Taxing Polluters: What is the Impact of a Global Minimum Tax on the Extractive Sector?

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This report assesses the potential and limitations of applying the OECD / G20 global minimum tax (Pillar Two) to the extractive sector, a high-profit and high-emission industry at the center of climate and development debates. Using country-by-country data from 27 major extractive multinationals operating in 165 jurisdictions, we estimate the revenue that could be raised under different minimum tax rates and examine how outcomes vary depending on policy design and firm behaviour.

Our findings show that a 15% global minimum tax on the extractive sector would generate modest revenues, around €17 billion annually when extrapolated globally. However, the revenue potential increases sharply with higher rates, surpassing €40 billion at a 30% rate and €100 billion at 40%. These gains, however, are highly concentrated among few jurisdictions and firms. Low-tax jurisdictions and headquarter countries stand to gain the most, while resource-rich countries – despite hosting extraction and bearing its costs – capture relatively little.

Design choices critically shape the effectiveness of the reform. The self-enforcing design of Pillar Two disincentivizes profit shifting and can boost revenues through behavioural responses. At the same time, substance-based carve-outs reduce revenues by over 20%, and political concessions, such as the G7's decision to exempt US multinationals from part of the enforcement mechanisms, further undermine the system's reach.

Overall, while the global minimum tax offers a framework for reducing tax avoidance and mobilising fiscal resources from the extractive sector, its current design—characterised by carve-outs, exemptions, and uneven implementation—risks limiting both its fairness and effectiveness. Moreover, it is not well suited to drive climate action directly. More targeted tools, such as carbon deficit collection, are better placed to address the environmental footprint of polluting industries.

Introduction

As governments accelerate the **transition to low-carbon economies** and confront the **escalating costs of climate change**, the use of **tax policy** to advance environmental goals is gaining renewed prominence. Well-designed taxation not only **shapes corporate behaviour** but also mobilises **public revenue**—both essential in addressing climate and environmental challenges.

In this context, sectors with high emissions and environmental externalities are coming under increasing scrutiny, particularly where corporate revenues are closely tied to polluting activities. Among these, the **extractive industry** stands out. Oil, gas, and mining companies not only generate **substantial profits** but also impose **significant social and environmental costs** on producing countries and communities. This raises urgent policy questions: **are extractive multinationals paying their fair share?** And **which tools are best suited** to ensure that taxation reflects both the sector's profitability and its environmental footprint?

Recent developments in international tax cooperation offer new instruments to address these questions. The **OECD/G20 Global Minimum Tax** (Pillar Two) establishes a **15% minimum effective tax rate for large multinationals** and introduces a **self-enforcing logic**: if a host country does not collect sufficient tax, other jurisdictions, including where parent companies are based, can step in and recover the difference. This creates both new incentives and expanded policy space for reform of multinationals' taxation.

At the same time, existing exceptions and **recent political developments may limit the scope of these ambitions**. In June 2025, the G7 agreed to effectively exempt US multinationals from key enforcement mechanisms. This decision risks weakening the global minimum tax's ability to operate as a cohesive and universal framework, especially if further concessions are made during implementation.

This study explores the **potential and limits** of applying an **increased global minimum tax to the extractive sector**. It assesses how much revenue could be raised, which jurisdictions would benefit, and how carve-outs, firm behaviour, and exemptions may shape outcomes. In doing so, it aims to inform current debates on climate finance, international tax reforms, and the role of fiscal measures in environmental policy.

Background: Where Do We Stand on the Global Minimum Tax?

The Pillar Two Agreement

The **OECD/G20 global minimum tax**, known as Pillar Two, establishes a **15% minimum effective tax rate** for large multinational corporations with **annual revenues above €750 million**. If a firm's profits are taxed below this rate in a given jurisdiction, other countries can apply "top-up" taxes to bring the effective rate up to the minimum. The rules rely on a three-tier mechanism:

- **Qualified Domestic Minimum Top-up Tax (QDMTT)**: The jurisdiction where the profits were taxed below the 15% minimum rate in the first place has the priority to collect the relevant top-up taxes.
- **Income Inclusion Rule (IIR)**: If the multinational is not subject to a QDMTT in the low-tax jurisdiction, then the firm's headquarter country can collect the top-up taxes.
- **Under-Taxed Profits Rule (UTPR)**: If the multinational is subject neither to a QDMTT in the low-tax jurisdiction nor to the IIR in its headquarter, then top-up taxes may be split between countries where it has real activities. Each country's share of the pie is derived from its share of the total employees and assets of the multinational. It acts as a backstop, enabling other countries where the firm operates to apply the top-up if the first two rules don't apply.

Implementation Status

The initial political agreement on Pillar Two was reached by **nearly all members of the OECD/G20 Inclusive Framework in 2021** (see OECD (2021)). Since then, the OECD has continued to issue additional commentary and administrative guidance to support implementation.

A major milestone was the adoption of **EU Council Directive 2022/2523** in December 2022, requiring **EU Member States** to implement the three core components of Pillar Two. The QDMTT and IIR came into effect in 2024, while the UTPR entered into force in 2025. Four countries—Estonia, Latvia, Lithuania, and Malta—opted to delay implementation by up to six years.

Implementation has not been limited to the EU: 57 jurisdictions have adopted a QDMTT, 45 have implemented the IIR, and 32 have enacted the UTPR. In total, **59 jurisdictions have adopted at least one of the three Pillar Two rules**.

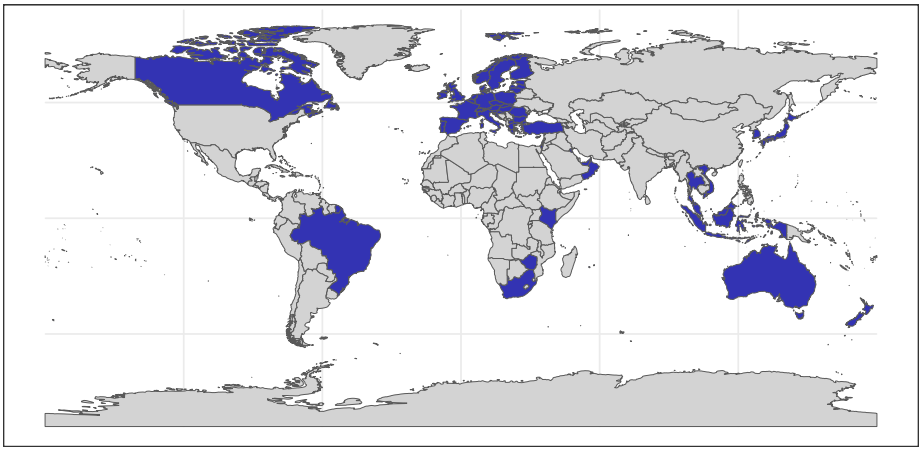


Figure 1: Countries implementing any of the three Pillar Two rules

Source: BDO Global's and PwC's Pillar Two implementation trackers. BDO Global's Pillar Two implementation tracker can be found here; PwC's tracker is available here.

However, the future of the Pillar Two framework may be shaped by significant political shifts. In June 2025, **G7 finance ministers endorsed a "side-by-side" approach under which the United States' Global Intangible Low-Taxed Income (GILTI)** regime is deemed equivalent to Pillar Two's IIR. This effectively exempts US-parented multinationals from both the IIR and UTPR, regardless of whether their profits are taxed domestically or abroad.

This decision risks undermining the enforcement logic of the global minimum tax. Pillar Two is structured as a **jurisdiction-by-jurisdiction system**: if income is taxed below the 15% minimum in any country, top-up taxes can be triggered. By contrast, GILTI applies a **blended global rate**, and granting it equivalence allows US firms to escape top-up taxation, even when they book large profits in low-tax jurisdictions. The result is a **two-tier system**: while non-US multinationals are subject to the full suite of Pillar Two rules, US firms receive de facto exemptions. This asymmetry not only threatens the integrity of the framework but also risks distorting global competition.

Application to the extractive sector

While other proposals agreed upon under the OECD/G20's supervision specifically excluded the extractive industry, **Pillar Two** provides no such general exemption.[1] Under the current rules, **multinationals in the oil, gas, and mining sectors with**

1. Pillar Two does exclude government entities, but this does not imply that the large state-owned firms prevalent in the extractive industry are out of scope. For instance, Saudi Aramco reports in its 2024 consolidated financial statements (link, Note 8(f), page 43) that it had to conduct an analysis of its exposure to the global minimum tax. In this specific case, the assessment however concluded to no "material" exposure.

global consolidated revenues above €750 million are, in principle, **subject to a minimum effective tax rate of 15%** in every jurisdiction where they operate.

However, as highlighted by the **UN Tax Committee (2024)**, implementing Pillar Two in this sector raises several **specific challenges**:

- **Sector-specific tax arrangements:** Extractive firms often operate under fiscal regimes that differ significantly from standard corporate tax systems. These may include extended loss carry-forward provisions or production-sharing agreements, where a portion of output is allocated to the host government in lieu of conventional taxes. These arrangements can complicate the measurement of effective tax rates under Pillar Two, especially if they are not formally recorded as corporate income tax payments.
- **Substance-based carve-outs:** The OECD's Model Rules include carve-outs for economic substance, exempting a portion of income related to tangible assets and payroll. Given the capital- and labor-intensive nature of the extractive industry, these carve-outs could significantly reduce the tax liability of extractive firms under the minimum tax framework.
- **Stabilized fiscal regimes:** In many resource-rich countries, extractive firms benefit from long-term fiscal stabilization agreements that lock in tax treatment for decades. These legal guarantees may limit governments' ability or willingness to adopt Pillar Two rules, potentially undermining implementation.

Data and Methods

This study builds on a unique dataset of **voluntarily disclosed country-by-country reporting (CbCR)** by **27 large extractive multinationals**, covering operations in **165 jurisdictions** between **2017 and 2023**. These reports provide detailed jurisdiction-level information on **revenues, profits, taxes paid, tangible assets**, and **employment**. The dataset also includes **payment-to-government disclosures** [2] that extractive firms listed in the **EU, UK, Norway, and Canada** have been required to publish since 2016.

2. Our measure of taxes aims to include all and only the payments that factor into the computation of the effective tax rate under the OECD's Model Rules. However, as noted by UN Tax Committee (2024), extractive companies often face sector-specific tax instruments. In addition to corporate income taxes, these firms may also pay royalties, license fees, or allocate a portion of their production to the government.

According to UN Tax Committee (2024), a payment should be considered a tax under Pillar Two if it is either based on a firm's profits or acts as a substitute for a corporate income tax.

In this study, we rely on the taxes reported in country-by-country reports for three key reasons. First, the comparison of country-by-country reports with payments to governments suggests that this measure excludes royalties and payments as part of production-sharing agreements. Second, the comments provided by several firms alongside their reports suggest that they clearly distinguish corporate income taxes from other instruments. Third, given our high effective tax rates in resource-rich countries, the omission of relevant instruments is unlikely to substantially over-estimate the revenue gains.

Effective tax rates are estimated in line with the **OECD's Pillar Two Model Rules**, incorporating both **current and deferred tax expenses**. **Top-up taxes** are simulated under four different minimum tax rate scenarios: **15%, 25%, 30%, and 40%**.

The study further accounts for:

- **Carve-outs** based on **substance-based income exclusion** rules for **local employment and assets**
- **Behavioural responses** using **semi-elasticities of profit shifting** in the range of $\mathbf{-0.8}$ to $\mathbf{-1.0}$[3]

Revenue is allocated across jurisdictions using the prioritisation order set out in the Pillar Two framework:

1. **Qualified Domestic Minimum Top-up Tax (QDMTT)**
2. **Income Inclusion Rule (IIR)** in the parent jurisdiction
3. **Under-Taxed Profits Rule (UTPR)** based on the multinational's distribution of tangible assets and employees

To assess **representativeness** and **extrapolate** findings to the full sector, the study compares the sample to firm-level data from **Compustat Global and North America**: the sample represents approximately **17%** of global profits and sales in the extractive sector, around **11%** of oil and gas production, and **14%** of mining production. It also accounts for **20–22%** of profits and sales, and **14–16%** of production by non-US extractive firms.

All extrapolations assume that **revenue gains scale proportionally with global pre-tax profits**.

For full methodological details, see the Appendix.

Key Results

1. At the group level, extractive firms, especially in oil and gas, face relatively high effective income tax rates

Over the past several decades, **extractive multinationals have faced higher effective tax rates compared to firms in other industries**. This trend likely reflects the

3. Several studies have found a semi-elasticity of profits with respect to tax rate differentials of about -0.8% to -1%. This is the case of Dharmapala (2014), Heckemeyer and Overesch (2017), Johansson et al. (2017), or Beer, Mooij, and Liu (2020). In other words, a one-percentage-point increase in the tax rate of a jurisdiction with respect to other jurisdictions is associated with a 0.8% to 1% decrease in pre-tax profits booked by multinationals in this jurisdiction.

use of **sector-specific fiscal instruments** such as royalties and production-sharing agreements, particularly in resource-rich countries.

Figure 2 shows that the opposite was true until the early 1970s, when there was a sharp spike in the average effective tax rate of the oil and gas industry, possibly linked to the oil shocks. After declines in the 1980s and 1990s, the rate **stabilised around 35–40%.** Over the past three decades, the effective tax rate for the oil and gas sector has remained stable, in contrast to the downward trend observed across other sectors.

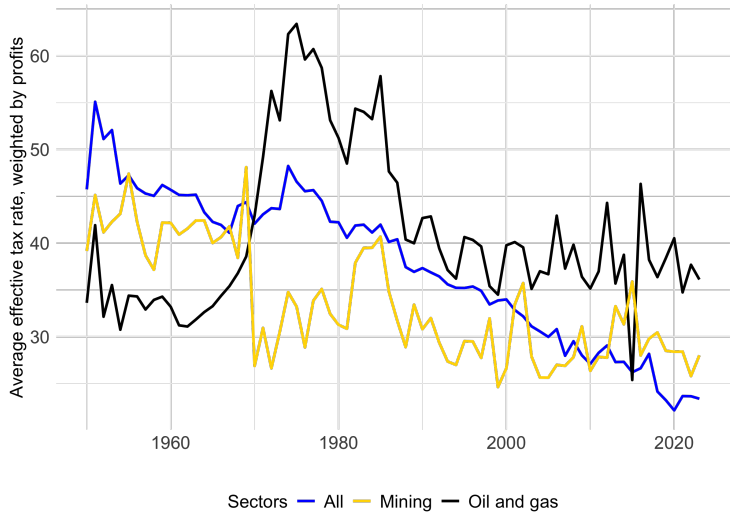


Figure 2: Sector-specific average effective tax rates over time

Note: This graph plots the average consolidated effective corporate income tax rate of three groups of listed firms: firms from any sector, firms mainly engaged in mining activities (NAICS code starting with 212), and oil and gas firms (NAICS code starting with 211 or equal to 324110). For each group of firms and each year, we sum the pre-tax profits and corporate income taxes reported by the firms in their consolidated financial accounts. We then divide aggregate taxes by aggregate profits, which results in an average effective tax rate weighted by pre-tax profits.

Source: Compustat Global and Compustat North America.

2. Within multinationals, core extractive affiliates tend to be taxed more heavily than non-extractive ones

The analysis shows that **extractive affiliates are generally subject to higher effective tax rates** than other entities **within the same multinational group**. This suggests that the core extractive activities are more likely to be taxed in alignment with their profits, especially in jurisdictions where resources are located. Conversely, non-extractive affiliates are more likely to benefit from low-tax environments and aggressive tax planning.

These differences are reflected in Figure 3, which decomposes the effective tax rates faced by extractive firms at the country level between extractive and non-extractive activity as well as between the mining and oil and gas sectors. Extractive activities are associated with higher income tax rates on average. **Within extractive activities, effective tax rates are significantly lower in the mining sector compared to the oil and gas sector.** This graph also shows that **large amounts of profits are still booked in countries with very low effective tax rates** such as Singapore, Switzerland, and the Bahamas at the bottom-right of the chart.

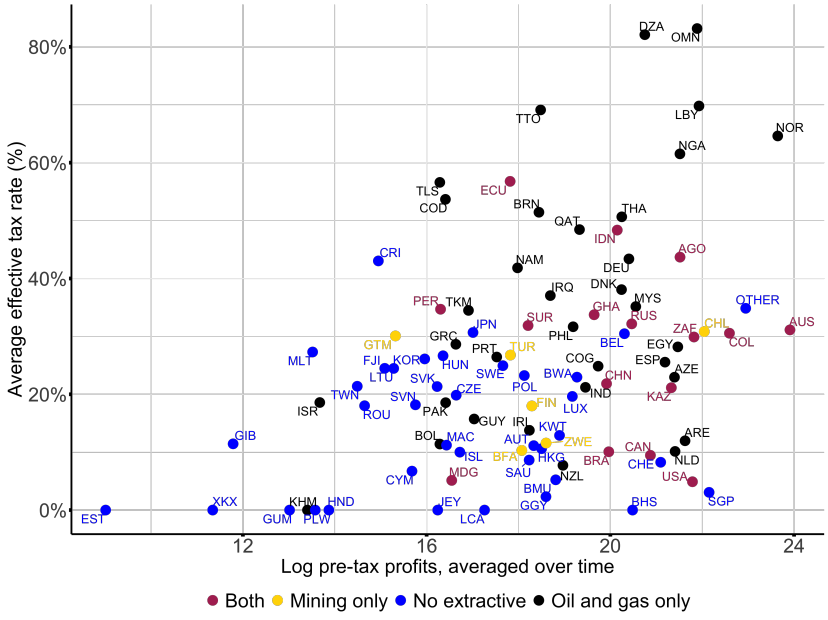


Figure 3: Effective tax rates by country and type of activity

Note: Each dot on this graph corresponds to a country or tax jurisdiction. The y axis shows the average effective tax rate observed in country-by-country reports, weighted by pre-tax profits. The x axis shows the log of pre-tax profits recorded each year on average by all firms in our sample. Thanks to data on payments to governments, we split locations into four groups: no extractive activities (by firms in our sample, in blue), oil and gas extraction only (in black), mining only (in gold), and both oil and gas and mining (in red).

Source: Voluntarily published country-by-country reports; reports on payments to governments.

3. Significant amounts of low-taxed profits still persist in tax havens where no extraction occurs

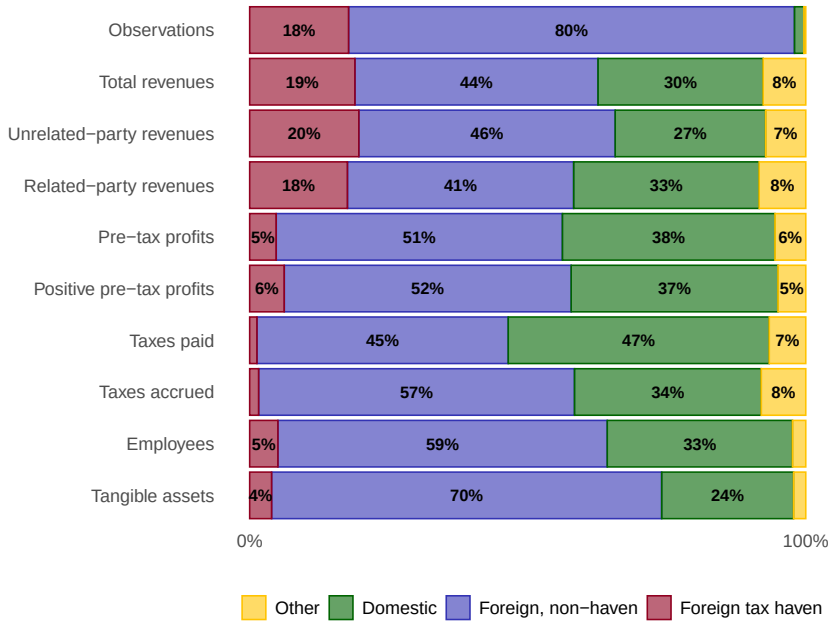
Profit shifting appears less extreme than in other sectors, yet it is far **from absent**. As shown in Figure 4, this study categorises jurisdictions into four groups — *domestic*, *foreign non-haven*, *foreign tax haven*, and *unclassified* — and finds the share of key financial and operational indicators (revenues, pre-tax profits, taxes paid, em-

ployment, and tangible assets) across these groups[4]. Panel 4a relies on the country-by-country reports voluntarily published by extractive firms, while Panel 4b **benchmarks them against the OECD's aggregated country-by-country report statistics**, which gather **all sectors**. It finds that:

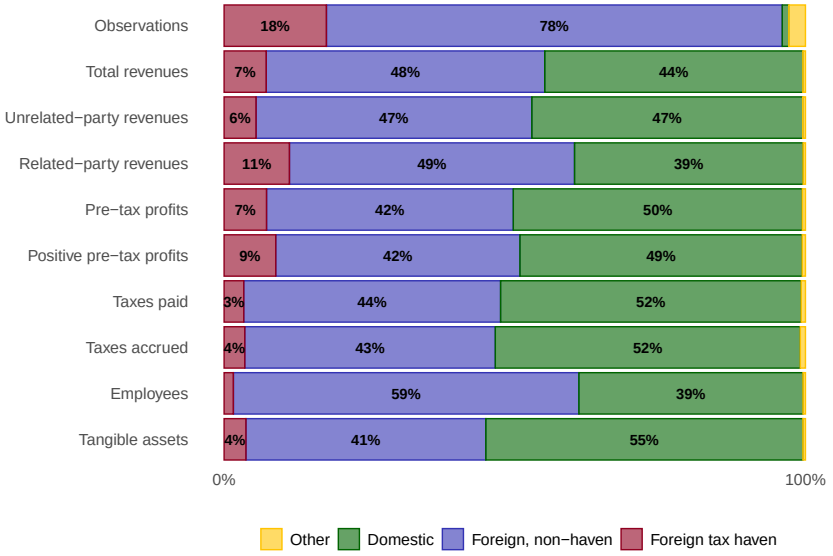
- **The share of foreign tax havens is broadly aligned with the cross-sector dataset.** However, in the cross-sector statistics, tax havens account for a slightly higher proportion of related-party revenues (11%) than in other revenue categories (6–7%). For extractive firms, this distinction is less pronounced (18% vs. 19–20%).
- **Effective tax rates are lower in foreign tax havens**. In our sample, these jurisdictions account for 6% of positive pre-tax profits but less than 2% of taxes accrued. A similar trend is seen in the cross-sector data, where tax havens represent 9% of pre-tax profits versus 4% of taxes accrued.
- **However, evidence of profit shifting through the misalignment between profits and real activity[5] is relatively limited among extractive firms.** In our data, foreign tax havens account for 6% of pre-tax profits, but 5% of employees and 4% of tangible assets. This contrasts with cross-sector patterns, where tax havens account for 9% of profits but only 3% of employment and 4% of tangible assets.
- **Similarly, the activities of extractive multinationals in foreign tax havens appear as much less profitable than in the other jurisdictions.** Their weight in pre-tax profits is substantially lower than in revenues (5% versus 19%). In aggregated statistics for all sectors, profitability in foreign tax havens is in line with the other jurisdictions since their share of total revenues and pre-tax profits are both around 7%.

4. The analysis focuses on the 2021 income year and restricts the sample to multinationals (or headquarter countries) reporting activity in at least 20 jurisdictions to ensure meaningful categorisation of partner countries.

5. The misalignment literature (e.g.,Guvenen et al. (2022), Aliprandi et al. (n.d.)) exploits the differential weight of low-tax jurisdictions in pre-tax profits and real economic activity indicators to estimate profit shifting. These studies generally find that tax havensare largely over-represented in pre-tax profits relatively to production factors, such as employment or tangible assets.



(a) In country-by-country reports published voluntarily by extractive firms



(b) In aggregated country-by-country report statistics

Figure 4: Distribution of the activities across jurisdiction groups

Note: "Domestic" corresponds to observations for which the affiliates are located in the same jurisdiction as the ultimate parent entity; "Foreign tax haven" means that the partner jurisdiction is distinct from the headquarter country and classified as a tax haven by Tørsløv, Wier, and Zucman (2022); "Foreign, non-haven" designates any other well-identified partner jurisdiction distinct from the headquarter country; "Other" corresponds to unidentified partner jurisdictions, such as continental aggregates for instance.

4. Revenue potential of an increased global minimum tax on the extractive sector is modest, unless increases are very high

Within our sample, applying a **15% minimum rate** would generate total top-up taxes of **€3.34 billion annually** for **2022**, as shown in Table 1. This figure **changes by increasing the tax rate**:

- Increasing the rate from 15% to **25%** would yield an additional **€5.63 billion** (**+170%**).
- Raising it to **30%** would increase gains by **€9.39 billion** (**+280%**).
- Raising it to **40%** would lead to **€22.15 billion** more in revenue (**+700%**).

Year	Revenues at 15%	15% to 25%	15% to 30%	15% to 40%
2019	1.22	1.97	3.35	8.11
2020	0.96	1.63	2.57	6.93
2021	1.68	3.10	5.10	14.26
2022	3.34	5.63	9.39	22.15
2023	1.58	2.89	4.74	12.08

Table 1: Incremental revenue gains for various minimum rates (billion EUR)

When extrapolated to the **entire extractive sector**, global revenues from a **15%** minimum tax could exceed **€17 billion annually**, rising to nearly €**50 billion** at a **25% rate**, €**66 billion** at a **30% rate**, and over **€100 billion** at **40%**.

Year	15%	25%	30%	40%
2019	9.43	24.65	35.26	71.94
2020	7.86	21.20	28.86	64.53
2021	8.45	24.07	34.18	80.35
2022	17.33	46.59	66.11	132.44
2023	12.14	34.41	48.63	105.18

Table 2: Extrapolated revenue gains for various minimum rates (billion EUR)

5. Gains would be highly concentrated by country and firm

Revenue gains would **not be equally distributed among countries** under the current Pillar 2 design. Table 3 highlights the top 15 countries expected to benefit the most in our sample estimates. In most years, **Singapore** emerges as the **primary revenue gainer**. For 2022, for instance, it would capture approximately €1.3 billion, accounting for 39% of total global revenue gains. The United Kingdom ranks second,

followed by the Bahamas and Canada, which are nearly tied for third position. **Several jurisdictions commonly identified as tax havens also appear prominently among the top recipients**, including the Netherlands (5th in 2022), Switzerland (7th), Guernsey (14th), and Ireland (19th, not shown in the table).

Country	2020	2021	2022	2023
Singapore	325	401	1301	337
United Kingdom	5	352	708	398
Bahamas	86	72	221	221
Canada	0	129	221	0
France	16	75	134	103
Netherlands	118	23	126	16
Italy	17	37	104	88
Switzerland	114	81	96	141
United Arab Emirates	50	71	94	123
Brazil	50	300	85	16
Australia	14	29	71	29
Norway	110	28	61	0
Spain	0	9	27	25
Guernsey	16	12	20	26
Germany	12	11	15	0
Total - Top 15	934	1630	3283	1524
Total - Full sample	962	1675	3335	1570
Share - Top 15 (%)	97	97	98	97

Table 3: Revenue gains by country and year (million EUR)

Revenue collection would also be highly concentrated within a few firms. In 2022, just **three multinationals**, Shell, BP, and Rio Tinto, would account for **70% of total top-up taxes** in our sample.

Revenue gains can also be disaggregated by the mechanism through which top-up taxes are collected, assuming all countries implementing Pillar 2 would enforce it:

- **Qualified Domestic Minimum Top-up Taxes (QDMTTs)** would account for the **majority** of gains, generating €2.35 billion (**71%** of the €3.34 billion total).
- **Income Inclusion Rules (IIR)** would make up the **remainder**, while **no revenues** are collected via the **Undertaxed Profits Rule (UTPR)** in the baseline scenario.

Overall, **QDMTT** revenues would be heavily concentrated in **low-tax jurisdictions**, including those traditionally considered tax havens. **IIR** revenues instead would primarily **benefit high-tax headquarter countries.** For instance, the United Kingdom collects €708 million via the IIR, reflecting top-up taxes on the undertaxed foreign

profits of UK-headquartered multinationals. **Resource-rich countries already applying high effective tax rates would gain little instead.**

This concentration would have significant implications for **tax enforcement, equity, and diplomatic coordination**.

6. Policy design significantly impacts revenue estimates

Policy choices could significantly affect the overall revenue yield, allowing companies to either leverage exceptions for profit-shifting or create incentives for behavioural responses.

6.1. Substance-based carveouts reduce revenue potential

The **exemptions for real economic activities** included in Pillar 2 rules, intended to exclude a portion of income linked to tangible assets and payroll from the minimum tax base, could significantly **reduce potential revenue** gains – as shown in Table 4

- Based on 2022 income data: the **first-year** exemption would **reduce aggregate revenue** gains by approximately **€0.74 billion**, equivalent to a **22%** reduction.
- In the **long term**, the exemption's impact would be more modest, lowering revenues by **€0.48 billion** annually, or **14%** [6].

These findings highlight the material effect that carve-outs can have on the overall effectiveness of the global minimum tax and underscore the **importance of minimising them** in implementation.

Year	No carve-outs	First-year carve-outs	Long-run carve-outs
2019	1.22	0.88	1.00
2020	0.96	0.71	0.80
2021	1.68	1.07	1.29
2022	3.34	2.60	2.86
2023	1.58	1.10	1.26

Table 4: Aggregate revenue gains for various carve-outs (billion EUR)

6. These results are consistent with prior estimates by Baraké et al. (2022), who, using aggregated country-by-country reporting data, projected revenue reductions of 22.3% and 13.7% from the first-year and long-term exemptions, respectively.

6.2. The current policy design could induce behavioural responses with positive effects on revenue yields

Accounting for **behavioural responses** — specifically, the ability of multinational firms to adjust their profit-shifting strategies — can significantly affect projected revenue gains under the global minimum tax.

Table 5 presents the **aggregate revenue impact** across three scenarios: a benchmark case without behavioural responses, and two scenarios where firms adjust profits in response to tax rate differentials, using semi-elasticities of 0.8% and 1%, respectively. The minimum rate remains fixed at 15%, and carve-outs for real activities are excluded.

Year	No behavioral responses	Semi-elasticity of 0.8%	Semi-elasticity of 1%
2019	1.22	1.45	1.50
2020	0.96	1.15	1.19
2021	1.68	2.29	2.45
2022	3.34	4.05	4.23
2023	1.58	2.00	2.11

Table 5: Aggregate revenues with various assumptions for behavioral responses

Under a **0.8% semi-elasticity scenario**, aggregate revenues in our sample would rise by **€0.71 billion**, a **21%** increase over the benchmark. At a **1% elasticity**, the gain would reach **€4.23 billion**, **27% above** the benchmark.

This effect would be driven by shifts in where profits are booked:

- In **low-tax jurisdictions**, **unshifting** reduces both conventional corporate tax receipts and the amount of top-up tax due under Pillar Two. For example, in 2022, top-up tax collections would fall by 8% relative to the benchmark.
- In **high-tax jurisdictions**, the reallocation of profits would lead to a **significant increase in corporate income tax revenues**, €1.06 billion in 2022 alone.
- The overall outcome would be a **net increase in global tax revenues**, as gains in higher-tax countries more than offset the reductions elsewhere.

This finding reflects a **key feature of Pillar Two's enforcement mechanism**: its "top-up" architecture ensures that undertaxed profits are taxed somewhere - if not in the subsidiary country, then by another jurisdiction under the IIR or UTPR. This design **transforms low-tax jurisdictions into less attractive profit-shifting destinations**, since the tax benefit of shifting is reduced. As a result, Pillar Two creates a **structural disincentive for profit shifting**, reinforcing tax neutrality in the location of reported profits. These findings underscore the **importance of policy design** in international taxation and its potential to not only protect, but enhance revenue yields.

6.3. Enforcing the G7 agreement excluding US firms risks losing significant revenue

Enforcing the G7 agreement would significantly reduce revenues. In our sample, excluding US multinationals has virtually no impact on the results: only two US-headquartered firms are included, and they are small relative to the rest of the sample, representing less than 1% of positive pre-tax profits overall. These companies generate zero tax deficit in all years except 2023, when their contribution is only marginal. However, when **extrapolating globally**, the exclusion of US firms **reduces revenue estimates by 22% in 2022**.

Year	Revenues at 15%	15% to 25%	15% to 30%	15% to 40%
2019	8.13	13.12	22.26	53.88
2020	7.49	12.71	20.00	53.99
2021	7.41	13.68	22.54	62.99
2022	13.56	22.89	38.17	90.07
2023	9.56	17.52	28.72	73.22

Table 6: Extrapolated incremental revenues (billion EUR)

These results underline once again the **importance of the design of Pillar 2 rules**, and how crucial it is that they are fully implemented.

Policy insights

1. The revenue potential of higher Global Minimum Tax rates on the extractive sector would only be significant with very high tax rate increases

At the currently agreed 15% rate, revenue gains are modest, insufficient to meaningfully support global climate finance needs. Only at a 30% rate or higher do revenues reach a scale, over €40 billion annually, that could substantially contribute to adaptation, mitigation, or loss and damage finance. At a 40% rate, estimated revenues from the extractive sector alone exceed €100 billion per year.

These figures are considerable when compared to climate finance benchmarks. The UN Environment Programme estimates that developing countries will need €360 billion annually by 2030 for climate adaptation. Meanwhile, the newly established Loss and Damage Fund is expected to require at least €93 billion per year to support countries most vulnerable to climate disasters. A 30% global minimum tax on extractives could thus cover more than 10% of global adaptation needs or fully finance the Loss and Damage Fund.

However, achieving these outcomes would require significant political commitment and international coordination. Raising the global minimum tax rate beyond 15% would involve navigating divergent national interests and institutional constraints, challenges that are particularly acute in the current geopolitical climate.

2. Revenue distribution could raise equity concerns

In the current design, revenue from the global minimum tax would be concentrated in a small number of jurisdictions, many of which are long-standing low-tax hubs or corporate headquarters. In 2022, for instance, Singapore alone stood to collect nearly 40% of total top-up taxes from extractive multinationals. Meanwhile, resource-rich countries that host extraction and already apply high effective tax rates would be seeing little benefit, since they already have high effective tax rates for the extractive sector. This could potentially raise questions about the equitable distribution of tax revenues.

3. Policy design and strict implementation are crucial, exemptions considerably weaken revenue potential

The effectiveness of the global minimum tax hinges not only on the headline rate, but on the integrity of its design and the consistency of its enforcement. The study finds that substance-based carve-out exemptions, which exclude from taxation a portion of profits linked to tangible assets and payroll, reduce potential revenues by 22% in the first year and 14% in the long run, even before other avoidance strategies are taken into account. While intended to protect real economic activity, these carve-outs could be exploited to shield profits in low-tax jurisdictions and significantly dilute the reform's impact.

At the same time, the enforcement architecture of Pillar Two is crucial. For the system to be truly self-enforcing, all three instruments - the Qualified Domestic Minimum Top-up Tax (QDMTT), the Income Inclusion Rule (IIR), and the Under-Taxed Profits Rule (UTPR) - must be in place and fully operational. The study finds that these mechanisms could induce behavioural responses that would boost revenues up to 27% – underscoring the strength of these rules. However, if any of these mechanisms is absent, the system lacks a fallback: low-taxed profits remain untaxed because neither the country where the income is booked, nor the parent jurisdiction, nor any third country has the legal right to step in.

The revenue potential of the minimum tax therefore requires both limiting carve-outs and exemptions and ensuring strict, coordinated enforcement.

4. The political landscape makes viability challenging

The recent G7 decision to grant equivalence to the US GILTI regime under Pillar Two underscores the limited political space for more ambitious international tax reform. By exempting US multinationals from the UTPR, the agreement departs from the core logic of Pillar Two's enforcement architecture. If the EU and OECD confirm this equivalence without requiring alignment on key provisions, it would significantly weaken the system's effectiveness: our extrapolated estimates suggest a 22% reduction in revenue in 2022 alone. This not only undermines the reform's integrity but also reduces its ability to address undertaxed profits on a global scale.

This should be seen in the broader context of constrained reform: while the analysis shows that substantial revenue gains are possible, they are only unlocked at much higher minimum tax rates, such as 30% or 40%. In the current geopolitical environment, achieving consensus on such increases appears politically unrealistic. The combination of modest gains at current rates and growing reluctance to enforce or strengthen the rules raises serious questions about the reform's long-term viability, particularly as a mechanism to mobilise meaningful resources for climate finance or development goals.

5. Aligning corporate taxation with environmental goals requires other instruments

Increasing global minimum tax rates on polluters represents an attempt to use one instrument, corporate taxation, for multiple goals, including climate finance and environmental regulation. While corporate tax is arguably less distortive than instruments, its capacity to achieve environmental outcomes is limited. It could be moderately effective in generating public revenue and can discourage future investment in carbon-intensive sectors like extractive industries, yet it does little to curb current emissions or production levels. More direct instruments are needed to address the environmental footprint of multinationals.

One promising option is to tax the "carbon tax deficit", the gap between the carbon price actually paid by a firm and a global benchmark. Countries could levy a supplementary charge on this deficit, apportioned based on a multinational's share of global sales in each jurisdiction. This approach would ensure that firms contribute based not only on the location of their emissions but also on the geographic distribution of their final sales, extending the core logic of the Carbon Border Adjustment Mechanism (CBAM). Unlike CBAM, however, multinationals could not circumvent carbon taxation by selectively directing their cleanest production to countries with carbon border adjustments while exporting their more carbon-intensive output to markets without such policies.

Overall, corporate taxation could support environmental objectives, but it should be seen as complementary to, not a replacement for targeted environmental instruments like carbon pricing or emissions-based taxation.

Conclusions

This analysis demonstrates that while the application of a global minimum tax to the extractive sector holds fiscal potential, that potential is only unlocked at significantly higher minimum tax rates. At the currently agreed 15% rate, revenue gains are modest, insufficient to meaningfully support global climate finance needs. Only by doubling the rate and above do revenues reach a scale, over €40 billion annually, that could substantially contribute to adaptation, mitigation, or loss and damage finance. More ambitious rates would require considerable international coordination and political will, both of which appear increasingly constrained in the current geopolitical context.

Even where revenues are raised, they are highly concentrated, both geographically and by firm. A small number of jurisdictions, many of them low-tax hubs or headquarter countries, stand to capture the bulk of the revenue. In 2022, Singapore alone would have collected nearly 40% of global top-up taxes from extractive multinationals, while three firms, Shell, BP, and Rio Tinto, accounted for 70% of all revenue in the sample. In contrast, many resource-rich countries in the Global South, which bear the social and environmental costs of extraction, would benefit little. This raises critical concerns about the equity and fairness of the reform's distributional outcomes.

The structure and design of the global minimum tax also play a decisive role in shaping outcomes. Substance-based carve-outs, exempting income linked to tangible assets and payroll, reduce revenues by over 20% in the first year alone, undermining the effectiveness of the policy. Similarly, the exclusion of US multinationals from the enforcement rules under the G7 agreement further fragments the global tax architecture and weakens the "top-up" logic at the heart of Pillar Two. Without consistent application of all three enforcement mechanisms, QDMTT, IIR, and UTPR, the system risks leaving low-taxed profits untouched.

Beyond these structural and political limitations, there are fundamental constraints to what corporate taxation can achieve in environmental terms. A global minimum tax may modestly discourage future profit shifting and enhance tax neutrality, but it does not alter production patterns, reduce emissions, or internalize the environmental externalities of polluting firms. At best, it can mobilise public funds for climate action and modestly shift incentives away from low-tax planning.

To truly align taxation with environmental goals, complementary instruments are essential. A promising approach is carbon-deficit pricing on firms that underpay relative to a global carbon price benchmark. Such tools would ensure that multinational polluters are taxed not only where profits are booked, but also in proportion to their environmental impact.

In sum, while the global minimum tax offers a valuable platform for expanding fiscal space, its contribution to climate and environmental goals will remain limited unless it is significantly strengthened, through higher rates, stricter enforcement, fairer revenue allocation, and integration with dedicated environmental policy instruments. Without these improvements, the reform risks becoming a missed opportunity: fiscally useful but politically diluted, and environmentally insufficient.

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