Profit Shifting, Employee Pay, and Inequalities: Evidence from US-Listed Companies

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Motivation

- A large and topical question: What explains the rise of income inequalities?

- Globalization is regularly accused of aggravating **income inequalities**.
- Emergence of MNEs + digitalization + development of offshore industries $\rightarrow$ **profit shifting**.

- These tax-dodging strategies have now become a salient policy issue.
- They are relatively well-documented but their **consequences** are still poorly understood.
- In particular, little is known on the effect on **employee pay**.

What I do in this paper

- I **empirically** investigate the impact of profit shifting on employee pay and inequalities and confront existing theories with data.

- I construct a **rich database** containing information on
  - financial statements,
  - foreign subsidiaries,
  - and executives

  of firms listed on the Standard & Poor's (S&P) 1500 index between 1993 and 2013.

- With an **event-study**, I analyze how firm entry in tax havens affects
  - the compensation of executives
  - and overall payments to non-executive employees.

Preview of the results

- In line with the theoretical predictions, the results show that the effect of profit shifting on employee pay is **heterogeneous** across occupations.
  - ⊕ Compensations of CEOs and CFOs remunerated on an after-tax basis increase by 8 percent.
  - ⊖ Total payments to non-executive employees, if anything, decline by 3 percent (effect not driven by job cuts).

- Also, the inequality-deepening effect of profit shifting on employee pay is magnified in intangible-intensive firms, as **intangible assets** facilitate profit shifting.

- These findings are validated by **multiple robustness checks** and have **policy implications**.
  1. They shed light on the recent trends in income inequalities.
  2. They uncover a new mechanism whereby globalization fosters income inequalities.
  3. They support the implementation of policies that aim at curbing corporate tax avoidance.

Related literature

Profit shifting activities of MNEs

- Techniques and estimates: Survey by Beer et al. (2020).
- Impacts: Desai and Dharmapala (2009), Overesch (2009), Krautheim and Schmidt-Eisenlohr (2016), Goldbach et al. (2019), Martin et al. (2020).
- Blind spot: Krautheim and Schmidt-Eisenlohr (2016) tackle the effect of profit shifting on wages but only from a theoretical perspective.

Corporate income taxation and wages

- Capital reallocation mechanism: Harberger (1962), Clausing (2013), Gravelle (2013).
- Rent-sharing mechanism: Arulampalam et al. (2012), Azémar and Hubbard (2015), Fuest et al. (2018).
- Prediction: Either way, a tax cut should increase wages.
- Take-away: Profit shifting *cannot* be seen as a simple tax cut through the lens of these models.

Outline of the talk

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Theoretical background

Rent-sharing theories

- Two opposite forces:
  - ⊕ The surplus/quasi-rent to be shared between the firm and its workers increases.
  - ⊖ Since profits are relocated, (most of) workers do not know the exact size of the surplus and their bargaining power weakens.
- Krautheim and Schmidt-Eisenlohr (2016) suggest that the second effect should dominate.

Agency theories

- Some executives are compensated on an after-tax basis to alleviate agency costs associated with moral hazard and adverse selection.

Economic theory thus predicts a positive effect on the compensations of executives – especially for those receiving after-tax incentives – and a negative effect on the wages of non-executive employees.

Outline of the talk

Sources

Compustat

- Consolidated financial statements of publicly listed firms in North America since 1950.
- Total employment, labor expenses, assets, sales, pre-tax income, etc.
- These companies are few in number but they are the most productive and the most likely to engage in FDIs and profit shifting (Helpman et al., 2004; Jones et al., 2018).

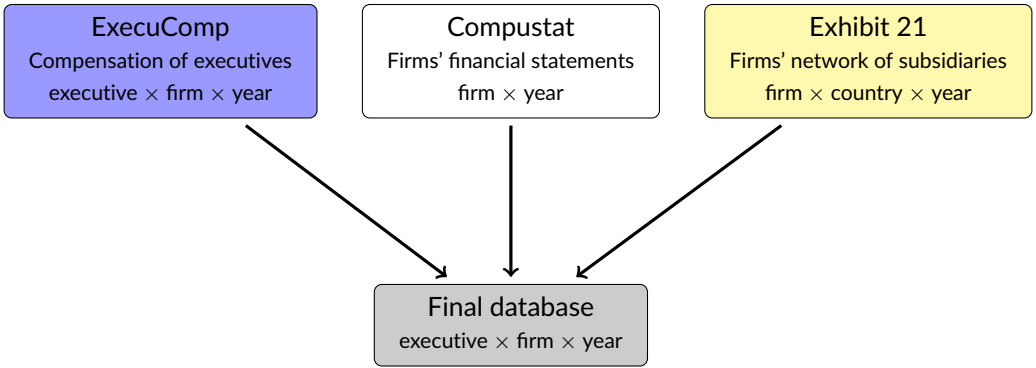
ExecuComp

- Title and compensation of executives in S&P 1500 firms since 1992.
- These firms account for 90 percent of US market capitalization.

Exhibit 21

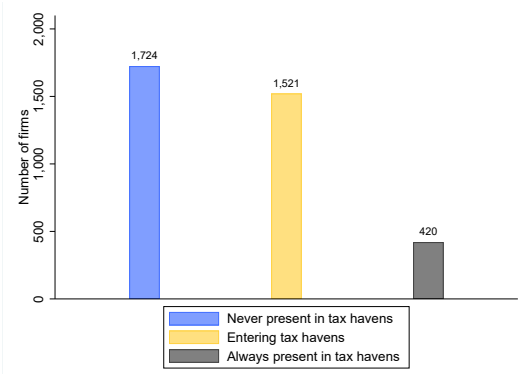
- The SEC requires US-listed firms to disclose every year in Exhibit 21 of Form 10-K a list of their worldwide subsidiaries.
- These reports have been electronically filed since 1993 and available on the EDGAR platform.
- I use a dataset covering the 1993-2013 period.

Database construction



Descriptive statistics

Figure 1 – Firms' presence in tax havens

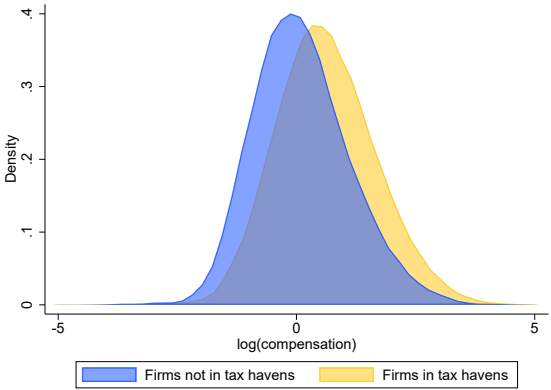


- The list of tax havens comes from Dyreng and Lindsey (2009), standard in the literature. ▸ List
- The number of S&P 1500 firms in tax havens more than tripled between 1993 and 2013.

→ Beyond data availability, the period is ideal to study the effect profit shifting. ▸ Graph

Employee pay and presence in tax havens

(a) Compensations of executives



(b) Payments to non-executive employees

- Primary evidence is mixed but this might stem from the existence of confounding factors.

→ Need to explore the effect of profit shifting on employee pay in a more systematic way.

Outline of the talk

Econometric approach

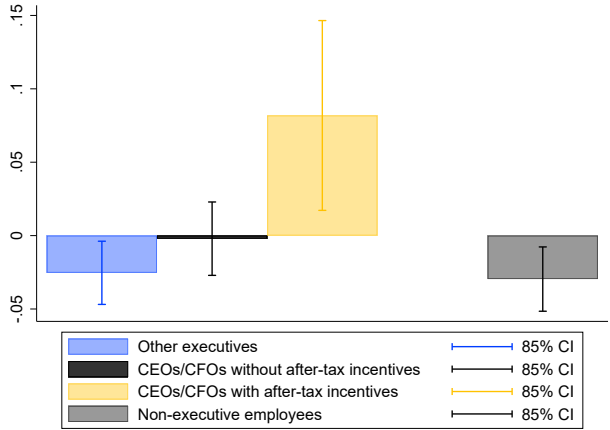
Two distinct equations, as I differentiate between **executives** and **non-executive employees**:

$$\begin{aligned} log(compensation_{e,i,t}) &= \alpha TH_{i,t} + \beta \mathbb{1}_{e,i,t}^{CEO/CFO} \times TH_{i,t} + \gamma \mathbb{1}_{e,i,t}^{CEO/CFO,\ after\text{-}tax} \times TH_{i,t} \\ &\quad + \lambda X_{e,i,t} + \upsilon_e + \phi_i + \psi_t + \epsilon_{e,i,t} \\ log(payments_{i,t}) &= \zeta TH_{i,t} + \lambda X_{i,t} + \phi_i + \psi_t + \epsilon_{i,t} \end{aligned}$$

- $compensation_{e,i,t}$: compensation of executive e employed by firm i in year t.
- $payments_{i,t}$: global payments to non-executive employees in firm i and year t.
- $TH_{i,t}$: 1 if firm i has at least one subsidiary in a tax haven.
- $\mathbb{1}_{e,i,t}^{CEO/CFO}$: 1 if executive e working for firm i in year t is the CEO/CFO.
- $\mathbb{1}_{e,i,t}^{CEO/CFO,\ after\text{-}tax}$: 1 if executive e working for firm i in year t is the CEO/CFO and is paid on an after-tax basis.
- $X_{e,i,t}$ and $X_{i,t}$: control variables (e.g., age and experience, CEO dummy, sales and assets)
- υ_e, ϕ_i, and ψ_t: executive, firm, and year fixed effects.

Benchmark results

Figure 3 – Benchmark results



Notes: Standard errors are clustered at the firm level.

Robustness checks

- Alternative dependent variables. ▸ Table
- Missing values. ▸ Table
- Relocation to low-cost countries. ▸ Table
- Complementary classifications of tax havens: Hines and Rice (1994) + exclusion of the 6 largest tax havens (CHE, HKG, IRL, LUX, MYS, and SGP). ▸ Graphs
- Common trends and placebo. ▸ Table

The magnifying effect of intangibles

- **Intangible assets** ease profit shifting activities of MNEs: the latter transfer intellectual property rights to tax havens and use intra-firm royalty payments to inflate (deflate) profits booked in tax havens (non-haven countries) (Heckemeyer and Overesch, 2017; Alstadsæter et al., 2018).
- Is the inequality-enhancing effect **more pronounced in intangible-intensive firms**? Yes! ▸ Table
- Take 2 firms *A* and *B*. Assume that the share of intangible assets is 1 percent in *A* (1st quartile) and 26 percent in *B* (3rd quartile).
- The regression results indicate that
  - the compensations of CEOs/CFOs paid on an after-tax basis would grow by 4 percent in *A* and 9 percent in *B*,
  - while payments to non-executive employees would vary little in *A* and decline by 5 percent in *B*.

Outline of the talk

Summary

- The effect of profit shifting on employee pay has not been explored from an empirical perspective.
- This paper fills this gap using a rich dataset on S&P 1500 firms and an event study.
- It reveals that profit shifting activities accentuate within-firm inequalities.
  - ⊕ Top executives receive higher compensations when their firm enters tax havens.
  - ⊖ If anything, non-executive employees see their wage fall in the meantime.
- Plus, as expected, this pattern is magnified in intangible-intensive companies.
- These findings shed light on the evolution of income inequalities and give credence to the implementation of anti profit shifting reforms.

Thank you for your attention!

Questions, remarks, and suggestions are welcome:
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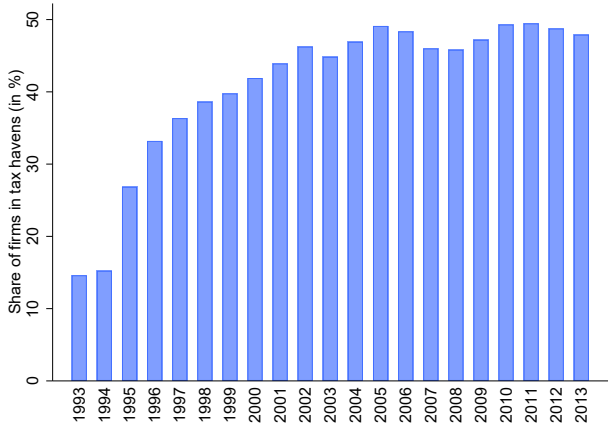
Appendix

Descriptive statistics (1)

Figure 4 – Firms' presence in tax havens over time ▸ Back



Descriptive statistics (2)

46 tax havens

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, Lebanon, Liberia, Liechtenstein, Luxembourg, Macau, Malaysia, Malta, Marshall Islands, Mauritius, Monaco, Montserrat, Nauru, Netherlands Antilles, Niue, Panama, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, San Marino, Seychelles, Singapore, Switzerland, Turks and Caicos Islands, and Vanuatu. ▸ Back

Robustness checks (1)

Table 1 – Effect of firm entry in tax havens on within-firm inequalities and the average wage of non-executive employees Back

Dependent variable	$log\left(\frac{compensation_{e,i,t}}{total\ payments\ to\ employees_{i,t}/employment_{i,t}}\right)$	$log\left(\frac{payments_{i,t}}{employment_{i,t}}\right)$
$TH_{i,t}$	-0.09^{c}	4.29e-3
	(0.05)	(0.17)
$\mathbb{1}^{CEO/CFO}_{e,i,t} \times TH_{i,t}$	0.21^{a}	
	(0.03)	
$\mathbb{1}^{CEO/CFO,\ after\text{-}tax}_{e,i,t} \times TH_{i,t}$	0.05	
	(0.08)	
Controls	Yes	Yes
Executive FEs	Yes	No
Firm FEs	Yes	Yes
Year FEs	Yes	Yes
R-squared	0.85	0.95
Nb. of obs.	17,700	5,073

Notes: Standard errors, in parentheses, are clustered at the firm level. $^{d}p < 0.15$, $^{c}p < 0.10$, $^{b}p < 0.05$, $^{a}p < 0.01$.

Robustness checks (2)

Table 2 – Sensitivity test: imputed labor costs Back

Dependent variable	$log\left(\widetilde{payments}_{i,t}\right)$
$TH_{i,t}$	-0.03^{c}
	(0.02)
Conrtols	Yes
Firm FEs	Yes
Year FEs	Yes
R-squared	0.94
Nb. of obs.	25,458

Notes: Standard errors, in parentheses, are clustered at the firm level. $^{d}p < 0.15$, $^{c}p < 0.10$, $^{b}p < 0.05$, $^{a}p < 0.01$.

Robustness checks (3)

Table 3 – Sensitivity test: adjusting for relocation effects ◂ Back

Dependent variable	$log(payments_{i,t})$	$log(payments_{i,t})$
$TH_{i,t}$	-0.04^{b}	-0.03^{c}
	(0.02)	(0.02)
$log(employment_{i,t})$	0.49^{a}	0.49^{a}
	(0.04)	(0.04)
$average\ cost_{i,t}$	-2.02e-5	
	(2.32e-5)	
$average\ GDP\ per\ capita_{i,t}$		6.25e-7
		(4.57e-7)
Controls	Yes	Yes
Firm FEs	Yes	Yes
Year FEs	Yes	Yes
R-squared	0.99	0.99
Nb. of obs.	4,798	5,059

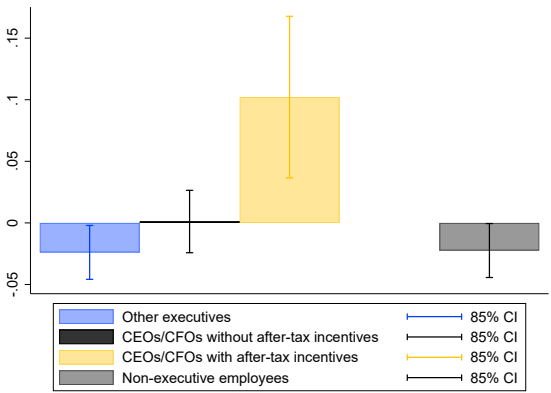
Notes: Standard errors, in parentheses, are clustered at the firm level. $^{d}p < 0.15$, $^{c}p < 0.10$, $^{b}p < 0.05$, $^{a}p < 0.01$.

Robustness checks (4)

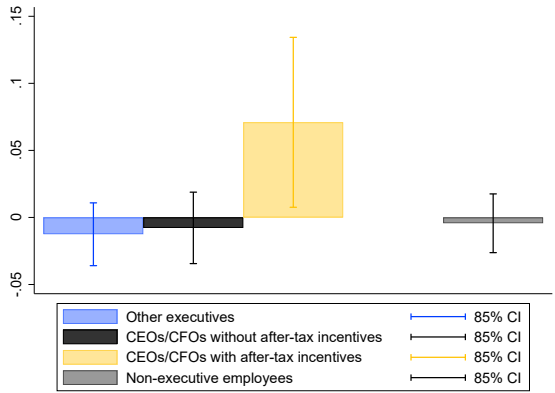
Figure 5 – Sensitivity test: alternative tax haven classification

Back

(a) List of Hines and Rice (1994)



(b) Exclusion of six tax havens

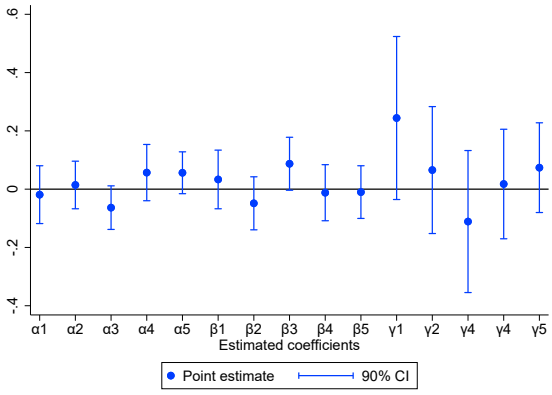


Notes: Standard errors are clustered at the firm level.

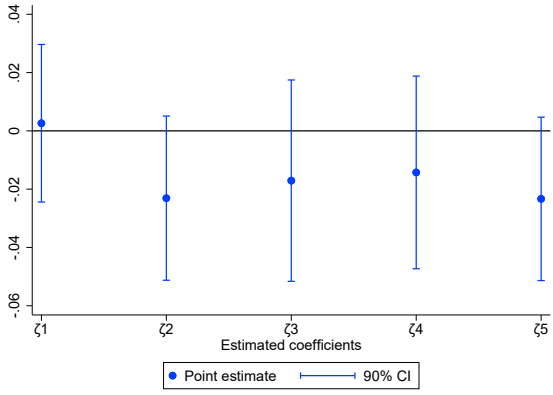
Robustness checks (5)

Figure 7 – Sensitivity test: parallel trends Back

(a) Compensations (lagged treatment variables)



(b) Payments to non-executives (lagged treatment variables)



Notes: Standard errors are clustered at the firm level.

The magnifying effect of intangibles

Table 4 – The magnifying effect of intangible assets ▸ Back

Dependent variable	$log(compensation_{e,i,t})$	$log(payments_{i,t})$
$TH_{i,t}$	-0.01	-0.01
	(0.02)	(0.02)
$TH_{i,t} \times INTANGIBLES_{i,t}$	-0.14^{b}	-0.17^{b}
	(0.06)	(0.08)
$\mathbb{1}^{CEO/CFO}_{e,i,t} \times TH_{i,t}$	0.01	
	(0.02)	
$\mathbb{1}^{CEO/CFO}_{e,i,t} \times TH_{i,t} \times INTANGIBLES_{i,t}$	0.12^{c}	
	(0.07)	
$\mathbb{1}^{CEO/CFO,\ after\text{-}tax}_{e,i,t} \times TH_{i,t}$	0.03	
	(0.06)	
$\mathbb{1}^{CEO/CFO,\ after\text{-}tax}_{e,i,t} \times TH_{i,t} \times INTANGIBLES_{i,t}$	0.25	
	(0.22)	
Controls	Yes	Yes
Executive FEs	Yes	No
Firm FEs	Yes	Yes
Year FEs	Yes	Yes
R-squared	0.83	0.99
Nb. of obs.	94,793	4,869

Notes: Standard errors, in parentheses, are clustered at the firm level. $^{d}p < 0.15$, $^{c}p < 0.10$, $^{b}p < 0.05$, $^{a}p < 0.01$.