Modeling and Testing Informational Learning: Human Capital and Technology

Futoshi Yamauchi
International Food Policy Research Institute, Washington DC
Foundation for Advanced Studies on International Development, Tokyo
National Graduate Institute for Policy Studies, Tokyo

This lecture reviews how informational learning can be modeled in the framework of Bayesian statistics, and examines empirical strategies to identify social learning. Motivation that we have throughout the lecture is quite empirical; how can we assess social learning empirically with interpretable frameworks. Note that examples are presented to have a sense of modeling and testing such effects.

In the first day, we review Bayesian learning, starting with actual observations on learning by doing, then tools to economic examples. The second day critically examines identification problems that we encounter when testing peer effects associated with social learning. In the third and fourth days, we study examples in technology adoption and human capital investment respectively.

We do not have a textbook but the following basic selected reference (articles) for each topic. Other related papers are also introduced during the lecture.

Schedule:

1. Bayesian Learning [November 29: 2hrs]
    1.1 Learning by doing – Empirical observations
        Jovanovic and Nyarko (1995) *Brookings J* (*Microeconomics)*
    1.2 Bayesian updating
        Chamley (2004) Ch.2,3 *Rational Herds* (also for 1.3 and 1.4)
    1.3 Binary case
    1.4 Gaussian case
        1.4.1 Mean
        1.4.2 Quadratic loss
    1.5: Examples
        Prendergast and Stole (1996) *JPE*
        Jovanovic and Nyarko (1996) *Econometrica*

2. Empirical Strategy [December 6: 2hrs]
    2.1 Identification problem – Reflection
        Manski (1993) *RES*
    2.2 Peer effects
        2.2.1 Conventional way
            Case and Katz (1991) *NBER*, Borjas (1992) *QJE*
        2.2.2 Random experiments
            Sacerdte (2001) *QJE*, and others TBA
        2.2.3 Instruments for network
            Munshi (2003) *QJE*, and others TBA

3. Technology Adoption [December 13: 2hrs]
   3.1 Non-Bayesian: Reduced form
      Munshi (2004) *JDE*
   3.2 Input target model
      Foster and Rozensweig (1995) *JPE*
   3.3 Structural Estimation
      Besley and Case (1994) Princeton
   3.3 Information network
      Conley and Udry (2004) Yale

4. Human Capital Investment [December 20: 2hrs]
   4.1 General issues
   4.2 Returns to schooling
      Yamauchi (2003) IFPRI
   4.3 Migration decision
      Kimura (2004) Kyoto, Johnson (1978) *JPE*
   4.4 Assimilation process
      Yamauchi (2004) *JDE*