Alfred Marshall, 1842–1924: Partial Equilibrium and Useful Economics

Alfred Marshall was born in Bermondsey in 1842. He was educated at the Merchant Taylor’s school in London, gaining a taste for mathematics. Subsequently, he completed the Cambridge Mathematical Tripos in 1865 and gained a fellowship at St John’s College. He then gradually switched to the moral sciences moving from philosophical, ethical and psychological studies to political economy. In 1868 he became College Lecturer in the Moral Sciences, by the early 1870s he was concentrating on advanced political economy teaching and working on a book on international trade. He wrote his first book *Economics of Industry* (1879) jointly with his wife, and privately printed material from a foreign trade manuscript (on the pure theory of domestic and international values). In 1884 he became Cambridge Professor of Political Economy until 1908 when Pigou (see Chapter 28, below) was appointed as his successor. His major work, *Principles of Economics*, was published in 1890 (eighth, and definitive edition, 1920). During retirement he published supplementary volumes (*Industry and Trade* in 1919, *Money, Credit and Commerce* in 1923) instead of the projected second volume of the *Principles*, which was to have covered these and other (public finance, monopoly, combinations, the role of the state) topics.

Marshall is often somewhat misleadingly bracketed with Jevons, Menger and Walras as a founder of the marginal revolution. Marshall’s initial price analysis, following that of Cournot and Mill, ignored utility considerations, only introduced in the context of analysing consumer surplus (see below). Secondly, Marshall failed to show the hostility to Ricardo and Mill revealed by Jevons. Marshall argued that their work was rarely incorrect, it needed to be completed (or reinforced) by aspects emphasised by the new economics, such as demand, consumption and certain allocative aspects conducive to the improvement of human welfare. For this reason, Veblen aptly described it as ‘neo-classical’. Although aware of the relevance of general equilibrium considerations and the importance of interdependence between economic variables, Marshall preferred a partial equilibrium
approach as more practical for solving economic questions. Never explicitly defined by him, it refers to essential abstraction and simplification in analysis or stripping an issue of those elements not required for a solution. Marshall saw economics as a useful subject geared to alleviating poverty and encouraging improvement. Marshall therefore also disliked indulgence in pure theory, particularly mathematical theory. At best, mathematics was an aid to analysis to be hidden when the problem was solved. Geometry was useful as a pedagogical device, but banished to footnotes in the *Principles*.

**Utility theory and the derivation of demand curves**

In his first paper on the theory of value, written circa 1870, price determination is simply analysed in terms of supply and demand, with the last constructed from hypothetical data relating prices to the specific amounts of the commodity which will be bought at these prices. Utility does not enter into this derivation. However, value in use (defined in terms of the amount of general purchasing power a buyer is willing to give up to obtain a specific quantity of a commodity can never be less, and generally speaking, is considerably more, than the price paid for it. This suggests the later notion of consumer surplus. This paper (reprinted in Whitaker, 1975, pp. 125–59) draws heavily on Cournot and Mill’s demand analysis. The privately printed *Pure Theory of Domestic Value*, written some years later (though not published until 1879) derives the demand curve in similar manner. Its Chapter II introduces the notion of consumers’ ‘rent’ or consumer surplus.

Book III of the *Principles*, from its first edition onwards, deliberately linked the derivation of the demand curve to the notion of marginal utility. This is almost certainly explained by the fact that Marshall by 1890 had become fully convinced of the potential usefulness for applied economics of the consumer surplus concept, an issue pursued here to illustrate some of the strengths and limitations of Marshall’s partial equilibrium approach.

The shapes of marginal utility functions and demand functions intuitively show that the former can lead to the latter. This had to be the order of causality, since it is consumer preference which influences the demand for a product at a particular price. The derivation of demand functions from utility functions is most easily shown algebraically as Marshall himself did in note II of the mathematical appendix to the *Principles*.

Start with the equilibrium condition for the consumption (purchase) of a commodity, $x$, which can be given as:

$$MU_x = p_x \cdot MU_m$$

where $MU_x$ is the marginal utility of a commodity, $p_x$ its price, and $MU_m$ the marginal utility of the consumer’s money income. This condition