

Industry and Trade Reconsidered
—Marshall on Britain's Industrial Leadership—

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1. Introduction: 'Crisis of British industry'

How Marshall constructed his industrial and labour economics in *Industry and Trade*, against the background of 'crisis of British industry', the second industrial revolution, and the rise of the corporate economy? Marshall in *Industry and Trade* (1919), like Ashley in *The Tariff Problem* (1903) and Joseph Chamberlain, was keenly aware of the unique historical conjecture which made Britain the workshop of the world in 19th century, and of the dangers to her leadership that 20th century might be bringing. Chamberlain's warnings about the British industries: Marshall vs Ashley or American managerial capitalism.

Marshall expressed the crisis in various ways.

Fifty years ago nine-tenths of those changes, which have enabled the working classes to have healthy homes and food, originated in England...Now,...Americans and Germans jeer at the way in which many of our business men give their energies to pleasure, and play with their work; and they say, truly as I believe, 'unless you completely shake off the habits that have grown on you in the last thirty years, you will go to join Spain.' (to Brooke Foss Westcott, 20 January 1901)

Marshall to Edward Caird, Master of Balliol (5 December 1897): 'I am wholly a trade-unionist of the old stamp. Everywhere the tried men who had made trade-unionism the greatest of England's glories, have been pushed aside. ..Lately the Engineers have used their grand prestige, I hold, for England's ill. ..If the men shd.. win, & I were an engineering employer, I would sell my works for anything I could get & emigrate to America.' 'This is the crisis of our industry'. Marshall thought of the strikes of the union Britain's 'Achilles' heel'. Strong concerns with the industrial relations.

2. Making of *Industry and Trade* and its Impacts

“What Happened to the Second Volume of the *Principles*? The Thorny Path to Marshall’s Last Books” (Whitaker 1990). “A Book that Never Was: Marshall’s final volume on progress and his system of ethical and political beliefs” (Groenewegen 2005)

How *Industry and Trade* was made? How he changed or shifted his plan from Vol.II of *Principles* to *Industry and Trade*. From 1890 to 1903 Marshall was still actively working on Vol.II of *Principles*. Under strong impetus of tariff reform debates caused by Chamberlain, he diverted his efforts to bringing out a book on *National Industries & International Trade* in 1903. C.R. Fay recalled Marshall’s lectures in 1903: “I make it a rule never to talk politics,” he began, “ but this last speech of Mr Joseph Chamberlain is...really...” and for the rest of the hour we listened to an apology for Free Trade.’ ‘The lectures were on “Trade and Industry”.’ (Fay 1924)

Marshall’s first lecture title for the Economics Tripos 1903 was ‘National industries and trade’ and he repeated it: he also lectured on ‘Structure and problems of industry’ in 1905. Walter Layton ‘soaked himself’ in Marshallian economics by attending Marshall’s lectures in 1905-7; ‘he gave us the benefit of his current thinking on the book he was writing on industry and commerce’. Preface to 5th ed.(1907), he proposed to bring out ‘as soon as possible an almost independent volume, part of which is already in print, on *National Industry and Trade*’. Marshall had laid his ‘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’. Preface to 7th ed.(1916), he was now engaged in writing an independent work on *Industry and Trade*. *Industry and Trade* finally appeared in August 1919, in effect as ‘a continuation’ of the *Principles*, to achieve ‘a remarkable success with the public’. (Keynes 1924)

Letters to Layton about lectures on ‘Structure & problems of modern industry’ and ‘Wages & conditions of employment’: ‘under your care the subject flourished; because your heart was in the matter’. ‘if you teach the coming generation, how to bring heart & mind together in working at it in conjunction with “Wages & Conditions of Employment”, you may do more towards fashioning the life of Britain in the second & third quarters of this century than anybody else’. (13 Jan. 1919) In October 1918 he had finalized the last chapter of the new book but one ‘after in effect rewriting it about four times’, explaining that the Board of Trade and the Ministry of Reconstruction were at work on the same lines as those of the last chapter (To Macmillan, 12 Oct.1918). Marshall to Layton as President of the Steel Whitley Council, ‘You would be the right man in the right

place. ...You would be able to write & think out general problems relating to employment & industrial organization, with unexampled knowledge' (9 Dec. 1918).

Industry and Trade, illustrated the value of the motto, 'The many in the one, the one in the many', was a research programme of continuing value to economists interested in the 'realistic' side of the 'science of business'. It raised a discussion on the foundation of a Chair of 'Applied Economics' or 'Industrial & Commercial Economics' at Cambridge among the people around Layton in the early 1920.

Stressing the prominent 'characteristic of the Cambridge School of Economics', Layton wrote to Colonel Strang: "Professor Alfred Marshall's desire that economics should not be a mere affair of the study but should be a real analysis and exposition of the laws governing the workshop and the market place will be evident to anyone who dips into his recent book "Industry and Trade". (19 February 1920, Layton 2/46 (1-4))

Layton drew up "Draft Scheme for a Professorship of Industrial & Commercial Economics at Cambridge University" (Layton 2/46(6)). The Professorship would be concerned primarily with that branch of the field of political economy which deals with the organization of industry, trade and commerce, the question of relations between employers and employed and the general economic problems that present themselves either to managers or to Trade Union organizers. "Memo on Necessity for Formation of School for Studying Applied Economics" was also drafted, requesting 'the foundation of a Professorship, or Chair of Applied Economics' or 'a man who will do for applied economics what Darwin did for natural history'; that is, to collect and collate the masses of facts which can be obtained by reference to and study of industry in every part of the world, and, in using these facts, to elucidate the economic laws, instead of theorizing on economic laws and trying to fit the facts to the theories. (Layton 2/40(1))

'Britain's industrial leadership under strong challenge'

Writing from the early 1870s to the early 1920s, Marshall saw 'Britain's industrial leadership' changing from 'its long freedom from challenge' to 'under strong challenge', i.e. to be confronted by the rise of German and U.S. industries based on science and corporate enterprise. The 20th-century experiences of successful economic development has been said that the organizational coordination has increasingly replaced the market coordination; from proprietary capitalism to managerial capitalism. Marshall vs Ashley's *Business Economics* (1926), Cambridge Economics Tripos vs Birmingham Faculty of Commerce.

The volume is greatly concerned with the comparative economic history of industrial technology and business organization in Britain, Germany and United States. In Book I

he endeavoured to show how industrial leadership had changed through time, making clear the British way of industrial progress. [IT: v-vi] He paid attention to the urgency of the allied problems of industry and trade, that is 'of especially urgent concern to Britain'. The maintenance of her material well-being above that of other countries of Europe cannot be expected to last for ever. It needs to be known on what Britain's industrial leadership was based; and how it may be conserved, and even enlarged again. They must meet strong rivals, especially in Germany and America, on equal terms: and in order to continue to lead, 'they must learn as well as teach, and work as hard as the most strenuous of their rivals'. [IT: 3,10]

Bk.I Some origins of present problems of industry and trade

Ch.4 Britain's industrial leadership: its long freedom from challenge

Ch.5 Britain's industrial leadership under strong challenge

Ch.7 The industrial leadership in Germany: science in the service of industry

Ch.8 The industrial leadership in US: multiform standardization

He remarked that English education 'has lagged behind that of Germany in some respects by more than a generation'. [IT: 97] Chapter VII "The industrial leadership of Germany: science in the service of industry": Marshall argues that 'Germany's zeal for solid education lays the foundation of her industrial progress'. 'She is without a rival in the organized applications of science to practical problems'. All the world had much to learn from the German methods of education. But Marshall thought that the lesson must be itself criticized and made the starting point for further progress. A chief strength of German education lied in its order and system. However, for Marshall discipline was a foe to spontaneity; and 'spontaneity is the chief creator of original work, and especially of that which makes epochs in thought'. [IT: 129]

3. Industrial and Business Organization

External and Internal Economies

Book IV of *Principles* deals with "The Agents of Production", 'Land, Labour, Capital and Organization.' Capital consists in a great part of knowledge and organization; and knowledge is 'our most powerful engine of production.' Organization aids knowledge and it has various forms, e.g. that of a single business, that of various businesses in the same trade, that of various trades relatively to one another, and that of the state

providing security for all and help for many. [P: 138-9] For Marshall the central concepts for analyzing the relations between firms and markets and the industrial organizations are external and internal economies.

The economies arising from an increase in the scale of production, are divided into two classes—firstly, ‘those dependent on the general development of the industry’; and, secondly ‘those dependent on the resources of the individual houses of business engaged in it, on their organization and the efficiency of their management’. The former is called *external economies*, and the latter is *internal economies*. In Ch.IX chiefly discussed internal economies; he then proceeds to examine ‘those very important external economies which can often be secured by the concentration of many small businesses of a similar character in particular localities,’ or by the localization of industry. [P: 265-66]

Ch.X “the concentration of specialized industries in particular localities.” Marshall argues on the advantages of localized industries. ‘So great are the advantages which people following the same skilled trade get from near neighbourhood to one another. Economies of large scale production develop from those which, although external to the firm, are internal to the industry, or from the division of labour within the industry. Marshall tends to emphasize the importance of external economies of general organization. For Marshall ‘External economies are constantly growing in importance relatively to Internal in all matters of Trade-knowledge’: newspapers, and trade and technical publications of all kinds are perpetually bringing him much of the knowledge. [P: 283-85]

Entrepreneur

Employers and other undertakers are divided into two classes, ‘those who open out new and improved methods of business, and those who follow beaten tracks’. ‘Business ability consists more of these non-specialized faculties than do industrial skill and ability in the lower grades: and the higher the grade of business ability the more various are its applications.’ [P:312-13, 606] ‘The employer has been regarded as the agent through whom competition acts in contriving and arranging the factors of production so that the maximum of direct services should be performed at a minimum money cost.’ [P:662, 599-600] Thus by ‘the law of substitution’, the entrepreneur searches endlessly for best practice with existing technology and for new technology. The driving force remained the individual entrepreneurs and the role of them are central to the optimizing procedure.

Forms of Management: Business Organization

Marshall examines the advantages and disadvantages of private firms and joint-stock companies, co-operative societies and public corporations, which were taking increasing share in business management. He is most fearful of 'the social perils of bureaucratic methods' in the management, i.e., fears that bureaucratic inertia or the stifling of free initiative would remove vital evolutionary forces for economic progress. He says that creative ideas and experiments in business technique and organization are very rare in Government undertakings, and not very common even in private enterprises which have drifted towards bureaucratic methods as the result of their age and large size.[P:304] "Social Possibilities of Economic Chivalry"; 'The difficulties of collectivism should be studied much more carefully, before the scope for creative enterprise is further narrowed by needlessly intruding collective administration into industries in which incessant free initiative is needed for progress.'

He favours the method of private partnership, which was capable of adapting itself to a great variety of problems: 'it is very strong and very elastic'; 'it has played a great part in the past, and it is full of vitality now'.

Not very long ago the representative firm in most industries and trades was a private partnership; ...Its own (Internal) economies were not great: but it took its part in affording a large market for firms in branches of manufacture, which supplied it with made or half-made materials: and in developing (External) economies of general organization, which gradually became common property. Thus each firm, though of moderate size, might reasonably hope to obtain most of the advantages in production, which would be accessible only to vast businesses, if each had been mainly dependent on its own resources. [IT: 314-15]

As regards the joint-stock companies, while recognizing their 'paramount influence on economic structure', Marshall was quite cautious about their development. Then following J.S. Mill's arguments, Marshall favourably argues for co-operation and profit-sharing, saying that 'co-operative association in its ideal form' might avoid the chief dangers of joint-stock companies.

Weakness of joint stock company: Limits to organization within the firm

In *Industry and Trade*, Book II, Ch.VIII "Business organization: the growth and influence of joint stock companies", Marshall argues on 'good and evil of the progressive supersession of private businesses by the joint stock companies' and concludes that recent developments call only for some mitigation, not for a reversal, of the judgment of the English business men that the conversion of a private business into joint stock

company, though occasionally inevitable and very frequently convenient to those immediately concerned, sometimes acts adversely to national prosperity and industrial leadership. [IT: 327-28]

There was the tendency to an increase in the size of businesses, with the transference of responsibility from the owners of each business to its salaried managers and officials. Marshall thought that ‘this would have been impossible had there not been a great improvement in the morality and uprightness of the average man’. For in the seventeenth and eighteenth centuries the great trading companies broke down largely in consequence of the corruption and selfishness of their officials. Since Adam Smith, the distrust in the method of joint stock company and the trust in the private partnership and co-operation were common through J.S. Mill to Marshall.

‘Such a system is necessarily wasteful of effort, and hostile to elasticity: and here lies a chief disadvantage under which a joint stock company lies in competition with a private firm.’ In so far as a system of checks represses elasticity and initiative, it is an injury to the community as well as to the company. ‘A tendency to ossification of the social organism might be feared as the result of bureaucratic habits of shirking troublesome initiative.’ [IT: 324-25]

4. Monopolistic Tendencies and the British Way: Competition and Cooperation

Book III “Monopolistic Tendencies: their relations to public well-being” deal with ‘the growth of massive production, and the ever increasing size of the representative business unit’.

Chs.VII-VIII “Trusts and cartels: American experience”

Chs.IX-X “Trusts and cartels: German experience”

Chs.XI-XIII on “Aggregation, federation, and cooperation in Britain’s industry and trade”.

Finally Marshall dedicates Ch.XIV to “The decline of exclusive class advantages in industry,” saying that ‘the future may be made brighter than the past ...by a fuller recognition of the dignity of man, and cordial cooperation among all the various ranks of industry, and by a continued development of the fundamental principles of the Whitley Report.’ [IT: 650]

Strong individuality and free enterprise

There appeared a firm resolve to reconsider the British methods in relation to the

problems in the new age of big business, and to the solutions in America and Germany. Marshall intended to apply the instruction afforded by experiences in America and Germany to problems of Britain, and to suggest that 'the strong individuality of the British race may find its highest development under the guidance of the spirit of constructive cooperation'. [IT: 577] First Marshall argues on the sources of the strength of British Businesses and sees strong individuality and free enterprise as very central motivating force in economic progress: 'the strong individuality', which created Britain's industrial leadership, is still her 'most important asset', and ought to be cherished as 'a priceless national asset'. [IT: 582-83]

Although praise must be given to the constructive work of giant businesses like German cartels, 'the immediate increase of strength...might be purchased at too great a price.' Competition between small and medium size businesses was a vital energizing force for economic progress. Strong individuality 'may enable a multitude of British businesses of moderate size to hold their own against powerful aggregations in all those industries, in which no over-mastering technical advantage belongs to massive, continuous production.' So vital to Britain's prosperity is the maintenance of 'full freedom for horizontal, rather than vertical expansion', that the country has deep interest in defending the home market for everything to purchase against an artificial manipulation of its prices by cartel. [IT: 584,590]

Marshall concluded the chapter on 'Further technical influences on the size of the business unit' in Book II:

'At any given time and in any given condition of industrial technique, there is likely to be a point, beyond which any further increase in size gives little further increase in economy and efficiency. And this is well; for small businesses are on the whole the educators of the initiative and versatility, which are the chief sources of industrial progress.'

 [IT: 249]

Small and medium size businesses : Competition and constructive co-operation

In the same chapter on 'Further technical influences on the size of the business unit', Marshall argues on 'Opportunities of a strong man with moderate means, who concentrates his energies on a speciality'. It comes that, though the small producer is constantly threatened with extinction; yet he survives. The demand for labour in those parts that still require individual attention, will have grown with the increased output: and 'the scope for elasticity, for the initiative, and for the watchful care about details, in which the small producer excels, may have been enlarged in one direction as much as it has contracted in another'. [IT:247-48] "Some aspects of competition";

although large firms have great advantages over their smaller rivals in making expensive and scientific experiments, these advantages count for little in the long run in comparison with 'the superior inventive force of a multitude of small undertakers', or 'private businesses of a moderate size in that energy and resource, that restlessness and inventive power, which lead to the striking out of new paths'. [Marshall [1890], 279-80]

The progress of technique, while pushing the small business man out of the main track of many industries, opens to him new opportunities, if he will apply energy and resource to developing some speciality.[IT: 589] Again the growth of giant firms tends to impair the supply of that individual initiative, which is by far the most important element of national wealth: but that may be relatively slight, if open field be kept for small businesses in appropriate industries. Important means is constructive cooperation, especially in such standardization as will enable the small man to work for open market.

Marshall does not like giant business like 'the United States Steel Corporation, which alone controls an output of iron and steel greater than the whole production of the United Kingdom' In his views, Sheffield skill makes fine cutlery of such excellent quality that none can surpass it: perhaps none can equal it. 'Sheffield is the home of some of the most delicate of British steel industries; and Sheffield is in all these respects an epitome of Britain.' [IT:587-88]

As regards the differences between the German and the British peoples in character and method of organization, Marshall says: while such powerful and enterprising businesses as those of Armstrong and Vickers were content to buy the steel on which they worked, there was 'no over-mastering advantage in deep vertical expansion' similar to the German steel industry. The relatively mild policy of British steel Associations gave great freedom to each business to choose its own lines of development.[IT:621] Marshall highly regards the importance of co-operative division of labour within the industry or district, not within the firm, as method of organization.

What suits their [Englishmen] character best is to have a broad and solid association based on many smaller associations, not controlling and directing them, not interfering with their freedom without absolute necessity, but acting as a common center for help and advice; serving as a channel by which any member that is in special need may receive the aid of others, and taking perhaps an active part in administrating aid and the wholesome advice by which it may perhaps have to be accompanied. ... Broad-based, highly-organized freedom of action is characteristically English: and the true future of English co-operation lies in adhering these lines. (Marshall [1889], 249)

Automatically specialized organization: Co-operative network of organization

Thus occupied with the sources of the strength of British businesses, Chapters XII-XIII are chiefly devoted to various forms of cooperation for constructive purpose. Marshall starts with the section entitled 'Some British textile industries have developed efficient standardization and specialization almost automatically', saying that: 'The broadest, and most efficient forms of constructive cooperation are seen in a great industrial district where numerous specialized branches of industry have been welded almost automatically into an organic whole.' [IT: 599]

For Marshall, the partial standardization effected by custom has effected automatic organization of industry. This organization included specialization, which dispensed with any complex arrangements in each individual business; since 'the external economies, which even a small business thus obtained, were generally far more important than those which the largest business in the world could obtain by its own efforts.' Following and enlarging Adam Smith's ideas of division of labour, Marshall argues: Almost every branch of industry depends directly or indirectly on hundreds, if not thousands of other branches, at home and abroad, for various parts of its plant and material. 'In one sense the whole world, in so far as it is in touch with western trade, is a single workshop: in a much fuller sense every compact industrial district is one.' [IT: 600]

Britain was the chief home of the automatic cooperation of many industries; and the modern methods of massive manufacture were pioneered by the textile industries. Thus he turns to the classic case of automatically specialized organization;

Lancashire, where may be seen perhaps the best present instance of concentrated organization mainly automatic. Nature had favoured Lancashire with good access to the sea, to coal and to iron; and also with a climate remarkably suited to the great cotton industry. Moreover the character of the population fitted them to develop the engineering industries. Thus makers and users of textile, and especially cotton, machinery have had nearly all the advantages of concentrated effort that could belong to a population of more than a million persons in a single composite business; while avoiding the cumbrous network of organization that would be required by it. Therefore dealers of various kinds flock to Manchester from all quarters of the globe; and they are able, by aid of motor cars, to enter into direct contact with makers of innumerable specialities spread over an area of some two hundred square miles.' [IT: 600-1]

The specialization is thoroughly effected without conscious effort, especially in those

branches, which are mainly in the hands of a multitude of independent businesses of moderate size. Fine spinning, coarse spinning, and weaving are localized separately. Individual firms frequently specialize on a narrow range of counts for spinning. Blackburn, Preston, Nelson and Oldham are centers of four different classes of staple cotton cloths, and so on. Automatic organization has predominated, especially in the cotton industry which 'by reason of its magnitude and the extent to which specialization has been carried, is probably the most efficient distributing organization in the world.' Trusting almost exclusively to automatic organization the British cotton industry has surpassed all its rivals in size and in efficiency. In fact, in those finer goods, which owe most to skill and admit of the highest rates of remuneration to labour, 'it is without a rival'. [IT: 601-3]

5. Some Critics

Unfortunately, as Marshall committed these words to print, wrote Lazonick, 'the automatic market mechanism was breaking down in the face of planned coordination of the specialized division of labour abroad—particularly in Japan'. Indeed, Keynes, after writing a long memoir on "Marshall", was in the later 1920s deeply involved in reorganizing Lancashire cotton industry by rationalization or cartelization, criticizing 'unorganized individualism' in Lancashire as 'hopelessly out of date'. He says that 'they are living industrially in the old world; and they are suffering intolerable pains from their failure to adapt themselves to the conditions of the new economic world', and that 'the day of the small unit is over, partly for technical reasons, even more for marketing reasons'.

However much Britain's individualistic structures of industrial organization may have contributed to British economic success in the 19th century, the same structures posed formidable obstacles in the 20th century in an international economy dominated by concentrated and collectivized structures of industrial organization such as had arisen in Germany and the US. As is well-known, subsequent commentators on British manufacturing industry, especially from the later 1950s, took a very different view from Marshall. They criticized British management heavily for its lack of specialist skill, its inability to master large-scale organization and mass production and for the confrontational aspects and slow institutional change of its system of industrial relations. An enormous amount of the criticism of British industry in the years after 1945 concentrated on the failure of management to adopt the US forms of large-scale organization.

However, writings since the 1980s (perhaps after *The Second Industrial Divide*, 1984) seem to have brought support to Marshall's views and analysis. Marshall developed the ideas on constructive co-operation based on strong individuality or on industrial organization of cooperative network largely based on external economy. His views and analysis on the 'automatically specialized organization' or industrial district as 'the most efficient forms of constructive cooperation' of small and medium size firms seem to be much worthy to be revisited and re-appraised against the background of a growing interest in the industrial district as a model of industrial organization and the flexibly specialized production systems as an alternative to the large scale business firms.

Appendix: Marshall and the Historical School: 'the many in the one, the one in the many'

Schumpeter on Marshall

It was Marshall who changed all that and 'led out of the valley on to a sunlit height'. In England, the period was 'emphatically the Marshallian Age.' His success was as great as Adam Smith's. Marshall commanded the scene much more than Ricardo had ever done. The great master made almost the whole of the rising generation of English economists his pupils and followers (Schumpeter 1954, pp.830,833; Foxwell 1887, p.92). Here again I would like to stress the existence of the Marshallian school of industrial and applied economics and the economic historians, who were the product of Marshall's effort to make economics realistic, i.e., to produce the blend of analysis and facts encouraged by the motto 'The many in the one, the one in the many.'

"Marshall's *Principles*: A semi-centennial appraisal" by Schumpeter was read to the American Economic Association in 1940. The book was widely respected:

Full justice cannot be rendered to it by going straight to the core of analytic apparatus the *Principles* presents. For behind, beyond, and all around that kernel there is an economic sociology of 19th century English capitalism which rests on historical bases of impressive extent and solidity. Marshall was, in fact, an economic historian of the first rank, though he may not have been much of a historical technician. And his mastery of historical fact and his analytic habit of mind did not dwell in separate compartments but formed so close a union that the live fact intrudes into the theorem and the theorem into purely historical

observations. This shows, of course, very much more obviously in *Industry and Trade* than it does in the *Principles*, in which, even in the historical introduction, historical fact has been so severely scaled down as to be almost lost to follower and critic alike. But within those limits a realism was attained which greatly surpasses that of Adam Smith—the only comparable instance. This may be one of the reasons why no institutionalist opposition rose against him in England (Schumpeter 1951, p.94).

Under the influence of the Historical School, Marshall made ‘a strenuous attempt to re-graft a historical-institutional approach on to the neo-classical abstraction’ (Hutchison 1988, p.529). Stressing that Marshall and Adam Smith had more in common, Schumpeter found ‘strong similarity in the visions or general conceptions of the process and, in particular, with respect to economic evolution.’ Also he found ‘an approximately equal distribution of weights as between ‘theory’ and ‘facts’’. In Marshall he notes ‘not only a high-powered technician, a profoundly learned historian, a sure-footed framer of explanatory hypotheses, but above all a great economist.’ Unlike the technicians, Marshall understood the working of the capitalist process. In particular, Marshall ‘understood business, business problems, and businessmen better than did most other scientific economists, not excluding those who were businessmen themselves. He sensed the intimate organic necessities of economic life even more intensively than he formulated them, and he spoke as one who has power and not like the scribes—or like the theorists who are nothing but theorists’ (Schumpeter 1954, p.836).

The Marshallian School of Industrial and Applied Economics

Sydney Chapman, one of Marshall’s most distinguished pupils who came under his influence ‘in his prime’, described Marshall’s method, stressing ‘realism’: while the *Principles* might be described as ‘theory fully clothed with realism’, *Industry and Trade* could be characterized ‘as realism adequately infused with theory’.

He had a passion for knowing all about the things he was dealing with,He had come to believe more and more that generalizing from facts can yield fruitful results if the facts are exhaustive enough and representative enough; and was never really satisfied that he had got enough. He had grown into a convinced realist, without however ceasing to be a theorist. In his view, the two lines of investigation were not parallel but converging so that they would more or less meet short of infinity. And at the same time his mistrust of the bare results of

pure deduction grew on him. Perhaps he began to underrate the value of abstract reasoning because it came too easy to him.Marshall stressed the importance of taking evolution into account in Economics. This he had partly in mind in dwelling on 'the many in the one, and the one in the many.' And for an evolutionary study much realism is essential' (Chapman "Autobiography", 24-26).

Industry and Trade, which illustrated the value of the motto, 'The many in the one, the one in the many', was a research programme of continuing value to economists interested in the 'realistic' side of the 'science of business'. It initiated a discussion of the foundation of a Chair of 'Applied Economics' or 'Industrial & Commercial Economics' at Cambridge among the people around Walter Layton in the early 1920s. Stressing the prominent 'characteristic of the Cambridge School of Economics', Layton, another of Marshall's eminent pupils, wrote to Colonel Strang that 'Professor Alfred Marshall's desire that economics should not be a mere affair of the study but should be a real analysis and exposition of the laws governing the workshop and the market place will be evident to anyone who dips into his recent book *Industry and Trade*' (19 February 1920, Layton 2/46 (1-4)).

Layton drew up the "Draft Scheme for a Professorship of Industrial & Commercial Economics at Cambridge University" (Layton 2/46(6)). The Professorship would be concerned primarily with that branch of the field of political economy which deals with the organization of industry, trade and commerce, the question of relations between employers and employed and the general economic problems that present themselves either to managers or to Trade Union organizers. The "Memo on Necessity for Formation of School for Studying Applied Economics" was also drafted, in which 'the foundation of a Professorship, or Chair of Applied Economics' or 'a man who will do for applied economics what Darwin did for natural history' was requested. In other words, an individual was sought to collect and collate the masses of facts which can be obtained by studying industry in every part of the world, and, to use these facts, to elucidate economic laws, instead of theorizing on economic laws and trying to fit the facts to the theories (Layton 2/40(1)).

W.J. Ashley, 'the most promising and brilliant English historical economist' (Koot 1987, p.102), was also attracted and praised *Industry and Trade* highly. He was very close to Schmoller and in closest sympathy with the German historical school (Koot 1987, p.103: Schumpeter 1954, p.82). While he was professor at Birmingham, he wrote of Chapman at Manchester and of Clapham at Leeds, suggesting that establishing a professorship of economics in a great industrial center was likely to lead to valuable publications on

the economic problems of the particular district, as illustrated by Chapman's writings on the economics of the cotton industry and Clapham's book on the woolen trades (Ashley 1908, pp.187-88).

Ashley noted what he considered a very encouraging growth in the number of books on industrial economics resulting from the creation of commercial faculties or of economics departments serving more or less the same ends. It would have been invidious to single out particular examples, yet he

cannot refrain from pointing to Dr. Alfred Marshall's *Industry and Trade* as a masterly and informing survey of a large part of the field. Matters as to which some of us had been trying for years to dig out some scrappy material, and which we had been presenting to our classes with a feeling that we were cultivating quite untilled tracts, were there brought together for the first time in a general view. The motto of the book, 'The many in the one, the one in the many', presents our common ideal: the reconciliation of the abstract and the concrete; a reconciliation, let me add, of which each side is equally in need (Ashley c1921: p.5).

In a long letter to W.A.S. Hewins, another leading historical economist at LSE, Marshall wrote about his motto, stressing that 'the Many is the ground of study....Having discovered the One in the Many, they might set forth afresh the Many in the One. I repeat, I regard the use of mathematics on the way as a gain when convenient, but not as of the essence of the work. In my view the Many is the ground of study; the One is the Holy Grail to be thought by the pious & laborious pilgrim; & the One when so found is to help as a guide through life over the broken ground of the Many' (12 Oct. 1899: Whitaker II, p.257). Also, Marshall wrote to A.L. Bowley, a former student and well-known economic statistician at LSE: 'Will you then be so very generous as to forgive me if I ask you to ask yourself whether ...it is not time to make some further study of the broader relations between economic facts: to leave mathematics for a little on one side; and join more heartily in the quest for 'the One in the Many, the Many in the One'?' (21 February, 1901, Whitaker II: pp.300-2).