvia	7.0	-0.1	3.4	1.6	1.8	0.4	3.7	0.0	3.7	0.4	10.8
Lithuania	13.0	-0.1	3.0	5.5	4.0	0.6	10.0	0.0	10.0	0.6	6.0
Luxembourg	15.7	-43.0	3.8	40.0	12.6	2.4	55.0	28.6	83.6	2.3	2.8
Malta	3.5	0.0	0.7	0.0	2.8	0.0	2.8	10.2	13.0	0.6	4.6
Netherlands	193.4	-15.8	67.4	10.2	113.4	18.2	141.8	31.9	173.7	18.4	10.6
Poland	110.6	-0.1	32.5	18.4	50.5	9.4	78.2	0.0	78.2	7.9	10.1
Portugal	40.3	-0.1	15.7	11.8	7.2	5.7	24.7	0.0	24.7	5.6	22.7
Romania	51.0	0.6	18.6	3.6	23.8	4.4	31.8	0.0	31.8	3.8	11.9
Slovakia	25.2	-0.7	8.4	4.5	10.0	3.0	17.5	0.0	17.5	2.9	16.6
Slovenia	7.6	-0.4	4.9	1.0	1.6	0.6	3.2	0.0	3.2	0.6	18.7
Spain	254.1	-7.0	112.5	31.3	95.9	21.3	148.6	0.0	148.6	25.6	17.2
Sweden	115.8	1.9	54.1	25.4	21.2	13.0	59.7	0.0	59.7	13.2	22.1
United Kingdom	567.7	-6.2	221.3	304.2	-21.1	69.5	352.6	0.0	352.6	63.3	18.0
Total	*3467.6*	*-197.4*	*1512.3*	*1095.0*	*689.7*	*367.9*	*2152.7*	*121.3*	*2274.0*	*332.3*	*14.6*

[1] Source: Non-financial Annual Sector Accounts (NASA) from Eurostat. Corporate tax revenues data is from OECD and IMf WoRLD. Data for missing profits is from Torslov et al. (2018).

[2] Data for Croatia for 2015 is inferred with available data from previous years.

Table 20: Domestic corporate profits for EU countries divided by foreign and local corporations, bn EUR (2015)

	Total	of which:		Foreign (excl. SPEs)	of which:			Local	Local multinationals
		Recorded profits	Unrecorded foreign profits		Dividends	Reinv. earnings	Corporate income tax		
Austria	42.9	42.9	0.0	9.9	7.8	0.6	1.5	33.0	16.5
Belgium	71.4	68.1	3.2	29.4	23.0	1.7	4.7	41.9	20.9
Bulgaria	9.1	9.1	0.0	2.1	1.0	0.9	0.2	7.0	3.5
Croatia	4.2	4.2	0.0	-0.3	0.5	-0.8	-	4.5	2.2
Cyprus	2.4	-1.0	3.4	31.4	17.2	4.5	9.7	-29.0	-14.5
Czechia	30.3	30.3	0.0	15.1	9.8	2.8	2.5	15.2	7.6
Denmark	47.3	47.3	0.0	4.6	4.2	-0.2	0.6	42.7	21.3
Estonia	3.9	3.9	0.0	1.3	0.7	0.5	0.1	2.6	1.3
Finland	24.8	24.8	0.0	4.3	4.9	-1.3	0.7	20.5	10.2
France	188.1	188.1	0.0	27.2	14.8	7.1	5.3	160.9	80.4
Germany	454.3	454.3	0.0	20.9	21.7	-3.0	2.2	433.5	216.6
Greece	21.8	21.8	0.0	1.2	0.6	0.4	0.2	20.6	10.3
Hungary	18.8	18.8	0.0	8.2	3.3	4.1	0.8	10.6	5.3
Ireland	157.1	113.2	44.0	66.5	15.5	48.2	2.8	90.7	45.3
Italy	197.3	197.3	0.0	11.5	3.1	6.7	1.7	185.8	92.8
Latvia	3.7	3.7	0.0	1.1	0.6	0.4	0.1	2.6	1.3
Lithuania	10.0	10.0	0.0	1.5	0.8	0.6	0.1	8.6	4.3
Luxembourg	83.6	55.0	28.6	10.7	6.0	4.4	0.3	72.9	36.4
Malta	13.0	2.8	10.2	9.5	8.4	0.7	0.4	3.5	1.8
Netherlands	173.6	141.8	31.9	79.3	52.1	19.6	7.6	94.3	47.1
Poland	78.2	78.2	0.0	16.0	7.2	7.3	1.5	62.3	31.1
Portugal	24.7	24.7	0.0	4.5	2.7	1.0	0.8	20.2	10.1
Romania	31.8	31.8	0.0	3.2	2.4	0.5	0.3	28.6	14.3
Slovakia	17.5	17.5	0.0	4.3	3.0	0.7	0.6	13.2	6.6
Slovenia	3.2	3.2	0.0	1.1	0.5	0.4	0.2	2.1	1.0
Spain	148.6	148.6	0.0	19.8	8.0	8.9	2.9	128.8	64.3
Sweden	59.7	59.7	0.0	22.5	12.3	6.1	4.1	37.2	18.6
United Kingdom	352.6	352.6	0.0	74.3	53.5	9.5	11.3	278.2	139.0
Total	*2274.0*	*2152.8*	*121.2*	*481.1*	*285.6*	*132.3*	*63.2*	*1792.9*	*895.8*

[1] Non-financial Annual Sector Accounts (NASA) from Eurostat. Data for for domestic foreign corporate profits is from OECD and Eurostat inward equity income FDI. Data for missing profits is from Torslov et al. (2018).

[2] Data for Croatia for 2015 is inferred with available data from previous years.

[3] Data for local multinationals is imputed Internal Revenue Service (IRS) and Torslov et al. (2018) data.

Table 21: Reported equity income on outward FDI vs. inward FDI reported by OECD and EU partners, bn EUR (2015)

	All resident units			Resident SPE		
	Reported by partner	Reported by country	Gap (Outward - Inward)	Reported by partner	Reported by country	Gap (Outward - Inward)
Austria	7.6	6.4	-1.3	0.0	0	0.0
Belgium	10.6	10.1	-0.5	0.0	0.9	0.9
Bulgaria	0.0	0	0.0	0.0	0	0.0
Croatia	0.1	-0.1	-0.1	0.0	0	0.0
Cyprus	2.9	0.4	-2.5	0.0	0	0.0
Czechia	1.7	1.6	-0.1	0.0	0	0.0
Denmark	5.6	8.5	2.9	0.0	0	0.0
Estonia	0.1	0.3	0.1	0.0	0	0.0
Finland	4.2	5.7	1.5	0.0	0	0.0
France	39.9	44.2	4.3	0.8	0	-0.8
Germany	57.1	59.2	2.1	0.5	0	-0.5
Greece	0.7	1.5	0.8	0.0	0	0.0
Hungary	0.4	2.6	2.2	0.0	1.8	1.8
Ireland	4.3	9.6	5.3	0.9	0	-0.9
Italy	8.9	10.2	1.2	0.2	0	-0.2
Latvia	0.1	0.1	0.0	0.0	0	0.0
Lithuania	0.1	0.1	0.0	0.0	0	0.0
Luxembourg	31.7	-	-31.7	0.5	-	-0.5
Malta	0.5	0	-0.5	0.0	0	0.0
Netherlands	52.9	110.9	58.0	0.0	0	0.0
Poland	0.6	0.8	0.2	0.0	0.1	0.1
Portugal	1.4	0	-1.4	0.0	0	0.0
Romania	0.1	0	-0.1	0.0	0	0.0
Slovakia	0.4	0.2	-0.2	0.0	0	0.0
Slovenia	0.3	0	-0.3	0.0	0	0.0
Spain	11.1	-	-11.1	0.1	-	-0.1
Sweden	13.8	19.1	5.3	0.2	0	-0.2
United Kingdom	44.4	29.9	-14.5	0.1	0	-0.1
Total	*301.5*	*321.3*	*19.6*	*3.3*	*2.8*	*-0.5*

[1] Source: Eurostat and OECD FDI statistics.

[2] Spain and Luxembourg do not report data on equity income at a by partner country level.

[3] Data for Austria is for Resident Operating Units (non-SPE). Austria treats SPEs as confidential and as a consequence data for all resident units its non-publishable.

Table 22: Bilateral discrepancies in outward FDI equity income by partner country, mn EUR (2015)

	United States	Switzerland	Other EU/OECD countries	Total Gap
Austria	0.60	0.60	-2.50	-1.30
Belgium	-0.20	0.10	-0.40	-0.50
Bulgaria	0.00	-0.00	0.00	0.00
Croatia	0.00	0.00	-0.10	-0.10
Cyprus	0.00	0.00	-2.50	-2.50
Czechia	0.00	0.00	-0.10	-0.10
Denmark	0.30	2.10	0.50	2.90
Estonia	0.00	0.00	0.10	0.10
Finland	-0.50	0.10	1.90	1.50
France	-2.20	4.00	2.60	4.30
Germany	4.10	4.30	-6.30	2.10
Greece	0.00	0.00	0.70	0.80
Hungary	0.00	1.70	0.40	2.20
Ireland	0.00	0.00	5.30	5.30
Italy	0.60	0.20	0.50	1.20
Latvia	0.00	0.00	-0.00	-0.00
Lithuania	0.00	0.00	0.00	0.00
Luxembourg	-0.60	0.00	-31.10	-31.70
Malta	0.00	0.00	-0.50	-0.50
Netherlands	11.50	19.90	26.50	58.00
Poland	0.00	0.00	0.20	0.20
Portugal	0.00	0.00	-1.40	-1.40
Romania	0.00	-0.00	-0.00	-0.10
Slovakia	0.00	-0.00	-0.20	-0.20
Slovenia	0.00	-0.00	-0.30	-0.30
Spain	-1.60	0.00	-9.50	-11.10
Sweden	1.30	1.10	3.00	5.30
United Kingdom	10.80	3.40	-28.70	-14.50
Total gap	23.90	37.60	-41.70	19.80

Table 23: Impact of unallocated or confidential equity income on by partner outward FDI data, bn. EUR (2015)

	All resident units			Resident SPEs		
	World	By partner	Unallocated or confidential	World	By partner	Unallocated or confidential
Austria	1.1	8	-6.9	-8.3	0	-8.3
Belgium	11.0	11.3	-0.3	0.6	0.9	-0.4
Bulgaria	0.0	0	0.0	-	0	0
Croatia	-0.2	-0.1	-0.2	-	0	0
Cyprus	25.4	1.5	23.8	-	0	0
Czechia	1.7	1.7	0.0	0	0	0
Denmark	10.8	9.8	1.0	0.6	0	0.6
Estonia	0.3	0.3	0.0	0	0	0
Finland	6.3	6.3	0.0	0	0	0
France	61.4	52.9	8.4	0	0	0
Germany	78.7	78.7	0.0	0	0	0
Greece	1.6	1.6	0.0	0	0	0
Hungary	3.1	3.1	0.0	2.2	1.9	0.3
Ireland	12.0	9.7	2.3	-	0	0
Italy	11.2	11.2	0.0	0	0	0
Latvia	0.1	0.1	0.1	0	0	0
Lithuania	0.1	0.1	0.0	0	0	0
Luxembourg	54.0	-	54.0	50.5	-	50.5
Malta	0.0	0	0.0	-	0	0
Netherlands	164.6	145.4	19.2	81.9	0	81.9
Poland	0.6	0.8	-0.1	0	0.1	-0.1
Portugal	2.0	0	2.0	0.1	0	0.1
Romania	-0.1	0	-0.2	-	0	0
Slovakia	0.3	0.2	0.1	0	0	0
Slovenia	0.0	0	0.0	0	0	0
Spain	30.0	-	30.0	-	-	-
Sweden	22.9	22.8	0.0	0	0	0
United Kingdom	76.6	48.8	27.8	-	0	0
Total	*575.4*	*414.3*	*291.6*	*161*	*288.6*	*124.6*

[1] Source: Eurostat and OECD FDI statistics.

[2] Spain and Luxembourg do not report data on equity income at a by partner country level.

[3] Data for Austria is for Resident Operating Units (non-SPE). Austria treats SPEs as confidential and as a consequence data for all resident units its non-publishable.

Table 24: Rate of return on FDI for all resident units, in percentage (2015)

| | Inward | | | | | | Outward | | |
| | Inward FDI | | | Outward FDI | | | Gap (outward - inward) | | |
	Total	Equity	Debt	Total	Equity	Debt	Total	Equity	Debt
Austria	0.2	0.0	6.9	0.6	0.5	2.0	0.4	0.5	-4.9
Belgium	5.3	4.6	2.5	2.4	2.1	5.6	-2.9	-2.5	3.1
Bulgaria	5.8	6.3	3.1	0.0	0.0	0.0	-5.8	-6.3	-3.1
Croatia	-0.8	-1.6	3.9	-3.9	-4.4	0.0	-3.1	-2.8	-3.9
Cyprus	6.8	7.8	3.1	6.7	7.2	-1.4	-0.1	-0.6	-4.5
Czechia	12.4	12.8	6.2	10.1	10.6	0.0	-2.3	-2.2	-6.2
Denmark	4.8	5.2	1.6	7.0	7.3	4.6	2.2	2.1	3.0
Estonia	7.0	7.3	0.0	5.6	7.7	0.0	-1.4	0.4	0.0
Finland	5.7	5.9	4.3	7.7	6.5	-3.6	2.0	0.6	-7.9
France	3.9	3.9	4.4	5.5	5.8	2.4	1.6	1.9	-2.0
Germany	3.6	3.5	4.0	6.2	6.0	2.4	2.6	2.5	-1.6
Greece	4.1	5.7	1.5	6.5	7.0	0.0	2.4	1.3	-1.5
Hungary	5.7	5.6	0.0	2.3	2.4	0.0	-3.4	-3.2	0.0
Ireland	8.0	10.8	0.4	1.3	1.6	-1.7	-6.7	-9.2	-2.1
Italy	3.4	3.6	2.3	2.6	2.7	20.0	-0.8	-0.9	17.7
Latvia	7.5	9.3	0.0	7.1	10.0	0.0	-0.4	0.7	0.0
Lithuania	10.5	11.3	5.3	3.1	3.6	0.0	-7.4	-7.7	-5.3
Luxembourg	1.3	1.6	-1.8	1.7	1.4	7.5	0.4	-0.2	9.3
Malta	6.0	7.2	0.0	0.0	0.0	0.0	-6.0	-7.2	0.0
Netherlands	4.6	5.4	2.0	4.3	4.7	3.3	-0.3	-0.7	1.3
Poland	9.8	11.6	4.6	2.8	2.6	0.0	-7.0	-9.0	-4.6
Portugal	3.9	3.9	3.6	3.2	3.2	2.8	-0.7	-0.7	-0.8
Romania	5.7	6.4	4.1	-14.3	100.0	44.4	-20.0	93.6	40.3
Slovakia	9.6	10.5	4.8	13.6	17.6	0.0	4.0	7.1	-4.8
Slovenia	8.8	9.4	5.6	0.0	0.0	0.0	-8.8	-9.4	-5.6
Spain	3.9	3.9	3.8	6.2	6.0	3.7	2.3	2.1	-0.1
Sweden	7.0	8.1	2.6	7.6	7.8	4.8	0.6	-0.3	2.2
United Kingdom	4.7	5.2	1.7	5.3	4.9	-2.6	0.6	-0.3	-4.3
EU-28	*4.1*	*4.5*	*1.8*	*3.8*	*3.8*	*3.8*	*-58.0*	*49.6*	*13.7*

[1] Source: Eurostat and OECD FDI statistics.

Table 25: Corrected equity income on outward FDI, bn EUR (2015)

	All resident units			Resident SPE			
	Equity income	Corrected	Gap (Corrected - Reported)	Equity income	Corrected	Gap (Corrected - Reported)	Correct (excl. SPEs)
Austria	8	11.3	3.3	0	0.1	0.1	11.2
Belgium	11.3	16.7	5.4	0.9	0.9	0.0	15.8
Bulgaria	0	0.0	0.0	0	0.0	0.0	0.0
Croatia	-0.1	0.1	0.2	0	0.0	0.0	0.1
Cyprus	1.5	4.3	2.7	0	0.0	0.0	4.2
Czechia	1.7	2.7	1.0	0	0.0	0.0	2.7
Denmark	9.8	10.7	0.9	0	0.0	0.0	10.7
Estonia	0.3	0.3	0.0	0	0.0	0.0	0.3
Finland	6.3	6.7	0.4	0	0.0	0.0	6.7
France	52.9	59.3	6.3	0	0.8	0.8	58.5
Germany	78.7	94.2	15.5	0	0.5	0.5	93.7
Greece	1.6	2.2	0.6	0	0.0	0.0	2.2
Hungary	3.1	3.5	0.3	1.9	1.9	0.0	1.6
Ireland	9.7	12.1	2.4	0	0.9	0.9	11.2
Italy	11.2	15.9	4.6	0	0.2	0.2	15.7
Latvia	0.1	0.1	0.1	0	0.0	0.0	0.1
Lithuania	0.1	0.1	0.0	0	0.0	0.0	0.1
Luxembourg	-	31.7	31.7	-	0.5	0.5	31.2
Malta	0	0.6	0.6	0	0.0	0.0	0.6
Netherlands	145.4	159.9	14.6	0	0.0	0.0	160.0
Poland	0.8	1.1	0.4	0.1	0.1	0.0	1.0
Portugal	0	1.4	1.4	0	0.0	0.0	1.4
Romania	0	0.0	0.0	0	0.0	0.0	0.0
Slovakia	0.2	0.5	0.3	0	0.0	0.0	0.5
Slovenia	0	0.3	0.3	0	0.0	0.0	0.3
Spain	-	11.1	11.1	-	0.1	0.1	11.1
Sweden	22.8	25.3	2.5	0	0.2	0.2	25.1
United Kingdom	48.8	73.6	24.8	0	0.1	0.1	73.5
Total	*414.2*	*545.7*	*131.4*	*2.9*	*6.3*	*3.4*	*539.5*

[1] Source: Eurostat and OECD FDI statistics.

[2] Spain and Luxembourg do not report data on equity income at a by partner country level.

[3] Data for Austria is for Resident Operating Units (non-SPE). Austria treats SPEs as confidential and as a consequence data for all resident units its non-publishable.

Table 26: Impact of unallocated or confidential sales and employees on outward FATS data (2015)

	Sales (bn. EUR)			Employees (th.)		
	World	By partner	Unallocated or confidential	World	By partner	Unallocated or confidential
Austria	120.1	119.7	0.4	565.7	563.0	2.7
Belgium	131.4	107.6	23.8	366	274.2	91.8
Bulgaria	-	0.3	-	-	4.2	-
Croatia	6.7	6.7	0	43.8	43.7	0.1
Cyprus	3.1	0.8	2.2	15.7	3.9	11.8
Czechia	8.2	7.1	1.1	33	25.7	7.3
Denmark	220.6	219.3	1.3	1138.5	1131.6	6.9
Estonia	-	0.4	-	-	4.4	-
Finland	119.4	118.3	1.2	426.4	423.0	3.5
France	1510.3	1505.7	4.6	5747.6	5724.9	22.7
Germany	2162.2	2161.3	0.9	5590.1	5583.7	6.4
Greece	13.1	7.2	6	80.2	51.8	28.4
Hungary	14.1	13.4	0.7	43.6	42.1	1.5
Ireland	171.6	152.4	19.3	778.5	518.1	260.4
Italy	544.4	543.5	0.9	1802.4	1798.2	4.2
Latvia	2.7	0.9	1.8	9.4	9.4	0
Lithuania	5.1	5.1	0	44	43.8	0.2
Luxembourg	73	30.8	42.3	196.8	49.2	147.6
Malta	0.6	0.0	0.6	8.2	1.7	6.5
Netherlands	-	301.4	-	-	650.2	-
Poland	25.2	19.6	5.5	94.5	86.9	7.6
Portugal	38.7	38.2	0.5	195.4	191.9	3.5
Romania	0.2	0.2	0	2.3	2.3	0
Slovakia	1.9	1.6	0.3	17.6	16.4	1.2
Slovenia	5.8	5.8	0	34.5	34.5	0
Spain	271.7	268.5	3.2	897.7	884.0	13.7
Sweden	329.2	103.5	225.7	1393.7	565.9	827.8
United Kingdom	1107.3	1099.0	8.2	4632.2	4567.3	65
Total	*6886.6*	*6838.2*	*350.5*	*24157.7*	*23296.0*	*1520.6*

[1] Source: Foreign Affiliate Statistics (FATS) from Eurostat and Activity of Multinational Enterprises (AMNE) from OECD.

[2] For Bulgaria, Estonia and Netherlands the total value for world is not reported.

Table 27: Reported sales and number of employees for outward vs. inward FATS reported by EU and OECD partners (2015)

	Sales (bn. EUR)			Employees (th.)		
	Reported by partner	Reported by country	Gap (Outward - Inward)	Reported by partner	Reported by country	Gap (Outward - Inward)
Austria	148.5	103.7	-44.8	615.9	427.4	-188.5
Belgium	200.7	92.7	-108.0	379.6	169.9	-209.7
Bulgaria	0.6	0.0	-0.6	5.9	0.0	-5.9
Croatia	5.2	5.6	0.4	29.5	34.9	5.3
Cyprus	34.8	0.6	-34.2	179.1	3.9	-175.2
Czechia	16.1	6.9	-9.2	68.2	22.6	-45.6
Denmark	141.5	169.3	27.8	511.2	596.1	84.9
Estonia	3.6	0.0	-3.5	21.6	0.1	-21.5
Finland	84.6	85.9	1.3	244.0	253.0	9.0
France	936.8	1062.6	125.8	1956.4	2986.8	1030.4
Germany	1424.6	1603.8	179.2	2773.8	3505.9	732.1
Greece	8.2	6.5	-1.7	45.7	38.5	-7.2
Hungary	11.8	12.3	0.4	41.4	29.8	-11.6
Ireland	193.6	141.0	-52.7	262.1	415.7	153.6
Italy	235.5	419.3	183.9	560.2	1048.0	487.8
Latvia	1.2	0.9	-0.3	7.8	6.6	-1.2
Lithuania	5.4	4.1	-1.3	38.0	29.2	-8.8
Luxembourg	243.6	30.8	-212.8	731.6	49.2	-682.4
Malta	6.8	0.0	-6.8	38.0	0.5	-37.4
Netherlands	761.1	172.1	-589.1	1427.8	259.1	-1168.7
Poland	23.9	16.8	-7.1	65.1	52.1	-13.0
Portugal	19.1	27.5	8.4	34.4	97.9	63.5
Romania	0.9	0.1	-0.7	6.3	1.3	-4.9
Slovakia	5.4	1.4	-4.0	42.3	9.9	-32.5
Slovenia	4.9	3.7	-1.2	27.5	16.6	-10.9
Spain	153.9	138.8	-15.1	317.7	367.3	49.5
Sweden	314.0	41.4	-272.6	826.2	197.8	-628.4
United Kingdom	1076.1	653.9	-422.3	1452.1	2240.1	788.0
Total	*6062.4*	*4801.6*	*-1260.7*	*12709.6*	*12860.4*	*150.8*

[1] Source: Foreign Affiliate Statistics (FATS) from Eurostat and Activity of Multinational Enterprises (AMNE) from OECD.

Table 28: Corrected sales and employees for outward FATS (2015)

	Sales (bn EUR)			Employees (th.)		
	Reported	Corrected	Gap (Corrected - Reported)	Reported	Corrected	Gap (Corrected - Reported)
Austria	119.7	171.0	51.3	563.0	776.7	213.7
Belgium	107.6	220.1	112.5	274.2	525.9	251.7
Bulgaria	0.3	1.0	0.6	4.2	10.1	5.9
Croatia	6.7	8.3	1.6	43.7	49.8	6.2
Cyprus	0.8	35.0	34.2	3.9	179.1	175.2
Czechia	7.1	16.5	9.4	25.7	71.6	45.9
Denmark	219.3	222.8	3.6	1131.6	1146.5	14.9
Estonia	0.4	3.9	3.5	4.4	25.9	21.5
Finland	118.3	127.3	9.1	423.0	457.9	34.9
France	1505.7	1534.2	28.6	5724.9	5773.7	48.9
Germany	2161.3	2228.0	66.7	5583.7	6068.6	484.9
Greece	7.2	10.1	2.9	51.8	61.8	9.9
Hungary	13.4	19.9	6.5	42.1	63.9	21.8
Ireland	152.4	211.4	59.1	518.1	563.1	45.0
Italy	543.5	562.3	18.8	1798.2	1802.0	3.8
Latvia	0.9	1.4	0.5	9.4	11.7	2.3
Lithuania	5.1	6.8	1.7	43.8	55.9	12.2
Luxembourg	30.8	243.6	212.9	49.2	741.3	692.1
Malta	0.0	6.8	6.8	1.7	39.4	37.7
Netherlands	301.4	890.5	589.1	650.2	2077.9	1427.7
Poland	19.6	28.4	8.7	86.9	112.7	25.8
Portugal	38.2	45.4	7.2	191.9	199.7	7.8
Romania	0.2	1.0	0.8	2.3	7.4	5.1
Slovakia	1.6	5.6	4.0	16.4	48.9	32.5
Slovenia	5.8	7.6	1.8	34.5	46.2	11.8
Spain	268.5	300.6	32.2	884.0	975.0	91.1
Sweden	103.5	383.2	279.8	565.9	1230.5	664.6
United Kingdom	1099.0	1562.7	463.7	4567.3	4803.8	236.6
Total	*6838.2*	*8855.6*	*2017.4*	*23296.0*	*27927.3*	*4631.3*

[1] Source: Foreign Affiliate Statistics (FATS) from Eurostat and Activity of Multinational Enterprises (AMNE) from OECD.

8.2   Difference between headquartered and resident corporations at the European Union

An interesting insight from Foreign Affiliate Statistics (FATS) (see Section 3 for more details) is that statistics are presented by ultimate controlling parent. More concretely, by the country of location of the corporation headquarters. This allows to infer where corporations of a certain nationality locate their economic activity. Tables 29 and 30 compare the shares of sales and employees, of corporations headquartered in a country with respect to the total of resident corporation at its territory for European Union corporations. For example, from Table 29, French corporations registered a total of €4.3 trillion worldwide of which 65% where made in France. Resident corporations in France, independently of whether they are headquartered or not in its territory, gained around €4 trillion in sales. Therefore, French corporations generated more income from its sales than the total of corporations at its territory by a factor of 1.2. If we compare across all countries, a stylized fact arises, Eastern European corporations generate less income from its activity outside its frontier than the rest of EU corporations. This is indicative of a lower international presence of Eastern European corporations as it is observed in its levels of equity income on outward FDI (see Table 25). As logic, the same pattern is observed in the case of employees at Table 30. Corporations from richer EU countries register a higher share of employees outside its frontier with respect to the total of resident corporations.

Table 29: Sales of resident vs. controlled European Union corporations, bn EUR (2015)

	Controlled by					Resident at	
	Total	Foreign	%	Domestic	%	Total	Controlled vs. Resident (%)
Austria	553.3	120.1	21.71	433.2	78.29	653.1	84.72
Belgium	784.1	131.4	16.76	652.7	83.24	989.2	79.26
Bulgaria	81.8	0.3	0.41	81.4	99.59	121.3	67.42
Croatia	61.6	6.7	10.89	54.9	89.11	77.7	79.31
Cyprus	24.6	3.1	12.55	21.5	87.45	25.6	96.26
Czechia	246.6	8.2	3.32	238.4	96.68	444.2	55.51
Denmark	587.6	220.6	37.53	367.1	62.47	479.5	122.56
Estonia	17.7	0.4	1.99	17.3	98.01	50.8	34.75
Finland	400.0	119.4	29.86	280.6	70.14	365.8	109.36
France	4350.1	1510.3	34.72	2839.9	65.28	3624.9	120.01
Germany	6866.0	2162.2	31.49	4703.8	68.51	6024.3	113.97
Greece	217.5	13.1	6.04	204.4	93.96	236.2	92.12
Hungary	144.1	14.1	9.80	130.0	90.20	277.7	51.91
Ireland	462.7	171.6	37.09	291.1	62.91	594.7	77.81
Italy	2910.9	544.4	18.70	2366.5	81.30	2887.6	100.81
Latvia	32.2	2.7	8.44	29.5	91.56	51.3	62.78
Lithuania	55.6	5.1	9.20	50.5	90.80	74.0	75.06
Luxembourg	146.9	73.0	49.69	73.9	50.31	151.4	97.07
Malta	15.1	0.6	4.24	14.5	95.76	18.7	80.95
Netherlands	1181.5	301.4	25.51	880.1	74.49	1412.4	83.65
Poland	470.9	25.2	5.35	445.7	94.65	921.4	51.11
Portugal	274.1	38.7	14.13	235.4	85.87	314.2	87.24
Romania	138.8	0.2	0.15	138.6	99.85	263.4	52.70
Slovakia	91.1	1.9	2.07	89.2	97.93	180.5	50.48
Slovenia	64.0	5.8	9.01	58.2	90.99	83.6	76.55
Spain	1569.6	271.7	17.31	1297.9	82.69	1789.3	87.72
Sweden	882.4	329.2	37.31	553.2	62.69	808.9	109.07
United Kingdom	3930.9	1107.3	28.17	2823.6	71.83	4348.3	90.40
Total	26561.8	7188.7	27.06	19373.1	72.94	27269.9	97.40

Note:
Foreign corresponds to the total of sales of a corporation outside the frontier where it is headquartered. In the case of domestic, they are the sales by corporation within the territory where they are headquartered.
[1] Source: Foreign Affiliate Statistics (FATS) and Structural Business Statistics (SBS) from Eurostat.

Table 30: Persons employed for resident vs. controlled of European Union corporations, in thousands (2015)

	Controlled by					Resident at	
	Total	Foreign	%	Domestic	%	Total	Controlled vs. Resident (%)
Austria	2762.7	565.7	20.48	2197.0	79.52	2742.7	100.73
Belgium	2696.1	366.0	13.57	2330.1	86.43	2769.1	97.36
Bulgaria	1610.5	4.2	0.26	1606.2	99.74	1911.9	84.23
Croatia	881.9	43.8	4.97	838.1	95.03	989.6	89.12
Cyprus	216.5	15.7	7.27	200.8	92.73	215.7	100.37
Czechia	2661.3	33.0	1.24	2628.3	98.76	3591.9	74.09
Denmark	2449.8	1138.5	46.47	1311.4	53.53	1666.0	147.05
Estonia	155.9	4.4	2.83	151.5	97.17	414.8	37.59
Finland	1635.7	426.4	26.07	1209.3	73.93	1454.6	112.45
France	19887.6	5747.6	28.90	14140.0	71.10	14645.8	135.79
Germany	30785.3	5590.1	18.16	25195.2	81.84	28183.4	109.23
Greece	2119.1	80.2	3.79	2038.9	96.21	2162.6	97.99
Hungary	1964.9	43.6	2.22	1921.3	97.78	2596.2	75.68
Ireland	1848.6	778.5	42.11	1070.1	57.89	1308.0	141.33
Italy	14859.2	1802.4	12.13	13056.9	87.87	14225.3	104.46
Latvia	516.4	9.4	1.82	507.0	98.18	633.5	81.53
Lithuania	837.4	44.0	5.25	793.4	94.75	934.4	89.61
Luxembourg	352.7	196.8	55.79	156.0	44.21	255.9	137.86
Malta	121.9	8.2	6.76	113.6	93.24	134.2	90.79
Netherlands	5195.2	650.2	12.51	4545.0	87.49	5461.1	95.13
Poland	3967.5	94.5	2.38	3873.0	97.62	8652.1	45.86
Portugal	2809.2	195.4	6.96	2613.8	93.04	3007.3	93.41
Romania	2845.2	2.3	0.08	2842.9	99.92	3898.2	72.99
Slovakia	1130.2	17.6	1.55	1112.6	98.45	1502.9	75.20
Slovenia	504.6	34.5	6.83	470.2	93.17	591.3	85.34
Spain	10605.5	897.7	8.46	9707.9	91.54	11109.7	95.46
Sweden	3821.6	1393.7	36.47	2427.9	63.53	3103.6	123.13
United Kingdom	20158.6	4632.2	22.98	15526.4	77.02	19209.7	104.94
Total	139401.2	24816.5	17.80	114584.6	82.20	137371.5	101.48

Note:
Foreign corresponds to the total number of employees of a corporation outside the frontier where it is headquartered. In the case of domestic, they are the number of employees of the corporation within the territory where they are headquartered.

[1] Source: Foreign Affiliate Statistics (FATS) and Structural Business Statistics (SBS) from Eurostat.