

OECD Taxation Working Papers series

Update to the Economic Impact Assessment of Pillar One

OECD/G20 Base Erosion and Profit Shifting Project

By Samuel Delpuch, Tibor Hanappi, Felix Hugger, Pierce O'Reilly, and David Whyman



OECD Working Papers should not be reported as representing the official views of the OECD or of its member countries. The opinions expressed and arguments employed are those of the author(s).

Working Papers describe preliminary results or research in progress by the author(s) and are published to stimulate discussion on a broad range of issues on which the OECD works. Comments on Working Papers are welcomed, and may be sent to the Centre for Tax Policy and Administration, OECD, 2 rue André Pascal, 75775 Paris Cedex 16, France (ctp.contact@oecd.org).

This working paper has been authorised for release by the Director of the Centre for Tax Policy and Administration, Manal Corwin.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

© OECD 2023

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at www.oecd.org/termsandconditions.

Abstract

This paper presents an update to the Economic Impact Assessment of Amount A of Pillar One of the Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy. The revised assessment is based on Amount A as detailed in the text of the *Multilateral Convention to Implement Amount A of Pillar One*. With results extending from 2017 to 2021, the paper details the changes in the design of Amount A as well as updates to the data and methodology of the impact assessment. The paper outlines the impact of Amount A on the allocation of taxing rights and the resulting revenue impacts.

Acknowledgements

This paper has been written by Samuel Delpéuch, Tibor Hanappi, Felix Hugger, Pierce O'Reilly, and David Whyman, under the supervision of David Bradbury and Kurt Van Dender. The work builds on the previous impact assessment carried out by Ana Cinta González Cabral, Tibor Hanappi, Valentine Millot, Pierce O'Reilly and Sébastien Turban under the supervision of David Bradbury, Åsa Johansson and Stéphane Sorbe. The authors would like to thank David Bradbury, Laurent Cytermann, Ana Cinta González Cabral, Alexander Duric, Clara Gascon, Yun-Woo Lee, Christopher Miller, Valentine Millot, Eric Robert, Ruairi Sugrue, Sébastien Turban, and Kurt Van Dender for helpful comments and input. The authors would also like to thank delegates from the OECD Committee on Fiscal Affairs' Working Party No. 2 on Tax Policy Analysis and Tax Statistics for their helpful comments on earlier versions of this work. Finally, the authors would like to thank Karena Garnier, Hazel Healy, and Carrie Tyler for their indispensable assistance with the manuscript, and Violet Sochay for excellent administrative support.

Table of contents

Update to the Economic Impact Assessment of Pillar One **Error! Bookmark not defined.**

1 Introduction	7
2 Overall approach to modelling Pillar One	9
2.1 Key changes to Amount A modelled	10
2.2 Methodological approach	11
2.3 Overview of main findings	13
2.4 Caveats	14
3 Data	16
3.1 Creation of MNE-specific matrices	16
3.2 Jurisdiction benchmarking	19
4 Calculation of Amount A	21
4.1 Global allocable residual profit: Components A and B	21
4.2 Allocation of profit: Components C and D	24
4.3 Elimination of double taxation: Components E and F	28
5 Results	32
5.1 Impact of Pillar One on the international tax environment	32
5.2 Impact of Amount A on the allocation of taxing rights	33
5.3 Impacts of Amount A on tax revenue	34
6 Conclusion	39
References	40

FIGURES

Figure 2.1. Simplified formula summarising the approach on Amount A	12
Figure 3.1. Overview of approach to creation of MNE-specific matrices	17
Figure 4.1. Trends in the number of MNEs and allocable residual profit in-scope of Amount A	23
Figure 4.2. Composition of allocable residual profit in-scope of Amount A	24
Figure 4.3. Distributions of ETRs within jurisdiction groups	31
Figure 5.1. Amount A reallocation of taxing rights	34
Figure 5.2. Amount A Global Inclusive Framework Revenue Estimates	36
Figure 5.3. Amount A Inclusive Framework Jurisdiction Group Revenue Estimates (Omitting Investment Hubs)	37

Figure 5.4. Amount A Inclusive Framework Jurisdiction Group Revenue Estimates (Including Investment Hubs)	38
---	----

TABLES

Table 2.1. Jurisdiction-group revenue estimates, % of CIT	14
Table 3.1. Data Sources Used to Build 2018 MNE-level Matrices	19
Table 4.1. Sectoral exclusions from the scope of Amount A	22
Table 4.2. Amount A Allocation Keys by Business Type	26
Table 4.3 Sample MDSH Application: Effect of Y and X Percentages	Error! Bookmark not defined.

1 Introduction

1. This paper presents an update of the Economic Impact Assessment of Amount A of Pillar One (Amount A) under the [Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy](#). The paper details updates to the methodology and design features of Amount A, and presents resulting estimates of in-scope profit, in-scope firms, impacts on tax bases and tax revenues. The analysis focuses on Amount A as detailed in the text of the *Multilateral Convention to Implement Amount A of Pillar One* (OECD, 2023)(henceforth the MLC). Agreement on a variety of design features of Amount A by the Inclusive Framework on Base Erosion and Profit Shifting (Inclusive Framework) has narrowed the spectrum of possible policy scenarios that could cause variations in the revenue impact.

2. The main goals of Amount A of Pillar One are to address the tax challenges arising from the digitalisation and globalisation of the economy, stabilise the international tax system and reduce the risks of tax uncertainty and disputes. Implementation of Amount A would also avoid increased trade tensions arising from the proliferation of new unilateral measures including digital service taxes and aggressive audits by tax administrations worldwide. Amount A accomplishes this goal by providing jurisdictions in which consumers and users are located (market jurisdictions) with a new taxing right over a portion of the residual profits of the largest and most profitable multinational enterprises (MNEs) in the world. Digitalisation and globalisation have highlighted vulnerabilities in the existing framework for the allocation of taxing rights, which allocates them principally on the basis of physical presence. The creation of the new taxing right reallocates taxable income primarily from investment hubs to market jurisdictions. In doing so, Amount A of Pillar One updates the international tax framework for the digital age, stabilises the system and reduces the risk of uncoordinated digital services taxes (DSTs) and similar related measures. Previous OECD research has suggested that a proliferation of these uncoordinated measures and the likely tax and trade disputes arising from them could reduce global GDP by up to 1% in a worst-case scenario (OECD, 2020^[1]).

3. Pillar One is also broader than Amount A. Amount B of Pillar One aims to provide increased tax certainty by creating standardised transfer pricing benchmarks for common transaction types to streamline the administration of the arm's length principle and decrease costly transfer pricing disputes. This Economic Impact Assessment does not include any quantitative modelling of the impacts of Amount B due to data limitations, and due to the fact that Amount B aims to simplify the administration of existing transfer pricing rules and therefore, unlike Amount A, does not seek to allocate new taxing rights.

4. The model detailed in this paper uses the Economic Impact Assessment methodology outlined in the 2020 EIA as a starting point, with a variety of methodological refinements and updates as described below. As was the case with the 2020 EIA, the framework presented in this paper has a wide geographic coverage, spanning more than 220 jurisdictions, reflecting the global nature of the proposals and the wide membership of the Inclusive Framework.¹ To enable this wide coverage, the analysis in this paper

¹ All revenue estimates presented in this paper at the global and jurisdiction group level pertain to sums and averages of the 143 Inclusive Framework jurisdictions, and do not cover revenue gains in other non-Inclusive Framework jurisdictions. However, the data on profit, sales, and economic substance of in-scope MNEs on which the analysis is based include 222 jurisdictions worldwide including non-Inclusive Framework members.

combines a variety of micro- and macro-level data sources into a consistent structure, including updates of the bilateral matrices used in the 2020 EIA.²

5. The scope of Amount A analysed in this paper varies from that of the 2020 EIA, which results in both a more comprehensive scope and a smaller number of multinational enterprises (MNEs). The smaller number of in-scope MNEs and various Amount A design features, particularly with respect to double tax relief, require an MNE-by-MNE approach to accurately model the distribution of revenue impacts. As a result, the analysis in this paper draws on new data sources including MNEs' own annual reports in order to craft MNE-specific matrix columns of key financial variables that determine the approach to double tax relief. In addition, this Economic Impact Assessment (2023 EIA Update) has extended Amount A revenue estimates forward from 2017-2021, relying on a variety of databases as well as manual cleaning and individual checks to craft in-scope MNE lists for each of these 5 years. Extensive benchmarking has been undertaken to ensure consistency across the data sources used in the analysis, including bilateral validation of aggregated data with individual jurisdictions.

6. The 2023 EIA Update shows a significant increase in Amount A revenue estimates compared to the 2020 EIA. These changes reflect design changes described below as well as more recent data. While the 2020 EIA estimates were generated for 2016, the extension of the estimates forward in time, setting aside design changes, covers a period in which the profitability of major MNEs increased significantly. These increases, together with a variety of design changes of Amount A, combine to increase the revenue gains relative to the 2020 EIA. While the 2020 EIA estimated revenue gains of USD 5-12 billion, the revised estimates reflect annual gains of USD 9.8-22.6 billion on average per year over the years 2017-2021 and USD 17.4 - 31.7 billion in 2021. Compared to the 2020 EIA, the 2023 EIA Update shows a significant increase in Amount A revenue estimates for low, middle, and high-income jurisdictions, alongside greater losses for investment hubs. As was the case in the 2020 EIA, revenue gains for low- and middle-income jurisdictions are higher as a share of current corporate income tax (CIT) revenues than for high-income jurisdictions.

7. It should be noted, however, that the revenue impacts are modelled only on a static basis. They do not include any benefits of Amount A that may result from a more stable international tax system, reduced unilateral measures, or reduced tax and trade disputes. These indirect gains outside of the direct revenue gains may be considerable. Conversely, the model here does not account for the costs of implementing Amount A or any costs resulting from the increased complexity in the system. However, given the centralised nature of Amount A administration and the formulaic nature of many of its provisions, these costs may be limited.

8. While the analysis carried out in this paper relies on the best data available to the OECD and has been extensively validated by Inclusive Framework member jurisdictions, the estimates presented in this paper should be interpreted as illustrating the broad order of magnitude of the impacts of Amount A, rather than being precise point estimates. Consistent with this, revenue estimates are presented as ranges to reflect the data-related uncertainty around the estimates, due to data limitations, and uncertainty around MNEs' and jurisdictions' adaptation to the reform, in particular regarding CIT rates.

9. The paper is structured as follows. Section 2 provides an overview of the approach taken, the key design features modelled and the main results. Section 3 discusses the data used as part of the estimates. Section 4 discusses the calculation of Amount A. Section 5 provides key results, examining both the allocation to market jurisdictions as well as the impact on tax revenues. Section 6 concludes.

² These matrices contain information on a parent-affiliate-pair level of MNEs turnover, assets, employment, and profit.

2 Overall approach to modelling

Pillar One

10. The analysis of Pillar One in this paper focuses exclusively on Amount A, which reallocates a portion of the residual profit of large and highly profitable enterprises to market jurisdictions on formulaic basis. It does not include Amount B, related to the simplification and the streamlining of transfer pricing rules and procedures. The MLC provides detailed information on key design features that impact the revenue outcomes of this update, as described below.

11. While the 2020 EIA assumed a focus of Amount A on highly digitalised businesses with a revenue threshold of EUR 750 million, the 2023 EIA Update models the scope laid out in the MLC. The MLC states that all MNEs with revenues exceeding EUR 20 billion and a pre-tax profitability rate exceeding 10% are in-scope of Pillar One, excluding only the extractive and financial sectors. This limits application of Amount A to a relatively small number of exceptionally large, profitable, and internationalised MNEs, largely due to the raising of the revenue threshold from EUR 750 million to EUR 20 billion. At the same time, a much wider range of businesses are expected to be subject to Amount A, resulting in around 100 MNEs to be in scope each year.

12. The methodology of the 2023 EIA Update uses an MNE-by-MNE approach to arrive at shares of relief and allocation for each jurisdiction, with these MNE-level estimates being aggregated to produce jurisdictional revenue estimates. The MNE-by-MNE approach allows a variety of design features to be modelled. A key design feature is the elimination of double taxation. The 2020 EIA model elimination of double taxation on a pro-rate basis, while the update accounts for new multi-tiered approach. Other rules including the MDSH, de minimis thresholds and other rules enumerated in the MLC are also accounted for. Modelling these granular design features require verifying jurisdictional amounts of particular financial metrics (profit, revenue, depreciation and payroll) for each individual in-scope MNE in order to allocate that MNE's Amount A and double tax relief obligations. In order to support the MNE-by-MNE approach, the distribution of key financial variables (profit, revenue, depreciation and payroll) at the jurisdiction-level are computed for each MNE rather than for all MNEs added together.

13. Compared to the 2020 EIA, the update benefits from a variety of updated data sources leading to more timely estimates. The 2020 EIA relied primarily on aggregated and anonymised data from Country-by-Country Reports (CbCRs), and other aggregate data to impute the distribution of profits and revenue across jurisdictions for the purpose of Amount A allocation and elimination of double taxation. The 2020 EIA presented estimates for the 2016 year, as only the 2016 aggregated and anonymised CbCRs were available at the time of its publication. The 2023 EIA Update draws on more recent data.

14. With respect to the jurisdictional distribution of profits, revenue, depreciation and payroll of these individual MNEs, reliance on data aggregated at the jurisdiction-pair level such as CbCR is likely to be significantly less accurate compared to the MNE's own financial statements. As a result, more granular data has been collected to supplement aggregated CbCRs, including jurisdiction- and jurisdiction group-level data from MNE's financial statements, supplemented by data on an industrial sector by parent jurisdiction basis from OECD's Activity of Multinational Enterprises (AMNE) dataset where financial statement information was unavailable.

2.1 Key changes to Amount A modelled

15. The 2023 EIA Update implements a number of important design changes that have occurred since the 2020 EIA, in line with the MLC reflecting advances in the work regarding various aspects of Amount A. For the purposes of the impact assessment, the design changes can be grouped into three categories. First, those affecting the calculation of the global residual profits in scope of Amount A. Second, those allocating taxing rights under Amount A. Third, the elimination of double taxation under Amount A. These changes are summarised in Box 2.1.

16. First, a number of design features affect the scope of Amount A. As per the MLC, the 2023 EIA Update provides that:

- The **scope rules** of Amount A mean the scope is no longer limited to Consumer Facing Businesses (CFB) and Automated Digital Services (ADS), but will instead be determined quantitatively as all MNEs with global revenue exceeding EUR 20 billion and pre-tax profitability exceeding 10% of revenue (noting various averaging rules apply).³ The extractives and regulated financial services sectors remain excluded from the scope of Amount A.
- The **tax base and profit allocation** rules fix global residual profits allocable through Amount A equal to 25% of each MNE's residual profit, and residual profit is defined to be pre-tax profit in excess of 10% of revenue.

17. Second, a number of design features affecting the general allocation of taxing rights under Amount A:

- As per the MLC, the 2023 EIA Update models in detail the different **revenue sourcing rules** used in the MLC. This notably provides for allocation of amount A by macroeconomic allocation keys which provide a formulaic basis for certain types of MNEs that would likely encounter difficulty in sourcing their revenue to the final destination of end use (e.g., B2B MNEs selling to third parties who cannot track sales to final consumers. This modelling also includes tail-end revenue allocation provisions in the revenue sourcing rules, which allow MNEs who cannot source all their revenue to allocate a small share of it exclusively to lower-middle- and low-income countries.
- The 2023 EIA Update models the **MDSH** applied on a jurisdictional and quantitative basis, which limits the allocated Amount A where residual profit is already present in the jurisdiction. This includes modelling of de minimis thresholds with respect to application of the MDSH application.
- The 2023 EIA Update models updated **nexus rules** including a lower nexus threshold for smaller jurisdictions.

18. Third, a number of additional provisions as part of the **elimination of double taxation** rules under Amount A are modelled:

- As per the MLC, the 2023 EIA Update provides that double tax relief be allocated in a multi-tiered approach based on returns on depreciation and payroll rather than on a pro-rata basis with respect to return on revenue as was modelled in the 2020 EIA.
- The revised approach to modelling of the elimination of double taxation also provides for a set of de minimis rules that limit the requirement to eliminate double taxation in smaller jurisdictions.

19. Several provisions in the MLC, which favourably impact small and developing economies, are modelled as part of the allocation and elimination rules, as will be discussed below.

³ These averaging rules provide that in order to be in-scope of Amount A, the MNE's profitability threshold, in addition to exceeding 10% in the current year, must also exceed 10% in either two of the four years prior to the current year or on average across the current year and the four prior years.

20. A number of provisions associated with Amount A, including the treatment of withholding taxes, the segmentation rules that are part of the Amount A scope, and differences in the allocation and elimination tax basis, have not been integrated into the 2023 EIA Update due to data limitations.

Box 2.1. Major design changes modelled relative to 2020 EIA

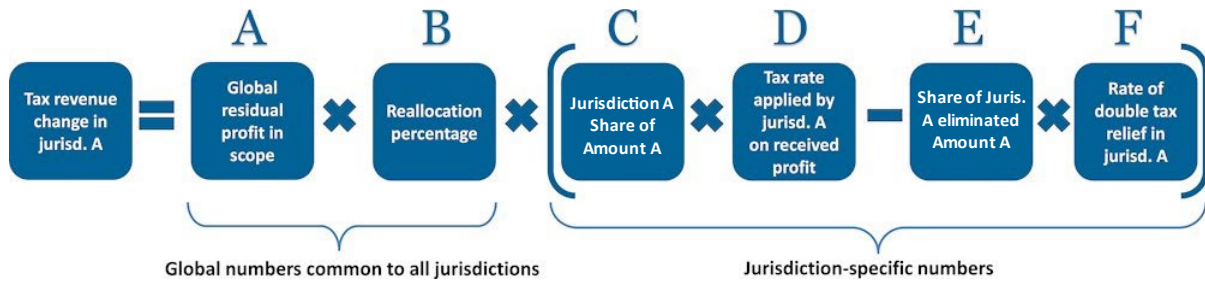
Amount A design changes

- **Scope rules.** Discarding an activity test focusing on Automated Digital Services (ADS) and Consumer Facing Businesses (CFB) in favour of a purely quantitative, more comprehensive scope with a EUR 20 billion revenue threshold and 10% profitability threshold, as well as rules to account for averaging across years. The extractives and regulated financial services exclusions are maintained.
- **Nexus rules.** A reduced nexus threshold of EUR 250,000 for small economies with GDP under EUR 40 billion (as opposed to the general nexus threshold of EUR 1 million).
- **Revenue sourcing rules.** Allocating Amount A on an MNE-by-MNE basis to market jurisdictions pro-rata using destination-based sales as well as a number of macroeconomic allocation keys. This modelling also includes a tail-end revenue provision where up to 5% of MNE revenue is allocated exclusively to low- and low-middle- income jurisdictions, and various other provisions.
- **Tax base rules.** Amount A is taken from financial consolidated accounts, with loss carry-forward rules accounted for.
- **Profit allocation rules.** Allocating a fixed 25% of residual profit to market jurisdictions; the threshold separating residual profit from routine profit globally is a 10% return on revenue. The MDSH adjusts the allocation of Amount A for market jurisdictions that already have existing taxing rights over the Group's residual profits.
- **Elimination of double taxation rules.** Discarding a purely pro-rata approach of allocating double tax relief based on return on revenue in favour of a multi-tiered approach based on returns on depreciation and payroll.

2.2 Methodological approach

21. The 2023 EIA Update determines the revenue impact of Amount A through a granular application of the quantitative formula from the 2020 EIA, summarised in Figure 2.1. As in the 2020 EIA, the approach first focuses on assessing the global residual profit of the MNE groups that would be in scope, based on an extensive dataset of consolidated financial accounts of MNE groups from the Orbis database complemented with other sources. Thus, component A of the formula is total global residual profit. This first step is carried out to arrive at an in-scope firm list for each year 2017-2021 using the global revenue and profitability thresholds provided for in the MLC: (i) a EUR 20 billion global revenue threshold and (ii) 10% pre-tax profit margin on that revenue. The rules also provide for a set of averaging procedures for the profitability threshold. The reallocation percentage, component B, is fixed at 25%. Taken together, the product of components A and B represent the total amount of residual profit that would be allocable to market jurisdictions under Amount A.

Figure 2.1. Simplified formula summarising the approach on Amount A



Note: This formula is calculated on an MNE-by-MNE basis, with A and B common to all jurisdictions with respect to one MNE, and C, D, E, and F determined uniquely for each jurisdiction with respect to each MNE.

22. A key change in the 2023 EIA Update is that the components of the formula are calculated for each in-scope MNE with respect to each jurisdiction. Results are then aggregated across all in-scope MNEs to arrive at final results for each jurisdiction. This approach allows for sector-level and MNE-level variations in the distributions of profit, revenue, depreciation and payroll across jurisdictions, to be accounted for, which in turn impacts allocation and relief across jurisdictions. This contrasts with the approach taken in the 2020 EIA whereby a single calculation for each jurisdiction pooled all MNEs in that jurisdiction. As a result, components A and B are determined at the MNE group level, and C, D, E, and F in Figure 2.1 are determined uniquely at the MNE-jurisdiction level, as set out below.

23. Components C and D relate to the tax revenue a jurisdiction gains from the reallocation of taxing rights; components E and F relate to tax revenue that a jurisdiction would surrender as a result of the reallocation (double tax relief). Components C and E are the shares of global allocable residual profit ($A * B$) that a jurisdiction is allocated or that it must surrender, respectively. In both cases, the tax revenue impact on a jurisdiction is the product of a tax base adjustment ($A * B * C$ for Amount A allocated and $A * B * E$ for tax base surrendered) and the tax rate applied to those tax bases (D and F). Therefore, total tax revenue gained from Amount A allocation equals $A * B * C * D$; the total tax revenue lost through double tax relief equals $A * B * E * F$. The difference between these two amounts is the net revenue impact of Amount A on the jurisdiction, with respect to a particular MNE.

24. On the allocation side (components C and D), jurisdictions are allocated a particular MNE's allocable residual profit in proportion to their share in the global revenue of the given MNE group, and that allocation is assumed to be taxed at the receiving jurisdiction's statutory tax rate (STR). Therefore, the jurisdiction's share of the MNE's global revenue is component C, and the jurisdiction's STR is component D. Global revenues are calculated using destination-based sales or a macroeconomic allocation key, depending on the business model of the firm and the feasibility of sourcing revenues to final consumers. Note that under Amount A, a jurisdiction may receive allocated profit from MNEs that have neither physical presence nor direct sales in their jurisdiction. In some cases, this allocation may be reduced by the MDSH, which mostly arises when profit is allocated under Amount A to a jurisdiction which already has residual profit.

25. On the relieving side (components E and F), the amount of double tax relief each jurisdiction provides for a particular MNE is computed through a multi-tiered approach as outlined in the MLC. For each MNE, jurisdictions are sorted into tiers based on the ratio of profit to depreciation and payroll that that MNE has in a given jurisdiction, with jurisdictions possessing higher profitability ratios providing double tax relief first. Often, many jurisdictions with residual profit from an MNE may not provide any double tax relief if they are sorted into lower tiers. Small and lower-income jurisdictions do not tend to provide any double tax relief in the model due to low levels of profitability as well as the presence of de minimis thresholds. Component E represents the share of a given MNE's global double tax relief that a particular jurisdiction

must provide as a result of the elimination rules, while component F represents the estimated effective tax rate (ETR) at which that MNE's profits are currently taxed in the particular jurisdiction.

2.3 Overview of main findings

26. While Amount A is a zero-sum redistribution of corporate tax base across jurisdictions, it has positive global revenue effects because tax base is significantly redistributed from low-tax to high-tax jurisdictions. On the other hand, the primary goal of Amount A is not to generate additional tax revenues, but rather to adjust profit allocation and nexus rules in response to tax challenges arising from the digitalisation and globalisation of the economy. Amount A creates new taxing rights on the profit of in-scope MNEs to market jurisdictions using a destination-based sales driven allocation key specific to each MNE. The market jurisdictions receiving large shares of Amount A tend to be medium or high tax jurisdictions. On the other hand, each dollar of Amount A distributed to a market jurisdiction involves one dollar of double tax relief surrendered. By design, this surrender is concentrated among a small number of jurisdictions where each MNE has large amounts of profit relative to economic depreciation and payroll, which tend to be low-tax jurisdictions.

27. The 2023 EIA Update projects that in 2021, the total amount of allocable residual profit under Amount A is USD 204.6 billion of residual profit, coming from 106 MNEs. Over the period from 2017-2021, accounting for averaging, these values range from USD 100.3-204.6 billion and between 74-106 MNEs. This is a substantial increase in the baseline scenario of the 2020 EIA of approximately USD 100 billion in allocable profit. The increases in the amount of global residual profit in scope of Amount A that occur over time are due to in-scope firms becoming larger and more firms coming into-scope of Amount A over time, as well as a large jump in the profitability of in-scope MNEs occurring in 2021.

28. The 2023 EIA Update shows a significant increase in Amount A revenue estimates compared to the 2020 EIA. While the 2020 EIA estimated revenue gains of USD 5-12 billion in the baseline scenario, the revised estimates involve gains of USD 9.8-22.6 billion over the years 2017-2021 and USD 17.4-31.7 billion in 2021. The changes result from the increase in global allocable profit as mentioned above, as well as improved data and updates in the design features modelled as discussed below.

29. Compared to the 2020 EIA, the 2023 EIA Update shows a significant increase in Amount A revenue estimates for low, middle, and high-income jurisdictions, alongside greater losses for investment hubs⁴ (see Table 2.1). In addition to the increase in global in-scope profit, certain design features have significantly impacted the updated jurisdiction-group results, boosting low- and middle- income jurisdiction revenue estimates. Some key design features are as follows.

- The change from a pro-rata allocation of double tax relief based on return on revenue towards a tiered approach based on return on depreciation and payroll (RoDP), shifts relief obligations away from ultimate parent entity (UPE) jurisdictions with large profits but also significant depreciation and payroll, to investment hub jurisdictions, which tend to have a higher ratio of profit to depreciation and payroll.
- For jurisdictions with GDP under USD 40 billion, which includes all low-income jurisdictions in the Inclusive Framework, the nexus threshold to receive Amount A is lowered from EUR 1 million to EUR 250,000. This change increases the share of low-income (and middle income) jurisdictions that are able to receive allocated profit under Amount A due to the nexus threshold.

⁴ Investment hubs are all jurisdictions with an inward FDI position exceeding 150% of GDP, as discussed further in the 2020 EIA.

- Tail-end revenue provisions in the MLC set aside up to 5% of Amount A that MNEs may have difficulty sourcing to the final consumer, and distribute this share of Amount A to low-income and lower-middle-income⁵ jurisdictions exclusively on a pro-rata basis by GDP (OECD, 2020^[2]).
- The de minimis provisions that largely exempt small and lower income jurisdictions from the obligation to provide double tax relief and from the MDSH. Taken together, these provisions play a significant role in increasing low-income Inclusive Framework member revenue estimates from Amount A.

Table 2.1. Jurisdiction-group revenue estimates, % of CIT

	2021 estimate		2017-2021 average	
	Upper bound	Lower bound	Upper bound	Lower bound
High-income jurisdictions	1.4%	0.9%	1.0%	0.5%
Middle-income jurisdictions	1.6%	1.2%	1.1%	0.7%
Low -income jurisdictions	3.0%	2.5%	2.0%	1.5%
Investment hubs	-0.5%	-7.9%	-0.3%	-5.3%

Note: The estimates assume the revised rules outlined in Box and incorporate the jurisdictional approach to the MDSH outlined in the MLC. The results for 2019, 2020 and 2021 assume the same global distribution of profit, sales, payroll and assets as in 2018. Withholding taxes are not modelled due to data constraints. Only revenue gains in Inclusive Framework jurisdictions are modelled.

Source: OECD Secretariat calculations

30. The distribution of revenue gains and losses generated by Amount A relate to the global distribution of in-scope destination-based sales and in-scope residual profit. The multi-tiered approach to double tax relief heavily concentrates double tax relief obligations in a small number of jurisdictions based on returns to depreciation and payroll. Typically, these jurisdictions are investment hubs. Amount A allocations are spread widely as they are distributed on a pro-rata basis driven by the location of the final customer or user (i.e., destination-based sales), even to jurisdictions where the MNE in question lacks permanent establishment or (for B2B MNEs) direct sales. Therefore, most jurisdictions receive some Amount A from most in-scope MNEs, while very few jurisdictions are required to provide double tax relief for each MNE. Overall, this means that most low-, middle-, and high- income jurisdictions receive net positive revenue from Amount A, receiving allocated profit at a higher rate than their double tax relief obligations; in fact, virtually all low-income and most middle-income jurisdictions never provide any double tax relief. On the other hand, most investment hubs tend to experience revenue losses under Amount A.

31. Finally, improvements in data quality may also play a role in the new revenue estimates. Expanded use of CbCR data suggests that the concentration of in-scope MNE profit in low-tax jurisdictions is modestly higher than was previously modelled. This is because in some cases previously where CbCR data was absent (as the country was not supplying aggregated and anonymised data to the OECD), imputations were used to estimate profits. Updated data based on aggregated CbCRs often showed higher profits in some low-taxed jurisdictions.

2.4 Caveats

32. Since the 2020 EIA, the Inclusive Framework has reached agreement on many of the key parameters of Amount A described above. This better-defined set of policy parameters facilitates modelling

⁵ Jurisdiction income groups are defined according to the World Bank methodology arriving at high, higher-middle, lower-middle, and low -income. While higher-middle and lower-middle are combined into simply “middle” for the presentation of jurisdiction group results, the MLC allocates tail-end revenues to low and low-middle-income groups, specifically.

the impact of Amount A with greater accuracy. While the framework is building on the best data sources available to the OECD Secretariat, it is nevertheless subject to a number of important data and modelling caveats:

- The analysis only focuses on Amount A, leaving aside the potential effects of Amount B. However, Amount B is not designed to reallocate taxing rights but rather to simplify the application of the arm's length principle.
- The estimates assume full implementation of Amount A by all Inclusive Framework members.
- The data underlying the analysis have limitations in terms of coverage, consistency, and timeliness. Most prominently, data on the location of MNEs' profit, revenue, depreciation, and payroll relates primarily to years 2017 and 2018. Developments in the international business tax landscape such as measures implementing the OECD/G20 Base Erosion and Profit Shifting (BEPS) Project, the US Tax Cuts and Jobs Act (TCJA) and GILTI implementation and events such as the COVID-19 crisis may not be reflected in this distributional data. However, data from 2019, 2020, and 2021 was utilised to determine which MNEs are in-scope of Amount A and their global totals of profit, revenue, depreciation, and payroll; as a result, global aggregates of Amount A estimates can be considered to reflect recent developments and events.
- Despite accounting for almost all design features of Amount A agreed upon by the Inclusive Framework, there are some Amount A features subject to simplifying assumptions that reflect data availability challenges or ongoing negotiations. In particular, the estimates herein do not account for segmentation in scoping, nor the relationship between withholding taxes and Amount A. The precise differences between elimination and allocation tax bases are not modelled. The defence adjustment and autonomous domestic business exemption have also not been accounted for in this modelling, though these provisions are not expected to have a large impact on the results.
- The analysis also relies on simplifications in the modelling of the effect of Amount A, which is unavoidable given the lack of an exhaustive source of micro-level data covering the geographic distributions of operations by MNE entities across all jurisdictions in the world. In particular, despite efforts to use firm-level and sector-specific information where possible, the reliance on aggregate data in certain parts of the analysis and for certain firms' presence in certain jurisdictions implies that some firm-level heterogeneities are overlooked, which could affect the results.
- The framework to assess the effect of Amount A is 'static', in the sense that it does not take into account the effect of potential strategic reactions by MNEs and governments. The reason for this difference is that behavioural reactions are likely to be modest for Pillar One. The relative lack of Pillar One behavioural responses is attributable to the fact that, first, only a fraction of MNE's global profit is reallocated, and second, that final sales-based taxation schemes may be less prone to strategic intra-group transactions or production network adjustment. Furthermore, the 2023 EIA Update does not account for potential implementation of Pillar Two in advance of Pillar One and in particular any affect that this implementation might have on effective tax rates on profit surrendered in connection with double tax relief or on the location of profit worldwide.

33. Given these caveats, the estimates presented in this paper should be interpreted as illustrating the broad order of magnitude of the impacts of Amount A, rather than being precise point estimates. Consistent with this, revenue estimates are presented as ranges to reflect the data-related uncertainty around the estimates.

3 Data

3.1 Creation of MNE-specific matrices

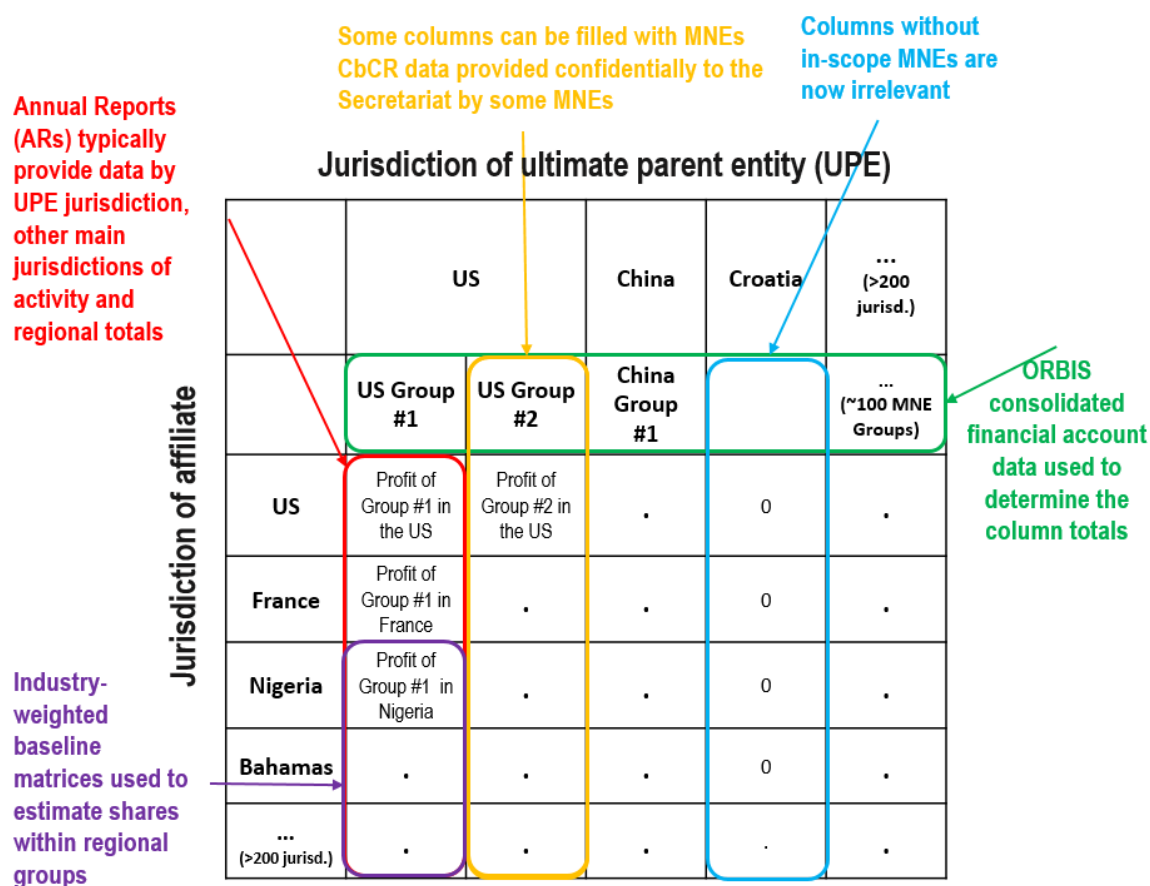
34. Due to the high revenue and profitability thresholds, the MNEs in scope of Amount A are relatively small in number and exceptionally large, profitable, and internationalised; datasets such as AMNE and CbCR with their much wider coverage are no longer representative. For this reason, it is necessary to model Amount A on an MNE-by-MNE basis. To calculate the Amount A formula for each in-scope MNE, it is necessary to create matrices on the distribution of each MNE's profits, revenue, depreciation, and payroll across all jurisdictions. While the 2020 EIA followed an aggregated approach in which the amount of profit and revenue in a given jurisdiction were modelled based on anonymised and aggregated CbCR data, the more limited scope of Amount A provided for in the MLC means that the allocation of Amount A is highly impacted by the global activities of the in-scope groups. An overview of the approach is shown in Figure 3.1.

35. The first step in creating MNE-specific matrices is to create a list of in-scope MNEs for each year, 2017-2021. This step is discussed in detail below. In addition to the EUR 20 billion profit threshold and the 10% profitability threshold including the averaging tests, the sectoral exclusions for extractives and regulated financial services companies are also taken into account. Exclusion decisions are based on Orbis NACE codes (1-9 for extractives and 64-66 for regulated financial services companies) as well as manual checks. The mechanisms for the averaging across years of the profitability threshold are fully accounted for in determining the annual in-scope lists. As in the 2020 EIA, this update does not take into account the possibility of in-scope segments of out-of-scope MNEs due to data constraints, even though this is envisioned by the MLC. In addition, some MNEs that are privately held or located in jurisdictions where the publication of financial information is less common may not appear in the data used, potentially leading to an underestimation of global in-scope residual profit and biasing revenue gains downward.

36. Once the list of in-scope MNEs for each year was determined, information about the geographic location of each in-scope MNE's profit, revenue, depreciation, and payroll was collected from those MNEs annual reports where available for the years 2017 and 2018. The annual reports were manually screened for relevant quantitative information. While some MNEs, especially those with UPEs in jurisdictions with less stringent disclosure rules, do not publish detailed annual financial statements, annual reports could be found for 92.6% of in-scope MNEs in 2018 and 91.9% in 2017.

37. This financial statement information from annual reports was used to create a set of matrices for each MNE representing the MNE's global distribution of profit, revenue, depreciation, and payroll. Each matrix contains 222 rows, with each row indicating the quantity of the financial variable (e.g., pre-tax profit) in one of the 222 jurisdictions included in this update. The sum of each variable is rescaled to equal the consolidated total of the relevant variable which is available for each MNE. These matrices form the basis for determining the amount of profit, depreciation, and payroll in each jurisdiction for each MNE to calculate double tax relief obligations under the multi-tiered approach indicated in the MLC (see Component C discussed in Section 4 below).

Figure 3.1. Overview of approach to creation of MNE-specific matrices



38. In some cases, quantitative jurisdiction-level information was unavailable in the annual reports for certain financial variables. For instance, few MNEs report payroll information by jurisdiction. In contrast jurisdiction-level information on the count of employees is often available. In such instances, payroll is estimated by multiplying the number of employees with the average MNE wages in a jurisdiction (sourced from the International Labour Organization).

39. Financial statement data collection occasionally produced “hard zeros” for particular variables in particular jurisdictions. From time to time, financial statement data indicated that the entire distribution of an MNE’s activity along a particular financial variable was concentrated in a set group of jurisdictions. For instance, some annual reports contained a list of jurisdictions in which the given MNE had an active subsidiary. In these cases, the values for payroll, depreciation, and profits were set to zero in all other jurisdictions outside of the list. In order to ensure consistency across variables generated from different data sources for the same MNE, adjustments constituting a sanity test were performed on the MNE-jurisdiction level data. In cases where revenue or both depreciation and payroll are set to zero, profit was similarly set to zero. For each MNE, all lost profit was then proportionally reallocated to the jurisdictions that do not fail this test based on the original shares generated by the MNE-specific matrices, ensuring that jurisdiction-level profit continues to sum to consolidated global profit for each MNE. First, this adjustment is logical as it is unlikely profit will be located in jurisdictions without at least some revenue or substantive economic activity there. Furthermore, this adjustment avoids generating extreme values in returns to depreciation and payroll and returns on revenue due to misalignments between data sources.

40. When numerical information on the desired quantities was unavailable in annual reports, qualitative statements in the annual reports about geographic distributions, including verbal descriptions, formed the basis for adjustments to jurisdiction-level quantities. For instance, several annual reports state that geographical information for a particular variable (or set of variables) is not presented because “substantially all” of the MNE’s activity along that variable is concentrated in a single stated jurisdiction, often the MNE’s headquarter jurisdiction. In the absence of any other information, for a very small number of firms, the qualitative statement “substantially all” was interpreted numerically to mean 90%.

41. For jurisdictions where neither numerical, nor non-numerical information on the variables of interest was available in the annual report of an MNE, the information is proxied using “sector-specific matrices”. Sector-specific versions of each of the four jurisdiction-by-jurisdiction matrices (i.e., payroll, assets, profit, and turnover) are created for each of the 34 sectors in the AMNE data, to proxy the location of MNE activities at the jurisdiction-pair-sector level, by using 2016-2018 data from AMNE and the US Bureau of Economic Analysis (BEA), as well as the jurisdiction matrices constructed as described in the 2020 EIA. MNE groups are matched to AMNE industrial sectors based on their primary activity NACE code; the matrix column corresponding to the sector and UPE jurisdiction of the MNE are taken as representing the global distribution of the matrix financial variable across jurisdictions. In situations where no financial statement information was available for a particular MNE for a particular variable, the relevant sector-specific matrix column was used as a basis for populating the MNE level data.

42. In many cases, the annual report of a given MNE provides information on the quantity of a particular variable in a handful of jurisdictions where most of the MNE’s operations are located but omits the totals outside of these jurisdictions or combines them into a “rest of world” category. In these cases, the values in the relevant matrix column for jurisdictions lacking annual report information are rescaled to equal the difference between the sum of the jurisdictional quantities given in the annual report and the MNE’s global consolidated total for the particular variable, and the rescaled matrix column values are used for the jurisdictions left unspecified in the annual report.

43. Frequently, even if preferred jurisdiction-level information was unavailable, jurisdiction group-level information was available and was used to rescale the jurisdictional quantities generated by sector-specific matrix columns. Often, annual reports contain information about the quantities of profit, revenue, depreciation, and payroll for the MNE’s regional operating segments or for continents rather than for individual jurisdictions. In an effort to use as much MNE-specific information as possible in the MNE-level vectors, the 2023 EIA Update incorporates this more aggregated information about groups of jurisdictions as well. Jurisdiction-level data points within MNE-level vectors that come from the sector-specific matrices described above are rescaled, such that the MNE-level vector’s jurisdiction-level datapoints within the jurisdiction group sum to the quantity of the jurisdiction group indicated in the annual report.⁶ In this manner, MNE-specific continent and regional information is combined with sector-specific jurisdiction information to form an MNE-level vector. However, jurisdiction-specific information in annual reports is always preferred over regional or continent information from annual reports, which is itself always preferred over jurisdiction-sector matrix columns. For a small number of MNEs, public firm-level CbCRs as well as a small number of CbCRs confidentially provided by MNEs are used. Where available these are preferred over all other sources of information.

44. A number of adjustments were made in order to ensure mathematical harmonisation of key financial variables between the jurisdiction-MNE level and the global-MNE level. For each MNE,

⁶ To illustrate, consider a case where the relevant sector-specific matrix column indicates that 20% of an MNE’s global profit is located in jurisdiction X and 5% is located in jurisdiction Y (summing to 25%). Consider also that the MNE’s annual report indicates that jurisdictions X and Y combined contain 50% of that MNE’s global profit. In this case the approach would be to double the profit values for jurisdiction X and jurisdiction Y indicated by the relevant sector-specific matrix column before being placed in the MNE-level vector. The remaining jurisdictions in the relevant sector-specific matrix column would be adjusted downwards.

jurisdiction-level shares of profit, revenue, allocated Amount A, depreciation, and payroll were calculated from the MNE-level matrices and adjusted to match their global MNE-level equivalents. For instance, the MNE-level matrices were used to compute the share of profit in each jurisdiction for any given MNE, and those shares, normalised to sum to one, were multiplied by the total global profit for that given MNE, ensuring that the sum of jurisdictional profit is equal to global profit. Note that in some cases, the sum of jurisdictional Amount A does not quite equal global Amount A even after this process due to the later application of the nexus threshold for receiving Amount A.

Table 3.1. Data Sources Used to Build 2018 MNE-level Matrices

	Percentage of total				Percentage of cells			
	Turnover	Profit	Depreciation	Payroll	Turnover	Profit	Depreciation	Payroll
MNE-level CbCRs	3%	2%	1%	2%	2%	2%	1%	2%
MNE - Jurisdictional data from financial statements	49%	28%	50%	17%	1%	1%	1%	0%
MNE - Regional data from financial statements	41%	34%	22%	21%	90%	64%	77%	31%
Sector specific Matrices	7%	36%	26%	59%	7%	34%	21%	66%

45. MNE-specific matrices are created for fiscal years 2017 and 2018; for 2019-2021, the shares in the 2018 MNE-specific matrices are scaled (by adjusting the column totals) to the new MNE-level consolidated totals for 2019, 2020, and 2021. For MNEs that entered the scope of Amount A after 2018, 2018 MNE-specific matrices are collected and used as described above for consistency. Therefore, while the revenue estimates do account for changes in global totals of in-scope profit, revenue, depreciation and payroll, they do not account for changes to the global distribution of profits, depreciation, payroll, and revenue that have occurred since 2018.

46. Overall, the majority of the variable totals in each of the MNE-level vectors tend to come from annual reports, while a majority of the individual values in the MNE-level vectors come from sector-specific matrices (Table 3.1). There is some source variation across the four variables: while most of the total turnover and a very high share of total depreciation come from the annual reports as does a majority of the profit total, a majority of the payroll total comes from sector-specific matrices.

3.2 Jurisdiction benchmarking

47. In order to maximise the accuracy of the various figures and aggregates used to model the jurisdictional revenue effects of Amount A through the formula in Figure 2.1, data validation exercises were conducted bilaterally with key jurisdictions in an anonymised and aggregated manner that preserved taxpayer confidentiality. To verify the accuracy of results, jurisdiction-group level matrices were shared bilaterally with jurisdictions which are expected to have in-scope MNEs. Jurisdictions were asked to validate the overall shares of profit in each jurisdiction-group-by-jurisdiction-group pair as well as shares

of relief (component E) provided by each jurisdiction-group taking into account the multi-tiered approach to the elimination of double taxation, along with the impact of the de minimis threshold. In all benchmarking efforts, the distinctive confidentiality rules of each assisting jurisdiction were respected. This meant that data sharing with different assisting jurisdictions produced benchmarking results of differing levels of aggregation and units of geographic precision.

48. The benchmarking exercise broadly confirmed the allocation of the revenue, payroll, and depreciation of in-scope MNEs across geographical regions. However, the benchmarking indicated that the model had underestimated the share of profit in investment hubs, and subsequently, the share of double tax relief in investment hubs. While it is not fully clear why this underestimation occurred, two reasons may explain. First, the MNEs in-scope of Pillar One are larger than the broader sample of CbCR-filing firms. Profit-shifting has been shown to be correlated with firm size, so the average firm in-scope of P1 may have more shifted profit concentrated in investment hubs relative to what is in the aggregated and anonymised CbCR data. Second, specific instances of high-taxed profit in a given jurisdiction for a given MNE may matter for a specific MNE but may be averaged out at the jurisdiction-level given the aggregated nature of the CbCR data used. This suggests that approach to estimation of Amount A that naively use the profitability levels in the aggregated and anonymised data may understate the share of elimination borne by investment hubs. The benchmarking confirmed all other aspects of the modelling of double tax relief, including the de minimis thresholds.

49. Subsequently, adjustments to the global distribution of profits were implemented in order to bring the level of profit in investment hubs in the original model in line with that suggested through the benchmarking process. Benchmarking indicated that the original model underestimated - by approximately half - the share of profits located in investment hubs in the same world region as the MNE's UPE but overestimated the share of profits located in investment hubs elsewhere. Specifically, for MNEs with European UPEs, profits appeared underestimated only in European investment hubs but overestimated elsewhere, while for MNEs with a UPE in Asia and North or South America UPEs, profits appeared underestimated only in Asian and American investment hubs but overestimated elsewhere. Following these patterns, an upwards adjustment of 100% to profit in investment hubs in the same region as the MNE UPE (the regions being either Europe or non-Europe) was made to the original data. In order to keep global total profit constant amidst this adjustment, profit outside of in-region investment hubs was proportionally adjusted downwards.

4 Calculation of Amount A

4.1 Global allocable residual profit: Components A and B

50. The MLC defines residual profit as all pre-tax profit exceeding 10% of revenue from MNEs whose global revenue also exceeds EUR 20 billion. Unlike the 2020 EIA, which assessed a range of allocation percentages, the 2023 EIA Update takes Component B as fixed at 25% as per the MLC. Therefore, if an MNE has pre-tax profit equal to 15% of revenue, 1/3rd of its profit is residual profit, and taxing rights on 1/12th of its profit will be reallocated through Amount A according to allocation keys or destination-based sales.

51. Notably, the scope of Amount A is no longer limited to MNEs falling within the automated digital services (ADS) and consumer facing business (CFB) classifications and only provides exclusions for the extractives and regulated financial sectors.⁷ Under 2023 EIA Update, MNEs of all primary business activities (excluding those in the extractives and regulated financial sectors) that meet the above quantitative thresholds are in scope of Amount A. The combination of the wider scope, the higher revenue threshold, and the chosen profitability threshold ultimately yields fewer in-scope firms but an amount of residual profit similar to that generated by the scope considered in the 2020 EIA.

Modelling in-scope MNEs

52. In order to calculate the quantity of global residual profit, it was necessary to identify the list of firms that meet the profitability and revenue threshold and calculate the residual profit of each firm. Using a database of consolidated financial accounts primarily drawn from Orbis, MNEs were identified on the basis of the scoping rules of the MLC for each year 2017-2021. While issues have been detected in the coverage and quality of Orbis' unconsolidated data, the global coverage of Orbis consolidated data is considered more reliable, especially for the largest MNEs. Notably, Orbis contains consolidated data on both publicly and privately owned firms. Careful cleaning and benchmarking efforts occurred to ensure the accuracy and completeness of Orbis consolidated revenue and pre-tax profit information, including deduplication procedures, integrating records from a variety of other databases, and manual checks of individual MNEs. In particular, benchmarking and manual checks in the Forbes Global 2000, Fortune 500, and the EU Industrial R&D Investment Scoreboard were undertaken to minimise the possibility of omitting in-scope MNEs missing from Orbis or wrongly classifying MNEs with incorrect Orbis information. Various rules regarding averaging across years are taken into account as envisioned in the MLC.⁸

⁷ Extractives (primary NACE Rev-2 codes 1-9) and financials (primary NACE Rev-2 codes 64-66) are excluded from Pillar One. Manual checks of individual companies were carried out to guard against potential errors in Orbis industry classifications, ensuring that MNEs are correctly included or excluded from Pillar One scope.

⁸ In order for a firm to be in scope in a particular year, it had to satisfy the 10% profitability threshold in the given year and at least two out of the prior four years and on average across the given year and the previous four years.

Changes to the amount of in-scope residual profit

53. As a result of the higher revenue threshold for the Amount A scope agreed by the Inclusive Framework (EUR 20 billion compared to EUR 750 million modelled in EIA 2020), the number of in-scope MNEs has fallen significantly compared to the proposals modelled in the 2020 EIA. However, the overall levels of in-scope residual profit remain at similar levels. The reduction in residual profit caused by the raising of the threshold is cancelled out by the increase in residual profit caused by the more comprehensive scope, extending beyond ADS and CFB (excluding only extractives and regulated financial services). The 2023 EIA Update projects that in 2021, the total amount of allocable residual profit under Amount A is USD 204.6 billion of residual profit, coming from 106 MNEs. On average over the period from 2017-2021, accounting for averaging, these values range between USD 100.3-204.6 billion and between 74-106 MNEs. The 2020 EIA estimated that for the year 2016, a EUR 750 million revenue threshold and 10% profitability threshold would produce approximately 500 in-scope ADS and CFB MNEs, with USD 123 billion in allocable residual profit.

Table 4.1. Sectoral exclusions from the scope of Amount A

Financials (out of scope)	Extractives (out of scope)	All other business activities (in scope)
NACE letter K (K64.1.1 - K66.3.0)	NACE letters A and B (A1.1.1 - B9.9.0)	NACE letters C, D, E, F, G, H, J, L, M, N, P, Q, R

Note: Primary NACE codes from the second revision are used.

Source: https://ec.europa.eu/competition/mergers/cases/index/nace_all.html

54. It is important to note that while this analysis shows the amount of profit in-scope of Amount A, this is not necessarily the same as the amount reallocated under Amount A. For a variety of reasons, USD 204.6 billion in profit will not be reallocated under Amount A. For example, Amount A may be unallocated if: (i) a jurisdiction does not implement Amount A and therefore cannot receive it; (ii) there is no nexus in a jurisdiction; and (iii) a jurisdiction already has residual profit and so sees its Amount A allocation reduced under the MDSH as outlined below. Moreover, a jurisdiction may already have taxing rights on a dollar of profit prior to allocation under Amount A, meaning that not all taxing rights that will be allocated under Amount A will be reallocated.

Trends in the amount of in-scope residual profit

55. The amount of in-scope residual profit tends to gradually increase over time along with the number of in-scope firms over the period 2016-2020 (see Figure 4.1). Part of the increase in the number of firms in-scope given the fixed global revenue threshold and the nominal growth in in-scope profit can be ascribed to inflation. However, in 2021, a large increase in the amount of in-scope residual profit compared to previous years can be seen in the data. This is driven by both an increase in MNE profitability and the count of MNEs in scope. Unlike in the 2017-2020 period, the major driver of this large 2021 increase is the increased in profitability of a number of large MNEs that were already-in-scope. While the causes of this change are not clear, one possible explanation is that this could be related to high profits of pharmaceutical or digitalised companies during the COVID-19 pandemic. Further, because of the definition of residual profit as all profit exceeding 10% of an MNE's revenues, small increases in total profit can translate into large increases in residual profit. For instance, an MNE whose profit to revenue ratio increases from 11% to 12% sees a doubling in its residual profit, all else equal.

56. The averaging rules that are part of the scope definition partly reduce the number of in-scope MNEs while only modestly reducing allocable residual profit, as these aspects of the rules tend to affect MNEs with profitability only slightly above the 10% threshold in certain years. In the years prior to 2021,

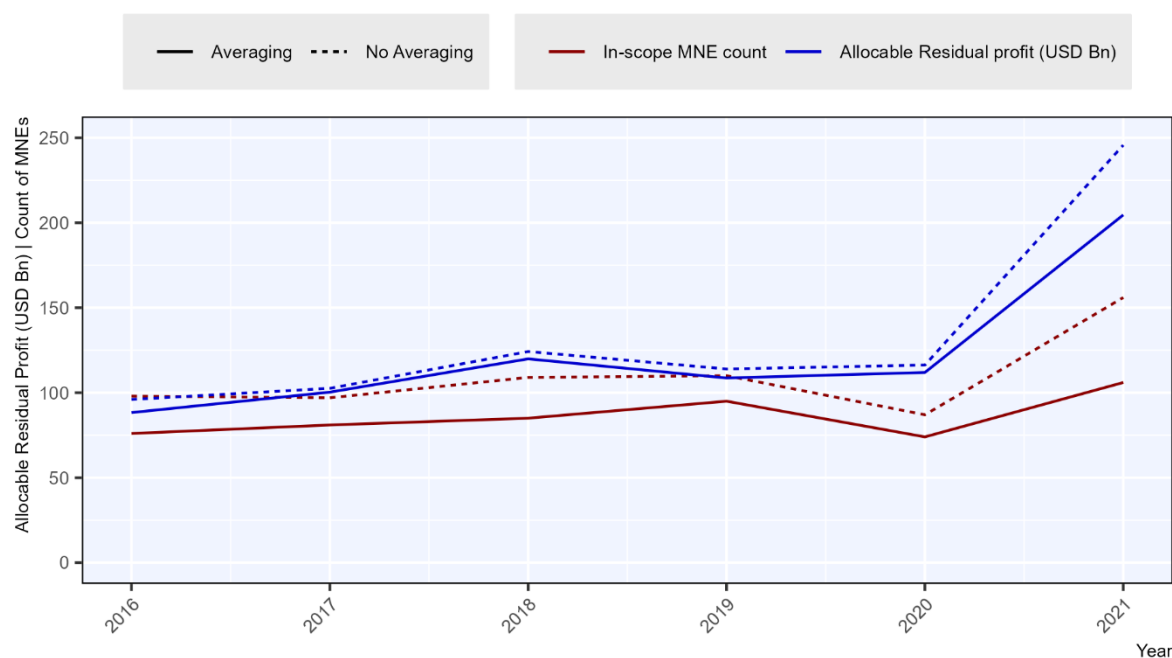
averaging excluded 13-24 MNEs from Amount A scope along with of USD 2.3-7.7 billion in allocable residual profit. Averaging affects the in-scope MNE count more than the allocable residual profit because relatively smaller MNEs with low residual profit tend to be those oscillating back and forth across the profitability threshold from year to year, while the largest, most profitable firms that contribute most to allocable residual profit tend to be significantly above the profitability threshold consistently. In 2021, however, averaging excludes 50 MNEs from Amount A scope along with USD 41.1 billion in allocable residual profit. The averaging mechanism has a larger effect in 2021 than in the other years because some of the pre-averaging increase in residual profit in 2021 comes from MNEs that did not exceed the profitability threshold until 2021.

Composition of in-scope residual profit

57. In-scope residual profit is highly concentrated amongst a small number of MNEs. The largest 11 firms account for approximately 50% of the total 2021 in-scope residual profit. Approximately 70% of the 2021 in-scope residual profit is accounted for by just 26 firms. For the years 2017-2021 on average, the figures are 13 firms and 25 firms, respectively.

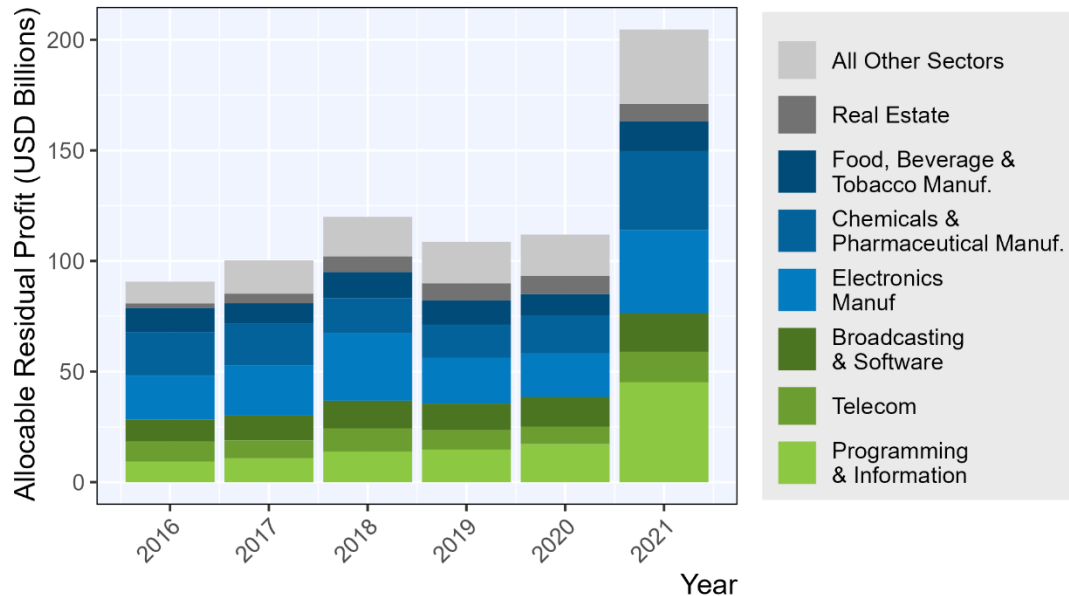
58. Amount A is also concentrated in certain sectors (see Figure 4.2). These sectors include several intangible intensive industries such as pharmaceuticals and consumer goods. Digital businesses of various kinds are also strongly represented, accounting for 54.1% of in-scope residual profit on average across 2017-2021 and 52.9% in 2021.⁹ Various manufacturing sectors are also strongly represented, with some form of manufacturing representing 46.3% of total residual profit in 2021 and 47% on average across 2017-2021. For electronics manufacturing specifically, these figures are 21.4% and 22.7% respectively.

Figure 4.1. Trends in the number of MNEs and allocable residual profit in-scope of Amount A



⁹ Here 'digital' is defined to include telecommunications, software & broadcasting, programming & information, and electronics manufacturing. If electronics manufacturing were excluded, the figure would be 31.4% on average over 2017-2021 and 31.5% in 2021.

Figure 4.2. Composition of allocable residual profit in-scope of Amount A



4.2 Allocation of profit: Components C and D

59. The MLC states that global allocable residual profit (the product of components A and B; the MNE’s residual profit multiplied by the allocation percentage) shall be allocated to market jurisdictions in proportion to their share of that MNE’s destination-based sales or the location of users of digital services, irrespective of the geography of the MNE’s permanent establishments or direct sales.¹⁰

60. In situations in which certain types of in-scope MNEs are unable to determine the final destination of their sales, in particular regarding MNEs that sell to other businesses (business-to-business (B2B)) rather than directly to consumers or for which revenue is related to the location of the user of a digital service, the MLC envisions the potential use by MNEs of various allocation keys based on macroeconomic indicators. Details of the approach taken to the revenue sourcing rules are described below.

61. The MLC includes a nexus threshold such that a jurisdiction must have at least EUR 1 million of sales from any given MNE in order to receive any Amount A from that MNE; this threshold is lowered to EUR 250,000 for jurisdictions with GDP of under EUR 40 billion. In situations in which in-scope MNEs are generally able to source their sales to the final destination but are unable to source a small percentage (up to 5%) of their revenues, the MLC provides that these “tail-end revenues” can be allocated (at the MNE’s discretion) among solely low and low-middle-income jurisdictions in proportion to GDP.

¹⁰ Destination-based sales and direct sales are identical for consumer-facing businesses, but not for businesses that sell to other businesses.

Revised tax base allocation according to share of destination-based sales – Component C

Revenue sourcing:

62. Both destination-based sales and a variety of macroeconomic keys approximating destination-based sales are used for the various in-scope business types, ultimately allocating the entirety of Amount A. These are as follows:

- The 2023 EIA Update assumes that MNEs that sell directly to consumers will allocate allocable profit using destination-based sales: MNE-specific matrices relying heavily on the geography of sales to final customers from annual reports in conjunction with aggregate final consumption data are used to create MNE-specific allocation keys. For example, if an MNE provides a detailed breakdown of its sales by continent, then that information is used to estimate its sales, with data on final consumption being used to weight the allocation of revenue within a given geographic grouping. Approximately 43% of allocable profit is allocated on this basis in the model.
- For MNEs that provide automated digital services and tend to earn revenue from advertisements shown to users throughout the world, the 2023 EIA Update assumes that profit is allocated based on a macroeconomic key in proportion to internet usage and final consumption expenditure. Approximately 24.0% of allocable profit is allocated on this basis in the model.
- For MNEs with revenue principally from components and business-to-business services, the 2023 EIA Update assumes that profit is allocated based on a macroeconomic key in proportion to GDP. Approximately 22.0% of 2021 allocable profit is allocated on this basis in the model.
- For MNEs with revenue composed principally of B2B finished goods, the 2023 EIA Update envisions that profit is allocated based on final consumption expenditure alone. Approximately 2.9% of allocable profit is allocated on this basis in the model.
- For MNEs in industries with distinctive relationships to geography such as airlines, international shipping, and real estate, a series of special keys are created to best approximate the allocation of profit for each individual business. Approximately 4.9% of 2021 allocable profit is allocated on this basis in the model.
- For some MNEs in the model, it is assumed that the MNE is principally domestically focused, and foreign revenue may be negligible. In such cases, all an MNE's profit is allocated to the parent jurisdiction. Approximately 2.9% of allocable profit is allocated on this basis in the model.

63. The allocation keys described above are calculated twice: Once for 2017 using 2017 data and a second time for 2018 using 2018 data. The shares from the 2018 key are then extrapolated forward for the years 2019-2021 using each MNE's consolidated 2019-2021 data. This double calculation involves collecting geographic information from MNE annual reports once for the 2017 financial year and again for the 2018 financial year and reproducing the jurisdiction-sector matrices once using 2017 CbCRs and AMNE information and again using 2018 CbCRs and AMNE information, as described in Section 3 above.

64. The use of macroeconomic allocation keys and destination-based sales to allocate Amount A makes a large positive impact on the Amount A revenue gains of low- and middle-income jurisdictions compared to the counterfactual use of direct sales or permanent establishments (PEs) to allocate Amount A. This is likely because many MNEs appear to be less likely to have a PE in low- and middle-income jurisdictions. Furthermore, many MNEs selling components or B2B services may make direct sales to other MNEs headquartered in high-income jurisdictions who in turn make direct sales to individual customers in low- and middle-income jurisdictions. Therefore, the MNEs selling components or B2B services may actually have final sales in low- and middle-income jurisdictions where they have no direct sales. This approach is likely to result in a modelled allocation of profit that will be more accurate than one that relies exclusively on MNEs reported sales.

Table 4.2. Amount A allocation keys by business type

Business type	Number of MNEs (FY 2021)	Allocation key used in modelling	Global allocable Amount A (USD billions)
Finished goods B2C (incl. B2C Services)	45	MNE-specific* / Final consumption expenditure	88.8
Finished goods - B2B	10	Final consumption expenditure	5.9
Components	18	GDP	14.7
Location specific services	11	MNE-specific* / Final consumption expenditure	9.3
Transport services	2	MNE-specific* / GDP (excl. non-markets)	6.2
B2B Services	9	GDP	25.6
Real estate	6	MNE-specific* / GDP	5.0
ADS	5	MNE-specific* / FCE * internet usage	49.1

Nexus thresholds

65. In situations where Amount A allocated from a particular MNE to a particular jurisdiction is below the relevant nexus threshold, that stream of Amount A is set to zero in the 2023 EIA Update and the relevant portion of residual profit remains unallocated. This nexus provision functions in order to prevent MNEs and jurisdictions from having to coordinate a large number of very small transactions, saving significant administrative cost.

66. The modelling of the lower nexus threshold from EUR 1 million to EUR 250,000 for jurisdictions with GDP under EUR 40 billion has a significant impact on the total Amount A allocated to and the ultimate Amount A revenue impact in small and low-income jurisdictions. It increases the revenue gains for low- and middle-income jurisdictions overall by 0.1% of CIT. For the affected jurisdictions (i.e., jurisdictions below the GDP threshold) revenue estimates increase by 0.4% of CIT in the model.

Allocation of tail-end revenues

67. The updated impact assessment models a provision in the revenue sourcing rules allowing some MNEs who cannot accurately source their revenue to final consumers to allocate some un-sourced revenue to low- and lower-middle income jurisdictions. These tail-end revenue provisions can cover up to 5% of an MNE's overall Amount A. This provision is available only to in-scope MNEs that sell directly to consumers. In the model, it is assumed that MNEs allocate 2.5% of their global Amount A (a conservative assumption given the maximum 5% allowable) to low- and low-middle-income jurisdictions. Note that these profits are allocated irrespective of the presence of sales in these jurisdictions in the data. Within the low and low-middle income jurisdictions, global tail-end revenue is allocated on a pro rata basis based on GDP.

68. The modelling of the tail-end revenue provisions has a large impact on the total Amount A allocated to and the ultimate Amount A revenue impact in low- and low-middle- income jurisdictions, increasing low-income and low-middle-income Amount A revenue estimates by 22%, or 0.4% of CIT. Other studies that fail to take into account tail-end revenues and other provisions (e.g., reduced nexus threshold) may underestimate gains to low-income jurisdictions from Amount A (Tandon and Rao, 2022^[3]).

Tax rates used for allocated profit – Component D

69. The 2022 EIA assumes that profit allocated under Amount A is taxed at the STR of the receiving market jurisdiction, taking advantage of updated STRs for all 200+ jurisdictions for each year of 2017-2021. This approach is also followed in the 2023 EIA Update. The vector of STRs used for Amount A is consistent with the STRs used for Pillar Two. The STRs used for both Amount A and Pillar Two are sourced from the OECD Corporate Tax Statistics database (OECD, 2020^[4]). The combined STR incorporating taxation on both the national and subnational levels is used in order to arrive at the most accurate picture of the STR faced by MNE affiliates operating in a given jurisdiction. For jurisdictions not included in the Corporate Tax Statistics database, KPMG’s publicly available statutory tax rate data are relied upon.

Marketing and distribution safe harbour

70. The MDSH is designed such that jurisdictions that already have residual profit will have their allocated profit under Amount A reduced to avoid double counting. The 2023 EIA Update models the MDSH as outlined in the MLC. The MDSH affects Amount A allocations, as described below, and was not accounted for in the 2020 EIA.

71. The MDSH is modelled as reducing both Amount A and residual profit in a given jurisdiction where a given MNE has residual profit. Across a range of possible parameters, the MDSH primarily impacts “circular” allocations of Amount A, modestly reducing global Amount A allocated. Circularity occurs when a jurisdiction that is receiving tax base from an MNE in the form of Amount A gives that same tax base back to the MNE in the form of double tax relief. The model estimates that 13.4% of Amount A allocation is circular prior to the MDSH, and that less than 1% of allocation is circular after the MDSH.

72. Several features of the MDSH are worth considering. A key parameter relating to the MDSH is referred to henceforth as the Y percentage. The Y percentage refers to the cents of a given MNE’s Amount A that are “offset” (that the jurisdiction no longer receives) per dollar of residual profit in the jurisdiction. The X percentage refers to the extent to which offset profit for MDSH purposes reduces profitability for the subsequent elimination of double taxation.

73. To consider the Y percentage, it is worth considering a simple example. Assume a jurisdiction has USD 1 million of residual profit and USD 2 million of Amount A from a particular MNE. In this case a Y percentage of 25% would leave the jurisdiction with only USD 1.75 million in Amount A after MDSH is applied, while a Y percentage of 100% would leave the jurisdiction with only USD 1 million in Amount A after MDSH is applied. In the MLC, different Y percentages apply in different circumstances, which have been accounted for in this modelling. This means that, given that the MDSH applies at the level of a particular MNE’s presence in a particular jurisdiction; a jurisdiction may experience very different MDSH outcomes with respect to different MNEs. Further details are contained in the MLC.

74. While the computation of residual profit for the MDSH generally applies based on returns to depreciation and payroll, an alternative computation of residual profit using return on revenue serves as an extra backstop for MDSH application. The inclusion of the return on revenue metric means that the MDSH will only apply where an MNE in a jurisdiction has profit that exceeds both a RoDP metric and a return on revenue metric. This approach ensures that the impact of the MDSH will not be unduly large for jurisdictions with high returns to depreciation and payroll but low returns to revenue.

75. Due to the provision of a de minimis threshold for the application of MDSH, small economies and low-income jurisdictions are generally unaffected by the MDSH. In order to reduce the complexity of the Amount A rules for smaller jurisdictions, a de minimis threshold included in the MLC. In the model, this de minimis threshold excludes all jurisdictions with less than EUR 50 million in profits from an MNE from the application of the MDSH for that MNE. This de minimis threshold alone excludes virtually all small and low-income jurisdictions from the MDSH within the model.

76. Average revenue gains within middle and high-income jurisdiction groups are largely unaffected by the MDSH, while investment hubs are moderately affected at the lower bound. In the model, the impact of the MDSH on Amount A is very concentrated in a small number of the large, high-income and middle-income markets with multiple in-scope UPEs. This is because the MDSH is only material in cases where a jurisdiction has both a significant share of an MNE's global destination-based sales (or macroeconomic allocation key) and a large amount of residual profit. For most high- and middle-income jurisdictions, the model projects only modest MDSH impacts on final Amount A revenue estimates. On the other hand, the MDSH modestly lessens the negative revenue outcome for investment hubs, who bear the large majority of global double tax relief obligations, by modestly reducing the total global pool of Amount A to be relieved.

4.3 Elimination of double taxation: Components E and F

77. The relief of double taxation modelled, reflecting the MLC, represents a more granular approach than the pro-rata approach modelled in the 2020 EIA. Instead of pooling all residual profit from all in-scope MNEs and using jurisdictional residual profit shares of that pool to allocate total global double tax relief across jurisdictions, the new approach requires an MNE-by-MNE calculation that moves through multiple tiers that carry different levels of priority for providing elimination. The residual profit in each jurisdiction must be computed separately with respect to each MNE, and jurisdictions are subsequently sorted into tiers to sequence elimination with respect to each MNE.

78. As a result of the new tiered system for double tax relief, jurisdictions may provide significant double tax relief for some MNEs, very little double tax relief for other MNEs, and no double tax relief at all for many MNEs. In practice, the tiered system concentrates the burden of elimination for most MNEs in a very small number of jurisdictions, while the majority of jurisdictions are never obligated to provide any double tax relief. This pattern amplified by the "de minimis" provisions, which exempts, on an MNE-by-MNE basis, a jurisdiction that has less than a certain amount (and global share) of profit from the obligation to relieve double taxation. The de minimis provision notably benefits small and low-income jurisdictions, and these types of jurisdictions subsequently provide virtually no double tax relief in the updated model.

79. A key change to the approach to double tax relief is the financial metrics by which residual profit is computed. While for the 2020 EIA, residual provide was assessed on the basis of return on revenue, in this revised version it is modelled on the basis of RoDP. This change has implications for the distribution of elimination; jurisdictions with high revenue but low depreciation and payroll with respect to profits will see an increase in double tax relief obligations, while jurisdictions with low revenue and high depreciation and payroll with respect to profits will see a decrease in double tax relief obligations. Furthermore, the adoption of the tiered system notably increases the concentration of double tax relief in jurisdictions with higher residual profit. Taken together, the developments in the elimination mechanism tend to concentrate double tax relief obligations in investment hubs while easing them in high-, middle-, and low- income jurisdictions.

Multi-tiered approach to elimination – Component E

80. For the purposes of assigning double tax relief to each in-scope MNE's Amount A, each jurisdiction where an MNE books profits is sorted into one of five tiers based on that jurisdiction's returns to depreciation and payroll with respect to the given in-scope MNE. These tiers are:

- Tier 1 - Jurisdictions where jurisdiction RoDP is above 1500% of the group average
- Tier 2 - Jurisdictions where jurisdiction RoDP is above 150% of the group average
- Tier 3A- Jurisdictions where jurisdiction RoDP is the higher of 40% absolute RoDP and a return to RoDP equivalent to 10% of a return on revenue at the group level

- Tier 3B - Jurisdictions where jurisdiction RoDP is the lower of 40% RoDP and a return to RoDP equivalent to 10% of a return on revenue at the group level
- Tier 4 - Jurisdictions without residual profit – i.e., jurisdictions that do not meet any of the criteria above.

81. The MLC sets out specific procedures for how elimination unfolds within the tiered structure, which is fully reflected in this 2023 EIA Update. To summarise, jurisdictions in the lower RoDP tiers for a particular MNE are only called upon to eliminate for that MNE if jurisdictions in higher RoDP tiers have provided a certain amount of double tax relief and there is still allocated profit still to be relieved. Within each tier, elimination proceeds on a pro-rata basis with respect to the amount of residual profit computed under RoDP. The exception to this is in Tier 1, where it proceeds on a waterfall¹¹ basis. The jurisdictions within a particular tier for a particular MNE are required to provide double tax relief until the profit remaining in the jurisdiction falls to a level such that the RoDP is subsequently equal to the threshold of the tier, unless that MNE's Amount A remaining to be relieved is surpassed first.

De Minimis thresholds

82. The joint application of two de minimis thresholds exempts jurisdictions with small amounts of profit from the given MNE from the obligation to provide double tax relief to that MNE. The de minimis thresholds provide that jurisdictions with less than EUR 50 million in profit from an MNE are exempt from providing double tax relief for that particular MNE, as long as they are also outside of the list of jurisdictions consisting of the smallest possible number of jurisdictions whose profit sums to at least 95% of the MNE's global profit. This joint de minimis rule ensures that virtually all low-income and small jurisdictions and many middle-income jurisdictions are exempt from the obligation to provide double tax relief for all in-scope MNEs across all years modelled.

83. The de minimis thresholds substantially reduce the share of surrendered taxing rights for low-income jurisdictions, middle-income jurisdictions, and small economies generally. This provision significantly increases their expected Amount A net revenue gain. The analysis shows that revenue gains to small jurisdictions increase by 0.5% of CIT, and 0.2% of CIT to low- and middle -income jurisdictions as a result of the de minimis threshold.

84. The switch from pro-rata elimination modelled in the 2020 EIA to the multi-tiered approach envisioned in the MLC highly concentrates the obligation to provide double tax relief in investment hubs, increasing their final revenue losses under Amount A. The updated model shows that investment hubs provide approximately 81% of total global double tax relief. Low-income jurisdictions continue to be all but excluded from any obligation to provide relief.

Tax rates used for elimination of Amount A – Component F

85. Improved ETR estimates from bilateral CbCR cells along with a variety of sources were used to value tax base losses due to double tax relief. Tax base losses due to double tax relief will affect a jurisdiction's CIT revenue in proportion to the pre-existing ETR on those profits in the relieving jurisdiction. In order to approximate these ETRs, the profit and the taxes paid from jurisdiction-by-jurisdiction CbCR

¹¹ In Tier 1, double tax relief allocation proceeds according to the waterfall procedure: For each MNE, Tier 1 jurisdictions with profit exceeding the joint de minimis threshold are ordered by descending post-MDSH RoDP. The jurisdiction with the highest RoDP provides double tax relief such that post-MDSH profit minus this double tax relief equals an amount of profit that produces an RoDP equal to the that of the jurisdiction with the next lowest RoDP. Then these two jurisdictions provide double tax relief until their RoDPs fall to the RoDP equal to that of the jurisdiction with the third highest RoDP originally, and so on. This continues until the RoDP of all jurisdictions of Tier 1 has fallen to the Tier 1 threshold multiplied by the MNE group's average RoDP, or until the total global Amount A to be eliminated has been exhausted.

cells were combined to compute ETRs. Given the lack of total CbCR availability for every host jurisdiction, this procedure generates as few as several or as many as a multitude of possible ETRs, giving an idea of the distribution of effective tax liability in the host jurisdiction. Both 2017 and 2018 CbCR cells were used, and the results were pooled. Given the lack of CbCRs extending to 2021 as well as the lack of ETR observations for small and developing jurisdictions, the model does not attempt to capture ETR variation across time.

Accounting for uncertainty in Amount A

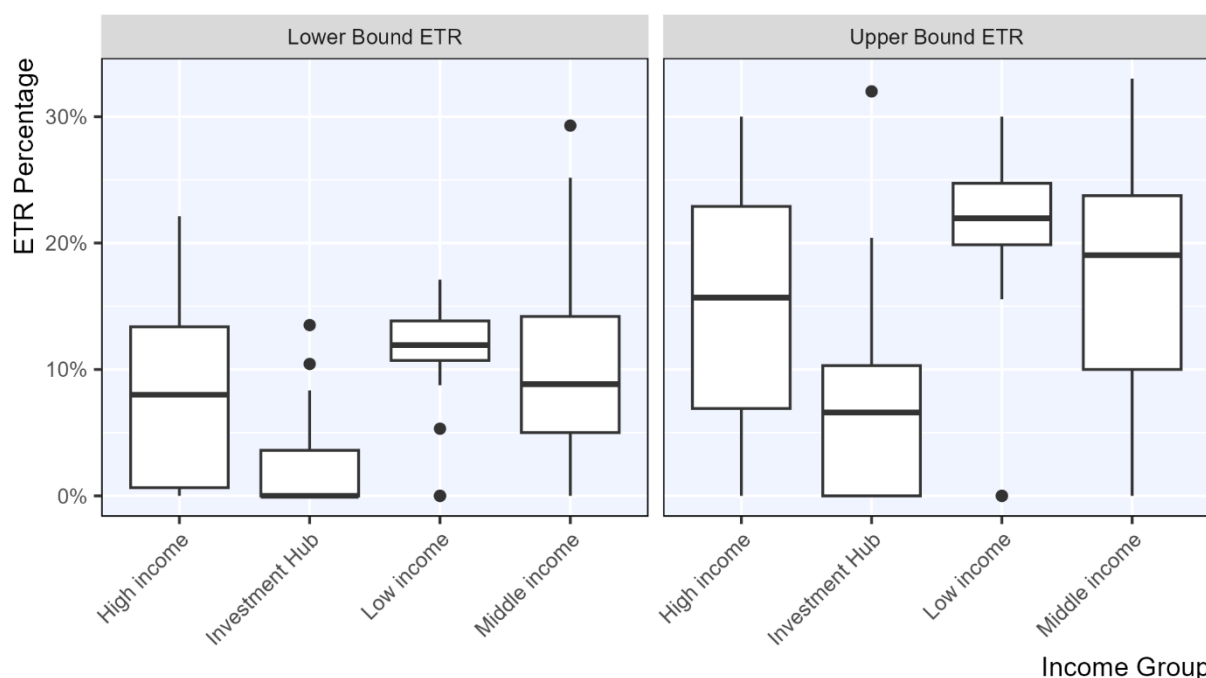
86. In order to generate the upper and lower bounds of estimates taking into account uncertainty about ETRs of eliminated profits, an upper bound and lower bound ETR were calculated from a variety of sources, principally the pooled 2017 and 2018 CbCR ETRs. The determination of how much the provision of double tax relief on a certain subset of an MNE's profits will affect a jurisdiction's CIT revenue is complicated by the significant uncertainty around the ETR at which the particular subset of the MNE's profit would be taxed in the absence of the application of Amount A. Surrendering taxing rights on high-taxed profits would have a much larger effect on a jurisdiction's CIT revenue than surrendering taxing rights on low-taxed profits. There is a very wide range of ETRs across firms within any particular jurisdiction, sometimes stretching all the way down to zero and all the way up to the STR. In order to capture this potential variation in revenue estimates, an upper and lower bound estimate was constructed using a lower and upper bound ETR. The lower bound was taken as the 75th percentile of the set of the pooled 2017 and 2018 bilateral CbCR ETRs for each jurisdiction, while the upper bound was taken as the 25th percentile. In cases where there were only a small number of bilateral CbCR ETRs, a global average distance between the 25th percentile ETR and the 75th percentile ETR was calculated, and this interval was centred at the mean bilateral ETR (or other ETR from Tørsløv, Wier, and Zucman or calculated from the US Bureau of Economic Analysis data if no bilateral ETRs were available) in order to derive an upper or lower bound ETR.¹² In case of extreme values arising from these procedures, ETRs were bounded from below at zero and from above at the STR.

87. Overall, the ranges of the ETRs vary substantially across jurisdictions and jurisdiction groups. This reflects both significant variation in STRs across jurisdictions both within and between jurisdiction groups, as well as significant uncertainty about how much lower ETRs are than STRs. As can be seen in Figure 4.3 below, there are discernible patterns. ETRs in investment hubs tend to be lower than ETRs in other jurisdictions, reflecting their lower STRs. Despite this, ETRs vary widely within jurisdiction groups as well, specifically within the middle- and high-income jurisdiction groups that contain jurisdictions with a wider range of STRs. Low-income jurisdictions, on the other hand, tend to have higher STRs and ETRs. Mean lower bound ETRs were 11.4%, 9.8%, 8.0%, and 2.4% for low-, middle-, and high-income jurisdictions and investment hubs respectively. Mean upper bound ETRs were 21.4%, 17.3%, 14.7%, and 7.1% for low-, middle-, and high-income jurisdictions and investment hubs respectively. Within the Inclusive Framework as a whole, the mean and median lower bound ETR are 8.7% and 8.8% respectively, while the mean and median upper bound ETR are 15.9% and 17.4% respectively.

¹² Data from Tørsløv, Wier and Zucman are taken from <https://gabriel-zucman.eu/missingprofits/>.

Figure 4.3. Distributions of ETRs within jurisdiction groups

ETRs used in the 2023 EIA update for the purpose of evaluating the revenue impact of double tax relief



Note: The “lower” and “upper” bound ETR labels in the facets of the graph refer to the low-end estimate of the ETR and the high-end estimate of the ETR respectively. The lower bound ETRs are used to generate the upper bound of the jurisdictional revenue estimates, while the upper bound ETRs are used to generate the lower bound of the jurisdictional revenue estimates. This is because higher ETRs reduce revenue estimates due to an increased revenue impact of double tax relief (Amount A revenue impact is generated using STRs for both bounds).

88. An absolute adjustment was also used in order to capture generic uncertainty arising from other aspects of the Amount A model. This absolute adjustment represents a globally constant percentage of each jurisdiction’s CIT revenue that is added to the jurisdiction’s Amount A allocation and surrendered tax base in the upper bound scenario and subtracted from those quantities in the lower bound scenario. In all cases, surrendered tax base and allocated profit are bounded at zero so that the absolute adjustment can neither cause a jurisdiction to have a negative profit allocated under Amount A nor cause a jurisdiction to surrender a negative amount of tax base. The fixed percentage of jurisdictional CIT is calculated as one fifth of global mean jurisdictional tax base change. Formatting the adjustment as a percentage of CIT rather than a fixed dollar amount creates a range that is of a similar order of magnitude for all jurisdictions. This range attempts to capture the general uncertainty that comes with integrating some jurisdiction-sector-level data alongside firm-level data into the estimates of profit, revenue, depreciation, and payroll, which might therefore not perfectly reflect the geographic idiosyncrasies of particular firms in particular jurisdictions.

5 Results

89. This section examines the impact of Amount A on tax bases and tax revenues based on the model outlined in the previous sections. It first discusses broader impacts of Amount A in terms of the stability and certainty of the international tax system, then discusses the reallocation of taxing rights that results from Amount A. Lastly, it examines the impact of Amount A on tax revenues.

5.1 Impact of Pillar One on the international tax environment

90. The most significant impact of Amount A may be to update the international corporate tax system to better reflect the digitalisation and globalisation of economy. As discussed above, Pillar One establishes a new taxing right based on new nexus and profit allocation rules that are better aligned with the modern global economy. Many large MNEs, particularly those with highly digitalised business models, are able to generate profits by participating in a market jurisdiction in an active and sustained way without any physical presence. Rising instances of MNEs generating profits without physical presence, and therefore without having traditional nexus, have posed significant challenges to the international tax system, to which the updated rules respond. While this update to the system strongly affects MNEs with highly digitalised business models, its impact is broader, expanding the taxing rights of market jurisdictions over all large MNEs with residual profits.

91. The implementation of Amount A also aims to avert the proliferation of DSTs and related similar measures. Although DSTs differ in their design across countries, they are generally based on turnover. These types of taxes are known to be distortive and to have uncertain incidence (Hanappi, Millot and Turban, 2023^[5]). DSTs can therefore be expected to have more significant negative effects on investment, employment and growth, than would be the case for the traditional CIT or Amount A. DSTs affect all firms regardless of their profitability, while Amount A only affects the largest and most profitable firms that have benefitted most from globalisation. DSTs would fall more heavily on lossmaking firms and near-marginal investments that do not generate large economic profits, potentially more significantly negatively affecting investment through their impact on the cost of capital. The fact that DSTs differ in their scope and design across jurisdictions would also mean that MNEs would face significant compliance burdens from a myriad of different taxes.

92. MNEs could also face double taxation due to the proliferation of DSTs discussed above, as the same income may be subject to both CIT and a DST. Many jurisdictions do not grant tax credits or exemptions against CIT liability arising from the payment of DSTs to foreign jurisdictions. The original 2020 EIA projected negative impacts of DSTs on global GDP growth in the absence of Pillar One due to the negative effect of DSTs on investment conditions as discussed above. When potential tax and trade disputes arising from the implementation of DSTs were taken into consideration, these negative impacts were estimated to reduce global GDP by up to 1% in the worst-case scenario. (OECD, 2020^[11]).

93. Finally, the potential positive impacts of Pillar One extend beyond Amount A. By creating global transfer pricing benchmarks for common transactions, Amount B of Pillar One can reduce costly transfer pricing disputes and provide further tax certainty. Amount B aims to simplify the application of the arm's length principle to a category of transactions which currently represent a large proportion of transfer pricing enquiries and disputes between tax administrations and taxpayers (OECD, 2022^[6]). This is expected to be

particularly beneficial for developing jurisdictions who face capacity constraints in the area of transfer pricing.

5.2 Impact of Amount A on the allocation of taxing rights

94. The new taxing right established under Amount A is estimated to reallocate substantial taxing rights among jurisdictions. The revenue sourcing rules, the rules on elimination of double taxation and the rules on the MDSH have a significant impact on the nature of this reallocation. Broadly speaking, Amount A reallocates taxing rights largely from investment hubs towards market jurisdictions (i.e., where MNEs have sales or users). The Amount A mechanism seeks to reallocate a portion of residual profits to market jurisdictions. In general, these residual profits are concentrated in investment hubs, which is why investment hubs provide a large share of the elimination of double taxation under Amount A, which reallocates taxing rights to other jurisdictions. The impact of Amount A is also driven by the revenue sourcing rules which are not based on a physical presence.

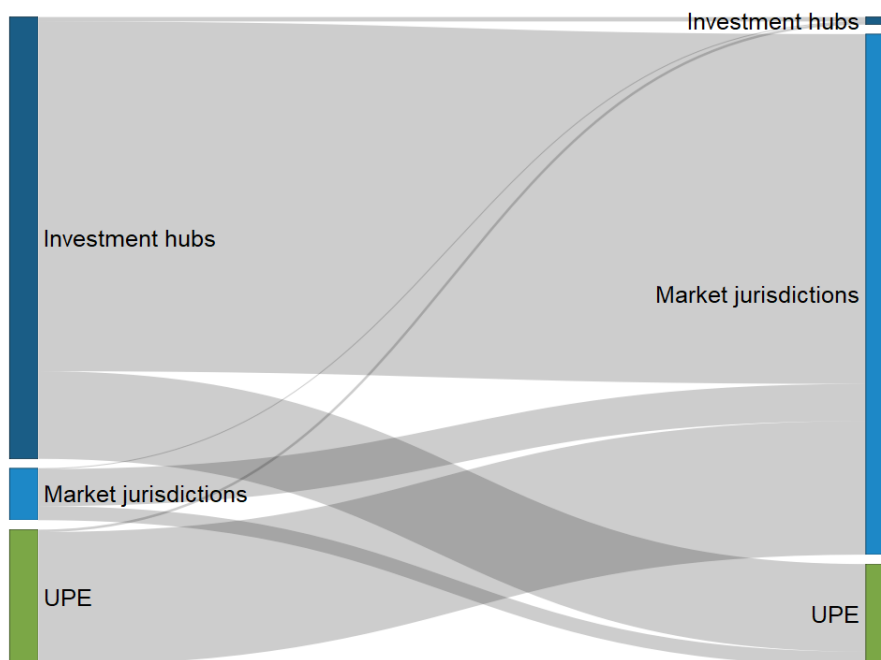
95. Figure 2.1 below visualises the estimated reallocation of taxing rights due to Amount A among three categories of jurisdictions: the UPE jurisdiction (UPE) of a given MNE, investment hub jurisdictions where that MNE has a presence, and all other jurisdictions, which are labelled as “market jurisdictions” for simplicity. The relative sizes of the coloured bars in the vertical line on the left represent the jurisdiction group shares of taxing rights over reallocated residual profit prior to Amount A. In the vertical line on the right, the relative sizes of the coloured bars represent the jurisdiction group shares of taxing rights over reallocated residual profit after Amount A. The horizontal grey bands represent allocations of taxing rights as a result of Amount A, with the thickness of the band corresponding to the size of the reallocation in USD.

96. The taxing rights on the majority of allocable residual profit in scope of Amount A of Pillar One are allocated to ‘market’ jurisdictions (i.e., jurisdictions other than investment hubs and the UPE jurisdiction). These allocations predominantly come from investment hubs. This highlights, first, the concentration of residual profit in investment hubs and second, the fact that the elimination of double taxation mechanism means that those jurisdictions with the highest levels of residual profit relieve first, which further concentrates relief in investment hubs.

97. The UPE jurisdiction also allocates a smaller amount of residual profit to market jurisdictions, as some residual profit will often be located in UPE jurisdictions. It is important to note, however, that while in some instances UPE jurisdictions allocate residual profit to other market jurisdictions, they are usually also themselves large markets, and often receive allocations from investment hubs. It is also worth noting that the circular allocation of a share of residual profits from a UPE jurisdiction to the same UPE jurisdiction under Amount A is reduced strongly by the MDSH.

98. A small share of Amount A is allocated from ‘market’ jurisdictions, corresponding to instances where an MNE would have some residual profit in a jurisdiction that is neither an investment hub nor the UPE jurisdiction. As Figure 5.1 shows, instances of this are relatively rare.

Figure 5.1. Amount A reallocation of taxing rights



Note: UPE means the jurisdiction of the Ultimate Parent Entity, which is defined uniquely for each MNE.¹³ The left column indicates the origin jurisdiction (i.e., the jurisdiction where the MNE profits over which taxing rights are to be reallocated is currently located), and the right column indicates the destination jurisdiction (i.e. the jurisdiction benefitting from the reallocation of taxing rights under Amount A). The thickness of the band and the vertical size of jurisdiction group bar corresponds to the reallocated amount under Amount A.

99. The design of Pillar One, in particular the provisions relating to the MDSH, ensure that Amount A taxing rights are not being allocated to the same jurisdictions that would have already had those taxing rights without Pillar One implementation. The MDSH provisions of Pillar One all but ensure that no single jurisdiction is both surrendering taxing rights through elimination of double tax relief and being allocated taxing rights through Amount A with respect to the same MNE. The staggered MDSH scenario agreed upon by the Inclusive Framework would leave less than 1% of total Amount A allocation circular, compared to 13.4% circularity in the absence of the MDSH.

5.3 Impacts of Amount A on tax revenue

100. The 2023 EIA Update finds that Amount A results in positive revenue impacts for low-, middle-, and high-income jurisdictions, with low-income jurisdictions gaining the most and high-income jurisdictions gaining the least, as a share of current CIT revenues. This outcome stems from the reallocation of taxing rights to low-, middle-, and high-income jurisdictions, net of double tax relief which mostly occurs in investment hubs. The factors leading to this positive outcome for low-income countries are as follows: (i) due to various de minimis provisions, low-income jurisdictions are almost entirely exempt from double tax relief and the implications of the MDSH; and (ii) due to the tail-end revenue provisions, low-income jurisdictions also receive additional allocated profit from MNEs. These two favourable outcomes also hold, to a somewhat lesser extent, for many middle-income jurisdictions, explaining why middle- and especially

¹³ Note that e.g., if MNE #1 has its UPE in jurisdiction A, and MNE #2 has its UPE in jurisdiction B, an allocation to jurisdiction B of taxing rights on the profits of MNE#1 would be classified as a flow to a market jurisdiction.

low- income jurisdictions have higher revenue gains from Amount A. Note that the results presented in this section exclude non-Inclusive Framework jurisdictions from global and jurisdiction group calculations.

101. Based on the assumption of full Amount A implementation, the 2023 EIA Update estimates that low-income Inclusive Framework jurisdictions would gain¹⁴ 2.5%-3.0% of CIT in 2021 and 1.5%-2.0% of CIT on average over 2017-2021, middle income jurisdictions would gain 1.2%-1.6% of CIT in 2021 and gain 0.7%-1.1% of CIT on average over 2017-2021. High income jurisdictions would gain 0.9%-1.4% of CIT in 2021 and 0.5%-1.0% of CIT on average over 2017-2021. On the other hand, investment hubs would lose 0.5%-7.9% of CIT in 2021 as a result of Amount A and lose 0.3%-5.3% of CIT on average over 2017-2021.

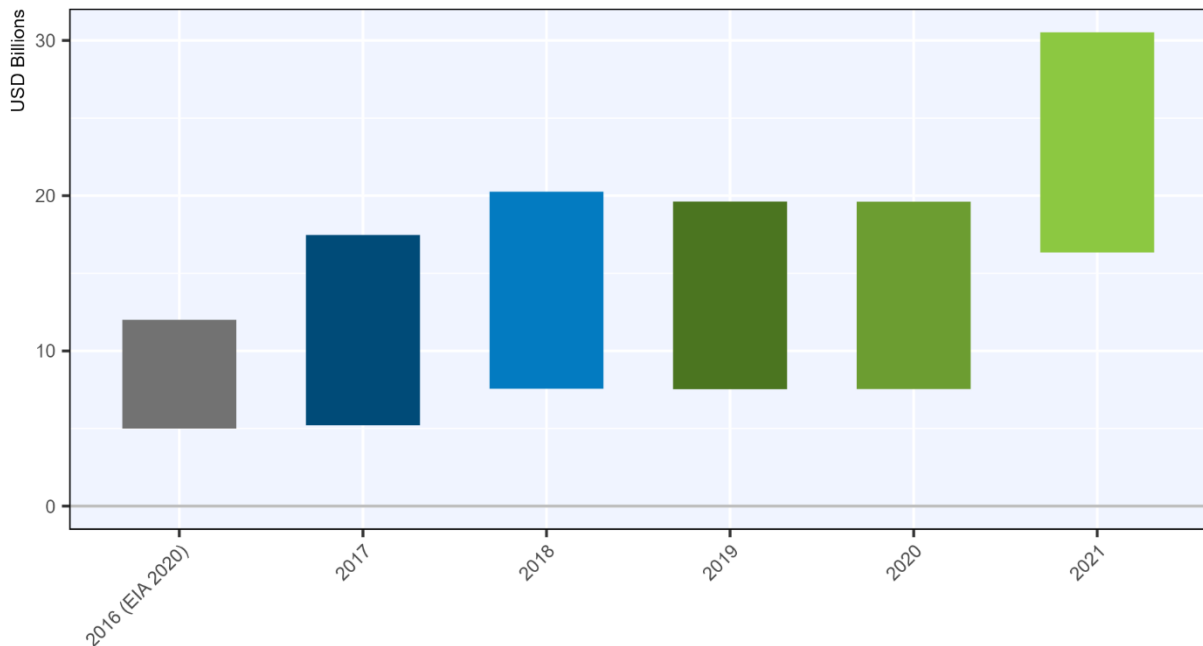
102. Compared to the 2020 EIA, the 2023 EIA Update shows investment hubs losing more and high-, middle-, and low-income jurisdictions gaining approximately double the amount of revenue as a share of CIT, depending on the year modelled. This change in the distribution of outcomes across jurisdiction groups stems from a number of sources, including design changes to Amount A, increases in global MNEs and residual profits in-scope of Amount A, and improvements in data quality. First, design changes to the double tax relief mechanism of Amount A, particularly the shift from pro-rata to multiple tiers and from return on revenue to return on depreciation and payroll (RoDP), have increased the concentration of double tax relief in investment hubs, reducing the surrender of taxing rights for low- and middle- income jurisdictions. Second, in-scope residual profit nearly doubles from 2016, the year analysed in the 2020 EIA, to 2021, the final year analysed in the 2023 EIA Update. Third, the 2023 EIA takes advantage of 2017 and 2018 aggregated and anonymised CbCR data, while the 2020 EIA had access only to 2016 data. The more recent CbCR data gives a better view of the distribution of profits in investment hubs. Taken together, all of these factors account for the doubling of global revenue gains in dollars and of the changes in the jurisdiction group averages as a share of CIT.

103. The wide error bounds in the jurisdiction group results, and particularly in the global results, account for uncertainty in the various components of the revenue estimate formula, most importantly each jurisdiction's share of Amount A, double tax relief, and the tax rate at which double tax relief is valued. There is considerable uncertainty in the current ETRs on profits surrendered through double tax relief; these ETRs determine the tax revenue losses arising from double tax relief in the relieving jurisdictions. A range of available ETR estimates are used for each jurisdiction in order to generate the upper and lower bounds. In addition, there is considerable uncertainty over the real geographic distribution of profit, revenue, depreciation, and payroll of in-scope MNEs, despite the incorporation of firm-level data where available. Any shift in the geographic distribution of these four financial variables would in turn alter the geographic distribution of allocated profit and double tax relief obligations.

104. Importantly, despite the positive net impact on global corporate tax revenues, the impact of Amount A on the global corporate tax base equals zero. Amount A generates net positive global revenue gains because it reallocates taxing rights, on average, from low-tax jurisdictions to medium- and high- tax jurisdictions, through Amount A net of double tax relief. However, Amount A does not in itself increase corporate tax rates in any jurisdiction, nor does it increase the global corporate tax base, nor generate double taxation.

¹⁴ Jurisdiction group revenue estimates reflect the arithmetic mean of the revenue estimates of the jurisdictions in the group.

Figure 5.2. Amount A Global Inclusive Framework Revenue Estimates



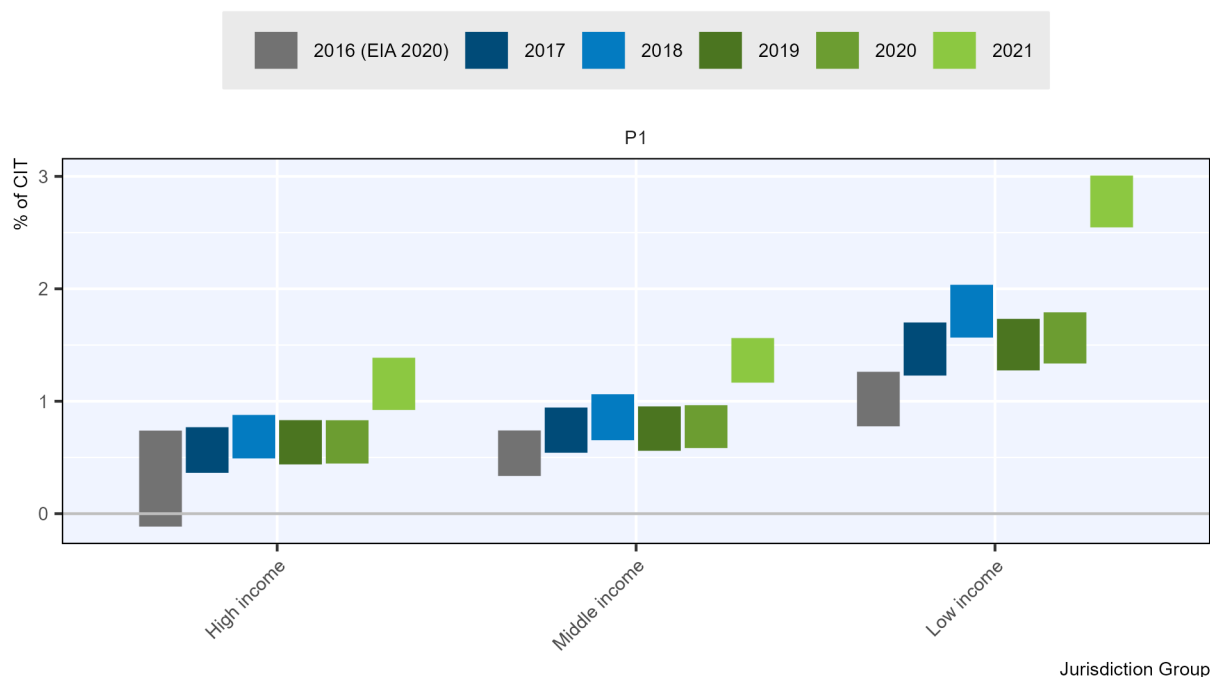
Note: 2016 (2020 EIA) assumes a scope of ADS and CFB, as well as a pro-rata approach to EoDT, and no MDSH. The other estimates assume the new scope, the revised tier approach to EoDT, and incorporate the jurisdictional approach to the MDSH outlined in the MLC. The results for 2019, 2020 and 2021 assume the same global distribution of profit, revenue, payroll and assets as in 2018. Withholding taxes are not modelled due to data constraints. Only revenue gains in Inclusive Framework jurisdictions are modelled.

105. The 2023 EIA Update shows that revenue gains to low-, middle-, and high-income jurisdictions (and revenue losses in investment hubs), as well as global revenue gains, increase between 2016 and 2018 as more MNEs come into scope and in-scope residual profit increases. As the revenue threshold is a fixed euro amount unadjusted for inflation, it is natural that, as nominal values of corporate revenues rise, additional MNEs that previously were just below the revenue threshold (along with their residual profit) would come in-scope of Amount A. In addition, as MNEs that are already in scope gradually increase their revenues and profits, the nominal amount of residual profit in-scope would increase. These increases in residual profit mechanically increase global Amount A allocated.

106. The 2023 EIA Update shows a large jump in revenue gains to low-, middle-, and high-income jurisdictions (and losses to investment hubs), as well as global revenue gains in 2021, due to sharp increases in the profitability of in-scope firms in that year. This increase is somewhat mitigated by the averaging procedure of Amount A that prevents new firms from coming into scope suddenly based on a single year's performance. The jump in residual profit is largely attributable to an increase in profitability of already in-scope firms in 2021. It is possible that these results reflect the impact of COVID-19 pandemic which may have accelerated trends of digitalization and market concentration. It is unclear whether profitability levels will revert to pre-2021 values or whether they will persist in the years to come.¹⁵

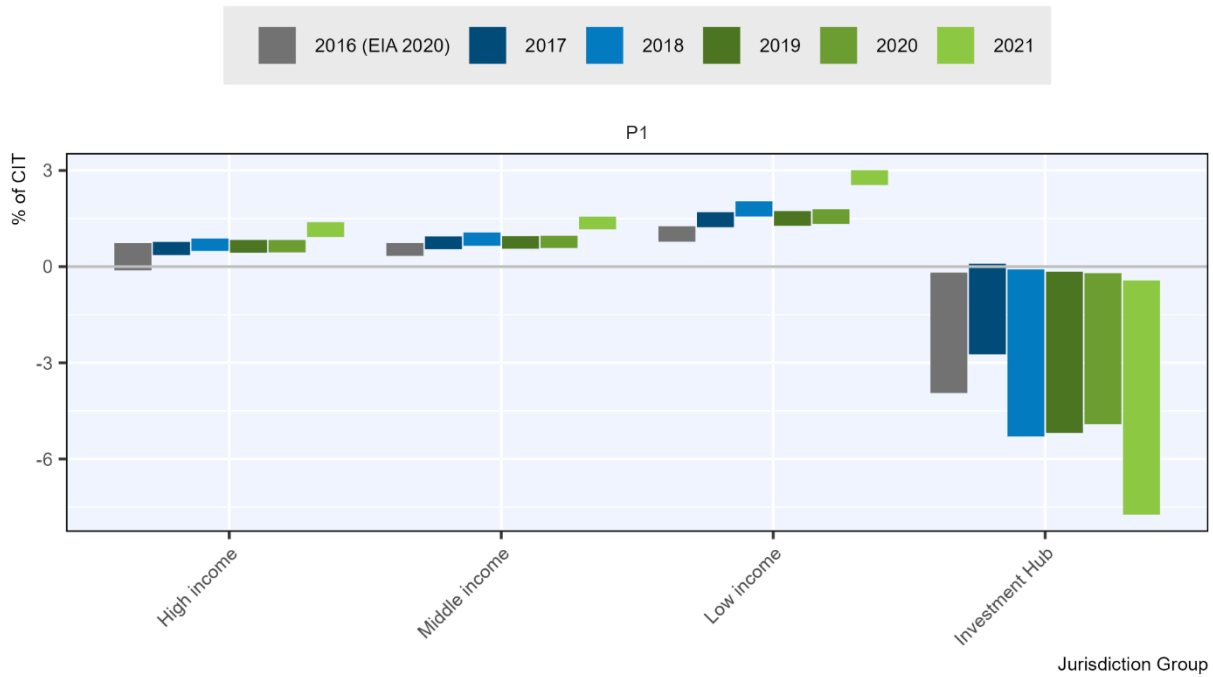
¹⁵ While part of this rise in excess profit strictly relates to the COVID-19 pandemic and the corresponding rise in e-commerce, the economic literature has documented structural changes pushing towards more market concentration and more profitability. As pointed out by Clausing (Clausing, 2023[7]), the rapid rise in global mark-ups documented by De Loecker and Eeckhout (2020[7]) or Beer et al. (2023[9]) is an important factor explaining excess profitability. In this context, the 2021-based estimates may not be outliers but instead may be an accurate representation of the impact of Amount A going forward, especially in the context of continued inflation worldwide.

Figure 5.3. Amount A Inclusive Framework Jurisdiction Group Revenue Estimates (Omitting Investment Hubs)



Note: 2016 (2020 EIA) assumes a scope of ADS and CFB, as well as a pro-rata approach to EoDT, and no MDSH. The other estimates assume the new scope, the revised tier approach to EoDT, and incorporate the jurisdictional approach to the MDSH outlined in the MLC. The results for 2019, 2020 and 2021 assume the same global distribution of profit, revenue, payroll and assets as in 2018. Withholding taxes are not modelled due to data constraints. Only revenue gains in Inclusive Framework jurisdictions are included. Jurisdiction group revenue estimates reflect the arithmetic mean of the revenue estimates of the jurisdictions within the group.

Figure 5.4. Amount A Inclusive Framework Jurisdiction Group Revenue Estimates (Including Investment Hubs)



Note: 2016 (2020 EIA) assumes a scope of ADS and CFB, as well as a pro-rata approach to EoDT, and no MDSH. The other estimates assume the new scope, the revised tier approach to EoDT, and incorporate the jurisdictional approach to MDSH outlined in the MLC. The results for 2019, 2020 and 2021 assume the same global distribution of profit, revenue, payroll and assets as in 2018. Withholding taxes are not modelled due to data constraints. Only revenue gains in Inclusive Framework jurisdictions are included. Jurisdiction group revenue estimates reflect the arithmetic mean of the revenue estimates of the jurisdictions within the group.

6 Conclusion

107. From a methodological standpoint, the 2023 EIA Update implements more precise details of the various features of Pillar One than the 2020 EIA. This new version is also based on refined underlying data. Significant data enhancements have occurred including access to the broad coverage of the 2017 and 2018 CbCRs, and the inclusion of jurisdiction-sector and MNE-level annual report data on the jurisdictional distribution of in-scope profits, revenue, depreciation and payroll. Efforts have been made to ensure a correct list of in-scope firms and geographic distributions of financial variables, including bilateral data validation with jurisdictions and manual checks of individual MNE's annual reports. In spite of these refinements, a range of important caveats have been outlined in Section 2.4 which should be considered.

108. Subject to the caveats set out above, the 2023 EIA Update continues to show Amount A delivering consistently positive revenue impacts over the course of 2017-2021. Through the creation of a new taxing right in the form of Amount A, the revenue impacts net of double tax relief are positive for low-, middle-, and high-income jurisdictions in every year modelled. As double tax relief is mostly concentrated in investment hubs, revenue impacts for this jurisdiction group tend to be negative. Low- and middle-income jurisdictions gain the most from Amount A as a share of current CIT revenues in each year modelled due to a number of provisions that effectively partially exempt them from double tax relief and variously raise their allocated Amount A in various ways.

109. Without introducing double taxation, Amount A net increases global CIT revenues in Inclusive Framework jurisdictions by an average of USD 9.8-22.6 billion over the years 2017-2021 and USD 17.4 - 31.7 billion in 2021 due to the reallocation of taxing rights on average from lower tax jurisdictions to higher tax jurisdictions. The revenue estimates, taken with all the uncertainty implied by the data limitations and modelling assumptions, increase over time, and significantly so in 2021 due to increases in the profitability of in-scope MNEs. In turn, global Amount A allocated rises from USD 100.3 billion in 2017 to USD 204.6 billion in 2021.

110. As important as the revenue gains discussed above is the stabilisation of the international tax system through the creation of a new taxing right suitable for the modern highly digitalised and globalised economy, whereby a new taxing right is allocated to market jurisdictions over a share of residual profit without reference to physical presence. By avoiding the proliferation of uncoordinated DSTs and related similar measures and the risk of escalating trade tensions, Amount A supports enhanced tax certainty and, as a result, can be expected to strengthen global investment conditions.

References

- Hanappi, T., V. Millot and S. Turban (2023), "How does corporate taxation affect business investment? Evidence from aggregate firm-level data", OECD Publishing, Paris. [5]
- OECD (2022), *Public Consultation Document: Pillar One – Amount B*, OECD, Paris. [6]
- OECD (2020), *Tax Challenges Arising from Digitalisation – Report on Pillar One Blueprint: Inclusive Framework on BEPS*, OECD Publishing, Paris. [7]
- OECD (2020), *Corporate Tax Statistics - Second Edition*, OECD, <https://www.oecd.org/tax/tax-policy/corporate-tax-statistics-second-edition.pdf> (accessed on 14 January 2021). [4]
- OECD (2020), *Tax Challenges Arising from Digitalisation – Economic Impact Assessment: Inclusive Framework on BEPS*, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris, <https://doi.org/10.1787/0e3cc2d4-en>. [1]
- OECD (2020), *Tax Challenges Arising from Digitalisation – Report on Pillar Two Blueprint: Inclusive Framework on BEPS*, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris, <https://doi.org/10.1787/abb4c3d1-en>. [8]
- OECD (2020), *Tax Challenges Arising From Digitalization – Progress Report on Amount A of Pillar One*, OECD Publishing, Paris, <http://www.oecd.org/termsandconditions> (accessed on 28 April 2023). [2]
- Tandon, S. and C. Rao (2022), *Evaluating the Impact of Pillars One and Two*. [3]