



Formulary apportionment in BEFIT

A path to fair
corporate taxation

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Abstract

Corporate tax abuse through profit shifting deprives European societies of desperately needed funds, threatens the integrity of the common market, and compromises democratic principles. This study examines the most direct method to curb within-EU profit shifting: the EU-wide adoption of unitary taxation. We offer country-level estimates on the potential revenue changes European member states could see when redistributing taxable profits based on various formulas that measure economic activity – suggestions that could be included in the European Commission’s proposal for *Business in Europe: Framework for Income Taxation (BEFIT)*. By using aggregated country-by-country reporting data from the OECD for multinationals operating in Europe, we show that BEFIT with formulary apportionment would lead to additional tax revenues for the majority of the member states. While some member states – in particular well-known tax havens Netherlands, Luxembourg, Ireland, and Malta – may incur losses from BEFIT, these can be substantially or entirely balanced out with the adoption of an effective national top-up tax, consistent with the EU’s plan to introduce a minimum corporate tax of 15 per cent in 2024. Our findings underscore that a more equitable corporate tax system would not only restore fair competition, halt the race to the bottom, and rebuild trust in democracy, but also has the potential to produce EU-wide tax benefits ranging from US\$ 24.1 billion to US\$ 26.8 billion, when considered in isolation, or US\$ 34.5 billion to US\$ 35.4 billion when combined with the planned 15 per cent minimum tax.



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1 Introduction

Corporate tax abuse deprives EU member states of urgently needed revenues, hinders a fair competitive landscape for European firms, and erodes social cohesion and democratic values in European societies (Tørsløv, Wier, and Zucman 2022; Gauß et al. 2022; Martin, Parenti, and Toubal 2023; Baugh, Ben-David, and Park 2018; Tax Justice Network 2023). Tørsløv et al. (2022) estimate that multinational enterprises shift nearly 40 per cent of their profits to tax havens by reporting them in low-tax jurisdictions, instead of where they are actually generated. With an annual loss exceeding 18 per cent of total tax revenues, non-haven EU members bear the brunt of the losses caused by multinationals' global profit shifting (Tørsløv, Wier, and Zucman 2022).

Profit shifting for the purpose of tax abuse could be instantly stopped by following a simple and old approach to corporate taxation: taxing profits where they are generated. The principle of taxing profits based on economic activity can be efficiently implemented through unitary taxation with formulary apportionment. This system would allocate taxing rights on a multinational's global profit in proportion to the economic activity in each country where the multinational operates. The allocation would be based on a formula that incorporates measures of profit-generating factors from both the supply side (such as employment and capital) and the demand side (such as sales).

While the likelihood of an effective global unitary taxation system seems distant,¹ its implementation within Europe is within reach. An EU-wide unitary taxation scheme would prohibit intra-EU profit shifting while allowing member states to maintain their established corporate income tax systems, including their democratically-decided tax rates on corporate profits. Additionally, it would guarantee a level playing field for all European firms, whether they are operating domestically or on a multinational scale. Paired with an effective introduction of the anticipated European minimum tax, this would mark the end of the damaging race to the bottom. By rendering intra-EU profit shifting unprofitable, such an approach would further make the industry of enablers, which exists purely to aid corporate profit shifting, redundant. This shift would channel valuable expertise, working hours and resources towards industries that contribute more productively to the economy.

Recognising the potential of unitary taxation, the European Commission has assessed stakeholders' agreement with formulary apportionment in

¹ Pillar I of the OECD's *Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy* foresees unitary taxation for the largest and most profitable multinational companies. However, the current proposal does only affect very few multinationals and only parts of their profits. Estimates suggest that this approach would not or only slightly benefit countries suffering from corporate profit shifting. The International Monetary Fund (IMF) estimates that Pillar One's Amount A would reallocate approximately 2% of the total profits of MNEs, increasing global corporate income tax revenue by a mere USD 12 billion based on 2019 data. The OECD's estimates indicate a somewhat higher range: an average annual increase in tax revenue of USD 12-25 billion globally over the period 2017-2021. Consequently, Pillar I's revenue potential would be relatively modest. In addition, the implementation of Pillar I is still uncertain. See IMF (2023) and OECD (2023).



preparation for its proposal on ‘Business in Europe: Framework for Income Taxation (BEFIT).’ During the Commission’s consultations on BEFIT between October 2022 and January 2023, a dominant portion of participants – notably mainly from the corporate sector, including several companies that offer tax consulting – voiced agreement, or partial agreement with the notion of formulary apportionment, with less than a quarter expressing reservations (European Commission 2023b).

In this report, we assess the revenue potential of implementing unitary taxation with formulary apportionment in Europe – for instance as part of BEFIT – at the country level. Leveraging the aggregated multinational country-by-country reports from 2018, published by the OECD in November 2022, we project the tax gains and losses each EU member state could face if BEFIT were applied to all multinationals generating a revenue over €750 million and operating within the EU. Our analysis is rooted in a reallocation of taxing rights for multinational profits presently reported in Europe, employing various proposed formulas that evaluate genuine economic activity.

Our findings indicate that the majority of EU countries would benefit from the implementation of formulary apportionment. Depending on the specific formula applied, most countries would see an increase representing a small one-digit percentage of their total tax revenues, with some countries gaining up to 6.4 per cent. A limited number of countries would experience a decrease in tax revenues, in particular the four EU member states commonly identified as corporate tax havens: the Netherlands, Luxembourg, Ireland, and Malta.² For these countries, the losses could range from 1.9 per cent to 4.3 per cent of their total tax revenues, again, depending on the formula used. Given that most European countries stand to benefit and those facing losses are known for their low corporate income tax rates, the EU as a whole could potentially generate an additional tax revenue between US\$ 24.1 billion and US\$ 26.8 billion. As the method we apply to estimate these numbers is likely to project losses correctly but might understate gains,³ these estimates mark the lower bound of the EU’s potential revenue gains from unitary taxation.

The substantial losses that a few countries might incur by linking taxation rights to genuine economic activity underscores the extent to which these nations capitalise on existing unfair rules. This not only harms their European partners but also undermines the integrity of the union as a whole. Nevertheless, the primary beneficiaries of the prevailing system aren’t individual European nations but rather companies that exploit the differences between European countries to their advantage: While using

² These countries are the three EU member states with the highest corporate tax haven score provided by the Tax Justice Network and Malta, which is also known for enabling profit shifting. See <https://cthi.taxjustice.net/en/>.

³ As detailed in Section 3, this is due to the following reason: To calculate additional tax revenues, we multiply the additional taxable profits of each country by that country’s effective tax rate (ETR). Conversely, to determine reduced tax revenues, we multiply the country’s reduced taxable profits by its ETR. Utilizing the ETR, instead of a country’s statutory corporate income tax rate, yields a more accurate estimate for losses – since these refer to taxes actually paid by companies, which should align, on average, with the ETR obtained from our sample. However, for additional tax revenues, it might be more appropriate to use the (higher) statutory tax rate on corporate income as profits that were previously shifted out of the country are likely those that did not benefit from any tax reductions in the country they were generated. Using the ETR for both gains and losses provides a conservative estimate, effectively capturing losses but offering a minimum figure for potential gains.



publicly-financed infrastructure and workforce that has been educated with public funds as a basis of their profits, these companies do not contribute their fair share to European budgets. The strong voice profiteers had in shaping the international corporate tax framework could partly be attributed to the uneven distribution of benefits and repercussions among nations apparent from this (and similar) studies: While many countries suffer losses under the current system, a select few stand to lose substantially from a more just redistribution. Game-theoretical evidence suggests that such stakeholders – small groups with significant stakes – can often coordinate their interests more effectively and champion them on the political stage (Van Huyck, Battalio, and Beil 1990).


As few as they may be, how can those EU member states that would experience losses from the redistribution of profits still be persuaded to support unitary taxation with formulary apportionment? Additional estimates suggest a solution that is both straightforward and already planned for EU-wide implementation: When combined with an effective, EU-wide minimum corporate tax rate of 15 per cent, the tax revenues of EU's tax havens remain largely unchanged, despite a reduction in their taxing rights over European profits. Our analysis reveals that by elevating the effective tax rate (ETR) on multinationals within their borders to 15 per cent,⁴ solely on the profits they're permitted to tax after the implementation of formulary apportionment, these tax havens would experience minimal net losses and, in some instances, even net gains. When considering the direct tax revenue benefits of unitary taxation, combined with the minimum tax at the European level, the union stands to gain additional tax revenues ranging from US\$ 34.5 billion to US\$ 35.4 billion, which, again, marks a lower bound of potential tax revenues.

The potential tax revenues from unitary taxation with formulary apportionment represent only a fraction of what the union could garner by implementing a more equitable corporate tax system. Beyond this direct impact on tax revenues, there are at least three additional economic benefits:

1. **Ending the downward spiral:** Terminating the harmful race to the bottom regarding reported profits – while still permitting some tax-based competition around genuine economic activity – enables European societies to reclaim their sovereignty in corporate tax matters, insisting that corporate entities pay their due. The data from our study shows that multinationals pay an effective tax rate of below 15 per cent in nearly half of the member states, even though 22 of these states have set the statutory corporate income tax rate at 15 per cent or higher.⁵ While there can be several valid reasons for offering reduced rates, only unitary taxation allows democratically elected governments to tax profits generated within their borders as

⁴ While we acknowledge that the EU minimum tax does not guarantee tax havens will raise their ETRs to 15%, its introduction undeniably presents them with the opportunity to do so.

⁵ We estimate ETRs after correcting for the problem of double counted dividends inherent in the OECD's country by country reporting data. Moreover, we only use entities with positive profits to calculate ETRs.



they see fit, without the concern of profits being artificially shifted to low-tax jurisdictions.


2. **Levelling the playing field:** Unitary taxation would renew the competitive landscape between companies operating exclusively within their home countries and global corporations. Whereas domestic companies have never had the means to move profits to low-tax jurisdictions, international corporations have leveraged this to gain an unfair edge. Eliminating this undue advantage will not only uplift smaller, localised enterprises and innovative newcomers, but will also favour consumers, who, in the long run, bear the brunt of reduced competition through inflated prices in monopolistic and oligopolistic markets (Gauß et al. 2022; Martin, Parenti, and Toubal 2023).
3. **Redirecting expertise:** Presently, a considerable portion of European talent and working hours is poured into the unproductive endeavour of exploiting the existing tax system.⁶ A simple unitary tax system with formulary apportionment would render the non-productive part of the tax consultancy industry, both within multinationals and independent firms, unnecessary. Europe can better utilise these expert resources for pressing challenges ahead.

The final advantage of unitary taxation goes beyond its monetary implications but might be its most essential: The pervasive feeling among European citizens that not all are paying their fair share intensifies dissatisfaction, reduces citizens' inclination to contribute to society, and undermines confidence in both governance and the democratic process. Europe must counter this diminishing trust and cohesion, and unitary taxation offers a viable solution.

While desperately needed and feasible, the implementation of EU-wide unitary taxation is a mammoth task. As for the roll-out of such a system, our study offers three primary insights:

1. **Universality is key:** The benefits and estimates discussed can only materialise if unitary taxation is mandated across all multinational corporations, rather than a select group of voluntary contributors. An optional scheme wouldn't reduce intricacy and would perpetuate uneven competition, thereby undermining the potential of unitary taxation.
2. **Details matter:** As our research further elucidates, the specifics of implementation are critical. While the criteria for gauging economic activity can be democratically debated, it is imperative that the measures are resistant to manipulation, especially avoiding the inclusion of intangible assets.
3. **Europe can set an example:** Europe does not need to await the protracted OECD processes. A well-conceived European solution for unitary taxation with formulary apportionment could be a benchmark,

⁶ For instance, McGuire et al. (2012) show that tax-specific industry expertise of external audit firms helps firms to engage in more tax avoidance.



setting the tone for global adoption of unitary taxation under UN guidance in the years to come. Unitary taxation is the path to a fairer system for all. With the unique opportunity to take the initial regional step towards this path, free from the risk of repercussions, the EU bears the responsibility to act accordingly.

This study is structured as follows: the next section outlines the fundamental principles of unitary taxation, discusses its present status, the challenges of implementing unitary taxation on a regional level, and the selection of a suitable formula to evaluate economic activity. Section 3 provides an overview of the data and methodology employed. In Section 4, we present our estimated outcomes from implementing unitary taxation in the EU, coupled with its compounded effect when paired with the upcoming minimum tax proposal. Section 5 offers some concluding remarks.

2 EU-wide unitary taxation with formulary apportionment


2.1 Why unitary taxation?

While large multinationals often comprise hundreds of subsidiary entities,⁷ their main economic success is due to their ability to act as one global player, i.e. to coordinate their activities within the group. By jointly bearing costs for crucial firm activities such as research, development, marketing, and supply chain management, the company's profits are generated through the collective efforts of its various activities, rather than from any single subsidiary.

To address this reality when taxing multinationals' profits, unitary taxation proposes treating multinationals as a unified, consolidated entity. This approach would allocate the multinational's global profits for taxation based on their tangible activities in each jurisdiction. Adopting unitary taxation is essential to:

1. Guarantee that multinationals profits are taxed at least once and only once;
2. Equitably distribute taxing rights among countries, reflecting their contributions in terms of infrastructure, workforce, and sales markets to the multinational's profitability;
3. Ensure that multinationals and domestic enterprises operate on a level tax playing field, given that purely national enterprises are already taxed as singular entities.

⁷ Analysis by UNCTAD shows that although only 1% of MNEs have over 100 affiliates, these MNEs account for over 60% of value added by MNEs, and that the largest 100 have some 55,000 affiliates between them (United Nations - Conference on Trade and Development 2016).



These core benefits are accompanied by a range of positive side effects. From the multinationals' perspectives, unitary taxation simplifies administrative processes, enhancing predictability and substantially reducing compliance costs tied to intricate international tax rules. Instead of spending heavily on tax advisors and consultants to create convoluted structures that capitalise on existing rules, companies can redirect these resources towards more productive investments.

By making the manipulation of subsidiary-based profits unattractive, unitary taxation eliminates the pressure on firms to disproportionately shift their profits to tax havens. It thereby ends the counterproductive race among multinationals to exploit the current system, allowing them to meet their tax responsibilities without compromising competitiveness. It fosters equitable competition: both among multinationals - some of whom exploit the system's loopholes and others who abstain - and between multinationals and domestic enterprises. This prevents the emergence of detrimental oligopolistic structures that harms consumers, curtails local job opportunities, and hinders innovation (Gauß et al. 2022; Martin, Parenti, and Toubal 2023).


In a democratic society, unitary taxation emerges as a crucial instrument to restore public confidence in both multinationals and taxation authorities. By adopting this system, nations can counter the dilution of their tax sovereignty, which has been eroded by the dominant influence of multinationals and the pressures of conforming to global economic developments. While every country would retain its autonomy to determine corporate tax rates, the system would guarantee that multinationals pay their rightful share. Additionally, with the aid of public country-by-country reporting, the public could reliably verify the authenticity of these contributions.

2.2 The state of unitary taxation

Federal systems, such as those in the United States and Canada, have already adopted unitary taxation, underscoring their viability. On a global scale, the preference for unitary taxation is also not a recent phenomenon. Capital-importing countries have championed this approach for some time, as reflected in the Mexico draft of the League of Nations model convention from 1943. This draft stipulated that income from any business or profit-making activity should be taxed exclusively in the state where the operation occurs, except for 'isolated or occasional transactions.'⁸

Yet, the approach to global corporate taxation that was ultimately adopted and remains in place today requires tax authorities to assess each affiliate within a multinational as if it were a standalone entity, transacting 'at arm's length' with other entities in the same corporate group. This paradigm paves the way for multinationals' tax advisors to engineer intricate structures, aiming to allocate minimal profits to

⁸ This was omitted from the London draft (League of Nations 1946, 13–14).



affiliates in high-tax jurisdictions and redirect the lion's share of surplus profits to places with lenient taxation regimes, like tax havens or investment hubs.

Recognising these flaws, about ten years ago, the G20 leaders backed the OECD's 'Base Erosion and Profit shifting' (BEPS) project, seeking reforms to ensure the taxation of multinationals aligned with the locations of their economic activities. By 2021, the second phase of the BEPS project had embraced the principle of unitary taxation, complemented by a global minimum tax to curb a harmful race to the bottom. However, the complex proposals presented by the OECD have serious limitations. The proposal for unitary taxation ('BEPS 2.0: Pillar One'), in particular, would only apply to very few firms and only to a small part of their profits – if implemented at all.⁹


Simultaneously, momentum has grown for a UN tax convention to supersede the OECD's framework. With regards to the alignment of profit generation and taxation, the UN Secretary General's recent report emphasises the need for an international tax system that ensures that tax payments correspond to where economic activities actually take place (United Nations Economic Commission for Africa 2023).

In this context, EU-wide unitary taxation with formulary apportionment emerges as a pioneering initiative, which could set an example for implementing unitary taxation equitably and comprehensively. It would furnish the EU with the means to significantly enhance its business environment, counteract tax evasion, while preserving regional tax system variations and preferences.

The European Commission's proposed Council Directive, known as 'Business in Europe: Framework for Income Taxation (BEFIT)', aims to establish a common corporate tax framework within the EU. Including formulary apportionment is the only logical step to effectively implement the taxation of multinational profits on a consolidated basis. However, despite considering the potential inclusion of formulary apportionment after a transitional phase, the Commission's current proposal does not adopt unitary taxation with formulary apportionment. Instead, it proposes reallocating the taxing rights of consolidated accounts based on the profits of the previous year during this transition (European Commission 2023a).

As a result, while granting multinationals all benefits of a common tax frame, the current proposal misses the chance to address multinational tax abuses – despite contrary economic evidence. In addition, the proposal appears to be at odds with the outcomes of the Commission's own consultation held between October 2022 and January 2023. In this consultation, predominantly attended by corporations and tax consulting firms, a significant majority (42 out of 77 respondents) expressed complete or partial agreement with the principles of unitary taxation and formulary apportionment. By contrast, just 18 out of 77 respondents were

⁹ See Footnote 1.



in disagreement, either wholly or partially, with these concepts (European Commission 2023b).

2.3 Challenges of implementing unitary taxation on a regional level

While any multilateral taxation system, including unitary taxation, would ideally be implemented globally under UN auspices, regional implementation can serve as an important stepping stone towards this goal. This regional approach can model a potential framework and highlight the system's benefits for a broader global audience.

The European Union is especially positioned to pioneer this regional approach for several reasons:

- **Relevance of intra-EU profit shifting:** While profit shifting is a global issue, a significant portion occurs within the EU (Tørsløv, Wier, and Zucman 2022). The potential impact of regional implementation is vast, particularly with the involvement of numerous member states, some of which are complicit in allowing corporate tax abuse.
- **Single market and competition:** Due to its integrated single market, the EU is particularly affected by the anti-competitive nature of tax abuse. As unitary taxation is not only a tool to distribute taxation rights in a fair manner, but also a tool to restore fair competition, the EU can expect substantial gains.
- **Dominance in business landscape:** Being a hub for numerous multinational corporations and an attractive place for employment, investments, and sales, the EU has little to fear in terms of negative corporate reactions.

However, for the unitary taxation proposal to fully realise its potential and sidestep unintended consequences, certain considerations are imperative:

1. **Mandatory implementation:** To maintain a sufficiently large scale and prevent new avenues for unfair competition, BEFIT should be mandatorily implemented across all member states.
2. **Rigorous public country by country reporting:** Effective country-by-country reporting is crucial to ensure that companies do not redirect funds that were previously shifted within the EU to locations outside the union. All external jurisdictions must be included in these reporting requirements, especially significant ex-EU tax havens like the Cayman Islands and the British Virgin Islands, which are known repositories for corporate profits.
3. **Preventing shifts to alternative tax havens:** Steps should be taken to ensure that profits currently routed to EU-based tax havens will not simply be redirected to external tax havens after the implementation of unitary taxation. By acting in unison, the EU can exert significant pressure on companies to deter the use of these external tax shelters.

2.4 How to measure economic activity: In search of the perfect formula

To implement unitary taxation effectively, one must pinpoint the sources of multinationals' profits, essentially discerning the accurate representation of economic activity. Determining a formula to distribute the taxing rights on these profits is crucial. Existing literature suggests five primary considerations for the selection of a formula (see Avi-Yonah, Clausing, and Durst (2009), Clausing (2017), and Picciotto et al. (2023)):

1. Accuracy in capturing economic activity:

In their 'Proposal for Addressing Tax Challenges Arising from Digitalisation', the G-24 Working Group on tax policy and international tax cooperation (2019) argued that 'both production and sales are essential for generation of profits, and neither can be ignored for the purpose of determining the profits that would be taxable in a jurisdiction'. As production is usually assumed to be based on the two main input factors (capital and labour), the factors historically proposed and adopted for apportionment are measures for assets, employment and sales.

2. Resilience to manipulation:

To avoid an easy manipulation of the factors, the formula should be based on physical factors that can be relatively easily measured and geographically located. For sales, this means that the formula should use destination-based sales and only incorporate unrelated party revenues. For assets, this means that only tangible assets should be included.¹⁰ Technical standards for the exact definition of these measures have been developed in the BEPS Pillars.


3. Simplicity:

Regarding the choice of a formula, the principle of simplicity advocates for limiting the number of factors and maintaining straightforward weights. Additionally, for the sake of consistency, the same formula should be applied to all companies, introducing minimal exceptions or additional rules, which is elaborated on in the next paragraph.

4. Sectoral fairness:

To uphold the principle of simplicity and ensure fairness across diverse sectors, the formula should focus on factors consistently relevant across industries. The relevance of physical assets as an indicator varies widely between sectors. The rise of service-based industries and the prominence of skilled and intellectual labour have further distanced these sectors from those heavily reliant on

¹⁰ With the argument that "also the business models of smaller jurisdictions have to be taken into account", KPMG Netherlands argues in their contribution to the Commission's public consultation held from 13 October 2022 to 26 January 2023 that intangible factors need to be incorporated in a formula. This is understandable from KPMG's perspective, given that KPMG's business model is based on advising firms to make best use of the existing arm's length system by manipulating intangibles. However, of, course, the EU has to follow other needs than those of a large, unproductive consultancy industry (European Commission 2023b).



tangible assets. Even in sectors where physical assets are crucial, like transportation and construction, these assets can be mobile, complicating their association with specific geographical locations. Additionally, accurately valuing fixed assets presents its own set of challenges. Given these complexities, there is a compelling case for excluding assets from the formula. Doing so would eliminate the potential need for sector-specific formulas, particularly for industries like transportation and construction.


Maintaining an assets factor in the formula introduces complexities that need addressing, especially given sectoral differences. For instance, if movable assets are considered, rules would have to be established to allocate their value based on the duration they are situated in various countries. Moreover, the assets factor would need to be tailored to specific sectors like financial services, where the EU's Common Consolidated Corporate Tax Base initiative (CCCTB, article 40) proposed to define financial institutions' assets as 10 per cent of the value of financial assets, excluding own shares (European Commission 2016).

Shifting the focus from assets to employment and sales might align better with our digital age, especially because sales-based measures can assess the value of intangibles. For example, the platform economy places significant emphasis on the intangible assets derived from user engagement. Revenue in this context is primarily generated from sales of advertising spaces or goods and services to these users. Such revenue streams, indicative of the value of intangible assets, can be aptly captured through sales-based metrics.

Notwithstanding the aim to avoid exceptions, the primary products sector does necessitate unique regulations. Sales of primary products should be credited to their countries of origin, not where they are sold. This is because income derived from natural resource extraction resembles rent, and the consumption taxes on refined primary products can be significant. This principle of attributing sales to the origin country has been recognized in the EU's CCCTB for sectors like oil and gas (as detailed in article 42) (European Commission 2016).

5. Minimising unintended consequences:

Ultimately, unitary taxation should not discourage capital investments or hinder employment generation. Integrating assets into the formula might deter capital investment, while assigning an excessive weight to employment raises concerns about potential reductions in workforce purely for tax benefits. Low-wage economies in particular may worry that a mere headcount of employees could diminish their appeal to labour-intensive sectors. Though using payroll expenses might mitigate these concerns, including payroll in the formula seems less well-suited for application among countries with vast wage rate disparities.



Apportioning based on sales destinations addresses some of these apprehensions, and diminishes ‘race to the bottom’ incentives linked with attracting employment and capital. Studies indicate that a shift toward sales-based apportionment in several US states did lure job-creating investments, but this effect was primarily short-term. Meanwhile, the states that implemented this strategy witnessed a decline in revenue over time (Clausing 2017).

Taking into account these considerations and trade-offs, three formulas have emerged as prominent compromises:

1. **The CCCTB formula:** Adopted by the European Commission in its proposals for a Common Consolidated Corporate Tax Base (CCCTB), this formula was first introduced in 2011 and revised in 2016. The formula assigns equal weight to the three factors (tangible assets, revenues, and employment). To strike a balance between the advantages and challenges of using either employee headcount or payroll to gauge employment, the CCCTB proposed a 50:50 division of the employment factor between the number of employees and payroll, resulting in a weighting of 1/3 tangible assets, 1/3 unrelated party revenues, 1/6 number of employees and 1/6 payroll.
2. **Double-weighted sales formula:** While different US states apply various formulas, the double-weighted sales formula has become the most prevalent. It assigns roughly half of the weight to payroll and assets and the other half to gross receipts. In its basis form, the weighting would be ½ unrelated partner revenues, ¼ tangible assets, and ¼ payroll.
3. **Canadian approach:** Canada chose to exclude assets from its formula. Instead, half of the weight is allocated to payroll, the other half to gross receipts.

In the following assessment, we will provide estimates for these three suggestions. Taking into account the advantages of a formula that completely excludes assets, and recognising that measuring employment based on payroll favours high-income countries over low-income ones while also incentivising firms to pay lower wages in high-tax jurisdictions, we propose an additional formula for estimation.

4. **Employees and sales:** Similar to the Canadian approach, the formula considers only employment and sales. In particular, taxable profits are determined 50 per cent based on the number of employees, and 50 per cent based on unrelated party revenues.

We consistently use only tangible assets when assessing assets and only unrelated party revenues to gauge sales. However, to illustrate the importance of excluding intangible assets and related party revenues, we provide some alternative estimates – based on a non-robust application of the three approaches by using total stated capital and total revenues in Annex A (see Section 4.4 and Annex A).



3 Data and methodology

Estimating taxing rights and associated tax revenue changes under unitary taxation requires information on the profits that multinationals report in different jurisdictions, as well as on their economic activity, measured by employment, sales, or assets in different jurisdictions.

We obtain this information from the country-by-country reports of multinationals provided by the OECD. Following Action 13 of the OECD BEPS Initiative, multinationals with a global revenue of over €750 million have to file yearly reports breaking down their profits and other economic indicators, in particular their number of employees, their total and unrelated-party revenues, and their total and tangible assets, on a country by country basis. For 46 countries, this country-by-country data is published in an aggregate form, i.e. on the parent jurisdiction-partner jurisdiction level, by the OECD. We use the most recent data for which guidance on data cleaning is available (see next paragraph), which is the data for the fiscal year of 2018.

As acknowledged by the OECD, the data have serious limitations. The most pressing concern for our purpose is the problem of dividend double-counting: country-by-country data double-count profits as several companies include tax-exempt dividends flowing across subsidiaries as profit. As this double counting could inflate profits disproportionately in different countries, it could result in biased estimates. We correct the data for this double counting, following the instructions in the country-specific notes which the OECD publishes with the reports and the analysis of Garcia-Bernardo, Janský, and Zucman (2022). In the country-by-country data, numbers are provided for different subgroups of entities, importantly for those with positive profits and those without. For calculating effective tax rates, we only use entities with positive profits and correct these profits for dividend double counting as reported above before calculating effective tax rates.

To evaluate the profits and economic activity that are relevant for a European framework of unitary taxation, we analyse all profit and economic activity that multinationals report in EU countries. This dataset encompasses the European activities of multinationals with a parent jurisdiction based within the EU, as well as segments of operations from multinationals whose parent jurisdictions are outside the EU but operate within an EU member state. Our calculations do not cover the activities of EU-based multinationals that are conducted outside of the EU. Activities conducted beyond the EU's borders are not part of the EU's common tax base. Consequently, these external operations are excluded from an EU-wide unitary taxation scheme..

To estimate the potential revenue from unitary taxation for a given country i , our methodology comprises four steps:

1. Quantifying economic activity:

First, we determine the economic activity that multinationals from parent jurisdiction j have in country i as a share of the cumulative activity across all I European nations in which multinationals from parent jurisdiction j operate.

$$\text{share economic activity}_{i,j} = w_{\text{sales}} \frac{\text{sales}_{ij}}{\sum_{i \in I} \text{sales}_{i,j}} + w_{\text{employment}} \frac{\text{empl}_{i,j}}{\sum_{i \in I} \text{empl}_{i,j}} + w_{\text{assets}} \frac{\text{assets}_{ij}}{\sum_{i \in I} \text{assets}_{i,j}}$$

As discussed previously, the weights w_{sales} , $w_{\text{employment}}$ and w_{assets} can vary depending on the formula choice. Moreover, for some formulas, employment is measured as a combination of the number of employees and payroll and could, as such, assume two separate weights.

2. Calculating taxable profits:

Second, we calculate the profits that country i would be allowed to tax under unitary taxation by multiplying the share of economic activity and total profits that multinationals from parent jurisdiction j report in EU countries.

$$\text{theoretical profits}_{i,j} = \text{share economic activity}_{i,j} \times \sum_{i \in I} \text{reported profits}_{ij}$$

3. Taking the difference to currently taxed profits:

Third, we calculate the difference between currently reported profits by multinationals from j in country i and the theoretical profits they would be allowed to tax under unitary taxation.

$$\Delta \text{taxable profits}_{i,j} = \text{reported profits}_{i,j} - \text{theoretical profits}_{i,j}$$

4. Aggregate change in taxable profits on the country level:

Fourth, we aggregate these additional or reduced taxable profits for each EU country over all $j \in J$ parent countries whose multinationals have reported economic activity in EU country i . We do so separately for positive and negative changes to illustrate the shifts in taxation rights through unitary taxation in each country:

$$\Delta^+ \text{taxable profits}_i = \sum_{j \in J} \Delta \text{taxable profits}_{i,j}^+$$

$$\Delta^- \text{taxable profits}_i = - \sum_{j \in J} \Delta \text{taxable profits}_{i,j}^-$$

Note that each country could have both positive and negative changes in taxable profits, as previously reported profits might have been lower than theoretical profits for some companies and higher than theoretical profits for others.

The net of additional or reduced profits is then calculated by subtracting the reduced taxable profits from the additional taxable profits.¹¹

$$\Delta \text{taxable profits}_i = \Delta^+ \text{taxable profits}_i - \Delta^- \text{taxable profits}_i$$

5. Calculate additional tax revenue:

We then multiply the net of additional or reduced profits by the effective tax rate of a given country to estimate the additional or reduced tax revenue the country can expect when unitary taxation is introduced.

$$\Delta \text{tax revenues}_i = \Delta \text{taxable profits}_i \times ETR_i$$

Officially, we should expect countries to tax multinational profits at the statutory rate. However, the effective tax rate, i.e. the average tax rate that multinationals in our database pay on their profits, might better capture the actual tax rate that multinationals face in a certain jurisdiction. Multiplying reduced taxable profits with the effective tax rate will consequently produce correct estimates for lost tax revenues (on average, these revenues were previously taxed by the effective tax rate of the jurisdiction where they were reported). However, multiplying additional taxable profits by the effective tax rate will likely underestimate potential gains, as additional taxable profits could be taxed by a country's statutory rate, rather than by its (lower) effective tax rate. As additional profits are those that were previously shifted to lower-tax jurisdictions, these profits will likely face the statutory tax rate. As such, our estimates are conservative in both directions: They will provide the best estimate for potential losses and a lower bound for potential gains.

4 Results

4.1 The effect of unitary taxation with formulary apportionment on taxable profits and tax revenues of member states

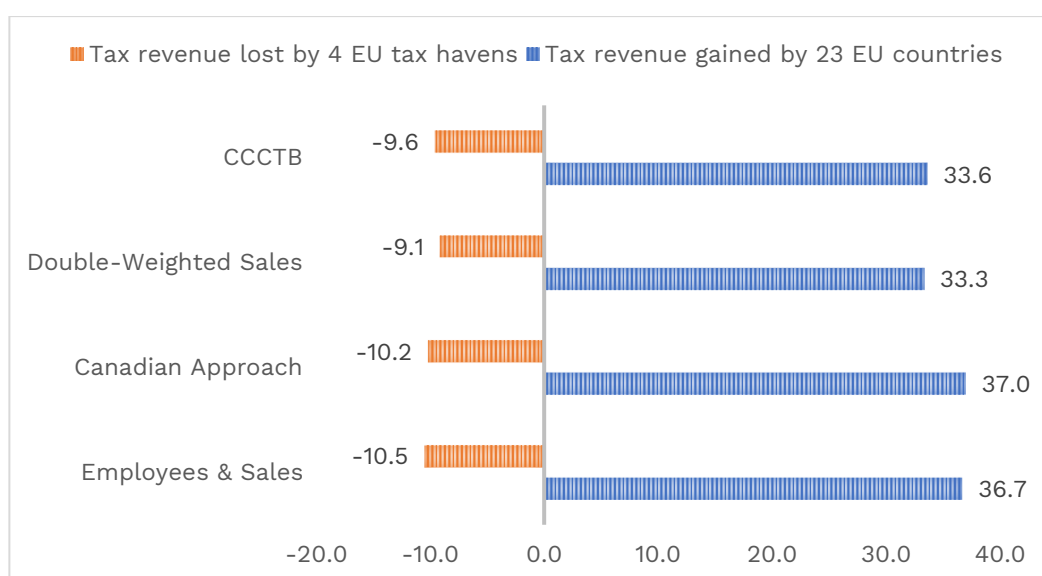
Figure 1 illustrates the potential revenue impact of implementing unitary taxation within the EU, drawing from the four formulas presented in Section 2. Across all models, the vast majority of countries would benefit from increased taxing rights, leading to elevated tax revenues under unitary taxation. Notably, four countries would experience a significant decline — both in terms of overall revenues and their share in 2018's total tax revenue. These countries are well-known tax havens: Luxembourg, the Netherlands, Malta, and Ireland. By contrast, the other 23 member states stand to gain an additional tax revenue ranging between US\$ 33.3 billion and US\$ 37.0 billion, contingent upon the chosen formula. Conversely, the four aforementioned tax havens would

¹¹ Note that, in principle, the fourth step can be left out and the net change in taxable profits can be directly calculated after the third step. We still include the fourth step to illustrate that the new taxation scheme will redistribute profits substantially, even though this does not result in large net changes in some cases.

incur a loss ranging from US\$ 9.1 billion to US\$ 10.5 billion in tax revenues. Summarily, the Union's collective gain from introducing unitary taxation would be an added tax revenue of US\$ 24.1 billion to US\$ 26.8 billion.

Figure 1: Estimated revenue effects of EU-wide unitary taxation, in billion US\$

This figure illustrates the projected shifts in annual tax revenues for EU member states resulting from the adoption of unitary taxation with formulary apportionment, benchmarked against their existing tax revenues (expressed in billion US\$). It employs four distinct formulas to assess economic activity: CCCTB utilises a third each of unrelated party revenues and tangible assets, and a sixth each of payroll and number of employees; the double-weighted sales approach combines 50 per cent unrelated party revenues with 25 per cent each of tangible assets and payroll; the Canadian approach is based on an equal split between unrelated party revenues and payroll; and the employees and sales approach equally weighs unrelated party revenues and employee count. The term '4 EU Tax Havens' denotes Ireland, Luxembourg, the Netherlands, and Malta. The underlying data for this analysis is derived from the 2018 country-by-country statistics provided by the OECD.






Table 1 through **Table 4** enumerate the country-specific ramifications of EU-wide unitary taxation with formulary apportionment. Within each table, light grey columns capture the shifts in taxable profits and tax revenues per member state, based on 2018 country-by-country data. Across all formulas, the majority of countries observe increases, generally within single-digit percentages of their prior total tax revenues. The four previously identified tax havens experience a reduction ranging from 1.9 per cent to 3.5 per cent of their total tax revenue when the CCCTB formula is applied. This loss further extends from 3.0 per cent to 4.3 per cent under the employees and sales formula. Note that, as elaborated upon earlier, while we calculate revenue losses accurately, the gains estimates are highly conservative. This is because the gains are derived by multiplying the additional taxable profits with the country's effective tax rate, offering a lower bound for potential benefits.

Besides the tax havens, another group of countries that receive a relatively smaller allocation of taxable profits – despite not exhibiting tax haven behaviours – are lower-income EU nations such as Portugal, the Czech Republic, and Slovakia. This discrepancy is primarily attributed to how employment is measured in the formulas, which derives from payroll, at least for half of the employment measure. While leveraging payroll as a metric ensures that low-income economies maintain their competitive edge in labour-intensive sectors (see Section 2), it also presents a drawback: it allocates fewer taxable profits to these lower-income countries, as discussed in Section 2.4. **Table A 1** and **Table A 2** in Annex A present estimates when employment is measured solely by headcount, highlighting an uptick in additional tax revenue projections for the affected nations.

Finally, the results of **Table 1** to **Table 4** provide another testament to the disparities inherent in the existing system. The initial two columns of the tables elucidate that unitary taxation will significantly reallocate taxing rights, even though this reallocation might not translate to substantial shifts in tax revenues for certain countries. On aggregate, when linking taxable profits to economic activity, taxing rights for profits ranging between US\$ 228.3 billion (for the double-weighted sales formula) and US\$ 245.6 billion (for the Canadian approach) will be realigned.

Table 1: Impact of EU-wide unitary taxation on taxable profits and revenues using the CCCTB formula (in million US\$)

This table presents the projected changes in annual taxable profits and tax revenues for EU member states as a result of adopting unitary taxation with formulary apportionment, utilising the CCCTB formula, compared to their existing tax revenues. The CCCTB formula quantifies economic activity as one-third each from unrelated party revenues and tangible assets, and one-sixth each from payroll and the number of employees. The light-grey columns report the estimated change in taxable profits and tax revenues due to unitary taxation alone, whereas the dark-grey columns display the potential additional revenues from a 15 per cent minimum tax on corporate income and the cumulative effect of both policies. The impacts of these changes are quantified in million US\$ and as a percentage of the country's total tax revenues for 2018. This analysis is based on the 2018 country-by-country data provided by the OECD.

Country	Unitary taxation					Combined with EU minimum tax		
	Change in taxable profits			Change in tax revenue		Additional revenue through minimum tax	Total change in revenue	% of tax revenues
	Gains	Losses	Net	Million US\$	% of tax revenues			
Austria	2,287	3,804	-1,518	-160	-0.1%	991	831	0.7%
Belgium	47,857	8,114	39,743	7,957	6.1%	0	7,957	6.1%
Bulgaria	749	578	171	11	0.1%	138	149	1.1%
Croatia	180	403	-224	-27	0.0%	40	13	0.0%
Cyprus	977	451	525	19	0.3%	37	57	0.9%
Czech Republic	1,795	3,454	-1,659	-265	-0.7%	0	-265	-0.7%
Denmark	451	6,056	-5,605	-878	-0.8%	0	-878	-0.8%
Estonia	146	0	146	22	0.3%	1	22	0.3%
Finland	866	2,120	-1,254	-187	-0.3%	14	-173	-0.3%
France	38,182	3,585	34,597	8,084	1.2%	0	8,084	1.2%
Germany	71,485	4,177	67,309	12,761	2.8%	0	12,761	2.8%
Greece	108	558	-449	-114	-0.2%	0	-114	-0.2%
Hungary	1,814	541	1,273	201	0.6%	0	201	0.6%
Ireland	2,049	17,476	-15,427	-1,784	-2.6%	874	-910	-1.3%
Italy	25,547	1,538	24,010	5,709	1.1%	0	5,709	1.1%
Latvia	122	60	61	3	0.0%	58	61	0.8%
Lithuania	198	127	71	9	0.1%	12	21	0.2%
Luxembourg	5,783	16,565	-10,782	-354	-1.9%	2,652	2,298	12.1%
Malta	489	2,804	-2,315	-126	-3.3%	91	-35	-0.9%
Netherlands	5,882	137,825	-131,943	-7,300	-3.5%	5,462	-1,838	-0.9%
Poland	7,071	3,359	3,712	607	0.6%	0	607	0.6%
Portugal	1,197	5,129	-3,932	-616	-1.1%	0	-616	-1.1%
Romania	3,180	484	2,696	398	1.1%	21	418	1.2%
Slovak Republic	772	863	-91	-21	-0.1%	0	-21	-0.1%
Slovenia	271	57	214	31	0.3%	6	37	0.4%
Spain	9,606	8,448	1,158	176	0.1%	0	176	0.1%
Sweden	2,608	3,097	-489	-87	-0.1%	0	-87	-0.1%
Total	231,671	231,671	0	24,069	0.8%	10,396	34,465	1.1%

Table 2: Impact of EU-wide unitary taxation on taxable profits and revenues using the double-weighted sales formula (in million US\$)

This table presents the projected changes in annual taxable profits and tax revenues for EU member states as a result of adopting unitary taxation with formulary apportionment, utilising the double-weighted sales formula, compared to their existing tax revenues. The double-weighted sales formula quantifies economic activity as 50 per cent from unrelated party revenues and 25 per cent each from tangible assets and payroll. The light-grey columns report the estimated change in taxable profits and tax revenues due to unitary taxation alone, whereas the dark-grey columns display the potential additional revenues from a 15 per cent minimum tax on corporate income and the cumulative effect of both policies. The impacts of these changes are quantified in million US\$ and as a percentage of the country's total tax revenues for 2018. This analysis is based on the 2018 country-by-country data provided by the OECD.

Country	Unitary taxation					Combined with EU minimum tax		
	Change in taxable profits			Change in tax revenue		Additional revenue through minimum tax	Total change in revenue	% of tax revenues
	Gains	Losses	Net	Million USD	% of tax revenues			
Austria	2,580	3,521	-941	-99	-0.1%	1,017	918	0.8%
Belgium	49,414	7,743	41,671	8,343	6.4%	0	8,343	6.4%
Bulgaria	390	679	-289	-18	-0.1%	98	80	0.6%
Croatia	90	513	-423	-50	-0.1%	33	-17	0.0%
Cyprus	951	464	487	18	0.3%	33	51	0.8%
Czech Republic	1,146	4,149	-3,003	-479	-1.3%	0	-479	-1.3%
Denmark	554	5,460	-4,906	-769	-0.7%	0	-769	-0.7%
Estonia	94	3	92	14	0.2%	1	14	0.2%
Finland	920	2,025	-1,104	-165	-0.3%	14	-151	-0.3%
France	36,221	3,267	32,954	7,700	1.1%	0	7,700	1.1%
Germany	74,847	3,103	71,744	13,602	3.0%	0	13,602	3.0%
Greece	95	679	-583	-149	-0.3%	0	-149	-0.3%
Hungary	858	927	-69	-11	0.0%	0	-11	0.0%
Ireland	1,967	14,072	-12,105	-1,400	-2.0%	988	-412	-0.6%
Italy	27,059	1,049	26,010	6,184	1.2%	0	6,184	1.2%
Latvia	84	74	10	1	0.0%	53	54	0.7%
Lithuania	128	198	-70	-9	-0.1%	10	0	0.0%
Luxembourg	5,783	18,414	-12,631	-415	-2.2%	2,436	2,020	10.7%
Malta	397	2,768	-2,372	-129	-3.4%	85	-43	-1.1%
Netherlands	6,033	136,114	-130,081	-7,197	-3.4%	5,638	-1,558	-0.7%
Poland	3,988	3,932	56	9	0.0%	0	9	0.0%
Portugal	849	5,429	-4,580	-718	-1.3%	0	-718	-1.3%
Romania	1,376	778	598	88	0.3%	15	104	0.3%
Slovak Republic	376	1,328	-952	-219	-1.1%	0	-219	-1.1%
Slovenia	222	63	159	23	0.2%	5	28	0.3%
Spain	9,002	8,791	211	32	0.0%	0	32	0.0%
Sweden	2,909	2,791	118	21	0.0%	0	21	0.0%
Total	228,333	228,333	0.00	24,209	0.8%	10,427	34,636	1.1%

Table 3: Impact of EU-wide unitary taxation on taxable profits and revenues using the Canadian approach (in million US\$)

This table presents the projected changes in annual taxable profits and tax revenues for EU member states as a result of adopting unitary taxation with formulary apportionment, utilising the Canadian approach, compared to their existing tax revenues. The Canadian approach quantifies economic activity as 50 per cent from unrelated party revenues and 50 per cent from payroll. The light-grey columns report the estimated change in taxable profits and tax revenues due to unitary taxation alone, whereas the dark-grey columns display the potential additional revenues from a 15 per cent minimum tax on corporate income and the cumulative effect of both policies. The impacts of these changes are quantified in million US\$ and as a percentage of the country's total tax revenues for 2018. This analysis is based on the 2018 country-by-country data provided by the OECD.

Country	Unitary taxation					Combined with EU minimum tax		
	Change in taxable profits			Change in tax revenue		Additional revenue through minimum tax	Total change in revenue	% of tax revenues
	Gains	Losses	Net	Million USD	% of tax revenues			
Austria	2,946	2,622	324	34	0.0%	1,073	1,107	1.0%
Belgium	48,289	6,927	41,361	8,282	6.3%	0	8,282	6.3%
Bulgaria	328	672	-344	-22	-0.2%	93	72	0.5%
Croatia	76	510	-435	-52	-0.1%	33	-18	0.0%
Cyprus	965	479	486	18	0.3%	33	51	0.8%
Czech Republic	1,603	4,083	-2,480	-396	-1.1%	0	-396	-1.1%
Denmark	797	7,128	-6,331	-992	-0.9%	0	-992	-0.9%
Estonia	130	0	130	19	0.3%	1	20	0.3%
Finland	1,352	1,848	-496	-74	-0.1%	14	-60	-0.1%
France	36,083	3,017	33,066	7,726	1.1%	0	7,726	1.1%
Germany	85,935	2,603	83,331	15,799	3.5%	0	15,799	3.5%
Greece	83	865	-782	-199	-0.3%	0	-199	-0.3%
Hungary	919	1,166	-246	-39	-0.1%	0	-39	-0.1%
Ireland	1,612	17,144	-15,532	-1,796	-2.6%	871	-926	-1.3%
Italy	30,045	388	29,657	7,051	1.4%	0	7,051	1.4%
Latvia	108	83	25	1	0.0%	55	56	0.7%
Lithuania	141	183	-42	-6	-0.1%	10	4	0.0%
Luxembourg	5,680	29,440	-23,760	-781	-4.1%	1,132	351	1.9%
Malta	218	2,858	-2,640	-143	-3.7%	60	-84	-2.2%
Netherlands	5,670	140,144	-134,474	-7,440	-3.5%	5,222	-2,218	-1.1%
Poland	4,703	3,907	795	130	0.1%	0	130	0.1%
Portugal	899	5,567	-4,668	-732	-1.3%	0	-732	-1.3%
Romania	1,777	706	1,071	158	0.5%	17	175	0.5%
Slovak Republic	641	1,522	-881	-203	-1.0%	0	-203	-1.0%
Slovenia	281	57	224	33	0.3%	6	38	0.4%
Spain	9,928	8,969	960	145	0.1%	0	145	0.1%
Sweden	4,397	2,716	1,682	299	0.2%	0	299	0.2%
Total	245,606	245,606	0	26,823	0.8%	8,618	35,441	1.1%

Table 4: Impact of EU-wide unitary taxation on taxable profits and revenues using the employees and sales formula (in million US\$)

This table presents the projected changes in annual taxable profits and tax revenues for EU member states as a result of adopting unitary taxation with formulary apportionment, utilising the employees and sales formula, compared to their existing tax revenues. The employees and sales formula quantifies economic activity as 50 per cent from unrelated party revenues and 50 per cent from the number of employees. The light-grey columns report the estimated change in taxable profits and tax revenues due to unitary taxation alone, whereas the dark-grey columns display the potential additional revenues from a 15 per cent minimum tax on corporate income and the cumulative effect of both policies. The impacts of these changes are quantified in million US\$ and as a percentage of the country's total tax revenues for 2018. This analysis is based on the 2018 country-by-country data provided by the OECD.

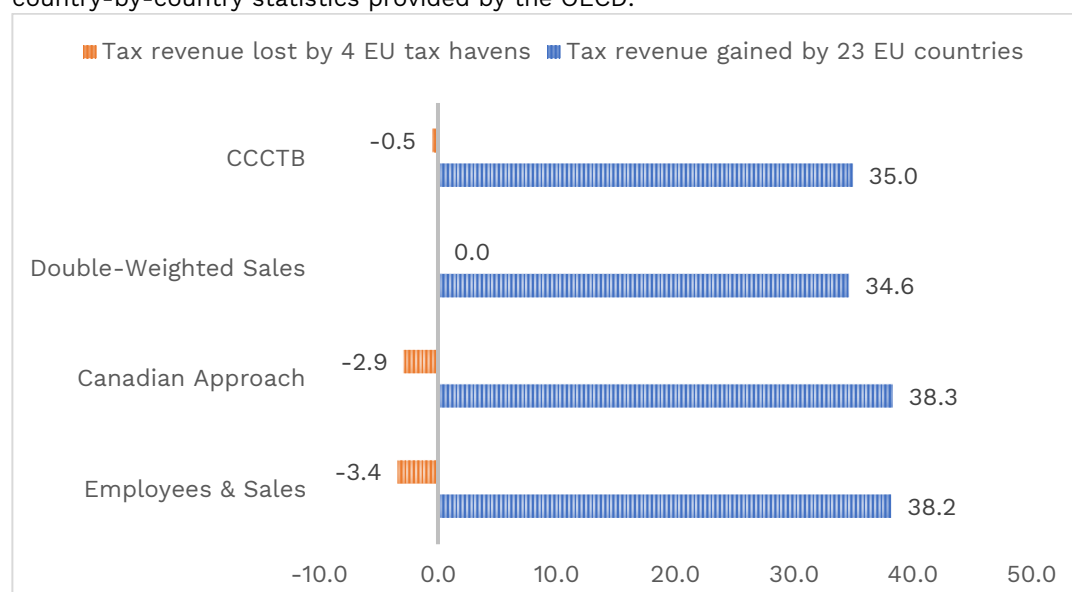
Country	Unitary taxation					Combined with EU minimum tax		
	Change in taxable profits			Change in tax revenue		Additional revenue through minimum tax	Total change in revenue	% of tax revenues
	Gains	Losses	Net	Million USD	% of tax revenues			
Austria	2,620	2,949	-329	-35	0.0%	1,044	1,010	0.9%
Belgium	43,414	8,254	35,160	7,040	5.4%	0	7,040	5.4%
Bulgaria	1,486	370	1,116	70	0.5%	221	291	2.2%
Croatia	461	201	260	31	0.0%	55	86	0.1%
Cyprus	1,003	457	546	20	0.3%	40	60	1.0%
Czech Republic	3,278	1,477	1,801	287	0.8%	0	287	0.8%
Denmark	570	8,534	-7,963	-1,248	-1.1%	0	-1,248	-1.1%
Estonia	303	0	303	45	0.7%	1	46	0.7%
Finland	947	1,991	-1,044	-156	-0.3%	14	-142	-0.2%
France	44,956	2,707	42,249	9,872	1.5%	0	9,872	1.5%
Germany	61,109	3,100	58,010	10,998	2.4%	0	10,998	2.4%
Greece	404	398	6	2	0.0%	0	2	0.0%
Hungary	3,895	293	3,603	570	1.6%	0	570	1.6%
Ireland	1,571	19,662	-18,091	-2,092	-3.0%	783	-1,310	-1.9%
Italy	25,157	1,631	23,527	5,594	1.1%	0	5,594	1.1%
Latvia	257	63	194	11	0.1%	70	81	1.0%
Lithuania	419	49	370	50	0.6%	17	66	0.7%
Luxembourg	5,646	30,166	-24,521	-806	-4.3%	1,043	237	1.3%
Malta	252	2,846	-2,594	-141	-3.7%	64	-77	-2.0%
Netherlands	5,620	140,223	-134,603	-7,447	-3.5%	5,210	-2,237	-1.1%
Poland	14,765	2,903	11,862	1,938	1.9%	0	1,938	1.9%
Portugal	2,339	3,855	-1,516	-238	-0.4%	0	-238	-0.4%
Romania	6,656	98	6,558	968	2.8%	30	998	2.9%
Slovak Republic	2,417	979	1,438	331	1.7%	0	331	1.7%
Slovenia	455	58	397	58	0.6%	6	64	0.6%
Spain	12,058	8,310	3,748	568	0.3%	0	568	0.3%
Sweden	2,923	3,409	-486	-86	-0.1%	0	-86	-0.1%
Total	244,982	244,982	0	26,204	0.8%	8,597	34,801	1.1%

4.3 The combined effect of unitary taxation and the EU corporate minimum tax of 15 per cent

While many countries stand to benefit, the losses experienced by a select few could pose political challenges to implementing unitary taxation. In the subsequent section, we demonstrate that pre-unitary taxation tax havens can leverage the proposed EU-wide minimum taxation to reduce, or even neutralise, their losses. For illustrative purposes, we posit that any nation currently displaying an effective tax rate below the proposed minimum tax of 15 per cent would introduce a supplementary tax to ensure all attributed profits are taxed at an effective tax rate of 15 per cent. With the collective EU-wide enforcement, nations can elevate their effective tax rates without facing negative consequences. This implies that, even if some tax havens see a reduction in taxable profits following an EU-wide introduction of unitary taxation, the remaining profits can be subjected to a higher tax rate. Consequently, we further estimate the surplus tax revenue that arises from elevating the actual effective tax rate to 15 per cent. While we acknowledge that the EU's plans for a corporate minimum tax will not necessarily push multinationals' effective tax rate up to 15 per cent, they definitively give tax havens the opportunity to raise the effective tax rate to 15 per cent. For clarity, this calculation omits any carve-out stipulations.

Figure 2: Estimated revenue effects of EU-wide unitary taxation with a 15 per cent minimum corporate tax, in billion US\$

This figure illustrates the projected shifts in annual tax revenues for EU member states resulting from the adoption of unitary taxation with formulary apportionment combined with a 15 per cent minimum tax on corporate income, benchmarked against their existing tax revenues (expressed in billion US\$). It employs four distinct formulas to assess economic activity: CCCTB utilises a third each of unrelated party revenues and tangible assets, and a sixth each of payroll and number of employees; double-weighted sales combines 50 per cent unrelated party revenues with 25 per cent each of tangible assets and payroll; the Canadian approach is based on an equal split between unrelated party revenues and payroll; and employees and sales equally weighs unrelated party revenues and employee count. The term '4 EU Tax Havens' denotes Ireland, Luxembourg, the Netherlands, and Malta. The underlying data for this analysis is derived from the 2018 country-by-country statistics provided by the OECD.





4.4 The relevance of robust measures

As discussed in Section 2.4, it is crucial to adopt a formula resistant to manipulation. To underscore this point, **Table B 1** to **Table B 4** in Annex B present country-specific estimates of unitary taxation when employed using parameters that are more susceptible to manipulation, specifically total revenues, as opposed to unrelated party revenues, and total stated capital, in place of tangible assets only. The shifts seen with these alternative formulas are notably less pronounced than with their more resistant counterparts, resulting in taxing rights that resemble the current system more closely. These alternate setups highlight the tactics multinationals employ, such as declaring intangible assets in tax havens and subsequently levying charges to their own subsidiaries (evident in related party revenues) to move profits to these havens; tactics that should be made unprofitable in a robust unitary taxation scheme.


5 Conclusion

This study estimates the changes in taxable profits and tax revenues with the implementation of unitary taxation with formulary apportionment, a system that could and should be integrated into the European BEFIT directive. We show that almost all EU countries would benefit from the implementation of unitary taxation, while the few European tax havens would lose some tax revenues. Combined with a strategic implementation of the EU-wide minimum corporate income tax of 15 per cent, unitary taxation could even be designed in such a way that it does not hurt any member state significantly, to the benefit of the Union's public funds, competitive situation and democratic values.



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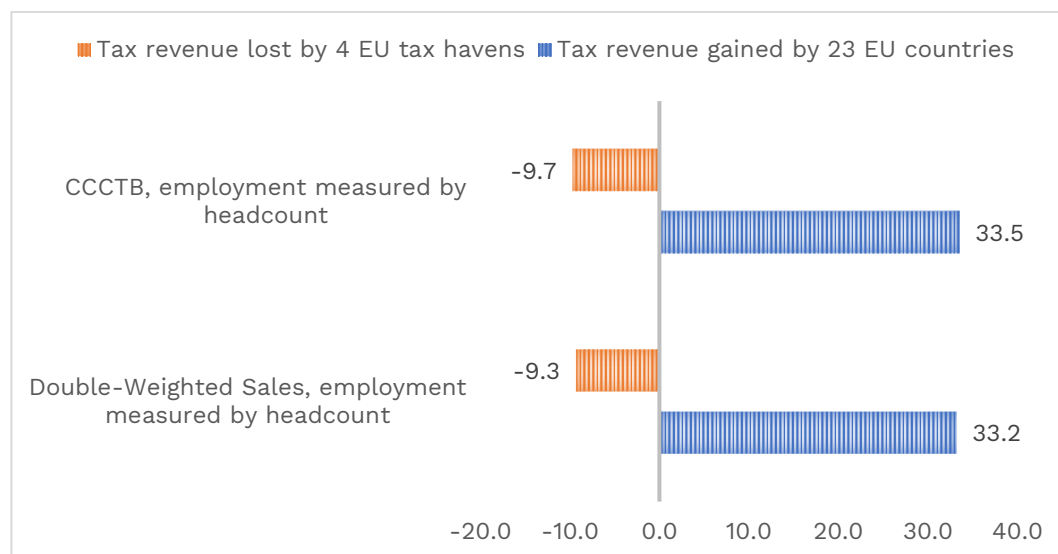
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Annex A: Results when employment is only measured by number of employees

This Annex shows the changes in taxable profits as well as the changes in tax revenues if unitary taxation was implemented in the EU, based on 2018 country-by-country data. While **Figure 1**, **Figure 2**, and **Table 1** to **Table 4** show the estimates using payroll as a proxy for employment in the CCTB and double-weighted sales formula, this Annex shows the results when employment is measured by employee headcount.¹²

Figure A 1: Estimated revenue effects of EU-wide unitary taxation measuring employment by headcount, in billion US\$

This figure illustrates the projected shifts in annual tax revenues for EU member states resulting from the adoption of unitary taxation with formulary apportionment, benchmarked against their existing tax revenues (expressed in billion US\$). It adopts two modified formulas from the original analysis, placing a greater emphasis on employee headcount rather than payroll. The CCCTB formula is recalibrated to equally divide economic activity among unrelated party revenues, tangible assets, and the number of employees, each accounting for a third. The double-weighted sales formula assigns 50 per cent to unrelated party revenues and 25 per cent each to tangible assets and employee headcount. The term '4 EU Tax Havens' denotes Ireland, Luxembourg, the Netherlands, and Malta. The underlying data for this analysis is derived from the 2018 country-by-country statistics provided by the OECD.



¹² The Canadian approach also proxies employment by payroll. However, when substituting payroll by the number of employees, it comes down to the employees and sales formula and to the results reported in **Figure 1**, **Figure 2** and **Table 4**.

Figure A 2: Estimated revenue effects of EU-wide unitary taxation measuring employment by headcount with a 15 per cent minimum corporate tax, in billion US\$

This figure illustrates the projected shifts in annual tax revenues for EU member states resulting from the adoption of unitary taxation with formulary apportionment combined with a 15 per cent minimum tax on corporate income, benchmarked against their existing tax revenues (expressed in billion US\$). It adopts two modified formulas from the original analysis, placing a greater emphasis on employee headcount rather than payroll. The CCCTB formula is recalibrated to equally divide economic activity among unrelated party revenues, tangible assets, and the number of employees, each accounting for a third. The double-weighted sales formula assigns 50 per cent to unrelated party revenues and 25 per cent each to tangible assets and employee headcount. The term ‘4 EU Tax Havens’ denotes Ireland, Luxembourg, the Netherlands, and Malta. The underlying data for this analysis is derived from the 2018 country-by-country statistics provided by the OECD.

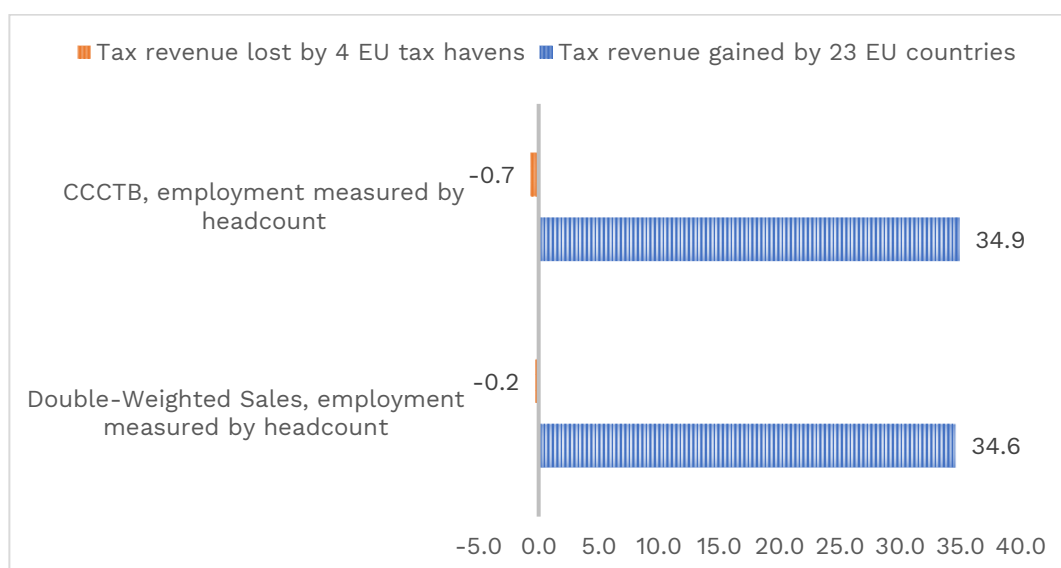


Table A 1: Impact of EU-wide unitary taxation on taxable profits and revenues using the CCCTB formula but measuring employment by headcount (in million US\$)

This table presents the projected changes in annual taxable profits and tax revenues for EU member states as a result of adopting unitary taxation with formulary apportionment, utilising an adapted version of the CCCTB formula, compared to their existing tax revenues. Economic activity is quantified as one third from unrelated party revenue, one third from tangible assets, and one third from the number of employees. The light-grey columns report the estimated change in taxable profits and tax revenues due to unitary taxation alone, whereas the dark-grey columns display the potential additional revenues from a 15 per cent minimum tax on corporate income and the cumulative effect of both policies. The impacts of these changes are quantified in million US\$ and as a percentage of the country's total tax revenues for 2018. This analysis is based on the 2018 country-by-country data provided by the OECD.

Country	Unitary taxation					Combined with EU minimum tax		
	Change in taxable profits			Change in tax revenue		Additional revenue through minimum tax	Total change in revenue	% of tax revenues
	Gains	Losses	Net	Million USD	% of tax revenues			
Austria	2,195	3,930	-1,735	-183	-0.2%	982	798	0.7%
Belgium	46,114	8,438	37,676	7,544	5.8%	0	7,544	5.8%
Bulgaria	1,128	471	657	41	0.3%	181	222	1.7%
Croatia	317	309	8	1	0.0%	47	48	0.0%
Cyprus	989	444	545	20	0.3%	40	60	1.0%
Czech Republic	2,358	2,590	-232	-37	-0.1%	0	-37	-0.1%
Denmark	391	6,540	-6,149	-963	-0.8%	0	-963	-0.8%
Estonia	204	0	204	30	0.5%	1	31	0.5%
Finland	729	2,165	-1,436	-214	-0.4%	13	-201	-0.3%
France	41,112	3,454	37,658	8,799	1.3%	0	8,799	1.3%
Germany	64,035	5,166	58,868	11,161	2.5%	0	11,161	2.5%
Greece	255	442	-187	-48	-0.1%	0	-48	-0.1%
Hungary	2,941	386	2,556	404	1.1%	0	404	1.1%
Ireland	2,032	18,312	-16,280	-1,883	-2.7%	845	-1,038	-1.5%
Italy	23,919	1,953	21,967	5,223	1.0%	0	5,223	1.0%
Latvia	169	51	118	7	0.1%	63	70	0.9%
Lithuania	284	76	208	28	0.3%	14	42	0.5%
Luxembourg	5,772	16,808	-11,035	-363	-1.9%	2,622	2,260	11.9%
Malta	500	2,800	-2,299	-125	-3.3%	92	-33	-0.8%
Netherlands	5,865	137,851	-131,986	-7,302	-3.5%	5,458	-1,844	-0.9%
Poland	10,543	3,143	7,401	1,209	1.2%	0	1,209	1.2%
Portugal	1,667	4,548	-2,881	-452	-0.8%	0	-452	-0.8%
Romania	4,747	221	4,525	668	1.9%	25	693	2.0%
Slovak Republic	1,491	809	683	157	0.8%	0	157	0.8%
Slovenia	329	57	272	40	0.4%	6	45	0.5%
Spain	10,313	8,225	2,088	317	0.2%	0	317	0.2%
Sweden	2,324	3,536	-1,212	-216	-0.1%	0	-216	-0.1%
Total	232,723	232,723	0	23,863	0.7%	10,389	34,252	1.1%

Table A 2: Impact of EU-wide unitary taxation on taxable profits and revenues using the Double-Weighted Sales formula but measuring employment by headcount (in million US\$)

This table presents the projected changes in annual taxable profits and tax revenues for EU member states as a result of adopting unitary taxation with formulary apportionment, utilising an adapted version of the double-weighted sales formula, compared to their existing tax revenues. Economic activity is quantified as 50 per cent from unrelated party revenue, and each 25 per cent from tangible assets and the number of employees. The light-grey columns report the estimated change in taxable profits and tax revenues due to unitary taxation alone, whereas the dark-grey columns display the potential additional revenues from a 15 per cent minimum tax on corporate income and the cumulative effect of both policies. The impacts of these changes are quantified in million USD and as a percentage of the country's total tax revenues for 2018. This analysis is based on the 2018 country-by-country data provided by the OECD.

Country	Unitary taxation					Combined with EU minimum tax		
	Change in taxable profits			Change in tax revenue		Additional revenue through minimum tax	Total change in revenue	% of tax revenues
	Gains	Losses	Net	Million USD	% of tax revenues			
Austria	2,442	3,710	-1,267	-134	-0.1%	1,003	869	0.8%
Belgium	46,799	8,229	38,571	7,723	5.9%	0	7,723	5.9%
Bulgaria	958	517	441	28	0.2%	162	189	1.4%
Croatia	288	363	-75	-9	0.0%	44	35	0.0%
Cyprus	970	454	517	19	0.3%	36	56	0.9%
Czech Republic	1,977	2,839	-863	-138	-0.4%	0	-138	-0.4%
Denmark	455	6,177	-5,723	-897	-0.8%	0	-897	-0.8%
Estonia	179	0	179	26	0.4%	1	27	0.4%
Finland	714	2,093	-1,378	-205	-0.4%	13	-192	-0.3%
France	40,627	3,082	37,544	8,772	1.3%	0	8,772	1.3%
Germany	63,365	4,282	59,084	11,202	2.5%	0	11,202	2.5%
Greece	265	454	-189	-48	-0.1%	0	-48	-0.1%
Hungary	2,293	437	1,855	293	0.8%	0	293	0.8%
Ireland	1,942	15,327	-13,385	-1,548	-2.2%	944	-604	-0.9%
Italy	24,617	1,671	22,946	5,456	1.1%	0	5,456	1.1%
Latvia	153	58	95	5	0.1%	61	66	0.8%
Lithuania	255	118	136	18	0.2%	13	31	0.3%
Luxembourg	5,766	18,777	-13,011	-428	-2.3%	2,391	1,963	10.4%
Malta	414	2,763	-2,349	-128	-3.3%	88	-40	-1.0%
Netherlands	6,131	136,276	-130,145	-7,200	-3.4%	5,632	-1,568	-0.7%
Poland	8,793	3,205	5,589	913	0.9%	0	913	0.9%
Portugal	1,471	4,475	-3,004	-471	-0.9%	0	-471	-0.9%
Romania	3,701	360	3,341	493	1.4%	22	515	1.5%
Slovak Republic	1,086	877	209	48	0.2%	0	48	0.2%
Slovenia	300	55	245	36	0.4%	6	41	0.4%
Spain	10,062	8,457	1,605	243	0.1%	0	243	0.1%
Sweden	2,339	3,305	-966	-172	-0.1%	0	-172	-0.1%
Total	228,362	228,362	0	23,899	0.7%	10,416	34,316	1.1%

Annex B: Results for non-robust formulas

This Annex shows the changes in taxable profits as well as the changes in tax revenues when implementing unitary taxation, based on 2018 country-by-country reporting data. While **Figure 1**, **Figure 2** and **Table 1** to **Table 4** show the estimates using a robust form of the formula (i.e. based on measures that are hard to manipulate to shift profits), **Figure B 1**, **Figure B 2** and **Table B 1** to **Table B 4** show the results of implementing a non-robust form. In particular, the asset factor (if included) was measured by total stated capital, the sales factor was measured by total revenues.

Figure B 1: Estimated revenue effects of EU-wide unitary taxation based on non-robust formulas, in billion US\$

This figure illustrates the projected shifts in annual tax revenues for EU member states resulting from the adoption of unitary taxation with formulary apportionment, benchmarked against their existing tax revenues (expressed in billion US\$). It employs non-robust versions of the four distinct formulas to assess economic activity: Non-robust CCCTB utilises a third each of total revenues and stated capital, and a sixth each of payroll and number of employees; non-robust double-weighted sales combines 50 per cent total revenues with 25 per cent each of stated capital and payroll; the non-robust Canadian approach is based on an equal split between total revenues and payroll; and non-robust employees and sales equally weighs total revenues and employee count. The term '4 EU Tax Havens' denotes Ireland, Luxembourg, the Netherlands, and Malta. The underlying data for this analysis is derived from the 2018 country-by-country-reporting statistics provided by the OECD.

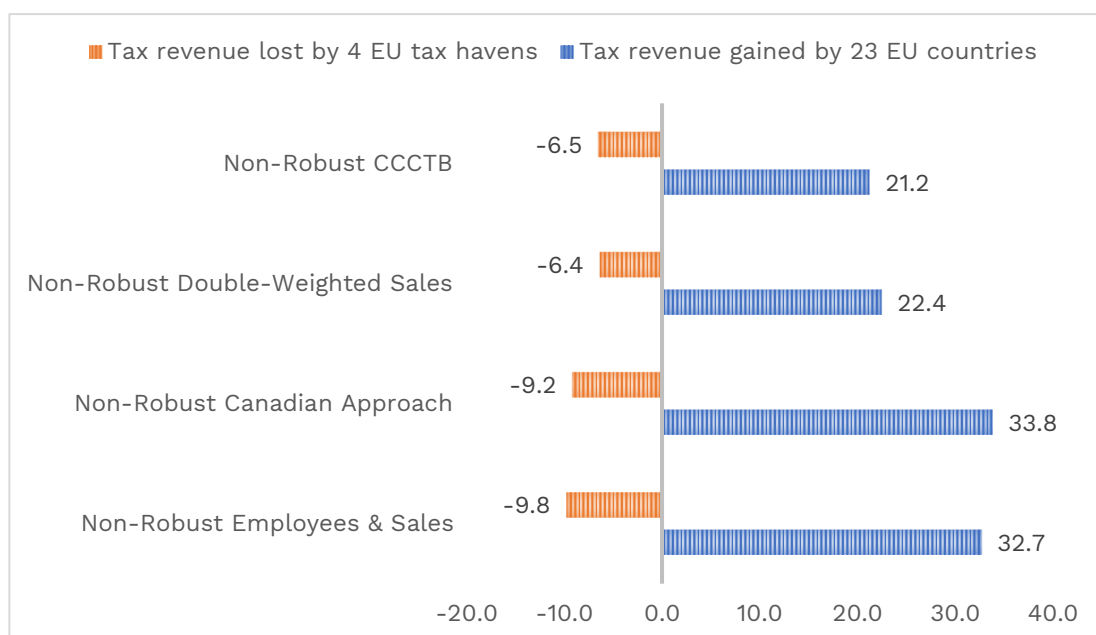


Figure B 2: Estimated revenue effects of EU-wide unitary taxation based on non-robust formulas with a 15 per cent minimum corporate tax, in billion US\$

This figure illustrates the projected shifts in annual tax revenues for EU member states resulting from the adoption of unitary taxation with formulary apportionment combined with a 15 per cent minimum tax on corporate income, benchmarked against their existing tax revenues (expressed in billion US\$). It employs non-robust versions of the four distinct formulas to assess economic activity: non-robust CCCTB utilises a third each of total revenues and stated capital, and a sixth each of payroll and number of employees; non-robust double-weighted sales combines 50 per cent total revenues with 25 per cent each of stated capital and payroll; the non-robust Canadian approach is based on an equal split between total revenues and payroll; and non-robust employees and sales equally weighs total revenues and employee count. The term ‘4 EU Tax Havens’ denotes Ireland, Luxembourg, the Netherlands, and Malta. The underlying data for this analysis is derived from the 2018 country-by-country reporting statistics provided by the OECD.

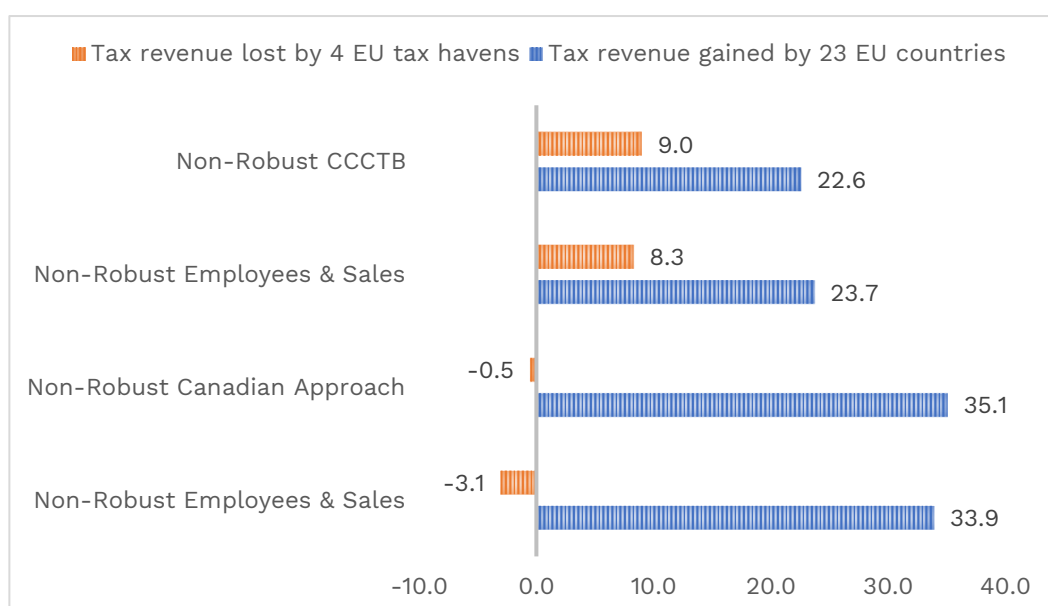


Table B 1: Impact of EU-wide unitary taxation on taxable profits and revenues using a non-robust CCCTB formula (in million US\$)

This table presents the projected changes in annual taxable profits and tax revenues for EU member states as a result of adopting unitary taxation with formulary apportionment, utilising a non-robust CCCTB formula, compared to their existing tax revenues. The non-robust CCCTB formula quantifies economic activity as one-third each from total revenues and stated capital, and one-sixth each from payroll and the number of employees. The light-grey columns report the estimated change in taxable profits and tax revenues due to unitary taxation alone, whereas the dark-grey columns display the potential additional revenues from a 15 per cent minimum tax on corporate income and the cumulative effect of both policies. The impacts of these changes are quantified in million US\$ and as a percentage of the country's total tax revenues for 2018. This analysis is based on the 2018 country-by-country reporting data provided by the OECD.

Country	Unitary taxation					Combined with EU minimum tax		
	Change in taxable profits			Change in tax revenue		Additional revenue through minimum tax	Total change in revenue	% of tax revenues
	Gains	Losses	Net	Million USD	% of tax revenues			
Austria	1,583	4,388	-2,804	-296	-0.3%	934	638	0.6%
Belgium	40,759	8,618	32,141	6,436	4.9%	0	6,436	4.9%
Bulgaria	490	598	-109	-7	-0.1%	114	107	0.8%
Croatia	78	489	-411	-49	-0.1%	34	-15	0.0%
Cyprus	1,772	127	1,645	61	1.0%	164	225	3.7%
Czech Republic	1,329	4,473	-3,143	-502	-1.4%	0	-502	-1.4%
Denmark	1,303	7,129	-5,826	-913	-0.8%	0	-913	-0.8%
Estonia	95	17	79	12	0.2%	1	12	0.2%
Finland	316	2,456	-2,139	-319	-0.6%	13	-306	-0.5%
France	29,768	4,459	25,310	5,914	0.9%	0	5,914	0.9%
Germany	54,921	5,828	49,093	9,308	2.0%	0	9,308	2.0%
Greece	58	893	-836	-213	-0.4%	0	-213	-0.4%
Hungary	1,248	894	354	56	0.2%	0	56	0.2%
Ireland	1,932	16,772	-14,839	-1,716	-2.5%	894	-822	-1.2%
Italy	17,958	3,361	14,597	3,471	0.7%	0	3,471	0.7%
Latvia	89	97	-8	0	0.0%	51	51	0.6%
Lithuania	153	162	-9	-1	0.0%	11	9	0.1%
Luxembourg	17,380	6,935	10,445	343	1.8%	5,137	5,480	29.0%
Malta	1,068	2,445	-1,377	-75	-2.0%	181	106	2.8%
Netherlands	10,027	101,738	-91,711	-5,074	-2.4%	9,270	4,196	2.0%
Poland	3,880	4,184	-304	-50	0.0%	0	-50	0.0%
Portugal	802	5,668	-4,866	-762	-1.4%	0	-762	-1.4%
Romania	2,550	702	1,849	273	0.8%	19	291	0.8%
Slovak Republic	543	1,335	-793	-183	-0.9%	0	-183	-0.9%
Slovenia	141	67	74	11	0.1%	5	16	0.2%
Spain	5,776	10,932	-5,157	-782	-0.4%	0	-782	-0.4%
Sweden	2,920	4,173	-1,253	-223	-0.1%	0	-223	-0.1%
Total	198,938	198,938	0	14,719	0.5%	16,825	31,544	1.0%

Table B 2: Impact of EU-wide unitary taxation on taxable profits and revenues using the non-robust double-weighted sales formula (in million US\$)

This table presents the projected changes in annual taxable profits and tax revenues for EU member states as a result of adopting unitary taxation with formulary apportionment, utilising the non-robust double-weighted sales formula, compared to their existing tax revenues. The non-robust double-weighted sales formula quantifies economic activity as 50 per cent from total revenues and 25 per cent each from stated capital and payroll. The light-grey columns report the estimated change in taxable profits and tax revenues due to unitary taxation alone, whereas the dark-grey columns display the potential additional revenues from a 15 per cent minimum tax on corporate income and the cumulative effect of both policies. The impacts of these changes are quantified in million US\$ and as a percentage of the country's total tax revenues for 2018. This analysis is based on the 2018 country-by-country reporting data provided by the OECD.

Country	Unitary taxation					Combined with EU minimum tax		
	Change in taxable profits			Change in tax revenue		Additional revenue through minimum tax	Total change in revenue	% of tax revenues
	Gains	Losses	Net	Million USD	% of tax revenues			
Austria	1,820	4,154	-2,334	-246	-0.2%	955	708	0.61%
Belgium	42,871	7,846	35,025	7,013	5.4%	0	7,013	5.38%
Bulgaria	203	710	-507	-32	-0.2%	79	47	0.36%
Croatia	57	677	-620	-73	-0.1%	27	-46	-0.05%
Cyprus	1,475	140	1,334	49	0.8%	129	178	2.90%
Czech Republic	898	4,999	-4,102	-655	-1.8%	0	-655	-1.77%
Denmark	1,058	6,127	-5,070	-794	-0.7%	0	-794	-0.69%
Estonia	65	33	32	5	0.1%	1	5	0.08%
Finland	383	2,333	-1,950	-291	-0.5%	13	-278	-0.48%
France	27,895	4,098	23,797	5,560	0.8%	0	5,560	0.82%
Germany	60,775	3,559	57,215	10,848	2.4%	0	10,848	2.38%
Greece	58	1,081	-1,023	-261	-0.5%	0	-261	-0.46%
Hungary	699	1,291	-592	-94	-0.3%	0	-94	-0.26%
Ireland	1,931	12,106	-10,174	-1,177	-1.7%	1,054	-122	-0.18%
Italy	19,198	2,239	16,959	4,032	0.8%	0	4,032	0.80%
Latvia	55	121	-66	-4	0.0%	46	42	0.54%
Lithuania	82	218	-136	-18	-0.2%	9	-10	-0.11%
Luxembourg	14,285	9,956	4,330	142	0.8%	4,421	4,563	24.12%
Malta	871	2,536	-1,665	-90	-2.4%	153	62	1.63%
Netherlands	9,656	104,242	-94,586	-5,233	-2.5%	8,997	3,765	1.79%
Poland	1,440	4,793	-3,353	-548	-0.5%	0	-548	-0.54%
Portugal	465	5,856	-5,391	-845	-1.5%	0	-845	-1.54%
Romania	1,045	1,086	-41	-6	0.0%	14	8	0.02%
Slovak Republic	207	1,554	-1,346	-310	-1.6%	0	-310	-1.58%
Slovenia	107	79	29	4	0.0%	5	9	0.09%
Spain	5,905	11,019	-5,115	-776	-0.4%	0	-776	-0.38%
Sweden	2,901	3,551	-651	-116	-0.1%	0	-116	-0.07%
Total	196,404	196,404	0	16,086	0.5%	15,902	31,988	1.00%

Table B 3: Impact of EU-wide unitary taxation on taxable profits and revenues using the non-robust Canadian approach (in million US\$)

This table presents the projected changes in annual taxable profits and tax revenues for EU member states as a result of adopting unitary taxation with formulary apportionment, utilising the non-robust Canadian approach, compared to their existing tax revenues. The non-robust Canadian approach quantifies economic activity as 50 per cent from total revenues and 50 per cent from payroll. The light-grey columns report the estimated change in taxable profits and tax revenues due to unitary taxation alone, whereas the dark-grey columns display the potential additional revenues from a 15 per cent minimum tax on corporate income and the cumulative effect of both policies. The impacts of these changes are quantified in million US\$ and as a percentage of the country's total tax revenues for 2018. This analysis is based on the 2018 country-by-country reporting data provided by the OECD.

Country	Unitary taxation					Combined with EU minimum tax		
	Change in taxable profits			Change in tax revenue		Additional revenue through minimum tax	Total change in revenue	% of tax revenues
	Gains	Losses	Net	Million USD	% of tax revenues			
Austria	2,412	2,943	-531	-56	0.0%	1,035	979	0.8%
Belgium	46,563	7,056	39,507	7,910	6.1%	0	7,910	6.1%
Bulgaria	285	643	-358	-22	-0.2%	92	69	0.5%
Croatia	66	614	-548	-65	-0.1%	30	-36	0.0%
Cyprus	953	450	503	19	0.3%	35	53	0.9%
Czech Republic	1,568	4,014	-2,446	-390	-1.1%	0	-390	-1.1%
Denmark	617	6,943	-6,326	-991	-0.9%	0	-991	-0.9%
Estonia	113	2	111	16	0.3%	1	17	0.3%
Finland	1,155	2,012	-857	-128	-0.2%	14	-114	-0.2%
France	32,532	3,918	28,614	6,686	1.0%	0	6,686	1.0%
Germany	84,244	2,571	81,673	15,485	3.4%	0	15,485	3.4%
Greece	55	1,136	-1,081	-275	-0.5%	0	-275	-0.5%
Hungary	962	871	91	14	0.0%	0	14	0.0%
Ireland	1,705	14,254	-12,549	-1,451	-2.1%	973	-479	-0.7%
Italy	26,420	721	25,699	6,110	1.2%	0	6,110	1.2%
Latvia	100	119	-19	-1	0.0%	50	49	0.6%
Lithuania	115	170	-55	-7	-0.1%	10	2	0.0%
Luxembourg	5,678	27,352	-21,674	-712	-3.8%	1,375	662	3.5%
Malta	275	2,909	-2,634	-143	-3.7%	60	-83	-2.2%
Netherlands	5,745	129,681	-123,936	-6,857	-3.3%	6,219	-638	-0.3%
Poland	4,045	4,028	17	3	0.0%	0	3	0.0%
Portugal	725	5,614	-4,889	-766	-1.4%	0	-766	-1.4%
Romania	1,728	655	1,073	158	0.5%	17	175	0.5%
Slovak Republic	661	1,278	-616	-142	-0.7%	0	-142	-0.7%
Slovenia	241	66	175	25	0.3%	5	31	0.3%
Spain	8,730	8,968	-239	-36	0.0%	0	-36	0.0%
Sweden	3,988	2,693	1,295	230	0.1%	0	230	0.1%
Total	231,680	231,680	0	24,613	0.8%	9,915	34,528	1.1%

Table B 4: Impact of EU-wide unitary taxation on taxable profits and revenues using the non-robust employees and sales formula (in million US\$)

This table presents the projected changes in annual taxable profits and tax revenues for EU member states as a result of adopting unitary taxation with formulary apportionment, utilising the non-robust employees and sales formula, compared to their existing tax revenues. The non-robust employees and sales formula quantifies economic activity as 50 per cent from total revenues and 50 per cent from the number of employees. The light-grey columns report the estimated change in taxable profits and tax revenues due to unitary taxation alone, whereas the dark-grey columns display the potential additional revenues from a 15 per cent minimum tax on corporate income and the cumulative effect of both policies. The impacts of these changes are quantified in million US\$ and as a percentage of the country's total tax revenues for 2018. This analysis is based on the 2018 country-by-country reporting data provided by the OECD.

Country	Unitary taxation					Combined with EU minimum tax		
	Change in taxable profits			Change in tax revenue		Additional revenue through minimum tax	Total change in revenue	% of tax revenues
	Gains	Losses	Net	Million USD	% of tax revenues			
Austria	1,918	3,479	-1,561	-169	-0.1%	923	754	0.7%
Belgium	41,011	8,034	32,977	7,069	5.4%	0	7,069	5.4%
Bulgaria	1,219	339	880	59	0.4%	186	244	1.8%
Croatia	365	210	155	19	0.0%	41	61	0.1%
Cyprus	991	461	529	23	0.4%	36	59	1.0%
Czech Republic	2,676	1,430	1,246	211	0.6%	0	211	0.6%
Denmark	426	8,316	-7,890	-1,274	-1.1%	0	-1,274	-1.1%
Estonia	248	0	248	37	0.6%	1	38	0.6%
Finland	2,096	2,152	-57	-9	0.0%	0	-9	0.0%
France	37,125	2,853	34,271	8,338	1.2%	0	8,338	1.2%
Germany	55,813	3,074	52,739	10,416	2.3%	0	10,416	2.3%
Greece	167	510	-343	-91	-0.2%	0	-91	-0.2%
Hungary	3,646	323	3,323	572	1.6%	0	572	1.6%
Ireland	1,663	15,116	-13,453	-1,888	-2.7%	166	-1,722	-2.5%
Italy	20,948	2,080	18,868	4,719	0.9%	0	4,719	0.9%
Latvia	227	101	125	7	0.1%	61	69	0.9%
Lithuania	390	53	336	55	0.6%	0	55	0.6%
Luxembourg	6,271	23,559	-17,287	-713	-3.8%	1,043	331	1.7%
Malta	309	2,574	-2,265	-123	-3.2%	60	-63	-1.6%
Netherlands	5,707	123,868	-118,161	-7,043	-3.3%	5,438	-1,605	-0.8%
Poland	12,234	2,894	9,340	1,656	1.6%	0	1,656	1.6%
Portugal	1,857	4,003	-2,145	-346	-0.6%	0	-346	-0.6%
Romania	5,995	99	5,896	931	2.7%	0	931	2.7%
Slovak Republic	2,310	1,018	1,292	321	1.6%	0	321	1.6%
Slovenia	386	67	319	48	0.5%	0	48	0.5%
Spain	10,190	8,322	1,868	293	0.1%	0	293	0.1%
Sweden	2,244	3,496	-1,252	-228	-0.1%	0	-228	-0.1%
Total	218,431	218,431	0	22,890	0.7%	7,957	30,847	1.0%

Annex C: Variable definitions and data sources

Table C 1: Variable definitions and data sources

Variable	Definition	Source	Link to source
Reported profits	Profit (Loss) before Income Tax	Country-by-country reporting data from the OECD	https://stats.oecd.org/Index.aspx?DataSetCode=CBCR_TABLEI
Employees	Number of Employees		
Unrelated party revenues	Unrelated Party Revenues		
Total revenues/sales	Total Revenues		
Tangible assets	Tangible Assets Except Cash		
Total assets	Stated capital		
Effective Tax Rate (ETR)	Effective Tax Rate of multinationals per jurisdiction	Country-by-country reporting data from the OECD, calculated from the subset of companies that have a positive profit in this country	https://stats.oecd.org/Index.aspx?DataSetCode=CBCR_TABLEI
Payroll	Paid wages of multinationals per jurisdiction	Number of employees (see above) multiplied by average salaries from ILO's Global Wage Database	https://www.ilo.org/ilostat-files/WEB_bulk_download/indicator/EAR_4MTH_SEX_E_CO_CUR_NB_A.csv.gz
Tax revenue	Country's total tax revenue	Data on tax revenue as a percentage of GDP, as well as the GDP figures themselves, were taken from the World Bank.	https://api.worldbank.org/v2/en/indicator/GC.TAX.TOTL.GD.ZS?downloadformat=csv