Could Country-by-Country Reporting Increase Profit Shifting?

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2023 WIDER Development Conference
September 6, 2023

Background: Country-by-Country Reporting

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→ **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)

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This paper:

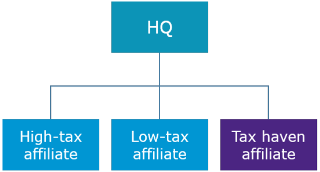
1. Theoretical model of a profit shifting MNC
2. Empirical evidence

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
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  - **Direct effect**: Profit shifting decreases due to increase of overall costs
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- The **substitution effect**
  - Profit shifting from high-tax affiliates becomes relatively more attractive
  - Reason: the tax rate differential is smaller for low-tax affiliates

Resolving the Empirical Puzzle

Empirical finding	**The model predicts**
Risk-based audits are effective	Profit shifting $\downarrow$ as a result of overall audit costs
No significant or small increase in consolidated ETRs and total tax payments	Overall profit shifting $\downarrow$ but high-tax country $\uparrow\downarrow$ and low-tax country $\downarrow$
On average, limited increase in affiliates' taxable income	Differential profit shifting pattern for high-tax and low-tax countries
Increased capital and labor investments in tax-preferential EU countries	Lower profit shifting from low-tax countries (might even shift towards them)
Closing of tax haven affiliates	Profit shifting from high-tax to low-tax country

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 $\downarrow$ (not testable)
- Profit in low- and middle-tax country $\uparrow$
- Profit in high-tax country $\uparrow$ or $\downarrow$

High-Tax versus Low-Tax Affiliates

Sample:	Low-Tax (1)	High-Tax (2)	Low-Tax (3)	High-Tax (4)	Low-Tax (5)	High-Tax (6)
CbCR	0.004***	-0.006***	0.004**	-0.002*	0.004**	-0.002
	(0.0015)	(0.0017)	(0.0017)	(0.0013)	(0.0017)	(0.0013)
Obs.	296,562	272,039	224,202	186,909	224,202	186,909
R^2	0.50	0.57	0.53	0.59	0.53	0.59
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm Ctrs.	No	No	Yes	Yes	Yes	Yes
Ctry. Ctrs.	No	No	No	No	Yes	Yes

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

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- 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!

	LMIC sample
CbCR	-0.0155*
	(0.0093)
Observations	4450
R^2	0.57
Firm FE	Yes
Year FE	Yes

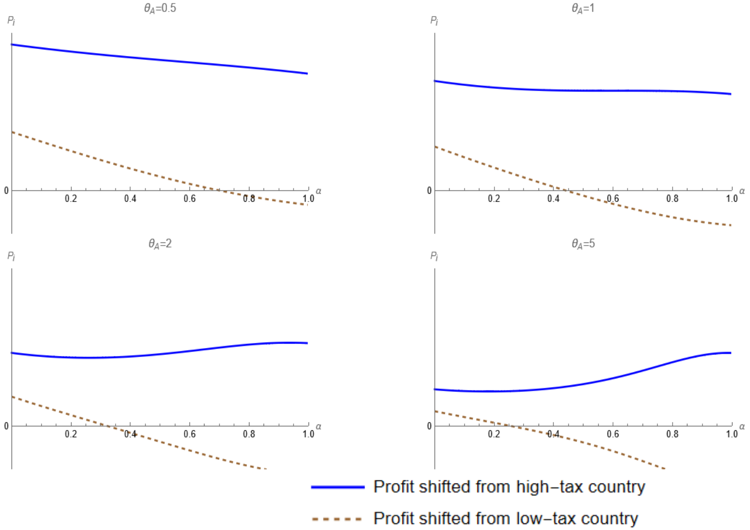
Note: Sample includes only affiliates in low- and middle income countries (following world bank definition). CbCR indicates whether the affiliate belongs to an MNC subject to CbC reporting. Standard errors clustered by Global Ultimate Owner interacted with year. ***, ** and * indicate significance at 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)

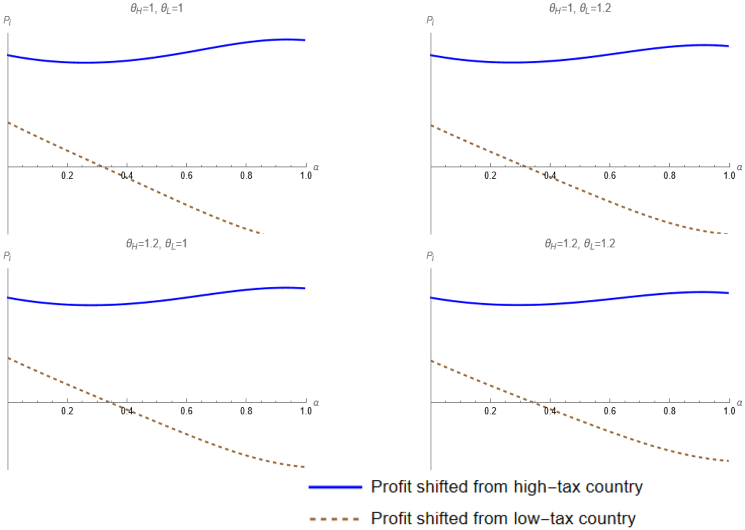
Figure 1: Homogeneous Tax Planning Costs



Parameters:
$t_H = 30\%$,
$t_L = 15\%$,
$t_H = 5\%$,
$\theta_H = \theta_L = 1$
θ_A varies

Simulations: When Does the High-Tax Country Lose? (2)

Figure 2: Heterogeneous Tax Planning Costs



Parameters:
$t_H = 30\%$,
$t_L = 15\%$,
$t_H = 5\%$,
$\theta_A = 2$
Homogeneous and heterogeneous θ_i