**LITERATURE**

**Recommended Textbooks**

Chambers, R.G. *Applied Production Analysis: A Dual Approach*, Cambridge Univ. Press, 1988.

Fare, R. and D. Primont *Multi-Output Production and Duality: Theory and Applications*, Kluwer Academic Publishers, 1995.

**Background Material**

Beattie, B.R., Taylor, C.R. and M.J. Watts. *The Economics of Production*, 2nd Edition, Krieger Publ. Co., 2009.

Henningsen A. *Introduction to Econometric Production Analysis with R,* Third Draft Version. Department of Food and Resource Economics. University of Copenhagen. 2019. https://leanpub.com/ProdEconR/

**Lectures**

Week 14 Primal Representation of Production Technology: Production Function, Transformation Function, Input Requirement Function, and Input and Output Distance Functions

*Chambers* (ch. 1, 7.1, 7.4)

*Färe & Primont* (2.1, 2.4)

Week 15 Scale and Substitution elasticities

 Cost function  Duality and comparative static results

*Chambers* (ch. 2 & 3, 7.2, 7.3, 7.4)

*Färe & Primont* (3.1, 3.2, 3.3, 3.6)

Week 16 Short run cost function

 Revenue Function

*Chambers* (ch. 2 & 3, 7.2, 7.3, 7.4)

*Färe & Primont* (3.1, 3.2, 3.3, 3.6)

Week 17 Profit Function  Duality and comparative static results

 Expansion and substitution effects of short run profit functions.

*Chambers* (ch. 4, 7.2, 7.4),

*Fare & Primont* (6.1, 6.2)

*Sakai, Y.* Substitution and expansion effects in production theory: The case of joint production, *Journal of Economic Theory*, 1974, 9, 255-74.

Week 18 Applications of production functions

Arrow, K.J., Chenery, H.B., Minhas, B.S. and R.M. Solow. (1961) Capital-labor substitution and economic efficiency, *Review of Economics and Statistics*, 43: 225-50.

Berndt, E.R. and L.R. Christensen. (1973) The translog function and the substitution of equipment, structure, and labor in US manufacturing, *Journal of Econometrics*, 1, 81-113.

*Chambers* (ch. 4, 7.2, 7.4)

Cobb, C.W. and P.H. Douglas. A Theory of Production, *American Economic Review*, 1928, 18, 139-65.

Griliches, Z. *Practicing Econometrics*, Edward Elgar, 1998, ch. 19.

*Henningsen* (ch .2)

van Beveren, I. (2012) Total factor productivity estimation: A practical review, *Journal of Economic Studies*, 2012, 26, 98-128.

Week 19 Applications of distance functions

 *Henningsen* (ch .8)

Fulginiti L. E. (2010). Estimating Griliches’k – shifts. American Journal of Agricultural Economics. 92(1): 86-101.

Grosskopf, S., Margaritis, D. and V. Valdamis. Estimating Output Substitutability of Hospital Services: A Distance Function Approach, *European Journal of Operational Research*, 1995, 80, 575-87.

Grosskopf, S., Hayes, K. and J. Hirschberg. Fiscal Stress and the Production of Public Safety: A Distance Function Approach, *Journal of Public Economics*, 1995, 57, 277-96.

Reig-Martinez E., Picazo-Tadeo A. and f. Hernández-Sancho (2001). The calculation of shadow prices for industrial wastes using distance functions: Analysis for Spanish ceramic pavement firms. International Journal of Production Economics. 69: 277-285.

Week 20 Indirect distance and cost functions

 Indirect distance and revenue functions

*Färe & Primont (ch. 4& 5)*

Kim, H.Y. Analyzing the indirect production function for US manufacturing, *Southern Economic Journal,* 1988, 55, 494-504.

Week 21 Applications of cost functions

Ball, V.E. and R.G. Chambers (1982). An economic analysis of technology in the meat products industry, *American Journal of Agricultural Economics*, 64: 699-709.

Berndt, E.R. *The Practice of Econometrics*, Addison Wesley, 1991, ch. 9.

Binswanger, H.P. (1974) A cost function approach to the measurement of elasticities of factor demand and elasticties of substitution, *American Journal of Agricultural Economics*, 1974, 56, 377-86.

*Chambers* (ch. 3)

*Henningsen (*ch. 3*)*

Lopez, R.E. (1980) The structure of production and the derived demand for inputs in Canadian agriculture, *American Journal of Agricultural Economics*, 62: 38-45.

McEllroy M B (1987). Additive general error models for production, cost, and derived demand or share systems. Journal of Political Economy, 95(4): 737-757.

Mundlak Y. (1968) Elasticities of substitution and the theory of derived demand. *Review of Economic Studies*, 35(2): 225-236.

Wieck, C., and T. Heckelei (2007): Determinants, differentiation, and development of short-term marginal costs in dairy production: An empirical analysis for selected regions of the EU. *Agricultural Economics* 36(2): 202-220.

Week 22 Directional Distance Functions

Fare, R. and S. Grosskopf (2000) Theory and Applications of Directional Distance Functions, *Journal of Productivity Analysis*, 13: 93-103.

Fare, R. and D. Primont. (2006). Directional duality theory. *Economic Theory*, 29: 239-247.

Week 23 Applications of profit function

Appclbaum. E. (1982). The Estimation of the Degree of Oligopoly Power. *Journal of Econometrics,* 19: 287-299.

Chand, R. and J.L. Kaul.(1986) A note on the use of the Cobb-Douglas profit function, *American Journal of Agricultural Economics*, 68: 162-64.

*Chambers* (ch. 4, 7.2, 7.4)

Carpentier A. and E. Letort (2012). Accounting for heterogeneity in multicrop micro-econometric models: Implications for variable input demand modeling. *American Journal of Agricultural Economics*, 94(1): 209-224.

 *Henningsen* (ch.4)

Lopez, R.E. (1984) Estimating substitution and expansion effects using a profit function framework. *American Journal of Agricultural Economics*, 66. 358-67.

Moschini, G. (1988) A model of production with supply management for the Canadian agricultural sector, *American Journal of Agricultural Economics*, 70: 318-29.

Villezca-Becerra, P.A. and C.R. Shumway (1994). Stale-level output supply and input demand elasticities for agricultural commodities, *Journal of Agricultural Economics Research*, 44: 22-34.

Weaver, R.D. (1983) Multiple inputs, multiple output production choices and technology in the US wheat region, *American Journal of Agricultural Economics*, 65: 45-56.