# Advanced Empirical Economics II: Empirical International Trade

#### HANNA ADAM & MARIO LARCH

CHAIR OF EMPIRICAL ECONOMICS

July 11, 2022

#### 1 General Issues

The course "Advanced Empirical Economics II: Empirical International Trade" addresses Master's students of Business Administration, Economics, Internationale Wirtschaft und Governance, and Philosophy & Economics. Advanced interested Bachelor's students may also participate.

The course will focus on empirical international trade. The aim is to introduce state-of-the art empirical methods which are used to (i) evaluate the determinants of trade flows and (ii) to quantify the effects of international policies, such as the effects of regional trade agreements, currency unions or sanctions. Additionally, in this course we will give you insights into own research, which also to a good deal explains the selected literature.

The course consists of three parts:

1. Student presentations will cover recent methods and applications of empirical international trade. We provide the topics for the presentation (including the respective reading material) as well as an introductory literature and further information via the **e-learning**. Therefore, please register in the e-learning for the course.

Our first compulsory introductory meeting will be on 27 October 2022, 2–4pm (ct, room tba), where we will discuss organisational issues and allocate presentation topics. The dates for the student presentations are 16 and 17 December 2022, 9am–6pm (exact times and room tba, depending on the number of participants). Please upload your presentation slides beforehand on e-learning (see database for presentation slides), by 14 December 2022.

- 2. Codes for implementing and estimating structural gravity models will be provided, which you should work through. We will have a computer tutorial on the codes on 19 December 2022, 8:30am-1pm (exact times and room tba, depending on the number of participants). Further information will be announced.
- 3. To practice the learned methods, you will in the end evaluate one specific international policy on your own and write a **term paper** about it. The topics for your term papers will be allocated at the end of the seminar presentations.

Interested students are asked to **sign up** by sending an email to Sandra Hörath (vwl6@uni-bayreuth.de) before **21 October 2022**, indicating your study program, semester of study, previous knowledge in statistics, empirical economics, and international trade. Further please give **three preferences for topics**, including at least one from the list of core topics (see below). For further questions concerning course details please contact Hanna Adam (hanna.adam@uni-bayreuth.de).

### 2 Requirements and Assessed Course Work

#### Requirements

In order to participate in the course, interest in and good knowledge of empirical economics at the level of Advanced Empirical Economics I is expected. Ideally, this includes knowledge of R, the programs to be used in this course. Further, knowledge of international trade theory, for example at the level of

Advanced Trade Theory (Theorie und Empirie des internationalen Handels), is helpful.

Assessed Course Work

The course work consists of:

- Active course participation during the presentations classes.
- The presentation of your allocated topic (of about 45 minutes).
- A term paper about one possible empirical, ex-ante analysis, such as TTIP, EU-Mercosur agreement, GREXIT, BREXIT, the effects of sanctions,.... The term paper should consist of about 20,000 characters (including spaces, excluding references and figures). The specific topics for the term papers are discussed at the end of the presentations. The date of submission of the term paper will be March 31st, 2023 (of course an earlier submission is possible at any time)

#### Language and Formal Requirements

The language of the course (and hence your presentation and presentation slides) is English. Hence, all the literature is in English. Your term paper can be written in German or in English, even though we suggest to write it in English. For more details concerning the formal requirements of the written assignments please see the style sheet available in German (Hinweis zur Formatierung von Seminar- und Abschlussarbeiten) and in English (Formal requirements for term papers and Bachelor's/Master's theses at the Chair of Economics VI: Empirical Economics).

# 3 Target Group

The course addresses students from the following degree courses:

• Betriebswirtschaftslehre (Master's): as "Advanced Empirical Economics II" (as part of the bloc "B 1 Forschungsmethoden" or as part of the bloc "V Empirische Wirtschaftsforschung").

- Economics (Master's): as "Advanced Empirical Economics II" (which is part of the specialization "Modelltheorie") or as substitute for "International Labor Markets" (which is part of the specialization "Internationale Wirtschaft") or as "Individueller Schwerpunkt".
- Internationale Wirtschaft und Governance (Master's): as "Advanced Empirical Economics II" (which is part of the specialization "Ökonomische Modellbildung und empirische Analyse") or as substitute for "International Labor Markets" (which is part of the bloc "Internationale Wirtschaft") or as "Individueller Schwerpunkt".
- Philosophy and Economics (Master's): as electives course.
- History and Economics (Master's): as specialization.

Additionally, interested Bachelor's students may participate.

### 4 Reading List

As stated before, the course tries to give you an insight into own research. This explains to a good part the selection of topics and papers.

In order to have a common base for discussion in class, you are all required to read the *Advanced Guide to Trade Policy Analysis* by Yotov, Piermartini, Monteiro, and Larch (2016), which can be freely downloaded from https://vi.unctad.org/tpa/web/vol2/vol2home.html.

As further useful general background, we provide the following reading list:

- A hand-out with a model description and formulas used for the counterfactual analysis.
- Head and Mayer (2014).

## 5 Presentation Topics

Please note that when you indicate your three preferences for topics, you have to choose at least one from the list of core topics. Depending on the

number of participants, topics may be allocated to teams of two. You are therefore also free to indicate potential partners for the presentation topic.

#### 5.1 Core Topics

- 1. General idea and an early application (main paper: Tinbergen, 1962, Appendix VI).
- 2. Theoretical foundation (main paper: Anderson and van Wincoop, 2003).
- 3. Theory-consistent estimation: fixed effects (main paper: Head and Mayer, 2014).
- 4. Zero trade flows and heteroskedasticity (main paper: Santos Silva and Tenreyro, 2006).
- 5. Taking endogeneity into account: estimating the effect of trade policy (main papers: Baier and Bergstrand, 2007; Bergstrand, Larch, and Yotov, 2015).
- 6. Trade and welfare effects in general equilibrium (main papers: Anderson, Larch, and Yotov, 2018; Fally, 2015).

# 5.2 Further Topics

- 1. Gravity with high-dimensional fixed effects (main paper: Larch, Wanner, Yotov, and Zylkin, 2018)
- 2. Gravity for trade and growth (main paper: Anderson, Larch, and Yotov, 2020)
- 3. Gravity for trade and FDI (main paper: Anderson, Larch, and Yotov, 2019)
- 4. Gravity with CO<sub>2</sub> emissions (main paper: Larch and Wanner, 2017)
- 5. Gravity with multiple sectors (main paper: Caliendo and Parro, 2015)

- 6. Gravity with extensive margin (main paper: Egger, Larch, Staub, and Winkelmann, 2011)
- 7. Gravity with unemployment (main paper: Heid and Larch, 2016)
- 8. International trade and production data (main paper: Borchert, Larch, Shikher, and Yotov, 2020)
- 9. Estimation of disaggregated gravity (main paper: Borchert, Larch, Shikher, and Yotov, 2020)
- 10. Estimating nondiscriminatory trade policies (main paper: Heid, Larch, and Yotov, 2021)
- 11. Country-specific institutions and trade (main paper: Beverelli, Keck, Larch, and Yotov, 2018)
- 12. Varying deepness of regional trade agreements (main papers: Dür, Baccini, and Elsig, 2014; Baier, Yotov, and Zylkin, 2019)
- 13. Trade and welfare effects of GATT/WTO membership (main paper: Felbermayr, Larch, Yalcin, and Yotov, 2020)
- 14. Using time-interval data for estimation (main paper: Egger, Larch, and Yotov, 2020)
- 15. EU-Turkey Customs Union (main paper: Larch, Schmeißer, and Wanner, 2020)
- 16. The effects of sanctions in the energy and mining sector (main paper: Larch, Shikher, Syropoulos, and Yotov, 2022)

### 6 Overview of Important Dates

- 21 October 2022: registration deadline via email.
- 27 October 2022, 2–4pm: compulsory introductory meeting, allocation of presentation topics.

- 4 November 2022: registration deadline for seminar "examination" on cmlife (necessary for definitive participation).
- 14 December 2022: submission deadline for presentation slides via elearning.
- 16–17 December 2022, 9am–6pm: student presentations.
- 19 December 2022, 8:30am–1pm: potential computer tutorial.
- 31 March 2023: submission deadline for term papers.

#### References

- Anderson, J. E., M. Larch, and Y. V. Yotov (2018): "GEPPML: General Equilibrium Analysis with PPML," *The World Economy*, 41(10), 2750–2782.
- ——— (2019): "Trade and Investment in the Global Economy: A Multicountry Dynamic Analysis," *European Economic Review*, 120, 103–311.
- ———— (2020): "Transitional Growth and Trade with Frictions: A Structural Estimation Framework," *The Economic Journal*, 130(630), 1583–1607.
- ANDERSON, J. E., AND E. VAN WINCOOP (2003): "Gravity with Gravitas: A Solution to the Border Puzzle," *American Economic Review*, 93(1), 170–192.
- Baier, S., and J. 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.
- BERGSTRAND, J., M. LARCH, AND Y. V. YOTOV (2015): "Economic Integration Agreements, Border Effects, and Distance Elasticities in the Gravity Equation," *European Economic Review*, 78, 307–327.
- Beverelli, C., A. Keck, M. Larch, and Y. V. Yotov (2018): "Institutional Quality, Trade and Development: A Quantitative Analysis," *CESifo Working Paper No. 6920*.
- BORCHERT, I., M. LARCH, S. SHIKHER, AND Y. V. YOTOV (2020): "Disaggregated Gravity: Benchmark Estimates and Stylized Facts from a New Database," USITC Economics Working Paper Series 2020–06–A.

- Caliendo, L., and F. Parro (2015): "Estimates of the Trade and Welfare Effects of NAFTA," *Review of Economic Studies*, 82(1), 1–44.
- DÜR, A., L. BACCINI, AND M. ELSIG (2014): "The Design of International Trade Agreements: Introducing a New Database," *Review of International Organizations*, 9(3), 353–375.
- EGGER, P., M. LARCH, K. STAUB, AND R. WINKELMANN (2011): "The Trade Effects of Endogenous Preferential Trade Agreements," *American Economic Journal: Economic Policy*, 3(3), 113–143.
- EGGER, P., M. LARCH, AND Y. V. YOTOV (2020): "Gravity-Model Estimation with Time-Interval Data: Revisiting the Impactof Free Trade Agreements," CESifo Working Paper No. 8553.
- FALLY, T. (2015): "Structural Gravity and Fixed Effects," Journal of International Economics, 97(1), 76–85.
- Felbermayr, G., M. Larch, E. Yalcin, and Y. V. Yotov (2020): "On the Heterogeneous Trade and Welfare Effects of GATT/WTO Membership," *CESifo Working Paper No. 8555*.
- Head, K., and T. Mayer (2014): "Gravity Equations: Workhorse, Toolkit, and Cookbook," Chapter 3 in the Handbook of International Economics Vol. 4, eds. Gita Gopinath, Elhanan Helpman, and Kenneth S. Rogoff, Elsevier Ltd., Oxford, pp. 131–195.
- Heid, B., and M. Larch (2016): "Gravity with Unemployment," *Journal of International Economics*, 101, 70–85.
- Heid, B., M. Larch, and Y. V. Yotov (2021): "Estimating the Effects of Non-discriminatory Trade Policies within Structural Gravity Models," *Canadian Journal of Economics*, 54(1), 376–409.
- LARCH, M., A. F. SCHMEISSER, AND J. WANNER (2020): "A Tale of (Almost) 1001 Coefficients: The Deep and Heterogeneous Effects of the EU-Turkey Customs Union," *Journal of Common Market Studies*, forthcoming.

- LARCH, M., S. SHIKHER, C. SYROPOULOS, AND Y. V. YOTOV (2022): "Quantifying the Impact of Economic Sanctions on International Trade in the Energy and Mining Sectors," *Economic Inquiry*, 60(3), 1038–1063.
- LARCH, M., AND J. WANNER (2017): "Carbon Tariffs: An Analysis of the Trade, Welfare, and Emission Effects," *Journal of International Economics*, 109, 195–213.
- LARCH, M., J. WANNER, Y. V. YOTOV, AND T. ZYLKIN (2018): "Currency Unions and Trade: A PPML Re-assessment with High-dimensional Fixed Effects," Oxford Bulletin of Economics and Statistics, 81(3), 487–510.
- SANTOS SILVA, J., AND S. TENREYRO (2006): "The Log of Gravity," *Review of Economics and Statistics*, 88(4), 641–658.
- TINBERGEN, J. (1962): Shaping the World Economy: Suggestions for an International Economic Policy. The Twentieth Century Fund, New York.
- YOTOV, Y. V., R. PIERMARTINI, J. MONTEIRO, AND M. LARCH (2016): An Advanced Guide to Trade Policy Analysis: The Structural Gravity Model. United Nations and World Trade Organization, Geneva, Switzerland, available for download at http://vi.unctad.org/tpa/index.html.