

How Much Multinational Corporations Really Pay in Taxes and Where: Evidence from the Voluntarily Published Country-by-Country Reports

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Research questions

- How much tax do MNCs pay and where?
- Is there evidence of aggressive tax planning?
- Do MNCs which voluntarily publish their country-by-country reports
 - pay higher ETR compared to other MNCs?
 - report a lower share of profits in tax havens?

Data

MNC	Years	Industry	Notes
Anglo American	2018	Extractives	
AXA	2018	Insurance	Only for selected countries. Not reported: unrelated party revenues, number of employees, tangible assets
BT Group	2019	Telecommunications	Not reported: income tax accrued,
ENI	2017, 2018	Extractives	Not reported: unrelated revenues
Iberdrola	2019	Insurance	
NN	2018, 2019	Insurance	Not reported: unrelated revenues, tangible assets
Repsol	2018	Extractives	
Rio Tinto	2018	Extractives	
Shell	2018	Extractives	
Vodafone	2018 (2016, 2017)	Telecommunications	Different reporting in 2016 and 2017.

Sample selection

- Positive profits
- Pooled observations from different years; average when several years per company
- Negative tax payments set to zero

The relative importance of tax havens

Company	Share of profits reported in tax havens (preferred list)	Share of profits reported in tax havens (Gravelle's list)
OECD*	14.2	9.5
Voluntary sample	16.3	8.8
Anglo American	7.5	7.5
<u>AXA</u>	34.8	26.0
<u>BT Group</u>	64.0	10.9
ENI	6.3	0.8
Iberdrola	1.3	0.4
<u>NN</u>	75.9	2.2
Repsol	3.3	1.8
Rio Tinto	3.7	3.6
<u>Shell</u>	26.1	15.3
Vodafone	3.7	3.3

Methodology

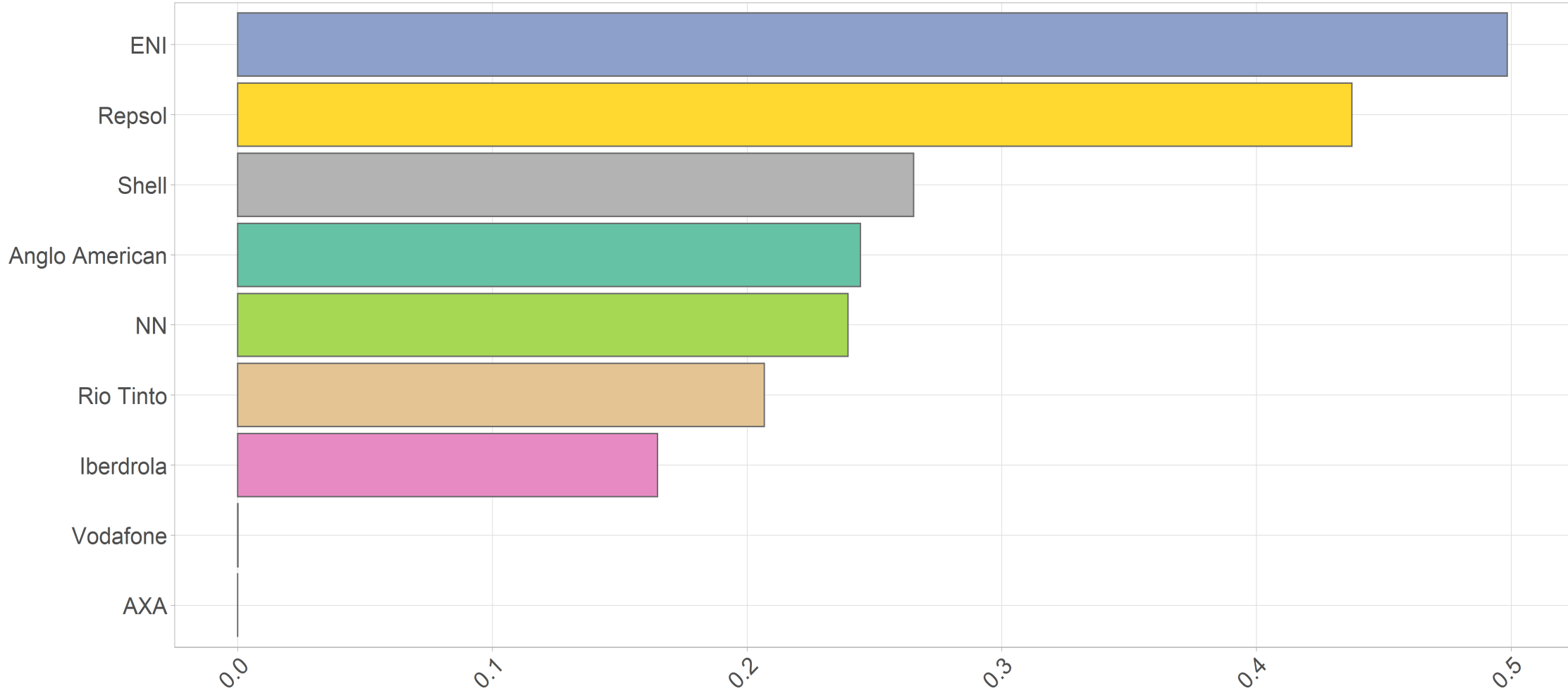
1. Compute (backward-looking) effective tax rates by multinational group and by country
2. Misalignment of reported profits and location of economic activity by country
3. Estimate semi-elasticity of reported profits with regard to effective tax rates

1. Effective tax rates (ETR)

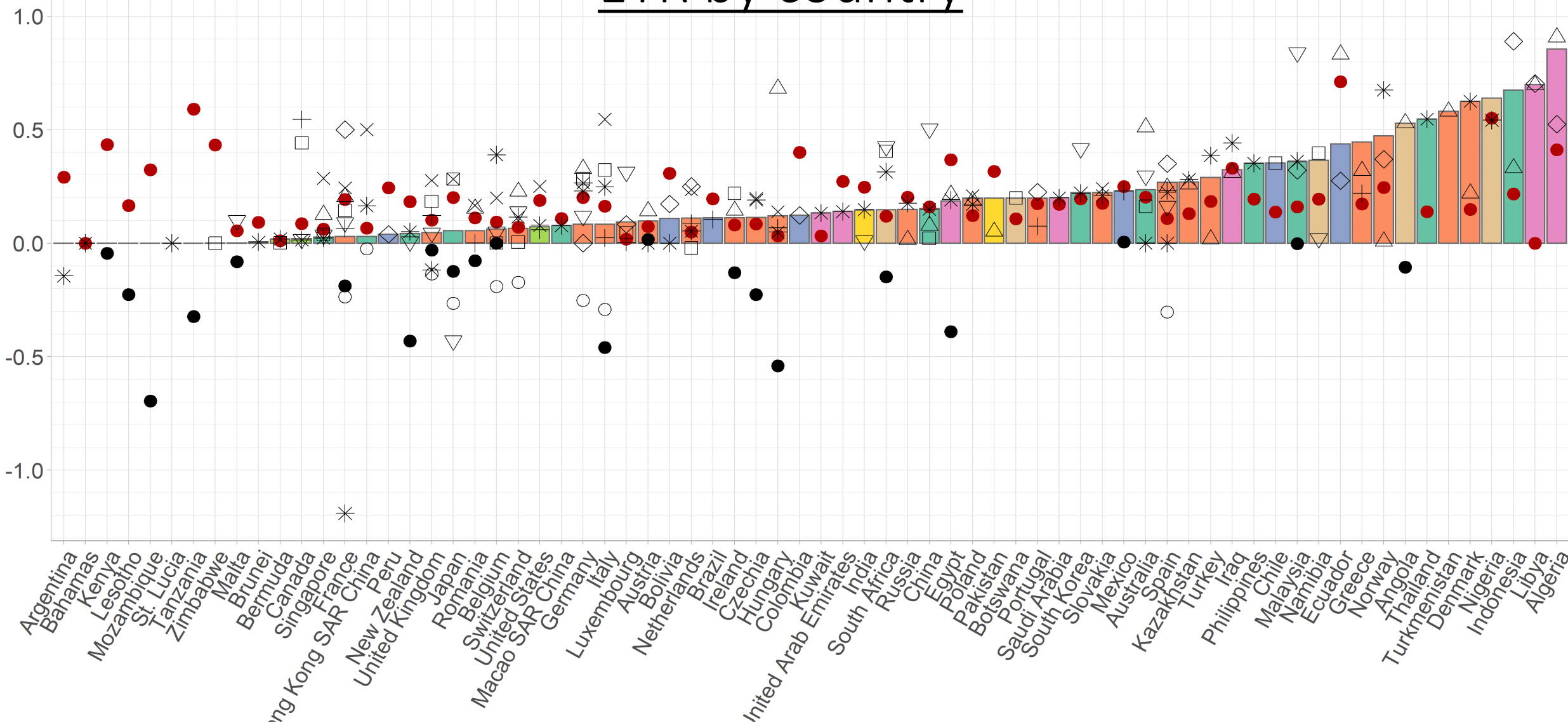
$$ETR_MNC_i = \frac{\sum_{j=1}^n \text{income tax accrued}_{ij}}{\sum_{j=1}^n \text{gross profits}_{ij}}$$

$$ETR_country_j = \frac{\sum_{i=1}^n \text{income tax accrued}_{ij}}{\sum_{i=1}^n \text{gross profits}_{ij}}$$

ETR by multinational group



ETR by country



● OECD Aggregate CBCR

Company

□ Anglo American	△ ENI	× NN	▽ Rio Tinto	● Vodafone
○ AXA	+ Iberdrola	◇ Repsol	* Shell	

2. Misalignment of Profits and Activity

Misaligned profit
= actual gross profit
– share of economic activity
** total global gross profit*

ETR and misalignment



Semi-elasticity of profits with regard to ETR

$$\ln \pi_{ij} = \beta_0 + \beta_1 \tau_j + \beta_2 \ln L_{ij} + \beta_3 \ln K_{ij} + \beta_4 \tau_j^2 + \beta_X X_j + \sum_{i=1}^8 \delta_i D_i + \varepsilon$$

- π_{ij} profit of multinational group i in country j
- τ_j ETR of country j
- L_{ij} Employees of group i in country j
- K_{ij} Tangible assets of group i in country j
- X_j country-level controls (GDP per capita; share of natural resource rent in GDP; headquarter country)
- D_i multinational group Dummy

Results semi-elasticity

- Quadratic relation between ETR and profit
 - Negative relationship up to an ETR of 34%
 - Positive for ETR above 34%
- Employees (+)
- Tangible assets (+)
- GDP per capita (+)
- share of natural resource rent in GDP (+)
- headquarter country (+)

Summary of results I

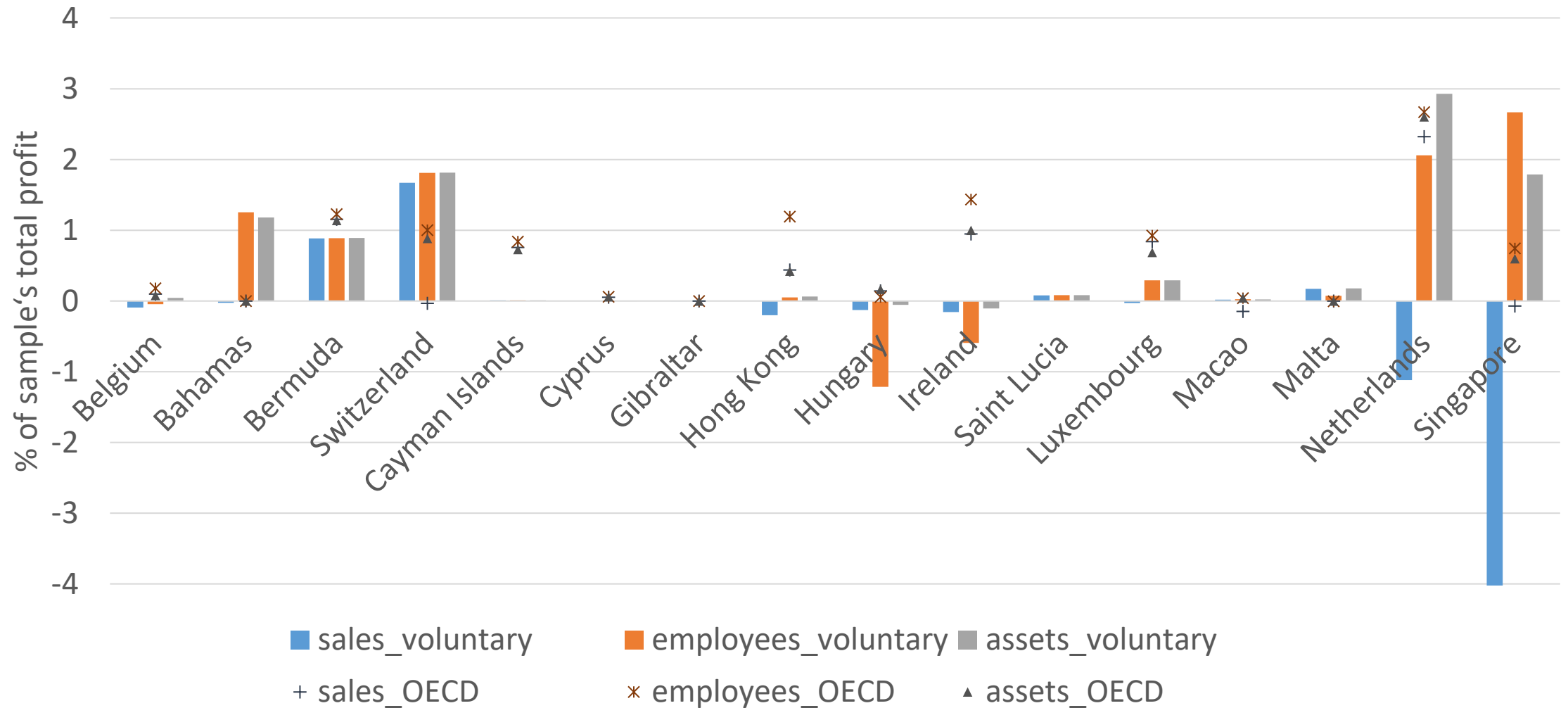
- Sample MNCs pay higher worldwide ETR than OECD MNCs on average.
- Individual MNCs report a very high share of global profits in tax havens. On average the sample reports slightly more profits than the the OECD average in tax havens.
- The reported profits in tax havens are much higher than what economic activity would suggest.
- Relationship between misalignment and ETR is probably blurred by high resource rents and resource rent taxes.

Summary of results II

- Regressions with control variables at country and multinational group level reveal non-linear relationship between the location of profit and ETR.
- Negative relationship up to an ETR of 34% is qualitatively comparable with other studies but relationship seems much weaker.
- Less profit shifting or special role of extractive industries?

Appendix

Misalignment in tax havens



Tax haven lists

We use the tax haven list by Gravelle (2015) and add Belgium, Hungary and the Netherlands, as they also display traits of a tax haven and facilitate aggressive tax planning according to the EU Parliament's special tax committee (2019). Gravelle's list includes Andorra, Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bahrain, Barbados, Belize, Bermuda, Cayman Islands, Cook Islands, Costa Rica, Cyprus, Dominica, Gibraltar, Grenada, Guernsey, Hong Kong, Ireland, Isle of Man, Jersey, Jordan, Lebanon, Liberia, Liechtenstein, Luxembourg, Macao, Maldives, Malta, Marshall Islands, Mauritius, Monaco, Montserrat, Nauru, Netherlands Antilles, Niue, Panama, Saint Lucia, Saint Vincent and the Grenadines, Samoa, San Marino, Seychelles, Singapore, St. Kitts and Nevis, Switzerland, Tonga, Turks and Caicos Islands, Vanuatu, British Virgin Islands, and U.S. Virgin Islands.

Profits in top-10 tax havens by multinational group

