

Econ 890: Partial Identification: Theory and Applications in Industrial Organization

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Adam Rosen†

Spring Semester, 2020
MW 15:05 – 16:20, Social Sciences 327.

Synopsis

This module will focus on the use of partially identifying models for applications in industrial organization, investigating a mix of methodological, theoretical, econometric and applied issues. Particular areas of application in the IO literature will comprise a selection of research employing various models of auctions, entry, matching, and demand estimation. For each area of application, we will cover both the econometric theory underlying the partial identification analysis employed, as well as the motivation for the use of the partially identifying model in empirical practice. We will discuss what features of these applications have made the use of such models successful, and highlight their ability to aid the credibility of empirical findings, for example by allowing for the possibility of multiple equilibria, or by dispensing with strong restrictions on unobservable heterogeneity that do not follow from economic theory.

Background

This is a class for second year PhD students interested in research in microeconometrics or empirical IO using structural models, or both. We expect all of you to have micro background on the order of what is covered in the first year micro sequence and Mas-Colell, Whinston, and Green (1995), and econometrics background on the order of what is covered in the first years econometrics sequence. In addition, this class will require you to be able to program. You are expected to have a working knowledge of MATLAB and STATA, or equivalent software (such as R, Julia, Java, Python, C++, whatever). However, it will be advantageous for you to settle on software that is part of the current equilibrium in economics.

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Office Hour

Allan Collard-Wexler: Sign up for office hours on website.

Adam Rosen: Thursdays 13:30 – 14:30, Social Sciences 221B.

Assessments

Course grades will be determined by a combination of problem sets, in class presentations of research papers, and a research proposal of approximately three to four pages.

Lecture Plan and Reading List

The schedule is tentative and subject to change.

- Allan**
Adam

 - Wednesday 8 January: Introduction and motivation. Multiple equilibria, incomplete models, and partial identification.
Primary references: Ho and Rosen (2017).
Supplementary references: Manski (1989, 2007), Pakes (2010, 2014), Tamer (2010).
- Adam**

 - Monday 13 January: Identification, Partial Identification, Generalized IV Models. Primary references: Chesher and Rosen (2020), Molinari (2020).
Supplementary references: Cowles 10, Manski (2003, 2007), Matzkin (2007), Tamer (2010), Chesher and Rosen (2017a).
- Adam**

 - Wednesday 15 January: Identification, Partial Identification, Generalized IV Models.. References: Same as previous lecture.
For presentation: Manski (1990).
 - **Problem Set 1: Partial Identification.**
 - Monday 20 January: MLK Jr holiday. No class.
- Allan**

 - Wednesday 22 January: Empirical work on auctions (1).
Primary references: Hendricks and Porter (1988) and Porter and Zona (1993).
Supplementary references: Myerson (1981), Klemperer (2004) (first chapter in particular at https://www.nuff.ox.ac.uk/users/klemperer/virtualbook/07_chapter1.pdf).
John Asker's Lecture notes on Auctions (<http://www.johnasker.com/Auctions%20I.pdf>).
- Allan**

 - Monday 27 January: Empirical work on auctions (2).
Primary references: Laffont, Ossard, and Vuong (1995), Guerre, Perrigne, and Vuong (2000).

Supplementary references: Paarsch, Hong, et al. (2006), Athey and Haile (2007), Hendricks and Porter (2007).

For presentation: Asker (2010).

- Allan**
- Wednesday 29 January: Empirical work on auctions (3): recent applications.
 Primary references: Bhattacharya, Roberts, and Ordin (2019) and Cassola, Hortaçsu, and Kastl (2013).
 Supplementary references: Hortaçsu and McAdams (2010).
- Adam**
- Monday 3 February: Incomplete models of auctions (1).
 Primary references: Haile and Tamer (2003).
 Supplementary references: Athey and Haile (2002), Gentry and Li (2014), Chesher and Rosen (2017a, 2017b), Freyberger and Larsen (2017).
- Adam**
- Wednesday 5 February: Incomplete models of auctions (2).
 References: Same as previous lecture.
 For presentation: Aradillas-Lopez, Gandhi, and Quint (2013).
 - **Problem Set 2: Auctions.**
- Adam**
- Monday 10 February: Incomplete models of auctions (3).
 References: Same as previous two lectures.
- Allan**
- Wednesday 12 February: Entry models (1).
 Primary references: Mankiw and Whinston (1986), Bresnahan and Reiss (1990, 1991a, 1991b).
 Supplementary references: Sutton (1991), Syverson (2004), Dixit and Stiglitz (1977).
- Allan**
- Monday 17 February: Entry models (2).
 References: Same as previous lecture.
 For presentation: Backus (2019).
- Allan**
- Wednesday 19 February: Entry models (3).
 Primary references: Berry (1992).
 Supplementary references: none.
- Allan**
- Monday 24 February: Entry models (4).
 Primary references: Mazzeo (2002), Seim (2006).
 Supplementary references: Bajari, Hong, and Ryan (2010)
 For presentation: TBD.
- Adam**
- Wednesday 26 February: Incomplete models of entry (1).
 Primary references: Tamer (2003), Ciliberto and Tamer (2009).
 Supplementary references: Berry and Tamer (2007), Aradillas-López and Tamer (2008),

Aradillas-López (2010), Beresteanu, Molchanov, and Molinari (2011), Galichon and Henry (2011), Kline (2016).

For presentation: Heckman (1978).

- **Problem Set 3: Entry Models.**

Adam

- Monday 2 March: Inference in incomplete models. (1)

Primary references: Ciliberto and Tamer (2009), Chernozhukov, Hong, and Tamer (2007).

Supplementary references: Rosen (2008), Andrews and Soares (2010), Holmes (2011), Beresteanu and Molinari (2008), Bugni (2010), Canay (2010), Romano and Shaikh (2010), Canay and Shaikh (2017).

Allan

- Wednesday 4 March: Application of incomplete entry models using moment inequalities .

Primary references: Holmes (2011).

Supplementary references: Eizenberg (2014), Wollmann (2018).

For presentation: Ho (2009).

- Monday 9 March: No class. Spring Break.
- Wednesday 11 March: No class. Spring Break.

Adam

- Monday 16 March: Incomplete models of entry (2).

Primary references: Chesher and Rosen (2019).

Supplementary references: Berry and Tamer (2007), Aradillas-López and Tamer (2008), Aradillas-López (2010), Beresteanu, Molchanov, and Molinari (2011), Galichon and Henry (2011), Kline (2016).

Adam

- Wednesday 18 March: Incomplete models of entry (3).

References: Same as last lecture.

For presentation: Kline and Tamer (2012).

- **Problem Set 4: Inference in Incomplete Models.**

Adam

- Monday 23 March: Inference in incomplete models. (2)

Primary references: Imbens and Manski (2004), Stoye (2009), Rosen (2008).

Supplementary references: Beresteanu and Molinari (2008), Bugni (2010), Canay (2010), Romano and Shaikh (2010), Canay and Shaikh (2017).

Adam

- Wednesday 25 March: Inference with conditional moment inequalities.

Primary references: Andrews and Shi (2013), Chernozhukov, Lee, and Rosen (2013)

Supplementary references: Chernozhukov, Chetverikov, and Kato (2013), Armstrong (2014, 2015), Bugni, Canay, and Shi (2017), Kaido, Molinari, and Stoye (2017), Belloni, Bugni, and Chernozhukov (2018), Chen, Christensen, and Tamer (2018), Chetverikov (2018). For presentation: Andrews and Soares (2010)

- Allan**
- Monday 30 March: Partially identifying models of demand.
Primary references: Nevo (2001), Pakes (2010) Ho and Pakes (2014).
Supplementary references: Berry, Levinsohn, and Pakes (1995), Griliches and Hausmann (1986), Blundell, Browning, and Crawford (2008), Nevo and Rosen (2012), Blundell, Kristensen, and Matzkin (2014), Hausman and Newey (2016), Kitamura and Stoye (forthcoming).
- Adam**
- Wednesday 1 April: IV models for discrete choice.
Primary references: Chesher, Rosen, and Smolinski (2013).
Supplementary references: Manski (2007b), Chesher (2010), Chesher and Smolinski (2012), Chesher and Rosen (2020), Chesher, Rosen, and Siddique (2019).
- Allan**
- Monday 6 April: Partially Identifying Models of Networks.
Primary references: .
Supplementary references: Ishii (2005).
 - Wednesday 8 April: Open.
 - Monday 13 April: Open.
 - Wednesday 15 April: Open.

References

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