Empirical International Trade

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Outline

What are the effects of regional trade agreements? How effective is the World Trade Organization in fostering international trade flows? How strong are the responses to tariff changes, such as the ones implemented in the US-China trade war? These are some examples of questions tackled in empirical international trade. Empirical research in international trade is characterized by a tight link between economic theory and econometric specifications. The course will introduce the gravity model of international trade, which is *the* workhorse model in empirical trade research. Based on a theoretical derivation of the model, students will learn both how to estimate the corresponding structural econometric model and how to use the model to perform counterfactual policy analyses. Using the trade gravity expression as a starting point, closely related models for example for international migration, FDI flows, or carbon emissions embodied in international trade will also be considered. Besides the **lectures**, the course will also contain **computer exercises** in which the students will implement the different estimations and simulations themselves. At the end of the term, students will write a term paper in which they perform their own empirical investigation of a trade policy measure.

Content and Readings

The course will cover the following agenda:

1. Introduction
2. Gravity Derivation & Accounting for Multilateral Resistance
    - Compulsory reading: Chapter 1 of Yotov, Piermartini, Monteiro, and Larch (2016)
3. Gravity beyond Trade: Migration, Investment, Ideas, and Emissions
    - Compulsory reading: Anderson (2011)
4. Heteroskedasticity and Zero Trade Flows & Theory Consistency
    - Compulsory reading: Santos Silva and Tenreyro (2022)
5. Endogeneity of Trade Policy & Panel Data
    - Compulsory reading: Baier and Bergstrand (2007)
6. Intranational Trade Flows & Unilateral Trade Policies
    - Compulsory reading: Yotov (2022)
7. Heterogeneous Trade Policy Effects
    - Compulsory reading: Baier, Yotov, and Zylkin (2019)
8. Extensive Margin of Trade
    - Compulsory reading: Helpman, Melitz, and Rubinstein (2008)
9. Quantitative Trade Theory and General Equilibrium
    - Compulsory reading: Eaton and Kortum (2002)
10. Different Micro-Foundations and Gravity Extensions
    - Compulsory reading: Section 2 of Head and Mayer (2014)

Coursework

Participants are expected to read the first chapter of the *Advanced Guide* by Yotov, Piermartini, Monteiro, and Larch (2016), at the latest by the second lecture. They are further required to read the remaining items of the **compulsory reading** list (roughly one paper per week, the exact timing for these will be discussed in class). **Active participation** in the lectures and exercise classes is also expected. At the end of the semester, all students have to write a **term paper** in which they will evaluate an international economic policy measure of their choice (see the next section for details).

Term Papers

In their term papers, students do their **own empirical analysis** based on the structural gravity model. They consider a trade cost determinant or trade policy variable of their interest. They will start off by explaining and motivating their choice and relating to existing literature. They will then introduce the data that they use for their analysis and introduce the empirical specification(s) that they will estimate. They will explain in detail why their specification looks the way it does and which different theoretical and econometric challenges are tackled by specific features of the regression. Students will present the results of their empirical analysis and carefully interpret them. After potentially considering robustness checks or e.g. an alternative specification allowing for additional heterogeneity in the results, their term paper will end with a short conclusion. Entirely optionally, they can add a general equilibrium section after the estimation in which they additionally consider a counterfactual scenario based on their estimation to infer the GE effects of the trade cost determinant under consideration.

If they are interested in a different type of bilateral flow than international trade flows, participants are free to alternatively follow the same structure for e.g. a determinant of bilateral migration or investment flows.

The deadline for the term papers is **September 30th, 2023**. It is sufficient to hand the paper in electronically. Along with the PDF, please also hand in

the data and code you used in the analysis. In case of large data files, a link can be generated and provided that can be accessed to download the data. The length of the term papers should be **35,000 characters** (including spaces). This is equivalent to about 13 pages of pure text with a standard formatting. Please indicate the number of characters in your paper. There are no specific requirements for the layout or the reference style, as long as the latter is done consistently throughout the term paper.

Organizational Issues

The lecture takes place in room 226 (Neue Uni) on Tuesdays from 10 to 12. The first meeting will be on April 18th, 2023. The exercise class takes place in CIP-Pool II (Altes IHK-Gebäude) on Wednesdays from 10 to 12. The first exercise class will be on April 19th, 2023. A prior registration is not required. The course is offered as the module "Workshop Internationale Ökonomik I". If you have questions about the course, please send an email to joschka.wanner@uni-wuerzburg.de.

References

Anderson, J. E. (2011). The Gravity Model. *Annual Review of Economics 3*, 133–160.

Baier, S. L. and J. H. Bergstrand (2007). Do Free Trade Agreements Actually Increase Members' International Trade? *Journal of International Economics 71*(1), 72–95.

Baier, S. L., Y. V. Yotov, and T. Zylkin (2019). On the Widely Differing Effects of Free Trade Agreements: Lessons From Twenty Years of Trade Integration. *Journal of International Economics 116*, 206–226.

Eaton, J. and S. Kortum (2002). Technology, Geography, and Trade. *Econometrica 70*(5), 1741–1779.

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Helpman, E., M. J. Melitz, and Y. Rubinstein (2008). Estimating Trade Flows: Trading Partners and Trading Volumes. *Quarterly Journal of Economics 123*(2), 441–487.

Santos Silva, J. M. and S. Tenreyro (2022). The Log of Gravity at 15. *Portuguese Economic Journal*, 1–15.

Yotov, Y. V. (2022). On the Role of Domestic Trade Flows for Estimating the Gravity Model of Trade. *Contemporary Economic Policy 40*(3), 526–540.

Yotov, Y. V., R. Piermartini, J.-A. Monteiro, and M. Larch (2016). *An Advanced Guide to Trade Policy Analysis: The Structural Gravity Model*. Geneva: World Trade Organization.