Could Country-by-Country Reporting Increase Profit Shifting?

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About **36% of profits** of multinational corporations (MNCs) worldwide are shifted to **tax havens** (Tørsløv et al., 2023)

One possible solution: More transparency and information exchange?
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One possible solution: More transparency and information exchange?

→ **Country-by-Country (CbC) reporting** (BEPS action 13)
  - Implementation since 2016
  - MNCs report information on global activities, profits, and tax payments
  - Scope: MNCs with global turnover above EUR 750 million
  - CbC report remains private (in EU: public from 2025 onwards)
Question: Does CbC Reporting Reduce Profit Shifting?

- **Information exchange** implies that all tax authorities will have information
  - Audits can be **targeted** more effectively
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- CbC reporting should increase the costs of profit shifting for MNCs
  - The costs of profit shifting become **interlinked** at the level of the MNC as a whole
  - This changes profit shifting incentives: Although profit shifting becomes less attractive overall, shifting profits away from some high-tax affiliates may become more attractive.
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This paper:
  1. Theoretical model of a profit shifting MNC
  2. Empirical evidence
Literature: Effectiveness of CbC Reporting

- **Effective Tax Rates (ETRs)**
  - Consolidated ETRs of affected MNCs increased slightly (Joshi, 2020; Hugger, 2020).
  - Affiliate-level ETRs did not increase (Hugger, 2020).
  - Financial sector: Public CbCR did not increase consolidated ETRs (Hugger et al., 2020).

- **Economic Activity**
  - Economic activity in low-tax countries might have decreased (Hugger, 2020).
  - Increase in capital and labor expenditures in Europe, especially with preferential tax regimes (De Simone and Olbert, 2022).
  - No evidence of reallocation of tangible assets and employees to substantiate real activities (Nessa et al., 2022).

- **Tax Havens**
  - No significant decrease in profits reported in tax havens (Hugger, 2020)
  - Subsidiaries in tax havens are closed (De Simone and Olbert, 2022)
Model: A Multinational Corporation

- Can shift profits from productive affiliates to tax haven
- Doing so imposes two types of costs
  1. **Tax planning costs**: Affiliate-specific costs of setting up tax avoidance structure
     - Cost of ex-ante business decision to shift profits
     - E.g., consultants and lawyers to justify the deviation from arm’s length prices
  2. **Audit costs**: (Expected) costs of being audited
     - Cost of ex-post consequences of profit shifting
     - E.g., interruption of business operation, settlements with tax authority/court, fines...
     - CbC reporting implies interlinking of profit shifting costs at the MNC level: Audit costs of one affiliate depend on total amount of profits shifted from both affiliates to the tax haven
- MNCs maximize total after-tax profits
Result: CbC Reporting Changes Profit Shifting Patterns

- We find that, as a result of CbC reporting:
  - The **total amount** of profits shifted decreases
  - **Tax havens** always lose tax base
  - **Low-to medium-tax countries** always gain tax base
  - The effect on **high-tax countries** is ambiguous
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CbC reporting has two effects on profit shifting

- **Direct effect**: Profit shifting decreases due to increase of overall costs
- **Substitution effect**: Interlinking of profit shifting costs
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CbC reporting has two effects on profit shifting:
- Direct effect: Profit shifting decreases due to increase of overall costs.
- Substitution effect: Interlinking of profit shifting costs.

The substitution effect:
- Profit shifting from high-tax affiliates becomes relatively more attractive.
- Reason: the tax rate differential is smaller for low-tax affiliates.
<table>
<thead>
<tr>
<th>Empirical finding</th>
<th>The model predicts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk-based audits are effective</td>
<td>Profit shifting ↓ as a result of overall audit costs</td>
</tr>
<tr>
<td>No significant or small increase in consolidated ETRs and total tax payments</td>
<td>Overall profit shifting ↓ but high-tax country ↑↓ and low-tax country ↓</td>
</tr>
<tr>
<td>On average, limited increase in affiliates’ taxable income</td>
<td>Differential profit shifting pattern for high-tax and low-tax countries</td>
</tr>
<tr>
<td>Increased capital and labor investments in tax-preferential EU countries</td>
<td>Lower profit shifting from low-tax countries (might even shift towards them)</td>
</tr>
<tr>
<td>Closing of tax haven affiliates</td>
<td>Profit shifting from high-tax to low-tax country</td>
</tr>
</tbody>
</table>
**Empirical Results**

**Data from Bureau van Dijk’s Orbis data, 2012–2021**
- Affiliate-level balance sheet information, matched to their ultimate owners
- Sample: 57,453 affiliates belonging to 7,012 MNCs

**(Staggered) Difference-in-Differences Analysis**

\[
\left( \frac{EBT}{Assets} \right)_{i,t} = \gamma_1 \cdot CbCR_{i,t} + \beta \cdot Controls_{i,t} + YearFE_t + FirmFE_i + \epsilon_{i,t}
\]

**Hypotheses**
- Profit in tax havens ↓ (not testable)
- Profit in low- and middle-tax country ↑
- Profit in high-tax country ↑ or ↓
## High-Tax versus Low-Tax Affiliates

<table>
<thead>
<tr>
<th>Sample:</th>
<th>Low-Tax (1)</th>
<th>High-Tax (2)</th>
<th>Low-Tax (3)</th>
<th>High-Tax (4)</th>
<th>Low-Tax (5)</th>
<th>High-Tax (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CbCR</td>
<td>0.004***</td>
<td>-0.006***</td>
<td>0.004**</td>
<td>-0.002*</td>
<td>0.004**</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(0.0015)</td>
<td>(0.0017)</td>
<td>(0.0017)</td>
<td>(0.0013)</td>
<td>(0.0017)</td>
<td>(0.0013)</td>
</tr>
<tr>
<td>Obs.</td>
<td>296,562</td>
<td>272,039</td>
<td>224,202</td>
<td>186,909</td>
<td>224,202</td>
<td>186,909</td>
</tr>
<tr>
<td>R²</td>
<td>0.50</td>
<td>0.57</td>
<td>0.53</td>
<td>0.59</td>
<td>0.53</td>
<td>0.59</td>
</tr>
<tr>
<td>Firm FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Firm Ctrs.</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ctry. Ctrs.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Note:** Low-tax and high-tax status defined by affiliate: Low-tax (high-tax) affiliates are affiliates that face a tax rate in a given year that is below (above or equal to) the median tax rate in the full sample. Affiliate being part of an MNC that is subject to CbC reporting in a given year are treated, control affiliates are not subject to CbC reporting. Firm-level control variables include the number of employees and fixed assets in EUR thousands. Country-level control variables include GDP and statutory corporate tax rate. Standard errors clustered by Global Ultimate Owner interacted with year. ***, ** and * indicate significance at the 1%, 5% and 10% levels. **Data:** Orbis 2012–2021.
Implications for Low/Middle-Income Countries

- Relatively high corporate tax rates in many LMICs
- Prediction: LMICs profit little or not at all from CbC reporting
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- Relatively high corporate tax rates in many LMICs
  → Prediction: LMICs profit little or not at all from CbC reporting
- Quick empirical test
  - Available data: only middle income countries
  - Almost all are high-tax countries (following earlier definition)
  - Re-run main diff-in-diff in this sample
- Result: MNC subject to CbC reporting declare less profit in LMICs after introduction of CbCR
- Caveat: Rather limited, non-representative sample!

<table>
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<tbody>
<tr>
<td>CbCR</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Observations</td>
</tr>
<tr>
<td>$R^2$</td>
</tr>
<tr>
<td>Firm FE</td>
</tr>
<tr>
<td>Year FE</td>
</tr>
</tbody>
</table>

Note: Sample includes only affiliates in low- and middle-income countries (following world bank definition). CbCR indicates whether the affiliate belongs to an MNC subject to CbC reporting. Standard errors clustered by Global Ultimate Owner interacted with year. ***, ** and * indicate significance at the 1%, 5% and 10% levels. Data: Orbis 2012–2021.
Take-Away: Country-by-Country Reporting and Profit Shifting

- Country-by-Country reporting may **change patterns** of profit shifting!
  - **Overall**, profit shifting decreases as **total profit shifting costs** increase
  - **Tax havens** lose tax base
  - **Low- to medium-tax countries** gain tax base
  - **High-tax countries** may gain or lose tax base because of a **substitution effect**

- We **confirm** these changes in **profit shifting patterns** using a staggered difference-in-differences design.
- **LMICs** unlikely to profit from CbC reporting
Simulations: When Does the High-Tax Country Lose? (1)

Figure 1: Homogeneous Tax Planning Costs

Parameters:
- $t_H = 30\%$
- $t_L = 15\%$
- $t_H = 5\%$
- $\theta_H = \theta_L = 1$
- $\theta_A$ varies

Profit shifted from high-tax country
Profit shifted from low-tax country
Figure 2: Heterogeneous Tax Planning Costs

Parameters:
\( t_H = 30\% \),
\( t_L = 15\% \),
\( t_H = 5\% \),
\( \theta_A = 2 \)
Homogeneous and heterogeneous \( \theta_i \)