

Arguments for implementing formulary apportionment in the European Union^{*}

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Abstract

Using recently published country-by-country reporting data released by the United States Internal Revenue Service, we assess United States multinationals' activity in the single market, aiming to contribute with data-based evidence to the ongoing political debate about the potential changes in the European corporate tax system. Our findings show evidence of artificial profit shifting across member States under the current method to allocate profits of multinational enterprises, with the Netherlands, Luxembourg and Ireland appearing to be the countries showing a higher degree of complicity with these activities. Such actions challenge fair international taxation in the European Union, distorting European internal competition and hampering tax revenue collection. Although it may not be (yet) the time for a worldwide unitary taxation approach, the analysis highlights the urgency for the European Union to adopt a formulary apportionment approach, overhauling a century-old set of global tax rules based on the separate entity approach.

Keywords : country-by-country reporting, European Union, formulary apportionment, tax havens, United States multinationals enterprises

JEL classification codes : D22, F23, F60, H25, H26

^{*} Received: 19 October 2023 – Revised: 11 April 2024 – Accepted: 11 April 2024

This work was supported by the FCT – Fundação para a Ciência e a Tecnologia (grant number SFRH/BD/129307/2017).

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1. Introduction

This study adds to the growing research on the activity of multinational enterprises (MNEs) in the European single market (Garcia-Bernardo et al., 2021 and 2022). Starting from the empirical evidence that United States MNEs shift twice as much profit as European MNEs and that European Union higher-tax countries lose twice as much profit as the United States (Tørsløv et al., 2022), we perform a risk assessment analysis to address potential aggressive tax avoidance schemes employed by large United States MNEs in the European Union.

We take advantage of recently published country-by-country reporting (CbCR) data released by the United States Internal Revenue Service (IRS) to perform an empirical assessment of United States MNEs' activity within the European Union by building an overall picture of the level of risks related to base erosion and profit shifting posed by these MNEs in an aggregate manner. For that, we explore three tax risks indicators: ownership, profitability and effective tax rates (ETRs). Based on these data, we conclude that United States MNEs have been taking advantage of differences in the member States' tax systems and relying on European tax havens to carry out their activity in a tax-friendly environment, which may have a distorting effect on internal competition in the single market. Of the commonly identified tax havens in the European Union, the Netherlands and Luxembourg (and, to a lesser extent, Ireland) are the countries that attract large amounts of profits and foreign direct investment (FDI), while applying low ETRs and registering modest real economic activity (measured either by sales, employment or assets).

With this analysis, we aim to contribute to the policy debate regarding a reform of the European corporate tax system on the basis of MNEs' activity. The analysis helps to have a better perception of the profit-shifting activities that are currently occurring within the European single market. This highlights the urgency for the European Union to promote a comprehensive tax

policy reform that is capable of better dealing with artificial profit shifting.

The current international transfer pricing regime, based on the separate entity approach, is no longer adequate to reflect MNEs' worldwide presence and activity, as it fails to deliver an effective and transparent taxation system capable of aligning taxation and economic substance (IMF, 2019). The scale of MNEs' activity, the increasing degree of globalization and economic integration, the growing prevalence of hard-to-value intangible assets, the fragmentation of production and supply chains and the emergence of new ways of business guided by the trade of unique goods and services outpaces the local tax authorities' capability to effectively enforce the transfer pricing rules, failing to protect countries from MNEs' tax abuse and aggressive tax planning schemes.

This lack of resilience and suitability of the separate entity approach to deal with tax avoidance and profit-shifting activities has led to numerous reform initiatives in the last decade, such as the Base Erosion and Profit Shifting (BEPS) Action Plan of the G20 and the Organisation for Economic Co-operation and Development (OECD) as well as the most recent tax agenda for business taxation in the 21st century of the European Commission, the Business in Europe: Framework for Income Taxation (BEFIT) initiative (European Commission, 2023). Altogether, these initiatives highlight the inadequacy of the current international regulatory model based on transfer pricing standards to prevent profit shifting. But when assessed in detail, two distinctive courses of action can be identified.

The first one is pursued by the G20/OECD. It acknowledges that the separate entity approach is outdated in its current form and needs to be overhauled (or enhanced) within its context – what the BEPS 1.0 and 2.0 initiatives have been trying to do. Nonetheless, concerns have been arising that the initiatives resulting from the BEPS Project have not been sufficiently effective to fulfil its principles of establishing



coherence among international tax rules, realigning substance with taxation rights and improving transparency (Piantavigna, 2017; Picciotto and Bertossa, 2019).

The other course of action has been pursued by the European Commission over the last two decades and acknowledges that the separate entity approach is no longer adequate to reflect MNEs' worldwide activity, especially within the single market, by not granting each jurisdiction its fair share of tax. These shortcomings led the Commission to propose a new method for allocating MNEs' profits across the European Union member States – the unitary taxation approach with formulary apportionment,¹ under the BEFIT initiative.

This alternative corporate tax system has been gaining supporters, and, as the literature strongly suggests, it is the most robust approach better suited to tackle tax avoidance and artificial profit shifting via transfer pricing (Avi-Yonah and Tinhaga, 2017; IMF, 2019; Keen and Konrad, 2013; Rixen, 2011). Under formulary apportionment, intercompany prices do not need to be established, so this approach would result in a simpler, fairer and more rational international tax system than the current one, cutting off MNEs' tax incentives to artificially shift profits from higher- to lower-tax jurisdictions while enhancing transparency and easing compliance costs for taxpayers and tax authorities.

The continuous delay in effectively reforming corporate tax rules has left the European Union exposed to global tax abuse by MNEs. In fact, the European Union appears to be the region most affected by profit shifting, with higher-tax member States

losing about 20 per cent of their domestic profit (Tørslov et al., 2022). This amounts to \$216 billion, reaching 1.5 per cent of gross domestic product (GDP), which is twice as much the amount that the United States loses (0.8 per cent of GDP). Looking at the total amount of global profits shifted to tax havens (\$616 billion), Ireland appears as the number one destination, with \$106 billion in shifted profits. The Netherlands and Luxembourg come next, with \$57 billion and \$47 billion respectively.

The BEFIT initiative is being designed to be a reform consistent with the OECD two-pillar solutions (European Commission, 2023). Pillar 1 involves a partial reallocation of taxing rights to market jurisdictions (using formulary apportionment), while also aiming to simplify the current separate entity approach for certain activities. Its details are still being discussed at the international level. Pillar 2 has already been endorsed by European Union member States, which unanimously adopted a directive on ensuring a global minimum ETR of 15 per cent for MNEs.

While reducing some current distortions, the formulary apportionment approach could result in new tax-induced economic distortions (e.g. in corporate ownership or in the location of the apportionment factors), as it does not eliminate the risk of tax competition, considering that some of the factors used for apportionment are mobile.² This hazard of a potential increase in tax competition over the location of factors is, however, mitigated with the introduction of the minimum ETR under Pillar 2, particularly important to create a floor on international tax competition and hinder the “race to the bottom” (Liotti et al., 2022).

¹ Under unitary taxation with formulary apportionment, legally separated but economically integrated companies are treated and recognized as a single group for tax purposes. It is through a multifactor allocation formula – based on apportionment factors that should reflect the true economic contribution of each entity – that MNEs' global taxable income is assigned as tax base between the different jurisdictions.

We only give the reader insight into the two most discussed and applied approaches to guiding the international transfer pricing regime (the separate entity approach and the unitary taxation approach). For a more comprehensive analysis and more alternatives for the international tax architecture (e.g. minimum tax schemes, residual profit allocation, allocation of taxing rights to destination-based countries), please see IMF (2019).

² The formulary apportionment approach can lead to a potential increase in international tax competition because member States would no longer be able to use the tax base to attract investment, which would have to be performed through tax rates – thus increasing competitive pressure on the statutory tax rate (the remaining variable policy in a harmonized corporate tax system).



Finally, it is worth mentioning that the current United Nations negotiations to establish a tax convention capable of leading the reform of the international tax system can help to create momentum for the European Union to strengthen in its tax agenda the clear call for tax reform and to further increase public support for government action to curb tax avoidance.

The remainder of the study is as follows: In section 2 we describe the methodology and data source used to assess how United States MNEs are challenging a fair international taxation in the European Union under the current separate entity regime. In sections 3 to 5 we perform the assessment based on three tax risk indicators: ownership, profitability and ETRs. In section 6 we present the main conclusions.

2. Assessing United States MNEs' activity in the single market

The current international taxation system is becoming increasingly unsuitable for dealing with artificial profit shifting, given the high levels of globalization and hard-to-value intangible assets. Both the BEPS 1.0 and 2.0 initiatives have been steps in the right direction but may prove insufficient to address these issues. Hence, policymakers, academics, international institutions and tax experts have been advocating for a true tax reform, moving away from the separate entity approach to a formulary apportionment approach (Avi-Yonah and Tinhaga, 2017; IMF, 2019; Keen and Konrad, 2013; Rixen, 2011). Under this approach, MNEs would be taxed on their global consolidated profits, with taxing rights allocated between jurisdictions according to an agreed formula that would ensure that each country receives its fair share of tax revenue.

Although replacing the separate entity approach may seem a wide-ranging dismantling of the current transfer pricing regime, tax experts (e.g. Avi-Yonah and Tinhaga (2017) and Picciotto and Bertossa

(2019)) argue that formulary apportionment could be, indeed, compatible with the bilateral network of double taxation treaties, suggesting that the main obstacles to the introduction of formulary apportionment are not legal, but rather political.

Implementing a form of formulary apportionment in the European Union would represent a reform towards greater alignment of economic value creation and taxation, reducing opportunities for MNEs to avoid taxes. The European Union leveraging its market power through stricter unilateral source-country taxation measures could thus have far-reaching tax consequences.

Although the European single market is a very competitive and important market for MNEs all over the world, we focus our attention on the activities only of United States MNEs. In addition to data availability, this decision stems from several reasons.

First, the European Union and the United States have the largest bilateral trade and investment relationship (UNCTAD, 2022). They are each other's biggest trading partner in services and biggest source of FDI.

Second, large technology MNEs from the United States are among the main beneficiaries of tax rulings granted by European Union tax havens (UNCTAD, 2022; United States, Department of the Treasury, 2016).

Third, although MNEs from all countries shift profits, it is predominately United States MNEs that shift profits from higher-tax countries in the European Union (Clausing, 2020; Tørsløv et al., 2022). For United States MNEs, tax-motivated profit shifting remains an important concern after the Tax Cuts and Job Act (TCJA), with a number of United States MNEs generating large profits in the single market but paying little or no tax in the European Union, relying on aggressive tax planning schemes, national mismatches and legal loopholes (Clausing, 2020; Garcia-Bernardo et al., 2022).

The United States tax law applies some tightening measures against profit shifting



targeted at MNEs with activities in tax havens, namely through controlled foreign corporation rules, the global intangible low-taxed income measure and a tax applied to certain cross-border transactions between foreign related parties and their United States subsidiaries (under the Base Erosion and Anti-Abuse Tax). Yet, these measures do not prevent artificial profit shifting between overseas subsidiaries, from higher- to lower-tax countries, leading the European Union to lose twice as much profit (relative to GDP) as the United States, because United States MNEs shift twice as much profit (relative to the size of their earnings) as European Union MNEs (Tørsløv et al., 2022). These activities highly distort the European internal market, resulting in unfair competition between European Union member States.

To understand how the behaviour of United States MNEs may affect the single market's functioning, it is important to evaluate their corporate activities, disaggregated by member State, to infer the possible distortion of competition between them. The goal is to assess if United States MNEs have a more intense relationship with European Union tax havens without corresponding economic activity, which suggests an artificial presence. Definitions of tax havens differ,³ and some degree of judgement is involved in compiling any list of tax havens. Menkhoff and Miethe (2019) provide a summary of the classifications used in six publications; by combining the criteria provided by these sources, we assume as a potential tax haven any country that is labelled

accordingly in any of those lists. Of the current 27 member States, 7 satisfy this criterion: Austria, Belgium, Cyprus, Ireland, Luxembourg, Malta and the Netherlands.

A risk assessment analysis of potential aggressive tax avoidance schemes employed by large United States MNEs in the European Union can be performed based on aggregate CbCR data made available by the IRS on its Statistics of Income Tax Stats webpage.⁴ Latest available data refer to returns filed for tax year 2020, reporting data such as the number of filers, revenues, profit, income taxes, earnings, number of employees and tangible assets. The database used in our exercise refers to the period between 2018 and 2020 – allowing us to capture data for three years after the reform and to provide a clear picture of the dynamic of United States MNEs' activity after the TCJA – to stabilize the ratios calculated and conclusions inferred.

These data provide complete coverage of the global distribution of profits and other indicators of economic activity for United States MNEs, aggregated at the country level. They also present an advantage over micro data at the company level (e.g. Orbis), because it has a better coverage of companies in lower-tax jurisdictions (especially tax havens), which is relevant for our analysis (Santomartino et al., 2022). Tørsløv et al. (2022) estimate that Orbis shows an average of only about 17 per cent of global profits, highly underrepresenting tax havens. Moreover, it includes all variables of interest for the analysis (profits, assets,

³ According to Dharmapala and Hines Jr. (2009), tax havens tend to be small, affluent and well-governed countries. They are also characterized for having very low tax rates (usually with ETRs below 10 per cent) and other tax attributes designed to appeal to foreign investors.

⁴ Aggregate CbCR data seeks to enhance transparency for national tax authorities by providing them with information to conduct transfer pricing risk assessments. The information reported by MNEs concerns to *aggregate* data, with separate information on each constituent entity in a jurisdiction being combined with no adjustment for transactions between constituent entities in the same MNE, as opposed to *consolidated* data, that treats the constituent entities of an MNE in a particular jurisdiction as a single economic entity. Data are based on CbCR made available annually by the IRS, specifically from Form 8975 – Country-by-Country Report and Form 8975 Schedule A – Tax Jurisdiction and Constituent Entity Information, available at www.irs.gov/statistics/soi-tax-stats-country-by-country-report (accessed 12 June 2023). Forms 8975 are required to be filed by certain United States ultimate parent entities of United States MNE groups with annual revenue of \$850 million or more. No specific information about a particular MNE can be inferred from the published data.



employees and revenues), and it is currently the only systematic source on the taxes effectively paid by MNEs.

OECD (2017) lists a number of potential tax risk indicators that can be derived from the information contained in an MNE's individual CbCR. With due adaptations, that information can also be used to build an overall picture of the level of BEPS-related risks posed by United States MNEs in an aggregate manner, mainly by exploring the following three tax risk indicators: ownership, profitability and ETR.

3. Ownership: the footprint of United States MNEs in particular jurisdictions

Analysing the patterns of ownership of United States MNEs in the European Union is a starting point for understanding if the activities of these MNEs within the European Union may be distorting the internal single market. Profits arising in any United States subsidiary go back to the ultimate parent entity as a dividend, which may trigger withholding taxes that have different treatment across European Union member States, incentivizing United States MNEs to structure their European activities in a particular way. But profits can also be shifted between different parts of an MNE (and, consequently, between different jurisdictions) using other forms of income (e.g. interest and royalties). In this case, profit-shifting opportunities can arise without a specific ownership structure. A more general analysis of the location of United States MNEs is useful to identify clusters of countries in which subsidiaries of these MNEs tend to be located.

According to information filed by United States MNEs with an annual revenue in excess of \$850 million – those subject to the proposed scope of the formulary apportionment tax reform – in each of fiscal years 2018 to 2020, there were on average 55,463 constituent entities resident in Europe ultimately owned by a United

States parent entity with a total of 1,416 United States MNE groups operating in the same region. Figure 1 shows how United States MNEs are spread across the European Union. The Netherlands, Germany and France are the member States with the largest numbers of reporting groups (974, 958 and 823, respectively).

It is expected, of course, that larger economies appear more frequently, since greater economic activity takes place in those countries. Thus we were already expecting to see significant numbers of MNE groups and subsidiaries in Germany, France, Italy and Spain – the member States with the largest numbers of reporting groups after the Netherlands. But, relative to their size, some other countries do appear to be more prevalent than expected (figure 1).

The undoubted preference for the Netherlands – by far the largest host of European Union subsidiaries of United States companies (6,067 in the reporting period) – may be explained for non-tax reasons. Nevertheless, considering the relative size of its economy, the disproportional use of this country seems likely to be related to its relatively favourable tax treatment. On average, each United States MNE reporting group present in the Netherlands has more than six subsidiaries operating within Dutch borders (with an average of three subsidiaries per MNE in the remaining member States). Luxembourg also features relatively heavily as a location for United States companies, followed, to a lesser extent, by Ireland and Belgium. The identification of this cluster of countries points to a degree of tax planning in determining location decisions, as these are among the European Union tax havens identified previously.

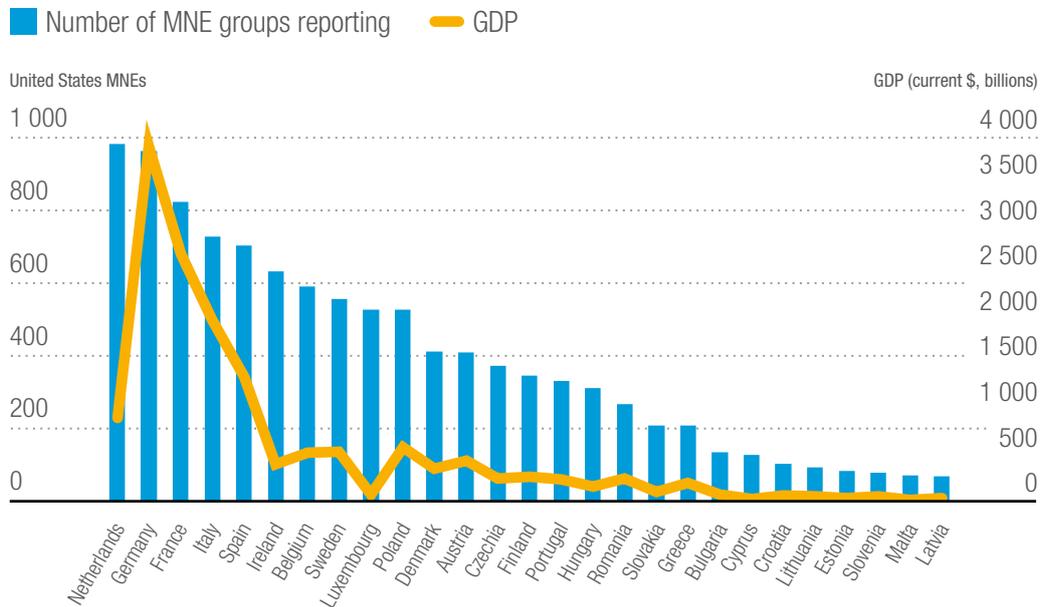
The decision to establish subsidiaries in these member States may be associated with the perceived idea that tax havens provide low tax rates (Dharmapala and Hines Jr., 2009; Keen and Konrad, 2013). If MNEs can shift profits to their subsidiaries in these (assumed to be) lower-tax





Figure 1

Number of reporting United States MNE groups in the European Union and country GDP, 2018–2020



Source: IRS Statistics of Income Division (www.irs.gov/statistics/soi-tax-stats-country-by-country-report), table 1A, Country-by-country report (Form 9975) for the number of MNE groups reporting; and UNCTAD Data Centre (https://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sCS_ChosenLang=en, accessed 17 March 2023) for GDP.

jurisdictions by underpricing sales to them and/or overpricing purchases from them, they can reduce their overall tax burden.

But tax competition and tax planning opportunities also take place through instruments other than the statutory tax rates, such as research and development (R&D) tax subsidies, patent box regimes and generous tax exemptions. Hence, in addition to the number of United States MNEs’ subsidiaries spread across the European Union, it is useful to assess the possible unequal predominance of specific sectors in specific jurisdictions. Table 1 shows the breakdown of the European Union subsidiaries of United States MNEs by member State and main business activity, allowing us to identify two important facts.

The first interesting fact is that United States MNEs concentrate their holdings mainly in the Netherlands and Luxembourg, which account for 38 per cent and 20 per cent of the total number of subsidiaries in the

European Union with “holding shares or other equity instruments” as their main business activity. This predominance could have been explained by the fact that these two member States serve as the residence of a larger absolute number of United States MNEs’ subsidiaries, as already stated. But, when looking at the relative weight that these subsidiaries represent in the total constituent entities resident in the corresponding jurisdictions, that possible justification collapses. The weight and importance that holding companies have in the Netherlands and Luxembourg are unrivalled, representing 56 per cent and 44 per cent (respectively) of all subsidiaries operating in these countries in other business activities. Malta also appears with a prominent position, with 31 per cent. This poses a higher risk of BEPS due to the high mobility of this activity: holding companies – legal entities with no or minimum substance and no real economic activities – are relatively easy to shift to



Table 1
Number of United States entities resident in the European Union by main business activity, 2018–2020

Tax jurisdiction	Number of entities	Main business activity								All other business activities
		Purchasing or procurement	Manufacturing or production	Sales, marketing or distribution	Administrative, management or support services	Provision of services to unrelated parties	Regulated financial services	Holding shares or other equity instruments	Dormant	
Austria	801	29	65	426	113	161	12	109	42	158
Belgium	1 472	85	209	699	304	296	26	114	85	336
Czechia	671	30	139	343	125	128	5	18	35	136
Denmark	917	25	91	449	115	181	20	154	47	208
Finland	575	18	69	334	86	116	18	28	29	129
France	3 717	138	799	1 706	517	605	66	524	204	874
Germany	5 029	232	981	1 868	922	850	111	863	365	1 352
Greece	314	9	23	164	47	79	9	7	31	49
Hungary	566	23	91	251	118	102	9	40	44	121
Ireland	2 385	87	185	529	303	447	159	365	321	768
Italy	1 969	84	396	1 014	279	374	58	143	108	458
Lithuania	141	6	10	54	40	25	7	5	14	34
Luxembourg	2 575	17	30	97	133	175	145	1 433	115	943
Malta	210	5	7	26	12	28	5	65	18	71
Netherlands	6 067	184	417	1 347	637	692	99	2 672	445	1 366
Poland	1 168	53	226	511	228	212	33	33	61	245
Portugal	629	13	54	347	88	132	12	33	36	78
Romania	428	25	75	189	104	96	6	8	26	97
Spain	2 014	50	274	903	293	406	72	221	148	410
Sweden	1 418	40	137	650	191	257	34	222	113	300

Source: IRS Statistics of Income Division (www.irs.gov/statistics/soi-tax-stats-country-by-country-report), table 1D, Country-by-country report (Form 9975).

Note: Data on Bulgaria, Croatia, Cyprus, Estonia, Latvia, Slovakia and Slovenia are missing because of the small number of forms on which they are based, in order to guarantee confidentiality. Tax jurisdiction detail exceeds the total number of entities because some of them may have more than one associated main activity business.

a different jurisdiction in order to benefit from a more favourable tax regime. Doing so entails simply relocating the corporate tax residence to a more business-friendly environment while continuing operations in the original location. For MNEs operating in higher-tax jurisdictions, establishing holding companies in tax-preferential jurisdictions has been a popular strategy to minimize the global tax burden, with legitimate tax advantages available in doing so. A concentration of holding companies can thus be evidence of certain tax planning structures. Holding companies established in the Netherlands and Luxembourg have access to extensive treaty networks and European Union Directives that exempt them from withholding taxes within the European Union while, simultaneously, benefiting from tax treatments that also exempt withholding taxes on outbound payments. These member States have been also particularly prone to granting access to reduced rates under tax rulings (Directorate-General for Competition, European Commission, 2016).

Other than through the manipulation of transfer prices, MNEs frequently shift profits across jurisdictions using channels such as financing structures (e.g. intragroup loans, internal debt shifting or cash-pooling schemes) and the location of valuable intangible assets (intellectual property (IP), such as trademarks or patents) (Dharmapala and Riedel, 2013; Mooij and Liu, 2018). Here lies the second interesting fact. OECD (2017), the handbook on CbCR, lists the reporting requirements that countries should follow and makes available a template on which the information by main business activity should be based. When comparing the template with the data made available under the United States CbCR, disaggregated information regarding the specific business activities of “research and development”, “holding or managing intellectual property” and “internal group finance” is missing and no justification is mentioned in the data files or in the

IRS’s disclaimer about data sources and limitations. We should not expect the reason to be confidentiality concerns, given the large number of reports filed and the fact that, of the 47 jurisdictions in the public OECD CbCR database with information by business activity,⁵ the United States is the only country that does not disclose this information in a disaggregated manner. Instead, it presents all the categories missing as “all other business activities”.

This aggregation of the statistics is a significant limitation, as it masks the effects of outliers and does not detail information that would be useful for the analysis of BEPS activities. Tax-deductible interest payments are one of the strategies that MNEs can apply to reduce tax liabilities in a particular jurisdiction. In the European Union, if a subsidiary in a higher-tax country pays interest to another group subsidiary in a lower-tax country, then the tax charge of the MNE will be lower, reflecting the difference in tax rates and tax systems in the two member States. Countries hosting a higher number of MNE subsidiaries engaged in “internal group finance” could, therefore, present a higher risk of BEPS.

MNEs can argue that their IP is owned by entities headquartered in tax havens, to which companies that sell their products in other (higher-tax) populous markets must pay royalties. Royalties accrue to the affiliate that holds the IP of the group in the tax haven (which probably offers a preferential regime for income derived from IP – the patent box regimes), enabling United States MNEs to exploit the mismatch resulting from inconsistencies in rules between member States. Determining the economic ownership of IP among the subsidiaries of an MNE can be challenging. IP ownership should be registered at the location where the asset was created, but the creation of IP assets is quite often funded by subsidiaries elsewhere in the group, through cost-sharing agreements. This makes it difficult to pinpoint which entity should maintain

⁵ The OECD releases aggregated and anonymized information on the global tax and economic activities of MNE groups headquartered in 47 jurisdictions (OECD Corporate Tax Statistics, table I – Aggregate totals by jurisdiction, accessed 12 June 2023). The latest year for which data are available is 2018.

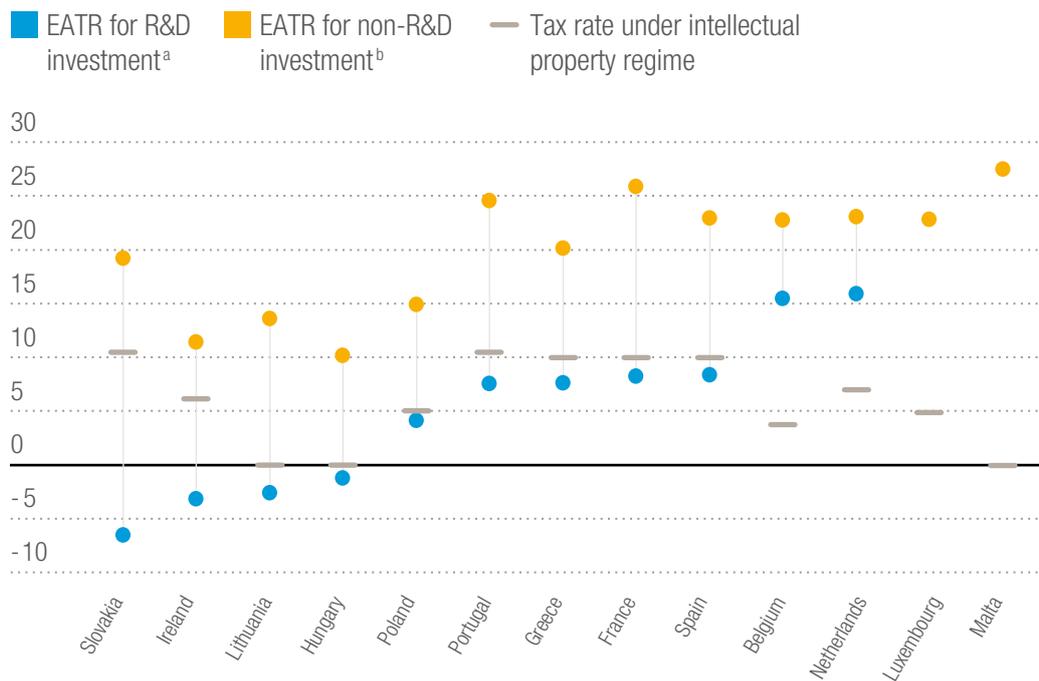


the legal ownership. Moreover, even if the question of initial ownership is solved, MNEs have a lot of leeway to change the ownership of an IP asset to lower-tax countries at a price that is not arm's length. This happens because, from an economic point of view, the transfer of all risks, rewards and rights deriving from IP ownership is not straightforward, as intangible assets are usually unique to the MNE and market prices for these transactions are not easy to establish. Hence, by shifting the ownership of intangible assets to subsidiaries in lower-tax jurisdictions or with favourable IP regimes, MNE groups can also lower their overall tax burden.

Currently 13 member States offer favourable IP regimes – already reviewed by the OECD and considered as non-harmful – that allow income from the exploitation of IP to be taxed at a lower rate than the statutory tax rate (figure 2). As some features of the preferential IP regimes can facilitate BEPS activities and, therefore, unfairly affect the tax base of other jurisdictions, the OECD applies a nexus approach, which requires a link between the income benefiting from the IP regime and the extent to which the MNE has undertaken the underlying R&D that generated the IP asset in the country of that IP regime. To assess the fulfilment of that requirement, more



Figure 2
Effective average tax rate for R&D investment in the European Union, 2021
(Percentage)



Source: OECD Corporate Tax Statistics, Effective tax rates for R&D (https://stats.oecd.org/Index.aspx?DataSetCode=CTS_CIT, accessed 22 April 2023) for EATRa for R&D and non-R&D investment and tax rates under IP regime; and Intellectual property regimes (https://qdd.oecd.org/subject.aspx?Subject=IP_regimes, accessed 21 April 2023) for the list of tax jurisdictions with an intellectual property regime.

Note: Only IP regimes reviewed by the OECD's Forum on Harmful Tax Practices were considered. The difference between the two EATRs provides an estimate of the preferential tax treatment for R&D investments in the member State, which measures by how much R&D tax incentives reduce the taxation of R&D investments that earn an economic profit.

^a Expenditure-based R&D tax incentives. It should be interpreted as an upper bound of the generosity and incentives provided by the tax system for the location of profitable R&D investments.

^b Comparable investment that does not benefit from expenditure-based R&D tax incentives.



than being able to identify the location of the entities with the “holding or managing IP” activities, it would be useful to know whether ownership of the IP is separated within the group and in a different jurisdiction than where the MNE’s activities gave rise to the IP (as “research and development”). If so, a greater number of IP registrations in certain countries can point to a possible use of this channel to engage in BEPS activities, because in order to access the preferential patent box regimes, the MNE should have substantial R&D activity effectively and actually carried out in the same jurisdiction. This is particularly important for Hungary, Lithuania, Ireland and Slovakia, which have the smallest – and negative – effective average tax rates (EATRs) for R&D investment.

As already stated, the disaggregated information needed to perform that assessment is not available, making it challenging to assess the true intention behind IP ownership transfers. However, from the OECD’s CbCR data we can calculate the average weight that “all other business activities” represent in the number of total entities per member States with the United States as a partner jurisdiction and with the information by main business activity disaggregated according to the OECD’s template. On average, other entities do not represent more than 9 per cent of the total companies. In the IRS CbCR data, the countries that deviate most positively from this ratio (used as a very loose proxy) are Luxembourg, Malta and Ireland, where other entities represent more than one third of all entities engaged in other business activities. These countries are, thus, the ones with an assumed higher relative percentage of entities engaging in intragroup activities, being better positioned to take advantage of the commonly used channels of profit shifting (finance structures and IP management). In these countries, MNEs can more easily relocate their activities and artificially rearrange intragroup payments to shift profits from higher- to lower-tax countries without actually relocating much of their real economic activity.

4. Profitability: the (dis)connection between profits and economic activity

Before the TCJA took effect in 2018, United States MNEs booked a disproportionate share of their worldwide foreign profits – profits booked outside of their headquarters country – in lower-tax locations (Clausing, 2020; Tørsløv et al., 2022). From figure 3, it is possible to assert that the situation has not changed since then. Considering individual tax jurisdictions, the top five countries in which large United States MNEs allocate profits – Switzerland (13 per cent), the United Kingdom (11 per cent), Singapore (10 per cent), Bermuda (9 per cent) and Cayman Islands (7 per cent) – are often identified in the literature as tax havens. Considering the European Union as a whole, the preference for allocating profits in the single market is clearly visible, as it captures almost one quarter of all foreign profits of United States MNEs. However, the individual contribution of each member State to the European Union’s global preponderance is quite disproportionate: almost three quarters of those profits were allocated solely in three countries – the Netherlands, Ireland and Germany. As Germany represents the largest European Union economy, the allocation to it of 7.9 per cent of United States MNEs’ European Union-wide profits is not surprising. The same, however, cannot be said for the Netherlands (35.7 per cent) and Ireland (30.7 per cent), the fifth and the tenth largest European Union economies, respectively. In fact, these countries alone rank fourth and sixth in United States MNEs’ preferred destinations for allocating foreign profits. Accumulated earnings are even more disproportionately reported, with the Netherlands and Luxembourg accounting for more than 75 per cent of the European Union total.

One of the first indicators that an MNE may be involved in BEPS-related activities is having earnings that are disproportionate and misaligned with their level of economic activity. At the aggregate level, this

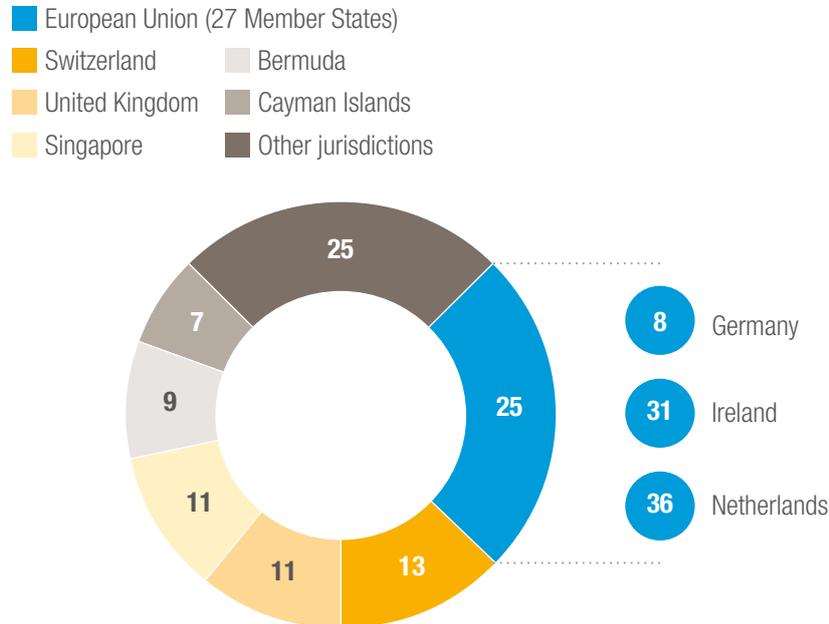




Figure 3

Foreign profit allocation of United States MNEs, 2018–2020

(Percentage)



Source: IRS Statistics of Income Division (www.irs.gov/statistics/soi-tax-stats-country-by-country-report), table 1A, Country-by-country report (Form 8975).

Note: Excludes foreign profits allocated to stateless entities and foreign-controlled domestic corporations. All computations are based on the subsample of profit-making jurisdictions of the data set, which excludes two reporting countries (Denmark and Malta). Numbers do not sum due to rounding.

requires assessing whether there are jurisdictions with significant profits but little substantial activity or jurisdictions with significant activities but low levels of profit. Both can indicate potential profit shifting and, thus, a tax risk. Table 2 show the allocation of United States MNEs’ profits across the European Union, employees and tangible assets in the 10 member States with higher profits.

The high concentration of foreign profits contrasts with the dispersion of employees and tangible assets. Despite evidence that MNEs shift the location of real economic activity in response to tax-rate differences among jurisdictions (Keen and Konrad, 2013), a substantial share of United States MNEs’ real activity remains in higher-tax countries, mostly large economies (Germany, Spain and France, mainly). This suggests that United States MNEs have

been able to reduce their tax liability by artificially shifting ownership and profits to lower-tax jurisdictions, where little real economic activity occurs – whether measured by employment, sales or investments in plant and equipment. They keep developing their profit-generating activities (e.g. manufacturing or production; sales, marketing or distribution; provision of services to unrelated parties; regulated financial services) in higher-tax countries while booking the corresponding profits in lower-tax countries. This is particularly visible in the case of the Netherlands, where there is evidence of limited real activity in comparison with the profits allocated therein. The share of tangible assets and employees located in tax havens – i.e. the *real* economic activity carried out there – is disproportionately low, compared to the profits reported there.



Table 2
Allocation of United States MNEs' profits, employment and tangible assets across the European Union, 2018–2020

Tax jurisdiction	Profit before tax (\$ thousands)	Share of European Union profits (%)		Number of employees	Share of European Union employees (%)		Tangible assets (\$ thousands)	Share of European Union tangible assets (%)		Rank
		Rank	Rank		Rank	Rank				
European Union, total	162 790 143		2 622 358		561 920 310					
Netherlands	58 049 229	36	172 004	7	6	70 541 902	13		4	
Ireland	49 948 153	31	162 354	6	7	105 628 971	19		1	
Germany	12 894 813	8	588 223	22	1	76 424 826	14		3	
Belgium	7 336 670	5	107 792	4	8	45 516 060	8		6	
Spain	5 322 033	3	198 443	8	5	23 067 176	4		8	
France	4 857 193	3	374 373	14	2	50 606 661	9		5	
Luxembourg	4 759 181	3	14 169	1	19	98 958 856	18		2	
Italy	4 115 619	3	203 691	8	4	27 817 476	5		7	
Sweden	3 497 474	2	62 268	2	12	8 693 218	2		10	
Hungary	2 958 951	2	70 310	3	11	4 760 488	1		14	

Source: IRS Statistics of Income Division (www.irs.gov/statistics/soi-tax-stats-country-by-country-report), table 1A, Country-by-country report (Form 9975).

Note: All computations are based on the subsample of profit-making jurisdictions of the data set, which excludes two reporting countries (Denmark and Malta).

To further assess the role that European Union tax havens play in United States MNEs' global activities, we computed two common profitability measures, namely the average ratio of pre-tax profits to tangible assets ("return on tangible assets") and to the number of employees ("return per employee") in different countries for the period under analysis. The profitability measures are computed by dividing the aggregate profits reported by all European Union subsidiaries of United States MNEs by the aggregate amount of tangible assets and the number of employees, in each country. The results are presented in figure 4.

Subsidiaries located in tax havens are, on average, far more profitable than subsidiaries located elsewhere. In these countries, the average return to tangible assets is roughly 66 per cent, which is more than twice the return for subsidiaries located in

other jurisdictions. Differences in returns on tangible assets within the tax havens countries are almost imperceptible, except for two clear outliers: Cyprus (229 per cent) and the Netherlands (85 per cent). Returns per employee – which can provide a representation of productivity, though not a complete measure – show an even larger difference: tax havens are jointly, on average, 12 times more profitable than the other countries. The average profit per employee in tax havens is \$249,000. Within this group, the countries that stand out above average are, in decreasing order, Cyprus (\$412,000), the Netherlands (\$337,000), Luxembourg (\$336,000) and Ireland (\$308,000). In this case, a worker from Cyprus is assumed to be almost 20 times more productive than, for instance, a German worker – a clear sign of misalignment of profits with economic activity.



Figure 4
Profitability measures of United States MNEs in the European Union, 2018–2020



Source: IRS Statistics of Income Division (www.irs.gov/statistics/soi-tax-stats-country-by-country-report), table 1A, Country-by-country report (Form 9875).

Note: All computations are based on the subsample of profit-making jurisdictions of the data set, which excludes two reporting countries (Denmark and Malta).



Finally, when assessing United States MNEs' profits, an additional aggregate measure is worth evaluating, respecting related-party revenues (i.e. revenues derived from companies within the MNE group). If earnings are largely derived from related-party revenues (in absolute terms or as a proportion of total revenues), that poses an additional risk, as it can indicate that profit is being shifted from other entities of the MNE (probably located in higher-tax jurisdictions) through inadequate transfer prices – one of the main channels through which MNEs shift profits.⁶ Only in six countries do revenues generated from related parties account for more than 50 per cent of the total amount of revenues: Cyprus (78 per cent), Luxembourg (70 per cent), Lithuania (66 per cent), Belgium (65 per cent), the Netherlands (64 per cent) and Ireland (56 per cent). Excluding Lithuania, all the remaining countries have been identified as potential European Union tax havens. This suggests that subsidiaries located in tax havens are particularly important for the provision of goods or services to affiliated companies, generating more than 50 per cent of their revenues through related-party transactions. This finding, combined with the higher profitability shown in some tax havens, may indicate a strategic location of revenues, aiming to shift profits to lower-tax jurisdictions.

5. Effective tax rate: comparing the ability to minimize taxes

The analysis performed so far represents an attempt to infer the extent to which United States MNEs engage in tax planning activities when they operate and undertake

investment in the European Union. The question is whether United States MNEs actually succeed in shifting profits and pay relatively low rates of tax on their activities, providing them a competitive advantage relative to European companies.

The statutory tax rate is just one of the several legal components of corporate taxation that determine the tax liability of MNEs, as the tax burden also depends strongly on the definition of taxable profits. These may differ from profits before tax as a result of capital and equity allowances, tax deductible interest payments, special tax regimes (e.g. R&D incentives or patent box regimes), special agreements between tax authorities and individual MNEs (tax rulings), and tax losses carry-forward rules. Hence, to truly assess the tax burden of MNEs, we need to calculate their ETR. Very low ETRs may serve as an indirect measure of profit shifting or an indicator of a tax haven. With the information included in the IRS CbCR data set, we cannot calculate the ETR for specific subsidiaries or for the corporate group as a whole, but we can assess it at a country level for the aggregated United States MNEs within scope.

To assess the tax liability, we consider “profit and loss before income tax”, a direct measure of taxable profit. The average ETR per country is then proxied by the ETR of the United States MNEs' affiliates resident in that country, computed as foreign income taxes paid relative to pre-tax profit.⁷ Note that these figures represent taxes paid only in the European Union – they do not include any further taxes paid in the United States or in any other country by the MNE groups considered. As in the remainder of the analysis, ETRs are

⁶ Empirical evidence suggests that the most common mechanism MNEs use to shift profits (about 70 per cent of them) is through strategic distortion of transfer prices on intragroup trade (Heckemeyer and Overesch, 2013).

⁷ The “income tax paid” represents the actual amount of cash paid in taxes by the MNEs in a particular financial reporting year. However, it is not necessarily directly related to the profit before tax reported in that same financial reporting year, as it considers payments of tax with respect to profits earned in earlier periods, advanced payments made in the current year and withholding tax incurred on payments. As for the “income tax accrued”, it is more related to the amount of profit before tax reported in a specific period, but it does not represent the true tax burden borne by the MNEs. There are a number of valid reasons why the figures for these two variables may differ for a particular fiscal year. It might be an indicator of possible tax risk only if the level of tax paid in a jurisdiction is materially lower than the level of tax accrued and/or if this difference persists over time. Nonetheless, if we were to consider the income tax accrued, it would not alter the results.



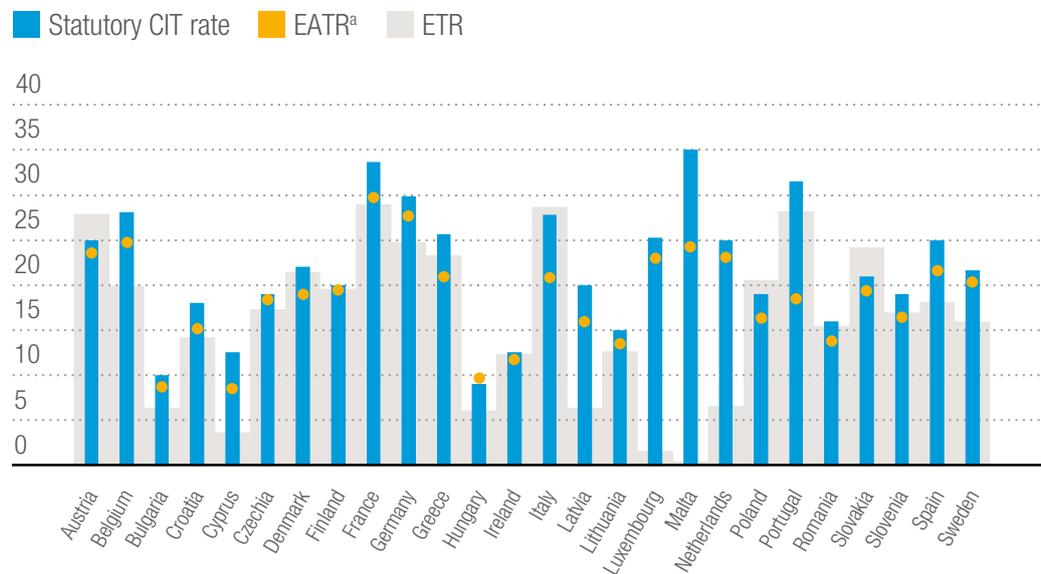
calculated on a country-by-country basis and averaged over the three available years (2018 to 2020). Also, as taxes are mostly paid only by profitable companies, only entities with positive profits and tax payments were considered when computing the ETR. Results are shown in figure 5.

This analysis – based on aggregate data concerning only large companies, obliged to participate in CbCR – seems to confirm that large companies have the ability to exploit their greater resources to reduce the tax burden and engage in more sophisticated tax planning strategies, enabling them to benefit from lower ETRs. This is especially true not only in the member States recording an exceptionally lower ETR, but also when a significant difference is observed between the headline tax rate and the ETR.

The differences in the taxation of corporate profits can partially explain some of the cross-country differences in profitability identified earlier, as some of the most profitable member States (measured in return per employee and return on tangible assets) are also the ones with low ETRs. Seven member States present an ETR below 10 per cent: Bulgaria, Cyprus, Hungary, Latvia, Luxembourg, Malta and the Netherlands. The first four already have low statutory CIT rates, which helps to explain the resulting lower ETRs. This leaves three prominent cases: Luxembourg (1.6 per cent), Malta (0.4 per cent) and the Netherlands (6.6 per cent). In addition to having low ETRs, these countries have some of the highest statutory CIT rates, well above the European Union average



Figure 5
Effective tax rates of United States MNEs in the European Union, 2018–2020
 (Percentage)



Source: IRS Statistics of Income Division (www.irs.gov/statistics/soi-tax-stats-country-by-country-report), table 1B, Country-by-country report (Form 9975) for ETR; OECD Tax Database, table II.1 (https://stats.oecd.org/Index.aspx?DataSetCode=CTS_CIT, accessed 17 March 2023) for statutory CIT rate; and OECD Corporate Tax Statistics, Effective tax rates (https://stats.oecd.org/Index.aspx?DataSetCode=CTS_CIT, accessed 17 March 2023) for EATR.

Note: All computations are based on the subsample of profit-making entities of the data set. Data on Estonia are missing (probably to ensure confidentiality given the small number of forms on which the information is based).

^a The EATR reflects the average tax contribution a firm makes on an investment project earning above-zero economic profits. It is constructed as a weighted average across finance- and asset-specific EATRs, under a country-specific interest and inflation rates scenario.



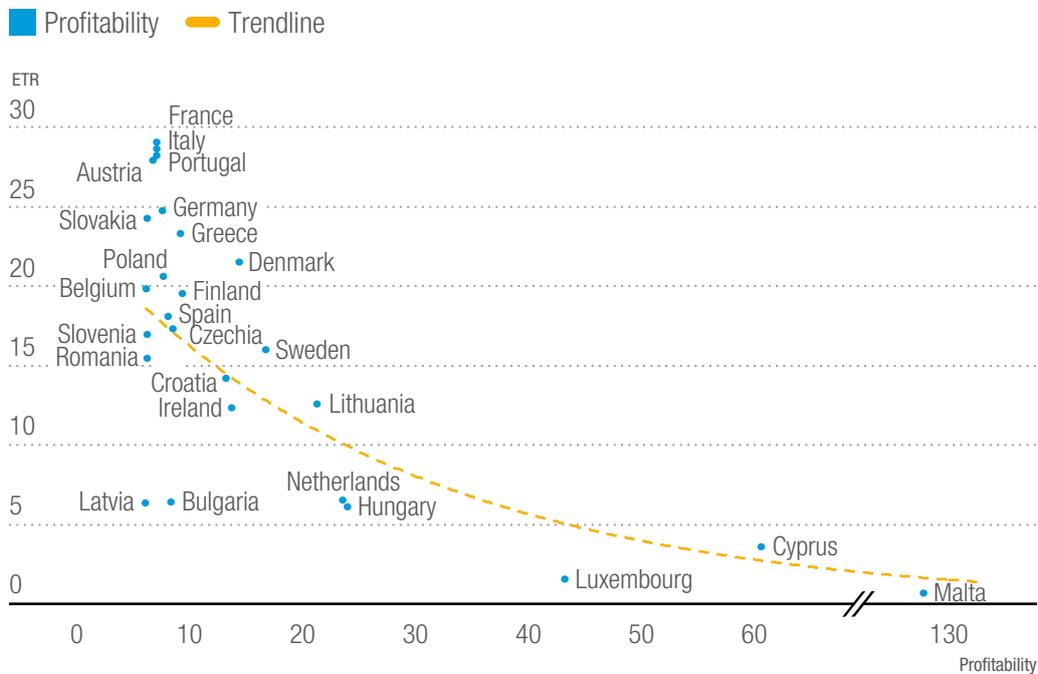
(21.8 per cent), hence having the highest percentage point differences between the two rates. They are also the top three countries where there is a greater difference with the country-specific EATR estimated by the OECD, which reflects the average tax contribution that all companies (not only those from the United States) make on an investment project that earns profits. As this also happens on average across the European Union, it highlights the fact that United States MNEs do have, on average, lower values of consolidated ETR in the European Union, demonstrating that they are able to reduce their European Union-wide taxable profit rather than simply shifting it between European Union countries.

In addition to the fact that jurisdictions with significant profits and or/ accumulated earnings usually have a low level of tax accrued, the literature typically finds a

negative correlation between tax rates and profitability, with companies in relatively lower-tax jurisdictions being more profitable than companies in higher-tax jurisdictions (Garcia-Bernardo et al., 2021; Keen and Konrad, 2013). Based on a profit-to-revenues ratio, figure 6 supports this growing view, especially in Cyprus, Hungary, Luxembourg, Malta and the Netherlands, which have profitability ratios above 20 per cent while applying ETRs below 10 per cent. As sales are measured on the basis of where they originate (instead of their final destination), sales from subsidiaries in lower-tax jurisdictions increases their profitability compared with that of other subsidiaries located in higher-tax countries. It is then not surprising that lower-tax jurisdictions have higher ratios of revenues (especially related-party revenues) than their level of employment or assets would suggest.



Figure 6
Profitability of United States MNEs in the European Union by ETR, 2018–2020
 (Percentage)



Source: IRS Statistics of Income Division (www.irs.gov/statistics/soi-tax-stats-country-by-country-report), table 1B, Country-by-country report (Form 9875).

Note: All computations are based on the subsample of profit-making entities of the data set. Data on Estonia are missing (probably to ensure confidentiality given the small number of forms on which the information is based).



Finally, evidence from United States MNEs suggests that lower tax rates indeed offer powerful incentives to inbound foreign investment and tax avoidance activities, sustaining the extensive literature on FDI tax sensitivity (Bolwijn et al., 2018; Keen and Konrad, 2013). Countries are eager to attract foreign capital and the economic benefits that accompany them, and, for that, some rely on low tax rates or other tax attributes designed to appeal to foreign investors. From 2018 to 2020, about 88 per cent of United States FDI stock in the European Union was located in merely three countries: the Netherlands (43 per cent), Luxembourg (33 per cent) and Ireland (12 per cent), incidentally countries with lower ETRs or aggressive IP tax regimes and large shares of United States MNEs' foreign profits booked.⁸ These high shares reflect the investment that is held in investment funds and holding companies in these countries. The level of FDI directed to these countries represents more than half of their economic weight, with Luxembourg being the most prominent case – net FDI inward from the United States represents more than 800 per cent of its GDP. This strongly indicates the use of aggressive tax practices to attract investments and income (acting as offshore investment hubs).

6. Conclusion and policy considerations

In performing the tax risk analysis, we ought to recognize that most of the inferences reached can be explained by non-related BEPS reasons. However, when taking in consideration all of the tax risk indicators addressed, it is hard not to attribute at least a part of United States MNE activity to tax avoidance practices.

United States CbCR data allow us to assess profit-shifting activities of United

States MNEs, providing a clear indication that their activity in the European Union is distorting the single market. United States MNEs have been exploiting the differences in the 27 member States' tax systems and relying on European tax havens to carry out their activity under a tax-friendly environment. Not only is income earned locally taxed at favourable rates, but tax havens also facilitate the avoidance of taxes that might otherwise have to be paid to other member States.

Of the seven European Union tax havens commonly identified in the literature, the Netherlands and Luxembourg (and Ireland, to a lesser extent) appear to be the ones with a higher level of United States MNEs' BEPS activity, highlighting the fact that better-governed countries – measured by political stability, government effectiveness, rule of law and the control of corruption – can be attractive offshoring locations (Dharmapala and Hines Jr., 2009). They are the countries that attract large amounts of FDI and profits from United States MNEs, while applying low ETRs and showing little real economic activity (measured by sales, employment or assets).

The analysis performed also shows evidence that United States MNEs have more subsidiaries in these tax-friendly countries than would be expected by the size of their economies. Subsidiaries in European Union tax havens are much more profitable than those in non-tax haven countries, which can be explained by the disproportionate large share of profits reported in tax havens and the small fraction of economic activity (tangible assets and employees). Of the global profits reported in the European Union, 36 per cent rests in the Netherlands and 31 per cent in Ireland. Offshore centres such as these have higher levels of tax avoidance activities either because of low taxes on

⁸ FDI stock data were retrieved from Eurostat, EU direct investment positions by country, ultimate and immediate counterpart and economic activity (BPM6), available at https://ec.europa.eu/eurostat/databrowser/view/BOP_FDI6_POS__custom_6040063/default/table (accessed 8 March 2023). Data on Austria, Cyprus, Malta and Sweden are not available because of confidentiality concerns and hence was not accounted for. It would be interesting, however, to know the percentage of FDI from United States MNEs in Malta, given the high incidence of holding companies in this country.



corporate profits or exemptions from taxation certain types of payments received by a company from its foreign subsidiaries.

Finally, these tax havens are also used as gateways through which United States MNEs channel profits out of the single market (Hakelberg, 2016). They have been identified in recent literature on profit shifting as a way for United States MNEs to shift their profits to non-European Union offshore centres, serving as conduit tax havens that facilitate profit shifting to non-European Union havens, such as the Bermudas (Tørsløv et al., 2022), by using the differences of tax systems within the single market and distorting intra-European Union competition.

The analysis suggests then that additional policy efforts must be put in place – especially in the European Union – to further reduce profit shifting by MNEs. Extending the practice of addressing tax havens outside the bloc to offshore financial centres inside the bloc would be a first step. The European Union must hold European countries up to the same level of scrutiny as non-European countries as regards harmful tax practices or favourable aggressive tax-planning practices.

This evidence concerning MNEs' profit-shifting activities supports the European Commission's most recent tax agenda for business taxation in the 21st century, the BEFIT initiative (European Commission, 2023). If carefully designed, this initiative can help to fulfil the three principles that the BEPS Project has been trying to achieve: establish coherence of corporate tax rules, realign substance with taxation rights and increase tax transparency.

Continued delay in implementing a formulary apportionment approach in the European Union will continue to allow aggressive tax planning behaviour. The European Union, a large financial and consumer market that accounts for an important fraction of United States MNEs' global sales, should be able to translate market size into political power and impose tax

avoidance measures without risking the United States presence in the single market.

Implementing a new corporate tax system implies reassessing the trade-off between tax autonomy and fiscal neutrality. The question is how much tax autonomy can be allowed without interfering with the European Union's goals of free trade and competition.



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