UNITED NATIONS
UNCTAD

TAX AND COMMERCIAL
ILLICIT FINANCIAL FLOWS

# Part II - Methods MNEs vs comparable non-MNE profit shifting

**Bojan NASTAV**

# Suggested methods – Aggresive tax avoidance / profit shifting

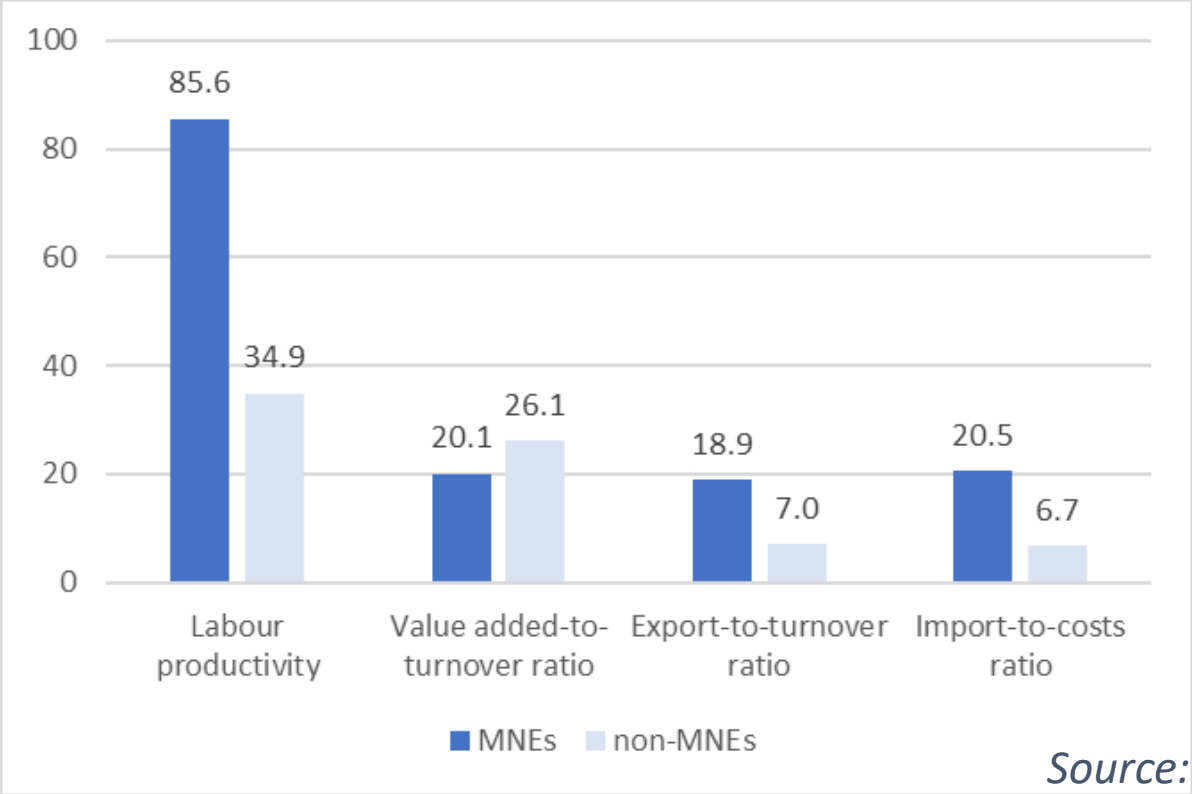
#4 MNEs vs comparable non-MNE profit shifting

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Concept and assumptions
  - Deviation from normality: domestic firms vs MNEs

***Multinational enterprises vs. non-multinational enterprises, 2015 (%)***




*Source: Sallusti (2021)*

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Concept and assumptions
  - Phase 1: Identify tax-avoiding MNEs
    - Between MNEs and non-MNEs
    - Within MNEs
  - Phase 2: Measure profit shifting
    - Declared vs should-have-been declared
  - Vertical strategy: MNEs' units in a selected country only

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Limitations
  - Differences between two groups driven by other factors
  - Smaller economies
  - Matching variables as ratios
  - Either outward or inward IFFs

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Overcoming limitations
  - Control group into same size class
  - Compare MNE units to average of domestics firms
  - Compare all MNE units to all domestic firms
  - Domestic firms and MNE units in the same size-class
  - Include size of assets (data permitting)

# #4 Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Source data
  - Microdata available to NSO
  - Economic and structural variables (value added, R&D spending, salaries/costs…)
  - Structural business statistics
  - Administrative data on taxable profits
  - International trade, position within MNEs, FATS, LCU

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

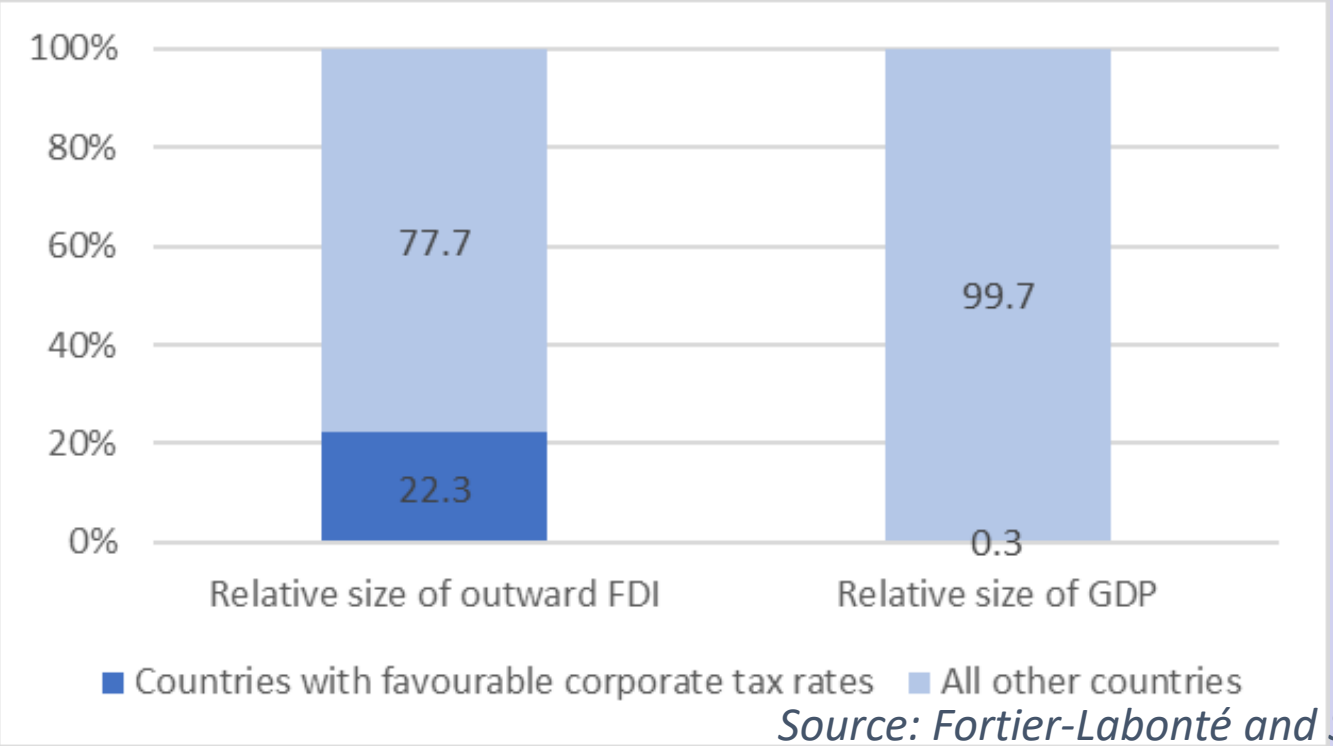
- Calculation – Phase zero: country
  - Identification of either inward or outward IFFs
  - Tax practices, macroeconomic variables…

# #4 Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

CASE STUDY

- Calculation – Phase zero: country

***Relative size of Canadian outward FDI and of GDP for ten countries with highest stocks of Canadian FDI, 2016***




*Source: Fortier-Labonté and Schaffter (2019)*

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

CASE STUDY

- Calculation – Phase zero: country
  - BEPS Indicator 1B: Mismatches between assets, employment and sales for countries with favourable corporate tax rates.
    - In countries with favourable corporate tax rates: 23 employees per billion dollars of assets.
    - For other countries: 270
    - -> investment in countries with favourable corporate tax rates **not driven by real economic factors**

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Calculation – 1. Identification phase
  - *Between comparison*
  - Propensity score (PS) matching
  - Characterization based on variables: territory, economic activity, employment, internationalization, structure of costs and revenues…
  - Proxy to determine abnormal behaviour:
    - $Proxy$=1 (suspect, or indicator of "abnormality"):
      EBIT-to-turnover ratio < average of the control group
    - $Proxy$=0 (no suspect):
      EBIT-to-turnover ratio ≥ average of the control group.

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Calculation – 1. Identification phase
  - *Within comparison*
  - Receiver operating characteristics (ROC)
  - Starting from proxy from previous step and defines final clustering
  - Classifier – composite indicator:
    - ratios to turnover of EBIT, VA, R&D spending, Exports;
    - Ratios to total costs: royalties, salaries, services, imports
    - …

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Calculation – 1. Identification phase
  - *Within comparison*
  - Composite indicator by stratum

$$I_i = \omega_1 \left( \sum_j \gamma_{j,1} x_{j,i} \right) + \omega_2 \left( \sum_j \gamma_{j,2} x_{j,i} \right)$$

$\gamma_{j,1}, \gamma_{j,2}$ … loadings of variable *j* in factors 1 and 2

$x_{j,i}$ … value of variable *j* for observation *I*

$\omega$ … weights in term of explained variance

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Calculation – 1. Identification phase
  - *Within comparison*
  - Logit model:
    - Dependent: suspect ($Proxy$=1)
    - Explanatory variable: composite indicator
  - Threshold observation identified for each stratum: $\bar{I}$
    - $I_i < \bar{I}$ – MNEs considered as tax avoiding
    - $I_i \geq \bar{I}$ – MNEs considered as non–tax avoiding

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Calculation – 2. Measurement phase
- For each tax-avoiding MNE from previous phase
- Profit shifted = theoretical profits – declared profits
- Adjusted value of EBIT-to-turnover ratio ($\tilde{x}_{h,i}$):
  - Increasing the ($x_h$), keeping the other variables ($x_{-h}$) unchanged so as to obtain $I_i = \bar{I}$

$$\tilde{x}_{h,i} = \frac{\bar{I} - \left(\omega_1 \sum_{-h} \gamma_{-h,1} x_{-h,2} + \omega_2 \sum_{-h} \gamma_{-h,2} x_{-h,2}\right)}{\omega_1 \gamma_{h,1} + \omega_2 \gamma_{h,2}}$$

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Calculation – Outward IFFs

$$OutwardIFFs_i = \left(\tilde{x}_{h,i} - x_{j,i}\right) * Turnover_i$$

$x_{,i}$ … the declared value of EBIT to turnover ratio;

$\tilde{x}_{h,i}$ … the threshold value of the EBIT to turnover ratio in order to be classified as non-tax avoiding MNE.

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Calculation – Inward IFFs
- Inflows of profits -> MNEs higher levels of profits than "normal" levels of similar non-MNEs
- Focus on structure of revenues, not so much costs
- Inverse relation of structural characteristics with "suspect"

- 1. Identification phase: *between*:
  - $Proxy$=1 (suspect, or indicator of "abnormality"): EBIT-to-turnover ratio > average of the control group

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Calculation – Inward IFFs
- 1. Identification phase: *within*:
- Classifier – composite indicator:
  - Reversed signs of EBIT-to-turnover, VA-to-turnover…
  - Royalties- and services-to-turnover (not costs)

  - … see Box 5 of Guidelines

#4

# Aggressive tax avoidance or profit shifting by MNEs: MNEs vs comparable non-MNE profit shifting

- Calculation – Inward IFFs
- 2. Measure
- $x_{j,i}$ for MNEs that are considered as collecting BEPS from other countries should be **higher** than $\tilde{x}_{h,i}$

$$InwardIFFs_i = -\left(\tilde{x}_{h,i} - x_{j,i}\right) * Turnover_i$$