Comments to:

M. Da Rin, M. Di Giacomo, and A. Sembenelli

”Corporate income taxation, leverage, and entrepreneurial firm’s growth”

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Summary of the paper

- **Questions**:
  - **Q1**: Does corporate taxation affect the leverage of new firms?
  - **Q2**: If so, does corporate taxation also have a further impact, via the leverage choice, on the investment and growth of the new firms?
- **Data set**: Baseline sample of 209 000 newly incorporated firms, cohorts 98-01, from Amadeus (BvD).
  - Augmented with information on corporate taxation from EY's "Worldwide Corporate Tax Quide", for 12 European countries

Effective average tax rate, following Devereux and Griffith -98, and Da Rin et al. -11.

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- **Method / approach**:
  - *Initial leverage*$_{icjt}$ = $f(\beta_{EATR} EATR_{cjt} + \gamma_S$ *Initial size*$_{icjt}$ + γ_P *Initial profitability*$_{icjt}$ + *other controls*) [Eq-1]
    - Papke-Wooldridge -96, fractional probit / ML
  - *Later size*$_{icjt}$ = α_S *Initial size*$_{icjt}$ + α_L *Initial leverage*$_{icjt}$ + *other controls* + *error* [Eq-2]
    - Survivorship bias (selection): Heckman selection model, identification by using ”Active ratio”-variable
    - Endogeneity of Initial leverage: Control function -approach (add generalized residuals from [Eq-1] to [Eq-2])

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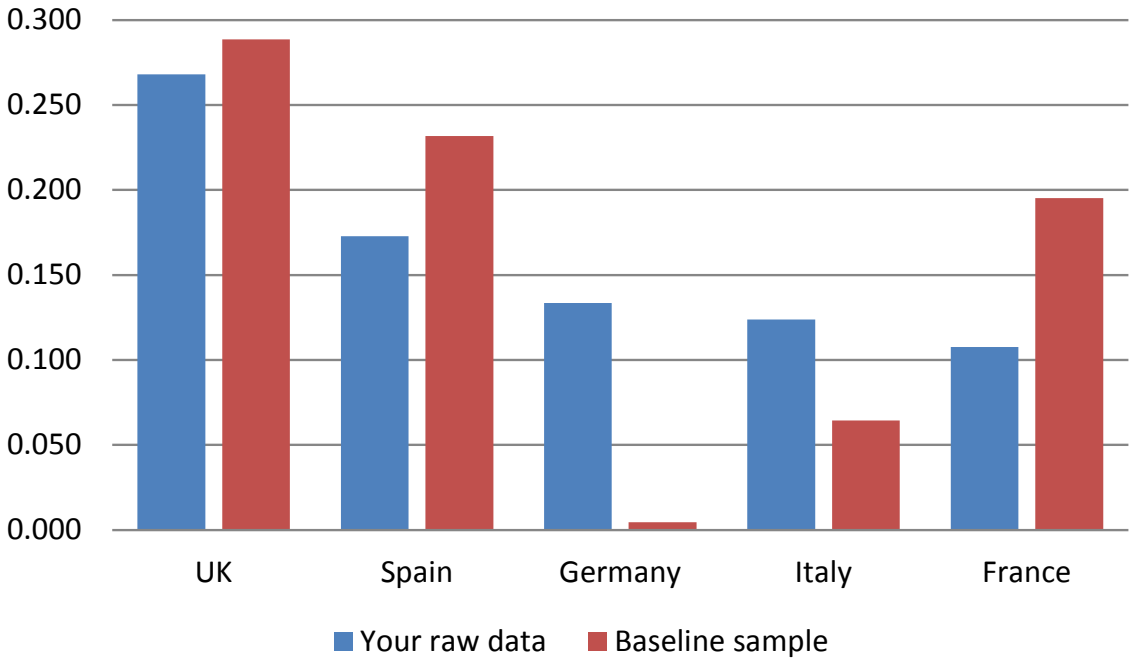
- **Key results**:
  - **Result for Q1**: Mostly positive effect of corporate taxation on initial leverage
  - **Result for Q2**: Controlling for initial size (+ other things), initial leverage is negatively associated with
    - Propability of survival (i.e., ”has accounting data nine years after incorporation”)
    - Later size, conditional on being in the data
- Conclusion (p. 11-12): Result for Q1 + Q2 $\Rightarrow$ taxation affects (negatively) survival and growth

Question / comment #1

- Effects of sample selection / representativeness?



Unavailability of initial size + exclusion of smaller firms + unavailability of initial leverage: 1.1 million firms ⇒ 209 000 firms

These five countries account for about 80% of the firms in your raw data and also in your baseline sample. However, the composition is quite different. Taxation of different industries vary by country ⇒ implications?

Selection into the sample?

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- **First**, assume that corporate taxation reduces demand for loans (leverage) and size
  - Thus, it reduces reporting requirements and the likelihood of being in your data
- **Second**, assume that firms may have a set of unobservable 'strengths' that enhance their borrowing needs and size.
  - For simplicity, assume that the strengths are uncorrelated with taxation
- **Third**, to be included in your sample, a firm who especially suffers from taxation is more likely to have high levels of the other strengths than its counterparts.
- **Fourth**, the strengths are likely to be unobservable to you and therefore show up in the error term of, e.g., your initial leverage regressions:
  - The error term and taxation are positively correlated when the regression is fitted to your baseline sample of firms => there is a positive bias (ovb)
  - If the bias is large enough, the estimated regression coefficient on taxation may be positive, although taxation was is initially assumed to reduce leverage?

Question / comment #2

- Endogeneity of initial size and profitability:
  - It is often argued that startups need external financing to enter 'properly' and to, e.g., pursue profitable investment opportunities:

Initial leverage $\rightarrow$ *Initial size*

Initial leverage $\rightarrow$ *Initial profitability*

  - How might this type of endogeneity affect the estimated effect of EATR on initial leverage and valid use of residuals in the second stage (control-fnc)?

Question / comment #3

- Is it plausible to argue that corporate taxation has no *direct* effect on the survival and growth of young firms?

  E.g., why can you impose $\beta_{ls} = 0$ here:

  $$Later\ size_{icjt} = \alpha_S Initial\ size_{icjt} + \alpha_L Initial\ leverage_{icjt} + \beta_{ls} EATR_{cjt} + other\ controls + error$$

  - Doesn't some of the prior literature on the effects of corporate taxation on firm growth (investment, etc) suggest that $\beta_{ls} \neq 0$?

- The empirical consequences of this exclusion restriction could be explored (in an IV-framework; see Conley et al. -12, Review of Economics and Statistics)

Question / comment #4

- It would help the reader if you clarified
  - the theoretical mechanisms you are interested in
    - Interpretation of the empirical findings?
  - the relation and contribution of this paper relative to some prior work, including your own work using nearly the same data
    - E.g., in Da Rin et al. (-12, JEEA), you show that corporate taxation reduces entrants' capital usage
      - So, taxation affects the subsequent (post-entry) growth both via initial leverage and via initial capital usage? Are these related or distinct mechanisms?

Question / comment #5

- Further prior literature, of potential interest (using data on private, small, non-listed firms):
  - Schmalz, Sraer, Thesmar (-14) ”Housing collateral and entrepreneurship”
    - Use of debt at entry affected by local variation in collateral values (e.g. housing); do collateral values and taxation co-vary?
  - Gordon and Lee (-01, J. of Publ. Econ.) ”Does taxes affect corporate debt policy? Evidence from U.S. corporate tax return data”
    - Corporate taxes reduce the share of assets financed by debt (especially the use of short-term debt)