TAX AND COMMERCIAL ILLICIT FINANCIAL FLOWS

Part II - Methods
Global distribution of MNEs' profits and corporate taxes

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Suggested methods – Aggressive tax avoidance / profit shifting

- Profit shifting flows in BoP, FDI, FATS?
- Strong recent development in methodologies
  - Concept:
    - Declared profits = Real/unobserved profits and Shifted profits
  - Approaches
    - Profit misalignment
    - Tax semi-elasticity
    - Compare MNE to domestic firms
## Suggested methods – Aggressive tax avoidance / profit shifting

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**Tax and commercial illicit financial flows**
Suggested methods – Aggressive tax avoidance / profit shifting

#3 Global distribution of MNEs’ profits and corporate taxes
Aggressive tax avoidance or profit shifting by MNEs: Global distribution of MNEs’ profits and corporate taxes

- Concept and assumptions
  - Tax semi-elasticity approach
  - Distribution of profits of an MNE among its units globally ~ corporate (effective) tax rates and underlying economic activity of units
  - Assuming shifting profits to lower-tax units
  - Any systematic deviation from predicted profitability is a sign of potential profit shifting
    - > caution in interpretation!
Aggressive tax avoidance or profit shifting by MNEs: Global distribution of MNEs’ profits and corporate taxes

- Limitations
  - Uncertainty about results
  - Tax rate faced by MNE unit?
  - Other-than-tax incentives to shift profits
  - Tax sensitivity varying by tax regimes, or size of MNE
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• Overcoming limitations
  – Use effective tax rate
  – Use quadratic tax variable specification
  – Use subsamples: quartiles of consolidated revenues
  – Use tools to confirm and interpret results
  • Location of the unit -> role of the unit
  • Economic activity of the unit
  • LCUs, experts of MNE
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- **Source data**
  - Data on MNE and their units (profits before taxes, effective tax rates, number of employees, value of tangible assets)
  - Microdata
  - OECD CbCR
  - Firm-level tax returns from Tax authority
  - Availability?
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- Source data
  - OECD ADIMA, AMNE, Tax Database
  - Global Groups Register
  - EuroGroups register
  - Population, GDP, tax rates etc.
Aggressive tax avoidance or profit shifting by MNEs: Global distribution of MNEs’ profits and corporate taxes

• Calculation
  1. Determine the presence of profit shifting
  2. Size of profit shifting
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- Calculation – presence of profit shifting

\[ \log(y_{i,c,t}) = \alpha_i + \beta_1 T_{i,c,t} + \beta_2 T_{i,c,t}^2 + \gamma' Firm_{i,c,t} + \delta' Country_{c,t} + \theta_t + \epsilon_{i,c,t} \]

- \( y_{i,c,t} \) ... sum of profits before taxes of MNE unit’s \( i \) in country \( c \)
- \( T_{i,c,t} \) ... tax variable of MNE unit’s \( i \) in country \( c \)
- \( Firm_{i,c,t} \) ... vector including variables describing unit’s \( i \) activities in country \( c \)
- \( Country_{c,t} \) ... vector including variables describing conditions in country \( c \)
- \( \alpha_i \) ... MNE unit’s fixed effects
- \( \theta_t \) ... year fixed effects
- Subscript \( t \) denotes time
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- Calculation – tax variable

\[
\log(y_{i,c,t}) = \alpha_i + \beta_1 T_{i,c,t} + \beta_2 T_{i,c,t}^2 + \gamma'Firm_{i,c,t} + \delta'Country_{c,t} + \theta_t + \epsilon_{i,c,t}
\]

\[
T_{i,c,t} = \tau_{i,c,t} - \bar{\tau}_{m-i,-c,t}
\]

- Tax rate faced by MNE unit \(i\) in country \(c\)
- Average tax rate faced by other MNE units in other countries
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- Calculation – tax variable

\[ \log(y_{i,c,t}) = \alpha_i + \beta_1 T_{i,c,t} + \beta_2 T_{i,c,t}^2 + \gamma' Firm_{i,c,t} + \delta' Country_{c,t} + \theta_t + \epsilon_{i,c,t} \]

- Effective average tax rate

- Microdata available:  \[ \tau = \frac{\text{paid taxes}}{\text{reported profits}} ; m - i \]

- Data availability limited:
  - EATR as reported
  - EATR = 0 if statutory tax rate = 0
  - EATR = (statutory tax rate) –
    (Median difference (statutory-effective tax rate))
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Global distribution of MNEs’ profits and corporate taxes

• Calculation – Firm vector

\[
\log(y_{i,c,t}) = \alpha_i + \beta_1 T_{i,c,t} + \beta_2 T_{i,c,t}^2 + \gamma' Firm_{i,c,t} + \delta' Country_{c,t} + \theta_t + \epsilon_{i,c,t}
\]

– Logarithms of:
  • Number of employees
  • Value of tangible assets
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- Calculation – *Country* vector

\[
\log(y_{i,c,t}) = \alpha_i + \beta_1 T_{i,c,t} + \beta_2 T_{i,c,t}^2 + \gamma' Firm_{i,c,t} + \delta' Country_{c,t} + \theta_t + \epsilon_{i,c,t}
\]

- Logarithms of
  - GDP p.c. (PPP)
  - Population
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- Calculation – tax semi-elasticities

\[
\log(y_{i,c,t}) = \alpha_i + \beta_1 T_{i,c,t} + \beta_2 T_{i,c,t}^2 + \gamma' Fir_m_{i,c,t} + \delta' Country_{c,t} + \theta_t + \epsilon_{i,c,t}
\]

- Marginal effect of a tax rate at certain tax rate
- Marginal effect is negative
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• Calculation – size of profit shifting
  – How declared profits would change without tax incentive?
  – Declared profits sum of real profits & shifted profits
  – Shifted profits part of real profits, combined with tax elasticity and tax variable

\[ S_{i,c,t} = \frac{y_{i,c,t} \cdot \hat{\beta}T_{i,c,t}}{1 + \hat{\beta}T_{i,c,t}} \]

\[ \hat{\beta}T_{i,c} = \beta_1 T_{i,c} + \beta_2 T_{i,c}^2 \]
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- Calculation – size of profit shifting
  - Results for each MNE and per country
  - $S<0$ -> profits shifted out of a country
  - $S>0$ -> profits shifted into a country
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- Calculation – outward and inward IFFs

\[
\text{Outward IFFs}_{i,c,t} = |\min(0,S_{i,c,t})| \\
\text{Inward IFFs}_{i,c,t} = \max(0,S_{i,c,t})
\]

- Underestimation from data undercoverage
- National-specific circumstances and enhancements!