

The Economics Tripos and the Marshallian School in the Making*

—With Special Reference to His Industrial Economics—

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A wave of enthusiasm for education is evidently passing over the business world...We are convinced that a rare opportunity is offered to Economics, and that it may gain a position of great influence, if it can succeed in demonstrating that it is *the* 'science of business'. [L. L. Price 1902 : 227-28]

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. [Marshall to Brooke Foss Westcott, 20 January 1901. II : 293-94]

1. Introduction : 'Crisis in British Industry' and A Boom of Business Schools 100 Years Ago

As seen in L. L. Price's phrase above¹⁾, a wave of enthusiasm for education of business men was passing over just after the turn of the century, i. e., 100 years ago. The organization of economic and business studies and teaching were the worldwide phenomenon around 1900, as typically seen in the business school boom in the United States. Not only Ashley's Faculty of Commerce at Birmingham but also Marshall's Economics Tripos at Cambridge and Chapman's Faculty of Commerce and Administration at Manchester were surely in this wide movement. Hewins' London School of Economics had already existed. A major problem was 'Britain's industrial leadership under strong challenge', as Marshall entitled a chapter of his *Industry and Trade* [IT : Bk. I Ch. V]. In a new 'illustrated magazine of national efficiency and social progress' (*The World's Work*, started in 1902), Ashley reminded 'how vitally the nation is concerned in the

efficiency of its business leadership' [Ashley 1902-3 : 267].

Marshall's Economics Tripos at Cambridge had originally a fairly lot of common basic ideas with Hewins' school of economics in London and Ashley's faculty of commerce in Birmingham. However, Marshall's school of economics in Cambridge, or Cambridge school of economics, has been said to grow soon as a distinctive school of economics of its own, hardly anything to do with the realistic side of the 'science of business', so that the 'science of business' or industrial economics in touch with reality was to grow and take shape outside Cambridge particularly after the late 1920s. My paper is focusing on Marshall's Tripos and his school of economics, particularly his industrial economics or *Industry and Trade* (1919), in their formative years, in comparative perspective with Ashley's Faculty of Commerce and his *Business Economics* (1926).

Marshall's *Industry and Trade* was initially planned as *National Industry and Trade* under the impetus of tariff reform debate caused by Joseph Chamberlain's

warning. He diverted his efforts from Vol. II of his *Principles of Economics*. Marshall paid attention to the urgency of the allied problems of industry and trade, which was 'of especially urgent concern to Britain'. They had to meet their strong rivals; 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]. In a similar tone of Marshall, Chamberlain warned that Britain should fall behind in the race, unless prepared to avail themselves of a great experiment in the 'distinctive application of knowledge to the advantage of science and of commerce'²². Referring to the 'Crisis in British Industry', he said that 'Employers have to bring to bear more scientific intelligence to the management of their business' [*The Times*: January 7, 1902]. Chamberlain wrote to the President of Mason College [11 December 1899], which was just being reconstituted into the University of Birmingham: 'we desire to systematize & develop the special training which is required by men in business & those who, either as principals or as managers & foremen, will be called upon to conduct the great industrial undertakings in the midst of which our work will be done'²³.

2. The Economics Tripos and Marshall's School of Economics in the Making

2.1 Needs of the University: Marshall and Organization of Economics

Urgent needs for training economists and businessmen were well noticed by Marshall. He claimed in the *Statement of the Needs of the University* (1900): 'The urgency and all-pervading character of economic problems is shown by the fact that the legislatures and diplomatic officers of all countries of the modern world are now chiefly occupied with economic issues'²⁴.

When Alfred Marshall came back to Cambridge in 1885, political economy was taught and examined within the Moral

Sciences Tripos and the History Tripos, and as a minor part of the Indian Civil Service course. Marshall disliked a singular position of economics as 'the only subject of which the unsystematic study in the University exceeds the systematic' [*Cambridge University Reporter* (abbreviated as *CUR* below), 1885-86: 579]. His inaugural lecture was of historical importance as 'almost the first blow in the struggle for the independent status which Economics has now won almost everywhere' [Keynes 1924: 56].

It took him eighteen years to achieve his objective and the progress was so painfully slow. The campaigns Marshall had to carefully wage for a separate faculty and tripos, would provide further insight into 'Marshall the academic politician fighting for the growth of his discipline'. The years and strenuous efforts he devoted to this task, first in creating, and then in nurturing, the new Tripos in its formative years, 'almost parallel the long haul of his *Principles* in terms of concentrated effort and devotion' [Grenewegen 1995: 531]. They would also parallel 'the thorny path by which Marshall's literary ambitions and plans advanced after 1890' [Whitaker 1990: 193]. The second volume of the *Principles* was never materialized, and there was another long haul of twenty-nine years before *Industry and Trade* appeared in 1919, which raised a question of founding an Industrial Professorship or a Chair of Applied Economics in Cambridge. Marshall's economic disciplines were certainly not only in the *Principles*; here I would like to discuss the making of the Marshallian school, rather focusing on his industrial economics, or stressing the importance of *Industry and Trade*, whose motto is: *The many in the one, the one in the many*.

2.2 Plea for the Creation of Cambridge School: Marshall vs Hewins

Marshall was very keen and scared of

the development of London School of Economics and the newly founded Faculty of Commerce at Birmingham. London School of Economics and Political Science had opened its door since October 1895 for 'training in administration, whether commercial or governmental'. It was described by Sidney Webb as 'the beginning of a "High School of Commerce"' [Webb 1897: 208], which was nothing other than a business school in later terminology⁵. The choice of W. A. S. Hewins as the first director of LSE was significant, for he was an Oxford historical economist and an outspoken critic of economic orthodoxy. G. M. Koot argued that LSE 'sought to mold economic history and applied economics into an alternative economics to Marshall's more theoretical vision of the subject than being rooted at Cambridge' [Koot: 3].

There were quite a few correspondences between Marshall and Hewins, in which we could see a sort of Marshall's manifesto for creating the Cambridge School of Economics. Following the official report on LSE in Sadler's Educational Blue Book in 1898, Hewins published a *Brief Report on the Work of the School* in 1899, which recounted a remarkable success story [Dahrendorf: 58]. Marshall had felt rather sore, he wrote to Hewins: 'while impelled to lay stress on one side of the case as to London, it seems rather hard that you should have laid stress on the other side as regards Cambridge. I gather that you really do not know what is being done here [12 Oct. 1899, II: 258-59].

In the same letter to Hewins, Marshall proposed the creation of the Cambridge School of its own:

Cambridge has an idea of its own which asserts itself...The incidental work wh...should be compelled to advertise if we were starting a new place like the London School...is very great. ...You will say—why then not write a separate & peculiar panegyric

of Cambridge?...So I have tried to indicate what I mean by the guiding principle of those Cambridge men who are—in my view most truly Cambridge men—the search for the One in the Many & the Many in the One. [II: 258]

In the course of the Moral Science Tripos reform, Marshall wrote to Neville Keynes: 'The success of the Econ: & pol: school in London will strengthen the demand in Cambridge for a bonâ fide economics school' [30 August 1897, II: 194]. Marshall was very keen on further development of LSE. Apologizing for his delayed answer, he wrote to Hewins on 19 February 1901: 'those difficult problems of organization in which you are immersed...are of vital importance for the economic wellbeing of England: London and Cambridge have in many respects a closer kinship with one another than with any other economic schools...; and, if at any time you would like to arrange a talk, I would gladly try to hit it off with you' [II: 300]. LSE was on the point of being reconstituted into the University of London as its Faculty of Economics and Political Science (including Commerce and Industry), conferring the degrees of B.Sc. (Econ.) and D.Sc. (Econ.)—the first university degrees in Britain devoted mainly to the social sciences.

2.3 Liberation of Economics from the Incubus of Moral Sciences: Marshall vs J.N. Keynes

The first thing to do for Marshall was to liberate Economics from the 'philosophical' pressure of the Moral Science Tripos. He wrote:

The oppression & suppression of economics by the incubus of Moral Sciences seems to me at once so cruel & so great a national evil, that I should be a traitor to my trust if I allowed my personal regard for Keynes & others to prevent me from appealing to the

judgment of the impartial University for redress. [To Foxwell, 14 February 1902, II: 358]

Neville Keynes did not think it necessary to liberate economics from philosophical pressure. Marshall wrote back to him in length on 30 January 1902, saying: 'In all this weary & oppressive work for the liberation of economics from the incubus by which I believe it be oppressed, nothing has given me so much pain as the thought that I must necessarily go against your wishes' [To Keynes, II: 350].

Marshall had been convinced that 'the hostility, wh businessmen & and men of affairs show to economics'. It was really necessary to liberate economics from 'the legacy of distrust and misunderstanding due to the false view of economics' so as to relieve the hostility of businessmen and to get public recognition. Marshall had been fearful of 'the narrowness of the studies' at Cambridge and thought that 'Oxford has a great advantage'. He had got more good economists out of one year in Oxford than from sixteen years in Cambridge.

It is a fact that the crop of economists whom I got out [of] Oxford in a single year—Price, Harrison & Gonner—is better than those whom I have got out of the Moral Science Curriculum proper in the last sixteen years. I must do all in my power to liberate economics from its shackles. ...I have no time to wait. Economics is drifting under the control of people like Sidney Webb & Arthur Chamberlain. ...*the curriculum to wh I am officially attached [i.e. Moral Sciences Tripos] has not provided me with one single high class man devoting himself to economics during the sixteen years of my Professorship.* [II: 350-52]

The Statist, reviewing Marshall's *Plea*, wrote that the teachers of economics 'are too academic; too ignorant of real life;

too far removed from the matters they treat of; and consequently their teaching is crude always, and not seldom absurd.' 'Economics, or political economy, or whatever name may be preferred, is purely a science of observation' [May 31, 1902: 1086]. For Marshall, 'liberation of economics' probably meant to make economics more 'realistic', to secure more public and academic recognition, or to make more easy to access for businessmen, so as to reduce the 'risk of the alienation of English business men from the Universities' [CUR, 528].

2.4 The Many is the Ground of Study: Economic Method and Chapman

Marshall stressed much that he 'was never a partisan of' pure theory and for more than a quarter of a century he had 'set his face away from it'. The fact was that he held 'Economics to be an organic whole, and had as little respect for pure theory'.

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. [To Hewins, 12 Oct. 1899, II: 256-57]

The well-known letter to Flux (Marshall's earlier student from the Mathematical Tripos) made the point even sharply: 'My confidence in Cournot as an *economist* was shaken when I found that his mathematics *re* I. R. [Increasing Returns] led inevitably to things which do not exist and have no near relation to reality. One of the chief purpose of my Wander-jahre among factories, etc., was to discover how Cour-

not's premises were wrong.' Marshall generated his concept of the 'representative firm' as a possible resolution to the conflict between competition and increasing returns. [7 March 1898, II: 227]. He conceived 'no more calamitous notion than that abstract, or general, or "theoretical" economics was economics "proper"'. The key-note of his *Plea* was that 'the work of the economist is to disentangle the interwoven effects of complex causes'; and for this, 'general reasoning is essential, but a wide and thorough study of facts is equally essential', thus 'a combination of the two sides of the work is *alone* economics *proper*' [To Edgeworth, 28 August 1902, II: 393].

Marshall's letters to his former student Bowley (from the Mathematical Tripos) would be exemplary how he thought about economic method and using mathematics. He warned 'to prevent people from using Mathematics in case in which the English Language is as short as the Mathematical' [27 February 1906, III: 130]. Then referring to the unemployment statistics of ironfounders and its 'uniqueness', and to his visit to the works in Keighley in 1885; he asked a favour of Bowley to question 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, II: 300-2] Marshall attempted to apprehend in all its aspects an ever-changing economic reality. In Marshall's view, history and economics were fundamentally complementary; and he provided an original way of combining history and economic analysis to understand the complexity of long-term dynamics⁶⁾.

As Chapman recalled, Marshall had come to believe more and more that 'generalising from facts can yield fruitful results if the facts are exhaustive enough and

representative enough'. He had grown into 'a convinced realist, without however ceasing to be a theorist'. Marshall stressed the importance of taking evolution into account in economics. Chapman came to Cambridge after graduated from Owens College, and came under Marshall's influence while reading for Moral Sciences Tripos. He attended 'all Marshall's lectures over a period of three years'; 'as he was the Colossus, the most that I have to say is about him.' [Chapman: 19, 25-26, 28]

After his return to Manchester, Chapman attempted an examination of 'economic theory in its actual working' by focusing on a single industry, and 'as highly organized a one as possible'. He chose the Lancashire cotton industry, which Marshall applauded. Chapman's economics continued to develop 'from its twin roots, one in theory and one in realism... the realism was predominantly derived from Lancashire.' In the Lancashire cotton industry he saw 'the economic world as a system of systems, each of which was in part a separate whole and in part a dependent portion of a larger whole. This... was a biological idea, and not merely a mechanical one, when the facts of growth were allowed for... As so united they constituted a higher organism, which, connected in turn by commercial ligaments with other industries and with the public at home and overseas, fitted into the complete national economy.' [Chapman: 59, 63-64, 77] *The Lancashire Cotton Industry* had come out in 1904 with a chapter on 'Localization, industrial specialism and modern problems of organization'.

2.5 Modern Economic History :

Marshall, Cunningham, Clapham

Another effort of Marshall was to liberate the modern economic history from the mediaeval history and Cunningham. 'The mediaevalists', wrote Marshall to Harcourt (11 March 1902), 'dominate our historical school... The aim of the new

movement is to provide an alternative course for those who wish to give their chief attention to the events of the nineteenth & twentieth centuries.' [II: 357, 368]

The absence of tolerable account of the 19th century and after was, Marshall thought, a grievous hindrance to the right understanding of the current economic problems. Till recently the man for the work had not appeared. But now 'Clapham has more analytic faculty than any other historian whom I have ever taught', Marshall wrote to Lord Acton; and, 'If you could turn him towards XVIII & XIX century economic history, economists would ever be grateful to you.' [13 November 1897, II: 206]

Marshall believed that 'every teacher of economic history except Cunningham', were opposed to encouraging people to study 'economic history in the present fashion'. Those people who were studying economic history 'as a mere series of facts without any scientific analysis', would not be called as students of economics [II: 251-52]. A resolution was carried at the Historical Board that students should be encouraged to study economic analysis in connection with economic history, Cunningham then declared that it would be impossible to continue, saying 'if this resolution stands, I shall retire from teaching'. Marshall moved that they should not adhere to the Resolution to be rescinded [II: 251, III: 65].

Marshall's hostility to Cunningham was revealing in his letter to Oscar Browning about Pigou. The Trinity as compared with the King's route to economics had not proved successful. Pigou 'never came under Dr Cunninghams influence at all'. 'From first to last the whole working of his mind has *not* been on Cunninghams lines, but on the opposite.' [28 October 1903, III: 67]

Clapham finished History Tripos, as Pigou did a little later; and under Acton's influence Clapham chose the French Revo-

lution as his first subject. However, with Marshall's recommendation he changed the subject to the economic history since the mid-eighteenth century. In 1902 he accepted, at Marshall's instigation, the chair of economics at Yorkshire College, Leeds, where he began his work on the history of *The Woolen and Worsted Industries* (1907). At about the same time he had come into contact with Ashley. In 1908 Clapham had been invited to take up the assistant history tutor vacated by Oscar Browning, and in 1913 he became King's history tutor. [Kadish 1989: 223-29]

Clapham was succeeded by Macgregor at Leeds. Graduated from the Moral Sciences under the influence of Marshall, Macgregor taught economic principles and applied economics in the early years of the Economics Tripos, and published *Industrial Combination* (1906). Main drive to tighter industrial combination and industrial giants came from those localized external economies which formed the strength of Chapman's industrial districts. Macgregor blended theory and fact in true Marshallian fashion, contributing to industrial economics in an evolutionary and realistic manner which greatly appealed to Marshall [Groenewegen 1995: 755]⁷. After Leeds Macgregor moved to Manchester, and from 1922 to Oxford.

2.6 Collaboration with Foxwell in the Economics Syndicate

Economics Tripos was actually brought into being by the Syndicate and the economic subjects were proposed by Marshall and Foxwell. 'Memorial to the Council of the Senate' (dated 26 April 1902) with 131 signatories by the Senate members, requested the Council 'to nominate a Syndicate to enquire into and report upon the best means of enlarging the opportunities for the study in Cambridge of Economics and associated branches of Political Science'. [CUR, April 29, 1902: 762-63] The Syndicate first met on 29 May and

were to meet every week. The following meeting on 22 October established a sub-syndicate (composed of Marshall, Foxwell, Westlake, Maitland, Tanner, Leathes, Dickinson) to consider detailed proposals. ["Minutes of the Economics and Political Science Syndicate", U. A., Min. VI, 68]⁸⁾ In consequence the Economics and Political Science Syndicate finally reported on 4 March 1903, recommending the establishment of a new Tripos. This Report was debated by Senate on 7 May and a full account appeared in the *Reporter*, 14 May 1903. [pp. 763-74]

Schedule of Subjects

Part I.

1. Subjects for an Essay. 1 paper
2. The existing British constitution. 1 paper
3. Recent Economic and General History. 2 papers
4. General Principles of Economics. 3 papers

Part II.

1. Subjects for an Essay. 1 paper
2. General Economics. 3 papers
3. Advanced Economics, mainly realistic. 2 papers
4. Advanced Economics, mainly analytic. 2 papers
5. Modern Political Theories. 1 paper
6. International Law with reference to existing political conditions. 1 paper
7. International Law with reference to existing economic conditions. 1 paper
8. Principles of Law as applied to economic questions. 2 papers
9. Special subject or subjects. 1 paper each

Each of the four papers on Advanced economics contains general questions. The majority of questions in each paper was to be divided among the four groups A, B, C, D, defined below. Two of these four papers were to be 'realistic, and adapted to the needs of those preparing for public or private business, as well as to those of professional economists'. The other two papers were to be of 'a more exclusively

analytic character'.

- A. Structure and Problems of Modern Industry
- B. Wages and Conditions of Employment
- C. Money, Credit and Prices
- D. International Trade and Its Policy

Although Marshall's proposal for a new curriculum met with 'almost unanimous support', 'one influential Cambridge man' Cunningham was 'strongly, even bitterly opposed to it'. Cunningham had 'stood aloof' from its proceedings. In alliance with MacTaggart he announced 'implacable resistance' to the establishment of a new Tripos, and the two refused to sign the Report. [Marshall to Brentano, 18 May 1903, III: 12]⁹⁾

2.7 Scope and Arrangement of Marshall's Economics

"What Happened to the Second Volume of the Principles? The Thorny Path to Marshall's Last Books", "Some Final Volumes: 1919-1924", "A Book That Never Was: Marshall's Final Volume on Progress and His System of Ethical and Political Beliefs", have been deeply inquired by Whitaker and Groenewegen. From 1890 to 1903 Marshall was still actively working on Volume 2 of the *Principles*. Under the impetus of tariff reform debates, he diverted his efforts to bringing out a book on *National industries and international trade* in 1903. Marshall's first lecture title for the Economics Tripos 1903 was 'National industries and trade' and he repeated it in 1906: he also lectured on 'Structure and problems of industry' in 1905 and devoted to 'Applied Economics' in his final year as Professor of Political Economy. C. R. Fay recalled Marshall's lectures in 1903: "I make it a rule never to talk politics," he [Marshall] 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: 74-75]

Walter Layton, who obtained first class honours in the first and second parts of the Economics Tripos in 1906 and 1907, 'soaked himself' in Marshallian economics by attending Marshall's lectures for all three years; and wrote that 'he gave us the benefit of his current thinking on the book he was writing on industry and commerce' [Groenewegen 1995: 313-14]. Marshall planned continuation of the *Principles* 'on a more lavish scale'. Marshall completed the fifth edition in 1907, in its Preface 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*'. In 1910, 'Volume I' was dropped and the title became *Principles of Economics: An Introductory Volume* in the sixth edition. 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'. In the Preface to the seventh edition (1916), it says, he was now engaged in writing an independent work on *Industry and Trade*. He had written to Macmillan on 5th April 1916 that he was 'dropping "National", & calling it "Industry & Trade"' [III: 330]. After the change and vacillations of his plan of the work, *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: 63]

Industry and Trade was "A Study of Industrial Technique and Business Organization; and of their Influences on the Conditions of Various Classes and Nations". It was designed to be followed by a study of the influences on conditions of man's life and work, which were 'exerted by the resources available for employment; by money and credit; by international trade; and by social endeavour' [IT: v]. *Industry and Trade* was planned

to be followed by a companion volume on *Money, Credit, and Employment*. And finally it may be possible to compress these two volumes, together with some discussion of the functions of Government, into a single volume; which may supplement the present volume, and form a consecutive treatise of moderate length. [Guillebaud 1961: 46] Once he decided to arrange his work in three volumes: I. *Modern Conditions of Industry and Trade*; II. *Credit and Employment*; III. *The Economic Functions of Government*. II, being changed into *Money, Credit and Employment*, but as time went on, Employment was squeezed out in favour of *Commerce*. In the Preface to *Money, Credit and Commerce*, Marshall was 'not without hopes that some of the notions...as to the possibilities of social advance may yet be published', of which Keynes gave the title *Progress: its Economic Conditions*. [Keynes 1924: 60, 65] Some manuscript drafts suggest Marshall thought of a volume on Economic Progress. Bk. I Wages and means of economic progress. Bk. II Functions of government in relation to economic progress. Bk. III Some possibilities economic future. [Marshall 5/3/1]

3. Marshall and Ashley on Economics and Education for Businessman¹⁰

3.1 Oxbridge vs New Civic Universities: Cambridge vs Birmingham

In the *Plea*, following the section "The national interest in the supply of trained economists", Marshall discussed "the study of economics regarded as a preparation for business and for public responsibilities", saying that 'we should not offer technical preparation for business'. 'It may be right that the university of a great city should offer to some classes of business men as direct a training for earning their livelihood as we do to schoolmasters and physicians'. For him, among the many changes in the methods of business, two things stood out clearly. While there was 'a

tendency towards increased specialization' in the work of subordinates, there was 'a no less marked tendency towards greater breadth and diminished specialization' in the work of heads of business, of directors of companies, and of the higher public officials.

Other institutions can give a technical training, suitable for the lower ranks of business more easily than we can, and with less harm to themselves. But we are well placed for giving a broad education which will bear directly on the larger management of affairs, and for adding to it that training of personal character which is offered by life at Oxford and Cambridge. [Marshall 1902: 8; Marshall 1903c: 17]

Marshall had circulated his *Plea* to men of affairs (such as Sir David Dale, Charles Booth, Walter Leaf, Sir Robert Giffen, Sir Clinton Dawkins, Mr Gibb, Sir Thomas Sutherland, and so on). Nearly all of them wrote 'expressing in definite terms their agreement', expressing strong sympathy with the movement. These letters of cordial support were read at the first meeting of the Economics Syndicate (29 May 1902), and printed to circulate to the members of the Senate in May 1903. [Marshall 1903a: 1, 8] Sir Clinton Dawkins replied to Marshall 'in general and hearty agreement'. Sir Thomas Sutherland was of quite a same opinion, stressing 'a good general education'. [II: 373, 375-76]¹¹⁾

Both *The Bankers' Magazine* and *The Statist* were very much in the same view with Marshall. For *The Statist* it was quite true that 'a university like Cambridge or Oxford is not qualified to give technical instruction, though we see no reason why the Universities of London, Birmingham, and others situated in great towns, ...should not be competent to give technical instruction in all departments of business'. [May 31, 1902: 1087]

3.2 Marshall vs *The Times* on Accountancy

By contrast, *The Times* implied that Cambridge made no provision for the education of business men. [Educational Notes, 18 November 1905] And they questioned whether Cambridge curriculum could serve its purpose: since it made no direct mention of such subjects as 'balance-sheets, sinking funds, and depreciation, goodwill and the finance of machinery', especially critical of the absence of accountancy. 'If there is one subject a knowledge of which is indispensable to a business man, it is surely the theory and practice of accountancy, and the omission of this subject from the Cambridge scheme is certainly significant'. [11 December 1905]

Marshall played down the importance of accountancy: It was true that economics must put up with a small staff; and that 'no place has been found in our staff for an accountant'. It was not probable that 'the University will allow much time to be given even by passmen to absorbing prematurely technical information about those "forms and accounts adapted to different classes of undertakings". For Honour men, at all events, such work is inappropriate. The three sacred years of their University life are already fully occupied with studies which claim to help the able business man to be a leader in the world'. [18 December 1905]

Marshall was not sure that its detailed forms 'adapted to different classes of undertakings' ought to be a part of academic education for any class of students. For they just filled the mind, without enlarging it and strengthening it. And the ablest business men told that it was faculty rather than knowledge which the business man of to-day needed. It was a powerful and capacious mind, rather than one already crammed with dead matter, that a University should send out to the work of world. [27 December 1905]

A business education that would

enlarge and strengthen the intellect and faculty, as opposed to pouring inert information into inert brains, had been Marshall's preoccupation of since his early days as Principal and Professor of Political Economy at University College, Bristol. Business education—any education—should verse the student in human nature, or at any rate those sides of human nature not to be plumbed by playground and factory experience alone. This meant history, literature—also required to develop 'the power of appreciating what is beautiful'—and the moral sciences, among which might be reckoned 'Political Economy, the science of business'. [See Maloney 1990: 186]

3.3 Cunningham's Opposition to Marshall

On the contrary, for Cunningham, who had opposed the independent Economics Tripos, the best means of promoting economic study, was quite distinct from a scheme for the University education of business men. He proposed to deal with two subjects separately, and to make business education more specific. He did not think it wise to meet both sets of requirements at once, and drafted the resolutions on 'the Training of University Men for a Business Career'.

Cunningham argued: While the instituting of an Economics Tripos, intended for the training of economic experts, might provide a good course for the exceptional men who were destined for high places in financial houses, it did not appear to afford a very useful scheme for men who were looking forward to commercial or industrial life. What seemed most important for this object would be the establishment of a 'Modern Side' of General Examination, to include at least one Modern Language, and such subjects as Physical Geography, and the Government of the British Empire. It would be desirable to institute a 'Business' Special, in which Commercial Law should

be a principal subject. Cunningham thought it desirable to make a more specific business course. ["Draft Resolutions (For the Members of the Economics Syndicate)" 9 March 1903. U. A. Min. VI. 68.]

3.4 Ashley and the Faculty of Commerce at Birmingham: Accounting and Business Policy

Ashley was 'unanimously elected' to the first professor of commerce on the strength of the recommendations of Marshall and Cunningham¹²). Soon after the appointment, Ashley drew up his first prospectus *The Faculty of Commerce in the University of Birmingham. Its Purpose and Programme* (April 23, 1902), and it started in October 1902. The curriculum comprised four main categories. First, two modern languages and modern history. Second, Accounting; Birmingham was probably the first English university to realize its importance and educational value and to appoint a professor. Third, Applied Science and Business Technique as well as Commercial Law.

Fourthly, the courses on Commerce, which was 'the most characteristic feature of the Birmingham plan'. These in the first two years were descriptive; the modern development and the present structure of industry and trade in the leading countries. The course in the third year was business policy. They were looked at from 'the point of view primarily of business efficiency and success'; using the cases that Ashley gathered and codified from the experiences of business leaders. [Ashley 1902: 12-13; Smith 1990: 11]

Accounting clearly deserved a large place in any scheme of higher commercial education. It made its appeal in the last resort to sound judgment of business situation. The syllabus was drawn up in consulting with the Birmingham and Midland Society of Chartered Accountants. [Ashley 1902: 10] *The Accountant* commented in details. ["The Degree of Bachelor of Com-

merce" I, II, III: June 7, 14, 21, 1902]. Lawrence R. Dicksee was appointed to its Professorship ["The Birmingham University", August 2, 1902], who was 'one of the largest contributors to the literature of the profession'. In the same year of his Birmingham appointment Dicksee was appointed to Lecturer in Accounting at LSE, and in December 1906 he resigned Birmingham, and in 1919 he was to be Sir Ernest Cassel Professor of Accountancy and Business Methods at LSE¹³⁾.

Curriculum for the Degree of B. Com.

First year

Commerce I: 2 papers

Modern languages, two: 2 papers in each

Accounting I: 1 paper

Modern European history: 2 papers

Second year

Commerce II: 2 papers

Modern languages, two: 2 papers in each

Accounting II: 1 paper

Public finance: 1 paper

Economic analysis: 1 paper

Third year

Commerce III [business policy]: 2 papers

Modern languages, two: 1 paper in each

Accounting III: 1 paper

Commercial law: 1 paper

Transport: 1 paper

Once a week: Commerce Seminar, to train students in independent investigation and reasoning

3.5 Enlargement of Economics: Business Economics in the Making

The Faculty of Commerce was designed to promote a practical approach to economic studies capable of overcoming the alienation between economics and real life, between economists and business. Ashley wrote a short article "A Science of Commerce and Some Prolegomena" in 1906, proposing two directions appropriate

to a commercial faculty and business education. The first was the descriptive survey of the actual forms of economic activity. The second and what was 'absolutely requisite' was the creation of a 'science of commerce', in the sense of a systematic consideration of the problems of business policy. What was wanted was "private economics" for the business man, as distinguished from "political" or "social" economy'. [Ashley 1906: 7-8]

In 1907 Ashley made the Presidential address to Section F of the British Association, "A survey of the past history and present position of political economy". His main thrust was to demonstrate the strength and scope of the 'realistic method', and pointed out that empirical economics blossomed into an active and fruitful field of study with a firm institutional base at LSE and some of the provincial universities. [Kadish 1989: 238] Then in his pioneering article "The Enlargement of Economics" in 1908, Ashley told: in London the subject of Economics was defined as 'Economics Analytical and Descriptive.' In Cambridge a more suitable word had been acclimatized from Germany; and the student was allowed to choose between 'Analytical' papers, and 'Realistic' papers 'adapted to the needs of those preparing for public and private business'. The establishing of a professorship of economics in a great industrial center was pretty sure to lead to valuable publications on the economic problems of the particular district, which was illustrated by Chapman's writings on the economics of the cotton industry and to Clapham's book on the woolen trades. [Ashley 1908: 187-88]

There was a very encouraging growth in the number of books on concrete economics as a result of the creation of commercial faculties or of economic departments serving more or less the same ends. It would be invidious to single out particular examples, Ashley wrote:

Yet I 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: 5]

But by the side of this widened 'political' economy, Ashley thought, there must be created 'provisionally called Business Economics, which frankly takes for its point of view the interest of the individual business man or business concern'. [Ashley 1908: 186-87] In 1926, in the previous year of his death, Ashley published a small but pioneering book called *Business Economics*. By Business Economics Ashley meant 'the study of the organization and financing of business concerns, of the manufacturing policy of business concerns, of their price policy, their labour policy and so on, as they present themselves in the effort to secure profit'. Business Economics may serve for this new sister in the house of Economics; and it may subdivided into 'Business Policy' in relation to the supply of capital and outside markets, and 'Business Administration' in relation to internal working. [Ashley 1926: 9-10]

However pioneering, Ashley's *Business Economics*, which was comprised of three lectures in 1926 at the Commercial College at Copenhagen, was not systematic and merely described some important aspects of the new academic disciplines which were being created and developed in

the ever-increasing Business Schools in the United States and Handelshochschule in Germany, as well as in the Universities of Commerce in Japan. Ashley's pioneering attempt to enlarge Economics so as to create Business Economics seems never to have developed in the British academics at least before the World War II.

4. Marshall on Business (Industrial) Organization

Marshall discussed "Dominant Tendencies of Business Organization" in Book II of *Industry and Trade*, and Chapters VIII to XII deal with "Business Organization". After discussing "The Growth and Influence of Joint Stock Companies" and "Its Financial Basis", Chapter X focuses on "Its Tasks and Requirements of Faculty", followed by "Applications of Scientific Method". In Chapter X Marshall argues on 'Faculties needed by the head of a large business; and by its chief officials' and 'The education of business faculty'.

In *Principles*' chapter on "Business Management" (Book IV, Chapter XII), Marshall argued that the chief risks of undertaking were sometimes separated from the detailed work of management. Then Employers and other undertakers could be divided into two classes, 'those who open out new and improved methods of business', and 'those who follow beaten tracks'. Marshall thought that 'the services which the latter perform for society are chiefly direct and seldom miss their full reward: but it is otherwise with the former class'. [P: 597] As John Maloney discussed, many of Marshall's arguments stressed the difference between the middle manager, who needed a good technical education so as to see to the details, and the 'captains of industry' that Cambridge was, or should be, producing, for whom 'the highest and most complete education—in its broadest sense—is required'. [Maloney 1990: 188]

4.1 Business Organization : Weakness of Joint Stock Company

Different forms of business management were treated in connection with the supply and development of free initiative and business ability. Marshall examined the advantages and disadvantages of private firms and joint-stock companies, co-operative societies and public corporations. 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'.

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 for the joint stock companies, while recognizing their 'paramount influence on economic structure', Marshall was quite cautious about their development. He elucidates 'the fiduciary element in corporate administration'; in other words, the owner of business is led by his own interest against the whole loss. But the private interest of the salaried manager often draws him into the path of least resistance and least risk of finding excuses for not trying improvement until its success is established. [IT : 324] Since Adam Smith, it seems, the distrust in the method of joint stock company and the trust in the private partnership and its co-operation within some industry were common through J. S.

Mill to Marshall.

Marshall trusted more in external economies, in the division of labour within and between the industry, but rather distrusted in internal division of labour within the firm. He discussed about the weakness of joint stock company and limits to organization within the firm. In *Industry and Trade's* chapter on "Business organization : the growth and influence of joint stock companies", Marshall argued on 'good and evil of the progressive supersession of private businesses by the joint stock companies' and concluded 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]

4.2 Monopolistic Tendencies and the British Way : Strong Individuality and Constructive Co-operation

Book III of *Industry and Trade* deals with "Monopolistic Tendencies : their relations to public well-being". Marshall argues in Chapters VII-VIII on "Trusts and cartels : American experience", and in Chapters IX-X on "Trusts and cartels : German experience", then in Chapters XI-XIII on "Aggregation, federation, and cooperation in Britain's industry and trade".

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]. '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]

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 overmastering technical advantage belongs to massive, continuous production.' So vital to Britain's prosperity was the maintenance of 'full freedom for horizontal, rather than vertical expansion'. [IT: 584, 590]

In "Some aspects of competition", he also argues that, 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' [Marshall 1890b: 279-80]. 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. 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. 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. ...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]

4.3 Automatically Specialized Organization

Thus occupied with the sources of the strength of British businesses, Chapters XII-XIII are chiefly devoted to various forms of co-operation for constructive purpose. Britain was the chief home of the automatic cooperation of many industries. 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.' He then turns to the classic case of automatically specialized organization, 'Lancashire, where may be seen perhaps the best present instance of concentrated organization mainly automatic.' There '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.' [IT: 599-601]

5. Selection of Pigou as Successor ; Contraction of Economics ?

5.1 Marshall, Foxwell, Pigou

Marshall was 'the conciliator which British economics needed at a time when its future turned on its ability to avoid the surly sterility of the German *Methodenstreit*'. It was, however, 'conciliation without concessions; under the leadership of almost any other major economic figure it might not have been; and this was Marshall's greatest contribution to the development of economics' [Maloney 1976: 440-41]. He would not compromise his aspirations for a genuinely analytical and scientific economics, and he intervened in his colleagues' work where it fell short of what

he desired, as seen above 'Marshall vs Cunningham'.

Although Marshall and Foxwell had so closely collaborated in the making of Economics Tripos, yet their ideals and method of economics were different. And the differences were getting increased particularly after 1903. In a letter to Foxwell Marshall stressed those differences:

Of course our ideals in economics are different. I have noticed that when a book or a pamphlet pleases you greatly you describe it as 'Scholarly': whereas I am never roused to great enthusiasm about anything which does not seem to me thoroughly 'Scientific'. ...Our difference in temper causes you to lay greater stress upon accuracy as regards facts, & me to insist more on their wrestling with difficult analysis and reasoning. [12 February 1906, III: 126]

In the course of organizing lectures for Economic Tripos, Marshall aimed to make all lectures tell, and not to waste their power on duplication. Marshall wrote to Foxwell that 'you and Macgregor divide English economic history' for the first-year. And 'if we provided a set of lectures to continue your course on economics, there would be another danger of overlapping in some matters, and omission as to others'. Marshall's intention seemed to divide the lectures on economics and economic history between Macgregor and Foxwell. 'A way out of three or four of our difficulties might be found in your undertaking English Economic History in the nineteenth century'. Then 'Macgregor might give a full three terms course on economics'. Marshall was inclined to shift Foxwell from the main line of economics to economic history, socialism, and history of economic theory. Marshall thought that the lectures which Foxwell affected were too much of the 'London School' type. [8 February 1906, III: 123-24; see also III: 128-

29]¹⁴⁾

Marshall had got MacTaggart and afterwards Clapham to look over his papers on 'general course' of economics. But Clapham's turn of mind had always been historical. At last Marshall felt that 'in Pigou I had found what I wanted'. He made a contract with Pigou to pay £100 for the delivery of lectures in 1900-1 [II: 319-20]. Then Marshall wrote to Foxwell: 'I fully recognize your right to teach economics on lines widely different from those which appear best to me: & I have often remarked how fortunately we supplement one another.' However, Marshall went on to say, also for that reason, 'I have found it impossible to build a course of advanced lectures on the foundation of a preliminary course given on your lines'. So, 'if Pigou had been unable to respond to my request, I should have been forced to continue to give my General Course myself.' [24 May 1901, II: 324-25]

As early as in 1900 Marshall was inclined to think that 'the ideal man is at hand: —Pigou', as he wrote to Neville Keynes. But Pigou would 'hardly be ripe for lecturing in 1900-1'. He continued: 'I had Pigou in my mind at last Board meeting: but I had not then seen much of his papers. I have seen a good deal since then; & I think he is thoroughly satisfactory.' [4 March 1900, II: 269]

'I propose, if I can get the right man as Pigou seems to be for the present, to continue to pay £100 a year in order that there may be one general course of lectures suitable for high-class beginners, & treated from the Scientific as distinguished from the Historical & Literary point of view.' [To Neville Keynes, 8 January 1901, II: 291]

5.2 Election of Pigou and Afterwards

On 30 April 1908 Neville Keynes interviewed with Marshall on the matter of election to the Political Economy Professorship. Keynes wrote down in his

“Diaries”: ‘He [Marshall] speaks in the highest terms of Pigou and is clearly most anxious that he should be elected. He very distinctly does not want Foxwell to be elected. I very much wish that I were not an Elector’. “John Neville Keynes Diaries” and some correspondences between the persons concerned revealingly disclose how Marshall himself thought about his successor and how some others thought about the election of Pigou instead of Foxwell. The candidates were Ashley, Cannan, Pigou, and Foxwell. Chapman had wanted to be a candidate [III: 363].

Marshall’s attitudes towards Foxwell and his intention to make his own Cambridge School of Economics were getting even clearer during the discussions on the ‘second Professorship’. After the election, Henry Higgs, a pupil and friend of Foxwell, suggested that money should be raised to provide a Professorship (a personal chair at Cambridge) for Foxwell.

Then Marshall had gone on the assumption that Higgs was a devoted friend of Foxwell’s, and that ‘he would appreciate fully all Foxwell’s merits, & not be in a position to note his deficiencies in regard to Cambridge work’. Marshall decided on a P. S. to Higgs which would leave him ‘no excuse for not recognizing that my estimate of Foxwell’s suitability for the higher Cambridge work differs widely from his’, especially in regard to the new features of Economics Tripos. [Marshall to Neville Keynes, (6?) December 1908, III: 213]

In answer to Higgs’ continued urgency as to the importance of Foxwell’s experience and judgment, Marshall wrote: on Finance in particular, one of the subjects proposed for Foxwell, ‘his judgment is extraordinary bad. He seems never to see more than one side of any complex question’.

If...the question is raised whether a second Professorship...should go to Clapham or Foxwell, I *must* speak for

Clapham. ...I...would always go to him as counselor of the first weight in any difficult matter of judgment. I think his achieved work is of a very high order, full of individuality and strength. Even if Foxwell were still in his prime, I should hesitate to put him on the same intellectual level with Clapham’. [To Neville Keynes, 13 December 1908, III: 215]

Marshall apparently did everything in his power to ensure that Pigou was elected. R. H. Coase discussed that ‘Marshall’s active support for Pigou must have told heavily in his favour. Marshall was, of course, deeply concerned about the future of economics, and particularly Cambridge economics, and, given his temperament, it is unthinkable that he would not exert himself to the full to secure the election of the candidate who, in his view, would do most for Cambridge economics.’ [Coase 1972, 473-74]

5.3 Layton and Applied Economics

In 1908 Marshall retired and Foxwell stopped teaching for Economics Tripos; and Walter Layton, J. M. Keynes and C. R. Fay newly came in. When Marshall resigned his Professorship, he should have felt very anxious as to the provision of lectures on ‘Structure & problems of modern industry’, if Layton had not been at hand. He wrote to Layton: ‘under your care the subject flourished; because your heart was in the matter; & now your head holds more of it, probably than does that of any other economist’. He went on to say, ‘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, III: 362]¹⁵⁾

In a recent paper Tiziano Raffaelli focused on ‘the Marshallian school of

industrial economics', pursuing 'what happened to Marshall's industrial economics in the interwar years?' 'Structure and problems of modern industry' was a main lecture topic for Economics Tripos: and Marshall lectured himself in 1905, while he did on 'National industries and trade' in 1903 and 1906, 'Applied economics' in 1907-8; then from 1908 the task was fulfilled by Layton up to the War. Layton also lectured on 'Labour problems' 'Conditions of labour' in 1911-12, 1914. In the period 1914-19 (except 1916-17) 'Structure and problems of modern industry' was taught by Pigou. Pigou also taught 'Wages and conditions of employment' in 1908-9, 'Distribution and labour' 'Problems of wages' in 1912-15, 1917-20, as well as 'Economics' and 'Principles of economics'.

Marshall's lecture topics were devoted to the main themes of his new book, *Industry and Trade*; of which Book I was called 'Some origins of present problems of industry and trade'. 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: III 357]. Marshall also wrote to Layton as President of the Steel Whitley Council, 'You would be the right man in the right place you would learn much that all economists have wanted to know, & have difficulty in learning. ... You would be able to write & think out general problems relating to employment & industrial organization, with unexampled knowledge'. [9 Dec. 1918, III: 359-60]

In the pre-war years, 'when Keynes and Layton...dominated the economics teaching to a greater extent than Pigou' [Groenewegen 1995: 758] a new generation of Cambridge economists was formed. The appointments of Layton and Keynes gave Marshall and Pigou the opportunity to complete their 'palace revolution'. Robert-

son 'recalled an atmosphere of calm that now seems somewhat forced and unnatural as well as characteristically British in its insularity and complacency' [Collard 1990: 171]. He taught 'Economics of industry' in 1913-14. Robertson's *Control of Industry* (1923), a third of the series "Cambridge Economics Handbooks", relied on some central issues of *Industry and Trade*. Lavington took on the task of teaching 'Structure and problems of industry' from 1921-27. Lavington was the most orthodox of Cambridge economists. He seemed almost to believe in the literal inspiration of Marshall's *Principles*. 'It's all in Marshall' was his favorite dicta [Collard 1990: 180]. The subject was taught by Hubert Henderson in 1919-20, while he taught 'Economic functions of government' in 1913-14, 1920-21, which was also taught by Shove in 1912-13, and by Guillebaud in 1914-19. Shove taught 'Distribution and labour' in 1920-26. In 1921 Sargant Florence joined the staff and began lecturing on various subjects like 'Industry and labour', 'Industrial efficiency and labour', 'Industrial psychology' until 1929, when he was elected into the dean of the Faculty of Commerce, University of Birmingham, which he occupied until 1955.

Marshall's *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 things [Groenewegen 1995: 710]. The book was a great success with the public. A second edition appeared only four months after the first, and a total of 12000 copies printed before Marshall's death. Marshall was pleased that 'the rather rapid sales...indicated that it was being read by business men' [III: 376]. It also 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:

Ever since its establishment the teachers in the school have been men trained by Professor Alfred Marshall whose inspiring personality has been the predominant influence in its creation and development. 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. It would include 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)]

A Professorship of Industrial and Commercial Economics, or Chair of Applied Economics, seems never to have been materialized, even not to have been

discussed in the Special Board for Economics and Politics in the 1920s, though the plan seems to have handed to its Chairman, Pigou. [Minutes of Special Board for Economics and Politics, U. A. Min.]

Epilogue

The making and nurturing of Marshall's Economic Tripos and his School of Economics in their formative years look actually to parallel the long haul of revising the *Principles* and 'the thorny path' to *Industry and Trade*.

It was actually 'inconceivable' that Marshall would have preferred Foxwell or Ashley to Pigou as his successor, because of the differences in their views on scope and method of economics, i. e., Cambridge School and the historical school. Nevertheless Marshall's motto of *Industry and Trade*, "The many in the one and the one in the many" was most favourably held in common by Foxwell, Ashley, Hewins, and some other historical economists. However, although Pigou was so faithful to Marshall¹⁶, 'Pigou lost half of Marshall's message on method, conceptualization, the nature of abstraction, style and vision, issues from Marshall's economic legacy.' *Industry and Trade* was to stay in touch with the facts which gave theory and analysis the necessary air of reality. Marshall's industrial economics had its strong association with dynamics and forces of change and its unwillingness to drive theory to its logical conclusions when this meant losing touch with reality [Groenewegen 1995: 757, 759]. Cambridge economics under Professorship of Pigou were gradually losing the half of Marshall's dictum and alienated economics from the real life of business organization, which was to be revealed by Clapham in "On Empty Economic Boxes" in *Economic Journal* 1922. This was to make a cause of the debates on the representative firm and increasing returns in the late 1920s and during the debates the Marshallian research programme was to

collapse and the Marshallian school of industrial economics was to be transformed in Cambridge; shifting attention towards formalization, abstraction and stationary equilibrium. This tended to establish a new core of economic science, separating it from the realistic side of industrial economics or the 'science of business', which was to grow outside Cambridge.

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Notes

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I am greatly benefited from *The Correspondence of Alfred Marshall* edited by John Whitaker in three volumes, and extensively quoted from them, only indicating volume number and pages. The following abbreviations are also used in making references to Marshall's two major published works. P: *Principles of Economics*; IT: *Industry and Trade*.

1) L. L. Price reviewed *The King's Weigh House Lectures to Business Men* (London: Macmillan, 1901) in *Economic Journal*, 1902, pp. 227-28.

2) He also held that 'it was on the University of Birmingham that the responsibility fell of sustaining the commercial and industrial position of that district' ("Mr. Chamberlain and Birmingham University", *The Times*, January 19, 1900).

3) Chamberlain Papers, JC/12/1, Birmingham University Library.

4) A. Marshall, "Political Economy" (dated March 24, 1899), in Cambridge University Association, *Statement of the Needs of the University*. Part I. Library, Departments of Divinity, Law, Literature, Philosophy and Art (Cambridge: University Press, 1900), pp. 26-28, U. A. Min. IX. 9.

5) Dahrendorf 1995: 59. For these movements, see M. Sanderson, "The Arts of Commerce 1890-1914", in Sanderson 1972. S. Keeble, "University Education and Business Management from the

1890s to the 1950s: A Reluctant Relationship", Ph. D. thesis, LSE, 1984.

6) See *The Early Economic Writings of Alfred Marshall*, edited by J. K. Whitaker, vol. 1, pp. 55-56. Arena and Quéré 2003: pp. 2-3.

7) Tiziano Raffaelli recently argued in his "Whatever Happened to Marshall's Industrial Economics": "Very promising steps towards the establishment of a Marshallian school of industrial economics' can be found at the beginning of the century, when two books, *The Lancashire Cotton Industry* and *Industrial Combination*, were published by two of 'his most distinguished pupils', S. J. Chapman and D. H. Macgregor. They were the product of Marshall's effort to make economic realistic, the blend of analysis and facts attested by the motto 'the Many in the One, the One in the Many'. [Raffaelli 2004: 211]

8) Keynes wrote in his "Diaries": "We are to meet every week. 'Marshall was as ridiculous as usual'. [October 15, 1902] 'We have appointed a large syndicate, who are likely to take some little time over their Report. That will give the rest of us a holiday'. [October 22, 1902]

9) "Memorandum" (4 March 1903) and "Draft Resolutions" (9 March) by W. Cunningham and J. Ellis McTaggart [U. A. Min. VI. 68]. Cunningham further opposed in a flysheet "The Proposed New Tripos" (26 May 1903), which was replied by Foxwell's "The Proposed New Tripos" (May 30, 1903). On the very eve of the Senate vote on the proposed Economics Tripos, Marshall circulated "The Proposed New Tripos" (5 June 1903) to the members of the Senate. ["Economics and associated branches of Political Science. 28.1", U. A.]

10) A substantial summary of Marshall's *Plea* was published with the title "Marshall on Economics for Business Men" in *Journal of Political Economy*, vol. 10, June 1902, pp. 429-37.

11) Sutherland had contributed to *The King's Weigh House Lectures to Businessmen* (London: Macmillan, 1901).

12) Sir Oliver Lodge to Alfred Marshall, July 31, 1901. [In A. Ashley 1932: 94] The other applicants for the post were L.L. Price and H.S. Foxwell [Marshall to Foxwell, 24 May 1901, II: 324].

13) "Obituary. Professor Lawrence R. Dicksee, M. Com., F. C. A.," *The Accountant*, 20 February 1932. Hayek 1946: 20-21.

14) Marshall did not share 'Foxwell's antipathy to theory' or his enthusiasm for the historical approach in economics. And Foxwell's speciality, the history of economic thought, was to Marshall a subject of secondary importance. The *Plea* took the position that 'the history of economic doctrine should be another optional subject'. [See Marshall

to Neville Keynes, 6 February 1902, II : 353-54]

15) Marshall suggested Layton to be a successor to Chapman (who resigned Manchester in 1918), saying that 'you wd. be constantly called on to act as Mediator & Interpreter between Employer and Employed, in the finest center of the finest industries of the world' [III : 362]. Chapman was eventually succeeded by Henry Clay.

16) 'The cause of my first interest in economic science was not a reason, but the personal inspiration of the master whose successor and whose pupil it is my high privilege to be...It will be my earnest endeavour to carry on and to develop in this University the work that he has begun, and to pass forward to others what I have learnt from him'. [Pigou 1908 : 7-8]

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