

THE
PURE THEORY OF (DOMESTIC) VALUES.

CHAPTER I.

§ 1. IN the present part of the treatise we are concerned with the causes which determine the relative values of commodities produced in the same country under the action of free competition. This theory is called by Mill and others the "theory of Value," but I prefer to call it "the theory of Domestic values." For the term "theory of value" is a generic term, and ought, I think, to be interpreted so as to include the theory of Domestic values and the theory of International values. The apparatus of diagrams which was best adapted for the investigation of the latter will not be of service here; where another apparatus must accordingly be supplied.

The necessity of this change can be easily seen. For in the theory of international values it is important to bring out the similarity between the positions in which the country that buys and the country that sells any particular ware stand to one another. And, to refer to the example of foreign trade which was discussed in the previous Part, the economic causes that govern Germany's willingness to exchange her linen for English cloth are in every respect homogeneous with those that govern England's willingness to exchange her cloth for German linen. It was expedient, therefore, that the curves which represented the respective demands of England and Germany should be drawn on the same principle. This would not have been effected if we had taken distances along Ox to represent numbers of yards of cloth, and distances measured along Oy to represent the exchange value of cloth in terms of linen. Such an arrangement of the diagrams would have some advantages; but it would have involved the laying down of two complete sets of

laws for the construction of the curves; so that, in fact, the laws which governed the shape of Germany's curve would have been in no respect similar to or symmetrical with those which governed the shape of England's curve. This want of symmetry would have marred, though it would not have rendered impracticable, the application of the method of diagrams to the more elementary portions of the theory; but in other portions it would have led to unmanageable complications.

In the theory of Domestic values on the other hand, the causes that determine the price at which producers are willing to bring into the market any given amount of a commodity are, in most respects, of a different character from the causes which determine the price at which consumers are willing to buy any given amount. There is not in the nature of the case any symmetry between these two sets of causes. Therefore it is useless to attempt to express the operation of these two sets of causes by curves, the laws of which shall be symmetrical.

It may at first sight seem that in consequence of the absence of symmetry the diagrams which interpret the pure theory of Domestic values must be very complex. But it is not so; for this theory, although in one respect it is at a disadvantage relatively to the pure theory of International values, yet has a compensating advantage. In the theory of Domestic values it is not necessary to consider at one time the special circumstances of more than one commodity; whereas in the theory of International values, with the partial exception of a certain portion of it, to be discussed hereafter, it is necessary to consider together the circumstances that govern the demand for at least two commodities, as e.g. cloth and linen. The importance of this advantage is so great that the application of the method of diagrams to the former theory involves on the whole less difficulty than does its application to the latter theory.

§ 2. The progress of the theory of Domestic values has been much hindered by contentions as to the relation in which value stands to "cost of production," and the meaning which is to be attributed to this phrase. The phrase is used in two different senses. Sometimes it means the sum total of the efforts and abstinences which have been undergone by the various labourers and capitalists who have had share in the production. At other times it means the economic measure of these efforts and abstinences, i.e. the price that must be paid by any person who wishes to purchase them.

In the present investigation we are concerned with cost of production only in its latter use, or, as I prefer saying, with "expenses of production." We have to deal only with the machinery of exchange. We have not to estimate the fatigue

or discomfort which must be undergone by those who perform any given task; we have only to consider the price which must be paid to them in order to induce them to perform it. We have to consider the consequences which result from the great central law of economic science.

This law is that "producers, each governed under the sway of free competition by calculations of his own interest, will endeavour so to regulate the amount of any commodity which is produced for a given market during a given period, that this amount shall be just capable on the average of finding purchasers during this period at a remunerative price. A remunerative price is to be interpreted to be a price which shall be just equal to the sum of the exchange or economic measures of those efforts and sacrifices which are required for the production of the commodity when the amount in question is produced. These economic measures are the expenses which must be incurred by a person who would purchase the performance of these efforts and sacrifices¹."

Accordingly, we take as before two fixed straight lines Ox and Oy at right angles to one another. But while we take distances along Ox to represent amounts of the commodity in question, we must take distances measured along Oy to represent values of a unit of the commodity; as e.g. a ton, if the commodity be coal; a yard, if the commodity be cloth, &c. These values must be measured in terms of some other commodity; in general it is convenient to measure them in terms of money, or, which is the same thing, in terms of command over commodities in general, so that distances measured along Oy represent prices. The curves are capable of being applied in the solution of many problems concerning market values. But here they will be applied only to average values.

§ 3. Let us consider first the curve which represents the circumstances of the average demand in a given market for a particular commodity; say for coal, supposed to be all of uniform quality. The market may be a district of any size; it may be the whole of a country. The amount of coals which will be bought or "demanded" in a given time, say in a year, will depend upon the average price at which they are offered for sale. Thus, if it is possible to dispose of, say, a million tons annually in this market, at an average price of 25s. a ton; it would not have been possible to dispose of eleven hundred thousand tons annually, save at a lower price, say at an average of 23s. a ton. Let us suppose that we know the price at which each several amount of coals can be disposed of annually. If

¹ From an article by the present writer in the *Fortnightly Review* for April, 1876.

then we measure numbers of tons of coals along Ox and the number of shillings in the price of a ton of coals along Oy , we may draw what may be called "the Demand curve," thus: Let M be any point on Ox (fig. 20), and let the price at which it is possible to dispose of OM_1 coals annually be estimated and found to be equal to ON_1 . Draw M_1P_1 and N_1P_1 at right angles to Ox and Oy respectively to meet in P_1 . Then P_1 is a point on the curve. By causing M_1 to move continuously from O along Ox , and finding the position of P_1 corresponding to each position of M_1 , we can obtain a continuous series of positions for P_1 ; i.e. we can make P_1 describe the curve which we are seeking.

Of course it may not be possible to conjecture, with any approach to accuracy, the price at which it would be possible to dispose of a quantity of the commodity, either very much greater or very much less than that amount which is wanted to be sold in the market in question. Consequently in the discussion of any particular practical problem the demand curve can be regarded as trustworthy, only within somewhat narrow limits on either side of this amount. But this difficulty is of importance only in connexion with Applied Economics. In Pure Economics, with which alone we are concerned here, we may suppose the curve to be properly drawn throughout its whole length.

Recollecting that P_1M_1 is equal to ON_1 we may define the Demand curve thus:

The Demand curve DD_1 for a commodity in a market is such that if any point P_1 be taken on it, and P_1M_1 be drawn perpendicular to Ox , P_1M_1 represents the price per unit, at which an amount of the commodity, represented by OM_1 , is capable of being sold in the market in each year (or other given period).

Since every increase in OM_1 causes a decrease in PM_1 , a point moving from D along DD_1 will continually increase its distance from Oy and diminish its distance from Ox . We may here recall a definition already given. It has been said:

Whatever portion of a curve lies in such a direction that a point which moves along it so as to recede from Ox recedes also from Oy ; that portion of the curve is said to be *inclined positively*. Conversely, whatever portion of a curve lies in such a direction that a point which moves along it so as to recede from Ox approaches Oy ; that portion of the curve is said to be *inclined negatively*.

With this definition we may enunciate

PROP. XVII. *The Demand Curve is throughout inclined negatively.*

§ 4. On similar principles we may draw the curve which

represents the circumstances of the average supply of the commodity: or as we may say, "the Supply Curve." It may be that every increase in the amount supplied involves a more than proportional increase in the expense of producing it. Thus we may suppose that if a million tons annually can be raised and brought into the market at a price of 25s. a ton, the requisite allowance being made for traders' profits of various kinds; that for an annual supply of nine hundred thousand tons, a price of 23s. would be sufficient; but that for an annual supply of eleven hundred thousand tons, a price of 27s. would be required. Let us suppose that we know the price which is sufficient to cover the expenses of production of each several amount of coal supplied annually in the market. We may then draw the Supply curve thus:

Let M_2 be any point on Ox , fig. 20. Let the price which will just cover the expenses of producing and bringing into the market OM_2 tons of coal annually be calculated and found equal to ON_2 . Draw M_2P_2 and N_2P_2 , at right angles to Ox and Oy respectively to meet in P_2 . Then P_2 is a point on the curve. By causing M_2 to move continuously from O along Ox , and finding the position of P_2 corresponding to each position of M_2 , we can obtain a continuous series of positions for P_2 ; i.e. we can make P_2 describe the curve which we are seeking.

The calculations necessary for drawing the Supply curve in any particular practical problem, are in general trustworthy only for amounts either very much greater or very much less than that which is wanted actually to be sold in the market in question. But as has been already remarked with reference to the Demand curve, this difficulty does not prevent us from reasoning in pure Economics on the supposition that the curve is properly drawn throughout its whole length.

We may then define the Supply curve thus:

The Supply curve SS' for a commodity in a market is such that if any point P_2 be taken on it, and P_2M_2 drawn perpendicular to Ox , P_2M_2 represents the price per unit at which a supply of the commodity of which the amount is represented by OM_2 can be remuneratively produced and brought into the market in each year (or other given period).

The law which governs the shape of this curve is not so simple as the corresponding law for the Demand curve. Some remarks will be made in the following section as to the manner in which an increase in the total production of any commodity affects the price at which its producers can afford to offer it for sale. For the present we may assume that in general an increase in the production of a raw commodity can be effected only at a more than proportionately increased expense: while an increase in

the demand for manufactured commodities in most cases tends to a diminution of the price at which they can be offered for sale. Thus if SS' be the Supply curve for a raw commodity, the law in most but not in all cases will be, that if a point moves from S along the curve it will increase its distance from Ox at the same time that it increases its distance from Oy : or in other words, that the curve is inclined positively throughout. If, however, SS' be the Supply curve for a manufactured commodity, the law in most, but not in all, cases will be that if a point moves from S along the curve, it will while increasing its distance from Oy diminish its distance from Ox . But after the point has moved in this way for a certain distance, it may cease to approach Ox , and begin to recede from it. For it may happen that a further increase in the amount produced will not render possible any important further economies in the production; and that in consequence of the increasing expense to which manufacturers are put in obtaining additional supplies of the raw material or of labour, any further increase in the amount produced can be profitably effected only at an increased price. But again, the production of an amount considerably larger than this may render possible further economies of such magnitude as to outweigh the tendency which the expense of obtaining additional supplies of labour and of raw material has to increase the price at which the commodity can be produced. So that as the point continues to move along SS' it may, while continuing to recede from Oy , again commence to approach Ox , and so on. Thus SS' may have the shape that is given to it in fig. 21. This result may be expressed by saying that it is possible that some portions of the supply curve may be positively inclined and others negatively. It is, however, obvious that the Supply curve cannot bend backwards after the manner of the curve drawn in fig. 22. For the circumstances on which the difficulty of production of any given amount OM_2 of the commodity depends, being definite; it cannot be true that each of two prices P_2M_2 and QM_2 is just sufficient to render remunerative the production of the same amount OM_2 . Hence we obtain the only law to which the Supply curve must in all cases conform, viz.:

PROP. XVIII. *The Supply Curve cannot cut twice any vertical straight line.*

It may be observed that the law that has been given with regard to the shape of the Demand curve includes the law:

The Demand curve cannot cut twice either any vertical straight line or any horizontal straight line.

The extent to which § 5. No attempt can be made in the present work fully to investigate the data which would be required for the construc-

tion of the supply curve in any particular case. For in such an attempt it would be necessary to work over a very large portion of the ground covered by the science of applied Economics. Enough has been said to indicate to those who are already acquainted with that science the general character of the required investigation¹. But I would venture to remark that the customary method of treating the advantages of division of labour and of production on a large scale appears to me to be in one respect defective. For the manner in which these advantages are discussed in most Economic treatises is such as to imply that the most important of them can as a rule be obtained only by the concentration of large masses of workmen in vast establishments. If this were the rule, it would be reasonable to object that the introduction of economies into the process of manufacture does not depend directly and in the main on the magnitude of the total amount of the commodity produced. It may indeed be argued that an industry which gives employment to only some twenty thousand men altogether may happen to be concentrated in the hands of a few large firms, and may thus have command over most of the more important advantages of production on a large scale. And it may be argued that industries of far larger dimensions may be conducted almost entirely by small masters. Such, for instance, is the case with some of the metal trades and with the trades of boot-making and tailoring in England. The answer to this objection is twofold.

In the first place it must be insisted that such industries as the two last mentioned are not fairly to be classed as manufacturing industries. For in them the producer who is brought into immediate contact with the consumer is generally in a position of great advantage relatively to the manufacturer, who lives at a distance from the ultimate purchaser of his wares, and who has to make them to fit a number of lay models. But even in trades of this class, when the progress of invention renders possible important economies of which none but large establishments can avail themselves, such establishments will rise more speedily and more surely if the total demand for the produce of the industry is great than if it is small. I may quote, in illustration of this principle, the history of the boot-making trade in America: in which the growth of large establishments and a localized industry has been simultaneous with the development of various forms of the sewing machine and of other great economies in manufacture. And the clothing trades in America and elsewhere appear to be entering upon a similar phase.

We may then properly limit the title of manufacturing

¹ But compare the Appendix on Mill's *Theory of Value*.

the economies derived from manufacturing on a large scale depend on the amount of the total production.

Characteristics of industries

which may properly be called manufacturing industries to those the produce of which is adapted for being dealt with wholesale, which do not require the producer to be brought into immediate contact with the consumer; which are not concerned with raising raw produce from the earth; and which give scope for various forms of specialised skill and specialised machinery.

The term manufacturing industries when thus limited will include the metal trades which have been referred to as being mainly in the hands of small masters. This brings us to the second portion of the answer to the objection with which we are dealing. For in these trades the advantages of production on a large scale can in general be as well attained by the aggregation of a large number of small masters into one district as by the erection of a few large works. It is true that the disadvantages under which the small masters lie in the competition with large firms are increasing more rapidly than are their peculiar advantages; and that in most though not in all directions there is a tendency for small masters to be supplanted. But in the metal trades in question, and in many others, the advantages which are generally classed under the heads of division of labour and production on a large scale can be attained almost as fully by the aggregation into one district of many establishments of a moderate size as by the erection of a few huge factories. The customary method of treating the advantages of division of labour appears to me to be defective, inasmuch as it takes but little account of this fact. I cannot, however, do more here than indicate in outline an explanation of it.

The advantages which a large industry, particularly if it be localized, may have even if it be not conducted in large establishments.

Firstly, with regard to many classes of commodities it is possible to divide the process of production into several stages, each of which can be performed with the maximum of economy in a small establishment: though the larger capitalists have even in these cases superior advantages as regards the buying of materials, and occasionally as regards the selling of that which they produce. If there exist a large number of such small establishments specialised for the performance of a particular stage of the process of production, there will be room for the profitable investment of capital in the organising of subsidiary industries adapted for meeting their special wants. The most important of these subsidiary industries fall chiefly into two groups.

Subsidiary industries. One of these groups is occupied with making the special tools and machinery required for this stage of the production. Such a task offers large scope for enterprise both in other ways and in particular in the invention and erection of machinery designed for making these special tools and machinery. But in order that such a task may be efficiently performed, it is neces-

sary that the total demand for these tools and machinery should be very great.

The other group of subsidiary industries is occupied with collecting and distributing the various materials and other commodities which are required by the small establishments in question, and with collecting and distributing the produce of their work. This task will be performed partly by carriers, including those who make and manage railways and canals: partly by intermediate traders, some on a small scale and some on a large. In this class of subsidiary industries are to be reckoned also the trade newspaper and other agencies for collecting and disseminating information relating to particular trades.

Secondly, among the most important of the economies which are available in the production of many classes of commodities are those which are concerned with the education of specialised skill. When large masses of men in the same locality are engaged in similar tasks, it is found that, by associating with one another, they educate one another. To use a mode of speaking which workmen themselves use, the skill required for their work "is in the air, and children breathe it as they grow up." Moreover, a man who has the faculties required for the work of a foreman, or for any specially difficult class of manual work, is likely soon to be put to the best work for which he is fitted, if there are in his neighbourhood many workshops in which he may seek a berth. Thus nascent talent is quickly and surely developed. Again, the large extent of the market in which employers can seek skilled labour makes it easy for them, when they want to extend their business, to obtain additional supplies of ready trained workmen. And they escape that disorganisation of their business, which would arise if they could not easily fill up the gap occasioned by the illness or death of a foreman or other highly skilled workman.

Thirdly, if the total number of firms engaged in a particular industry is small, there are but few men in a position to make improvements in the processes of manufacture, to invent new machines and new methods. But when the total number of men interested in the matter is very large there are to be found among them many who, by their intellect and temper, are fitted to originate new ideas. Each new idea is canvassed and improved upon by many minds; each new accidental experience and each deliberate experiment will afford food for reflection and for new suggestions, not to a few persons but to many. Thus in a large localised industry new ideas are likely to be started rapidly: and each new idea is likely to be fertile of practical improvements.

The education and economy of technical skill.

The inter-communication of ideas.

