Chapter 5.1: ETR Calculation Mechanics

Learning Objective

After completing this chapter, you will be able to calculate the jurisdictional Effective Tax Rate (ETR) by applying the Article 5.1 formula, understand jurisdictional blending, and handle special cases including loss scenarios and negative covered taxes.

Key References

OECD GloBE Model Rules: - Article 5.1.1 — ETR formula - Article 5.1.2 — Jurisdictional Net GloBE Income - Article 5.1.3 — Adjusted Covered Taxes for ETR - Article 5.1.4 — ETR rounding (four decimal places)

Administrative Guidance: - February 2023: Negative tax expense treatment - December 2023: Loss carry-forward interaction clarification

OECD Commentary: - Chapter 5, paragraphs 1-25 — ETR calculation methodology

1. The ETR Formula

The ETR calculation is the pivotal step that determines whether a jurisdiction is subject to Top-Up Tax. Article 5.1.1 provides the formula:

```
                    Adjusted Covered Taxes
ETR = ──────────────────────────────────────────
             Jurisdictional Net GloBE Income
```

Express as a percentage, rounded to four decimal places *(Article 5.1.4)*

If ETR < 15%: The jurisdiction is **low-taxed** and Top-Up Tax applies If ETR ≥ 15%: **No Top-Up Tax** for that jurisdiction

1.1 The Two Components

Component	Definition	Source
Adjusted Covered Taxes	Covered Taxes after all adjustments from Part 4 (current tax adjustments, DTAA, tax allocations)	Article 5.1.3
Jurisdictional Net GloBE Income	Sum of GloBE Income for all CEs in the jurisdiction, minus GloBE Losses	Article 5.1.2

2. Jurisdictional Blending: The Core Principle

The GloBE rules use **jurisdictional blending**, not global blending. This is a fundamental design choice that determines how ETRs are calculated.

2.1 What Jurisdictional Blending Means

All Constituent Entities in the **same jurisdiction** are combined for ETR purposes:

```
                   Sum of Adjusted Covered Taxes (all CEs in jurisdict
Jurisdictional ETR = ──────────────────────────────────────────────────
                    Sum of Net GloBE Income (all CEs in jurisdiction)
```

2.2 Why This Matters

Scenario: A jurisdiction has two entities—one high-taxed, one low-taxed.

Entity	GloBE Income	Covered Taxes	Entity ETR
Entity A	€10,000,000	€2,000,000	20.0%

Entity	GloBE Income	Covered Taxes	Entity ETR
Entity B	€5,000,000	€500,000	10.0%
Jurisdiction Total	**€15,000,000**	**€2,500,000**	**16.67%**

Result: The high-taxed Entity A "shelters" the low-taxed Entity B. The **jurisdictional ETR** (16.67%) exceeds 15%, so **no Top-Up Tax** applies—even though Entity B individually would have triggered Top-Up Tax.

2.3 Practical Implication

When assessing Top-Up Tax exposure: - Do **not** calculate ETR per entity - Calculate ETR per **jurisdiction** (aggregate all CEs in that country) - A single high-taxed entity can eliminate Top-Up Tax for the entire jurisdiction

3. Calculating Jurisdictional Net GloBE Income

Article 5.1.2 defines Jurisdictional Net GloBE Income as:

```
Jurisdictional Net GloBE Income = Σ(GloBE Income of all CEs) − Σ(GloBE
```

3.1 Step-by-Step Process

Step 1: Identify all Constituent Entities in the jurisdiction

Step 2: For each CE, determine GloBE Income or Loss (from Part 3 calculations)

Step 3: Sum all positive GloBE Income amounts

Step 4: Sum all GloBE Loss amounts (as positive numbers)

Step 5: Subtract total losses from total income

3.2 Worked Example: Germany Jurisdiction

Stratos entities in Germany:

Entity	GloBE Income/(Loss)
SG Germany GmbH	€53,880,000
SG Germany Services GmbH	(€2,100,000)
SG Germany IP KG	€4,500,000

Calculation:

```
 Step 1: Total GloBE Income = €53,880,000 + €4,500,000 = €58,380,000
Step 2: Total GloBE Losses = €2,100,000
Step 3: Jurisdictional Net GloBE Income = €58,380,000 − €2,100,000 = €5
```

Key point: The loss from SG Germany Services GmbH reduces the jurisdictional denominator, which **increases** the ETR (beneficial outcome).

4. Handling Special Cases

4.1 Case 1: Net GloBE Loss (Negative Denominator)

If Jurisdictional Net GloBE Income is **negative** (total losses exceed total income):

Rule: No ETR calculation is required. The jurisdiction is not subject to Top-Up Tax for that fiscal year.

Rationale: You cannot have a meaningful tax rate when there is no net income to tax.

Example:

Entity	GloBE Income/(Loss)
Entity X	€3,000,000
Entity Y	(€8,000,000)

Entity	GloBE Income/(Loss)
Net	**(€5,000,000)**

Result: - Jurisdictional Net GloBE Income = (€5,000,000) - **No ETR calculation** - **No Top-Up Tax** for this fiscal year - Loss may be carried forward (see GloBE Loss Election, Chapter 4.4)

4.2 Case 2: Zero GloBE Income

If Jurisdictional Net GloBE Income equals exactly **zero**:

Rule: No ETR calculation is possible (division by zero). No Top-Up Tax applies.

4.3 Case 3: Negative Adjusted Covered Taxes

Adjusted Covered Taxes can be **negative** when: - Refunds exceed current tax expense - Deferred tax credits exceed deferred tax expense - Tax allocations result in net outflows

Treatment:

Scenario	Covered Taxes	GloBE Income	ETR	Result
Negative numerator	(€500,000)	€10,000,000	-5.0%	**Low-taxed** (ETR < 15%)
Both negative	(€500,000)	(€2,000,000)	N/A	**No calculation** (negative denominator)

Key insight: A negative ETR is possible and means the jurisdiction is definitely low-taxed.

4.4 Case 4: Very Small GloBE Income

When GloBE Income is small, even modest Covered Taxes can produce very high ETRs.

Example:

Item	Amount
GloBE Income	€100,000
Covered Taxes	€80,000
ETR	**80.0%**

Practical note: Small jurisdictions with minimal activity often have high ETRs due to fixed minimum taxes or registration fees. The De Minimis Exclusion (Chapter 5.5) addresses this.

5. The Complete ETR Calculation Process

5.1 ETR Calculation Flowchart

```
START
  │
  ▼
┌──────────────────────────────────────┐
│ Step 1: Aggregate all CEs in         │
│         jurisdiction                  │
└──────────────────────────────────────┘
  │
  ▼
┌──────────────────────────────────────┐
│ Step 2: Calculate Jurisdictional     │
│         Net GloBE Income             │
│         (Income − Losses)            │
```

```
└──────────────────────────────────────┘
  │
  ▼
┌──────────────────────────────────────┐
│ Is Net GloBE Income ≤ 0?             │
└──────────────────────────────────────┘
  │
  ├── YES ──▶ No ETR calculation required
  │           No Top-Up Tax
  │           (END)
  │
  NO
  │
  ▼
┌──────────────────────────────────────┐
│ Step 3: Aggregate Adjusted Covered   │
│         Taxes for jurisdiction       │
└──────────────────────────────────────┘
  │
  ▼
┌──────────────────────────────────────┐
│ Step 4: Calculate ETR                │
│         ETR = Taxes ÷ Income         │
│         Round to 4 decimal places    │
└──────────────────────────────────────┘
  │
  ▼
┌──────────────────────────────────────┐
│ Is ETR < 15%?                        │
└──────────────────────────────────────┘
  │
  ├── YES ──▶ LOW-TAXED JURISDICTION
  │           Proceed to SBIE and
  │           Top-Up Tax calculation
  │
  NO
```

```
   |
   ▼
NO TOP-UP TAX for this jurisdiction
(END)
```

6. Stratos Worked Example: Complete ETR Calculation

Using data from Case Study 4, calculate ETRs for Stratos's three key jurisdictions.

6.1 Data Summary (from Part 4)

Jurisdiction	Adjusted GloBE Income	Adjusted Covered Taxes
Germany	€53,880,000	€12,393,000
Singapore	€4,000,000	€392,206
Ireland	€15,000,000	€1,770,000

6.2 Step 1: Germany ETR

```
                         €12,393,000
ETR (Germany) = ─────────────────── = 0.22999... = 23.00%
                         €53,880,000
```

Result: 23.00% > 15% → **No Top-Up Tax**

6.3 Step 2: Singapore ETR

```
                            €392,206
ETR (Singapore) = ─────────────── = 0.09805... = 9.81%
                           €4,000,000
```

Result: 9.81% < 15% → **Low-taxed jurisdiction** → Proceed to SBIE

6.4 Step 3: Ireland ETR

$$\text{ETR (Ireland)} = \frac{€1{,}770{,}000}{€15{,}000{,}000} = 0.11800 = 11.80\%$$

Result: 11.80% < 15% → **Low-taxed jurisdiction** → Proceed to SBIE

6.5 ETR Summary

Jurisdiction	GloBE Income	Covered Taxes	ETR	Status
Germany	€53,880,000	€12,393,000	23.00%	No Top-Up Tax
Singapore	€4,000,000	€392,206	9.81%	**Low-taxed**
Ireland	€15,000,000	€1,770,000	11.80%	**Low-taxed**

7. Multi-Entity Jurisdictions: Blending in Practice

7.1 Scenario: UK Jurisdiction with Multiple Entities

Stratos has three entities in the UK:

Entity	GloBE Income/(Loss)	Covered Taxes
Stratos Holdings plc	€8,500,000	€2,125,000
SG UK Services Ltd	€2,200,000	€550,000
SG UK Trading Ltd	(€1,500,000)	€0

7.2 Calculation

Step 1: Jurisdictional Net GloBE Income

```
€8,500,000 + €2,200,000 − €1,500,000 = €9,200,000
```

Step 2: Jurisdictional Adjusted Covered Taxes

```
€2,125,000 + €550,000 + €0 = €2,675,000
```

Step 3: ETR Calculation

$$\text{ETR (UK)} = \frac{€2{,}675{,}000}{€9{,}200{,}000} = 29.08\%$$

Result: 29.08% > 15% → **No Top-Up Tax** for UK jurisdiction

Analysis: - SG UK Trading Ltd has a loss and zero taxes - Without blending, its individual ETR would be undefined (0 ÷ negative) - With jurisdictional blending, the loss reduces the denominator, and the profitable entities' taxes cover the jurisdiction

8. Common Pitfalls

8.1 Pitfall 1: Calculating ETR Per Entity Instead of Per Jurisdiction

Error: Computing separate ETRs for each subsidiary and assessing Top-Up Tax entity-by-entity.

Correct approach: Aggregate all CEs in the jurisdiction first, then calculate a single jurisdictional ETR.

8.2 Pitfall 2: Ignoring Loss Entities in ETR Calculation

Error: Excluding loss-making entities from the jurisdictional aggregation.

Correct approach: Include all CEs—losses reduce the denominator, which affects the blended ETR.

8.3 Pitfall 3: Attempting ETR Calculation with Negative Denominator

Error: Dividing by a negative number and treating the result as meaningful.

Correct approach: If Jurisdictional Net GloBE Income ≤ 0, stop—no ETR calculation is required.

8.4 Pitfall 4: Inconsistent Rounding

Error: Rounding ETR to two decimal places (e.g., 14.99% becomes 15.0%).

Correct approach: Round to **four decimal places** per Article 5.1.4. An ETR of 14.9999% is still below 15% and triggers Top-Up Tax.

8.5 Pitfall 5: Forgetting QRTC GloBE Income Adjustment

Error: Using GloBE Income from Case Study 3 without the QRTC addition.

Correct approach: If QRTCs were identified in Part 4, the corresponding addition to GloBE Income (Article 3.2.10) must be reflected in the denominator.

9. ETR Calculation Worksheet

Use this worksheet for each jurisdiction:

```
 ETR CALCULATION WORKSHEET
Jurisdiction: _________________________
Fiscal Year: _________________________

SECTION A: CONSTITUENT ENTITIES
List all CEs in this jurisdiction:

| # | Entity Name | GloBE Income/(Loss) | Adj. Covered Taxes |
|---|-------------|---------------------|--------------------|
```

```
| 1 | ___________ | €__________________ | €________________ |
| 2 | ___________ | €__________________ | €________________ |
| 3 | ___________ | €__________________ | €________________ |
| 4 | ___________ | €__________________ | €________________ |

SECTION B: AGGREGATION
B1  Total GloBE Income (positive amounts)    €__________________
B2  Total GloBE Losses (as positive number)  €__________________
B3  Jurisdictional Net GloBE Income (B1-B2)  €__________________

    If B3 ≤ 0: STOP. No ETR calculation. No Top-Up Tax.

B4  Total Adjusted Covered Taxes             €__________________

SECTION C: ETR CALCULATION
C1  ETR = B4 ÷ B3                            ___________________%
    (Round to 4 decimal places)

C2  Is ETR < 15%?                            YES / NO

    If YES: Low-taxed jurisdiction → Proceed to SBIE (Chapter 5.2)
    If NO:  No Top-Up Tax for this jurisdiction

SECTION D: VERIFICATION
D1  Data sources verified?                   □ GloBE Income (Part 3)
                                              □ Covered Taxes (Part 4)
D2  All CEs included?                        □ Yes
D3  QRTC adjustments applied to both         □ Yes / □ N/A
    numerator AND denominator?
```

10. Why Global Blending Was Rejected

The OECD considered two approaches:

Approach	Description	Outcome
Global blending	Calculate one ETR for the entire MNE group worldwide	Rejected
Jurisdictional blending	Calculate separate ETR per jurisdiction	**Adopted**

10.1 Why Jurisdictional Blending?

Global blending would have: - Allowed high-tax jurisdictions to shelter low-tax jurisdictions across borders - Significantly narrowed the scope of GloBE (fewer jurisdictions would be "low-taxed") - Created opportunities for tax planning through strategic profit shifting

Jurisdictional blending ensures: - Each jurisdiction is assessed independently - Low-tax jurisdictions cannot be sheltered by high-tax jurisdictions in other countries - The 15% minimum applies jurisdiction-by-jurisdiction

10.2 Within-Jurisdiction Blending Is Permitted

Blending **within** a jurisdiction is intentional: - Reflects economic reality (entities in the same country face similar tax environments) - Simplifies compliance (one calculation per jurisdiction, not per entity) - Allows temporary losses to offset profitable entities