

# Global Minimum Tax and Profit Shifting

**Tomáš Boukal**  
Charles University

Petr Janský  
Charles University

Niels Johannesen  
Oxford University

Miroslav Palanský  
Charles University,  
Tax Justice Network

**CORPTAX**

**EU TAX**  
Observatory


EEA ESEM, Rotterdam, August 2024

All opinions expressed are of the authors and have not been endorsed by the Financial Administration and the Ministry of Finance of the Slovak Republic.

# Motivation



The screenshot shows the top section of the Financial Times website. At the top, there is a navigation bar with the 'FINANCIAL TIMES' logo and a search icon. Below this is a horizontal menu with links for HOME, WORLD, US, COMPANIES, TECH, MARKETS, CLIMATE, OPINION, WORK & CAREERS, LIFE & ARTS, and HTSI. The main content area features a headline: '136 nations agree to biggest corporate tax deal in a century'. Above the headline is a sub-headline 'International tax' with a '+ Add to myFT' button. Below the headline is a short summary: 'OECD-led pact sets 15% floor aimed at raising \$150bn annually as US wins two-year ban on tech levies'. At the bottom of the screenshot, there is a red 'The Economist' logo and a navigation bar with links for 'Menu', 'Weekly edition', 'The world in brief', and a search icon.


 [The World Ahead](#) | Finance in 2024

## A global minimum tax on firms is finally taking shape

# Motivation



The screenshot shows the top section of the Financial Times website. At the top, there is a navigation bar with the 'FINANCIAL TIMES' logo and a search icon. Below this is a secondary navigation bar with links for HOME, WORLD, US, COMPANIES, TECH, MARKETS, CLIMATE, OPINION, WORK & CAREERS, LIFE & ARTS, and HTSI. The main content area features a red 'International tax' tag with a '+ Add to myFT' button. The headline reads '136 nations agree to biggest corporate tax deal in a century'. Below the headline, a sub-headline states 'OECD-led pact sets 15% floor aimed at raising \$150bn annually as US wins two-year ban on tech levies'. At the bottom of the screenshot, there is a red 'The Economist' logo and a navigation bar with links for 'Menu', 'Weekly edition', 'The world in brief', and a search icon.

 [The World Ahead](#) | Finance in 2024

## A global minimum tax on firms is finally taking shape

... but will the global minimum tax reduce profit shifting?

## We know that:

- ▶ There is a sizeable profit shifting by multinationals;  
(Álvarez-Martínez et al., 2021; Bilicka, 2019; Garcia-Bernardo and Janský, 2024; Riedel, 2018; Tørsløv et al., 2023)
- ▶ The scale of profit shifting has been increasing over time;  
(Clausing, 2016; Garcia-Bernardo, Janský, and Zucman, 2022; Wier and Zucman, 2022)
- ▶ The global minimum tax's objective is to reduce profit shifting.  
(Barake et al., 2021; Cobham et al., 2022; Devereux, 2023; Gomez Cram and Olbert, 2023; Hebous and Keen, 2023; Hugger et al., 2024; Johannesen, 2022; OECD, 2020; Schjelderup and Stähler, 2023)

## We know that:

- ▶ There is a sizeable profit shifting by multinationals;  
(Álvarez-Martínez et al., 2021; Bilicka, 2019; Garcia-Bernardo and Janský, 2024; Riedel, 2018; Tørsløv et al., 2023)
- ▶ The scale of profit shifting has been increasing over time;  
(Clausing, 2016; Garcia-Bernardo, Janský, and Zucman, 2022; Wier and Zucman, 2022)
- ▶ The global minimum tax's objective is to reduce profit shifting.  
(Barake et al., 2021; Cobham et al., 2022; Devereux, 2023; Gomez Cram and Olbert, 2023; Hebous and Keen, 2023; Hugger et al., 2024; Johannesen, 2022; OECD, 2020; Schjelderup and Stähler, 2023)

The global minimum tax aims to reduce profit shifting.

## We know that:

- ▶ There is a sizeable profit shifting by multinationals;  
(Álvarez-Martínez et al., 2021; Bilicka, 2019; Garcia-Bernardo and Janský, 2024; Riedel, 2018; Tørsløv et al., 2023)
- ▶ The scale of profit shifting has been increasing over time;  
(Clausing, 2016; Garcia-Bernardo, Janský, and Zucman, 2022; Wier and Zucman, 2022)
- ▶ The global minimum tax's objective is to reduce profit shifting.  
(Barake et al., 2021; Cobham et al., 2022; Devereux, 2023; Gomez Cram and Olbert, 2023; Hebous and Keen, 2023; Hugger et al., 2024; Johannesen, 2022; OECD, 2020; Schjelderup and Stähler, 2023)

The global minimum tax aims to reduce profit shifting.

... **BUT** will the global minimum tax reduce profit shifting?

# Introduction

## **Rationales for the Global Minimum Tax**

(#1) Increase tax contribution from large businesses

(#2) Reduce scope for profit shifting

(#3) Level the playing field for firms

# Introduction

## A set of diagnostics

(#1) Increase tax contribution from large businesses

→ Higher average tax rate

(#2) Reduce scope for profit shifting

→ Less tax rate dispersion within firms

(#3) Level the playing field for firms

→ Less tax rate dispersion across firms

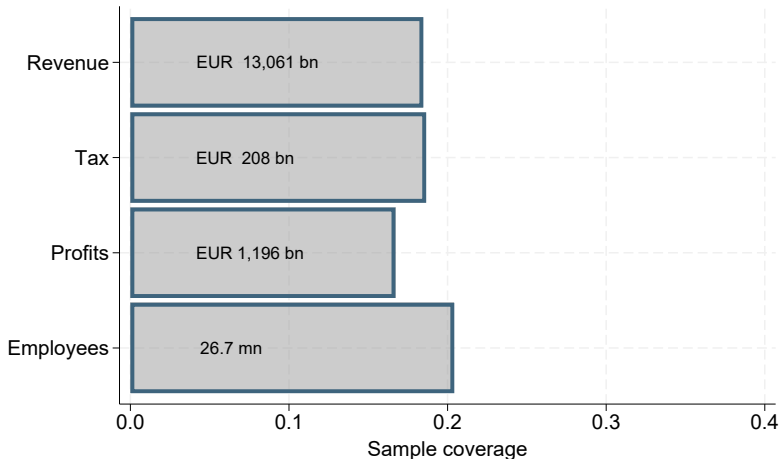


# DATA

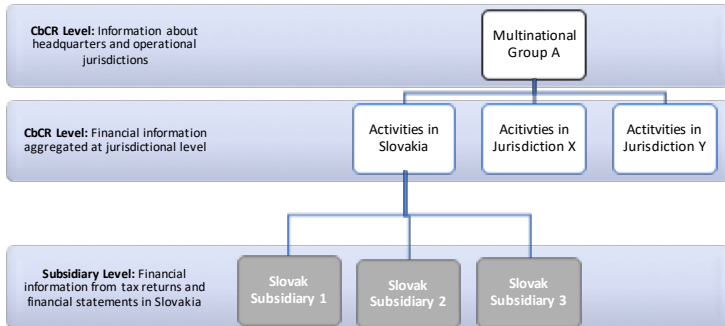
# Data

- ▶ Firm-level country-by-country reporting data for 788 multinationals
- ▶ 20% of all large multinationals globally
- ▶ 34 thousand multinational-country observations
- ▶ 788 multinationals with activities in Slovakia, 1827 Slovak subsidiaries paired across three data sets: (i) country-by-country reporting data, (ii) tax returns, and (iii) financial statements

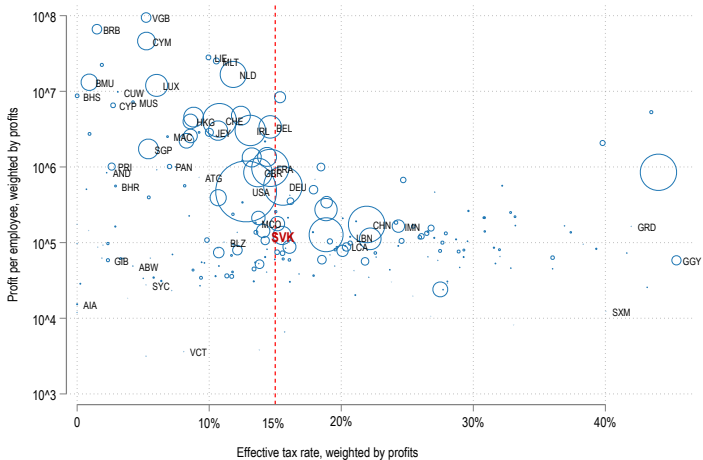
# Covering 20% of activities of all large multinationals globally



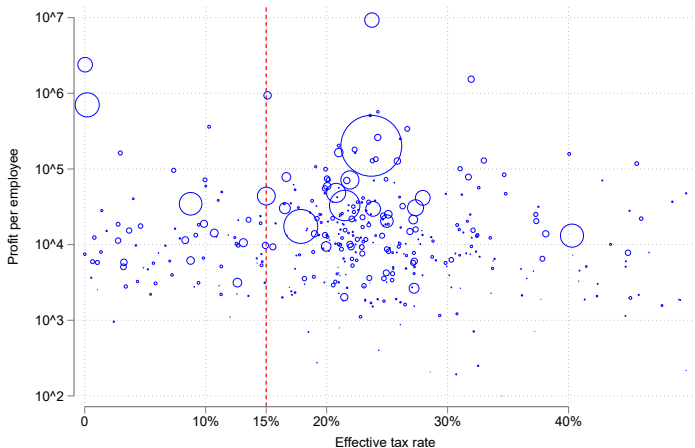
# Country-by-country reporting, tax returns and financial statements



# Profitability and effective tax rates: Global



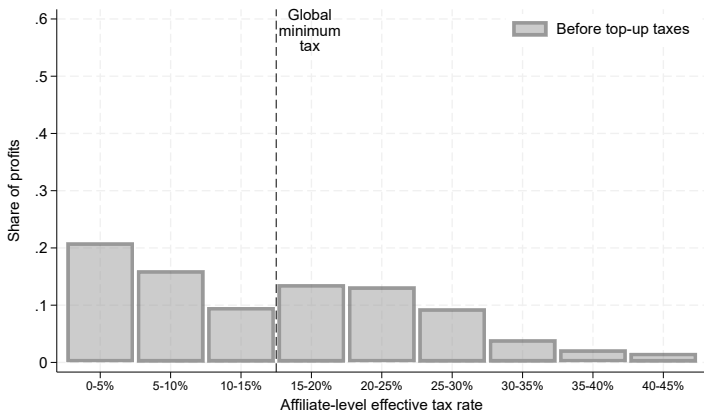
# Profitability and effective tax rates: Slovakia



The mechanical impact not accounting for firm or  
government responses

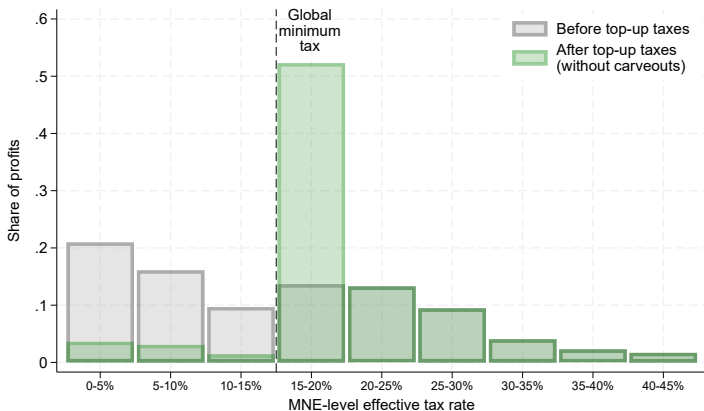
## RESULTS

# Large dispersion in **affiliate-level** tax rates before top-up taxes

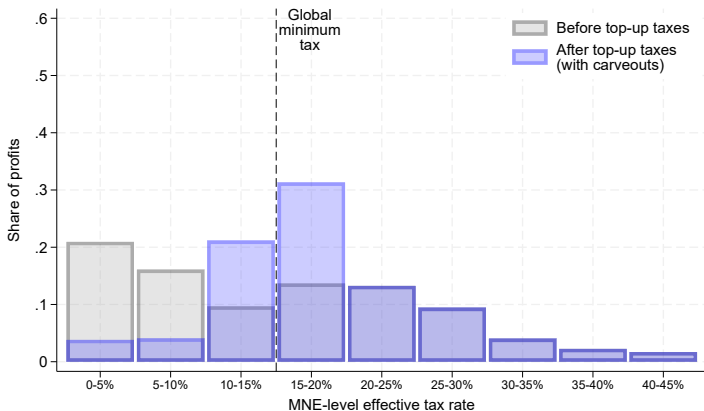




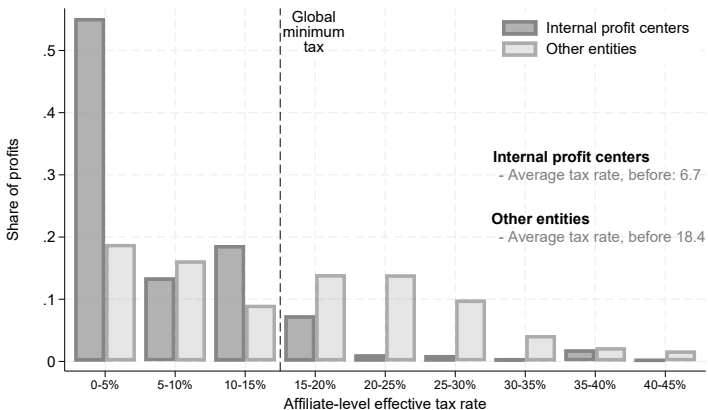
## Before carve-outs, top-up taxes push almost all affiliates above 15%



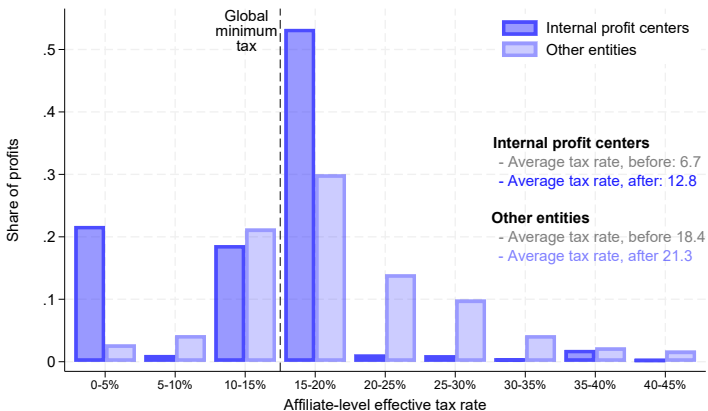
# Carve-outs allow some affiliates to fall down below 15%



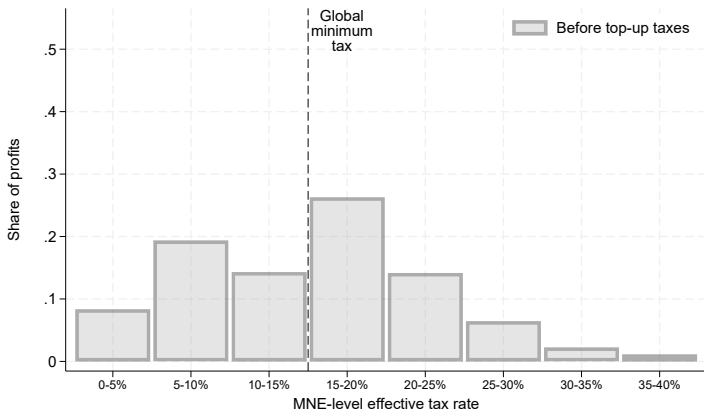
# Strikingly low tax rates in the baseline for internal profit centers



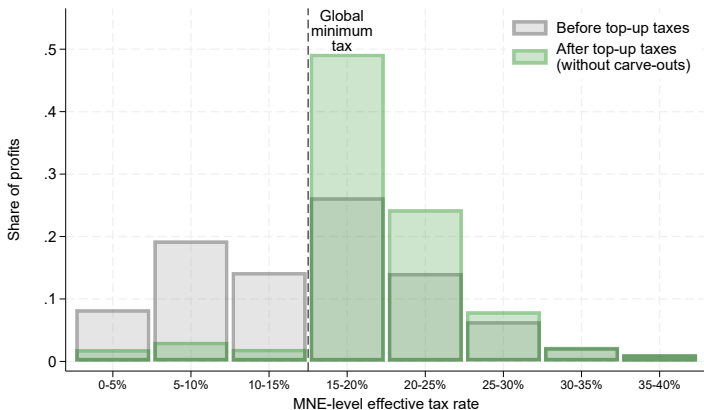
# Most of the tax increase applies to internal profit centers



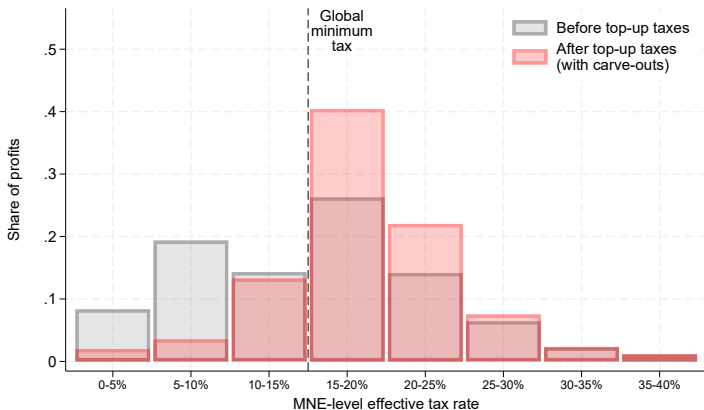
# Distribution of **MNE-level** effective tax rates in 2020



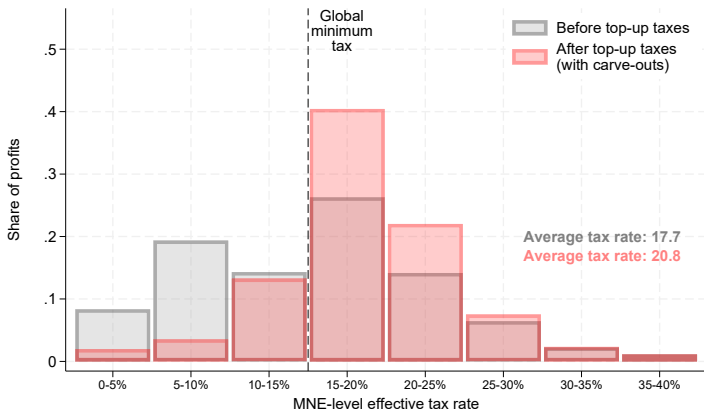
## Before carve-outs, top-up taxes push almost all MNEs above 15%



# Carve-outs allow some multinationals to fall down below 15%



# Average tax rate across all MNEs increases by around 3 percentage points





# A summary of the results

## Rationales for the Global Minimum Tax

(#1) Increase tax contribution from large businesses

- average rate:  $\sim 3\%$ -points  $\uparrow$
- global tax bill:  $\sim \text{€}200\text{bn}$   $\uparrow$

(#2) Reduce scope for profit shifting

- within-firm tax dispersion  $\downarrow$
- mostly but not only internal profit centers

(#3) Level the playing field for firms

- between-firm tax dispersion  $\downarrow$

# The impact on tax revenue accounting for firm and government responses

## **CONCEPTUAL FRAMEWORK**

# Institutional background

## **Which countries:**

- ▶ Participating
- ▶ Implementing
- ▶ Non-participating

# Institutional background

## Which countries:

- ▶ Participating
- ▶ Implementing
- ▶ Non-participating

## Which top-up taxes

- ▶ Domestic top-up tax (QDMTT)
- ▶ Headquarter top-up tax (IIR)
- ▶ Non-headquarter top-up tax (UTPR)

# Institutional background

## Which countries:

- ▶ Participating
- ▶ Implementing
- ▶ Non-participating

## Which top-up taxes

- ▶ Domestic top-up tax (QDMTT)
- ▶ Headquarter top-up tax (IIR)
- ▶ Non-headquarter top-up tax (UTPR)

The participation of countries is crucial: (i) only implementing countries can apply top-up taxes and (ii) in an easier way to multinationals in participating countries.

# Global minimum tax, profit shifting and tax revenue

Top-up taxes affect revenue both directly (top-up tax revenue) and indirectly (corporate income tax revenue through profit shifting)

- ▶ Increase in top-up taxes applied by the country
- ▶ Increase in corporate income tax through less profit shifting out of the country
- ▶ Decrease in corporate income tax through less profit shifting in the country

# Global minimum tax, profit shifting and tax revenue

Top-up taxes affect revenue both directly (top-up tax revenue) and indirectly (corporate income tax revenue through profit shifting)

- ▶ Increase in top-up taxes applied by the country
- ▶ Increase in corporate income tax through less profit shifting out of the country
- ▶ Decrease in corporate income tax through less profit shifting in the country

# Global minimum tax, profit shifting and tax revenue

Top-up taxes affect revenue both directly (top-up tax revenue) and indirectly (corporate income tax revenue through profit shifting)

- ▶ Increase in top-up taxes applied by the country
- ▶ Increase in corporate income tax through less profit shifting out of the country
- ▶ Decrease in corporate income tax through less profit shifting in the country

## Profit shifting

- ▶ For the estimation of profit shifting we consider Hines & Rice (1994) methodology
- ▶ The decreased incentive to shift profit is proportional to changes in the differences in effective tax rates as there will be an increase in minimum taxation
- ▶ We consider substance-based carveouts



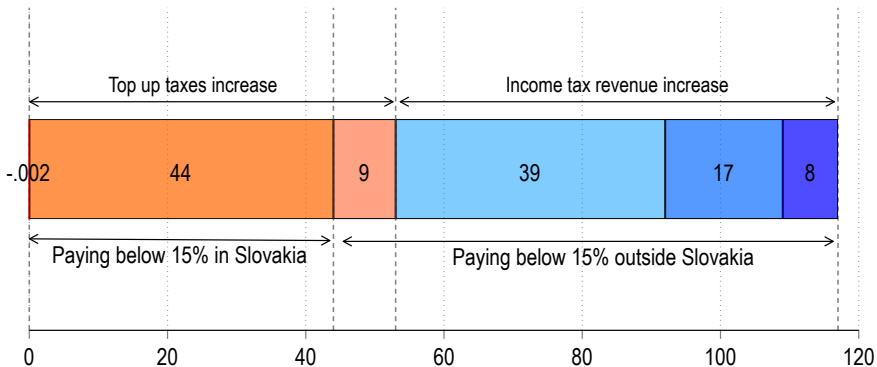
# Seven components

We decompose the change in tax revenue into:

- ① Domestic top-up tax
- ② Headquarter top-up tax
- ③ Non-headquarter top-up tax
- ④ Income tax domestic
- ⑤ Income tax headquarter
- ⑥ Income tax other
- ⑦ Income tax decrease

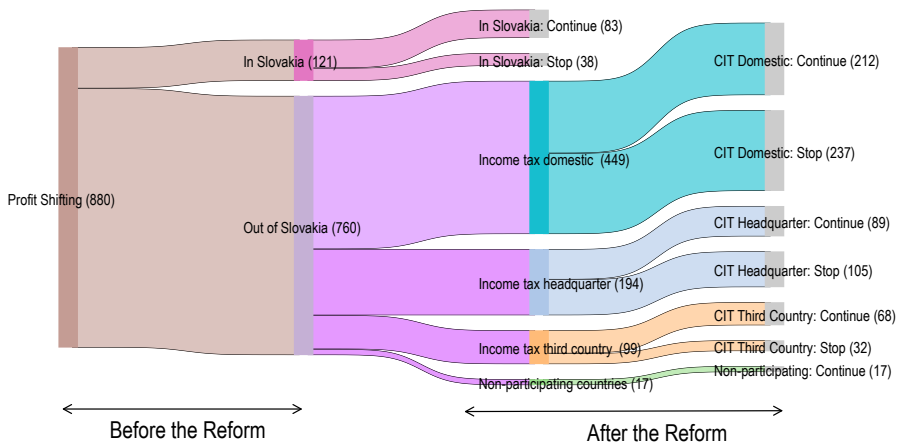
# RESULTS: DECOMPOSITION

# Tax revenue composition based on profit shifting behavior

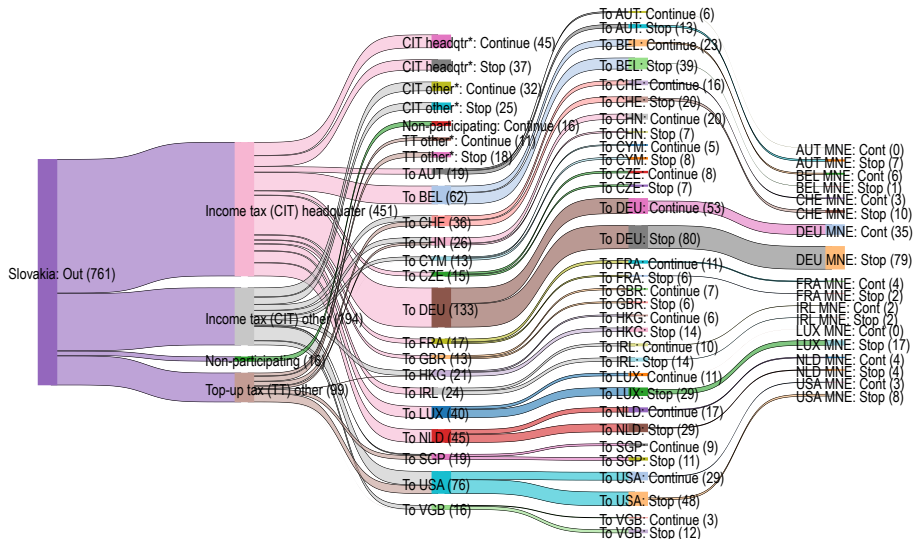


- Income tax revenue: Income tax decrease
- Top up taxes: Domestic top-up tax
- Top up taxes: Third country top-up tax
- Income tax revenue: Income tax domestic
- Income tax revenue: Income tax headquarter
- Income tax revenue: Income tax third country

Figure: Changes in profit shifting



# The global change in profit shifting



# Discussion

## Key takeaways:

- ▶ Increase average rate:  $\sim 3\%$ -points  $\uparrow$  and global tax bill:  $\sim \text{€}200\text{bn}$   $\uparrow$
- ▶ Reduce scope for shifting: within-firm tax dispersion  $\downarrow$ , internal profit centers
- ▶ Level the playing field for firms: between-firm tax dispersion  $\downarrow$
- ▶ Slovakia's corporate tax revenue will increase by 4%  $\Rightarrow$  half of the increase in top-up taxes, half in corporate income taxes due to halving of profit shifting
- ▶ Clearly too soon for a final verdict on the reform and the responses

# Thank you!

Tomáš Boukal

Institute of Economic Studies, Charles University

tomas.boukal@fsv.cuni.cz

# CORPTAX

# APPENDIX



**Table:** Semielasticity model results

Dependent variable: Log of Profit	(1) Linear	(2) Quadratic	(3) Logarithmic
Log of Assets	0.357*** (72.11)	0.357*** (72.37)	0.357*** (72.28)
Log of Labor	0.419*** (55.85)	0.420*** (56.18)	0.420*** (56.25)
Effective tax rate	-0.885*** (-4.50)	-7.867*** (-13.16)	4.246*** (9.75)
Effective tax rate (quadratic)		19.410*** (12.37)	
Effective tax rate (logarithmic)			-0.727*** (-13.19)
Log of GDP per capita	0.288*** (25.73)	0.301*** (26.85)	0.316*** (27.82)
Log of Population	0.0757*** (7.36)	0.102*** (12.96)	0.101*** (12.93)
Constant	3.342*** (18.22)	3.297*** (18.04)	0.430 (1.50)
N	19,747	19,747	19,747
R2	0.647	0.650	0.650

Note: t value in parentheses. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

For the calculation of tax semi elasticities we use only observations with positive profits. We replace the negative values of tax accrued by 0 and do not allow for higher effective tax rates than 50%. The control variables in terms of GDP per capita and population are taken from World Development Indicators published by the World Bank.

## This paper

**Research question:** How the global minimum tax affects multinationals, changes profit shifting incentives and impacts tax revenues?

## This paper

**Research question:** How the global minimum tax affects multinationals, changes profit shifting incentives and impacts tax revenues?

**Data:** 34 thousand multinational-country observations from country-by-country reports of ca 800 large multinationals headquartered in many countries

### Main findings:

- ▶ The global minimum tax increases effective tax rates to up to 15%, but the increase is heterogeneous and lower than without carve-outs

## This paper

**Research question:** How the global minimum tax affects multinationals, changes profit shifting incentives and impacts tax revenues?

**Data:** 34 thousand multinational-country observations from country-by-country reports of ca 800 large multinationals headquartered in many countries

### Main findings:

- ▶ The global minimum tax increases effective tax rates to up to 15%, but the increase is heterogeneous and lower than without carve-outs
- ▶ The global minimum tax lowers incentives to shift profits for most multinationals, which are likely to pay higher effective tax rates in most countries worldwide.

## This paper

**Research question:** How the global minimum tax affects multinationals, changes profit shifting incentives and impacts tax revenues?

**Data:** 34 thousand multinational-country observations from country-by-country reports of ca 800 large multinationals headquartered in many countries

### Main findings:

- ▶ The global minimum tax increases effective tax rates to up to 15%, but the increase is heterogeneous and lower than without carve-outs
- ▶ The global minimum tax lowers incentives to shift profits for most multinationals, which are likely to pay higher effective tax rates in most countries worldwide.
- ▶ The corporate tax revenues of Slovakia will increase by 4%, with most of the increase due to its minimum top-up taxes.

## This paper

**Research question:** How the global minimum tax affects multinationals, changes profit shifting incentives and impacts tax revenues?

**Data:** 34 thousand multinational-country observations from country-by-country reports of ca 800 large multinationals headquartered in many countries

### Main findings:

- ▶ The global minimum tax increases effective tax rates to up to 15%, but the increase is heterogeneous and lower than without carve-outs
- ▶ The global minimum tax lowers incentives to shift profits for most multinationals, which are likely to pay higher effective tax rates in most countries worldwide.
- ▶ The corporate tax revenues of Slovakia will increase by 4%, with most of the increase due to its minimum top-up taxes.
- ▶ The rest of the increase is corporate income tax on profits that will no longer be shifted out of it.

## This paper

**Research question:** How the global minimum tax affects multinationals, changes profit shifting incentives and impacts tax revenues?

**Data:** 34 thousand multinational-country observations from country-by-country reports of ca 800 large multinationals headquartered in many countries

### Main findings:

- ▶ The global minimum tax increases effective tax rates to up to 15%, but the increase is heterogeneous and lower than without carve-outs
- ▶ The global minimum tax lowers incentives to shift profits for most multinationals, which are likely to pay higher effective tax rates in most countries worldwide.
- ▶ The corporate tax revenues of Slovakia will increase by 4%, with most of the increase due to its minimum top-up taxes.
- ▶ The rest of the increase is corporate income tax on profits that will no longer be shifted out of it.
- ▶ Profit shifting will decrease by slightly more than half and much of it will continue to few European countries that did implement the reform.

# Motivation

## We know that:

- ▶ There is a sizeable profit shifting by multinationals;  
(Álvarez-Martínez et al., 2021; Bilicka, 2019; Garcia-Bernardo and Janský, 2024; Riedel, 2018; Tørsløv et al., 2023)
- ▶ The scale of profit shifting has been increasing over time;  
(Clausing, 2016; Garcia-Bernardo, Janský, and Zucman, 2022; Wier and Zucman, 2022)
- ▶ The global minimum tax's objective is to reduce profit shifting.  
(Barake et al., 2021; Cobham et al., 2022; Devereux, 2023; Gomez Cram and Olbert, 2023; Hebous and Keen, 2023; Hugger et al., 2024; Johannesen, 2022; OECD, 2020; Schjelderup and Stähler, 2023)



# Motivation

## We know that:

- ▶ There is a sizeable profit shifting by multinationals; (Álvarez-Martínez et al., 2021; Bilicka, 2019; Garcia-Bernardo and Janský, 2024; Riedel, 2018; Tørsløv et al., 2023)
- ▶ The scale of profit shifting has been increasing over time; (Clausing, 2016; Garcia-Bernardo, Janský, and Zucman, 2022; Wier and Zucman, 2022)
- ▶ The global minimum tax's objective is to reduce profit shifting. (Barake et al., 2021; Cobham et al., 2022; Devereux, 2023; Gomez Cram and Olbert, 2023; Hebous and Keen, 2023; Hugger et al., 2024; Johannesen, 2022; OECD, 2020; Schjelderup and Stähler, 2023)

The global minimum tax aims to reduce profit shifting.

# Motivation

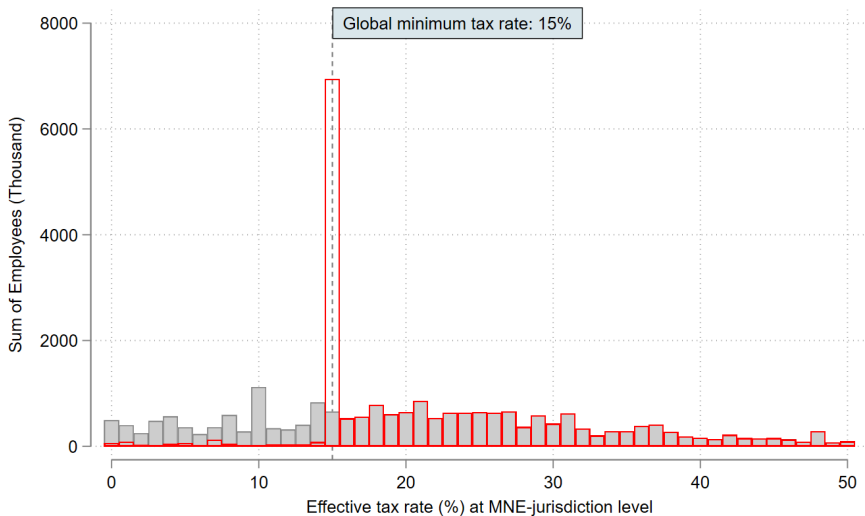
## We know that:

- ▶ There is a sizeable profit shifting by multinationals;  
(Álvarez-Martínez et al., 2021; Bilicka, 2019; Garcia-Bernardo and Janský, 2024; Riedel, 2018; Tørsløv et al., 2023)
- ▶ The scale of profit shifting has been increasing over time;  
(Clausing, 2016; Garcia-Bernardo, Janský, and Zucman, 2022; Wier and Zucman, 2022)
- ▶ The global minimum tax's objective is to reduce profit shifting.  
(Barake et al., 2021; Cobham et al., 2022; Devereux, 2023; Gomez Cram and Olbert, 2023; Hebous and Keen, 2023; Hugger et al., 2024; Johannesen, 2022; OECD, 2020; Schjelderup and Stähler, 2023)

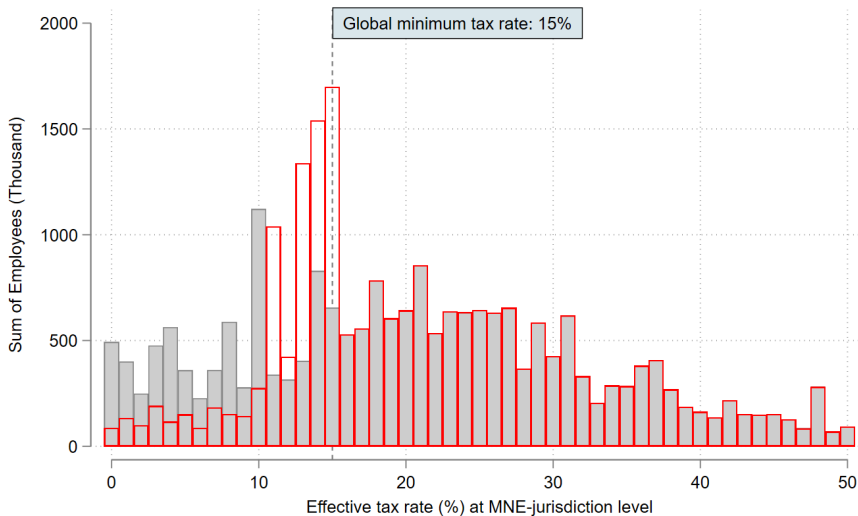
The global minimum tax aims to reduce profit shifting.

... **BUT** will the global minimum tax reduce profit shifting?

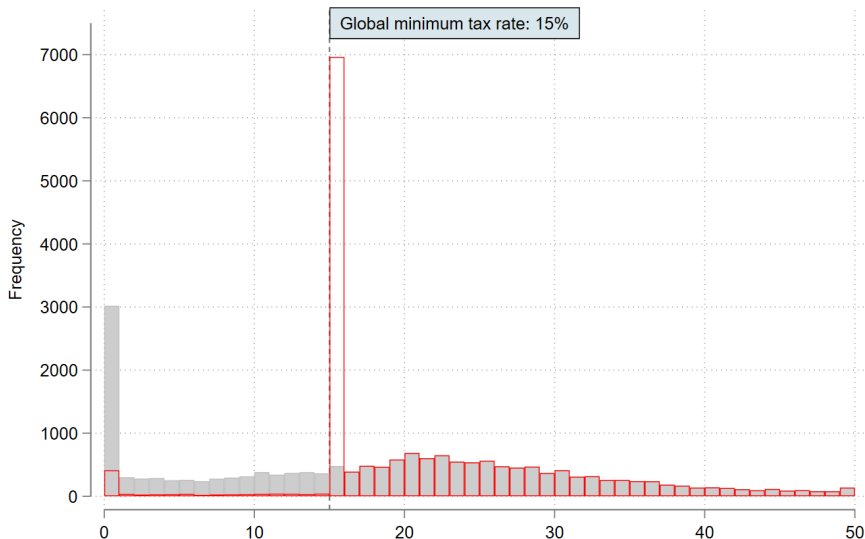
# Mechanical effect of the global minimum tax on effective tax rates: employees, without carve-outs



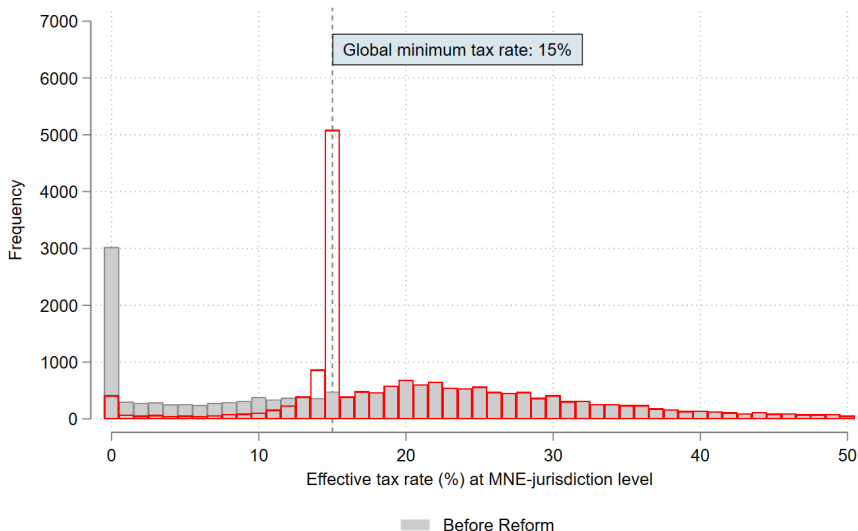
# Mechanical effect of the global minimum tax on effective tax rates: employees, with carve-outs



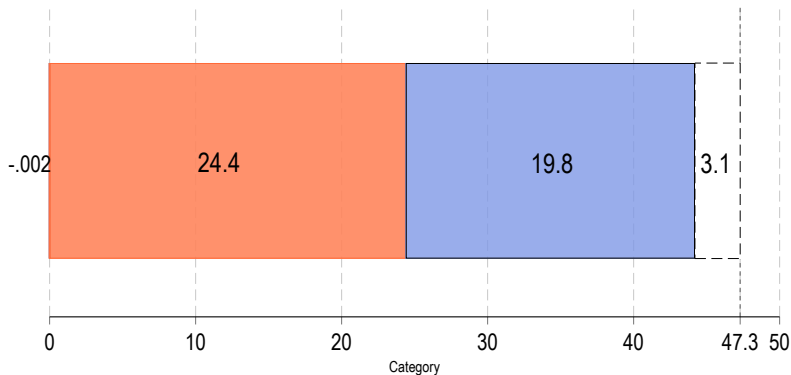
# Mechanical effect of the global minimum tax on effective tax rates: frequency, without carve-outs



# Mechanical effect of the global minimum tax on effective tax rates: frequency, with carve-outs

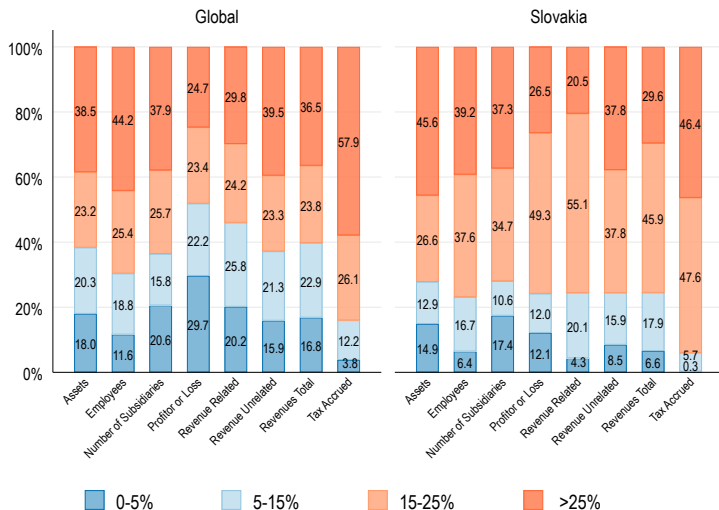


# Composition of tax revenue post-reform, less profit shifted into Slovakia



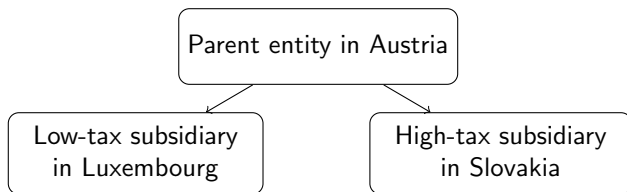
- Income tax decrease - less profit shifting from other countries into Slovakia
- Top-up tax on undertaxed profits - companies shifting profits out of Slovakia
- Top-up tax on undertaxed profits - companies shifting profits to Slovakia
- Top-up tax forgone with respect to baseline (retrospective) scenario, companies shifting less profits to Slovakia

# Distribution of multinationals' activities according to their effective tax rates



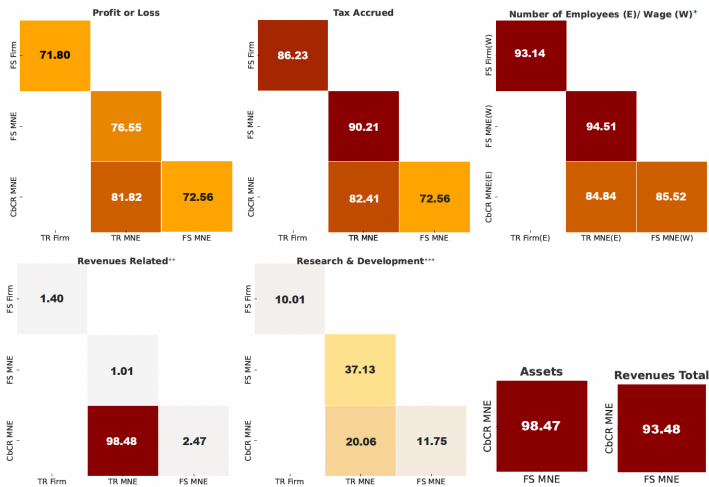


## A hypothetical example



	Luxembourg	Austria	Slovakia	Top-up tax recipient
<b>Domestic top-up tax</b>	Implementing with domestic top-up tax	Participating or implementing	-	Luxembourg
<b>Headquarter top-up tax</b>	Participating or implementing (without domestic top-up tax)	Implementing	-	Austria
<b>Non-headquarter top-up tax</b>	Participating or implementing (without domestic top-up tax)	Participating	Implementing	Slovakia
<b>No Taxation</b>	Non-participating	-	-	No taxation

# Correlation coefficients for individual data sources



## Changes in Profit Shifting Due to the Introduction of Global Minimum Tax

<b>Out of Slovakia</b>	<b>760</b>	<b>386</b>	<b>49%</b>	<b>887</b>	<b>433</b>	<b>51%</b>	<b>1850</b>	<b>1138</b>	<b>38%</b>
Income tax domestic	449	212	53%	482	218	55%	962	562	42%
Income tax headquarter	275	89	53%	275	141	49%	605	367	39%
Income tax third country	99	68	60%	113	56	50%	258	182	29%
Non-participating	18	18	0%	15	15	0%	25	25	0%
<b>Into Slovakia</b>	<b>121</b>	<b>83</b>	<b>31%</b>	<b>105</b>	<b>65</b>	<b>39%</b>	<b>692</b>	<b>511</b>	<b>26%</b>