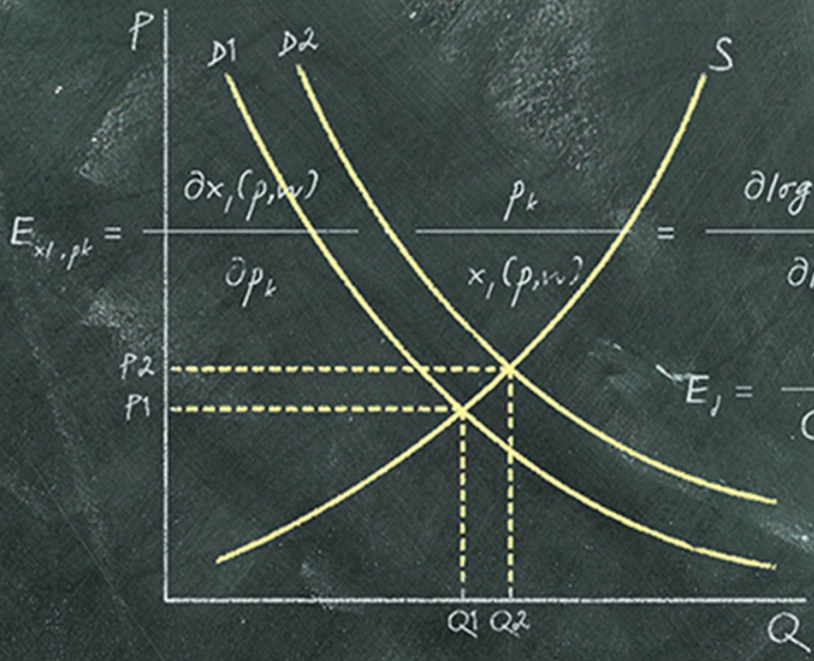

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Principles of Economics

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Alfred Marshall

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Contents

Book V General Relations of Demand, Supply and Value

Book VI The Distribution of the National Income

Introduction

Peter Groenewegen

In 1890, during his sixth year as professor of economics at the University of Cambridge, Alfred Marshall published the first edition of what became his major book on the subject, *Principles of Economics*. Thirty years later, in 1920, the book's eighth edition appeared, a volume frequently reprinted (in 1922, 1925, 1930, 1936, 1938, reset and reprinted in 1949, 1952, 1956, 1959, ninth variorum edition in 1961, and so on). It greatly outsold the copies of the book sold during its author's lifetime, which ended in 1924 (26,297 copies had by then been sold in England and America; 39,890 were sold from 1924–25 to 1941–42). Moreover, the book was continuously in print throughout the twentieth century, and at the time of writing was available in a variety of different reprints. The eighth edition of Marshall's *Principles* therefore taught thousands and thousands students of economics not only the foundations of the subject but also many of its more advanced parts. This makes Marshall's *Principles* a true classic in the literature of economics, even in the special sense in which Marshall himself defined classical writers in a letter to James Bonar on 27 November 1898, the year its fourth edition was published. 'A classical author…is one who by the form or the matter of his words or deeds has stated or indicated architectonic ideas in thought or sentiment, which are in some degree his own, and which, once created, can never die but are an existing yeast ceaselessly working in the Cosmos'. Marshall's *Principles* contain many of these architectonic ideas, which have become such important parts of the language of economists that their origin in Marshall's book is often forgotten.

An overview of the contents of the eighth edition enables a clear insight into the high originality of the work as presented in the last version revised by its author. The six books into which the text is divided provide a 'Preliminary Survey' and 'Some Fundamental Notions', before examining 'Wants and Their Satisfaction'; 'The Agents of Production: Land, Labour, Capital and Organization'; 'General Relations of Demand, Supply, and Value'; and finally 'The Distribution of the National Income' as the earnings of labour, the interest of capital, profit and the rent of land. The text's Table of Contents (pp. v–vii) therefore indicates that these parts of the contents were subdivided into six Books. In addition,

the contents included 12 appendices (from A to L) on a range of topics, a Mathematical Appendix, an index, and prefaces to both the 1890 first edition and the 1920 eighth edition. By contrast, the 1890 first edition had contained seven Books, no Appendices apart from a Mathematical Appendix, and an index. Its size was 754 pages (including the index); by 1920 the eighth edition contained 871 pages (including the index).

The prefaces to the first and the eighth edition which, as indicated above, are part of the text of the eighth edition, both drew attention to the fact that Marshall had intended initially to publish *Principles of Economics* in two volumes. The planned second volume would most probably have presented 'Foreign Trade' in Book VII, 'Money and Banking' in Book VIII, 'Trade Fluctuations' in Book IX, 'Taxation' in Book X, 'Collectivism' in Book XI and 'Aims for the Future' in Book XII. Like the first volume, the projected second volume was to have its own Mathematical Appendix. This plan was not fully abandoned until the appearance of the sixth edition in 1910. It was then replaced, as the preface to the eighth edition makes clear, by an intention to produce a group of companion volumes. These included *Industry and Trade* (published in 1919) and a volume on trade, finance and the industrial future, parts of which were published in 1923 as *Money, Credit and Commerce*. Even by that late year in Marshall's life, the second 'companion' was to be followed by a book on 'the possibilities of social advance', a topic on which Marshall had many ideas he had pondered for the greater part of his life. Book VI, Chapter XIII, included from the fifth edition of the *Principles*, presents some of these expectations about the future by way of conclusion to his major work on economics. The final sentence of the concluding chapter suggests that its final two Books, V and VI, contain material 'the most difficult of the whole province of economics; and command, and give access to, the remainder'.

The view imparted in this final sentence of Marshall's *Principles* (at least in the later editions) may be further explored in order to shed light on the intentions of its author visible in the formal structure of the book. The major theoretical framework of Marshall's *Principles of Economics* can be summarized in four brief phrases: things are **wanted** and are therefore **produced**; these products are sold in the market at an exchange **value** determined by supply and demand; and this market value is **distributed** as income to those who helped to produce it, that is, the labourers, owners of capital, entrepreneurs (Marshall preferred the English term 'undertakers') and landlords.

The first two books provided background and definitional material. Economics is defined as both the science of wealth and as part of the

science of man; it is basically concerned with (mainly monetary) incentives to action; its study by both inductive and deductive means generates economic laws more complex and less advanced than those of the physical sciences; the practical aims of economics require 'perception, imagination, reason, sympathy, and caution' on the part of the investigating economist. This definition only left limited room for the use of mathematics in economics. Mathematics was a technique which Marshall had used extensively when first writing on economics; the mature Marshall became increasingly cautious of its usefulness in economic reasoning. In the preface to the first edition (p. x), Marshall put the matter as follows: 'The chief use of pure mathematics in economic questions seems to be in helping a person to write down quickly, shortly and exactly some of his thoughts for his own use; and to make sure that he has enough, and only enough, premises for his conclusions (i.e. that his equations are neither more nor less in numbers than his unknowns)'. The four chapters of Book II in turn examined wealth, production, consumption, labour, necessaries, income and capital, defined in such a way that they reflected 'the practice of every-day life'.

This brief account of the contents of Marshall's *Principles* enables some further comments on what its economics can be classified as, and what not. Marshall's *Principles* presents a great deal of what would now be called 'micro-economics'; however, 'macro-economic issues', where relevant, are not ignored. The book was presented by Marshall as essentially a treatise on preliminary theoretical foundations, but practical applications are frequently discussed. Many propositions in the book can be considered as static (particularly those derived by using Marshall's 'partial equilibrium method'), but dynamic analysis was not forgotten and was used when needed as, for example, in the eighth edition's final chapters on progress. Much of the argument can be considered as value neutral, and various perspectives on parts of economics are based on specific value judgments, such as the 'welfare economics' theorems contained in specific chapters of Books III and V. Examples are the introduction of 'Consumer Surplus' in Book III Chapter 6, 'Value and Utility', and Book V Chapter XIII, 'Theory of changes in normal demand and supply, in relation to the doctrine of maximum satisfaction'. Consumer's Surplus, as well as Producer's Surplus were concepts introduced into economics by Marshall, which have endured in varying degrees; Marshall's analysis of maximum satisfaction reflects on the impact of changes in demand on the value of commodities subject to constant, diminishing, and increasing returns, a fairly novel aspect of his theory of production, which likewise endured.

The static and dynamic aspects of Marshall's *Principles of Economics* are introduced where relevant in the text. Some of the dynamics arise when appropriate in the discussion, for example, when linking the theory of economic growth with the theory of production. The time periods under which production of commodities takes place—market period, short period and long period—likewise rest on static and dynamic characteristics. The high dynamic contents of Marshall's *Principles* reflects on various interdisciplinary approaches in the book drawn from history and the philosophy of history, from sociology, from the emphasis on the importance of biology for economic analysis, and from the economic institutions Marshall had studied at firsthand in Britain, the United States, and various European countries. These studies taught him the nature of production in specific industries, whether it was particularly land, capital, labour using, or highly mechanized or not. His *Wanderjahre* in industrial districts from the 1860s and a concentrated visit to the United States in 1875 procured for him examples of industrial life and the specific details which enabled the mental separation of one industrial process from another. Much of the theory contained in *Principles of Economics* is leavened and illustrated by factual examples drawn from the 'real world'. This approach to the subject explains the book's long life and its popularity with readers, especially student readers.

The following issues are discussed further by way of introduction: (1) The road to the eighth edition of *Principles of Economics*; (2) its underlying method; (3) its authorities; (4) its enduring impact on economic thought and analysis.

1 The Road to the Eighth Edition of *Principles of Economics*

Marshall started work on his *Principles* when traveling in Europe during 1881–82 while on a year of sick leave from the University of Bristol. Its contents grew gradually out of the material for Book III on wants and the theory of satisfaction, and Book V on the theory of value and supply (cost of production) and demand. The theory of distribution (wages, interest, profits and rent) of Book VI developed naturally from the material of value and cost production. Book IV was devoted to the theory of production on which the cost of production analysis (and that of supply) was based, and which also introduced much factual material to the contents of *Principles of Economics*. The introductory Books I (A Preliminary Survey) and Book II (Some Fundamental Notions) were originally much longer than they were in the eighth edition, because

they incorporated two long historical chapters on 'The Growth of Free Industry and Enterprise' and a chapter on 'The Growth of Economic Science', which became Appendices A and B from the fifth edition. The remaining four chapters of Book I in 1890 covered methodological issues. Book II's six chapters covered similar material to that Book in the final edition. One (unrepeated in later editions) aspect of the 1890 first edition was that it was published with seven Books: Book V presented the theory of the equilibrium of demand and supply; Book VI (with only six chapters) presented 'Cost of Production Further Considered', while Book VII presented 'Value or Distribution and Exchange'. This change in the structure of the Book was undertaken quite late in the construction period of *Principles*, and delayed its publication by a good six months. The structure did not last, however. A year later, the second edition returned the structure to the six Books originally contemplated, and so it remained until the final and eighth edition.

According to Marshall's nephew, Claude Guillebaud, the third edition of 1895 was prepared by Marshall when his powers of exposition were probably at their height. It added 40 pages to the contents. These were spread over Book III, which modernized its terminology by steering it away from the utilitarian language in which it had been couched in the previous two editions, and in Book IV on social capital. The 1895 edition was also the first opportunity Marshall had of replying to his critics of the first two editions. These changes made it longer than the fourth edition (1898) in terms of pages. The fourth edition nevertheless introduced some important new concepts to the text, including especially a separate chapter on quasi rent as the earnings of capital investment. The fifth edition (1907) made the most dramatic changes. It transformed the introductory three historical chapters of Book I into Appendices A and B, and its, and Book II's methodological chapters into Appendix C. Appendix D discussed the uses of abstract reasoning in economics, including mathematics; Appendix E discussed definitions of capital by earlier economists; Appendix F discussed barter, formerly an argument in the text; Appendix G discussed the incidence of local rates, an argument formerly in the text; Appendix H reviewed 'limitations of the use of statical assumptions in regard to increasing returns' from text first introduced into the fourth edition; Appendix I discussed 'Ricardo's theory of value', originating as text in the first edition; Appendix K addressed certain types of surplus, largely dating from third edition text; while Appendix L addressed 'Ricardo's doctrine as to taxes and improvements in agriculture' from text dating to the first edition. The fifth edition also embodied very heavy rewriting

of the chapters on rent and quasi-rent. The sixth edition (1906), as mentioned earlier, removed volume I from the spine. It made relatively few other changes, and its text was reproduced with no major changes in the seventh (1916) and the eighth editions (1920). For those interested in some more detail on Marshall's economic writing, including the *Principles*, reference should be made to my *Alfred Marshall* published by Palgrave Macmillan, 2007, in the series of Great Thinkers in Economics.

It can be argued that the 'opportunity cost' of these various editions was rather high. For example, Marshall would have spent his time much better in the early 1890s had he concentrated on producing the text of the planned second volume after the publication of the first volume in 1890. However, this was not to be, and the eighth edition here reprinted became the book that it was only after the tortuous road of frequent revisions.

2 The Underlying Method of *Principles of Economics*

A few additional comments need to be made on this important topic in addition to the brief remarks on Marshall's methodology in the early broad summary of the contents of *Principles of Economics*.

The first comment arises from a discussion on method Marshall had in conversation and correspondence with his former pupil and subsequent friend, John Neville Keynes. This coincided with the time Keynes himself was busily writing his work on method, *The Scope and Method of Political Economy*, which was published in December 1890, a few months after Marshall's *Principles*. In this exchange of views, Marshall explained his views on method as follows:

> I take an extreme position as to the *methods* & *scope* of economics. In my new book [i.e. *Principles of Economics*] I say of *methods* simply that economics has to use every method known to science. And as to scope, I say 'Economics is the science of man's actions in the ordinary business of life, it inquires how he gets his income & how he uses it.... You make all your contrasts rather too sharply for me. You talk of the inductive & the deductive method, whereas I contend that each involves the other, and that historians are always deducting, & that even the most deductive writers are always implicitly at least basing themselves on observed facts.... My second point is that you continually use the word *theory* where I sh[oul]d use *analysis*.' (Marshall to Keynes, [September?] 1889; 20 September 1890)

Marshall also explained in this letter that theory, in his view, preceded factual argument, but that analysis preceded both and came first in scientific argument.

The second comment relates to the Marshallian use of partial equilibrium analysis, its meaning and the implications of his use of that method. Equilibrium in this context gives an emphasis on the need for stability when trying to obtain solutions to particular problems, because unstable situations do not lend themselves to useful solutions. Partial for Marshall in this context emphasized that the need for obtaining practical solutions by means of breaking complex problems into various causal parts, and holding most of these constant, enables concentration on the main causal factor. Hence the notion of *caeteris paribus* (other things being equal) as a device for drawing approximate conclusions from a relationship between two factors, by holding the other, less important, causal factors constant for the time period in question. (Short period analysis may require different major causes for analysis than the market period or the long period for the item in question.) This is a method, therefore, particularly appealing to Marshall. He wished to be able to draw significant conclusions from his analysis by simplifying complex problems in this way, and was well aware of the role of time in specifying solutions to analytical problems. (NB: this method of course conflicts from the contemporary practice of confining meaningful economic analysis to general equilibrium, a situation which Marshall recognized in notes XIV–XXI of the Mathematical Appendix in his *Principles of Economics*, but which he declined to use because it tended to ignore the important issue of time in economic activity.) Hence partial equilibrium was a useful, albeit imperfect, tool for Marshall, much superior in this regard to the notion of general equilibrium, the basis for the economic thinking of his contemporary, economist Léon Walras. There is therefore much partial equilibrium analysis throughout the pages of *Principles of Economics*.

Readers who are introduced to Marshall's work by examining the content of the eighth edition of his *Principles* need to be well aware of these methodological aspects of his work. This part of his heritage is also visible when looking at the types of authorities he used when writing his book.

3 The Major Authorities Marshall Used in Writing His *Principles*

Marshall used an extensive set of authorities in writing *Principles of Economics*. The preface to the first edition lists a number of persons

whose influence on him was particularly great in the context of 'continuity', a principle initially applied in that preface to the use of terms. Such continuity is illustrated there by the notion of rent, described as a large genus, of which the rent of land is the leading species. 'The notion of continuity with regard to development is common to all schools of economic thought', whether in biology as visible in Herbert Spencer's work, or in history and philosophy as represented by G. W. F. Hegel's *Philosophy of History*. These writers were likewise influential on Marshall, as were other representative writers from these schools of thought. Antoine-Augustin Cournot's use of mathematical continuity influenced Marshall on the mutual determination of the various elements in an economic problem. William Stanley Jevons is a modern authority Marshall briefly acknowledged, while writers of the classical school (especially Adam Smith, David Ricardo and J. S. Mill), were implicitly described as influences, together with members of the German historical school. Finally, Cournot and Johann Heinrich von Thünen are thanked for drawing Marshall's attention to the importance of the margin (and of marginalist analysis), especially in defining a stable equilibrium as a balance between an increment in demand and an increment in cost of production. The genius of Cournot is particularly acknowledged as a crucial influence on Marshall's own work even if occasionally a dangerous one.

The preface written in 1920 for the eighth edition in addition mentions Wilhelm Roscher as a German writer of volumes of foundations. It therefore resembles the volume of foundations Marshall's *Principles* had become in the absence of a second volume and its replacement, as indicated previously in this introduction, by several companion volumes. Likewise this preface mentions Ricardo and Thomas Malthus in the context of diminishing returns. It may be noted that by 1920, biology had become 'the mecca' of the economist, while the importance of philosophy and history à la Hegel was no longer highlighted as a major influence.

The perspective on authorities from the prefaces included with these two editions of Marshall's *Principles of Economics* is to a large extent limited. A better insight comes from the index and the names of cited authors there included. An examination of the index of the eighth edition already tells a great deal about such influences and their degree of importance to Marshall from the number of citations each name index entry implies. This task can be left to the reader of this volume.

4 The Enduring Influence and Impact of Marshall's *Principles of Economics*

Marshall's classic text continues to influence economics, even if often only by reminding contemporary economists of the valuable lessons to be learned from his method, with special reference to the wide approach he took to the scope of the subject. Combining facts and theory, 'induction and deduction' are specifically important aspects of his legacy. Changes in the facts generally indicate a need to change the underlying theory, an issue of which Marshall was very cognizant. When economic institutions (such as the market, the industry and the firm) were continuously evolving in the light of changing circumstances, economic analysis of their activities had to continually change in order to accommodate these developments. Such emphasis on change and evolution explains why Marshall described biology as the mecca of the economist in the preface to the first edition; it also makes examination of progress (social, moral and economic) a suitable conclusion to this volume of foundations. A significant number of current admirers of Marshall wish to emulate and advance on his plea for the 'biological method'; others seek to develop his market and industry economics to make it conform to specific institutions, such as the industrial districts which, following Marshall, see this phenomenon as an expansion of the division of labour.

More narrowly, Marshall bequeathed to later economists a significant number of new tools for their analytical toolbox, some more successful than others. These included Consumer's Surplus and the associated Producer's Surplus; various time periods for analysing markets and productive processes; and a broad classification of the various relationships between inputs and outputs, depending on whether they obeyed the laws of increasing or diminishing returns (or costs). The notion of quasi-rent to explain returns from durable productive instruments was one valuable consequence of Marshall's broad approach to the theory of rent; its application as the rent of ability to explain remuneration of classes of skilled labour is another. More generally, the use of diagrams and their simplification was a habit Marshall bequeathed to economics education, and is very visible in many parts of his *Principles*. The description of a supply-and-demand diagram as the Marshallian cross reveals the extensive value of this legacy.

Marshall's second legacy was the longevity of his *Principles* as a tool for teaching. This was suggested at the start of this introduction, and does not need further reiteration. The one book, however, enabled the creation of

a Marshallian school, as the Cambridge Faculty could be described after Marshall's retirement as professor in 1908. Under Arthur Pigou, Dennis Robertson, John Maynard Keynes and many other, less well-known, students of Marshall who became academics, this Cambridge School thrived. Much of the economic debate in the journals of the 1920s and 1930s focused on Marshallian tools of analysis such as the laws of costs, the representative firm and the nature of competition. In the English-speaking world, Marshall's *Principles* remained a key text up to at least the end of the 1930s, and in many respects, well beyond.

The final part VIII of the invaluable reference book *The Elgar Companion to Alfred Marshall* (2006) is devoted to Marshall's importance for developments in contemporary economics. Some of these have already been mentioned in different contexts, but they can be noted here as a group. The seven topics listed commence with 'evolutionary economics', to which can be added biological economics. There follow 'industrial economics' and its application to the 'industrial districts' as a vehicle for economic development, and three more specialist topics as well as 'methodology', which has been already frequently raised in this introduction. The specialist topics are 'cognitive economics', 'institutional economics' in the sense of further in-depth research on the interplay between institutions and individual behaviour, and finally the 'micro-economics of supply'. These topics highlight the continuing relevance of Marshall's economics, particularly that of his *Principles of Economics*.

It is now time to conclude this introduction by drawing attention to the classic work of economics reprinted here. Marshall's eighth edition of *Principles of Economics* is a book well worth reading, and is most favourably savoured in a reading from start to finish. To those who have never done so, I wish you bon voyage for a fascinating intellectual journey and a most insightful economic adventure.

Peter Groenewegen
The University of Sydney

PREFACE TO THE FIRST EDITION

ECONOMIC conditions are constantly changing, and each generation looks at its own problems in its own way. In England, as well as on the Continent and in America, Economic studies are being more vigorously pursued now than ever before; but all this activity has only shown the more clearly that Economic science is, and must be, one of slow and continuous growth. Some of the best work of the present generation has indeed appeared at first sight to be antagonistic to that of earlier writers; but when it has had time to settle down into its proper place, and its rough edges have been worn away, it has been found to involve no real breach of continuity in the development of the science. The new doctrines have supplemented the older, have extended, developed, and sometimes corrected them, and often have given them a different tone by a new distribution of emphasis; but very seldom have subverted them.

The present treatise is an attempt to present a modern version of old doctrines with the aid of the new work, and with reference to the new problems, of our own age. Its general scope and purpose are indicated in Book I; at the end of which a short account is given of what are taken to be the chief subjects of economic inquiry, and the chief practical issues on which that inquiry has a bearing. In accordance with English traditions, it is held that the function of the science is to collect, arrange and analyse economic facts, and to apply the knowledge, gained by observation and experience, in determining what are likely to be the immediate and ultimate effects of various groups of causes; and it is held that the Laws of Economics are statements of tendencies expressed in the indicative mood, and not ethical precepts in the imperative. Economic laws and reasonings in fact are merely a part of the material which Conscience and Common-sense have to turn to account in solving practical problems, and in laying down rules which may be a guide in life.

But ethical forces are among those of which the economist has to take account. Attempts have indeed been made to construct an abstract science with regard to the actions of an "economic man," who is under no ethical influences and who pursues pecuniary gain warily and energetically, but mechanically and selfishly. But they have not been successful, nor even thoroughly carried out. For

they have never really treated the economic man as perfectly selfish: no one could be relied on better to endure toil and sacrifice with the unselfish desire to make provision for his family; and his normal motives have always been tacitly assumed to include the family affections. But if they include these, why should they not include all other altruistic motives the action of which is so far uniform in any class at any time and place, that it can be reduced to general rule? There seems to be no reason; and in the present book normal action is taken to be that which may be expected, under certain conditions, from the members of an industrial group; and no attempt is made to exclude the influence of any motives, the action of which is regular, merely because they are altruistic. If the book has any special character of its own, that may perhaps be said to lie in the prominence which it gives to this and other applications of the Principle of Continuity.

This principle is applied not only to the ethical quality of the motives by which a man may be influenced in choosing his ends, but also to the sagacity, the energy and the enterprise with which he pursues those ends. Thus stress is laid on the fact that there is a continuous gradation from the actions of "city men," which are based on deliberate and far-reaching calculations, and are executed with vigour and ability, to those of ordinary people who have neither the power nor the will to conduct their affairs in a business-like way. The normal willingness to save, the normal willingness to undergo a certain exertion for a certain pecuniary reward, or the normal alertness to seek the best markets in which to buy and sell, or to search out the most advantageous occupation for oneself or for one's children—all these and similar phrases must be relative to the members of a particular class at a given place and time: but, when that is once understood, the theory of normal value is applicable to the actions of the unbusiness-like classes in the same way, though not with the same precision of detail, as to those of the merchant or banker.

And as there is no sharp line of division between conduct which is normal, and that which has to be provisionally neglected as abnormal, so there is none between normal values and "current" or "market" or "occasional" values. The latter are those values in which the accidents of the moment exert a preponderating influence; while normal values are those which would be ultimately attained, if the economic conditions under view had time to work out undisturbed their full effect. But there is no impassable gulf between these two; they shade into one another by continuous gradations. The values which we may regard as normal if we are thinking of the changes

from hour to hour on a Produce Exchange, do but indicate current variations with regard to the year's history: and the normal values with reference to the year's history are but current values with reference to the history of the century. For the element of Time, which is the centre of the chief difficulty of almost every economic problem, is itself absolutely continuous: Nature knows no absolute partition of time into long periods and short; but the two shade into one another by imperceptible gradations, and what is a short period for one problem, is a long period for another.

Thus for instance the greater part, though not the whole, of the distinction between Rent and Interest on capital turns on the length of the period which we have in view. That which is rightly regarded as interest on "free" or "floating" capital, or on new investments of capital, is more properly treated as a sort of rent—a *Quasi-rent* it is called below—on old investments of capital. And there is no sharp line of division between floating capital and that which has been "sunk" for a special branch of production, nor between new and old investments of capital; each group shades into the other gradually. And thus even the rent of land is seen, not as a thing by itself, but as the leading species of a large genus; though indeed it has peculiarities of its own which are of vital importance from the point of view of theory as well as of practice.

Again, though there is a sharp line of division between man himself and the appliances which he uses; and though the supply of, and the demand for, human efforts and sacrifices have peculiarities of their own, which do not attach to the supply of, and the demand for, material goods; yet, after all, these material goods are themselves generally the result of human efforts and sacrifices. The theories of the values of labour, and of the things made by it, cannot be separated: they are parts of one great whole; and what differences there are between them even in matters of detail, turn out on inquiry to be, for the most part, differences of degree rather than of kind. As, in spite of the great differences in form between birds and quadrupeds, there is one Fundamental Idea running through all their frames, so the general theory of the equilibrium of demand and supply is a Fundamental Idea running through the frames of all the various parts of the central problem of Distribution and Exchange.[1]

[1] In the *Economics of Industry* published by my wife and myself in 1879 an endeavour was made to show the nature of this fundamental unity. A short provisional account of the relations of demand and supply was given before the theory of Distribution; and then this one scheme of general reasoning was applied in succession to the earnings of labour, the interest on capital and the Earnings of Management. But the drift of this arrangement was not made sufficiently clear; and on Professor Nicholson's suggestion, more prominence has been given to it in the present volume.

Another application of the Principle of Continuity is to the use of terms. There has always been a temptation to classify economic goods in clearly defined groups, about which a number of short and sharp propositions could be made, to gratify at once the student's desire for logical precision, and the popular liking for dogmas that have the air of being profound and are yet easily handled. But great mischief seems to have been done by yielding to this temptation, and drawing broad artificial lines of division where Nature has made none. The more simple and absolute an economic doctrine is, the greater will be the confusion which it brings into attempts to apply economic doctrines to practice, if the dividing lines to which it refers cannot be found in real life. There is not in real life a clear line of division between things that are and are not Capital, or that are and are not Necessaries, or again between labour that is and is not Productive.

The notion of continuity with regard to development is common to all modern schools of economic thought, whether the chief influences acting on them are those of biology, as represented by the writings of Herbert Spencer; or of history and philosophy, as represented by Hegel's *Philosophy of History*, and by more recent ethico-historical studies on the Continent and elsewhere. These two kinds of influences have affected, more than any other, the substance of the views expressed in the present book; but their form has been most affected by mathematical conceptions of continuity, as represented in Cournot's *Principes Mathématiques de la Théorie des Richesses*. He taught that it is necessary to face the difficulty of regarding the various elements of an economic problem,—not as determining one another in a chain of causation, *A* determining *B*, *B* determining *C*, and so on—but as all mutually determining one another. Nature's action is complex: and nothing is gained in the long run by pretending that it is simple, and trying to describe it in a series of elementary propositions.

Under the guidance of Cournot, and in a less degree of von Thünen, I was led to attach great importance to the fact that our observations of nature, in the moral as in the physical world, relate not so much to aggregate quantities, as to increments of quantities, and that in particular the demand for a thing is a continuous function, of which the "marginal"[1] increment is, in stable equilibrium, balanced against the corresponding increment of its cost of

[1] The term "marginal" increment I borrowed from von Thünen's *Der isolirte Staat*, 1826–63, and it is now commonly used by German economists. When Jevons' Theory appeared, I adopted his word "final"; but I have been gradually convinced that "marginal" is the better.

production. It is not easy to get a clear full view of continuity in this aspect without the aid either of mathematical symbols or of diagrams. The use of the latter requires no special knowledge, and they often express the conditions of economic life more accurately, as well as more easily, than do mathematical symbols; and therefore they have been applied as supplementary illustrations in the foot-notes of the present volume. The argument in the text is never dependent on them; and they may be omitted; but experience seems to show that they give a firmer grasp of many important principles than can be got without their aid; and that there are many problems of pure theory, which no one who has once learnt to use diagrams will willingly handle in any other way.

The chief use of pure mathematics in economic questions seems to be in helping a person to write down quickly, shortly and exactly, some of his thoughts for his own use: and to make sure that he has enough, and only enough, premisses for his conclusions (i.e. that his equations are neither more nor less in number than his unknowns). But when a great many symbols have to be used, they become very laborious to any one but the writer himself. And though Cournot's genius must give a new mental activity to everyone who passes through his hands, and mathematicians of calibre similar to his may use their favourite weapons in clearing a way for themselves to the centre of some of those difficult problems of economic theory, of which only the outer fringe has yet been touched; yet it seems doubtful whether any one spends his time well in reading lengthy translations of economic doctrines into mathematics, that have not been made by himself. A few specimens of those applications of mathematical language which have proved most useful for my own purposes have, however, been added in an Appendix.

September 1890.

PREFACE TO THE EIGHTH EDITION

THIS edition is a reprint of the seventh, which was almost a reprint of the sixth, the only changes being in small matters of detail: the Preface is almost the same as in the seventh edition.

It is now thirty years since the first edition of this volume implied a promise that a second volume, completing the treatise, would appear within a reasonable time. But I had laid my plan on too large a scale; and its scope widened, especially on the realistic side, with every pulse of that Industrial Revolution of the present generation, which has far outdone the changes of a century ago, in both rapidity and breadth of movement. So ere long I was compelled to abandon my hope of completing the work in two volumes. My subsequent plans were changed more than once; partly by the course of events, partly by my other engagements, and the decline of my strength.

Industry and Trade, published in 1919, is in effect a continuation of the present volume. A third (on Trade, Finance and the Industrial Future) is far advanced. The three volumes are designed to deal with all the chief problems of economics, so far as the writer's power extends.

The present volume therefore remains as a general introduction to the study of economic science; similar in some respects, though not in all, to that of volumes on *Foundations* (*Grundlagen*), which Roscher and some other economists have put in the forefront of groups of semi-independent volumes on economics. It avoids such special topics as currency and the organization of markets: and, in regard to such matters as the structure of industry, employment, and the problem of wages, it deals mainly with normal conditions.

Economic evolution is gradual. Its progress is sometimes arrested or reversed by political catastrophes: but its forward movements are never sudden; for even in the Western world and in Japan it is based on habit, partly conscious, partly unconscious. And though an inventor, or an organizer, or a financier of genius may seem to have modified the economic structure of a people almost at a stroke; yet that part of his influence, which has not been merely superficial and transitory, is found on inquiry to have done little

more than bring to a head a broad constructive movement which had long been in preparation. Those manifestations of nature which occur most frequently, and are so orderly that they can be closely watched and narrowly studied, are the basis of economic as of most other scientific work; while those which are spasmodic, infrequent, and difficult of observation, are commonly reserved for special examination at a later stage: and the motto *Natura non facit saltum* is specially appropriate to a volume on Economic Foundations.

An illustration of this contrast may be taken from the distribution of the study of large businesses between the present volume and that on *Industry and Trade*. When any branch of industry offers an open field for new firms which rise to the first rank, and perhaps after a time decay, the normal cost of production in it can be estimated with reference to "a representative firm," which enjoys a fair share both of those internal economies which belong to a well-organized individual business, and of those general or external economies which arise out of the collective organization of the district as a whole. A study of such a firm belongs properly to a volume on Foundations. So also does a study of the principles on which a firmly established monopoly, in the hands of a Government department or a large railway, regulates its prices with main reference indeed to its own revenue; but also with more or less consideration for the wellbeing of its customers.

But normal action falls into the background, when Trusts are striving for the mastery of a large market; when communities of interest are being made and unmade; and, above all, when the policy of any particular establishment is likely to be governed, not with a single eye to its own business success, but in subordination to some large stock-exchange manœuvre, or some campaign for the control of markets. Such matters cannot be fitly discussed in a volume on Foundations: they belong to a volume dealing with some part of the Superstructure.

The Mecca of the economist lies in economic biology rather than in economic dynamics. But biological conceptions are more complex than those of mechanics; a volume on Foundations must therefore give a relatively large place to mechanical analogies; and frequent use is made of the term "equilibrium," which suggests something of statical analogy. This fact, combined with the predominant attention paid in the present volume to the normal conditions of life in the modern age, has suggested the notion that its central idea is "statical," rather than "dynamical." But in

fact it is concerned throughout with the forces that cause movement: and its key-note is that of dynamics, rather than statics.

The forces to be dealt with are however so numerous, that it is best to take a few at a time; and to work out a number of partial solutions as auxiliaries to our main study. Thus we begin by isolating the primary relations of supply, demand and price in regard to a particular commodity. We reduce to inaction all other forces by the phrase " other things being equal ": we do not suppose that they are inert, but for the time we ignore their activity. This scientific device is a great deal older than science: it is the method by which, consciously or unconsciously, sensible men have dealt from time immemorial with every difficult problem of ordinary life.

In the second stage more forces are released from the hypothetical slumber that had been imposed on them: changes in the conditions of demand for and supply of particular groups of commodities come into play; and their complex mutual interactions begin to be observed. Gradually the area of the dynamical problem becomes larger; the area covered by provisional statical assumptions becomes smaller; and at last is reached the great central problem of the Distribution of the National Dividend among a vast number of different agents of production. Meanwhile the dynamical principle of " Substitution " is seen ever at work, causing the demand for, and the supply of, any one set of agents of production to be influenced through indirect channels by the movements of demand and supply in relation to other agents, even though situated in far remote fields of industry.

The main concern of economics is thus with human beings who are impelled, for good and evil, to change and progress. Fragmentary statical hypotheses are used as temporary auxiliaries to dynamical—or rather biological—conceptions: but the central idea of economics, even when its Foundations alone are under discussion, must be that of living force and movement.

There have been stages in social history in which the special features of the income yielded by the ownership of land have dominated human relations: and perhaps they may again assert a pre-eminence. But in the present age, the opening out of new countries, aided by low transport charges on land and sea, has almost suspended the tendency to Diminishing Return, in that sense in which the term was used by Malthus and Ricardo, when the English labourers' weekly wages were often less than the price of half a bushel of good wheat. And yet, if the growth of population should continue for very long even at a quarter of its present rate,

the aggregate rental values of land for all its uses (assumed to be as free as now from restraint by public authority) may again exceed the aggregate of incomes derived from all other forms of material property; even though that may then embody twenty times as much labour as now.

Increasing stress has been laid in successive editions up to the present on these facts; and also on the correlated fact that in every branch of production and trade there is a margin, up to which an increased application of any agent will be profitable under given conditions; but beyond which its further application will yield a diminishing return unless there be some increase of demand accompanied by an appropriate increase of other agents of production needed to co-operate with it. And a similar increasing stress has been laid on the complementary fact that this notion of a margin is not uniform and absolute: it varies with the conditions of the problem in hand, and in particular with the period of time to which reference is being made. The rules are universal that, (1) marginal costs do not govern price; (2) it is only at the margin that the action of those forces which do govern price can be made to stand out in clear light; and (3) the margin, which must be studied in reference to long periods and enduring results, differs in character as well as in extent from that which must be studied in reference to short periods and to passing fluctuations.

Variations in the nature of marginal costs are indeed largely responsible for the well-known fact that those effects of an economic cause, which are not easily traced, are frequently more important than, and in the opposite direction to, those which lie on the surface and attract the eye of the casual observer. This is one of those fundamental difficulties which have underlain and troubled the economic analysis of past times; its full significance is perhaps not yet generally recognized, and much more work may need to be done before it is fully mastered.

The new analysis is endeavouring gradually and tentatively to bring over into economics, as far as the widely different nature of the material will allow, those methods of the science of small increments (commonly called the differential calculus) to which man owes directly or indirectly the greater part of the control that he has obtained in recent times over physical nature. It is still in its infancy; it has no dogmas, and no standard of orthodoxy. It has not yet had time to obtain a perfectly settled terminology; and some differences as to the best use of terms and other subordinate matters are but a sign of healthy life. In fact however there is a

remarkable harmony and agreement on essentials among those who are working constructively by the new method; and especially among such of them as have served an apprenticeship in the simpler and more definite, and therefore more advanced, problems of physics. Ere another generation has passed, its dominion over that limited but important field of economic inquiry to which it is appropriate will probably be no longer in dispute.

My wife has aided and advised me at every stage of successive editions of this volume. Each one of them owes a great deal to her suggestions, her care, and her judgment. Dr Keynes and Mr L. L. Price read through the proofs of the first edition and helped me greatly; and Mr A. W. Flux also has done much for me. Among the many who have helped me on special points, in some cases in regard to more than one edition, I would specially mention Professors Ashley, Cannan, Edgeworth, Haverfield, Pigou and Taussig; Dr Berry, Mr C. R. Fay, and the late Professor Sidgwick.

BALLIOL CROFT,
6 MADINGLEY ROAD, CAMBRIDGE.
October 1920.

Note. A comparative index relating this resetting of the Eighth Edition to the original setting will be found on pp. 720–731.

BOOK I

PRELIMINARY SURVEY

CHAPTER I

INTRODUCTION

I, 1, 1.

§ 1. POLITICAL ECONOMY or ECONOMICS is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of wellbeing.

Economics is a study of wealth and a part of the study of man.

Thus it is on the one side a study of wealth; and on the other, and more important side, a part of the study of man. For man's character has been moulded by his every-day work, and the material resources which he thereby procures, more than by any other influence unless it be that of his religious ideals; and the two great forming agencies of the world's history have been the religious and the economic. Here and there the ardour of the military or the artistic spirit has been for a while predominant: but religious and economic influences have nowhere been displaced from the front rank even for a time; and they have nearly always been more important than all others put together. Religious motives are more intense than economic, but their direct action seldom extends over so large a part of life. For the business by which a person earns his livelihood generally fills his thoughts during by far the greater part of those hours in which his mind is at its best; during them his character is being formed by the way in which he uses his faculties in his work, by the thoughts and the feelings which it suggests, and by his relations to his associates in work, his employers or his employees.

Man's character formed by his daily work.

Poverty causes degradation.

And very often the influence exerted on a person's character by the amount of his income is hardly less, if it is less, than that exerted by the way in which it is earned. It may make little difference to the fulness of life of a family whether its yearly income is £1000 or £5000; but it makes a very great difference whether the income is £30 or £150: for with £150 the family has, with £30 it has not, the material conditions of a complete life. It is true that in religion, in

I, 1, 2. the family affections and in friendship, even the poor may find scope for many of those faculties which are the source of the highest happiness. But the conditions which surround extreme poverty, especially in densely crowded places, tend to deaden the higher faculties. Those who have been called the Residuum of our large towns have little opportunity for friendship; they know nothing of the decencies and the quiet, and very little even of the unity of family life; and religion often fails to reach them. No doubt their physical, mental, and moral ill-health is partly due to other causes than poverty: but this is the chief cause.

And, in addition to the Residuum, there are vast numbers of people both in town and country who are brought up with insufficient food, clothing, and house-room; whose education is broken off early in order that they may go to work for wages; who thenceforth are engaged during long hours in exhausting toil with imperfectly nourished bodies, and have therefore no chance of developing their higher mental faculties. Their life is not necessarily unhealthy or unhappy. Rejoicing in their affections towards God and man, and perhaps even possessing some natural refinement of feeling, they may lead lives that are far less incomplete than those of many, who have more material wealth. But, for all that, their poverty is a great and almost unmixed evil to them. Even when they are well, their weariness often amounts to pain, while their pleasures are few; and when sickness comes, the suffering caused by poverty increases tenfold. And, though a contented spirit may go far towards reconciling them to these evils, there are others to which it ought not to reconcile them. Overworked and undertaught, weary and careworn, without quiet and without leisure, they have no chance of making the best of their mental faculties.

May we not outgrow the belief that poverty is necessary?

Although then some of the evils which commonly go with poverty are not its necessary consequences; yet, broadly speaking, "the destruction of the poor is their poverty," and the study of the causes of poverty is the study of the causes of the degradation of a large part of mankind.

§ 2. Slavery was regarded by Aristotle as an ordinance of nature, and so probably was it by the slaves themselves in olden time. The dignity of man was proclaimed by the Christian religion: it has been asserted with increasing vehemence during the last hundred years: but, only through the spread of education during quite recent times, are we beginning to feel the full import of the phrase. Now at last we are setting ourselves seriously to inquire whether it is necessary that there should be any so-called "lower classes" at all: that is,