Shifts and profits within multinationals and across jurisdictions

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  - The EU commission, under the leadership of Juncker, sued Ireland and Apple over private tax agreement.

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- which crook was responsible gave multinationals these sweetheart deals?

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Figure 1: The aforementioned crook, on the left - J.C. Juncker.

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- **unrelated revenues** occur when a consumer buys an phone from an Apple store.

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  - Note that the Bahamas has less than 400k inhabitants. If Shell-Bahamas was to be selling gasoline to the locals, each would be spending upward of 13,000$ a year!

Revenues within Shell

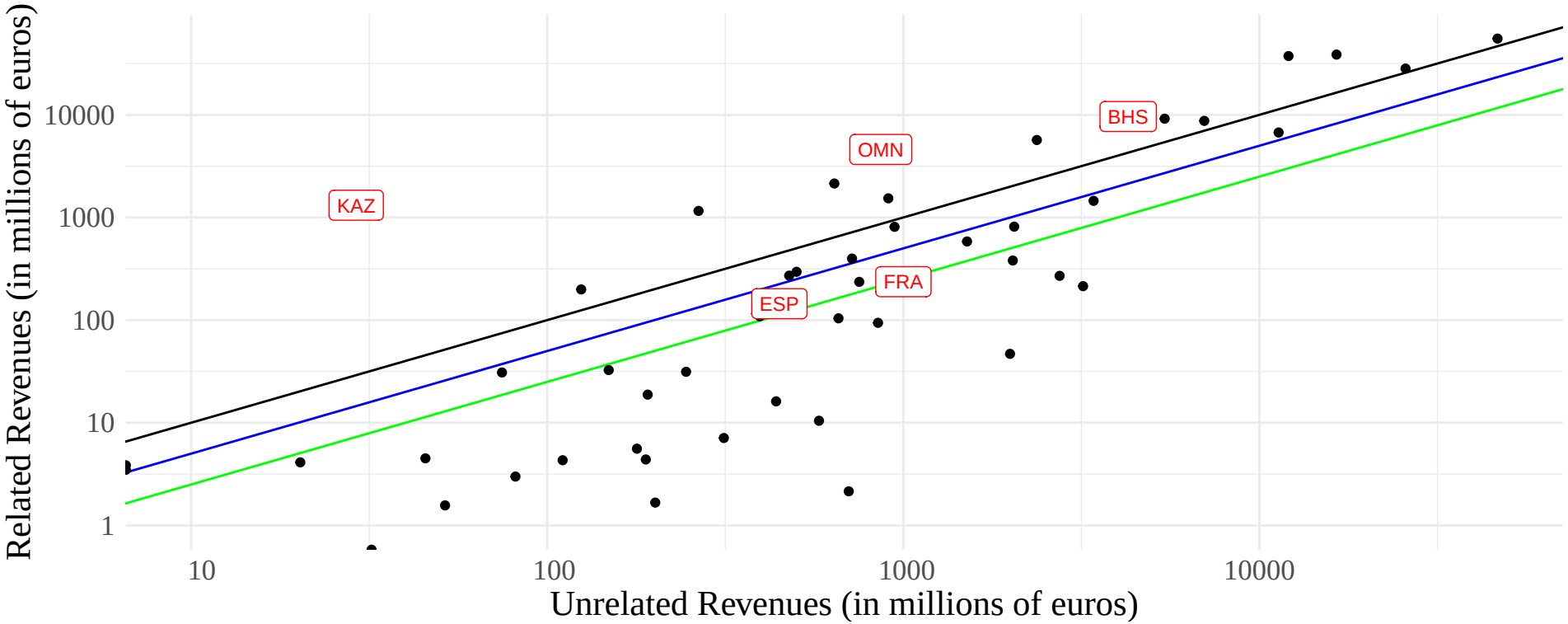

Figure 2: Subgroups above the black line have over 50% of related revenues. For the blue and green line, the thresholds are 33% and 20%, respectively.

This thesis in a nutshell

- In the 5 jurisdictions with highest share of related revenues, we find both Bermuda the Cayman islands. Both get over 95% of the revenue via related parties. Guernsey, the Bahamas and the Netherlands also have most of their revenues from related parties.

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- Ideally, data on transactions between subgroups would be used to study profit shifting.
    - That is not currently possible, but country-by-country data is available.

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  - Examples include TotalEnergies, BP, Piaggio and many others.

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Related *vs* Unrelated revenues - across the dataset

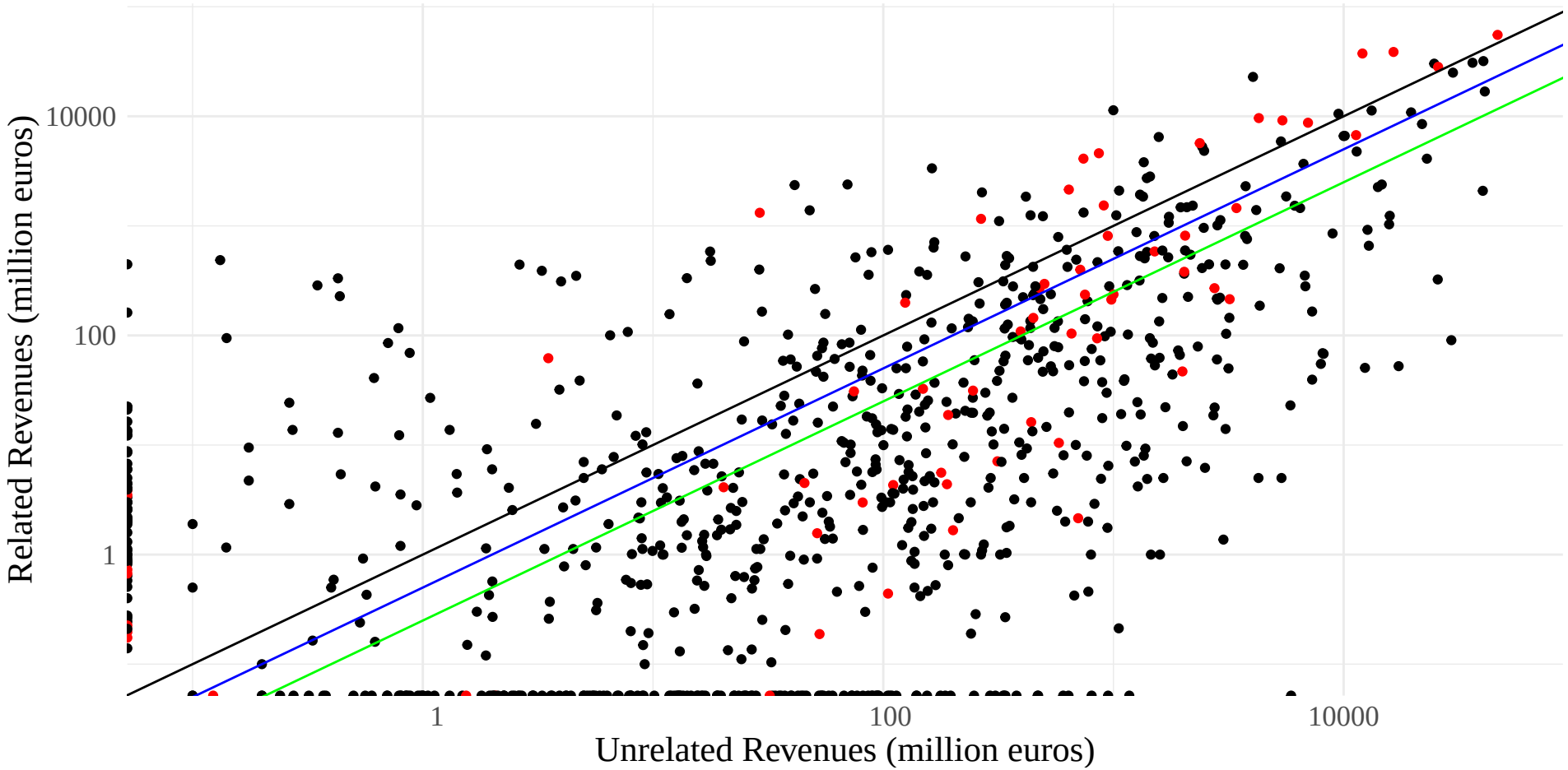

Figure 3: Shell subgroups in red. Subgroups above the black line have over 50% of related revenues. For the blue and green line, the thresholds are 33% and 20%, respectively.

Empirical Model

$$\log \Pi_i = \beta D_i^{MR} + \beta_1 \log K_i + \beta_2 \log L_i + \beta_3 \log T_i + \mu_{HQ} + \mu_{MNC} + \epsilon_i \quad (1)$$

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- μ_{HQ} and μ_{MNC} represent the HQ an multinational-level fixed-effects, respectively.

OLS results

	Dependent variable:
	profit_before_tax
mr	0.361^{**} (0.173)
total_revenues	0.755^{***} (0.075)
employees	0.130 (0.088)
tangible_assets	-0.026 (0.021)
HQ Fixed effect	Yes
MNC fixed-effect	Yes
Observations	534
R^2	0.781
Adjusted R^2	0.759
Residual Std. Error	1.372 (df = 486)
Note (1):	*p<0.1; **p<0.05; ***p<0.01
Note (2):	Standard errors clustered at the multinational-level.
Note (3):	Only profit-making subgroups included.

Interpretation of the results

According to the OLS results and specification, having mostly related revenues increases profit by 43%, *ceteris paribus*.

$$\log \Pi_i = \beta D_i^{MR} + \beta_1 \log K_i + \beta_2 \log L_i + \beta_3 \log T_i + \mu_{HQ} + \mu_{MNC} + \epsilon_i \tag{2}$$

$$\begin{aligned} \log \Pi_{\mathrm{MR}} - \log \Pi_{\mathrm{MU}} = \beta \Leftrightarrow \\ \Leftrightarrow \frac{\Pi_{\mathrm{MR}}}{\Pi_{\mathrm{MU}}} = e^{\beta} \Leftrightarrow \\ \Leftrightarrow \frac{\Pi_{\mathrm{MR}} - \Pi_{\mathrm{MU}}}{\Pi_{\mathrm{MU}}} * 100\% = (e^{\beta} - 1) * 100\% \sim 43\% \end{aligned} \tag{3}$$

- These 43% 'bonus' is not due to productive inputs nor to company-level productive factors!

Limitations

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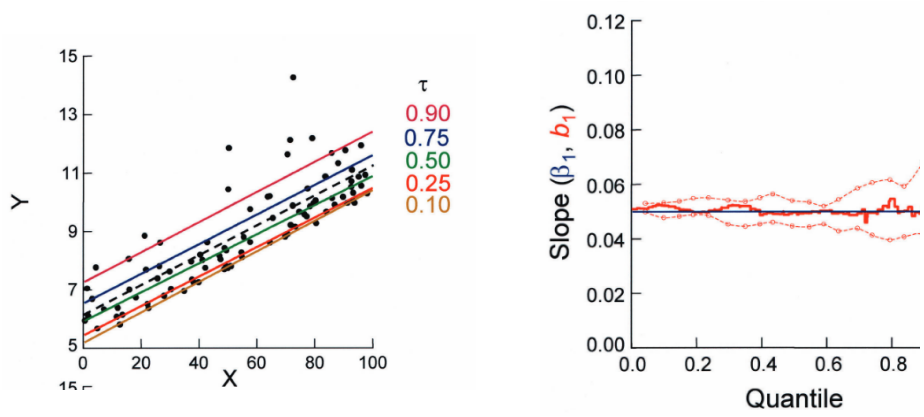
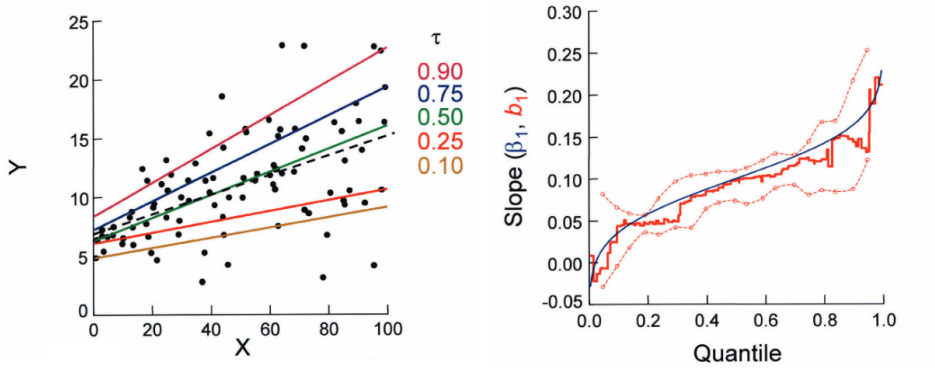
    - The narrative of having two subgroups - one represented by the Bahamas, the other by Kazakhstan - would be consistent with a jump in the effect of having mostly related revenues.

Quantile Regression - quickest overview



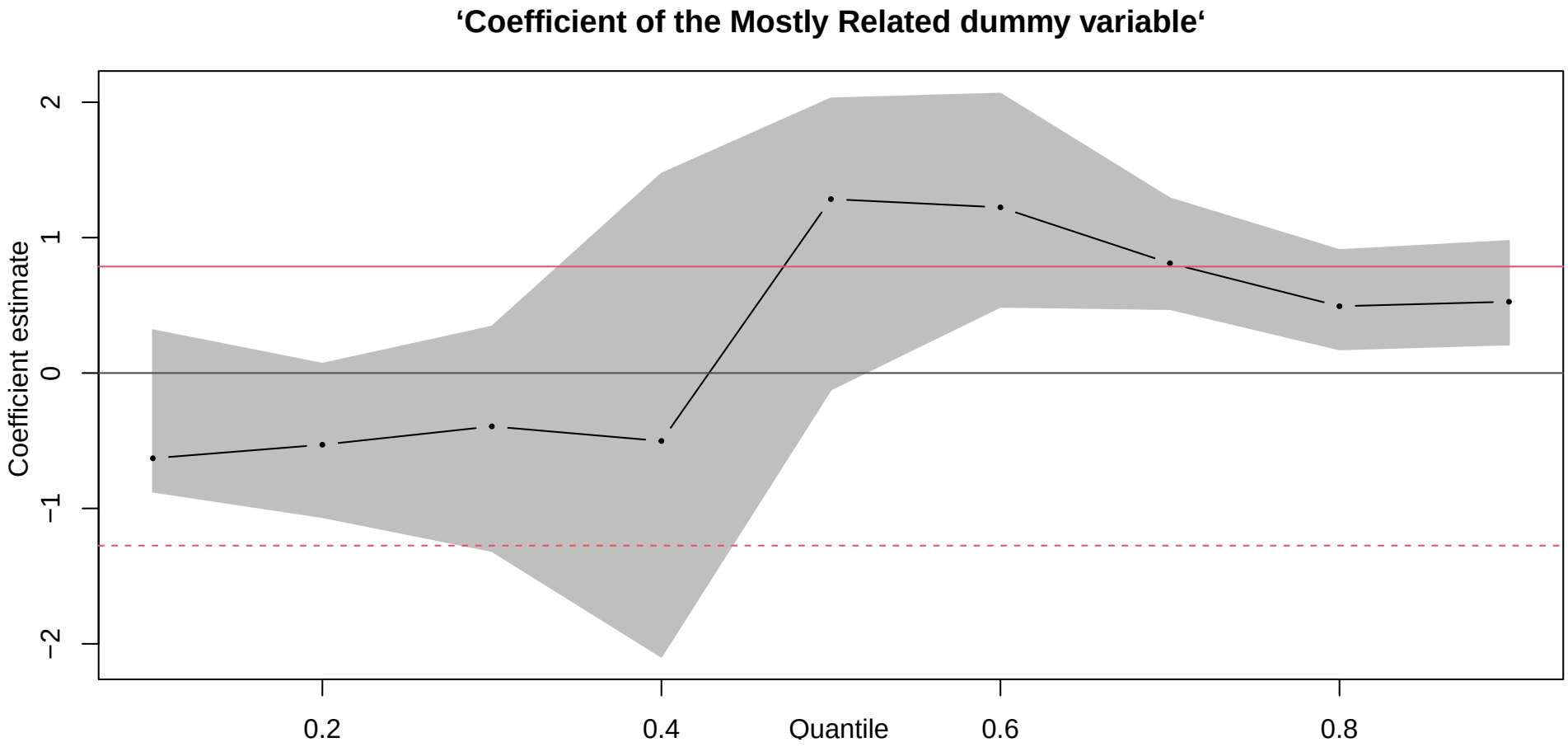
(a) Effect constant across quantiles.



(b) Effect significatively stronger for upper quantiles of Y.

Images taken from Cade and Noon (2003).

Quantile Regression - Results



- The effect of having mostly related revenues is only significant in the most (top half) profitable firms, given the other regressors.

Interpretation of QR results

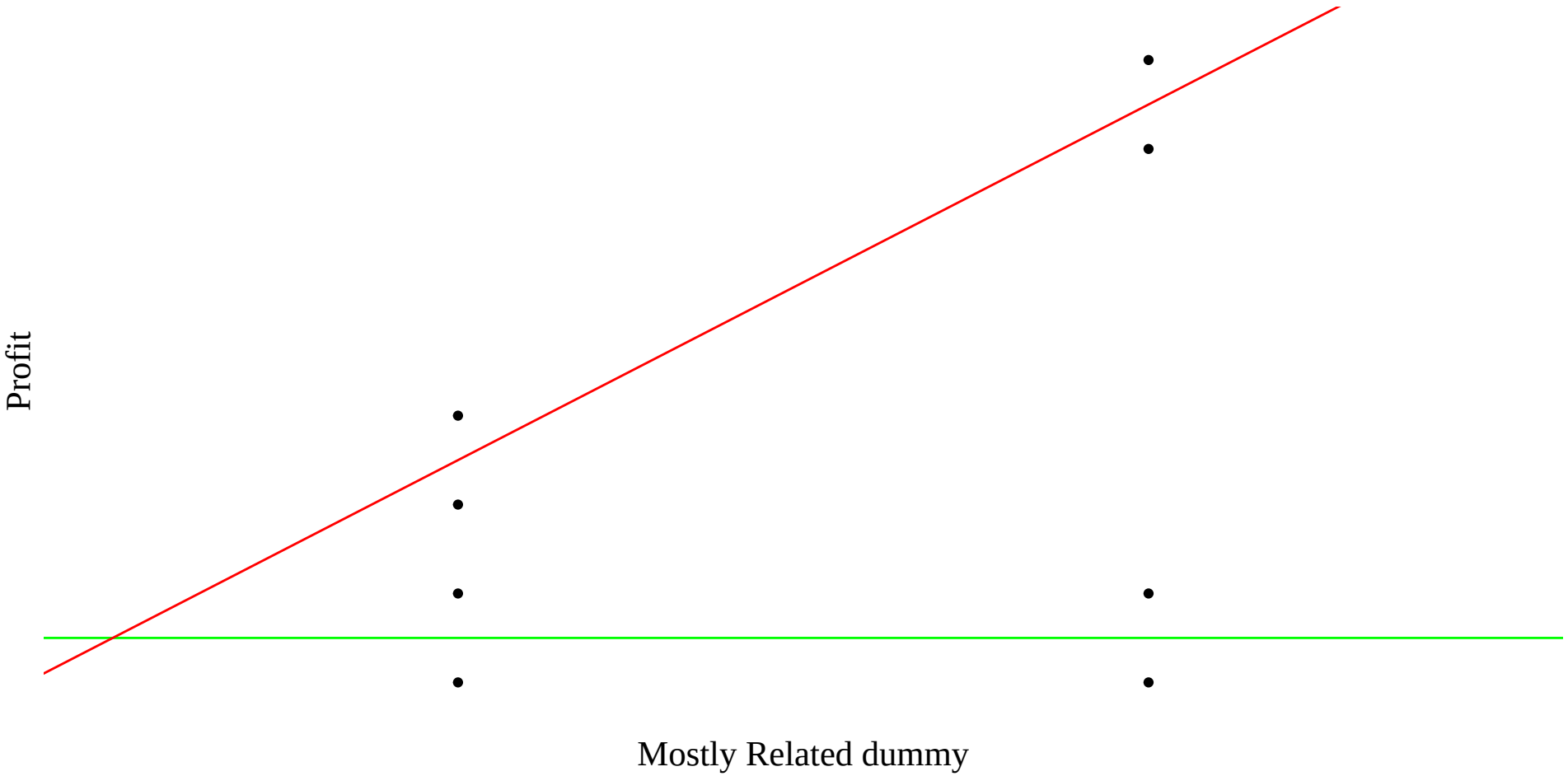


Figure 5: The effect of having mostly related revenues is negligible for the lower part of the profit distribution (in green) and pronounced for the upper quantiles (in red).

Conclusion

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- There is evidence that subgroups in which most of the revenue originates from within the multinational and across jurisdictions book higher profits. These higher profits are not explained by the level of productive input nor multinational-wide productive factors.
- A OLS regression estimates that profits rise 43% when revenues are mostly related. However, this effect is far from constant: it is much more pronounced in the top half of the profit distribution (conditional on the regressors).

The end

Thank you for your attention!

References

Cade, Brian S, and Barry R Noon. 2003. "A Gentle Introduction to Quantile Regression for Ecologists." *Frontiers in Ecology and the Environment* 1 (8): 412–20.

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