

**SURV 650: ECONOMIC MEASUREMENT
FALL 2010**

Professor Katharine G. Abraham
1218 LeFrak Hall
University of Maryland
College Park, MD 20742
301-405-1004 (telephone)
301-314-7912 (FAX)
kabraham@survey.umd.edu

Class schedule:
Wednesday 9:30 a.m.-12:10 p.m.

Class location:
BLS Conference Center

Office hours: By appointment

Course Overview

This course is designed as an introduction to the field of economic measurement, taught at the graduate level. Sound economic data are of critical importance to policymakers, the business community, and others. The course will emphasize the economic concepts that underlie key economic statistics and the translation of those concepts into operational measures. Topics to be addressed will include business survey sampling; the creation of business survey sampling frames; the collection of data from businesses; employment statistics; price statistics; output and productivity measures; the national accounts; and the statistical uses of administrative data. Lectures and course readings assume some prior exposure to statistical methods and the tools of economic analysis.

Some of the readings on the syllabus are meant to be read carefully; others are meant to be skimmed or read selectively. Readings marked with a "*" are optional. Most weeks, students in the class will be assigned a short exercise to complete. These are designed to reinforce or amplify the concepts covered during the class session and will be due at the start of the following week's class. There also will be a three-hour take-home midterm exam, to be handed out on October 20 and returned on October 27, and a take-home final exam, to be distributed on December 8 and returned by December 15. Final grades will be based 30 percent on the homework assignments, 30 percent on the midterm, and 40 percent on the final exam. Class participation will determine grades in borderline cases.

The course website can be accessed at www.jpsm.org/SURV650. Wherever possible, links to the course readings have been included on the syllabus. Class handouts, exercise assignments and exercise solutions also will be posted to the class website.

Course Schedule

September 1 Users and Uses of Federal Economic Statistics

Clea Benson, "Not Enough Information," *CQ Weekly*, December 7, 2009, pp. 2810-2816.
[posted to class website]

Steve Landefeld and Dennis Fixler, "The Importance of Data Sharing to Consistent Macroeconomic Statistics," in *Improving Business Statistics Through Interagency Data*

Sharing: Summary of a Workshop, Washington, DC: National Academies Press, 2006, pp. 91-132. [available online at http://www.nap.edu/catalog.php?record_id=11738]

*Council of Economic Advisors, Chapter 1, pp. 25-38; Chapter 8, pp. 209-234; and Chapter 10, pp. 255-284, in *Economic Report of the President*, January 2010, [available online at http://www.gpoaccess.gov/eop/2010/2010_erp.pdf] (skim).

*Congressional Budget Office, Chapter 2, pp. 23-26, *The Budget and Economic Outlook*, January 2010. [available online at <http://www.cbo.gov/ftpdocs/108xx/doc10871/01-26-Outlook.pdf>] (skim)

September 8 Collecting Data from Businesses: Overview; Sample Frames

Robert M. Groves et al, Chapter 2, “Inference and Error in Surveys,” pp. 39-65, in *Survey Methodology*, Hoboken: John Wiley and Sons, 2004.

Rivière, P., “What Makes Business Statistics Special?” *International Statistical Review*, 2002, 70: 145-159. [available through University of Maryland library website]

Michael Searson and Tracy Farmer, “Quality of the Bureau of Labor Statistics’ Business Establishment List as a Sampling Frame,” Proceedings of the Survey Research Methods Section, American Statistical Association, 1997, pp. 11-20. [available online at http://www.amstat.org/sections/srms/Proceedings/papers/1997_002.pdf]

Edward Walker, “The Census Bureau’s Business Register: Basic Features and Quality Issues,” unpublished paper presented at the Joint Statistical Meetings, August 1997. [posted to class website]

September 15 Collecting Data from Businesses: Selecting the Survey Sample

Graham Kalton, *Introduction to Survey Sampling*, 1983, pp. 5-56.

Leslie Kish, Chapter 3, “Stratified Sampling,” *Survey Sampling*, New York: John Wiley and Sons, 1965, pp. 75-112.

Week of September 22 Collecting Data from Businesses: More on Survey Sampling

Esbjorn Ohlsson, “Coordination of Samples Using Permanent Random Numbers,” in *Business Survey Methods*, Brenda Cox et al, eds., New York: John Wiley and Sons, 1995, pp. 153-169.

Phillip S. Kott and Frederic A. Vogel, “Multiple-Frame Business Surveys,” in *Business Survey Methods*, Brenda Cox et al, eds., New York: John Wiley and Sons, 1995, pp. 185-203.

*Richard S. Sigman and Nash J. Monsour, "Selecting Samples from List Frames of Businesses," in *Business Survey Methods*, pp. 133-152.

September 29 Collecting Data from Businesses: Nonresponse Error

Willimack, D.K., Nichols, E., and Sudman, S., "Understanding Unit and Item Nonresponse in Business Surveys," in R.M. Groves, D.A. Dillman, J.L. Eltinge, and R.J.A. Little (eds.), *Survey Nonresponse*, New York: Wiley, 2002.

*Dave Elliot, "Weighting for Non-response: A Survey Researcher's Guide," London: Office of Population Censuses and Surveys, 1991.

October 6 Collecting Data from Businesses: Measurement Error

W.S. Edwards and D. Cantor, "Towards a Response Model in Establishment Surveys," in P.B. Biemer, R.M. Groves, L.E. Lyberg, N.A. Mathiowetz, and S. Sudman (eds.), *Measurement Errors in Surveys*, New York: Wiley, 1991, pp. 211-233.

*Diane K. Willimack and Elizabeth Nichols, "Building an Alternative Response Process Model for Business Surveys," *Proceedings of the Survey Research Methods Section, American Statistical Association*, August 5-9, 2001. [available online at <http://www.amstat.org/sections/srms/Proceedings/y2001/Proceed/00071.pdf>]

*Seymour Sudman, Diane K. Willimack, Elizabeth Nichols, and Thomas Mesenbourg, Jr., "Exploratory Research at the U.S. Census Bureau on the Survey Response Process in Large Companies," *Proceedings of the Second International Conference on Establishment Surveys*, June 17-21, 2000, pp. 327-335.

Paul P. Biemer and Ronald S. Fecso, "Evaluating and Controlling Measurement Error in Business Surveys," in *Business Survey Methods*, Brenda Cox et al, eds., New York: John Wiley and Sons, 1995, pp. 257-281.

Pascal Riviere, "General Principles for Data Editing in Business Surveys and How to Optimize It," paper prepared for UNECE Work Session on Statistical Data Editing, Helsinki, Finland, May 27-29, 2002. [posted to class website]

October 13 Monitoring the Labor Market: Employment and Unemployment

Bureau of Labor Statistics, *Handbook of Methods*, Chapter 1: Labor Force Data Derived from the Current Population Survey. [available online at <http://www.bls.gov/opub/hom/pdf/homch1.pdf>]

Bureau of Labor Statistics, *Handbook of Methods*, Chapter 2: Employment, Hours and Earnings from the Establishment Survey [available online at <http://www.bls.gov/opub/hom/pdf/homch2.pdf>]

Mary Bowler and Teresa L. Morisi, "Understanding the Employment Measures from the CPS and CES Survey," *Monthly Labor Review*, February 2006, 23-38. [available online at <http://www.bls.gov/opub/mlr/2006/02/art2full.pdf>]

*Katharine G. Abraham, John Haltiwanger, Kristin Sandusky and James Spletzer, "Exploring Differences in Employment between Household and Establishment Data," paper prepared for Princeton Data Improvement Initiative conference, Princeton, New Jersey, October 3-4, 2008; revised May 2010. [posted to class website]

Steve J. Davis and John Haltiwanger, "Measuring Gross Worker and Job Flows," in *Labor Statistics Measurement Issues*, John Haltiwanger, Marilyn E. Manser and Robert Topel, eds., Chicago: University of Chicago Press, 1998, pp. 77-122. [available online at <http://www.nber.org/chapters/c8358.pdf>]

*Richard L. Clayton and James R. Spletzer, "Business Employment Dynamics," in *Producer Dynamics: New Evidence from Micro Data*, Timothy Dunne, J. Bradford Jensen and Mark J. Roberts, eds., Chicago: University of Chicago Press, 2009, 125-147. [available online at <http://www.nber.org/chapters/c0484.pdf>]

*Steve Davis, Jason Faberman, John Haltiwanger and Ian Rucker, "Adjusted Estimates of Worker Flows and Job Openings in JOLTS," *Labor in the New Economy*, Katharine G. Abraham, James R. Spletzer and Michael Harper, eds., forthcoming [working draft available online at <http://www.nber.org/chapters/c10820.pdf>]

October 20 Prices and Price Indexes: Choosing an Index Number Formula

W.E. Diewert, "Index Numbers," in *Essays in Index Number Theory*, W.E. Diewert and A.G. Nakamura, eds., Amsterdam: Elsevier Science Publishers B.V., 1993, pp. 71-104.

*Pollak, Robert, *The Theory of the Cost of Living Index*, New York: Oxford University Press, 1989, Chapter 1.

Bureau of Labor Statistics, *Handbook of Methods*, Chapter 17: The Consumer Price Index [available online at <http://stats.bls.gov/opub/hom/pdf/homch17.pdf>]

Bureau of Labor Statistics, *Handbook of Methods*, Chapter 14: Producer Prices [available online at <http://www.bls.gov/opub/hom/pdf/homch14.pdf>]

October 27 Prices and Price Indexes: Accounting for Changes in the Product Mix

John S. Greenlees, "Consumer Price Indexes: Methods for Quality and Variety Change," *Statistical Journal of the United Nations ECE*, 2000, pp. 59-74. [available through the University of Maryland library website; working paper version posted to class website]

*Jack Triplett, "Chapter 2: Quality Adjustment in Conventional Price Index Methodologies," and "Chapter 3: Hedonic Price Indexes and Hedonic Quality Adjustments," *Handbook on Quality Adjustment of Price Indexes for Information and Communication Technology Products*, OECD, October 8, 2004. [available online at <http://www.oecd.org/dataoecd/37/31/33789552.pdf>]

Hausman, Jerry, "Cellular Telephone, New Products and the CPI," *Journal of Business and Economic Statistics*, April 1999, pp. 188-194. [available on-line through JSTOR or the University of Maryland library website]

November 3 The National Accounts: An Organizing Framework

Bureau of Economic Analysis, "Measuring the Economy: A Primer on GDP and the National Income and Product Accounts," September 2007. [available online at http://www.bea.gov/national/pdf/nipa_primer.pdf]

J. Steven Landefeld, Eugene P. Seskin and Barbara M Fraumeni, "Taking the Pulse of the Economy: Measuring GDP," *Journal of Economic Perspectives*, Spring 2008, 193-216. [posted to class website]

*Bureau of Economic Analysis, *Concepts and Methods of the U.S. National Income and Product Accounts*, October 2009. [available online at <http://www.bea.gov/national/pdf/NIPAhandbookch1-4.pdf>]

*Nordhaus, William and James Tobin, "Is Growth Obsolete?" in Milton Moss, ed., *The Measurement of Economic and Social Performance*, Studies in Income and Wealth, Vol. 38, National Bureau of Economic Research, 1973. [available online at <http://cowles.econ.yale.edu/P/cp/p03b/p0398a.pdf>]

November 10 Savings, Investment and the Measurement of Capital

Michael J. Harper, "Estimating Capital Inputs for Productivity Measurement: An Overview of Concepts and Methods," paper prepared for the Conference on Measuring Capital Stocks, Canberra, Australia, March 10-14, 1997. [available online at <http://www.oecd.org/dataoecd/8/46/2666894.pdf>]

*Charles R. Hulten and Frank C. Wykoff, "The Measurement of Economic Depreciation," in *Depreciation, Inflation, and the Taxation of Income From Capital*, Charles R. Hulten, ed., Washington, DC: Urban Institute Press, 1981, pp. 81-125.

*OECD, *Measuring Capital*, 2001. [available online at <http://www.oecd.org/dataoecd/61/57/1876369.pdf>]

Ana M. Aizcorbe, Carol E. Moylan and Carol A. Robbins, "Toward Better Measurement of Innovation and Intangibles," *Survey of Current Business*, January 2009, pp. 10-23. [available online at http://www.bea.gov/scb/pdf/2009/01%20January/0109_innovation.pdf]

*Dennis Fixler, "Accounting for R&D in the National Accounts," paper presented at ASSA meetings, San Francisco, January 2009. [available online at http://www.bea.gov/papers/pdf/Accounting%20for%20RD_02_09.pdf]

*Sandra E. Black and Lisa M. Lynch, "Measuring Organizational Capital in the New Economy," in *Measuring Capital in the New Economy*, Carol Corrado, John Haltiwanger and Daniel Sichel, eds., Chicago: University of Chicago Press, 2005, pp. 205-234.

November 17 Accounting for Productivity Growth

Jones, Charles I., *Introduction to Economic Growth*, New York: W.W. Norton, 2002, pp. 20-95 and pp. 199-203.

Bureau of Labor Statistics, *Handbook of Methods*, Chapter 10.: Productivity Measures: Business Sector and Major Subsectors, and Chapter 11: Industry Productivity Measures. [available online at <http://www.bls.gov/opub/hom/pdf/homch10.pdf> and <http://www.bls.gov/opub/hom/pdf/homch11.pdf>]

Dave Wasshausen and Brent R. Moulton, "The Role of Hedonic Methods in Measuring Real GDP in the United States," paper prepared for the 31st Committee on Statistical Information in the Economic and Social Spheres, Rome, Italy, October 12-13, 2006. [available online at <http://www.bea.gov/papers/pdf/hedonicGDP.pdf>]

*Stephen D. Oliner and Daniel E. Sichel, "The Resurgence of Growth in the Late 1990s: Is Information Technology the Story," *Journal of Economic Perspectives*, Fall 2000, pp. 3-22. [posted to class website]

*Carol Corrado, Charles Hulten, and Daniel Sichel, "Intangible Capital and U.S. Economic Growth," *Review of Income and Wealth*, September 2009, pp. 661-685. [available through the University of Maryland library website; working paper version available online at <http://www.federalreserve.gov/Pubs/feds/2006/200624/200624pap.pdf>]

Susan N. Houseman, "Outsourcing, Offshoring, and Productivity Measurement in U.S. Manufacturing," *International Labour Review*, 146(1-2), 2007, pp. 61-80. [working paper version available online at <http://www.upjohninst.org/publications/wp/06-130.pdf>]

Tuesday, November 24 Measurement of Service Sector Output

Mark K. Sherwood, "Difficulties in the Measurement of Service Outputs," *Monthly Labor Review*, March 1994, pp. 11-19. [available online at <http://www.bls.gov/opub/mlr/1994/03/art2full.pdf>]

William Gullickson and Michael J. Harper, "Possible Measurement Bias in Aggregate Productivity Growth," *Monthly Labor Review*, February 1999, pp. 47-67. [available online at <http://www.bls.gov/opub/mlr/1999/02/art4full.pdf>]

Dennis Fixler, Marshall Reinsdorf and George Smith, "Measuring the Services of Commercial Banks in the NIPAs," *Survey of Current Business*, September 2003, pp. 33-44.

Michael Christian, "Human Capital Accounting in the United States, 1994-2006"; Katharine G. Abraham, "Accounting for Investments in Formal Education"; and comments by Ellen McGrattan and Dale Jorgenson, *Survey of Current Business*, June 2010, pp. 30-56. [all available online at <http://www.bea.gov/scb/toc/0610cont.htm>]

Alison Rosen and David Cutler, "Measuring Medical Care Productivity: A Proposal for U.S. National Accounts," *Survey of Current Business*, June 2007, pp. 54-58. and Michael Christian, "Measuring the Output of Health Care in the United States," *Survey of Current Business*, June 2007, pp. 78-83. [both available online at http://www.bea.gov/scb/pdf/2007/06%20June/0607_health.pdf]

*David M. Cutler and Elizabeth Richardson, "Measuring the Health of the U.S. Population," *Brookings Papers on Economic Activity, Microeconomics* 1997, pp. 217-282. [available online through JSTOR or the University of Maryland library website]

*Zvi Griliches, ed., *Output Measurement in the Service Sectors*, Chicago: National Bureau of Economic Research, 1992. [chapters available for download at <http://www.nber.org/books/gril92-1/>]

December 1 Small Area Estimation

M. Ghosh and J.N.K. Rao, "Small Area Estimation: An Appraisal," *Statistical Science*, February 1994, pp. 55-93. [available online through JSTOR or the University of Maryland library website]

*J.N.K. Rao, *Small Area Estimation*, Hoboken, New Jersey: John Wiley and Sons, 2003.

*Constance F. Citro and Graham Kalton, *Small Area Income and Poverty Estimates: Priorities for 2000 and Beyond*, Washington, DC: National Academy Press, 2000.

December 8 Wrapup and review