Corporate Taxes and Economic Activity at Home and Abroad

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Research Proposal: January 2023

A central question for policy-makers is the extent to which corporate taxes distort real economic activity such as investment and employment. This question is at the heart of any discussion on the design of the corporate income tax as well as other taxes and transfers. Existing empirical literature has investigated this relationship in a national context (Giroud and Rauh, 2019; Lester, 2019; Ohrn, 2018; Suárez Serrato and Zidar, 2016). In line with theoretical predictions, these studies generally find fairly sizeable negative effects of the corporate income tax on economic activity. However, little is known about the anatomy of this response: does it represent real downsizing or simply reallocation of activity abroad? This distinction is becoming ever more relevant with the increasing importance of multinational enterprises (MNEs) in the corporate landscape (OECD, 2018) and the downward pressure on corporate taxes in recent decades as a result of tax competition. MNEs make global intra-firm allocation decisions which affect both home and host countries (Cravino and Levchenko, 2017; Di Giovanni et al., 2018). By operating within networks that cross national borders, MNEs are important decision-making agents in the context of global allocation and reallocation of resources and economic activity. Arguably, their global presence lowers transaction costs, thereby making it easier for MNEs to re-optimise internationally. This makes MNEs the firm population of most interest when analysing international mobility of corporate activity. Our understanding of these decisions in relation to corporate taxes is limited due to opaque MNE structures as well as limited availability of high-quality data on MNEs that span across national borders. Two recent working papers try to fill this gap by comparing affiliates of MNEs with a presence in tax reform countries to those that are not present in such countries (Hoopes et al., 2022; De Vito et al., 2021).

This project attempts to bridge these two literatures on corporate income taxation and cross border MNE activity and explicitly studies both domestic and foreign responses to corporate taxes in a unified empirical framework. This unified perspective is possible by exploiting within-country variation in corporate tax rates as well as comprehensive administrative data from a country that collects micro level data on both domestically located firms as well as domestically owned foreign affiliates. This dataset allows us to track complete multinational groups across the globe and investigate the effects of corporate tax changes in their home country on foreign operations. Importantly,

we can also analyse the effects of these same corporate tax changes on domestic affiliates of multinational groups and fully domestic firms. Hereby we propose a comprehensive analysis of the effect of corporate taxes on real economic activity, taking seriously the notion that firms today operate in a global reality and the effect of domestic tax policy does not stop at the border. Further, the richness of the data also allows us to look into potential links between relocation of activity and relocation of reported profits in response to tax changes. Similarly, it makes it possible to study interesting heterogeneity in responses across MNEs by characteristics of their group-structures, such as presence in tax havens.

Data and variation

The project exploits several comprehensive datasets. Firstly, the administrative German MiDi database on German foreign subsidiaries. This dataset includes traditional firm characteristics and balance sheet information such as turnover, number of employees and fixed and intangible assets from 1999-2017. Further, it also includes intra-group positions such as loans and equity positions that would be either indistinguishable from external positions or netted out at the group level in other available micro datasets. Second, we also use the administrative German Janis/Ustan database which includes similar balance sheet information for all german-based firms (including fully domestic firms and parent companies).

To causally identify the effects of the corporate income tax on real activity at home and abroad we utilize within-country variation in the corporate income tax rate in Germany. In Germany, part of the tax levied on corporate profits is the Local Business Tax. The Local Business Tax varies at the municipal level and this leads to both cross-sectional variation as well as considerable time-variation within municipalities in tax rates. Fuest et al. (2018) exploit this variation to identify the incidence of the corporate tax on wages and in their sample period (1993-2012) they report just under 18000 tax rate changes.

Empirical strategy

We are interested in measuring the effect of corporate income taxes on the size and geographical allocation of real economic activity. To this end we can exploit the variation in corporate tax rates within Germany in several ways.

For each foreign subsidiary of a German MNE we can construct a variable equal to the corporate tax rate faced by the German operations of that multinational group. This variable, τ_m, varies over time and by the municipality in which those operations are located. Consider the following specification

$$\log(y_{ight}) = \beta \cdot \tau_m + \alpha_i + \theta_{t \times h} + \mathbf{X}_{it} + \varepsilon_{igt}$$

where $\log(y_{ight})$ is the log of a measure of real activity (investment, employment etc.) of subsidiary i, within multinational group g, in host country h at time t. The specification includes subsidiary fixed

effects as well as country-by-time fixed effects. This means that β measures relocation of activity abroad in response to the corporate income tax in the municipality. This parameter is conceptually identified from differential changes in real activity within foreign subsidiaries in the same host country that do and do not respectively have group members within a German municipality that changes its local business rate.[1]

To measure the effect on domestic activity we use the full set of domestically located firms and a staggered event-study design,

$$log(y_{fmt}) = \sum_{j=-4,\neq -1}^{4} \beta^j R_{mt}^j + \theta_t + \alpha_f + \gamma_m + \varepsilon_{fmt}$$

where R_{mt}^j is an indicator for a tax change happening j periods away in municipality m at time t, and $log(y_{fmt})$ is again the log of a measure of real activity. This event study hence compares the evolution of activity within firms located in municipalities that experience a corporate tax change to the activity of firms in other municipalities at the same time. Within this specification we can look at several interesting dimensions of heterogeneity: fully domestic firms versus firms that are subsidiaries of multinational enterprises, subsidiaries of multinational enterprises with tax haven subsidiaries and without etc. By comparing the effects within these different types of firms we can speak to several highly relevant questions: What is the importance of the presence of multinational firms in an economy for the effects of corporate taxes? How does the effect within domestic subsidiaries of multinational firms compare to the foreign spillover effect observed within foreign subsidiaries? What does that tell us about the relative importance of down-sizing versus reallocation of economic activity abroad?

Extensions

If we observe that corporate taxes do in fact lead to a reallocation of real activity within the multinational firm, there are several very interesting follow up questions we could attempt to answer. For instance using the MiDi database with intra-group positions on debt and equity, we could investigate where the funding for these new investments comes from – from the parent, from a tax havens, from targeted domestic subsidiaries? What type of countries does the activity move to – other developed countries or developing countries? What is the link between the reallocation of activity and the reallocation of reported profits in response to taxes? Answering these questions will provide a nuanced picture of the impact of corporate income taxes by explicitly showing reactions in the network of MNEs.

[1] To account for the variation across multinationals in exposure to the German economy, some specifications should weight τ_m by the fraction of assets located in Germany (or a similarly defined weight).

References

Cravino, J. and Levchenko, A. A. (2017). Multinational firms and international business cycle transmission. *Quarterly Journal of Economics*, 132(2):921–962.

De Vito, A., Jacob, M., and Xu, G. (2021). How do tax increases affect investment allocation within multinationals? *Working Paper, SSRN 3643481*.

Di Giovanni, J., Levchenko, A., and Mejean, I. (2018). The micro origins of international business-cycle comovement. *American Economic Review*, 108(1):82–108.

Fuest, C., Peichl, A., and Siegloch, S. (2018). Do higher corporate taxes reduce wages? micro evidence from germany. *American Economic Review*, 108(2):393–418.

Giroud, X. and Rauh, J. (2019). State taxation and the reallocation of business activity: Evidence from establishment-level data. *Journal of Political Economy*, 127(3):1262–1316.

Hoopes, J. L., Klein, D., Lester, R., and Olbert, M. (2022). Corporate tax policy in developed countries and economic activity in africa. *Working Paper, SSRN 4254414*.

Lester, R. (2019). Made in the usa? a study of firm responses to domestic production incentives. *Journal of Accounting Research*, 57(4):1059–1114.

OECD (2018). Multinational enterprises in the global economy - heavily debated but hardly measured. *Policy note*.

Ohrn, E. (2018). The effect of corporate taxation on investment and financial policy: Evidence from the dpad. *American Economic Journal: Economic Policy*, 10(2):272–301.

Suárez Serrato, J. C. and Zidar, O. (2016). Who benefits from state corporate tax cuts? a local labor markets approach with heterogeneous firms. *American Economic Review*, 106(9):2582–2624.

Sarah Clifford – Curriculum Vitae

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Employment

2021 - Associate Professor - Department of Economics, University of Oxford

2021 - Tutorial Fellow - St Hugh's College, University of Oxford

2021 - CESifo Research Network Affiliate

2018-2021 Postdoctoral Prize Research Fellow - University of Oxford (Department of Economics, The Centre for Business Taxation and Nuffield College)

Education

Ph.D. in Economics - University of Copenhagen (11/2018)

M.Sc. in Economics - University of Copenhagen (8/2016)

B.Sc. in Mathematics and Economics - University of Copenhagen (5/2013)

B.Sc. in Actuarial Science - University of Copenhagen (6/2012)

Research and teaching fields

Primary Public Economics

Secondary Applied microeconomics, Econometrics

Publications

"Tax Enforcement Using a Hybrid Between Self- and Third-party Reporting" (with P. Mavrokonstantis)
Journal of Public Economics, Nov 2021, Vol. 203, 104519

"Taxing Multinationals Beyond Borders: Financial and Locational Responses to CFC Rules"
Journal of Public Economics, 2019, vol. 173, pp. 44-71.

Work in progress

"The Importance of Being a Multinational: Access to Debt" (with J. Miethe)

[This project investigates whether the existence of an internal capital market increases resilience of multinational affiliates during economic downturns]

"Internal Banks of Multinational Enterprises in Tax Havens" (with J. Miethe)

[We analyse the empirical importance of large bank-like affiliates of multinational enterprises located in tax havens for the functioning of internal capital markets]

"Tax Enforcement with Multiple Evasion Technologies" (with N. Johannesen)

[In a simple theoretical framework we analyse the implications of multiple evasion technologies for the effect of enforcement on evasion and tax revenue]

Teaching

Public Economics (MPhil/PhD), University of Oxford, Lecturer (2022)

Public Economics (B.Sc), University of Oxford, Lecturer (2021)

Quantitative Economics (B.Sc), University of Oxford, Tutorials (2022)

Prelim Microeconomics (B.Sc), University of Oxford, Tutorials (2021)

Econometrics (MPhil/PhD), University of Oxford, Classes (2019, 2020)

Tax and Public Policy (M.Sc), University of Oxford, Guest lecturer (2019, 2020)

Micro B (B.Sc), University of Copenhagen, Classes (2015)

Statistics and probability theory (B.Sc), University of Copenhagen, Classes (2013)

Basic non-life insurance mathematics (B.Sc), University of Copenhagen, Classes (2012)

Honors and Awards

2017	Award for best paper at the Oxford University CBT Doctoral Conference 2017
2017	Nominated and selected for participation in the 6th Lindau Nobel Laureate Meeting in Economics
2014	Awarded the 2014 Mikael Kristiansen grant (Grant of approx. £ 15.000 awarded to pursue international studies in Economics)
2014	Nominated for the McKinsey Prize for best seminar paper 2014

Conference and seminar presentations

Institute for Fiscal Studies, Invited seminar (planned 2023), Finnish Centre of Excellence in Tax Systems Research (FIT), University of Tampere, Invited seminar (planned 2023), Norwegian School of Economics (NHH), Invited seminar (2022), University of Reading, Invited seminar, Virtual (2020), The 35th annual congress of the European Economic Association, EEA, Virtual (2020), Centre for Business Taxation Seminar, Said Business School, University of Oxford (2020), Department of Economics seminar series,

University of Oxford (2019), CPB Workshop: The End of Tax Havens?, The Hague (2019), ASSA Annual Meeting, Atlanta (2019), The NTA 110th Annual Conference on Taxation, Philadelphia (2017), Workshop on Advances in Political Economy and Public Economics, Max Planck Institute for Tax Law and Public Finance, Munich (2017), Invited Job talk, Oxford University - Department of Economics and Nuffield College, Oxford (2017), The 4th Annual MaTax Conference, Mannheim University / ZEW (2017), Oxford University Centre for Business Taxation Doctoral Conference, Oxford University (2017), European Doctoral Group in Economics (EDGE) Jamboree, Università Bocconi, Milan (2017), Economic Policy Research Unit (EPRU) Seminar, University of Copenhagen (2016)

Professional Service

Seminar organizer: Applied Microeconomics Seminar Series, Department of Economics, University of Oxford (2020/21)

Refereeing: The Journal of Public Economics, The Scandinavian Journal of Economics, British Tax Review, International Tax and Public Finance, Journal of the Royal Statistical Society: Series A

Committee work: Member of Governing Body, St. Hughs College, Oxford (2021-), Junior Dean, Nuffield College, Oxford (2019-21), Personnel and Domestic Committee, Nuffield College, Oxford (2019-21), Welfare Committee, Nuffield College, Oxford (2019-21), Member of the Governing Body, Nuffield College, Oxford (2018-21), Strategy and Resources Committee, Nuffield College, Oxford (2018-19)

Other

2020/21 President, Linacre-Nuffield Boat club, Oxford

2019/20 Vice Captain of the women's rowing team, Linacre-Nuffield Boat club, Oxford

Citizenship: Denmark

Languages: Danish (native), English (fluent), German (intermediate)

Jakob Miethe

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Center for Economic Studies (CES)
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Current Position and Affiliations

since 10/2019	**Assistant Professor**, Department of Economics (CES), LMU Munich
since 02/2020	**Research Affiliate**, CESifo Network
since 05/2021	**Research Fellow**, EU Tax Observatory

Previous Positions

08/2022 – 12/2022	Visiting Assistant Professor, **UC Berkeley** visiting Gabriel Zucman, teaching Econ133: Global Inequality and Growth
07/2016 - 09/2019	Research Associate, **German Institute for Economic Research (DIW)** with Lukas Menkhoff
02/2017 – 04/2017	Visiting Scholar, **International Monetary Fund (IMF)** visiting Romain Duval, Davide Furceri, & Aleksandra Zdzienicka
01/2013 – 09/2014	Research Assistant, **German Institute for Economic Research (DIW)** Departments of Macroeconomics and Economic Policy with Kerstin Bernoth, Ferdinand Fichtner, and Simon Junker
02/2011 – 08/2011	Internship, **German Society for International Cooperation (GIZ)**

Education

11/2015 - 08/2019	**Dr. rer. pol. in Economics** (summa cum laude) supervised by Lukas Menkhoff, second supervisor Marcel Fratzscher Humboldt University Berlin, DIW graduate center
10/2014 - 09/2015	**DIW graduate center**
10/2012 – 09/2014	**MSc. in Economics** (best of class) University of Potsdam
09/2011 – 08/2012	**Conversion Diploma in Economics** University of Nottingham
09/2007 – 08/2010	**B.A. European Studies** Maastricht University, exchange semester at the University of Hong Kong

Research Visits

10/2023 – 02/2024	*scheduled*: **Paris School of Economics** & EU tax observatory visiting Gabriel Zucman, funded by DFG - Walter Benjamin-Programm
02/2018 – 03/2018	**University of Copenhagen**, Center for Economic Behavior & Inequality visiting Niels Johannesen
08/2015 – 10/2015	**IMF Research Department** (visiting scholar) visiting Romain Duval & Davide Furceri

Publications

Tax evasion in new disguise? Examining tax havens' international bank deposits
with Lukas Menkhoff
Journal of Public Economics 2019, Vol. 176, pp. 53-78
previous version: *DIW Discussion Paper* Nr. 1711.

Robust political economy correlates of major product and labor market reforms in advanced economies: Evidence from BAMLE for Logit Models
with Romain Duval & Davide Furceri
Journal of Applied Econometrics, 2021, Vol. 36, issue 1, pp. 98–124
previous version: *IMF Working Paper* Nr. 101.

Working Paper

Homes Incorporated: Offshore Ownership of Real Estate in the U.K.
with Niels Johannesen and Daniel Weishaar
CEPR Discussion Paper No. DP17738
CESifo Working Paper No. 10159

The elusive banker: Using hurricanes to uncover (non-)activity in offshore financial centers
CESifo Working Paper No. 8625

Ongoing Research

The importance of being a multinational: Access to debt
with Sarah Clifford

Internal banks of multinational enterprises in tax havens
with Sarah Clifford

How to Make Multinational Automatic Information Exchange on Financial Account Data Work
with Annette Alstadsæter, Elisa Casi and Barbara Stage

Germany's efforts to curb international tax evasion
with Hannes Fauser

Making the invisible visible. An empirical assessment of the Eurodollar and its consequences
with Andrea Binder

Other Professional Activity

Administrative	co-organizer LMU Public Economics seminar
	co-organizer LMU Public Economics PhD Workshop
	co-organizer LMU Public Economics Week
	DIW Seminar Macroeconomics and Fin. Markets (2016/2017, 2019)
Open Science	Organization of the useR group at the DIW Berlin with Niels Aka
Refereeing	JPubE, JPE, EJ, itax, AER insights, JPubE shorts, and others

Grants and Scholarships, and Awards

10/2023 - 02/2024	5 months research scholarshop **DFG - Walter Benjamin-Programm**
08/2022 - 12/2022	Research stay funding **LMU Junior Faculty Development Program**
07/2016 - 06/2019	Doctoral grant from the **Friedrich Ebert Foundation (FES)**
09/2014 – 06/2016	Doctoral grant from the **DIW Berlin Graduate Center**
04/2013 – 09/2014	Full scholarship from the **Friedrich Ebert Foundation (FES)**
01/2011	**DIA/Volkskrant Scriptieprijs** for best Bachelor thesis
03/2010 - 06 /2010	Maastrichts **(MARBLE)** program for top performing students

Additional Information

Languages	German (native), English (fluent), French (good), Dutch (intermediate)
Software Skills	R, Stata, QGIS, EViews, SPSS, VBA, LaTeX, Ubuntu, Bloomberg, Datastream, Orbis, Eikon

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EDUCATION

PhD Candidate in Economics & Junior Economist 2021 -
ifo Center for International Economics & Ludwig Maximilian University, Germany

Research Stay:
University of California, Berkeley (Sept-Oct 2022), invited by Prof. Gabriel Zucman

Master's degree in Economics, Public Policy and Development 2017-19
Toulouse School of Economics, France

Exchange Programs:
Ludwig Maximilian University of Munich, Germany (2017-18)
University of Oslo, Norway (2016-17)

Bachelor's degree in Economics 2016
Toulouse School of Economics, France

EMPLOYMENT

Consultant, The World Bank 2019 - present
Development Research Group (DECRG), with Anne Brockmeyer and Pierre Bachas *Washington DC, USA*

Intern, European Bank for Reconstruction and Development May - Aug. 2019
Office of the Chief Economist, with Ralph De Haas and Helena Schweiger *London, UK*

Research Assistant, Institute for Advanced Study in Toulouse Jan. - June 2019
IAST and TSE, with Professor Michael Becher *Toulouse, France*

Research Assistant, ifo Institute Oct. 2017 - July. 2018
Macroeconomics and Surveys, with Professor Andreas Peichl and Paul Hufe *Munich, Germany*

Intern, ZEW-Leibniz Centre for European Economic Research June - Aug. 2017
International Distribution and Redistribution Research Group, with Holger Stichnoth *Mannheim, Germany*

TEACHING

Seminar Teaching Assistant, LMU Summer term 2022
"Tax Policy and Multinational Firms" *Munich, Germany*

Teaching Assistant, Toulouse School of Economics Fall term 2018
Undergraduate Macroeconomics *Toulouse, France*

RESEARCH

Working Paper

· Bachas, Pierre & Brockmeyer, Anne & Semelet, Camille, 2020. "The Impact of COVID-19 on Formal Firms: Micro Tax Data Simulations across Countries," Policy Research Working Paper Series 9437, The World Bank.

Policy Work

· "ASEAN SMEs Integration in GVCs: Opportunities and Challenges in Response to COVID-19". OECD 2022, with Lisandra Flach and Isabella Gourevich

· "The Impact of COVID-19 on Formal Firms: Evidence from [Albania, Costa Rica, Ecuador, Ethiopia, Guatemala, Montenegro, Senegal, Uganda, Honduras]. The World Bank. MTI Practice Note Series, August 2020, No. 9A-9H, with Pierre Bachas and Anne Brockmeyer.

· "Better Governance, Better Economies," Chapter 4, Transition Report 2019-20, EBRD, with Ralph De Haas, Ralf Martin, Mirabelle Muuls,and Helena Schweiger.

CONFERENCES, WORKSHOPS AND SEMINARS

4th World Bank Tax Conference, Washington DC, (September 2022)

2022 Annual Congress of the IIPF, Linz, Austria (August 2022).

PSE workshop in International Trade, Paris, France (June 2022).

CESifo Public Economics Week, Munich, Germany (PhD Poster Session, Mai 2022).

2021 Annual Congress of the IIPF, online (August 2021).

SKILLS AND INTERESTS

Software	Stata, R, R Markdown, LaTeX, QGIS, SAS, Github, Microsoft Excel
Refereeing	International Economics, The Journal of African Economies
Languages	Native in French, Fluent in English, Intermediate in German (B1.1)

REFERENCES

Prof. Lisandra Flach (LMU, ifo Center for International Economics)	flach@ifo.de
Prof. Stephane Straub (Toulouse School of Economics)	stephane.straub@ut-capitole.fr
Anne Brockmeyer (Institute for Fiscal Studies, UCL)	abrockmeyer@worldbank.org
Pierre Bachas (The World Bank)	pbachas@worldbank.org

Budget Estimate

Travel: Munich (Sarah Clifford) for the purpose of joint work on the project. Main focus is datawork at Bundesbank facilities (data access only from within Germany)
Timing: 1 week, April 2023
Cost:

Transport costs	$400
Accomodation costs and other expenses	$1000

Travel: Munich (Sarah Clifford) for the purpose of joint work on the project. Main focus is datawork at Bundesbank facilities (data access only from within Germany)
Timing: 2 weeks, June 2023
Cost:

Transport costs	$400
Accomodation costs and other expenses	$2000

Travel: Oxford (Jakob Miethe and Camille Semelet) for the purpose of joint work on the project. Main focus on preparing presentation for NTA and draft.
Timing: 1 week, October 2023
Cost:

Transport costs	$900
Accomodation costs and other expenses	$2000

Travel: Presentation at the NTA Annual Conference in Denver, CO (Camille Semelet)
Timing: November, 2023
Cost:

Transport costs	$800
Accomodation costs and other expenses	$800
Participation fee	$300

Editing services for first draft
Cost: $1500

Expected data costs (related to preparing municipality-level tax data)
Cost: $2000

Total costs: $12100