

Applied Structural Microeconometrics:

Consumer Demand Methods applied to the Measurement of

Cost of Living, Cost of Children, Poverty, Social Welfare and Inequality Within and Across Households

Pre-Requisite Skills: algebra, introductory matrix algebra, introductory calculus, intermediate econometrics, intermediate statistics, and intermediate micro-economic theory.

Short Description:

In this course, you will read some classic papers, and some of my papers, in the literatures of consumer demand analysis as it applies to: the measurement of the cost of living and the cost of children; poverty, inequality and social welfare analysis; and new approaches to family economics that permit the analysis of inequality within and across households. You will also write an empirical paper using consumer demand analysis to answer some question that you are interested in.

Course Description:

Consumer demand analysis is as old as the sea, and lies at the core of micro-economic theory and general equilibrium theory. The basic object of interest is to model the consumer's choice of a set of continuous quantities when faced with a linear budget constraint.

What you get from this model depends on what you put into it. If you assume rationality in a classical sense, an estimated demand model allows you to estimate indifference curves and utility functions (up to monotonic transformations of utility). Therein lie tools to estimate cost-of-living (or inflation) indices, and consumer surplus measures in the face of price changes (such as soda taxes or carbon taxes).

If you assume interpersonal comparability of utilities, demand models may allow you to estimate equivalence scales, which can be used to 'control' for the cost of household characteristics when we measure poverty or inequality. Additionally, such scales allow one to engage in applied public economics: construct tax and transfer systems that are equitable even in the presence of heterogeneous households.

If you assume a model of the household, demand models may allow you to estimate the resources of each household member, and the economies of scale that households are able to exploit. This information illuminates within-household inequality, allowing us to estimate, for example, the rate of women's poverty in a place where women have poor access to household resources.

If you assume that goods are demanded discretely, and that prices are determined in general equilibrium, you get market-level demand analysis commonly used in empirical industrial organisation.

In this course, you will read some classic papers, and some of my papers, in these literatures, and write an empirical paper using consumer demand analysis to answer some question that you are interested in. I will make a recent Canadian household consumption micro-data quasi-panel available for your use in case you are troubled by data access issues.

Course Grading: This course will require short weekly assignments on the readings (10%), in-class presentations on the readings (10%), a term paper (30%), and a midterm (20%) and final exam (30%).

Readings:

Equivalence Scales

Lewbel and Pendakur 2007 (survey)

Pollack and Wales 1979 (conditional vs unconditional)

Blackorby and Donaldson 1993 (exactness)

Identification of Equivalence Scales

Racine primer on nonparametrics (nonparametrics)

Pendakur 1999 (shape-invariance)

Kouvoulatianos et al 2004 (other identification strategies)

Donaldson and Pendakur 2004 (other functional forms)

Consumption and Income Inequality

Pendakur 2002 (package: prices, equivalence scales, inequality)

Blundell and Preston 1997 (consumption vs income)

Aguiar and Bils 2015 (measuring consumption)

Unobserved Heterogeneity: random coefficients

Brown and Walker 1989 (random utility)

Beran and Hall 1992 (linear random coefficients)

Hoderlein, Klemela and Mammen 2010 (linear random coefficients)

Fox et al 2012 (random coefficients in discrete choice)

Lewbel and Pendakur 2015 (nonparametric random coefficients)

Collective Households

Vermeulen 2002 (survey)

Donni and Chiappori 2011 (survey)

Browning, Chiappori and Lewbel 2013 (demand analytic version)

Dunbar, Lewbel and Pendakur 2013 (new application)

IO

Akerberg et al pgs 1-35 (survey)

Nevo 2000 (survey)

Nevo 2001 (cereal)

Blow et al 2008 (characteristics models)

Wang 2015 (new application)

References

Akerberg, Daniel, et al. "Econometric tools for analyzing market outcomes." *Handbook of econometrics* 6 (2007): 4171-4276. https://scholar.google.com/scholar?output=instlink&q=info:TA1u3jS-V1oj:scholar.google.com/&hl=en&as_sdt=0.22&inst=5823668996110809182&scillfp=9337322148405561407&oi=lle

Aguiar, M. and Bils, M., 2015. Has consumption inequality mirrored income inequality?. *The American Economic Review*, 105(9), pp.2725-2756.

https://scholar.google.com/scholar?output=instlink&q=info:MVQBJ31ZKuAJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=13972429373587208412&oi=lle

Angrist, Joshua D., and Jörn-Steffen Pischke. *Mostly harmless econometrics: An empiricist's companion*. Princeton university press, 2008, chapter 3.
https://www.researchgate.net/profile/Joshua_Angrist/publication/51992844_Mostly_Harmless_Econometrics_An_Empiricist_Companion/links/00b4953344a9a0cb13000000.pc

Beran, R. and Hall, P., 1992. Estimating coefficient distributions in random coefficient regressions. *The annals of Statistics*, pp.1970-1984.
<http://www.jstor.org/stable/2242376>

Blackorby, C. and Donaldson, D., 1993. Adult-equivalence scales and the economic implementation of interpersonal comparisons of well-being. *Social Choice and Welfare*, 10(4), pp.335-361. https://scholar.google.com/scholar?output=instlink&q=info:CxtqfQlsmZQJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=16838651048516647471&oi=lle

Blow, L., Browning, M. and Crawford, I., 2008. Revealed preference analysis of characteristics models. *The Review of Economic Studies*, 75(2), pp.371-389.
https://scholar.google.com/scholar?output=instlink&q=info:Abj7z6dajz8J:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=10431565925083358066&oi=lle

Blume, Lawrence E., et al. "Identification of social interactions." *Available at SSRN 1660002* (2010). <http://tuvalu.santafe.edu/~leb/bbdi3web.pdf>

Blundell, R. and Preston, I., 1998. Consumption inequality and income uncertainty. *Quarterly Journal of Economics*, pp.603-640. <http://www.jstor.org/stable/2586914>

Also, Blundell, Preston, Pistaferri, AER 2008 is interesting: https://scholar.google.com/scholar?output=instlink&q=info:LmrZnP5GXOAJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=17162892397892718111&oi=lle

Brown, B.W. and Walker, M.B., 1989. The random utility hypothesis and inference in demand systems. *Econometrica: Journal of the Econometric Society*, pp.815-829.
<http://www.jstor.org/stable/1913773>

Browning, M., Chiappori, P.A. and Lewbel, A., 2013. Estimating consumption economies of scale, adult equivalence scales, and household bargaining power. *The Review of Economic Studies*, rdt019. https://scholar.google.com/scholar?output=instlink&q=info:qJa7_ob6thEJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=10553930402298594262&oi=lle

Donaldson, D. and Pendakur, K., 2004. Equivalent-expenditure functions and expenditure-dependent equivalence scales. *Journal of Public Economics*, 88(1), pp.175-208.
https://scholar.google.com/scholar?output=instlink&q=info:qCKPmGXDh9YJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=2470393219779751072&oi=lle

Donni, Olivier, and P.A. Chiappori, 2011, "Collective Household Models" in J.A. Molina (ed.), *Household Economic Behaviors*, International Series

on Consumer Science, DOI 10.1007/978-1-4419-9431-8_1. https://scholar.google.com/scholar?output=instlink&q=info:1bcKycl8s6oj:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=12020615536621541555&oi=lle

Dunbar, Geoffrey R., Arthur Lewbel, and Krishna Pendakur. "Children's resources in collective households: Identification, estimation, and an application to child poverty in Malawi." *American Economic Review* 103.1 (2013): 438-471. https://scholar.google.com/scholar?output=instlink&q=info:jJUnuPcq47cj:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=17160498524557016271&oi=lle

Fox, J.T., il Kim, K., Ryan, S.P. and Bajari, P., 2012. The random coefficients logit model is identified. *Journal of Econometrics*, 166(2), pp.204-212.
https://scholar.google.com/scholar?output=instlink&q=info:ccYuxa8cdn8J:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=10937592617052419112&oi=lle

Hoderlein, S., KlemelÃ, J. and Mammen, E., 2010. Analyzing the random coefficient model nonparametrically. *Econometric Theory*, 26(03), pp.804-837.
https://scholar.google.com/scholar?output=instlink&q=info:zfCQATxo6ZYJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=9959948562599667238&oi=lle

Koulovatianos, C., SchrÃ¶der, C. and Schmidt, U., 2005. On the income dependence of equivalence scales. *Journal of Public Economics*, 89(5), pp.967-996.
https://scholar.google.com/scholar?output=instlink&q=info:qoKkxY4lh9kJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=11241431889874625325&oi=lle

Lewbel, Arthur and Krishna Pendakur. 2009. "Tricks with Hicks: The EASI Demand System", *American Economic Review*. https://scholar.google.com/scholar?output=instlink&q=info:bj6JU9YelAJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=3962399280529211207&oi=lle

Lewbel, Arthur and Krishna Pendakur, 2007 "[New Palgrave \(2nd Edition\) entry on Equivalence Scales](#)". (right-click, save-as, open as pdf)

Lewbel, Arthur and Krishna Pendakur, 2015, Unobserved Preference Heterogeneity in Demand Using Generalized Random Coefficients, *Journal of Political Economy*, forthcoming. <http://www.sfu.ca/econ-research/RePEc/sfu/sfudps/dp16-03.pdf> (right-click, save-as, open as pdf)

Nevo, A., 2000. A Practitioner's Guide to Estimation of Random Coefficients Logit Models of Demand. *Journal of Economics & Management Strategy*, 9(4), pp.513-548.
https://scholar.google.com/scholar?output=instlink&q=info:ZTpFqiHY5c0J:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=16413121499345421419&oi=lle

Nevo, A., 2001. Measuring market power in the ready-to-eat cereal industry. *Econometrica*, 69(2), pp.307-342. https://scholar.google.com/scholar?output=instlink&q=info:11DN0ixcbn4J:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=14170287212552686877&oi=lle

Pendakur, Krishna, 1999, "Semiparametric estimates and tests of base-independent equivalence scales." *Journal of Econometrics* 88.1 (1999): 1-40.

https://scholar.google.com/scholar?output=instlink&q=info:TwpHbrEJxTsJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=8530102883475441976&oi=lle

Pendakur, Krishna. 2002, "Taking prices seriously in the measurement of inequality." *Journal of Public Economics* 86.1 (2002): 47-69. https://scholar.google.com/scholar?output=instlink&q=info:nnqjWygdrjYJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=14393027258465319794&oi=lle

Pollak, R., & Wales, T. (1979). Welfare Comparisons and Equivalence Scales. *The American Economic Review*, 69(2), 216-221. https://scholar.google.com/scholar?output=instlink&q=info:pstsi9_9CZYJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=13376556483425100051&oi=lle

Racine, J., 2008, Nonparametric Econometrics: A Primer, *Foundations and Trends in*

Econometrics Vol. 3, No 1 (2008) 1-88. <http://www.uv.mx/meae/files/2015/04/racine-paper.pdf> (right-click, save-as, open as pdf)

Vermeulen, F. (2002). Collective household models: principles and main results. *Journal of Economic Surveys*, 16(4), 533-564. https://scholar.google.com/scholar?output=instlink&q=info:1C1Wl3d8ON0J:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=10561321380886699745&oi=lle

Wang, E.Y., 2015. The impact of soda taxes on consumer welfare: implications of storability and taste heterogeneity. *The RAND Journal of Economics*, 46(2), pp.409-441.
https://scholar.google.com/scholar?output=instlink&q=info:nnU7FqL_6ysJ:scholar.google.com/&hl=en&as_sdt=0,22&inst=5823668996110809182&scillfp=1436858607943185770&oi=lle