Global Economy: Theories and Applications

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1 Overview

Recent intensification of globalisation has made it necessary to account for global linkages and interdependencies, both from economy theory and empirical perspectives. This course considers both theoretical and empirical analyses of the *causes* and *consequences* of increasing international economic integration, focusing on **global macroeconomic models with microfoundations**, and their empirical counterparts. In particular, we will cover state-of-the-art models on trade, labour, investment, and technology diffusion.

This course is split into *three* parts. *First*, we begin by reviewing workhorse models of modern international trade. In particular, we will cover the stochastic multi-country extension of Ricardian trade model due to Eaton and Kortum (2002). The main focus, nevertheless, will be on models of international trade in which countries trade to exploit economies of scale, and in which production is imperfectly competitive. The models for this part include Melitz (2003), Helpman et al. (2010); Helpman and Itskhoki (2010), among others. We introduce a number of layers of heterogeneity: firms, workers, and countries will all be allowed to differ.

The *second* part of the course reviews a set of applications of these models. First, we look at the effects of trade openness (globalisation) on labor market outcomes, innovation and growth. On the one hand, we look at how increased trade and interdependencies among countries affect labour market conditions. On the other hand, we study the effects of trade on the incentives to innovate and on the growth performance of modern economies. Next, we look at the implications of the core models for the empirical analysis of bilateral trade flows, introducing students to the rich and diverse literature on international trade gravity. Statistical details in the empirical applications will also be discussed. We will link trade theory to international finance, and discuss how portfolio and direct investment flows can be generated using gravity framework (drawing from Okawa and van Wincoop, 2012 and Araujo et al., Forthcoming). Time permitting, we may also discuss intermediate trade (global value chains), an increasingly important aspect of global interlinkages.

The *third* part leads to the economic policy implications and empirical techniques that account for global economic dependencies. Our discussions will focus on the challenges and opportunities that globalisation creates for policy makers. For instance, we will address questions of economic reforms on macroeconomies when global linkages are carefully incorporated into empirical models (for recent applications, refer to Lastauskas and Stakenas (2015, 2016), among others). In order to understand the empirical literature, we will cover some bits and pieces from the literature on computable general equilibrium models and global vector autoregressions (GVAR), which are designed to explicitly model the economic and financial interdependencies at the national and international levels. The idea is quite simple: country (or other relevant economic entity) specific vector error-correcting models are estimated, where the domestic variables are related to corresponding foreign variables constructed exclusively to match the international trade (or some other, theoretically mo-

tivated) pattern of the country under consideration. The individual country models are then linked in a consistent manner so that the GVAR model is solved for the world as a whole. The GVAR methodology is, therefore, useful for evaluating the importance of different shocks and channels of transmission mechanisms, accounting for global factors, general equilibrium effects, and as a tool to conduct counterfactual analysis. This approach has already found applications in macro, international economics, financial applications, forecasting, and policy analysis.

2 Background Knowledge

I will assume that participants are comfortable with intermediate macroeconomics, microeconomics and econometrics. A good reference for the first course in graduate macroeconomics is David Romer's Advanced Macroeconomics; microeconomics – Hal Varian's Microeconomic Analysis; a useful reference for intermediate econometrics is either Stock and Watson (2011) or Wooldridge (2008). Familiarity with international economics at the level of Krugman et al. (2015) is recommended but not required. Knowledge of mathematical statistics and optimisation techniques will prove useful but not a formal requirement of the course.

3 Textbooks

There is no one required text but useful materials can be found in

- Feenstra (2004, Advanced International Trade: Theory and Evidence)
- Helpman (2011, Understanding Global Trade)
- Obstfeld and Rogoff (1996, Foundations of International Macroeconomics)
- Pesaran (2015, Time Series and Panel Data Econometrics),

GVAR methodology and its applications are well covered in

- Garratt et al. (2006, Global and National Macroeconometric Modelling: A Long-Run Structural Approach)
- di Mauro and Pesaran (2013, The GVAR Handbook: Structure and Applications of a Macro Model of the Global Economy for Policy Analysis)

The first text by Garratt et al. (2006) is most useful for technical insights whereas the second one exemplifies wide uses of the GVAR methodology. There will also be discussions on applications and uses of GVAR toolbox, accessible from this site.

Note on Problem Sets

Theory is covered to provide useful background for the practical sessions. There will be 3-4 problem sets in total which cover each part of the course.

4 Miscellaneous

We will also make use of a number of research papers, not mentioned in the course description. These readings will motivate much of our theoretical discussions. A set of sample readings include: Anderson and van Wincoop (2003), Garratt et al. (2003), Ghironi and Melitz (2005), Gobillon and Magnac (2015), Pesaran et al. (2004), Dees et al. (2007), Rebucci et al. (2012).

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