

CHAPTER II

THE QUANTITATIVE THEORY OF VALUE

JEVONS'S theory of value takes human desire as its starting-point. Commodities possess value because they can satisfy some want or desire of man, *i.e.* because they possess utility. The desire for any commodity may, however, be so fully met by an increase of supply, that the desire becomes extinguished; while, on the other hand, a reduction in the supply of some commodities, if large enough, may cause the desire for them to become irresistible. "We may state as a general law that the degree of utility varies with the quantity of commodity, and ultimately decreases as that quantity increases."¹

The several portions of the same stock of a commodity, therefore, possess different degrees of utility. As, however, any two equal quantities of the same commodity are interchangeable, either will be taken with absolute indifference by any purchaser. Hence no one will give more for any equal portion of a stock of a commodity than for that portion which possesses the least utility. Hence the value of the whole stock of any commodity is determined by the utility of its final portion, *i.e.* by its final utility.

Jevons's exposition of the quantitative theory of value, though true as far as it goes, embraces but a limited series of the phenomena of value. It has received the necessary extension at the hand of the Austrian school of economists, whose conclusions are now generally accepted. In the following, necessarily much condensed, summary of their

¹ Jevons, *The Theory of Political Economy*, 3rd edition, p. 53.

teaching I lean largely upon Professor von Böhm-Bawerk's profound exposition in *The Positive Theory of Capital*.

All human action is prompted by desire and resisted by distaste for exertion. In order that a thing may be produced, the desire for it must conquer the distaste for the exertion which its production necessitates. The acquisition of goods through exchange is dominated by the same law. In an exchange of, say boots for hats, the desire of one party for hats must conquer his reluctance to part with boots, and *vice versa*, *i.e.* the thing to be acquired must be more ardently desired than the thing to be given up on both sides or no exchange can take place. But desire and utility are merely two aspects of the same relation. Men desire things because they are of some use to them, *i.e.* because they possess utility; and things are useless, *i.e.* possess no utility, unless they can satisfy some desire.

Things may, however, be valued from a subjective standpoint—that is, for their power to satisfy the owners' desire for themselves; or from an objective standpoint, when the desire is for other things which they bring through exchange. In either case their value depends upon, and is a consequence of the utility of the things. Hence it is clear that utility is the cause of both subjective or use-value, and of objective or exchange-value.

Utility and value are not, however, convertible terms, for a thing may possess utility without possessing value. In order that a useful thing may acquire value, the desire for it must be strong enough to provoke action; and in order to do this the thing must be an indispensable condition of the satisfaction of desire. Water as such is capable of quenching thirst. But if I want a cup of water from a flowing stream, any particular cupful has no more utility than any of the other thousand cupfuls of water which every minute are flowing by. I would lose no satisfaction by the loss of any particular cup of water. It is capable of satisfying my desire, but its possession is not an indispensable condition of satisfaction. Therefore, water, though useful, possesses no value in this place.

In a desert, however, where water is scarce, the loss of any single cup of water may compel some of my desire for

water to go unsatisfied. Where this is the case, every cupful of water is an indispensable condition of satisfaction, and, therefore, water does possess value here.

It follows : in order that utility shall evolve into value, the available quantity of the useful thing must be so limited that some desire for it may have to go unsatisfied unless the available quantity is increased.

The value of goods, therefore, is a consequence of their utility. Their relative utility was classed by the classical school of economists according to the kind of desire which they could satisfy. First in the order of importance they placed necessities, next superfluities, and last luxuries. Hence they came to the conclusion, adopted by Marx, that the use-value and exchange-value of things had no necessary connection with each other. For according to this classification the use-value of bread infinitely exceeds that of diamonds ; yet the exchange-value of diamonds is enormously in excess of that of bread. This, however, is a purely academic manner of looking at the conduct of men. They do not feel the promptings of desire according to this scale. Many a family has stinted itself in food in order to keep a carriage ; women constantly deprive themselves of necessities in order to save money for a new dress or a coveted ornament ; and men will deprive themselves of food or go about in old and shabby clothes in order to get tobacco, beer, or tuition. It, therefore, is not the kind of desire which determines the value of the object of that desire, but the degree of desire for that object.

Any given kind of desire is felt in differing degrees of urgency, and may, for a time, be extinguished by satisfaction and even by the assurance of satisfaction. To come back to the former illustration, the man who has drunk enough water and sees more of it flowing by him, has no longer any desire for water. Even in a desert, if conscious that he has more than sufficient water with him, his desire for any particular gallon of this water is small. But should he lose so much of it, that the remainder is barely sufficient for the rest of his journey, he will feel a more urgent desire for what is left and will value it more

highly. The loss of every additional gallon will increase the desire which he feels for, and the value which he sets on, the rest.

Not the kind but the degree or urgency of desire, therefore, measures the utility and the value of the desired object; and as goods of the same kind are interchangeable, the least urgent degree of desire which can be satisfied with the available quantity, *i.e.* the marginal desire, determines the value of the entire available quantity. Or, in other words, the value of any commodity in the market is determined by the valuation of the marginal buyer, *i.e.* the buyer whose effective desire is least urgent.

Not only is every kind of desire felt in many differing degrees of urgency, but many commodities are capable of satisfying several kinds of desire of differing urgency.

As an illustration,¹ take the case of a solitary settler, who has just harvested five bags of wheat on which he must live till the next harvest. He determines that the best use he can make of them is to devote one bag to making bread; one to make puddings and cakes; one to feed poultry for his meals; one to make into spirit; and having no direct use for the fifth bag, he decides that it will be most usefully employed in feeding parrots and song-birds which he will catch. What is now the value of a bag of wheat to him?

There can be no doubt as to his answer, for if he were to lose one of the bags, he would obviously discontinue the feeding of captured birds, while continuing to use the remaining four bags for his more pressing wants as before. The use of one bag for feeding birds, therefore, was the marginal utility of his whole stock of wheat. What he lost, when he lost one bag, was this former marginal utility, and this utility determined the value of this one bag of wheat.

The assumption, however, is that the five bags of wheat are all of exactly the same weight and quality, therefore interchangeable. It is, therefore, a matter of indifference to the settler, which of the five bags is lost, *i.e.* they are

¹ Free rendering of example in *A Positive Theory of Capital*, by Prof. von Böhm-Bawerk.

all of the same value to him. Hence the value of one bag being determined by the least urgent desire which the whole quantity enables to be satisfied, and the value of all bags being alike, it follows that this same desire—the marginal utility—determines the value of all five bags of wheat.

If now another bag were lost, the settler would discontinue making spirits, *i.e.* the marginal utility of four bags of wheat would have been determined by this, the highest use to which the fourth bag of wheat could be put, and this use would have determined the value of all the bags. If another bag were lost, the settler would discontinue the feeding of poultry; and if still another were lost, that of making cakes and puddings. Being then reduced to one bag, none of the less urgent wants can be satisfied; to lose this last bag would mean death. Marginal utility and highest utility have become one, and, to the settler, the value of this remaining one bag is immeasurably high.

Suppose now that a hawker penetrates the wilderness and offers to exchange some of his wares for wheat. If the settler have five bags, he will part with one at a comparatively low rate; for in parting with it he loses only the satisfaction of feeding birds. If his stock consists of only four bags, he will demand a higher rate for any one of them, because he loses a higher satisfaction in parting with it. If he had only one bag, he would not part with it at any price.

The motives which determine the valuation of goods by this solitary settler also determine their valuation in the largest industrial community. Other things being equal, increase of supply reduces value and decrease of supply increases value—that is, when the available quantity of any commodity increases, lower levels of desire must be appealed to than before; these being less urgent will not become active unless the sacrifice imposed through their satisfaction is reduced, *i.e.* until the price falls. The value thus imposed by the least urgent desire determines the value of the whole stock. If supply decreases, less urgent desires cannot be satisfied, and a more urgent desire, forming the marginal of economic employment, produces a

higher value for the whole stock. If, however, the available quantity of any commodity is so large, that all possible desires for it can be satisfied without absorbing the whole quantity, the marginal utility of the whole of it is zero, and the value of it is nothing.

So far it has been shown that the value of goods arises from their utility, and is determined by their marginal utility. It now becomes necessary to consider a class of goods which cannot directly satisfy any desire, but which assists in the production of such desired goods, *i.e.* productive goods, or, in the phraseology of Socialism, "means of production." Whence do these derive their value? The answer is that their value also is determined by the marginal utility of the stock of consumption-goods which forms their final product.

The end and purpose of all production is the satisfaction of human desire through consumption. Therefore, every material, instrument, and opportunity of production from the land downwards is, economically speaking, undergoing the process of being converted into consumption-goods. Take a concrete case, say, that of bread. Let us call it a commodity of first rank. Its existence depends upon that of commodities of second rank, *viz.* flour, oven, and upon the labour of the baker. The existence of these again depends upon a group of commodities of third rank, *viz.* wheat, mill, materials of oven, and upon the labour of producing them. They are again conditioned by a group of fourth rank, *viz.* agricultural implements, building material of mill, by land, and by labour. With the exception of bread, none of these things are desired for themselves, for none can directly satisfy any desire. Each of them, however, does satisfy desire indirectly, through their final product, bread. Each one of these groups of production-goods is, economically speaking, bread in the making; is valued only in so far as it assists in the ultimate satisfaction of the desire for bread. Their only contact with desire is through bread, and their value, therefore, is determined by the value of bread. As the value of bread itself is determined by the quantitative relation between the wants for bread and the supply of bread,

i.e. by the marginal utility of bread, the same condition determines the value of each group of the productive goods which is called into existence by the wants for bread.

In the modern co-operative system of industry, it is, of course, impossible for all intermediate producers to know the value of the final product. But each group of productive goods has an intermediate product, and finds its value in that of its intermediate product. Thus, reverting to our previous illustration, the value of bread directly determines the value of the group of commodities of second rank ; the value of flour, their intermediate product, determines that of the group of commodities of third rank ; and the value of wheat determines that of the group of fourth rank, of which it is the intermediate product ; and all this, because the value of wheat and flour depends upon the marginal utility of bread as much as the value of bread itself. "Though the conduction of value from the anticipated final product back to intermediate product, and from that back to the very first product of all, may remain hidden from each producer, the organisation of industry practically carries the information from stage to stage."¹

It will thus be seen that this theory derives the cost of production from the marginal value of the final product, instead of deriving the value of the product from the cost of production. However paradoxical this conception may seem when compared with surface appearances, it is nevertheless borne out by common experience. No cost of production can give value to a thing the desire for which has ceased ; if goods are out of fashion, *i.e.* if the desire for them has lessened, they fall in value regardless of their cost of production. Merchants and retailers whose shelves are encumbered with "dead stock" know this to their cost.

Common experience, however, suggests, that if the cost of producing an article of general consumption falls, such as iron, steel, wool, or cotton, there will sooner or later be a corresponding fall in its value. The fact is true, but the compelling force does not arise from the lessened

¹ Smart, *Introduction*.

cost of production. The producers are not anxious to lower the price as long as they can dispose of all their products. If they could combine to prevent an increase in supply, they could prevent, as in protectionist countries they have frequently reduced, the fall in value. When, however, such a fall in the cost of production takes place, the supply generally does increase, either through the desire of previous producers to reap the increased profit from a greater number of sales ; or through the desire of capitalists to share in the exceptionally high profit, by joining in the production of the article in question ; or from both these causes. As a consequence, the wants which previously were fully supplied cannot absorb the additional supply ; lower levels of wants must be appealed to, and can only be induced to take up the new supply if it can be obtained with a smaller sacrifice, *i.e.* at less cost. But as all parts of the whole stock are interchangeable, no one will give more for any of them than the marginal buyers offer for the new supply. Hence the value imposed upon this new supply by the new and lower wants to which it appeals, fixes the value of the whole supply, and not its cost of production, and the marginal cost of production must assimilate itself to this new value.

Similarly, if the desire for a commodity declines, the cost of production will tend to assimilate itself to the lower value. Marginal producers, *i.e.* those who produce at the highest cost of production, and who find the new value unprofitable, will curtail and eventually abandon production. A lower cost of production thus forms the margin, while the lessened supply may and ultimately will produce a higher marginal utility, either preventing a further fall in value or raising value again. From both ends, therefore, tendencies arise which assimilate the cost of production to the new marginal utility of the product. It is not the cost of production, but the anticipated value of the product, which is the dynamic force and determines the course of industry. For cost of production, that is the sum of exertions, merely acts as a brake ; the active cause of all economic actions is consumption, the satisfaction of human desires, the well-being of man.