

The Missing Profits of Nations

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Introduction

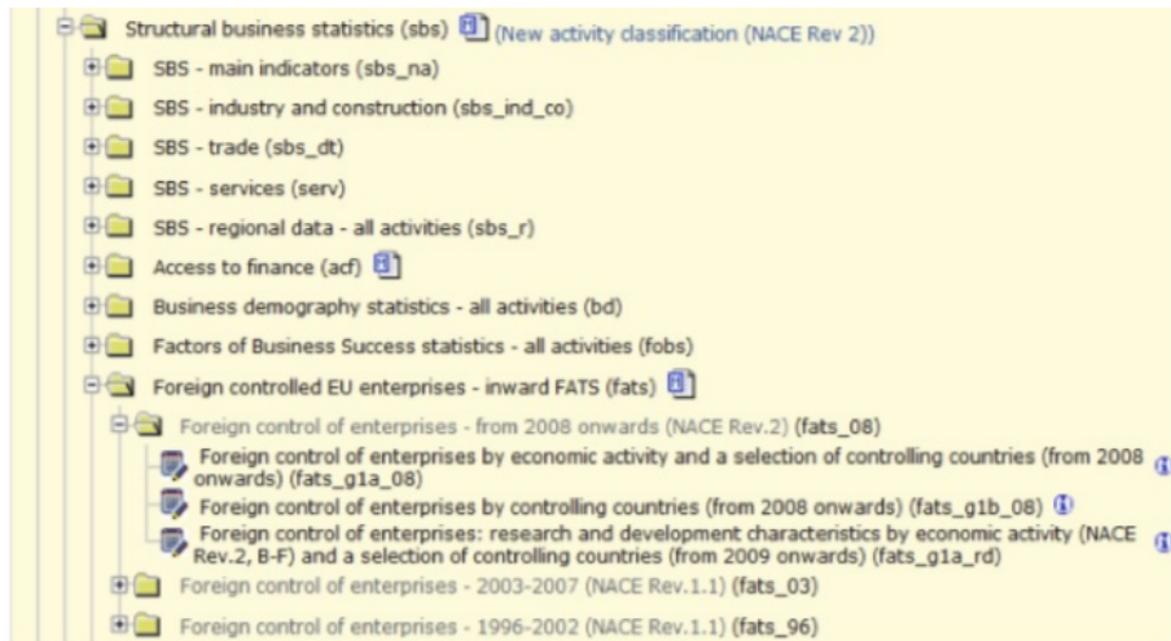
How much profits move across countries because of differences in corporate tax rates?

- ▷ Firms move capital to low-tax countries
- ▷ Firms shift paper profits to tax havens

If there was a **perfect international tax coordination**:

- ▷ Which countries would gain/lose profits?
- ▷ How? Relocation of capital, or reduced profit shifting?

New data: foreign affiliates statistics → wages, profits, etc., of foreign firms



→ Use these new data to provide first global map of where multinationals book their profits

How we estimate the amount of profits shifted to tax havens

We compute **capital shares α in foreign vs. local firms** across the world. Striking global pattern:

- ▷ Foreign firms have lower α than local firms...
- ▷ ... Except in tax havens: hugely higher α

Benchmark estimate: set profitability of foreign firms in havens equal to profitability of local firms in havens

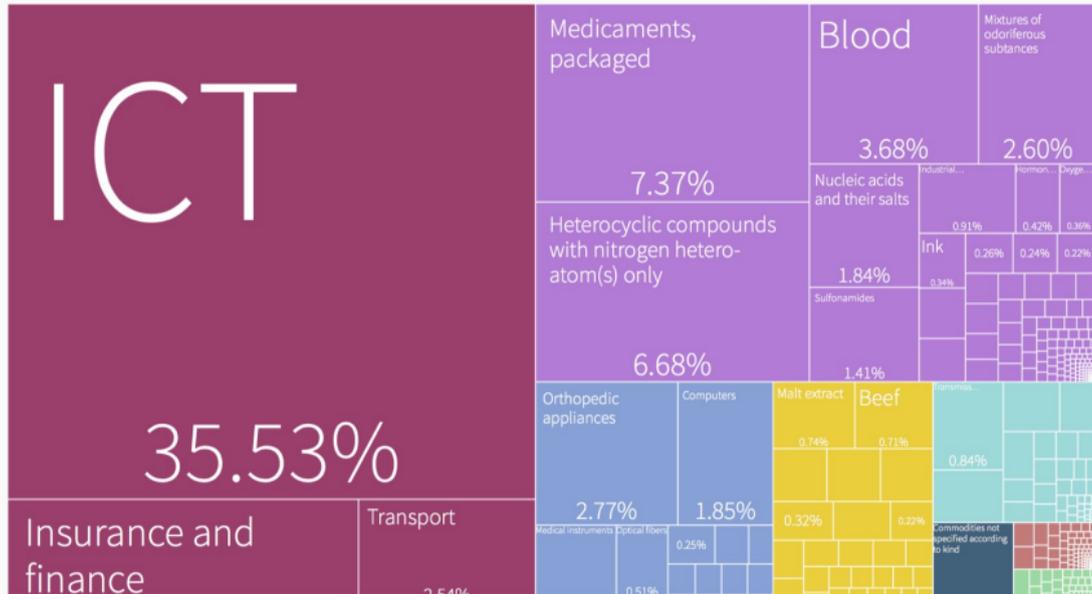
- ▷ Transparent
- ▷ Robust

New data: bilateral service trade

What did Ireland export in 2014?

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\$275B / \$275B



→ Use these new data to allocate shifted profits to the countries where they have been made

How we allocate the shifted profits

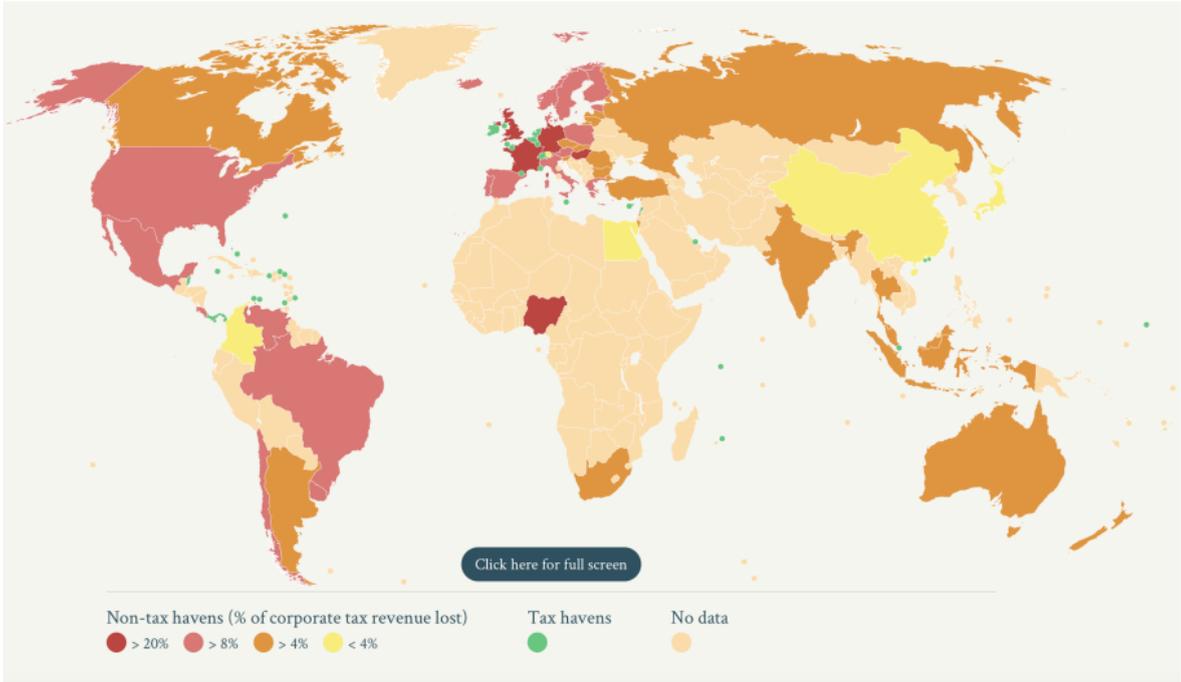
Benchmark: follow destination of tax havens' service exports and intra-group interest receipts

- ▷ Services: focus on royalties, management fees, ICT, fin. services → most conducive of shifting
- ▷ Outcome: granular estimates of profit shifting (eg, France–Ireland, Germany–Switzerland, etc.)

→ **New global database** to study (some of) the redistributive effects of globalization (2015)

- ▷ Will update annually → make it possible to study dynamics (eg, effect of policies)

MissingProfits.world



MissingProfits.world: the case of Spain

Spain loses 13% of its corporate tax revenue because of these tax havens:



	Profits lost (\$, Millions)	Tax revenue lost (\$, Millions)	Tax revenue lost (% of corp. tax revenue)
All havens	14,880	3,720	13%
EU havens	11,919	2,980	11%
Belgium	1,063	266	1%
Cyprus	4	1	0%
Ireland	2,575	644	2%
Luxembourg	3,458	865	3%
Malta	174	44	0%
Netherlands	4,645	1,161	4%
Non-EU tax havens:	2,960	740	3%
Switzerland	2,078	519	2%
Bermuda, Caribbean, Puerto Rico, Hong Kong, Singapore and others	883	221	1%

Main results

40% of multinat'l profits (\approx \$600bn) shifted to havens

- ▷ Main winners: Ireland, Luxembourg, Singapore, etc.
(impose low rates but on big \$600bn base)
- ▷ Main losers: non-haven EU countries
- ▷ Profit shifting swamps tax-driven tangible capital mobility (different welfare implications)
- ▷ Rise of capital share is higher than in official data → provide corrected estimates of α , GDP, trade

Why should we care?

Whatever one's view about efficiency costs of capital taxation, global profit shifting raises policy issues:

- ▷ Distorted competition
- ▷ Inequality
- ▷ Loss of tax revenue

Global Profit Shifting

How multinationals shift profits offshore

Three ways firms shift profits to low-tax countries:

- ▷ Manipulation of intra-group export and import prices
- ▷ Intra-group interest payments (tax deductible)
- ▷ Strategic location of intangibles

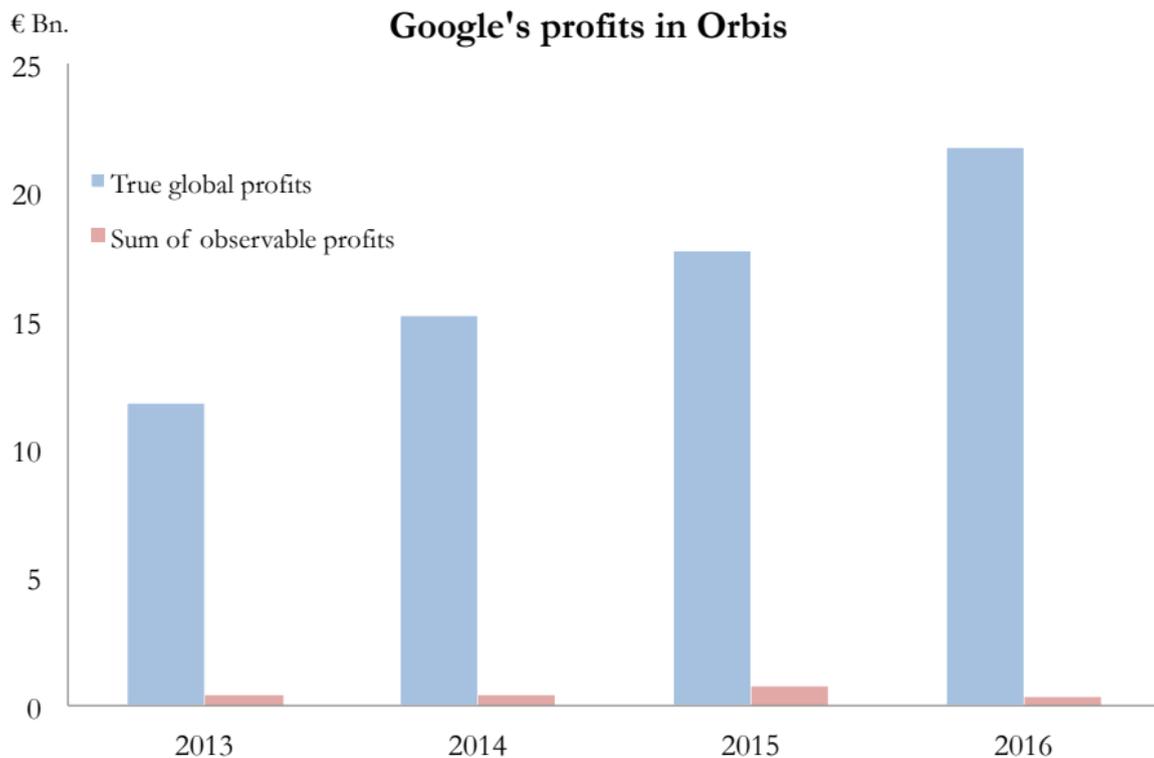
Previous literature on global profit shifting

Vast literature on shifting by US multinationals

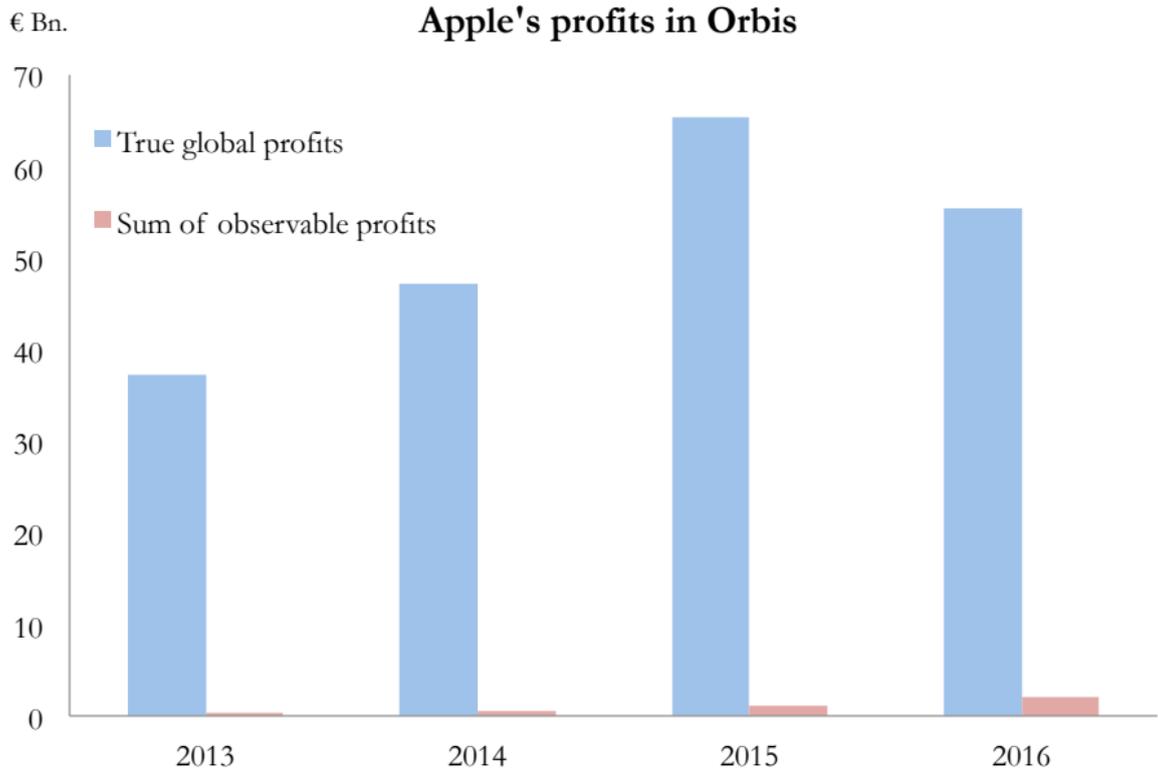
Few papers on global profit shifting, due to data issue

- ▷ Key data source: Orbis registry data
- ▷ Problem: poor Orbis coverage in tax havens...
- ▷ ... where the bulk of shifting takes place

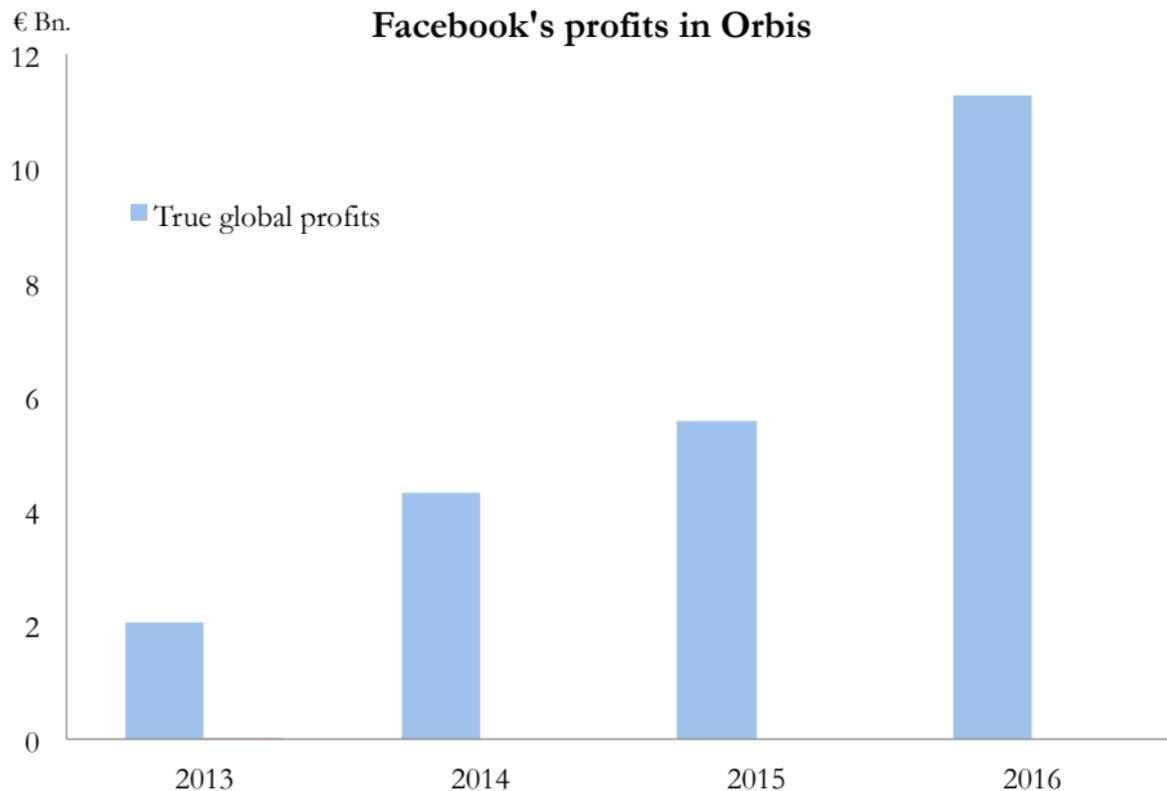
Most of Google's profits are invisible in available financial accounts data



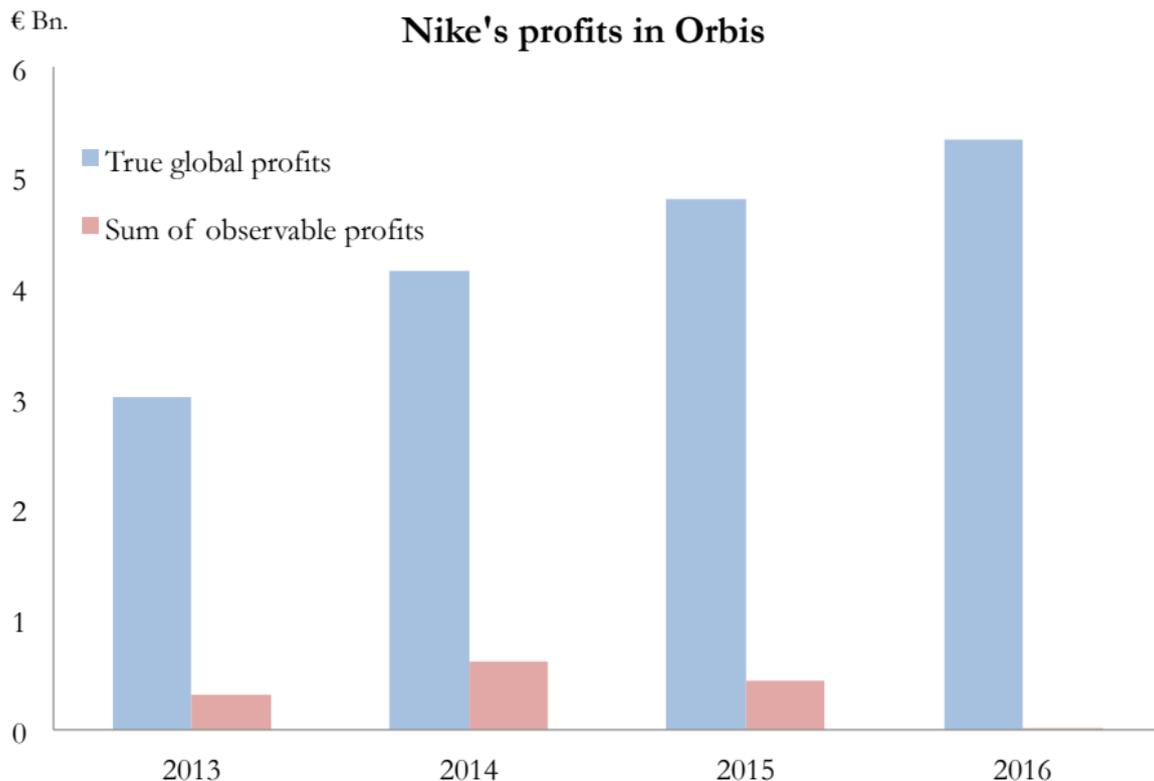
Most of Apple's profits are invisible in available financial accounts data



None of Facebook's profits are visible in available financial accounts data



Most of Nike's profits are invisible in available financial accounts data



This paper: global macro approach

Directly observable profits booked in tax havens based on foreign affiliates statistics (FATS)

- ▷ Census-like confidential surveys → more comprehensive than Orbis
- ▷ Harmonized definitions and guidelines
- ▷ No double-counting (\neq financial accounting)
- ▷ Missing countries (eg, Caribbean): use balance of payments and partners' FATS → global database

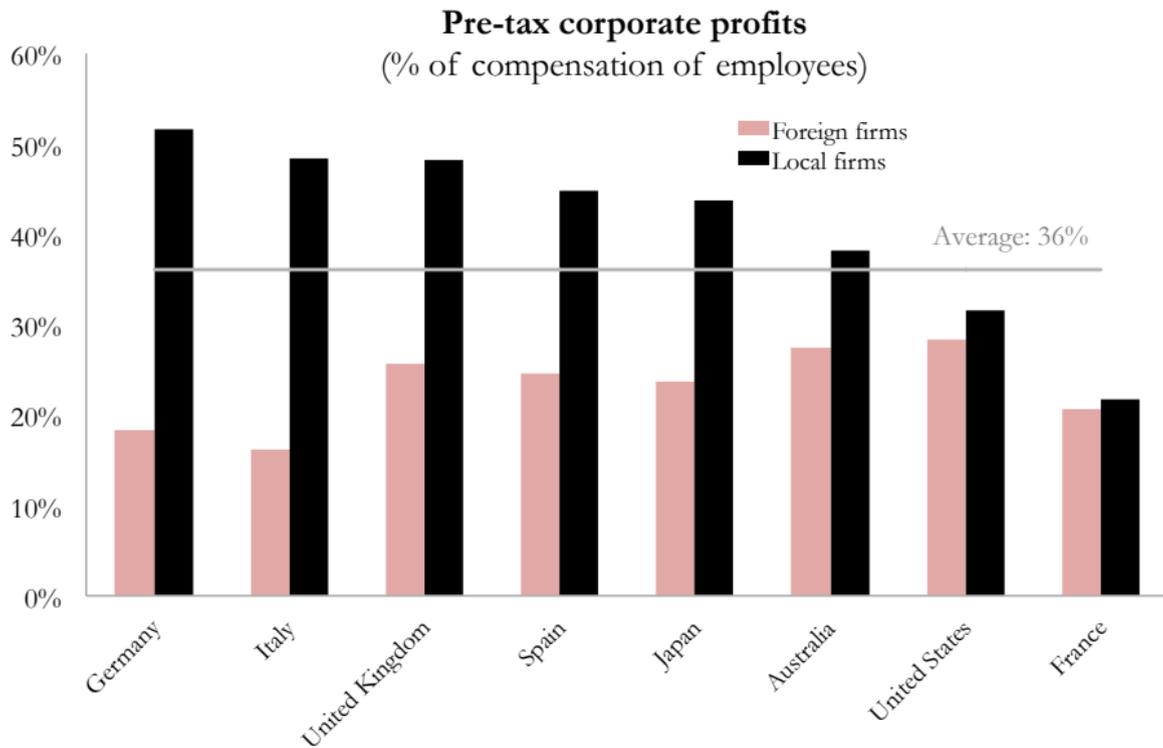
Conceptual framework

Compute profitability π of foreign vs. local firms

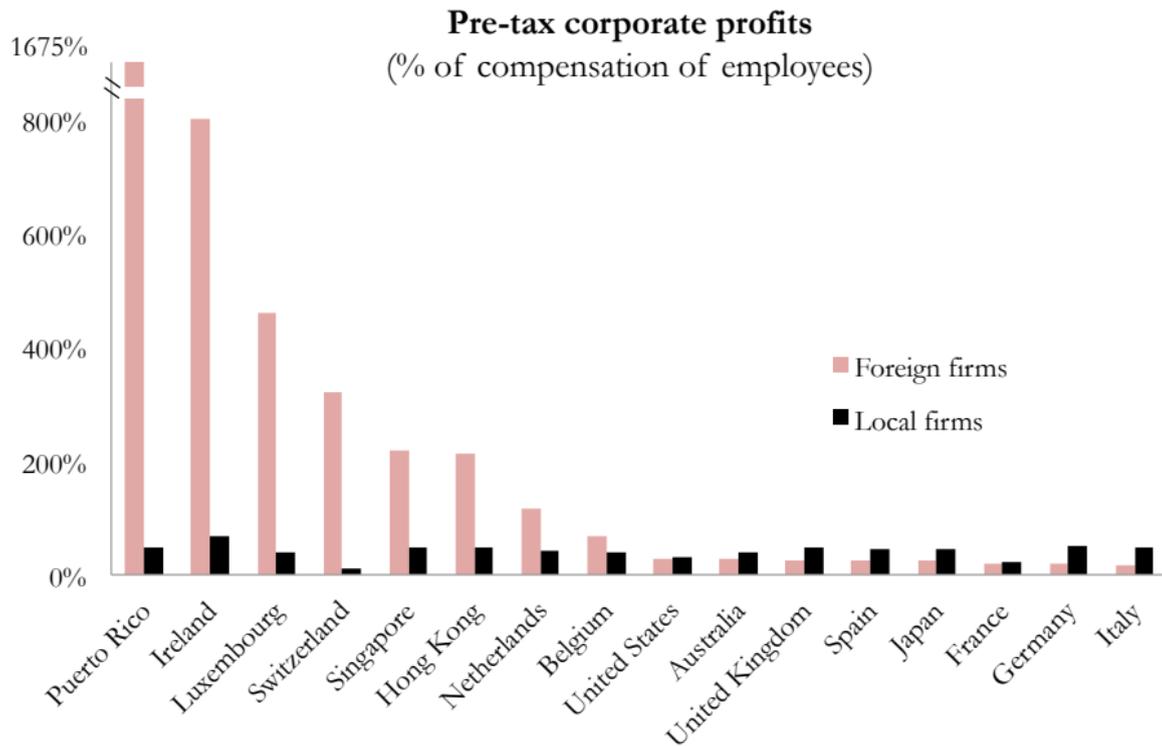
(foreign: $>50\%$ foreign-owned)

- ▷ Country's corporate output $Y = F(K, AL) = rK + wL$
- ▷ Labor share = wL/Y ; capital share = $1 - \text{labor share} = rK/Y$ ($r = \text{normal} + \text{above-normal return}$) $\equiv \alpha$
- ▷ Net interest paid = $p\%$ of rK
- ▷ Pre-tax profits/wage ratio: $\pi = (1 - p) \cdot \alpha / (1 - \alpha)$
- ▷ Recorded $\pi = f(\text{shifting, other})$

In non-havens, foreign firms are less profitable than local firms



In tax havens, foreign firms are much more profitable than local firms



Benchmark estimate of profits shifted to tax havens

Set π_f in havens equal to profitability local firms π_l

- ▷ Can be easily computed in each haven
- ▷ Easy to track for policymakers (eg, to study effects of policies)
- ▷ Allows havens to have higher overall profitability than non-havens (due, eg, to anti-labor policies)

Shifted profits: robustness

π_l in havens inflated by inward shifting?

- ▷ Robustness test: vary $\pi_l \rightarrow$ little difference

Foreign firms different than local firms?

- ▷ Sectoral composition \rightarrow find $\pi_f \gg \pi_l$ within sector

▷ sector

- ▷ Capital intensity \rightarrow decompose π_f into shifting effects vs. movements of capital

Do movements of capital explain the high profitability of haven affiliates?

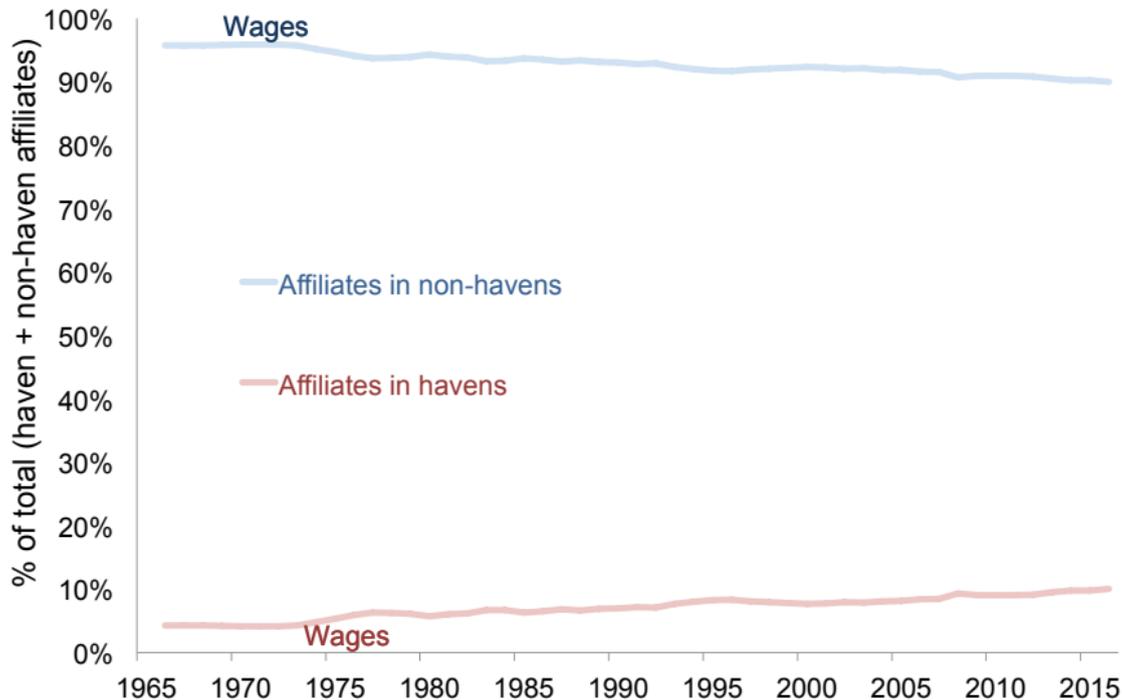
If havens attract highly capital-intensive industries:

- ▷ With Cobb-Douglas production, this does not affect π
- ▷ With CES production & $\sigma > 1$, high $K/AL \rightarrow$ high π

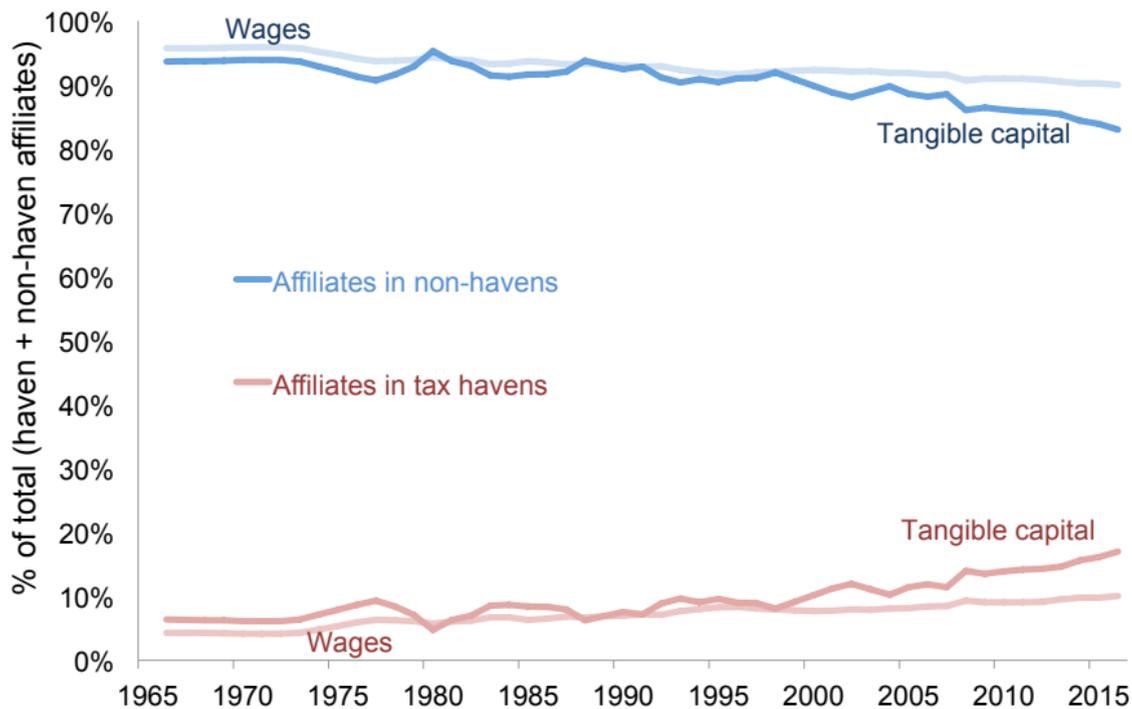
Test using data on affiliates of US multinationals:

- ▷ US data more detailed (info on K)
- ▷ Annual since 1982, every 5 years back to 1966

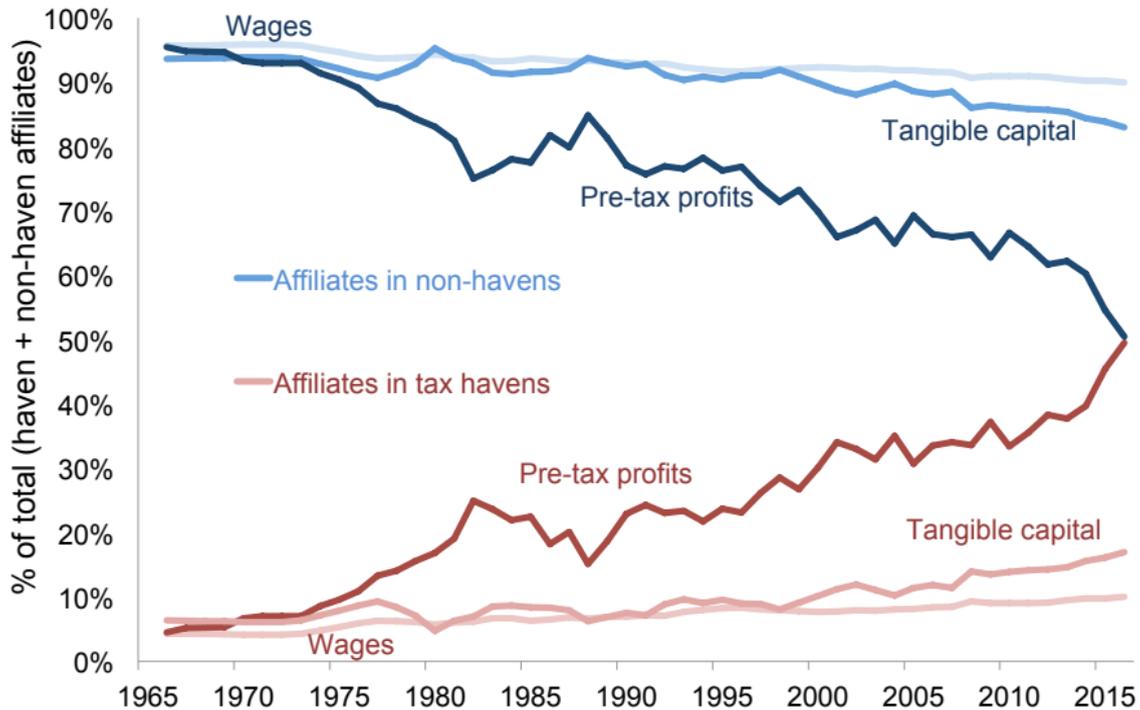
Where do US multinationals operate?



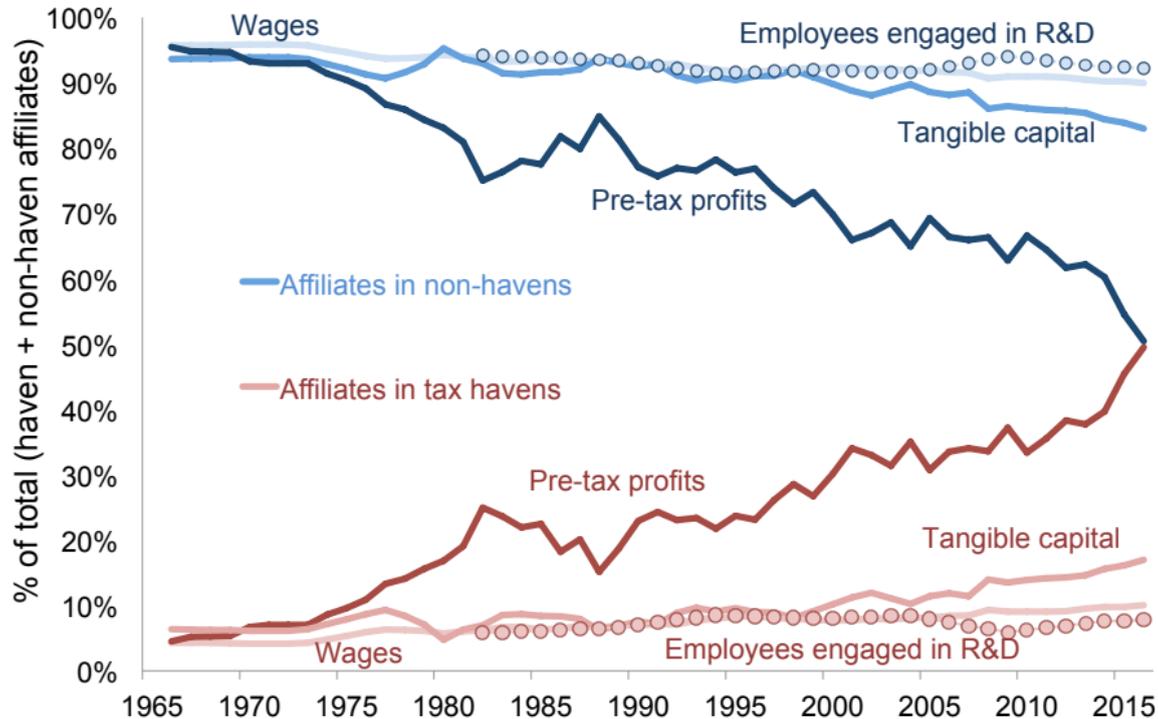
Where do US multinationals operate?



Where do US multinationals operate? Where do they book their profits?

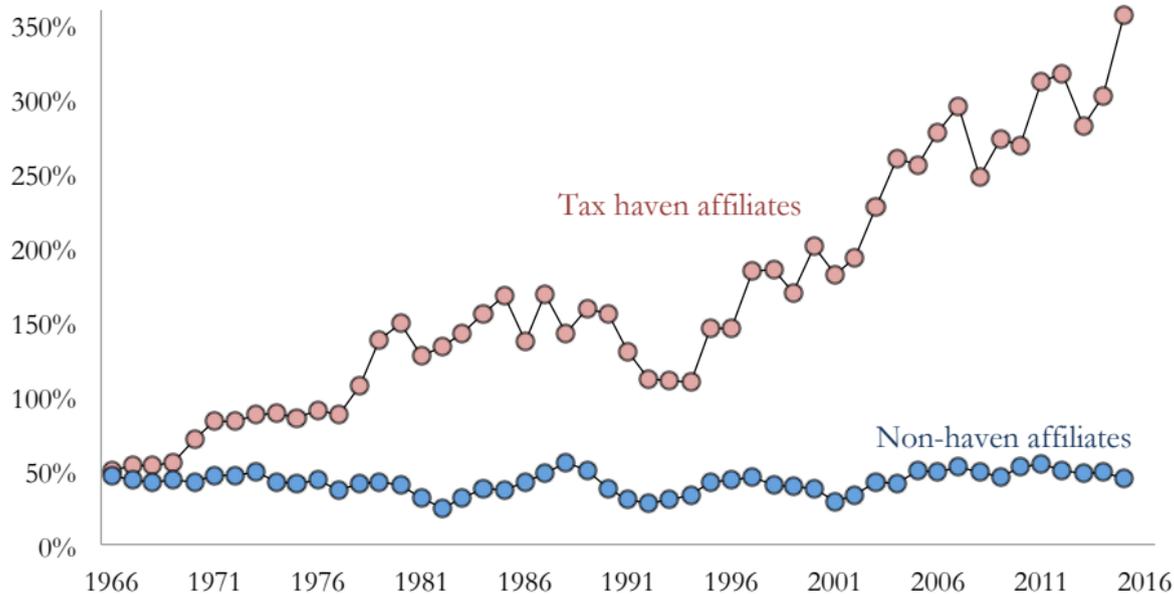


R&D has not moved to low-tax countries

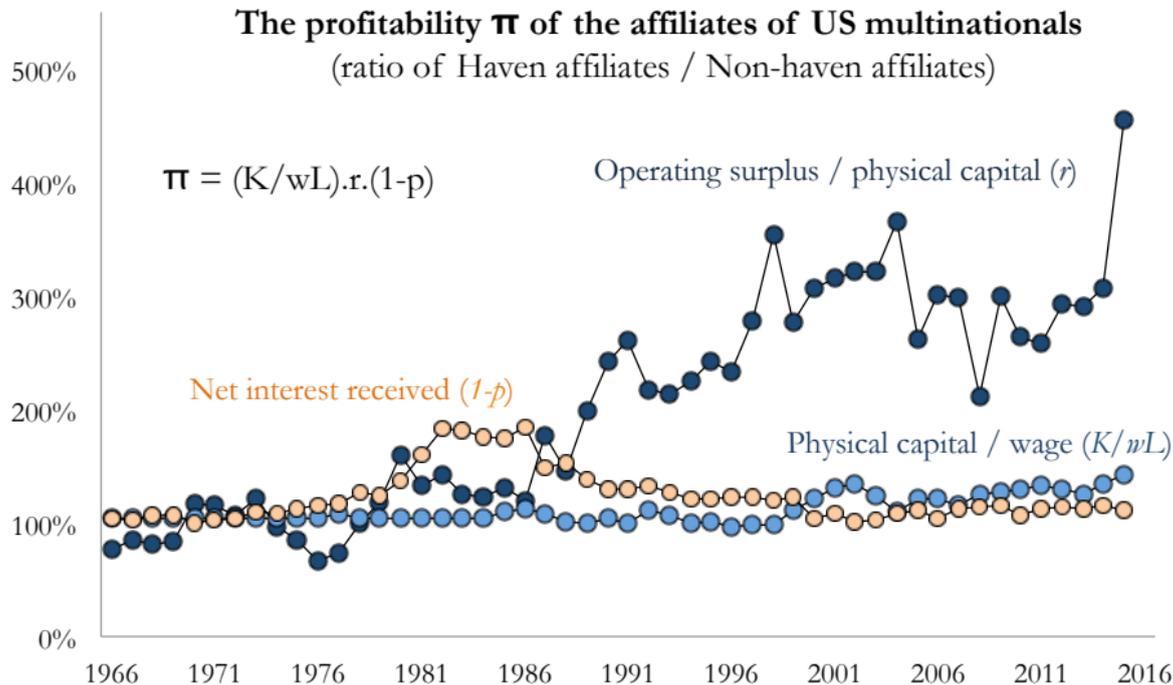


Tax haven affiliates of US multinationals are abnormally profitable

Pre-tax profits of affiliates of U.S. multinationals
(% of compensation of employees)

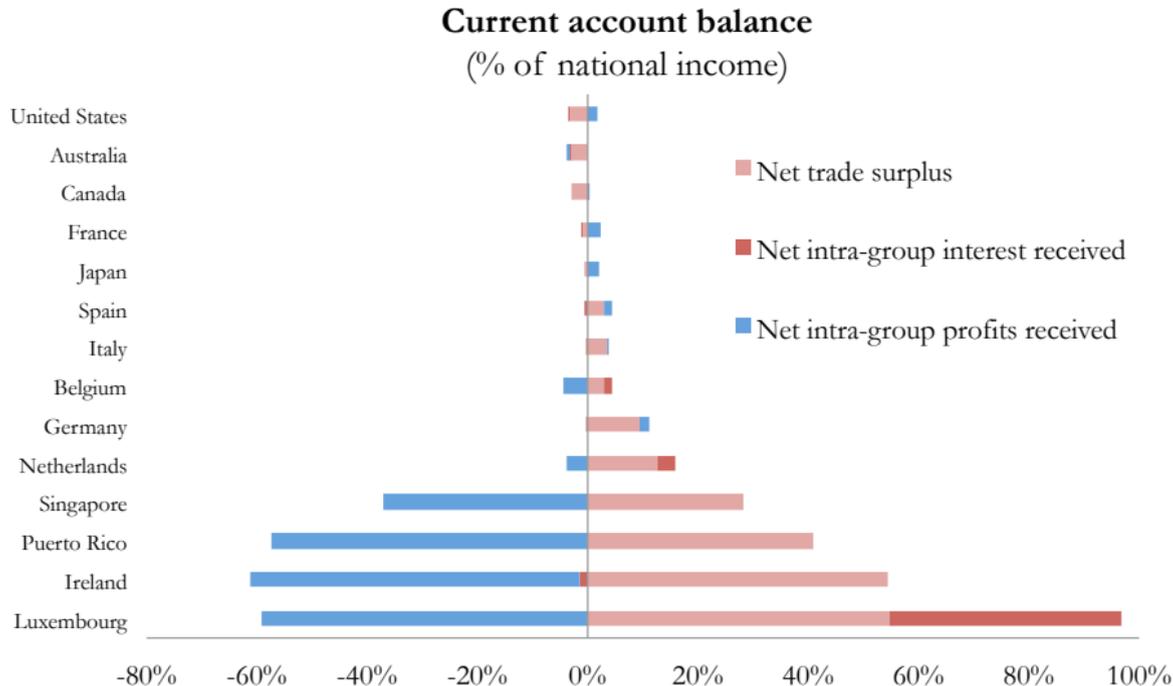


Decomposing the abnormally high profitability of U.S. affiliates



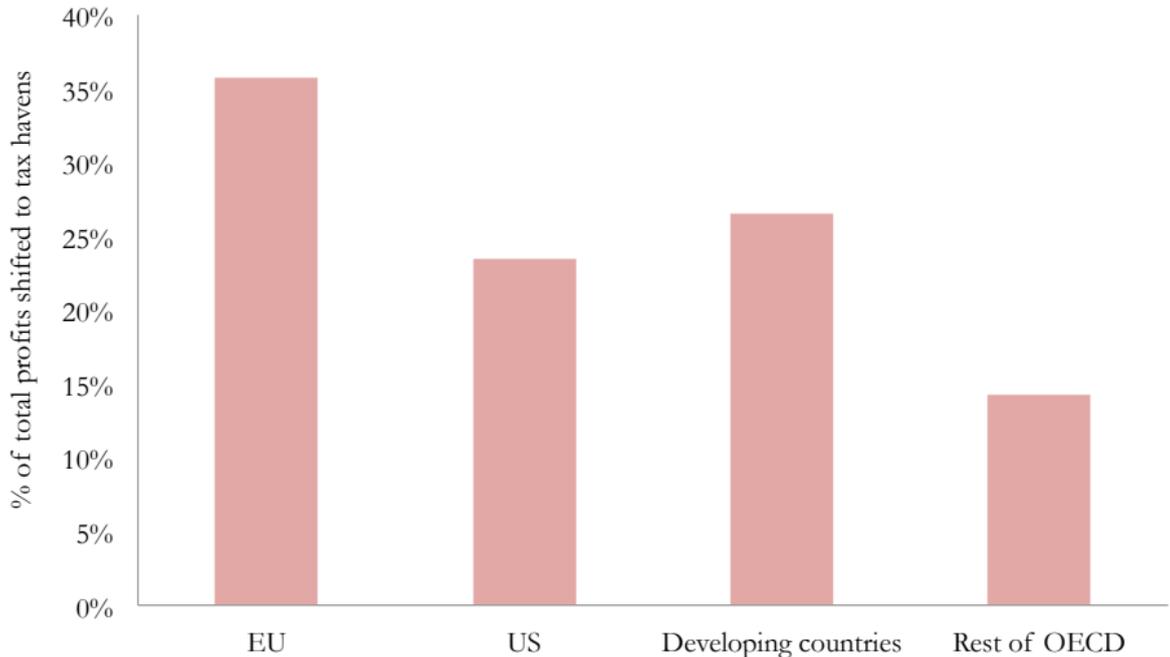
Who Loses? Allocating the Shifted Profits

To study who loses profits, follow the money in balances of payments of havens



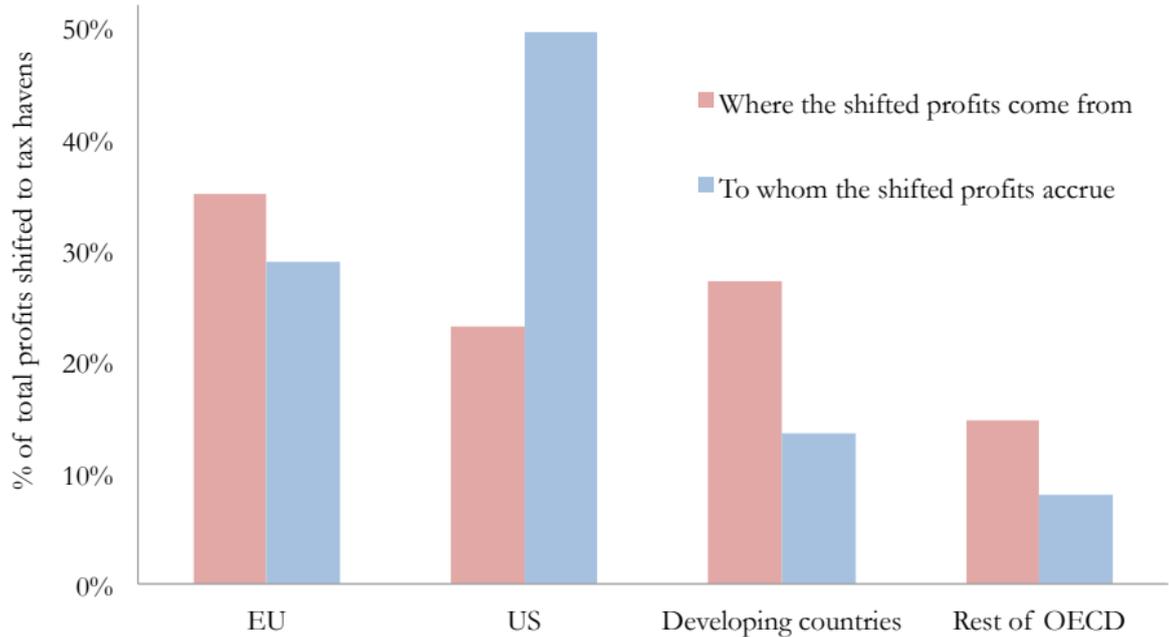
Who loses most? The EU.

Where do the shifted profits come from?



Who loses most? The EU. Who shifts most? The US.

Allocating the profits shifted to tax havens



Computing tax revenue losses

Benchmark: apply statutory rate to missing profits

- ▷ Find 10% of corporate tax revenue lost
- ▷ Similar to OECD (but different reasons)

Robustness:

- ▷ Taxes paid when IP initially transferred
- ▷ Taxation of passive income in residence country

Corporate tax revenue losses



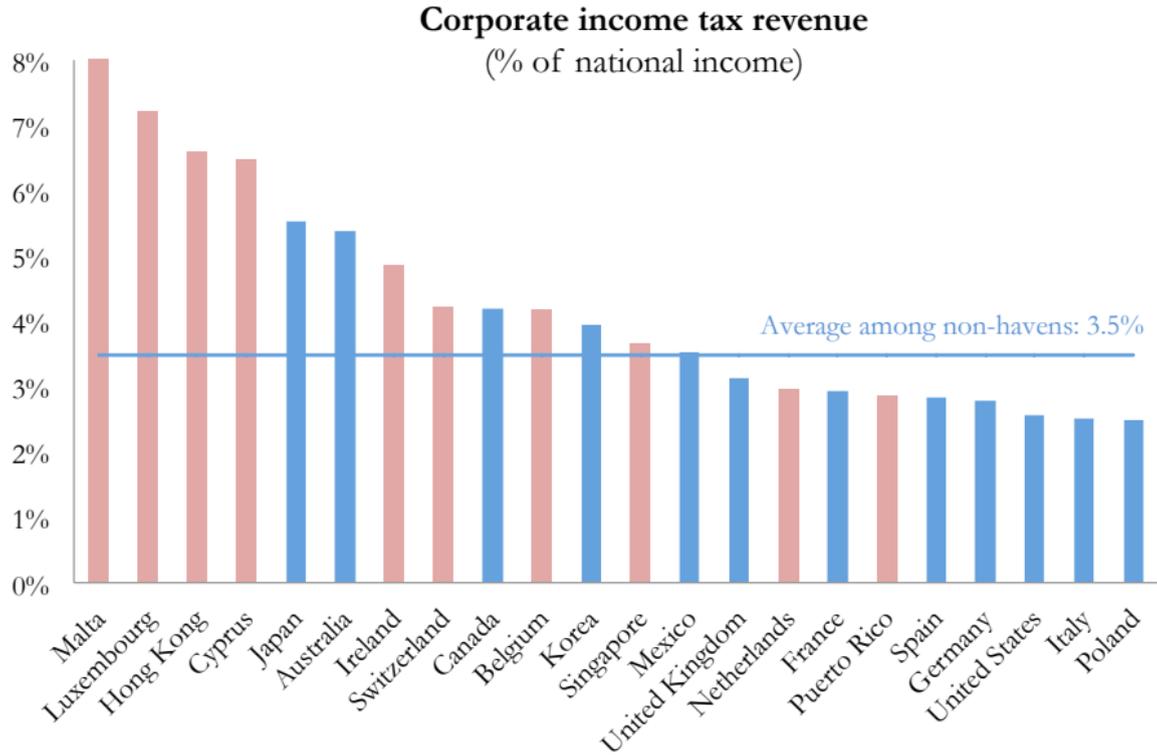
Explaining the rise of profit shifting

Beggar-thy-neighbor pays off

Incentives of havens can explain the rise of shifting:

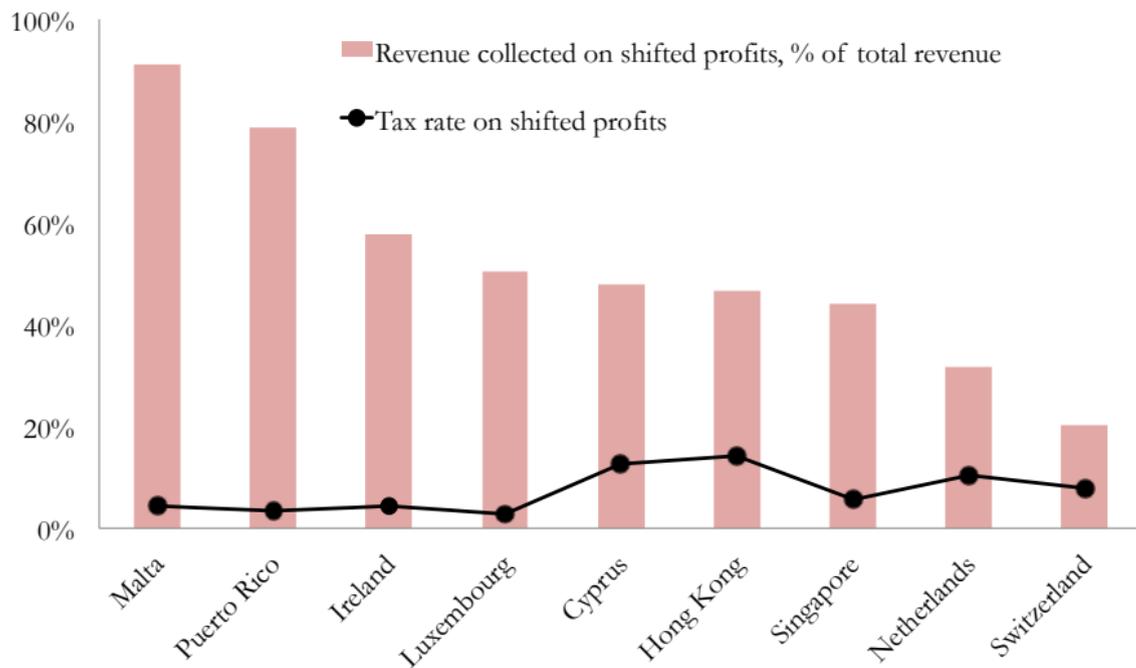
- ▷ With source taxation & no coordinat^o or sanction, havens can earn revenue by attracting paper profits
- ▷ For small countries, revenue-max. rate $0 < \tau^* < 5\%$: havens with $\tau \approx \tau^*$ generate very large tax revenue
- ▷ Can explain the rise of the supply of tax avoidance schemes (e.g., tax rulings: Apple – Ireland)

Many havens collect a lot of tax revenue...



... By applying low rates to the huge tax base they attract

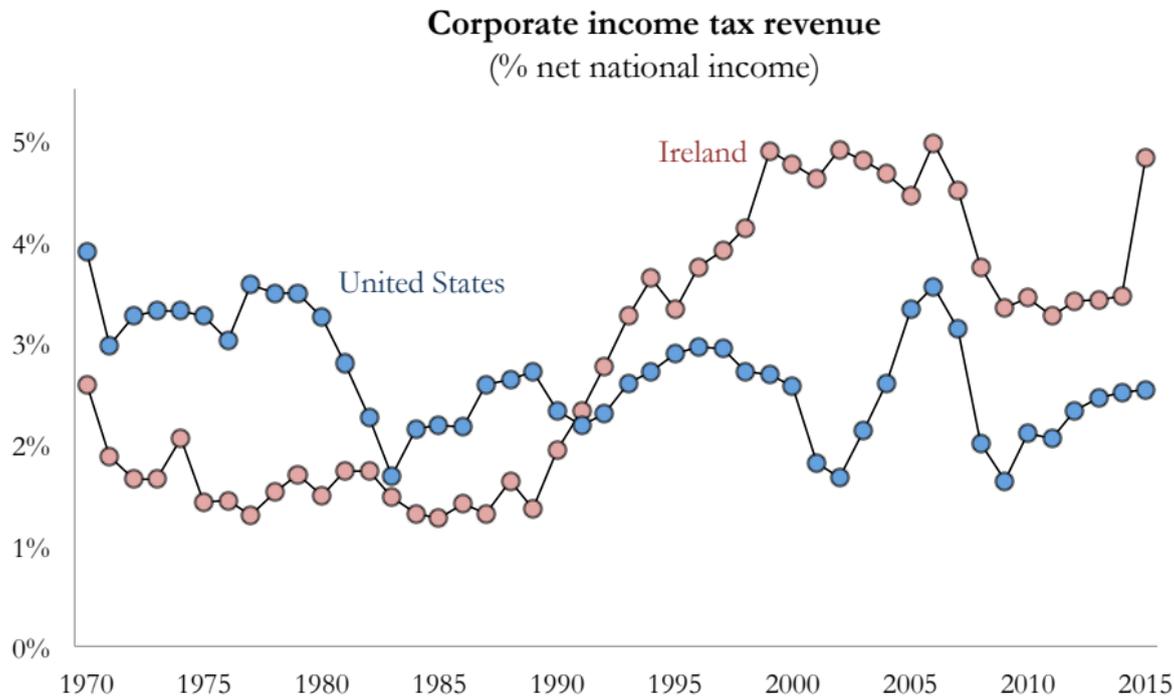
Corporate tax revenue collected & tax rate on shifted profits



As profit shifting rose...

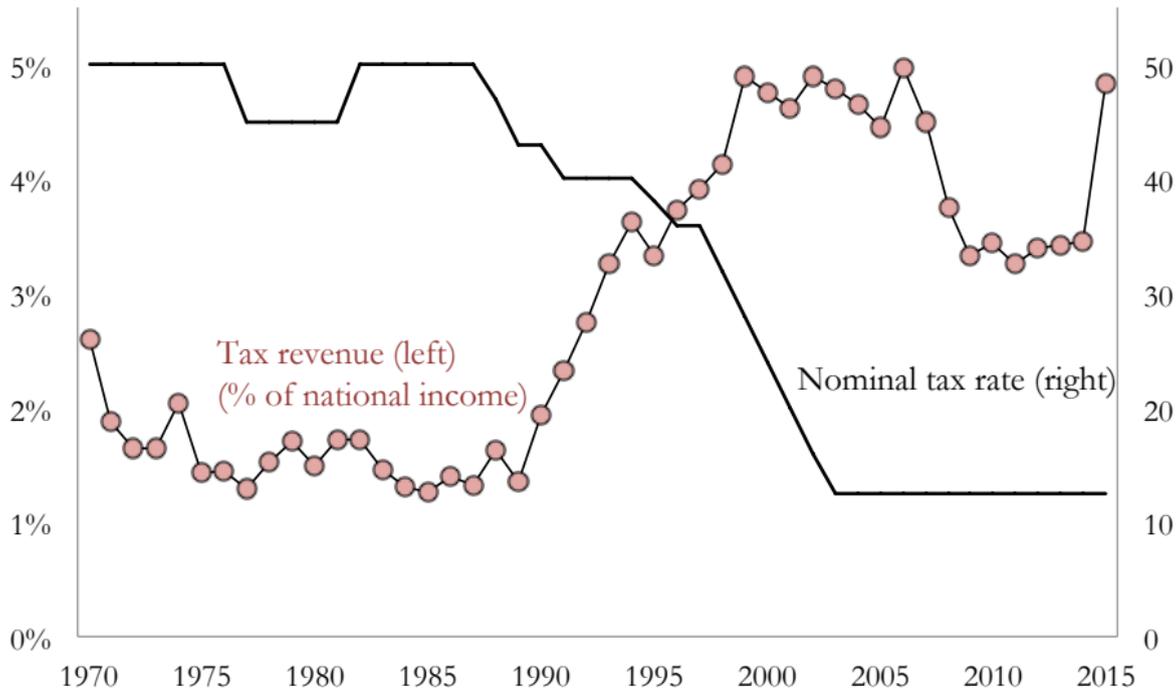


... Tax revenue rose in many havens, while they ↓ or stagnated in high-tax countries



The lower the rate, the higher the revenue

Corporate income tax revenue vs. tax rate in Ireland



Conclusion

Main findings

40% of multinational profits shifted to tax havens:

- ▷ Paper profits move; tangible capital not much
- ▷ Non-haven EU govts the main losers; US multinationals the main shifters

Tax competition has **large redistributive effects**, but different than in textbook model

Rise of global capital share since 1980s higher than in official data (e.g., twice as large in Europe)

Next steps

Introduce inequality dimension in the analysis:

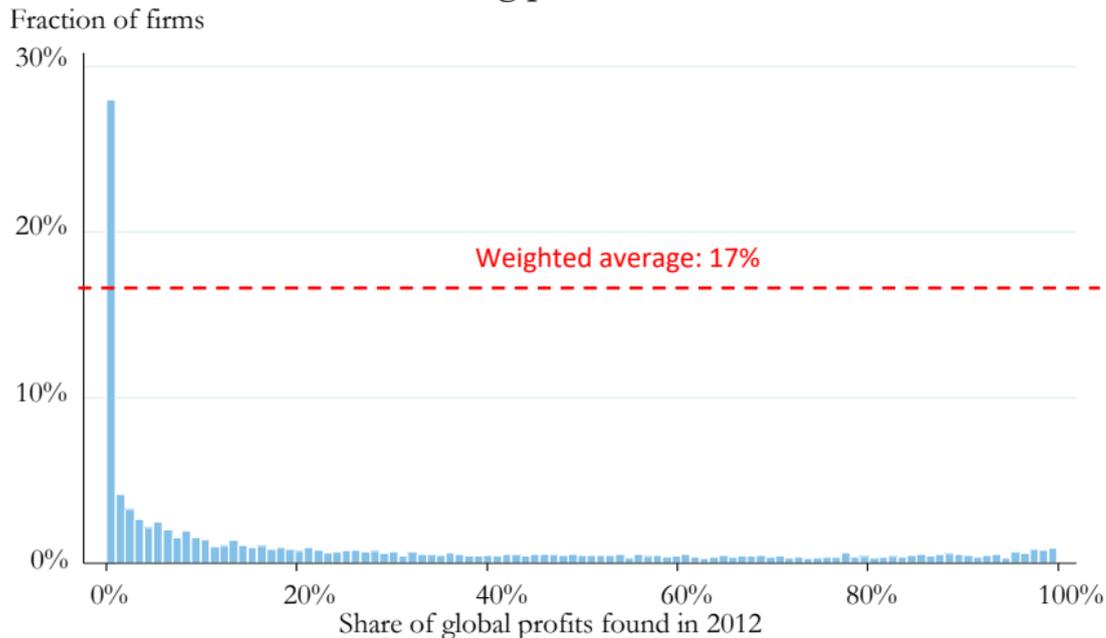
- ▷ Compared to benchmark of perfect tax coordination, how much do shareholders of multinationals gain?
- ▷ How much do workers and various income/wealth groups gain/lose in each country?

→ Ultimate goal: offer full-fledged **macro-distributional analysis of globalization with unequal tax rates**

Supplementary slides

Only 17% of multinationals' profits are visible in financial accounts micro-data

The missing profits in Orbis



A new global database on profits (2015)

	Billions of current US\$	% of net corporate profits
Global gross output (GDP)	75,038	
Depreciation	11,940	
Net output	63,098	
Net corporate output	34,083	296%
Net corporate profits	11,515	100%
Net profits of foreign-controlled corp.	1,703	15%
Of which: shifted to tax havens	616	5%
Net profits of local corporations	9,812	85%
Corporate income taxes paid	2,154	19%

Imputation of profits in foreign firms when no FATS exist

Compute profits in foreign firms using direct investment income flows

- ▷ 10% vs. 50% ownership threshold; pre-tax vs. post-tax → impute taxes
- ▷ Assume profits / wage same as for US affiliates

Imputation when no direct investment income data exist:

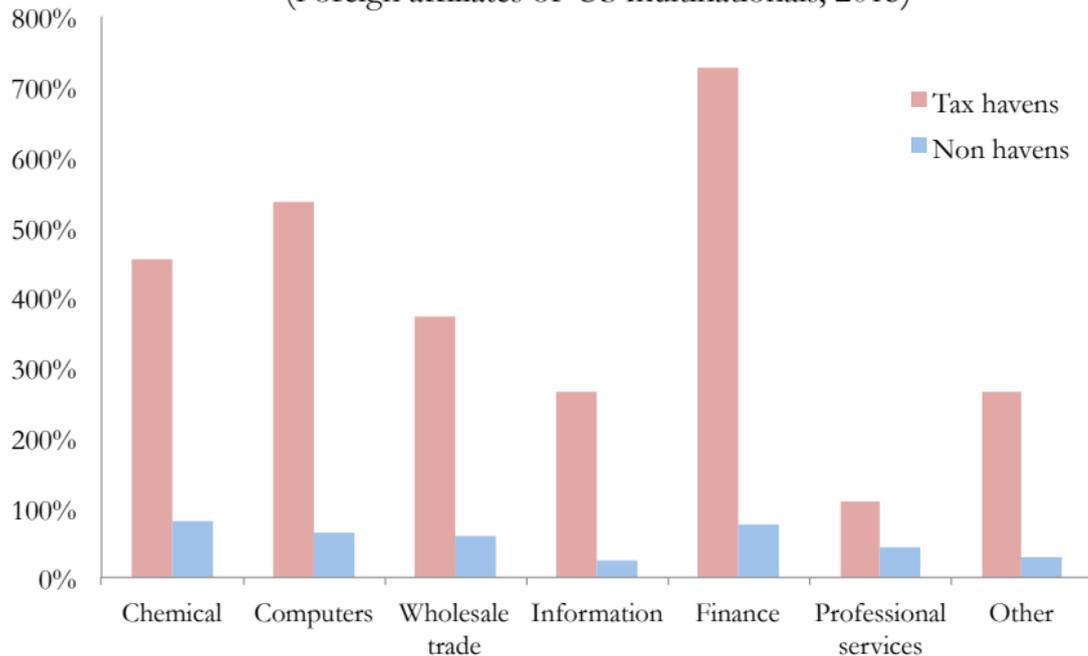
- ▷ Estimate direct investment income paid such that world DI income balances to 0
- ▷ Two reasons why global DI income > 0 : missing US profits in Ireland etc.; missing BoP → we impute both

Estimated profits shifted in each haven

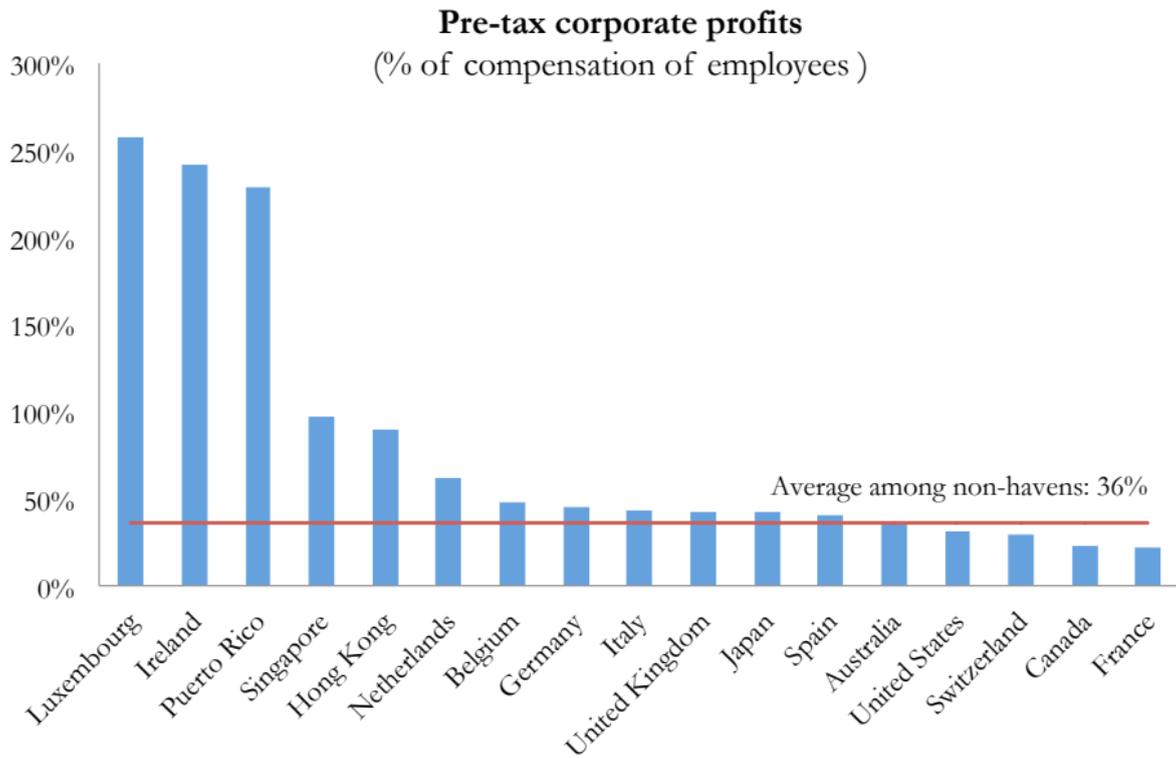
	Reported pre-tax profits	<i>Of which: Local firms</i>	<i>Of which: Foreign firms</i>	Shifted profits
Belgium	80	48	32	-13
Ireland	174	58	116	-106
Luxembourg	91	40	51	-47
Malta	14	1	13	-12
Netherlands	195	106	89	-57
Caribbean	102	4	98	-97
Bermuda	25	1	25	-24
Singapore	120	30	90	-70
Puerto Rico	53	10	43	-42
Hong Kong	95	45	50	-39
Switzerland	95	35	60	-58
Other				-51

Tax haven firms are abnormally profitable within each sector

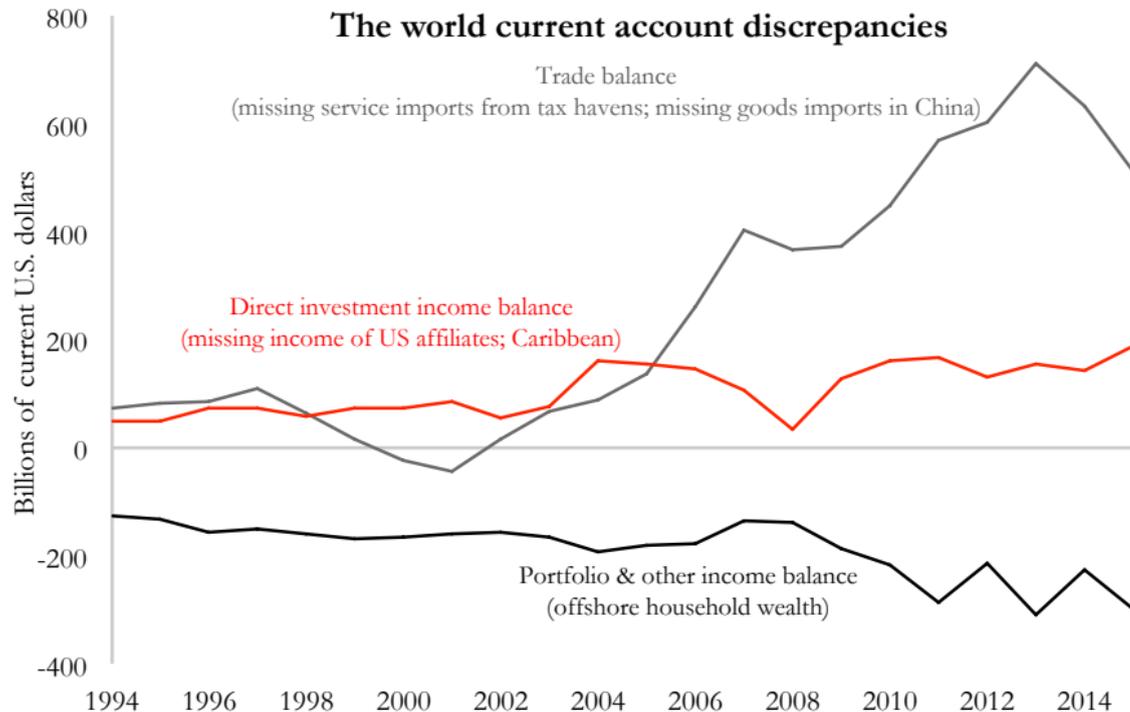
Pre-tax corporate profits (% of compensation of employees)
(Foreign affiliates of US multinationals, 2015)



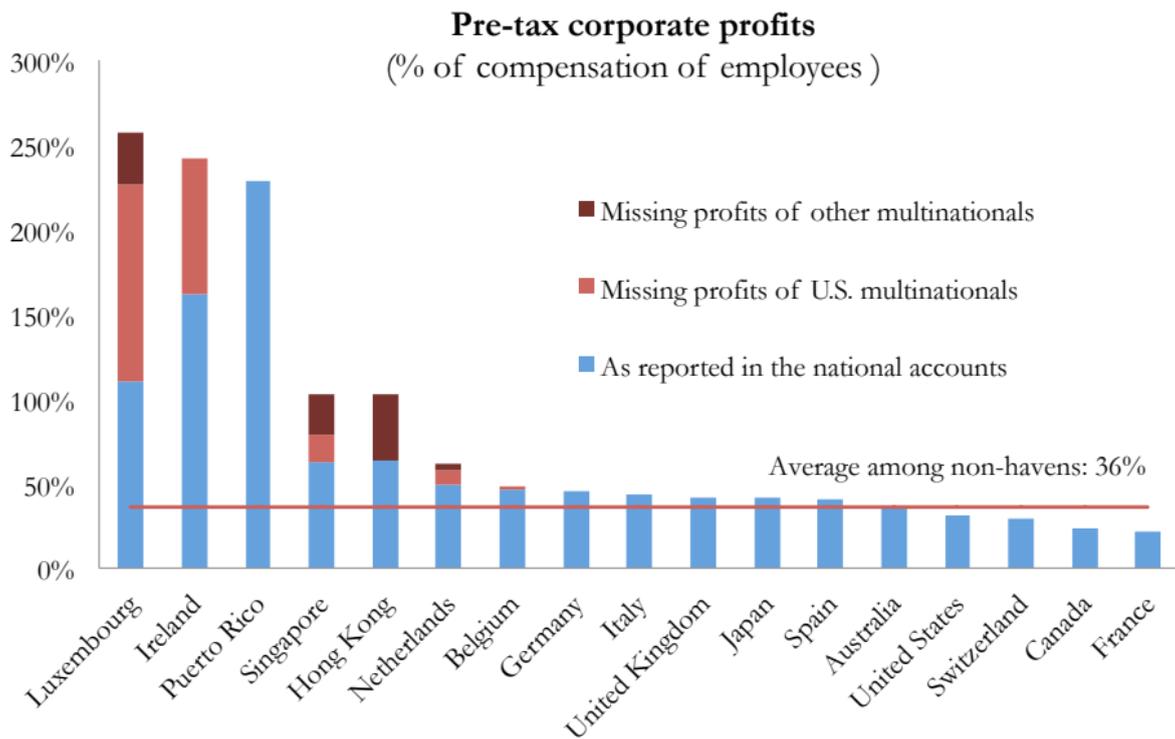
The huge profits of foreign firms make tax havens abnormally profitable overall



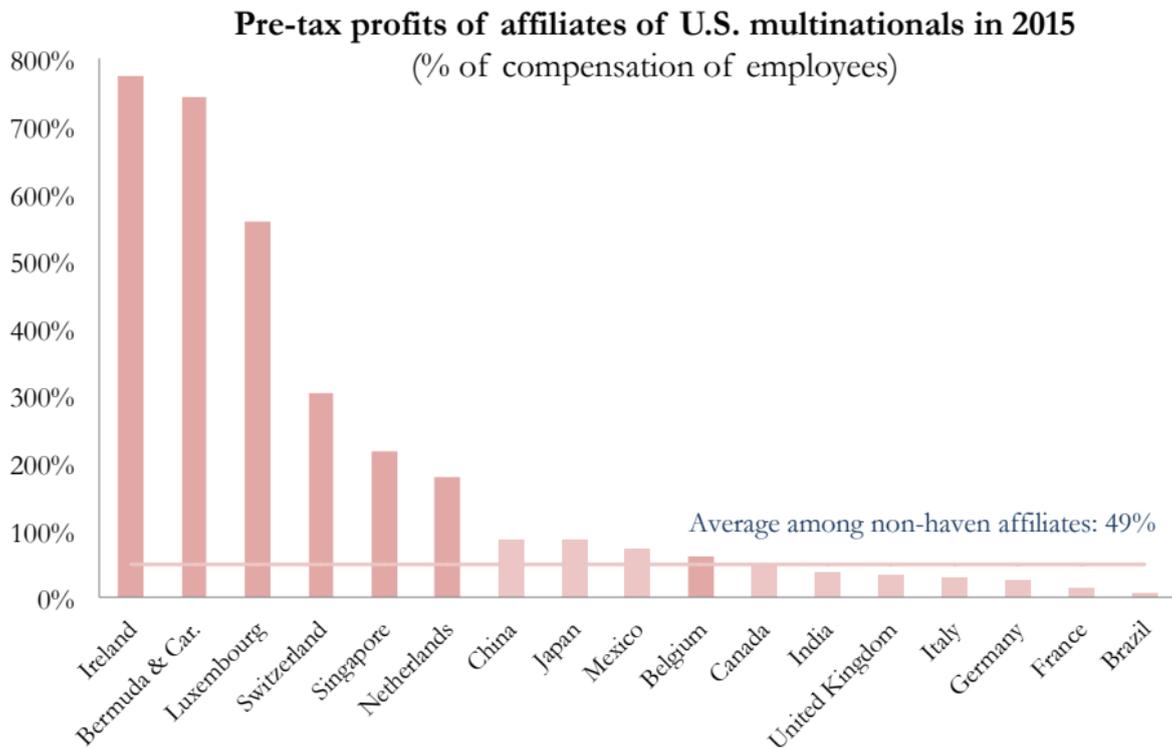
Anomalies in the world balance of payments



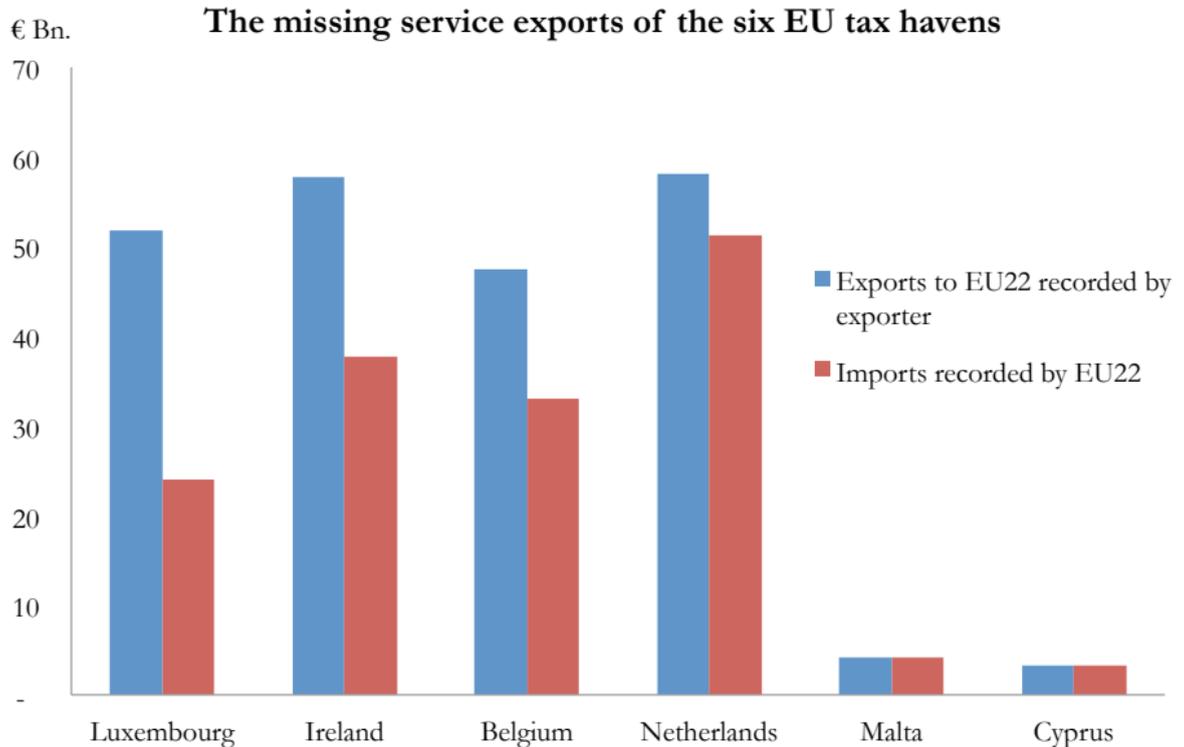
The unrecorded profits of U.S. affiliates in tax havens



Tax haven affiliates of U.S. multinationals are abnormally profitable

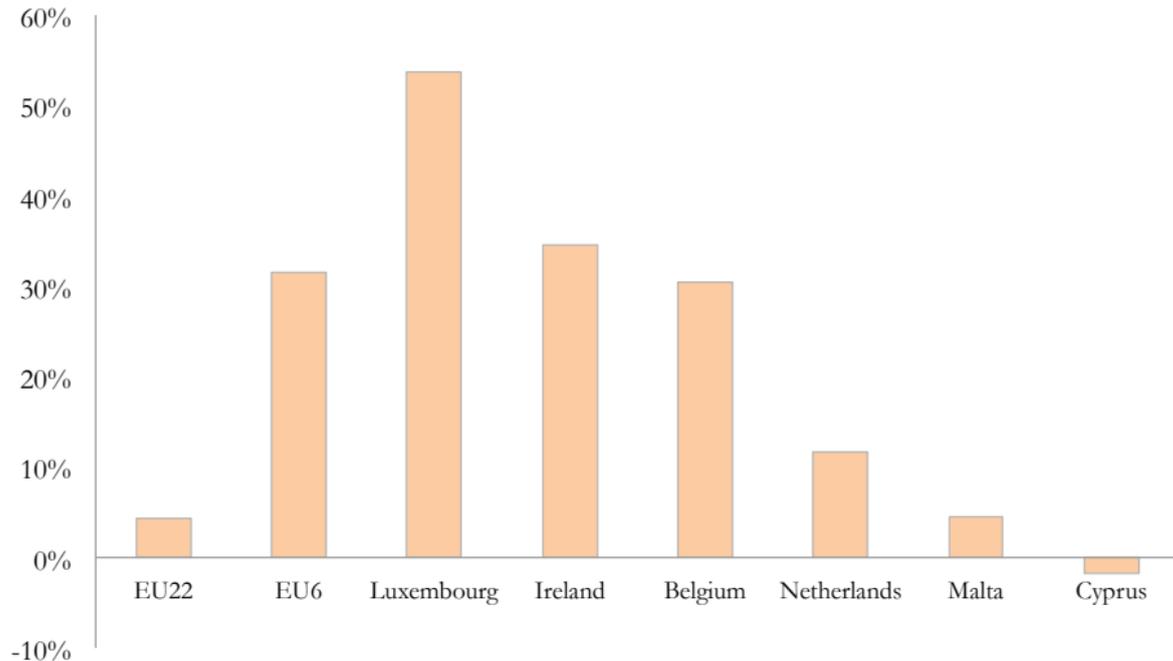


Service imports from tax havens are under-estimated by importers (B2C sales)



At least 30% of the services exported by EU havens go unreported by the importer

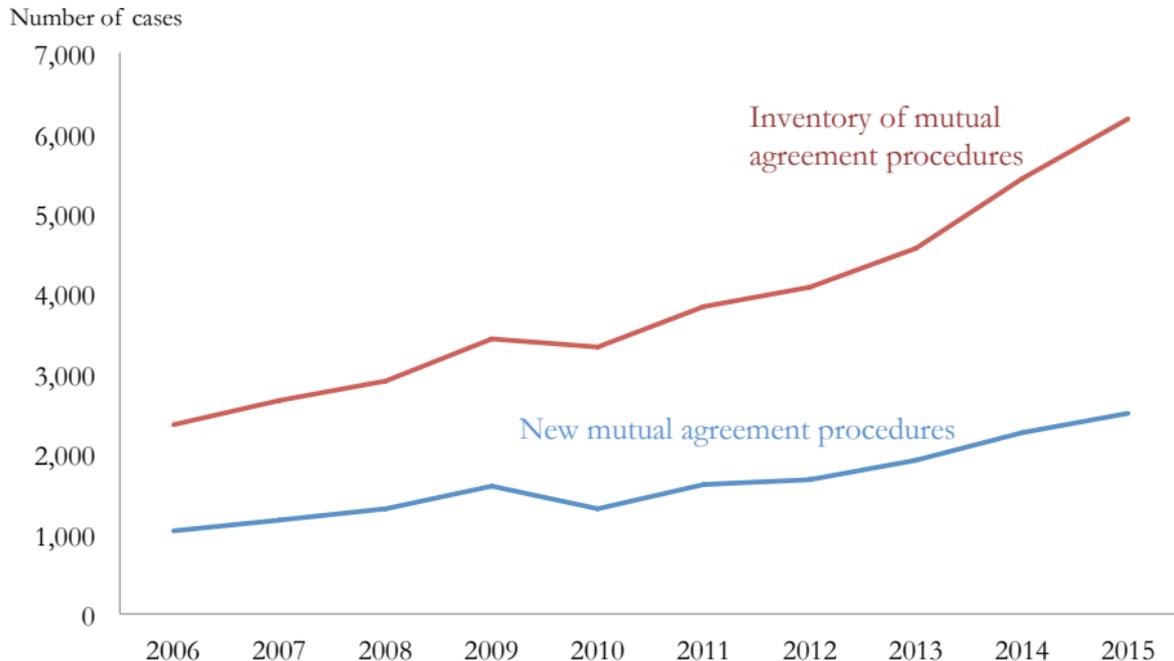
Missing service exports, % of total service exports



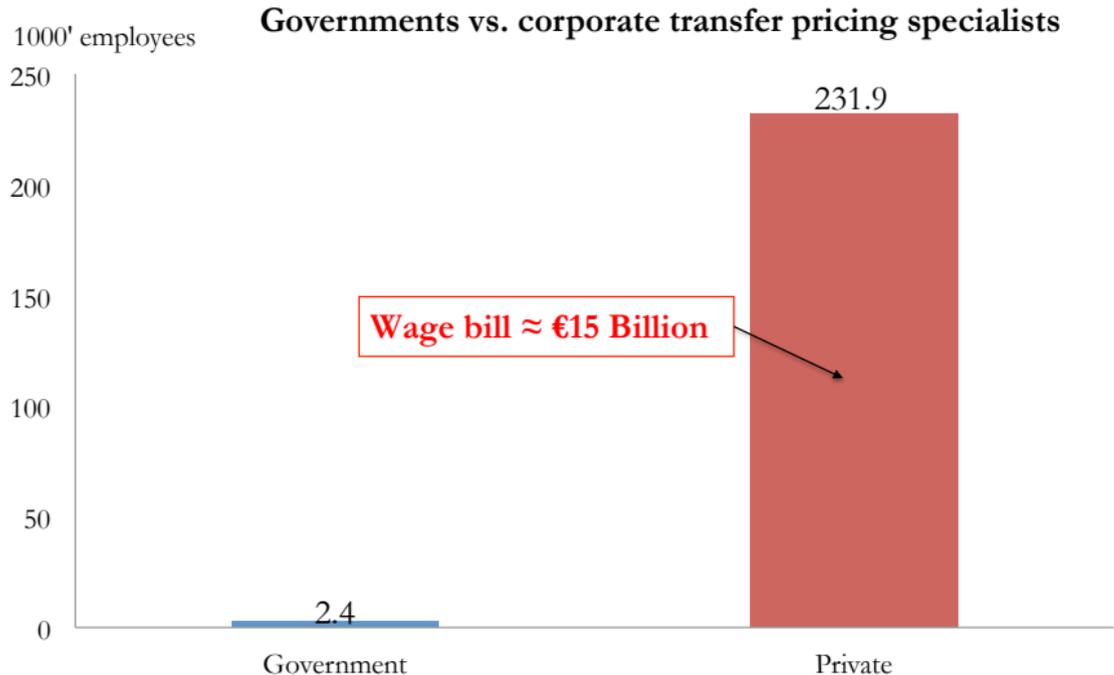
Note: Service exports include exports to all EU22 countries (EU26 minus Luxembourg, Ireland, Belgium, Netherlands, Malta, Cyprus).

As settlement is facilitated, high-tax to high-tax disputes are growing

Number of mutual agreement procedures in the OECD



Multinationals outspend tax authorities



Source is LinkedIn, but the government count is corroborated by the EY Transfer Pricing Tax Authority Survey (2014). The wage bill is estimated by applying the average salary of an EY Transfer Pricing Specialist (Source: Glassdoor).