

## ARTNeT Advanced Workshop on Analysing Trade and Trade Policy with the Structural Gravity Model

14-29 December 2020 (virtual)

### **Course Description**

The goal of the workshop is to serve as a practical guide for trade policy analysis with the structural gravity model, i.e., the workhorse model in international trade. The course traces the evolution of the gravity model from its initial a-theoretical applications to the most recent structural developments, e.g., dynamic gravity, and it offers a comprehensive and balanced approach between theory and empirics. Rigorous theoretical exposition is combined with a series of applications and empirical exercises, including estimation of the partial and the general equilibrium effects of regional trade agreements and changes in MFN tariffs within the same theory-consistent framework. The workshop will also be used to launch the recently developed R-version of the structural gravity code – developed and presented by Mauricio Andres Vargas Sepulveda.

### **About the course convenor**

Yoto V. Yotov is a Professor at the School of Economics of the LeBow College of Business at Drexel University (Philadelphia, USA) and a Research Professor at the Center for International Economics of the ifo Institute, Leibniz Institute for Economic Research at the University of Munich. His professional interests are focused in the area of international trade and trade policy with emphasis on structural gravity modeling and estimation. Prof. Yotov has extensive experience in consulting for international organizations and governments around the world. He is a world-renowned expert on structural gravity modelling, and his short courses on the topic are in high demand by policymakers, academics, and staff of international organizations.

### **Special note**

Please note that places are strictly limited and the selection of participants will be based on the quality of submitted applications. Due to the limited spaces, we kindly ask you to commit to fully attending each lecture (including paying attention), as well as allocate time for self-studying in between lectures. If you are not sure you will be able to fully attend each lecture, please do not apply. Course materials will be provided to the selected participants, but recordings of the sessions will not be made available after the lectures.

### **Tentative Programme<sup>1</sup>**

(as of 3 December 2020, all time are in Indochina Time (UTC+7))

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| <b>14-Dec-2020</b><br>14:00 – 16:30 | <b>Lecture 1:</b> The Gravity Model of International Trade: Introduction and Theoretical Foundations.          |
| <b>18-Dec-2020</b><br>14:00 – 16:30 | <b>Lecture 2:</b> Estimating Structural Gravity: Challenges, Solutions, and Applications.                      |
| <b>21-Dec-2020</b><br>14:00 – 16:30 | <b>Lecture 3:</b> Gravity Applications. Hands-on Session on Estimating Gravity. (Stata & R required)           |
| <b>28-Dec-2020</b><br>14:00 – 17:00 | <b>Lecture 4:</b> General Equilibrium Gravity Analysis. Theory, Applications Hands-on Session (Stata required) |
| <b>29-Dec-2020</b><br>14:00 – 16:30 | <b>Lecture 5:</b> Nested Gravity: A Dynamic Gravity Model of Trade and Growth. Trade and FDI with Dynamics.    |

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<sup>1</sup> For the version of the latest programme, please go to <https://unescap.org/events/workshop-analysing-trade-and-trade-policy-structural-gravity-model>

## Readings:

### **Required Readings**

The course is developed around the following book and the accompanying two working papers, which are extended versions of the book's two main chapters. The book, along with data and Stata codes can be downloaded for free at <https://vi.unctad.org/tpa/web/vol2/vol2home.html>

[1] "An Advanced Guide to Trade Policy Analysis: The Structural Gravity Model" Yotov, Y. V., R. Piermartini, J. A. Monteiro, and M. Larch. Co-published by UNCTAD and WTO, 2016.

[2] "Estimating Trade Policy Effects with Structural Gravity", Piermartini, R. and Y. V. Yotov, 2016.

[3] "General Equilibrium Trade Policy Analysis with Structural Gravity", Larch, M. and Y. V. Yotov, 2016.

#### For those who wish to conduct analysis in R:

[4] "The Gravity Model of International Trade: A User Guide (R Version)" Shephard, B., Doytchinova, Hrisyana and Kravchenko, A.. Bangkok: United Nations ESCAP. Available at <https://www.unescap.org/resources/gravity-model-international-trade-user-guide-r-version>

[5] "ESCAP Online Training on Using R for Trade Analysis" Available at <https://www.unescap.org/resources/escap-online-training-using-r-trade-analysis>

### **Highly Recommended Readings:**

The required readings cover a large number of important related studies and I refer the interested reader to the bibliography sections of the above papers. The following are some influential academic papers that are most closely related to the course material.

[1] "Gravity with Gravitas: A Solution to the Border Puzzle" Anderson, J. E., and E. van Wincoop. 2003. *American Economic Review*, 93(1): 170–192.

[2] "Technology, Geography, and Trade" Eaton, J. and S. Kortum, 2002. *Econometrica*, vol. 70(5), pages 1741-1779.

[3] "Estimates of the Trade and Welfare Effects of NAFTA" Caliendo L., and F. Parro *The Review of Economic Studies*, Volume 82, Issue 1, 1 January 2015, Pages 1–44.

[4] "The Changing Incidence of Geography" Anderson, J. E. and Y. V. Yotov, 2010. *American Economic Review*, vol. 100(5), pages 2157-86.

[5] "Distorted Gravity: The Intensive and Extensive Margins of International Trade" Thomas Chaney. *American Economic Review*, 98(4), pp. 1707-21.

[6] "The Log of Gravity" Santos Silva, J.M.C. and S. Tenreyro, 2006. *Review of Economics and Statistics*, 88(4): 641–658.

[7] "Estimating General Equilibrium Trade Policy Effects: GE PPML" Anderson, J. E., M. Larch, and Y. V. Yotov, 2015. CESifo Working Paper Series 5446.

### **Highly Recommended Survey Readings.**

The following are excellent surveys that complement the main reading materials for the course.

[1] "The Gravity Model" Anderson, J.E. 2011. *Annual Review of Economics*, 3:133-60.

[2] "Gravity for Dummies and Dummies for Gravity Equations" Baldwin, R. and D. Taglioni, 2006. NBER Working Papers 12516.

[3] "Trade Theory with Numbers: Quantifying the Consequences of Globalization" Costinot, A., and A. Rodríguez-Clare, 2014. in the *Handbook of International Economics Vol. 4*, eds. G. Gopinath, E. Helpman, and K. Rogoff.

[4] "Gravity Equations: Workhorse, Toolkit, and Cookbook" Head, K. and T. Mayer, 2014. in the *Handbook of International Economics Vol. 4*, eds. G. Gopinath, E. Helpman, and K. Rogoff.

[5] "Practical Guide to Trade Policy Analysis" World Trade Organization and United Nations Conference on Trade and Development, 2012.