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# Welfare Economics

## 15.1 INTRODUCTION

Welfare economics can be regarded as a branch of economics dating from the late nineteenth century. This is not to imply that earlier economists were not concerned with the welfare of society as a whole – far from it, for the classical economists were very much concerned with this.[1] What happened towards the end of the nineteenth century was that welfare economics began to develop as a separate branch of economics, for several reasons. Firstly, there was a desire to stress the distinction between the positive and normative aspects of economics, which necessitated separating welfare economics from the positive branches of the subject.[2] Secondly, there was a need to examine more carefully the role of the state in economic life. Not only was the state playing a greater role in the economy, but socialism, or collectivism, was an important issue towards the end of the nineteenth century. Criteria had to be developed to evaluate proposals for state intervention, and these had to be provided by welfare economics.

Equally important, however, were two reasons connected with the new theory of value. Marginalism meant that economists were equipped, for the first time, with a technical apparatus for dealing with allocation problems, and these came to constitute an important part of welfare economics. Most important, however, is the fact that the marginal utility theory of value meant that wealth could no longer be regarded as synonymous with welfare, for the utility of a commodity need not equal its price. This difference between value (in the sense of utility) and price was something of which economists had long been aware, but it was only after the marginal utility theory of value became widely accepted that its full implications became apparent.

The development of welfare economics as a separate branch of economics came only gradually. As with the doctrine of marginal utility itself, precursors can be found, such as Dupuit's use of consumers' surplus, or Bastiat's doctrine of maximum satisfaction,[3] but it is only from the 1870s that the issues involved were confronted systematically within the main body of economic analysis. It then took several decades before welfare economics attained its present form, this occurring from the 1940s and 1950s. The intervening period, during which the foundations for modern welfare economics were laid, is the subject of this chapter. In dealing with it, it is helpful to distinguish two streams of thought: the utilitarian, associated above all with English economists such as Sidgwick, Marshall and Pigou; and the non-utilitarian, of which Pareto was the most prominent exponent.

## 15.2 UTILITARIAN WELFARE ECONOMICS

### *Bentham and J. S. Mill*

We have already met utilitarian welfare economics in the work of Jevons,[4] who saw pure economics as comprising the mechanics of utility and self-interest, and who used the utilitarian criterion in his analysis of economic policy. However if we are to understand developments in welfare economics, in which differences of opinion over the nature of utility played a major role, we need to consider in more detail what economists of the time meant by the term utility. To do this it is useful to go back not simply to Jevons but to Bentham and J. S. Mill.

For Bentham, the utility which served both to explain behaviour (individuals seeking to maximize their own happiness) and as a standard of morality (the "principle of utility", or the greatest happiness of the greatest number) was a very down-to-earth, commonsensical concept.

> By utility is meant that property in any object, whereby it tends to produce benefit, advantage, good or happiness, (all this in the present case comes to the same thing) or (what again comes to the same thing) to prevent the happening of mischief, pain, evil or unhappiness to the party whose interest is considered.[5]

> I use the words *pain* and *pleasure* in their ordinary signification ... *Pain* and *pleasure* are what everybody feels to be such – the peasant and the prince, the unlearned as well as the philosopher.[6]

He saw no problem of principle in basing theories on individual feelings in this way, arguing that "the sensations of men are sufficiently regular to become the objects of a science and an art".[7]

Bentham recognized that the pleasure a person received from something (its utility to him) depended on both "the particular sensibility of individuals" and "the exterior circumstances in which they are placed".[8] However, he saw these as practical problems, not conceptual ones. For example, in discussing criminal law he argued that whilst these differences in character and individual circumstances could not, in general, be taken account of by legislators, "provision of them may be made by the judge, ..., to whom the several individuals that happen to be concerned may be made known".[9] Utility is made into a practical concept by the proviso that where character and circumstances cannot be ascertained or measured, either directly or indirectly, "they have no claim to be taken notice of".[10] Implicit in this is the judgement that where all ascertainable characteristics are the same for two individuals, so too are their utilities. This makes sense of Bentham's argument that every individual is to count as one.[11]

It is because pleasure and pain, and hence utility, were seen as common-sense concepts of practical application that Bentham's discussions of utility measurement seem so unsatisfactory from a modern point of view. Apart from attempts to relate the measurement of pleasure to the least and greatest perceptible pleasures, his discussions deal only with the mechanics of utility measurement, leaving the principles untouched. Inter-personal comparability was an issue never confronted, his only justification for the utilitarian criterion being the absence of any consistent alternative.

Bentham's utilitarianism raised the question as to whose judgement is to be used in applying the utilitarian criterion. Presumably the answer is that it is the judgement of whoever is making the decisions. The paternalistic bias implicit in this approach, which implies that some people (the judge in the example cited above) can evaluate the pleasures experienced by others, was made explicit by J. S. Mill. Mill argued that only those who are acquainted with both can compare two pleasures. Thus only the educated can judge the utility of education, since the uneducated are not acquainted with its benefits. In other words, inter-personal utility comparisons are based on the judgements, and hence the values, of a small, wealthy and leisured class.[12] Although solving the problem from a logical point of view, the ethical basis for this is questionable.

To sum up, utility was, for both Bentham and Mill, a practical concept, something that properly qualified people could recognize and measure. The problems in deciding on the competence of alternative judges, and the ethics involved, were simply not perceived in the way we would perceive them today.[13]

### *Jevons*

Like Mill Jevons separated clearly the issues of utility as an explanation of behaviour and as a standard of morality. Rejecting the notion of inter-personal utility comparisons, he used utility maximization as an explanation of behaviour. When he turned to questions involving social welfare he recognized that the utilitarian criterion was not an objective one, but a matter of individual judgement.[14] In his discussions of practical issues his use of the utilitarian criterion was thus little more than a form of words, nothing in his arguments depending on it.

However, although Jevons himself denied the possibility of inter-personal utility comparisons, this was not true of his successors. These can be divided into two groups: there is the practical utilitarianism of Sidgwick, Marshall and Pigou; and there is the more abstract utilitarianism associated with Edgeworth.

### *Sidgwick*

It can be argued that it was Sidgwick who was the originator of the utilitarian tradition in welfare economics which culminated in the work of Pigou. Sidgwick's contributions were threefold. Firstly, he stressed the distinction, fundamental to welfare economics, between the positive and normative aspects of economics.[15] Secondly, the classical economists were concerned with measures to increase the wealth of nations, wealth being taken to measure what we now think of as welfare. Sidgwick used Jevons' value theory to show that wealth in the sense of the sum of individuals' utilities (which we might call welfare) did not necessarily correspond to wealth in the sense of the sum of produced goods valued at their market prices. Sidgwick found three reasons for this. (1) Prices correspond to *marginal* utilities, whereas to calculate the utility resulting from the consumption of a good we need to multiply the quantity of the good not by its marginal utility, but by its *average* utility. In other words, people may benefit from *unpurchased utilities*, explained by Sidgwick in terms of consumer's surplus, a concept he learnt from Marshall's early work. (2) Similar problems arise in the case of free goods, the price of which has nothing to do with either marginal or average utility. (3) The total utility derived from a given collection of goods will depend on their distribution between individuals, for by redistributing goods from consumers with a low marginal utility (the rich) to those with a high marginal utility (the poor) total utility will be raised, even though the value of goods consumed will be unchanged.

However, despite these differences between wealth and welfare, Sidgwick argued that for practical reasons, and because it corresponded with common usage, the term wealth had to be defined in terms of market prices, except in the specific cases where "the standards of the market fail us".[16] He argued that where comparisons are being made between communities similar in time and place this will be a reasonable approximation. This therefore provides the justification for Sidgwick's aggregative, classical approach, in which he considers first the production of wealth, followed by its distribution and exchange. The fundamental problem of production was seen in classical terms, as concerning the causes influencing "the average annual produce per head of a given community".[17] Utilitarianism, seeing welfare as the sum of individual utilities, was thus used to justify the aggregative approach of the classical economists.

The theory of utility on which this analysis was based had much in common with that of Bentham. Despite the long discussions of utility in *The Methods of Ethics* (1874), utility was almost taken for granted. As with Bentham and Mill, it was an *assumption* that degrees of desirability (pleasure) were "definitely given in experience",[18] and that they were commensurable.[19] However, Sidgwick clearly rejected Mill's paternalistic approach, arguing that individuals had to be taken as the judges of their own utilities, seeing "the immediate decision of consciousness" as "the only conceivable means of estimating pleasure".[20] Sidgwick recognized that inter-personal utility comparisons involved "those vague and uncertain balancings of different quantities of happiness with which the politician has to content himself",[21] but, like Bentham, he appears to have seen the main problems as practical rather than conceptual.

Finally, Sidgwick contributed to practical welfare economics by providing a systematic account of the principles of economic policy. This problem too is approached in a classical manner, through analysing in turn production and distribution. He starts by systematically investigating the reasons why a system of *laissez faire* will not necessarily maximize production. From a modern perspective the most interesting of these are probably those involving what Sidgwick describes as involving "a conflict of private and social interests".[22]

(1) There is the "large and varied class of cases" in which individuals cannot obtain adequate remuneration for the services they provide to society, such as the provision of lighthouses.[23]
(2) Entrepreneurs may, on the other hand, be able to obtain rewards exceeding the benefits to society (e.g. a second railway line).
(3) There are cases where the co-operation of everyone is needed (e.g. in controlling diseases).
(4) Inequalities may have adverse effects on efficiency (e.g. low wages affecting health).
(5) Individuals may fail to save enough to provide for future generations.
(6) The production of maximum wealth (at market prices) may not correspond to the production of maximum utility, if prices do not reflect the utilities of the commodities concerned.

Any of these, Sidgwick argued, *might* call for state intervention, but he stressed that abstract principles could provide no more than a framework in which government intervention could be discussed. In reaching definite conclusions, practical, empirical considerations were decisive. The merits and demerits of intervention had to be weighed up against those of non-intervention in each particular case. When he did this, Sidgwick found considerable scope for government intervention.

In addition to this concern with production, Sidgwick put forward as a second major objective of government policy the objective of bringing about a just or equitable distribution of the produce.[24] His conclusion was that "fair" wages (and this extended to that part of profits which could be seen as the wages of management) could be defined as "market wages as they would be under the least possible inequality of opportunities".[25] Although equality of opportunity was desirable, and although there were many ways of moving towards it (such as the provision of free education) there were in practice many obstacles in the way of achieving complete equality. Particularly important was the effect of many redistributive schemes on incentives, and hence on the amount of wealth to be distributed. "I object to socialism not because it would divide the produce of society badly, but because it would have so much less to divide."[26] Thus, for example, although he conceded that it would be possible for society to be organized on a socialist basis, without any interest being paid on capital, he nonetheless came down against this.

### *Marshall*

Although Marshall's approach is utilitarian, it is easier to separate out the utilitarian elements in his economics than is the case with either Jevons or Sidgwick. Unlike Sidgwick, Marshall makes it completely clear that wealth is a sum of money values (the national dividend) and that this is an object of study in its own right. Utility is brought in as consumer's surplus. Maximizing the sum of consumers' surpluses, and maximizing wealth, are clearly distinguished.

Marshall's crucial contribution to welfare economics is his development of the idea of consumer's surplus. Not only is it a concept which has remained in economics ever since; but also Marshall was able to use it to examine the doctrine of maximum satisfaction, showing that consumers' surplus will be maximized at the competitive equilibrium of supply and demand. According to Schumpeter, this "spelled a new departure" in welfare economics, being the first time that the doctrine had been considered on a purely theoretical plane.[27] At the same time, however, Marshall pointed out the limitations of consumer's surplus much more clearly than did Sidgwick. He showed that consumer's surplus could be used to measure utility only if the marginal utility of income was constant, and that the sum of different individuals' consumer surpluses could be said to correspond to a sum of utilities only if the marginal utility of income were the same for all individuals. Marshall's response to this was to confine his use of the concept to situations where these conditions might be approximately satisfied:

> On the whole, however, it happens that by far the greatest number of the events with which economics deals, affect in about equal proportions all the different classes of society; so that if the money measures of the happiness caused by two events are equal, there is not in general any very great difference between the amounts of happiness in the two cases.[28]

This approach has much in common with the intensely practical utilitarianism of Bentham and Sidgwick.

### *Pigou*

The practical, aggregative, utilitarian approach to welfare economics reached its culmination in the work of Pigou, who gave the subject its name. Just as much as Sidgwick and Marshall, Pigou believed that it was "the realistic, not the pure, type of science that constitutes the object of our search".[29] This desire for a practical approach led him to follow Sidgwick and Marshall in adopting the classical approach, of discussing welfare in terms of the production and distribution of wealth, or national dividend.

Although using very different terminology, Pigou, like Marshall, separated much more clearly than did Sidgwick the concepts of wealth and welfare. His definition of welfare was explicitly utilitarian: (1) "the elements of welfare are states of consciousness"; (2) "welfare can be brought under the category of greater and less".[30] This was clearly a very broad concept, so to make it practical Pigou restricted his attention to *economic welfare*: "that part of welfare that can be brought, directly or indirectly, into relation with the measuring rod of money".[31] It was economic welfare to which the national dividend was the objective counterpart, for it comprised "the balance of satisfactions from the use of the national dividend over the dissatisfactions involved in the making of it".[32] The links between economic welfare and the national dividend may, as Sidgwick showed, be indirect, and economic welfare may be an unsatisfactory concept, but the terminology nonetheless has the virtue of making very clear the distinction between wealth and welfare.[33]

Perhaps Pigou's more important contribution, *vis à vis* Marshall, was that he abandoned the latter's consumers' surplus analysis in favour of a marginal approach. He started with the question of the conditions under which *laissez faire* would not result in maximum welfare, tackling this by examining the factors which might cause private interests to diverge from the interests of society. If marginal private products differed from the corresponding marginal social products, then *laissez faire*, even if it maximized wealth, would not maximize welfare. There were three reasons for such discrepancies to occur.

(1) Separation of tenancy from ownership of a factor might lead to inadequate compensation being provided for improvements made by a tenant.

(2) Problems are created by externalities and public goods, these being defined in the following way:

> the essence of the matter is that one person A, in the course of rendering some service, for which payment is made, to a second person B, incidentally also renders services or disservices to other persons C, D and E, of such a sort that technical considerations prevent payment being exacted from the benefited parties or compensation being enforced on behalf of the injured parties.[34]

Despite the clarity of his definition, however, Pigou failed to think through all the difficulties involved, and his analysis has been subjected to severe criticism.[35]

(3) Problems were also caused by the co-existence of industries with increasing and decreasing returns to scale. This was an extension of Marshall's argument,[36] that the government ought to take measures to increase production of commodities the price of which will fall as their production increases, reducing production of commodities the price of which rises as production is increased. This argument was, however, subjected to severe criticism: in particular, Pigou failed to distinguish real externalities from effects which were merely transfers.[37] Given Pigou's concern with maximizing welfare this distinction was crucial, for transfers did not affect total welfare.

Economic policy, for Pigou, involved eliminating discrepancies between marginal private and social products. Using these concepts Pigou, after considering the practical details of various cases, constructed a detailed programme for economic policy, described by one historian as providing "virtually a blue-print for the welfare state".[38]

### *Edgeworth*

Edgeworth, like Sidgwick, owed much to Jevons, but his use of utilitarianism was very different. Where Sidgwick, Marshall and Pigou were very practical, Edgeworth's work was much more abstract. He remained very close to Jevons, seeing economics as concerned with examining the implications of utility maximization, but he pursued far more rigorously than did Jevons the idea that ethics involved analysing the implications of maximizing the sum total of utilities. Three aspects of Edgeworth's work was worth discussing here: his attempts to provide a means of measuring utility; his attempts to provide a rationale for utilitarianism; and his use of utilitarianism to argue the case for progressive taxation.

(1) The issue of utility measurement is discussed right at the start of *Mathematical Psychics* (1881), where Edgeworth writes,

> Utility, as Professor Jevons says, has two dimensions, *intensity* and *time*. The unit in each dimension is the just perceivable increment. The implied equation to each other of each *minimum sensibile* is a first principle, incapable of proof.[39]

The idea of measuring utility in terms of the smallest difference that people could distinguish was an idea Edgeworth took from contemporary psychology, which attempted to measure such differences experimentally. Such an approach may provide a means of measuring utility, but severe problems are raised by the last sentence quoted above. In it Edgeworth is making an ethical judgement about the relative values of different persons' utilities, without giving any defence of the implied value judgements involved.[40] Despite appearances, therefore, Edgeworth's approach does not solve the problem of inter-personal utility comparisons.

(2) Edgeworth introduced the utilitarian criterion into the theory of bargaining, as a principle of arbitration:

> competition requires to be supplemented by arbitration, and the basis of arbitration between self-interested contractors is the greatest possible sum-total of utility.[41]

He gave two reasons why the utilitarian solution might appeal to both sides. The first was that in the absence of such a principle of arbitration the bargainers might end up anywhere on the contract curve. Faced with the alternative of a random outcome somewhere on the contract curve, the utilitarian position would have much to recommend it. The second was the argument that "splitting the difference" would lead to a point nearer to the utilitarian position than to either extreme position.

(3) In *Mathematical Psychics* Edgeworth clearly recognized that utilitarianism implied that incomes should be equally distributed. However, this result applied only if all individuals had the same capacity for pleasure (i.e. the same utility functions): if some people had a greater capacity than others for pleasure, maximizing the sum of utilities generally meant that they should end up with more pleasure.[42] This, however, was already well known. Edgeworth's contribution was to apply this to the theory of taxation. Where his predecessors, such as Sidgwick, had interpreted the notion of equality of sacrifice as implying proportional taxation, Edgeworth interpreted sacrifice in terms of utility. Rejecting the criteria of equal absolute sacrifice and equal proportional sacrifice as giving inadequate guidance as to whether or not taxation should be progressive, Edgeworth argued that the total disutility imposed by taxation should be minimized. Edgeworth followed Sidgwick, howev-

er, in finding many reasons why, despite this, taxation should not be sufficiently progressive to create complete equality of incomes. These reasons ranged from differences between individuals' utility functions, to the need to guard against eroding the incentive to work.[43]

## 15.3 NON-UTILITARIAN WELFARE ECONOMICS

### *Walras*

The origins of the branch of welfare economics based on the denial of the possibility of making scientific inter-personal utility comparisons go back to Walras. Though Walras used the concept of utility, he did not make inter-personal comparisons, basing his welfare economics instead on the concepts of commutative and distributive justice.[44] Though derived from the concept of commutative justice, the doctrine of maximum satisfaction he developed proved capable of a different interpretation, providing the basis for a non-utilitarian welfare economics. The economist who saw the possibility of developing Walras's ideas in this way was Pareto.

### *Pareto*

In his *Cours d'Economie Politique* (1896) Pareto approached the problem of welfare economics through examining the allocation of resources that would be pursued by a socialist state seeking to achieve "the maximum well-being of its citizens".[45] He was able to show that this allocation would be the same as that occurring under free competition. What did he mean by "well-being" in this context?

(1) He argued that if a reallocation of resources would make everyone better off, society would be better off if it were undertaken.
(2) Where a proposed change made some people better off and some worse off, it was necessary to separate the questions of production and distribution.. Pareto tackled this by looking for an allocation of resources such that "the sum of goods obtained, *if they were distributed in a suitable manner*, would maximize each individual's utility".[46]

In other words, Pareto assumes that society as a whole gains if the gainers from a change are able to compensate the losers and still remain better off.[47] Thus Pareto had come a long way towards what we now call "Pareto optimality", but despite his refusal to make inter-personal utility comparisons he was still seeking a single optimum.

The final step towards what we now think of as "Pareto optimality" came in the *Manual of Political Economy* (1906), where he wrote:

> We will say that the members of a collectivity enjoy *maximum ophelimity* [Pareto's term for utility] in a certain position when it is impossible to find a way of moving from that position very slightly in such a manner that the ophelimity enjoyed by each of the individuals of that collectivity increases or decreases. That is to say, any small displacement in departing from that position necessarily has the effect of

increasing the ophelimity which certain individuals enjoy, and decreasing that which others enjoy, of being agreeable to some and disagreeable to others.[48]

It is the last sentence of this which contains the crucial insight – that where some gain and others lose it is impossible, without making further ethical judgements, to say whether society as a whole gains or loses. By seeing this, Pareto was able to develop a concept of social welfare, albeit a very limited one, which did not depend on any ability to make inter-personal utility comparisons. It is this insight which distinguishes Pareto's contribution from that of Edgeworth who, although he had shown that on the contract curve it was impossible to increase one person's utility without reducing another's, and that the competitive equilibrium was one point on the contract curve, had not drawn these conclusions from his results.

## 15.4 LATER DEVELOPMENTS

By the end of the 1920s the Sidgwick–Marshall–Pigou approach to welfare economics had developed to such an extent that one of its critics was able to describe it as "the most impressive and most unified body of thought in economic science", no other school having developed a detailed welfare economics.[49] However, as we have seen, implicit in much of this work was the possibility of making inter-personal utility comparisons. For example, it is not, except in special cases, possible to speak of a welfare gain for society without having some means of balancing the utility gained by one person against that lost by another. No adequate justification for such inter-personal utility comparisons had been given. This assumption was strongly attacked, in particular by Myrdal (1929) and Robbins (1932). In addition, the concept of externalities was subject to severe criticism. The result was that by the mid 1930s, according to Hicks, "Pigou's foundations seemed hopelessly eroded".[50]

The argument used by Robbins was that there was no *scientific* way of comparing one individual's utility with another's. Thus whilst comparisons of satisfactions are, and must continually be, made in everyday life, such comparisons have no scientific basis, and as such should be clearly distinguished from positive economics. Robbins' critique was thus not that inter-personal utility comparisons could not be made, but that the way they had been introduced into economics was confusing the distinction between positive and normative issues. This essentially methodological critique was similar to that of Myrdal, who argued that economics, both past and present, was permeated by political values. Although his conclusion, that there was a need for an economics based on "explicit and concrete value premises",[51] was radically different from that of Robbins, the implications of Myrdal's critique for Pigovian welfare economics were seen as being much the same.

These ideas were not new. Economists had long since recognized both the difficulties involved in comparing different individuals' utilities, and the need to be careful about the distinction between positive and normative economics. The criticisms of Myrdal and Pigou, however, were nonetheless effective in destroying the foundations of welfare economics as it then stood. In the attempt to find an alternative basis for welfare economics, economists began to make use of what Hicks described as the "hint [which] was discovered in one of the more obscure chapters of Pareto's *Manuel*".[52] The work of Pareto, which had been neglected by English speaking economists, was rediscovered, and the stage was set for the emergence of the so-called "New Welfare Economics" in the late 1930s.[53]