



The role of diminishing marginal utility in the ordinal and cardinal utility theories

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Abstract

We illustrate the role of the law of diminishing marginal utility in the two main modern utility theories, the ordinal and cardinal utility theories, using a generalised total utility function. In short, the ordinal utility theory, in which utility is immeasurable, must abandon the law of diminishing marginal utility; the cardinal utility theory, although able to retain this law, suffers from keeping the unrealistic view of utility measurability, which Samuelson criticises as “infinitely improbable.” A new utility theory with the advantages of the two mentioned theories (i.e. the notions of both diminishing marginal utility and utility immeasurability) but without the disadvantages (i.e. the law of diminishing marginal utility is excluded and utility is measurable) therefore still seems to be a Holy Grail deserving search and development by economists.

REFERENCES

Allen, R. G. D. (1934). A comparison between different definitions of complementary and competitive goods. *Econometrica*, 2(2), 168–175.

 | [Google Scholar](#) |

Allen, R. G. D. (1935). A note on the determinateness of the utility function. *Review of Economic Studies*, 2, 155–158.

 | [Google Scholar](#) |

Allingham, M. G., & Sandmo, A. (1972). Income tax evasion: A theoretical analysis. *Journal of Public Economics*, 1, 323–338.

 | [Web of Science®](#) | [Google Scholar](#) |

Alt, F. (1971). On the measurability of utility. In J. S. Chipman, L. Hurwicz, M. K. Richter, & H. F. Sonnenschein (Eds.), *Preferences, utility and demand* (pp. 424–431). New York, NY: Jovanovich.

[Google Scholar](#)

Bernardelli, H. (1934). Notes on the determinateness of the utility function: II. *Review of Economic Studies*, 2, 69–75.

[Google Scholar](#)

Bernardelli, H. (1938). The end of the marginal utility theory? *Economica*, 5(18), 192–212.

[Google Scholar](#)

Bernardelli, H. (1952). A rehabilitation of the classical theory of marginal utility. *Economica*, 19(75), 254–268.

[Web of Science®](#) | [Google Scholar](#)

Calvo, G. A. (1981). Devaluation: Levels versus rates. *Journal of International Economics*, 11, 165–172.

[Web of Science®](#) | [Google Scholar](#)

Hicks, J. R. (1946). *Value and capital: An inquiry into some fundamental principles of economic theory* (2nd ed.). Oxford: Clarendon Press.

[Google Scholar](#)

Hicks, J. R., & Allen, R. G. D. (1934). A reconsideration of the theory of value. *Economica*, 1, 52–76, 196–219.

[Google Scholar](#)

High, J., & Bloch, H. (1989). On the history of ordinal utility theory: 1900–1932. *History of Political Economy*, 21(2), 351–365.

[Web of Science®](#) | [Google Scholar](#)

Hudík, M. (2014). Reference-dependence and marginal utility: Alt, Samuelson, and Bernardelli. *History of Political Economy*, 46(4), 677–693.

[Web of Science®](#) | [Google Scholar](#)

Jehle, G. A., & Reny, P. J. (2011). *Advanced microeconomic theory* (3rd ed.). India: Pearson Education.

[Google Scholar](#)

Katz, M., & Rosen, R. (1994). *Microeconomics* (2nd ed.). Burr Ridge, IL: Richard D. Irwin Inc.

[Google Scholar](#)

Koopmans, T. C. (1965). On the concept of optimal economic growth. In *The Economic Approach to Developing Planning*. Amsterdam: Elsevier.

[Google Scholar](#)

Lancaster, K. (1953). A refutation of Mr. Bernardelli. *Economica*, 19, 259–262.

[Web of Science®](#) | [Google Scholar](#)

Lange, O. (1934). The determinateness of the utility function. *Review of Economic Studies*, 1, 218–225.

[Google Scholar](#)

Marshall, A. (1920). *Principles of economics: An introductory volume*. London, England: Macmillan for the Royal Economic Society.

[Google Scholar](#)

McCulloch, J. H. (1977). The Austrian theory of the marginal use and of ordinal marginal utility. *Journal of Economics*, 37(3/4), 249–280.

[Web of Science®](#) | [Google Scholar](#)

Moscato, I. (2013a). How cardinal utility entered economic analysis: 1909–1944. *The European Journal of the History of Economic Thought*, 20(6), 906–939.

[Web of Science®](#) | [Google Scholar](#)

Moscato, I. (2013b). Were Jevons, Menger and Walras really Cardinalists? On the notion of measurement in utility theory, psychology, mathematics, and other disciplines, 1870–1910. *History of Political Economy*, 45, 373–414.

[Web of Science®](#) | [Google Scholar](#)

Pareto, V. (1971). *Manual of political economy*. New York, NY: Kelley.

[Google Scholar](#)

Phelps Brown, H. E. (1934). Notes on the determinateness of the utility function: I. *The Review of Economic Studies*, 2(1), 66–69.

[Google Scholar](#)

Romer, D. (2001). *Advanced macroeconomics* (2nd ed.). New York, NY: McGraw-Hill.

[Google Scholar](#)

Rothbard, M. (1956). Toward a reconstruction of utility and welfare economics. In M. Sennholz (Ed.). Princeton, NJ: D. Van Nostrand. Reprinted in Rothbard, M. N. (1997). *The logic of action one: Method, money, and the Austrian school* (pp. 211–255). London, England: Edward Elgar. [Mises.org](#)'s online edition copyright

[Google Scholar](#)

Samuelson, P. A. (1938). The numerical representation of ordered classifications and the concept of utility. *Review of Economic Studies*, 6, 65–70.

[Google Scholar](#)

Samuelson, P. A. (1939). The end of marginal utility: A note on Dr. Bernardelli's article. *Economica*, 6(22), 86–87.

[Google Scholar](#)

Samuelson, P. A. (1974). Complementarity: An essay on the 40th anniversary of the Hicks–Allen revolution in demand theory. *Journal of Economic Literature*, 12(4), 1255–1289.

[Web of Science®](#) | [Google Scholar](#)

Silberberg, E. (1978). *The structure of economics: A mathematical analysis*. New York, NY: McGraw-Hill.

[Google Scholar](#)

Varian, H. R. (1996). *Intermediate microeconomics: A modern approach*. New York, NY: W&W Norton.

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