Alfred Marshall and the establishment of the Cambridge Economic Tripos

Peter D. Groenewegen

Keynes (1972, 218–19) indicated in his well known memoir of Marshall, that during his 23 years as Professor at Cambridge, Marshall “took part in three important movements which deserve separate mention.” The first, Marshall’s contributions to the foundation of the Royal Economic Society, have been discussed in detail by Coats (1968). The second, Marshall’s participation in the women’s degree controversy at Cambridge, has been reviewed in depth by McWilliams-Tullberg (1975). The third, Marshall’s role in establishing the Cambridge Economics Tripos, has as yet not attracted the attention it deserves. This gap in our knowledge about Marshall’s work as Cambridge professor of political economy is filled by this article,1 a gap whose importance is illustrated by the fact that on his retirement from the Cambridge chair in May 1908 it was recognised as one of his major achievements.2 The significance of the contribution is even more easily appreciated from its concise summary by Keynes (1972, 220) as “Marshall’s services in the foundation of the Cambridge school of economics.”

The topic of this paper is wider than just filling in the details about an

1. The contents of this article are drawn from a lengthy study of Alfred Marshall as Professor of Political Economy at Cambridge (1885–1908) first presented at the HES meeting at George Mason University in May 1985 as a centenary tribute to Marshall’s professorship. Revision has been assisted in various ways by G. Becattini, Bob Coats, Neil de Marchi, Geoff Harcourt, Jim Henderson, Peter Kriesler, John Maloney, Sir Austin Robinson and last, but by no means least, John Whitaker. Further revision was assisted by the helpful comments of two anonymous referees. Needless to say remaining errors of interpretation are my own responsibility. I also acknowledge the kind assistance from Cambridge librarians, particularly in the Marshall Library, and am grateful for permission to quote from unpublished Marshall material in their custody and for permission from Cambridge University Library in allowing me to quote from the Keynes diaries.

2. On the occasion of Marshall’s retirement, the Special board of Economics under the chairmanship of A. W. Ward (Peterhouse) passed the following resolutions: “We desire to express to Professor Marshall on behalf of this Board our deep regret on learning that he has resigned the chair which he has filled with so much lustre and with so much advantage to the University and to offer him our thanks for his services as Chairman of this Board and for the generosity with which he has for so many years supported the School of Economics destined to be long identified with his great name” (Marshall Papers, Cambridge, Letters, Box 3).
important aspect of Alfred Marshall’s activities as Professor of Political Economy at Cambridge from 1885. Marshall’s role in creating the Cambridge school of Economics from the Cambridge school of Moral Sciences during the last decades of the Victorian era illuminates a number of important features in the development of economic thought. For example, in an important way it is part of the search for “authoritative theology substitutes” flowing from the crisis and decline of religious beliefs in the 1860s and after. This affected two of the key figures in Cambridge economics of the 1880s and 1890s: Sidgwick and Marshall (Skidelsky 1983, 40–41). In their own ways, both of them sought solutions to what appeared as a double dilemma for the university they loved, a dilemma created by this personal (and more general) destruction of theology’s authority. The first dilemma found expression in the need to establish a new authoritative doctrine to fill the vacuum, especially on social questions, created by the eroded status of established religion. The attractiveness in the 1860s and 1870s in studying the moral sciences, particularly moral philosophy and economics, is clearly in part explained by this. At the same time, secularisation of social and scientific thought had implications for the quasi-religious organisation of the mid-Victorian universities. Among other things, a traditional role in seeking careers with the established church for many of the university’s graduates was disturbed by these events. The economics school which Marshall helped to create to a significant extent provided answers to both dilemmas. It provided the foundation for a new, authoritative, scientific applied social ethics, partly geared to addressing the relevant problem of poverty. It also had its impulse from a need for professional education for those seeking careers in business, politics, and the civil service instead of the church. Hence Keynes’ remark about the double nature of Marshall’s role in Cambridge: pastor and scientist, moraliser and searcher for knowledge for its own sake (Keynes 1972, 168–74; see also Hutchison 1981, chap. 3, esp. 46–62; Skidelsky 1983, chap. 2; Collini, Winch, and Burrow 1983, chap. 10–11). Since the school Marshall created also produced some of the greatest economists of the twentieth century, study of its foundations and hence some of its preconceptions is likewise relevant to understanding features of twentieth century developments in Cambridge economics.

The argument is presented in several sections. The first briefly examines the status of economics teaching at Cambridge under Marshall’s professorial predecessors. The second section reviews Marshall’s inaugural lecture as a declaration of planned progress towards greater opportunities at Cambridge for more specialised economic studies. The next section investigates Marshall’s strategy for reaching these objectives, emphasising the nature of the course reforms achieved within the Moral Sciences Tripos in 1889 and 1897. The fourth part outlines the final, successful push in cre-
ating the separate Economics Tripos, before offering some conclusions. Appendices give details of the economics course changes at Cambridge in which Marshall was involved.

I

Some background is clearly required on both the Cambridge Tripos and the political economy education Cambridge provided to its nineteenth-century students if the significance and nature of Marshall's reforms leading up to the Economics and Politics Tripos are to be properly understood. It is useful to start with the notion of Tripos, the system of examinations producing wranglers, optimes and generally, honours graduates (Gray 1926, 250–51). By the early nineteenth century the Cambridge Tripos was already generally regarded as the oldest and most famous written competitive examination in England, one demanding high standards and conducted with scrupulous fairness. It gave substantial rewards to those who did well in it. Success in the first class honours list of Wranglers (identified with the mathematics honours list from the end of the eighteenth century) generally secured a college fellowship more or less automatically. A Classics Tripos was established in 1824, but (except for nobility) honours could not be attempted in Classics until 1857 unless the mathematics honours examinations had been attempted first. Moral and Natural Sciences Triposes were established in 1848 and although honours degrees in the Moral Sciences were not really established till 1860, results for the Moral Sciences were published in three classes from 1850 onwards following practice established in 1751. Subjects originally covered within the Moral Sciences Tripos included moral philosophy, political economy, modern history, general jurisprudence, and the laws of England (Rothblatt 1981, 181–82; Winstanley 1947, 185–86).

The second half of the nineteenth century saw considerable expansion in the number of Triposes offered, partly in the wake of the university reforms this period produced and partly to increase the number of students by making the courses offered more relevant and attractive (Collini, Winch, and Burrow 1983, chap. 11, esp. 342–43). In 1854 a separate Law Tripos was created; the History Tripos was established in 1873 following the short-lived History and Law Tripos of 1868. Triposes in Oriental Languages, Medieval and Modern Languages, Theology and the Mechanical Sciences followed prior to the creation of the Economics and Political Sciences Tripos in 1903. By then Triposes had become honours examinations, controlled by Boards of Studies, later to be called faculties.

3. Marshall, as Second Wrangler in 1865 was elected to a Fellowship at St. Johns within six months; Sidgwick (Senior Classic or first in the Classical Tripos list in 1859) obtained a Fellowship at Trinity by October 1859 (he was also 33rd Wrangler, that is, thirty-third in the Mathematics honours list).
and composed of the teachers within the appropriate departments of study.\footnote{Before 1851, honours students were rare and pass students, (poll men) provided the vast majority of undergraduates. These were not subject to very stringent examinations for their degrees but did have to attend a certain number of lectures for the B.A. The reforms of the 1870s created tougher conditions for pass students. That, together with the substantially increased number of Triposes or honours schools, meant that the number of honours students gradually increased. By 1902 over 53 per cent of the Cambridge degrees given were honours degrees; by 1912 this proportion had risen to 62 per cent. (See Rothblatt 1981, 184–85 and n.2.) A list of Triposes in 1903 is given in Macalister (1903, 18).}

From 1848 political economy was therefore listed as a subject for Tripos examinations at Cambridge for those students taking the Moral Sciences Tripos. However, political economy lectures at Cambridge had started much earlier with a regular course of lectures presented by George Pryme from 1816. Pryme’s services as a regular lecturer of political economy were recognised by the Cambridge University Senate in 1828 when it conferred an honorary Professorship on him, a title giving neither stipend nor implying establishment of a permanent position. The creation of the Moral Science Tripos in 1848 made the case for a permanent chair of political economy much stronger but this was not achieved until 1863 after a lengthy campaign. The duties of the new political economy professor were defined as follows: “to explain and teach the principles of Political Economy and to apply himself to the advancement of the science.” Unlike Oxford’s Drummond chair, there was no limit on the holder’s term of office but annual residency was required for eighteen weeks between the 1st of October and the end of the Easter term, to allow fulfilment of an obligation to give an annual course of lectures of unspecified duration.\footnote{Material for this paragraph derives from James P. Henderson (1984, 1–9) who also provides details of Pryme’s Course of Lectures. A syllabus of these was published on four occasions (Pryme 1819).} The first holder of this new and permanent Cambridge chair of political economy was Henry Fawcett, who won it after a hotly contested election with voting by the resident M.A.’s, a few examiners and other ex-officio electors.\footnote{Fawcett won this election by 90 votes against Mayor (80 votes), Courtney (19) and H. D. MacLeod (14). For details see Leslie Stephen (1885, 116–22).}

Fawcett in fact gave an annual course of lectures until his death in 1884 during his statutory eighteen weeks of annual residence. Stephen (1885, 124–25) described these lectures as a “forcible and lucid” exposition of the leading principles of political economy, principles which Fawcett regarded as being few in number and by their simplicity capable of being imparted to people of average intelligence (including the poll or pass degree men compelled by regulation until 1876 to attend a certain number of lectures.)\footnote{Stephen (1885, 123) indicates that Fawcett was the only Professor in 1876 to oppose abolition of the compulsory attendances at lectures for pass students, that for a short period after 1876 his lectures were nearly deserted but that “in his later years he again had a respectable audience.”}
The Moral Sciences Tripos, in which political economy examinations stayed as a formal part for the remainder of the nineteenth century, also needs comment on its contents and reputation. For the first ten years of its existence it was rumoured "that it could be passed, and even a first class obtained in it, on very little work" (Winstanley 1947, 186–87). But irrespective of this, it did not prove very attractive in its first decade. Only 66 men had taken honours in that period and for 1860 there were no candidates whatsoever. Revisions were clearly required to make the new Tripos more attractive. In December 1859 a University committee recommended the establishment of a Board of Moral Science Studies to supervise standards in the degree more rigorously. In addition it substituted mental philosophy (psychology) for law, a change justified because from 1854 a new Tripos provided for regular legal studies. In 1867 history and jurisprudence were omitted from the Moral Sciences for similar reasons and by 1870 political economy amounted to roughly one third of the B.A. in Moral Sciences. Despite these changes, the Tripos continued to be regarded as unsatisfactory. Sidgwick, an examiner and lecturer for the Moral Sciences Tripos on several occasions, in 1870 wrote that in the Moral Sciences, "the standard of a first class is low because the most able and industrious men do not devote themselves to the study" (University Reporter, 26 October 1870). Eight years later he wrote Foxwell that he "certainly would not encourage any promising young man to try and find an opening in Cambridge in that department" (cited in Collini, Winch, and Burrow 1983, 266).

However, the decade from 1870 did produce a number of first class men in the Tripos' results. It opened with Foxwell's first class result in the Moral Sciences for that year and continued with William Cunningham and F. W. Maitland in 1872, Henry Cuninghamame (who later published some mathematical economics) in 1873, J. M. Ward (the psychologist) in 1874 (as well as Mary Paley Marshall8), J. N. Keynes in 1875 and J. S. Nicholson in 1876. This increase in quality and to a lesser extent, in quantity, was undoubtedly assisted by the extension of the teaching staff assisting the two Moral Sciences professors (Political Economy and Moral Philosophy). From the late 1860s a number of College lecturers in the Moral Sciences were appointed from Johns, Trinity, Caius, and St. Catherine's who included Sidgwick, Mayor, Venn, Levin, and Marshall himself from 1868.

When Marshall returned to Cambridge as Professor in 1885, the Moral Sciences Tripos was not the only Tripos within which students could study political economy. The History Tripos examination, established separately

8. As Keynes (1972, 236–37) explains, Mary Paley Marshall in 1874 obtained two votes for a first and two for a second class result from Foxwell, Gardiner, Pearson, and Jevons, the four examiners.
in 1873, also allowed a paper in the subject, one which from 1886 was to devote "Special attention to government action in matters of finance and industry" (Reporter, 17 November 1885, No. 610, p. 162). The status of political economy teaching at Cambridge therefore gradually expanded during the nineteenth century. This expansion reflected the impetus of university reform in Victorian England to a greater extent than the growing recognition of the subject. The hostility against education for business in the British universities (see Rothblatt 1981, 257–73, and cf. 244–47) in the nineteenth century made the study of political economy a part of the Moral Sciences and the study of history at Cambridge. Compared with the study of mathematics and classics, it carried little academic prestige. Furthermore, by the early 1880s the reputation of the study of political economy had declined for several reasons while that of the Moral Sciences in general had lost the bloom of discovery it enjoyed during the 1860s and early 1870s.  

II

Marshall's 1885 inaugural lecture, whose contents are partly significant for the story of his campaign to create a separate Economics and Politics Tripos, was an obvious consequence of his election to the Cambridge chair of Political Economy in December 1884. Since details of that election are not widely known, they are briefly provided before examining the aspects of Marshall's inaugural lecture relevant to the role of economics in the Cambridge university curriculum.

Henry Fawcett's death on 6 November 1884 made the Professorship of Political Economy vacant. On 13 December, the university selection committee met and Marshall was appointed, the first selection to the chair of

9. See Kadish 1982, chap. 4; Maloney 1985, introduction and chap. 1. The basic explanation of the drawing power of Moral Sciences in this period is undoubtedly the enormous appeal of its subject matter to the major intellectual issue of the 1860s which Arthur Balfour (himself a Moral Sciences student in the 1860s) described as the great conflict between religion and science (Balfour 1930, 50–60 and esp. 51). This 'conflict' had also affected Marshall. It at least partly explains his departure from this youthful passion for mathematical studies to serious study of metaphysics, moral and political philosophy, political economy and particularly, psychology. The combination of subjects in the Moral Sciences Tripos therefore filled a special need for the time.

10. Basic details of Marshall's selection were reported in The Times, 15 December 1884. This included the composition of the selection committee which had been announced in October 1884 (University Reporter, No. 550, 24 October 1884, p. 36) and this, together with the electors' college affiliation, are as follows: Chairman and Vice-Chancellor was N. M. Ferrers, Master of Caius. The two Senate nominees were James Stuart, M.P., Professor of Mechanical Engineering and Fellow of Trinity; H. J. Roby, a businessman and former Fellow of John's. The General Board was represented by V. H. Stanton, the Senior Dean at Trinity and a 20th Wrangler; Henry Sidgwick, the Knightbridge Professor of Moral Philosophy and former Fellow of Trinity and R. H. I. Palgrave, banker and writer on political economy. Finally, the Special Board of Studies for the Moral Sciences had three Johnians as its nominees: L. H. (later Lord) Courtney, M.P and one time (1872–75) Professor of Political Economy at University College, London; H. S. Foxwell, then College Lecturer


political economy on the then newly reformed basis by committee specified by 1878 (*Cambridge University Statutes* 1882, chap. IX).

Details about Marshall's competition are not easily found. Sidgwick (1906, 394), one of the electors, only noted Marshall's success in his diary, as subsequently did Keynes (1972, 179) and John Whitaker (1975, 27) in their accounts of the event. Mary Paley (1947, 42) notes Inglis Palgrave as the "only serious competitor;" Maloney (1976, 441; 1985, 99, 123–24) lists Cunningham, the economic historian, and MacLeod, banker and writer on political economy, who had already been a candidate for the chair when Fawcett obtained it. The full story, on the authority of Foxwell (another elector), was confided by J. N. Keynes to his personal diary in entries for 13 and 14 December and thereby preserved for posterity:

Sat. 13 Dec. 1884.
Election of the Political Economy Professorship. Yesterday a postcard from Foxwell. "It is by no means certain. Will let you know as soon as possible." This afternoon I got rather fidgety about the result; but in the evening another postcard from Foxwell. " Marshall is elected". The other candidates were Inglis Palgrave, MacLeod, Cunningham, Levin, Hooppell.

Sunday 14th Dec. 1884.
Foxwell tells me the electors have agreed to divulge nothing concerning the Political Economy election. He personally agrees with me in not estimating Cunningham particularly highly. We cannot think him in any way thorough. At the election each of the electors seems to have made a little speech concerning the merits of each of the candidates.11

The chair to which Marshall was elected, it will be recalled, had been formally established in 1863 though the title of Professor of Political Economy had been first conferred by the University in 1828. Under 1882 Statutes, Marshall's chair was one of three in the Special Board of Moral Science, the others being the Knightbridge chair (held by Sidgwick since

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11. I am indebted to John Whitaker for originally drawing this material to my attention. The two candidates not previously mentioned were T. W. Levin, a college lecturer in political economy at St. Catherine's and R. E. Hooppell, a 40th Wrangler in 1855, a First Class Honours graduate in Moral Sciences in 1856 and at the time of the election, Principal of the Winterbottom Nautical College.
1883) and the chair of Mental Philosophy and Logic (then vacant). The chair carried an annual stipend of £700 (reduced by £200 if the Professor held a headship or college fellowship) while the statutory duties of the professor (likewise enacted in 1882) included “research and the advancement of knowledge in his department,” “to give lectures in every year,” and to report annually to the appropriate special Board of Studies on “the number of lectures given . . . during the preceding year, and the times of delivery, together with the number of weeks in each of the three terms during which he has resided in the University.”

Marshall’s inaugural lecture was given in Senate House at 2.00 p.m. on 24 February 1885. Its contents are of considerable interest for this paper because it provides Marshall’s views “of the province of the economist as I understand it, and of what it seems to me that Cambridge may best do in it” (Marshall 1885, 153, my italics). Much of the lecture was devoted to Marshall’s opinions on what economics was about, but its final paragraphs discussed the relation in which Cambridge ought to stand to economic science. These concisely expressed Marshall’s misgivings about the importance the Cambridge curriculum accorded economics relative to its importance in the world.

Marshall’s premise for the concluding section of his inaugural lecture was that the need for people trained in helping to solve “the economic problems of the age” was not being met by Cambridge, even though it had more trained minds than any other university in the world. Few Cambridge people seemed willing to devote much of their time to the study of economics over the years, he had observed (Marshall 1885, 171). Marshall suggested several causes for this supply deficiency. First was the frequent but “disastrous mistake” within the university community as a whole of being philosophically indifferent to wealth and associated subjects. Next was general university disdain for training and “preparation for the higher positions in business” and a failure to appreciate its potential for changing the “tone of business.” Why, Marshall dramatically asked in one of the more controversial parts of his lecture, should social problems induced by

12. University of Cambridge Historical Register (1917, 99): Cambridge University (1883, 46, 49–52, 57–60) the quotes coming from Statute B, chap. XI, sect. 5 and 6, p. 58. Marshall’s statutory duties as Professor arose from the substantial reforms in University organisation and teaching which took place in the 1870s and in which Sidgwick had taken an important part. See Sidgwick (1906, 371–79 and cf. with p. 264 as to the enhanced status the new regulations provided for professors). For a general discussion of these reforms see Winstanley 1947, chap. 5 and 7; Rothblatt 1981, esp. 170–72, dealing with the role of the pre-reform professor.

13. The Inaugural Lecture was published by Macmillan in May 1885 and reviewed in the Times (May 1885), a review whose tone prompted a reply by Marshall (2 June 1885). Detailed discussion of this part of the lecture is provided in Kadish (1982, 132–35) and for a discussion of Marshall’s aims and objectives in a wider context, see Maloney 1985, introduction and chap. 2.
poverty “be left to impetuous socialists and ignorant orators” when the “great scientific strength of Cambridge” if properly applied could be used to solve such problems? Finally, a belief that a young science like economics lacked substance and hence adequate intellectual challenge was an explanation why it attracted so few brilliant minds at Cambridge but this, Marshall suggested, indicated misunderstanding of the real nature of the problems economists had to solve.14

Marshall also gave a more specific reason for the relative unpopularity of the study of political economy among Cambridge undergraduate men. This touched upon a delicate matter of recently achieved university reform: the role of political economy within the Moral Sciences Tripos. Because these remarks put much of Marshall’s subsequent drive towards a separate Economics and Politics Tripos into perspective, they are quoted in full:

[T]he only curriculum in which Economics has a very important part to play is that of the Moral Sciences Tripos. And many of those who are fitted for the highest and hardest economic work are not attracted by the metaphysical studies that lie at the threshold of that Tripos. Economics is a science of human motives, and, since some grouping is necessary, it could not be better grouped than with the other Moral Sciences. Tested by its fruits the Tripos is an excellent one. It may claim a share, very much larger than in proportion to its numbers, of those who have increased the fame of Cambridge and her power in the world; and what it has done for Economics has certainly not been the least of its achievements. But may I not appeal to some of those who have not the taste or the time for the whole of the Moral Sciences, but have the trained scientific minds which Economics is so urgently craving? May I not ask them to bring to bear some of their stored up force; to add a knowledge of the economic organon to their general training, and thus to take part in the great work of inquiring how far it is possible to remedy the economic evils of the present day? . . . It will be my most cherished ambition, my highest endeavour, to do what with my poor ability and my limited strength I may, to increase the numbers of those, whom Cambridge, the great mother of strong men, sends out into the world with cool heads but warm hearts, willing to give some at least of their best powers to grappling with the social suffering around them; resolved not to rest content till they have done what in them lies to discover how far it is possible to

open up to all the material means of a refined and noble life. [Marshall 1885, 171–72, 174]¹⁵

Part of Marshall's inaugural lecture can be interpreted as a blueprint for developing his "area of knowledge" by raising the "status of economics" through establishing "a separate School and separate Tripos in Economics and associated branches of Political Science" (Keynes 1972, 221–22). Most of his later professional ventures into university administration and controversy were directed towards this end. Some of his views on the subject itself, its status as a science and its history, can be said to have been influenced by this motivation (Maloney 1985, chap. 2).

III

The gradual improvement in the status of political economy at Cambridge from 1816 to 1870 was outlined in section I. The informal nature of the course of lectures with which political economy teaching at Cambridge had commenced was altered in 1848 when it became part of the official Moral Sciences Tripos curriculum. When Law and History obtained their own Triposes from the 1850s, the role of economics in the Moral Sciences Tripos expanded and by the 1870s it had become close to one third of the requirements for the B.A. in Moral Sciences. For example, of the ten papers required for the Moral Sciences Tripos examination in 1875 when J. N. Keynes sat for them, three were in political economy, three in mental philosophy, while in addition, there were two in logic and one each in ethics and moral philosophy (J. N. Keynes, Diaries, entry for 29 November 1875).¹⁶

However the five years before Marshall's appointment to the chair at Cambridge produced renewed complaints about the low quality of the po-

¹⁵. Sidgwick interpreted these statements by Marshall as a "threatened declaration of war" plainly visible to the initiated despite the "courteous" manner in which they were expressed (Sidgwick 1906, 402). For Cunningham's reaction to the lecture, hostile for different reasons, see Maloney 1985, 99–100. John Neville Keynes recorded in his diary (24 February 1885): "Mother went with me to hear Marshall's inaugural lecture which I thought a decided success. I hear however that he caused displeasure (for different reasons) to Cunningham, Sidgwick and Ward."

¹⁶. The timetable may be of interest in this context. Examinations were held between 9.00 and 12.00 a.m. and 1.00–4.00 p.m. for the five days of the Tripos examination which started on Monday, 29 November. The ten papers were therefore completed in a week. On Monday, J. N. Keynes took Ethics and Logic, on Tuesday Mental Philosophy and Political Economy, on Wednesday Mental Philosophy and Moral Philosophy, on Thursday Political Economy and Mental Philosophy and on Friday, Logic and Political Economy. Within a week from taking his last examination (that is by 8 December 1875), J. N. Keynes knew he was First Moralist, the next day (9 December) he knew his marks (all out of 900) as 617 for Political Economy, 610 for Mental Philosophy, 620 for Moral Philosophy and 684 for Logic (J. N. Keynes Diaries, entries for end November and early December 1875). The political economy papers for which Keynes sat in 1875, and M. P. Marshall sat in 1874 (see n. 8 above), are reproduced in Black 1981, 132–38.
itical economy teaching within the Moral Sciences Tripos. J. N. Keynes
recorded examples in his diaries probably based on his own experience as
examiner in 1879 and 1880. Thus he commented in 1881: "they [the ex-
aminers, that is, Levin, Read, Venn, and Lyttleton], have let the standards
drop in a way that is rather distressing. The papers were poor ones. A great
deal of book work, and the Political Economy antiquated" (J. N. Keynes,
Diaries, entry 7 December 1881.) In 1883 he recorded critical remarks
about Foxwell's shift in examining standards, and in 1884 noted a com-
pliment from Nicholson on the quality of the women students in political
economy he himself had taught (J. N. Keynes, Diaries, entries 14 July
1883, 26 May 1884). Sidgwick, who also examined in those two years,
left no record of his impressions, but the class lists for these years include
no distinguished economics students.

Sidgwick did, however, leave an impression of the first, and rather
stormy, meeting he had with Marshall after his election to the political
economy chair in December 1884, followed before the end of the year by
some very critical correspondence from Marshall on the Moral Sciences
Tripos. Sidgwick's account gives an indication of things to come at the
Moral Sciences Board after Marshall joined it as Professor, and can be
extensively quoted, if only because it illustrates the bad footing on which
their relationship as senior members of the Moral Sciences Board com-
menced.

In the next few years, Keynes' diaries (which often record events at
Moral Science Board meetings at which he was present) highlight contin-
uation of friction between Marshall and Sidgwick. This friction arose from

17. "The story begins on December 13, when we elected Alfred Marshall Professor of
Political Economy. He came here on December 17, called on us, heard my view of the
lectures required, then suddenly broke out. I had produced on him the impression of a petty
tyrant 'dressed in a little brief authority' (Chairman of the Board of Moral Science) who
wished to regulate, trammel, hamper a man who knew more about the subject than I did. I
tried to explain, and we parted friends; but the explanation was imperfect, correspondence
ensued, and on Tuesday (23) I received from him a long and very impressive letter, analys-
ing my academic career, and pointing out that the one source of failure in it was my mania
for over-regulation. The result of this had been that my energies had been frittered away on
details of administration, and on the effort to give a wretched handful of undergraduates the
particular teaching that they required for the Moral Sciences Tripos. He contrasted my
lecture-room, in which a handful of men are taking down what they regard as useful for
examination, with that of [T. H.] Green, in which a hundred men—half of them B.A.'s—
ignoring examinations, were wont to hang on the lips of the man who was sincerely anxious
to teach them the truth about the universe and human life. I have left out the partly cour-
teous, partly affectionate—for Marshall is an old friend—padding of the letter, by which
he meant to soften the pressure of these hard truths, but this is the substance" (Sidgwick
1906, 394). Sidgwick's not uncharacteristic response to this criticism from Marshall was a
bout of self criticism and self examination about his failure to attract men on a large scale.
From this he felt that he could not and would not do anything to make his philosophy "more
popular" whereas he found Marshall's charge of "over-regulation" containing at best an
element of truth and an element of error (Sidgwick 1906, 394–96).
Marshall’s hostility to the Moral Sciences Tripos and the enforced role of political economy therein, so unambiguously expressed in his inaugural and which, on Keynes’ account, he also freely expressed to some of his colleagues. Standards within the Tripos were also not rising as a result of Marshall’s presence. For example, at the end of 1886 half of Marshall’s crop of “political economy men” failed, while J. N. Keynes complained of the poor quality of the new students at the start of the 1887 academic year (Keynes’ Diaries, entries 11 December 1886, 13 October 1887).

From early 1885, however, Marshall took a number of steps to make the study of political economy more attractive to students. In November 1885, for example, the Reporter notified the University community that “political economy in so far as it bears upon international law,” was to be included in the examination for the Whewell scholarship (Reporter, No. 610, p. 158). Although this sounds a minor change, it is significant because students in subjects outside classics, mathematics and to a less extent, the natural sciences, had little real access to College scholarships. Inclusion of some study of political economy in the examinations for the Whewell Scholarship was therefore a marginal improvement in this situation and gave greater incentive to its study.19

Marshall’s offer of a general political economy prize in March 1886 can be interpreted in a similar vein. The Marshall Prize, as it became officially known, amounted to £15 to be spent on books, and was to be awarded annually for five years from 1887 to the student performing best in the regular political economy or the advanced political economy papers required for the Moral Sciences Tripos. Although the prize was awarded on examination within that Tripos, it was open to all students who wished to enter it provided they took the relevant papers. Marshall’s reasons for offering the prize are given in a letter to the Vice-Chancellor (15 March 1886). This emphasised the need to widen access to political economy examinations to students apart from those entering for the Moral Sciences

18. As early as 15 January 1885, Keynes records a conversation with Marshall in which he expressed the wish not to attach himself too firmly to the Moral Sciences Board, because he wanted to address himself to the wider audience of students, irrespective of Tripos. In the two months after the inaugural, Keynes twice mentioned the “painful friction” between Marshall and Sidgwick (4 March, 19 April 1885) and a year later (11 May 1886) he expressed the feeling that their enmity seemed to be getting worse. One of my referees has suggested that consultation of the minute books of the Special Board of Moral Sciences, now available at the University Archives for the whole period, and those of the History Board would make a useful source of additional documentation. I was prevented from taking this good advice through absence from Cambridge while revising this paper, a less serious shortcoming than may be thought because as the referee in question also pointed out, use of this material would not alter the picture presented in this paper in any substantial way.

or History Triposes, arguing the relevance of economics for students of mathematics, the natural sciences, law, and even the classics, to impress upon his audience of senior university administrators his view that "Economics holds a singular position" among the sciences because of its wide-ranging relevance (University Reporter, 4 May 1886, p. 579; 25 May 1886, p. 647 and 8 June 1886, p. 719).  

Before looking at the positive steps he took in the course reforms within the Moral Science and History Board of Studies to advance the cause of political economy teaching at Cambridge within these Triposes, Marshall's teaching program for the 1880s and 1890s may be briefly examined. A typical economics lecturing timetable for this period is that announced by the Special Board for Moral Sciences in 1886–87. During Michaelmas term, Marshall gave general lectures on political economy (Tuesdays and Thursdays at 12.00); for Lent term he kept a similar lecture timetable. In addition, Levin gave lectures on the theory of money on Wednesdays at 12.00, while Foxwell lectured on Thursdays and Saturdays at 11.00 on Smith, Malthus, and Ricardo in Michaelmas term and on the history of socialism and elements of political economy in Lent term. (University Reporter, 9 June 1886, p. 762). Apart from his lectures, Marshall’s teaching involved his “at homes” initially for six hours a week, for students interested in political economy. These were announced as soon as Marshall took up residence as Professor and persevered with throughout his professorship. From 1885–86, they were extended to advertised times of three hours every Monday to Thursday during term, and were open to all students wishing to discuss economics questions. Contrary to current practice, Marshall’s informal teaching was free of charge, probably generously extended time wise for promising students, and undoubtedly part of his campaign to enhance the status of political economy teaching.  

Marshall expanded the scope of economics teaching on two occasions within the Moral Sciences Tripos (1888–89 and 1897) and once in the History Tripos (1897) before his final and decisive moves towards estab-

20. The first Marshall Prize was awarded to S. M. Leathes who was not a student in the Moral Sciences Tripos (Reporter, 18 June 1887, No. 693, p. 849) but a history student. A more distinguished Marshall Prize winner was A. W. Flux, the mathematical economist who obtained the prize in 1889 (Reporter, 18 June 1889, No. 796, p. 950). In 1891, Marshall proposed the replacement of the Marshall examination prize with an Adam Smith Essay Prize, whose purpose was expressly designed “towards my old aim of attracting to the study of Economics men who are able to bring to it highly trained minds” (Marshall to Vice-Chancellor, 24 January 1891, University Reporter, 17 February 1891). Other examples of Marshall’s attempts to make political economy studies more attractive relate to examination timetabling and the library.  

21. University Reporter, no. 568, p. 365 (January 1885). A similar invitation was henceforth inserted at the start of each term, initially addressed to all members of the university but later confined to students. Fay (1924) gives an account of the generosity with which Marshall gave his time to economics students who seemed promising to him.
lishing an Economics and Political Sciences Tripos. Details of the syllabus outcomes are summarised in the Appendices; arguments surrounding Marshall's case, drawn from the official record in the University Reporter and John Neville Keynes' diaries, are summarised in what follows.

According to Keynes (diary entry for 29 February 1888), initial moves to reform the structure of the Moral Sciences Tripos in 1888 came from Sidgwick. This induced a number of stormy meetings of the Moral Sciences Board during the following months, largely on the question whether compulsory metaphysics should be placed in the first preliminary part of the Tripos (Marshall's suggestion) or the second (Sidgwick's position).\(^{22}\) Deferral of the matter till October 1888 showed the friction this caused and only when Sidgwick conceded a substantial compromise did Marshall finally accept the general position on metaphysics in the degree structure (10 November 1888). However, in early December, Marshall wanted changes in the status of the Logic examination for political economy specialists, and it was not till the end of January 1889 that J. N. Keynes was able to report "fair progress with the new regulations" with agreement in sight on February 6. It was reached on 27 February and the Moral Science Board report was presented to the Senate by the Vice Chancellor shortly thereafter.

For economic studies in the Tripos, the report implied the following. For the first part of the Tripos, two papers on Political Economy were to be required together with two compulsory papers for each of the two other required subjects: Psychology, and Logic and Methodology. For Part II, Advanced Political Economy was changed to a special subject, taken either with Political Philosophy or with Ethical and Metaphysical Philosophy, students taking political economy thereby being given the option of concentrating on Political Philosophy and hence being exempted from the former compulsory ethics and metaphysics. (This was Sidgwick's compromise.) Attempting Part II was to be permitted to students from other Triposes, as Pigou and Clapham were to do after completing History, and as Marshall tried to persuade J. M. Keynes to do after finishing his Mathematics Tripos. The exemption of advanced political economy students in Part II from compulsory studies in metaphysics and ethics drew strong opposition from William Cunningham (then a member of the Special Board of Moral Sciences). He explained his vigorous dissent from this provision during the debate in the University Council when the proposal

\(^{22}\) A vote on the subject resulted in three votes for Marshall's position, three for that of Sidgwick and three abstentions (J. N. Keynes diaries, 15 May 1888) nor was it resolved at a more peaceful subsequent meeting of the Moral Sciences Board (25 May 1888). The matter was therefore deferred till October. The bitter discussion induced Sidgwick to confide an intention to resign his chair within a short term, a clear sign to J. N. Keynes of "the low ebb which the Moral Sciences school here has now reached" (Diaries, 25 May 1888).
came before it. The removal of compulsory metaphysics for advanced political economy students was a victory for Marshall, but it gained him only few additional students for economics.23

The 1889 compromise did not last very long. A further move to separate and hence enable fuller development of the “Philosophical” and “politico-economical” branches of the Tripos was made in a report from the Special Board of Moral Sciences presented to the University Council in May 1897. Debate over this matter had disrupted discussions at the Moral Sciences Board for the previous three years. The new regulations virtually formalised the separation of politics and economics from philosophy which Sidgwick had foreshadowed in 1889 and Marshall so strongly supported. They did this by further expansion of opportunities to specialise in economics for Moral Sciences students. As the Report noted, “The inclusion of Ethics in Part I of the Tripos” which was proposed, enables “the Board to add a third paper to the two now set on Political Economy [in Part II] an extension regarded as desirable by the teachers of this subject [Marshall and Foxwell] in order to represent adequately the different parts and aspects of this important study... this change will improve the whole course of preparation gone through by students of Moral Sciences whose bent lies in the direction of Economics.” (University Reporter, 18 May 1897, p. 941, my italics). The consequence was formal separation of politics and political economy from philosophy, metaphysics, and other moral sciences.

23. University Reporter, 26 February 1889, pp. 481–3. During the Council debate (University Reporter, 19 March 1889, pp. 593–96) Cunningham opposed exemption from metaphysics for advanced Political Economy students because these two subjects were interdependent, particularly in a Moral Sciences Tripos where questions of social reform and the individual were so often raised. In addition, he pointed to the fact that students could already concentrate on combining Political Philosophy and Political Economy studies within the recently approved new regulations for the History Tripos, and that as such the Moral Sciences proposal could be interpreted as a duplication of the History Tripos regulations. Marshall opposed Cunningham with the following arguments. First, the history of economics itself showed its essential independence from metaphysics. Questions of method were also independent from metaphysics. Most important Marshall argued, was the need to create a Political Sciences school like those in the United States, combining Political Philosophy and Political Economy studies. Because not all serious Political Economy students would want to study history, the duplication Cunningham mentioned was not a real danger. He concluded by saying that the Moral Sciences proposals were not completely satisfactory and should basically be regarded as “a transition stage.” In the debate Sidgwick confirmed what Keynes had recorded; this part of the proposal had been hotly debated at meetings of the Special Board, and should be seen as a compromise not necessarily preventing Political Economy students from taking metaphysics. Sidgwick also expressed agreement with “Marshall in thinking it probable in the course of a few years... to construct a Political Sciences Tripos.” This prompted Marshall’s affirmation that “he had the new Tripos exclusively in view” and saw the present scheme as “an excellent compromise.” The debate between Marshall and Cunningham has to be seen in the context of their wider conflict about the scope and method of political economy and economic history, this became even stronger after the publication of Marshall’s Principles. On this see Maloney (1976, 1985); Cunningham (1887); and Collini, Winch, and Burrow (1983), esp. pp. 265–90.
in Part II of the Tripos, thereby virtually completing Marshall’s ambition to allow students from other Triposes to enter Part II of the Moral Sciences Tripos as if it was an Economics and Political Tripos.24

Final stages of the second round of Moral Sciences Board course reform debates coincided with a move for course reform within the History Tripos. This allowed Marshall to support actively a proposal to double the number of political economy papers for that Tripos to two thereby greatly increasing the potential number of students in economics from that source. Although there was support for such a proposal from among the historians (Tanner, for example, described the introduction of the two political economy papers as “a great gain,” Reporter, 9 February 1897, p. 506), it attracted opposition from others, notably Cunningham. In the summary of one of his speeches during the debate given in the Reporter (9 February 1897, p. 510), Marshall not only expressed his gratitude for the “concessions . . . made to the subject in which he was specially interested” but also expressed what he saw as basic principles relevant to general reform of the Triposes. The Report under consideration, he argued, “was a step towards acknowledging that the old Tripos system needed to be modified . . . so as to meet the requirement of modern study . . . to allow each student to develop his own idiosyncracy, provided only that whatever work he did was thorough. . . . The true function of University education was to develop a man’s faculties that they might continue to develop to the fullest extent in later life; and in this respect though not in all respects, the German system was superior to ours. For it gave the student a freer choice of work and would get more good by spending a year on one special subject like political economy than by giving three or four months to each of several subjects.” Similar arguments were to be used when within the next five years Marshall pressed for the complete independence of economics from the moral sciences.

IV

Marshall’s final steps to create a separate Economics Tripos were not taken till after Sidgwick’s death in August 1900. On 8 May 1901, Marshall

24. The new regulations formally divided Part II of the Tripos in a part dealing with philosophy, logic, and psychology and a second part dealing with Political Philosophy and Political Economy. In the detailed schedule of books and courses for the subjects appended to the proposal, this part was simply divided into Politics and Advanced Political Economy (University Reporter, 18 May 1897, pp. 943 [clause 12], 949). The Keynes diaries once again provide commentary on the proceedings at the Moral Sciences Board over these changes, which initially appear to have been rather stormy. Marshall’s absence from the final two meetings, however, speeded things up and the matter was brought to a satisfactory conclusion. As Keynes recorded these two meetings in his diary: because of Marshall’s absence, “in a little over an hour we got through as much as we generally manage in two long meetings” (3 May 1897) while he noted the final meeting concluded “at a great rate, after desultory discussions over two or three years” (10 May 1897).
wrote to Foxwell he had been appointed to a committee to report on "how best to extend the study of modern economics and politics in the University." Its membership consisted of Ward, the Master of Peterhouse and Sidgwick's successor as Chairman of the Special board of Studies for Moral Sciences, Lowes Dickinson, a lecturer in political science, and Marshall himself. This letter to Foxwell sets out Marshall's preferred solution to the problem:

My own hobby now is an entirely separate Tripos, as separate as are the Indian and Semitic Triposes; but under the same board with the Historical Tripos as those are both under the Oriental Board. Only I would propose that this board did most of its business in two grand Committees, one historical, the other Economic and Political. The suzerain Board would have a new title and stand in the same relation to them [the two committees] that the Nat[ural] Sc[ience] Board does to its Physical and Biological Grand Committees. Possibly there might be a little economy of papers, some being set simultaneously in the Historical Tripos and the Econ[omics] and Pol[itics] Tripos. But this is a small matter. I am not sure that anything will come of it. Ward (Peterhouse) is not in Cambridge now; and nothing is in course just yet. To explain matters, I incorporated Dickinson's suggestion for the Political Papers with an amended, (perhaps I should say more humbly, "hashed up") revision of the old scheme which you, Sidgwick, Keynes and I discussed so much some time ago. At the meeting before last, I urged that if our studies were made to give no room for what business men want, we must expect their money to go to new Universities; and we should continue money-starved. I find that some thought I was going for a "Commercial School."

Marshall enclosed a draft plan of the proposed new Tripos (reproduced in Appendix 3) for Foxwell with the request that he show it to J. N. Keynes. This also disclosed his aims in establishing the new Tripos. A major purpose was to meet the needs of professional students in economics and politics, as well as the special needs of those intending to seek employment opportunities in parliament or local government bodies, the domestic and the Indian Civil Service, the "higher work" in public and private business enterprises, "the duties of a country gentleman," and last, (but presumably not least) "the service of the poor." Marshall subsequently developed these themes on the need for creating a curriculum in economics and associated branches of political science in a number of pamphlets and speeches published in 1902 and 1903. The first of these (Marshall, 1902a) repeats the broad thrust of the argument he had used in his inaugural lecture, about difficulties in teaching economics within the Moral Sciences Tripos, the rising importance of securing an adequate supply of trained
economists and most importantly provision of opportunities for persons interested in economics at Cambridge to obtain "three years' scientific training of the same character and on the same general lines as that given to physicists, or physiologists or engineers" (Marshall 1902a, 11). A subsequent address concentrated on the need for economics education arising from growing complexities in business, the need in labour relations for the training of "sympathies and the intellect" which economic studies provide, and for wider education on social questions such as housing, charity, and the causes of unemployment (Marshall 1902b, esp. 3–4, 6, 7–9).

However, there were other reasons as well for promoting more specialised economics training at Cambridge. Foremost was the need to develop training for the sound, analytical skills required in economists, that is, promoting the ability of "reasoning." Reasoning was listed by Marshall (1902b, 6) as one of three required skills for good economists, the other two being an ability for "perception and observation" and the possession of a scientific "imagination." Advancement of the ability to reason clearly on complex problems, Marshall observed, was largely associated with the mature approach to study obtained from university education, the most fruitful period during which to induce good scientific and analytical habits of thought. In short, for economics, absorption of that analytical engine for truth, with which Marshall identified the subject, was a prerequisite for its mastery (see Maloney 1985, esp. 41–55 for detailed development of this argument). As a further, and seemingly equally important reason, Marshall (1902a, 4) raised the spectre that Cambridge would be left behind in the serious and important business of economics education. Because of development elsewhere in England, this was all the more likely if no action were taken in Cambridge at that stage. London had created its own Faculty of Economics and Political Science in 1895 in response to a Report on Economics Education prepared by a subcommittee of the British Association for the Advancement of Science; Birmingham had established its own Faculty of Commerce; the Board of Studies of Owen College at Manchester had just approved establishment of a school of economics and politics and similar moves were under consideration at Oxford. These initiatives had been spurred by the fear that England otherwise would be left further behind American and Continental developments in economics education than was already the case (Marshall 1902a, 11), while Marshall personally had doubts that the London, Birmingham, and Manchester developments would address this problem in an appropriate way.25

25. On these matters in relation to the foundation of the London School of Economics and Political Science, see Hayek (1946, esp. 1–2); in the context of developments at Oxford, Chester (1986, chap. 1). Marshall's privately expressed opinions on these subjects can be found in his correspondence, particularly a letter to Ely dated 28 October 1900 (in Coats 1961, 192–93) and his correspondence with Hewins on the early development of the London School of Economics (Coats 1967, esp. 409–10, 414–15), the last of which gives
Marshall's plea for a curriculum in economics and associated political sciences (1902a) in which those reasons were canvassed, was originally addressed to the University Senate and received considerable publicity in the press. A *Times* editorial (18 April 1902) supported Marshall's proposal to set up a committee to investigate giving fuller recognition to the study of economics and politics, and also reported that a petition to this end had been presented to the Council of the Senate signed by many leading members of the University. The Council responded positively on 22 May 1902 by appointing a Syndicate (committee) "to inquire into the best means of enlarging the opportunities for the study in Cambridge of Economics and associated branches of political science." Membership included the Vice-Chancellor, F. H. Chase, three members of the working party appointed to investigate the matter in 1901 (that is, Ward, Marshall, and Lowes-Dickinson), J. Westlake, the Whewell Professor of International Law, several teachers in the Moral Sciences (J. N. Keynes, H. S. Foxwell, Sorley, the new Knightbridge Professor of Moral Philosophy, and McTaggart, College Lecturer in History of Philosophy) and from the History School, Tanner and Leathes, (both College lecturers on Constitutional History), William Cunningham, as well as Edmund H. Parker, M.A., a lawyer and at the time, Cambridge-borough Treasurer.\textsuperscript{26}

Now that it had surfaced, Marshall's proposal for the new Tripos had to be defended on a number of fronts. First, it had to be sold to his colleagues on the committee from the Moral Sciences with a strong interest in economics: Keynes and Foxwell. Disputes with Foxwell are visible in the Marshall-Foxwell correspondence (Marshall Papers Box 3, items 44-46) and dealt with the relative importance to be assigned to economic history and other historical subjects in the syllabus. They also concerned the continuing role, if any, of psychological studies in the new Tripos\textsuperscript{27} and the

\textsuperscript{26} The appointment of this committee was not universally applauded. In the context of the Cambridge Committee *The Statist* (31 May 1902) editorialised against economics teaching in the Universities, because of the "utter deficiency of our present professorial system in economics" in which the teachers were "too academic; too ignorant of real life, too far removed from the matters they treat of." In a specific criticism of Marshall's pamphlet (1902a, 4), it pointed to the contradiction between his view that "economics is a science of observation" and his proposal "that the mathematical presentation of economics should be admitted to the scheme of instruction." The latter was of course clearly required in Marshall's plan to inculcate proper methods of reasoning and analysis into economics students (1902a, 16). The proceedings of the Committee itself were arduous: for example, six months after its commencement it circulated for the benefits of its members a number of resolutions on which it had agreed in principle by November 12. Its final report, dated 4 March 1903, was a majority one, William Cunningham and McTaggart refusing to sign it.

\textsuperscript{27} Marshall expressed the view in a letter to Foxwell (29 January 1902, item 43, p. 5) that "psychology is weaker as a science than economics; and economics is too young and
relative importance to be assigned to politics. Disputes with Keynes appear to have been even greater. Keynes recorded his hostility to the new proposal when he first heard of it (31 January 1902), and gleefully noted that Marshall made a particularly bad impression at the first meeting of the committee (29 May 1902). When the committee finally had reached sufficient agreement to have its majority report signed, Keynes recorded his relief because the trying business about economics was nearly at an end, but his diary reflects little of the nature of his disputes with Marshall. The need to have a compulsory international law component was one matter of dispute between them, they quarrelled over the role of Logic while the impression Keynes gives that he saw the Economics Tripos Committee as an administrative bore rather than a major intellectual struggle, would have given further cause for friction between the two former colleagues (cf. Maloney 1985, 63–65).

Within the University community, major opposition to the new Tripos came from within the History School for reasons not dissimilar to those offered by Cunningham in the context of the 1889 proposals to alter the Moral Sciences Tripos curriculum. This was revealed after the publication of the Report of the Economics and Political Science syndicate (Reporter, 10 March 1903, pp. 528–38) particularly during the full debate it produced in the University council during May (Reporter, 14 May 1903, p. 763–74). Before examining the historians’ critique, the contents of the committee’s report may be briefly summarised.

Its preamble bears the unmistakable stamp of Marshall as shown by its resemblance to arguments he had published in the previous year (esp. Marshall 1902a). The proposed syllabus outline reveals he had to accept some compromises. Part I of the proposed new Tripos consisted of three compulsory papers on economic principles, as well as two on general and economic history, one on constitutional law and one on essay questions. Part II provided for no less than seven papers on general and advanced economics, one on modern political theories, two on international law, and two on legal principles as well as optional papers on a special subject of an applied nature to be approved by the Special Board of Studies. The Economics Board was to include the Knightbridge Professor of Moral Philosophy, the Regius Professor of Modern History, the Downing Professor of the Laws of England, the Professor of Political Economy, the Whewell Professor of International Law and the Reader in Geography ex

weak to carry them,” a matter of some interest in the light of Marshall’s later expression of regret that he did not pursue psychological studies more fully (quoted in Whitaker 1975, 6–7 and n. 9). See also Keynes (1972, 200) where Marshall is quoted as having said, “If I had to live my life over again I should have devoted it to Psychology. Economics has too little to do with ideals.”
officio, as well as the examiners appointed for the current and last preceding year and five elected from the Senate to serve for five years. The text of the new economics syllabus is given in Appendix 4.

The historians’ attack on the new Tripos was conducted in flysheets, articles, and letters in the Cambridge Review, in addition to their participation in the Council debate. Most active in this opposition was Marshall’s old rival and antagonist, William Cunningham, who produced several flysheets, a humorous interview in the Cambridge Review and opened the debate for the opposition in the Council’s debate on the syndicate Report. Cunningham queried the need for early and “excessive” specialisation in economics as intended under the new Tripos, its claimed usefulness for business, the adequacy of library facilities to support serious research work in economics, and he expressed fears that the Tripos would rapidly develop into one devoted exclusively to economics. Last, but not least, he worried about the detrimental effects a specialist Economics Tripos would have on students taking economics subjects in the existing History and Moral Sciences Triposes (Reporter, 14 May 1903, pp. 766–67; Cambridge Review, 7 May 1903, pp. 277–78). McTaggart, a former student of Marshall, but like Cunningham a dissenting member of the Economics Tripos Committee, largely saw the Tripos as an unnecessary waste of resources. Opportunities for increased study of economics could have been just as satisfactorily created by allowing students to take Part I of the History Tripos followed by a modified Part II of the Moral Sciences Tripos. He also wondered where the finance for the new Tripos would come from and expressed fears about maintaining independence in economics teaching if substantial monetary gifts were provided by business interests. McTaggart’s objections contained an implicit attack on Marshall’s intransigence: in his view the report “was based on the principle that economics should give up nothing.” (Reporter, 14 May 1903, pp. 768–69, my italics). Others opposed the new Tripos because economics lacked real complexity (Mayo, ibid., p. 771); because the subjects for the new Tripos were ill-defined, and without sound foundations (Watkin, ibid., pp. 771–72) and that a new Tripos as such was redundant when changes could have been made to the existing History Tripos (Dickinson, ibid., pp. 772–73).

Although other distinguished members of the Council, including the Vice-Chancellor, supported the proposal, Marshall, needless to say, provided the major reply to the opposition. This largely repeated his arguments on the wider social needs for economists and the importance of economics as a scientific area for university studies akin to physics and mathematics. Marshall recounted how his attempts of nearly two decades to teach economics within the existing Moral Sciences Tripos had been a failure for reasons he had foreshadowed in his inaugural lecture in 1885. He also referred to the overwhelming support of expert opinion his pro-
posal had received. The last part of Marshall's speech almost sounds like a threat. If Cambridge refused "to do what businessmen required," then their sons would enter the new universities and Cambridge would regret this step in time when "the rising generation of wealthy businessmen became the loyal sons of the newer and not the older Universities" (Reporter, 14 May 1903, and cf. his letter to Foxwell, 8 May 1901).

The Senate on 6 June 1903 approved the new Tripos' establishment with a substantial vote; it thereby successfully concluded Marshall's battle for the independent status of economics studies at Cambridge for which he had been continuously fighting since his return to the University in 1885. This success achieved, Marshall did not rest on his laurels. The new courses had to be popularised, and their advantages made known to a wider public to ensure a growing number of students in the new Tripos. Furthermore, additional lecturing resources had to be made available to mount the increased economics courses which the new Tripos demanded and thereby to make the teaching a success. Marshall worked hard in trying to achieve both these objectives in the last five years during which he held the Cambridge chair.

28. Apart from the views on the subject from eminent business leaders, politicians, and churchmen which Marshall had earlier circulated to the Senate (Marshall 1903a) he indicated the signatories on a memorandum supporting his proposal as including the names of Courtney, Leslie Stephen, Roby, J. B. Mayor, Cunynghame, Nicholson, Flux, Bowley, Chapman, Aves, Wynnard Hooper, Moulton, Sanger, Clapham, Llewellyn-Davies as well as a number of distinguished Cambridge moralists such as Lyttleton (late Bishop of Southampton), and Caldecott, Professor of Logic and Moral Philosophy at London.

29. Prior to the decisive Senate vote the debate continued with the publication of a series of flysheets from leading spokesmen for the two sides. Again opposition was concentrated in the history school which as an alternative opportunity for specialisation in economics suggested a revised second Part for the History Tripos. This argument was rebutted by Marshall in a flysheet released the day before the Senate vote was taken. Once again he appealed to the members of the University to grant students the right of three years specialisation in studying economics and associated political sciences in a Tripos of their own. The previous day Pigou had joined him in pressing this argument in an article opposing a History Tripos solution to the problem of economics education at Cambridge because it failed to provide the additional time for serious study of economics required as the necessary safeguard against superficiality in such studies (Cambridge Review, 4 June 1903, p. 346—47).

30. The worshipful Company of Girdlers initially provided the only outside funds for teaching; the Girdler lectureship it financed was in turn held by Pigou, Meredith, J. M. Keynes, and Lavington. In addition Marshall (and on his retirement, Pigou) used their own money to finance one, and sometimes two lectureships. The first university lectureship in economics came in 1911, the second not till 1923. Marshall's final evaluation of the new Tripos came in letters written shortly after his retirement. These expressed the view that the new Cambridge school of economics "was second to none in the world," that its syllabus fully met "the requirements of the present time" and that even the growth of student numbers attempting the two parts of the Tripos, though slow, was heartening. The greater part of the fruits of the new Tripos did not come till the decade of Marshall's death. Letters to the Clerk (Secretary) of the Worshipful Company of Girdlers and E. S. Roberts (then Vice-Chancellor) written around 1909 (Marshall Papers Box 3, items 91, 92). Student numbers for the first years of the Tripos were summarised as follows in the first of these letters.
Marshall's services to the foundation of the Cambridge school and his role in establishing the Cambridge Tripos have now been outlined. This account throws light on a number of aspects of the development of economics teaching within the Moral Sciences at Cambridge in the second half of the nineteenth century. It illustrates the notion that during this period economics was seen by some as a theology substitute in the form of a new, authoritative applied social ethics, useful both for analysing and ameliorating important social problems, particularly that of poverty. This attitude is quite visible in Marshall's original pleas for improved economics studies opportunities at Cambridge in his 1885 inaugural lecture and repeated in his 1902 and 1903 arguments in favour of a separate economics Tripos. Furthermore, his activities reveal a growing concern with the universities' role in training for business, a concern dating from his period in Bristol. This also was clearly an important aspect of Marshall's drive for university reform, not only for maintaining student numbers for his university but also its future funding, an important consideration when colleges, and hence the university, were precariously reliant on the increasingly unstable income source of agricultural rents. The matter was also not unrelated to Marshall's growing fears about Britain's economic future in the face of growing German and American rivalry, particularly when, in the case of business and economic education, these countries had already surpassed Britain by the end of the 1890s. Marshall did not hide these aspects of his campaign despite the unpopularity of business with many of his university colleagues. This is revealed in a letter to Foxwell announcing his final campaign and his speech at the University Council before the decisive vote was taken. In this way the account of the establishment of the Tripos illuminates some wider issues associated with the development of university education in Victorian England.

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Subsequently these numbers climbed from 29 for the two parts in 1910 to 71 in 1924, the year of Marshall's death.

31. Marshall held this view early on, as illustrated in his 1876 paper on Mill's theory of value: "The pure science of Ethics halts for lack of a system of measurement of efforts, sacrifices, desires, etc, fit for her wide purposes. But the pure science of Political Economy has found a system that will subserve her narrower aims . . . [it] has analysed the efforts and sacrifices that are required for the production of a commodity, . . . [Political Economy] has found a measure for them, . . . and then enunciated her central truth." (in Pigou 1925, 126).
This article also presents a picture of the growth of a discipline at an important university as shown through the formal expansion of its syllabus. Some important aspects of this picture can be reiterated. First, it clearly describes the growing importance of economics teaching within both the Moral Sciences and History Triposes thereby locating that development firmly within the Cambridge institutional structure of the nineteenth century. Secondly, it presents syllabus content development as illustrated by the formal outline of economics teaching at Cambridge as successfully reformed by Marshall in 1889, 1897, and 1903. Flesh is put on these bones by providing a picture of the books economics students were reading in the years commencing with the first edition of the *Principles* to Marshall’s retirement from the chair in Appendix 5. In this way the article illustrates some of the major foundations from which the Cambridge school of economics developed in the twentieth century.

Aspects of these foundations may also be emphasised in this conclusion. The long, and initially strong, association at Cambridge between economics and the moral, political, and historical sciences, coloured the perspectives on their science for members of the later Cambridge school. For example, Cambridge economists continued to emphasise the moral nature of the subject as against its alleged associations with the “natural sciences” at least as late as the end of the 1930s, as documented in the writings of its, by then, leading practitioner, John Maynard Keynes. These roots likewise explain why Pigou concentrated not only on the theoretical side of the applied social ethics of wealth and welfare, business fluctuations and public finance, but also on the contemporary economic history of Great Britain as a necessary guide to understanding and influencing aspects of economics policy. Secondly, the emphasis in the economics syllabus on applied and theoretical monetary economics, business fluctuations, labour studies, public finance, and economic progress, socialism and the role of government in economic activity, explains much of the research agenda of the later generation of Cambridge economists: Robertson, Lavington, Shove, and Fay, not to mention Pigou and John Maynard Keynes. Their research as applied to trade cycle and economic fluctuations commenced during the second decade of the twentieth century; applied studies of the capital market, labour conditions, and industry economics were produced from the early 1920s. Much more than Marshall’s published economic work, the Syllabus of Economics Studies developed by Marshall mapped out the research agenda for his direct and indirect students at Cambridge, by explicitly highlighting gaps to be filled.

32. I cannot therefore endorse the remarks on Pigou in Hutchison (1981, 65–66) suggesting that such practical concerns were lacking from his work. The clue for this error in interpretation seems to lie in what Professor Hutchison, rather anachronistically, described as Pigou’s “main writings,” an identification by innuendo rather than argument or evidence. His whole account of the Cambridge school is rather idiosyncratic.
In short, the account of Marshall’s role in establishing the Cambridge Economic Tripos is not only a chapter in his biography. It also illuminates the history of economics education in the Victorian era and the rise of the science in its various manifestations as a subject for tertiary education. As such it is also a chapter in that era of university reform when Oxford and Cambridge were changed from within and without and when universities began actively educating for business. This makes it a theme of continuing interest to students of the history of economics and its institutional setting.

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APPENDIX 1: Political Economy Course Outlines with the Moral Sciences Tripos, 1889 and 1897

A. Political Economy

I. Preliminary

The fundamental assumption of economic science, the methods employed in it, and the qualifications required in applying its conclusions to practice; its relation to other branches of Social Science.

II. Production of Wealth

Causes which affect or determine
(i) The efficiency of capital and of labour.
(ii) The difficulty of obtaining natural agents and raw materials.
(iii) The rate of increase of capital and population.

III. Exchange and Distribution of Wealth

Causes which affect or determine
(i) The value of commodities produced at home.
(ii) The rent of land.
(iii) Profits and wages.
(iv) The value of currency.
(v) The value of imported commodities.

IV. Governmental Interference in Its Economic Aspects

Communism and Socialism. The principles of taxation: the incidence of various taxes: public loans and their results. . . .

List of books recommended on this subject:
Marshall, Economics of Industry.
Mill, Principles of Political Economy, Books III. and V.
Jevons, Money and the Mechanism of Exchange.
Sidgwick, Principles of Political Economy, Introduction and Book III.
Fawcett, Free Trade and Protection.

The following books should also be consulted:
Baghdot, Lombard Street.
Bastable, Foreign Trade.
Farrer, Free Trade and Fair Trade.
Giffen, Essays in Finance, Second Series.
Nicholson, Money and Monetary Problems, Part I.
Rae, Contemporary Socialism.
Sidgwick, Principles of Political Economy, Books I and II.

March 4, 1889.


APPENDIX 2: Political Economy, 1897

A descriptive and analytical study, with special reference to the conditions of England at the present time, of

I. Consumption. The modes of living of different classes of the community; the nature and variations of their demand for commodities and services.

II. The methods, organization, and resources of production.

III. The mutual influences of consumption and production. The population question.

IV. Markets generally. Competition, combination, and monopoly.

V. The relative values of commodities; wages, profits and rents.

VI. The relations of imports and exports. The foreign exchanges. International trade competition. The terms of international interchange; and the distribution, immediate and ultimate, of the benefits of trade among the nations concerned.

and commerce. The policies of currency, credit, and banking in their national and international relations.

VIII. Collective bargaining in matters relating to labour; its methods, and its effects on those directly concerned and on the general public. Trade Unions. Co-operation.

IX. An elementary treatment of the following aspects of public finance, administration and control: The principles of taxation; incidence and shifting of taxes; public loans. The functions of Government, Imperial and Local, in initiating, managing and regulating enterprise; in supplying information and instruction; and in providing appliances for common use and common enjoyment. Public and private relief of the poor. The influence of Public Opinion and Authority in economic matters generally. Socialism.

There will be required throughout a study of fundamental notions and their appropriate definitions; of the scope and methods of the science; and of its relations to other branches of social science.

List of the books recommended on this subject:
Baghot, Lombard Street.
Bastable, Theory of International Trade.
Dunbar, The Theory and History of Banking.
Jevons, Money and the Mechanism of Exchange.
Keynes, Scope and Method of Political Economy.
Plehn, Introduction to Public Finance.
Sidgwick, Principles of Political Economy, Introduction and Book III.

Among the other books which may be read with advantage are the following:
Bastable, Commerce of Nations.
Booth, Life and Labour of the People in London. Vol. IX.
Clare, Money Market.
Giffen, Essays in Finance, Second Series.
Goschen, Foreign Exchanges.
Hadley, Railway Transportation.
von Halle, Trusts.
Mill, Principles of Political Economy.
Nicholson, Money and Monopoly Problems.
Rae, Contemporary Socialism.
Sidgwick, Principles of Political Economy, Books I, II.
Adam Smith, Wealth of Nations.

Advanced Political Economy

Students will be expected to shew a wider and more thorough knowledge of the subjects included in the schedule for Part I.; and the papers will consist largely of questions involving considerable scientific difficulty. In particular students will be required to have made a more careful and exact study of the mutual interactions
of economic phenomena, especially in recent times; and to have grappled with the difficulties of disentangling the effects of different causes, and of assigning to each as nearly as may be its relative magnitude and importance. The examination will also include the following subjects: a general knowledge of economic history and the history of economic science, especially in their later stages, the science of statistics in its applications to the theoretical and practical problems of economics. Some scope will also be given for the diagrammatic expression of problems in pure theory, with the general principles of the mathematical treatment applicable to such problems.

The third paper will contain at least eight questions, of which no candidate may attempt more than four; full marks being obtainable for full answers to any two.


APPENDIX 3: Scheme for an Economic and Political Sciences Tripos, 1901

Designed with a view to the needs not merely of professional students of economics; but also for those who are preparing for
(a) Work in Parliament, or on local Representative Bodies;
(b) The Home of Indian Civil Services; diplomacy and the consular service;
(c) The higher work of large businesses, public and private, including railways, shipping foreign trade and those branches of manufacture that do not require a long study of engineering and physics;
(d) The duties of a country gentleman;
(e) The service of the poor.

Part I
(at end of second year; all papers compulsory)

A. Modern History
(Economic & political, chiefly since 1780: to be treated broadly. Each paper to contain (say) nine questions, of which three are to be general, three distinctively economic, and three distinctively political. No one to answer more than six.)

1, 2. United Kingdom. (two papers)
3. France and Germany. (with some reference to the rest of Europe)

B. Economics
5, 6. A general study

C. Politics
7. The existing English polity. (To include relations to Colonies and Dependencies.)

D. Essays
Part II

(Not less than six, or more than eight papers to be taken, inclusive of the Essays. Economic students to be required to take the whole of Group A, and at least one paper from either C or D. Perhaps a corresponding rule to be made for other students.)

A. Main Economic Course

(A study, more detailed on the descriptive side and more advanced on the analytical side, than in Part I, of contemporary economic and social conditions; of their mutual relations and interactions and of their causes in the near past. The treatment to be international, where possible, and to require an elementary knowledge of economic geography and of statistical method.)

1. Production: Distribution. (Resources of different countries. Causes that govern value and the distribution of the national income. Combination and Monopoly. Trade Unions.)
3. Public business and finance. Public duties on their economic side. (Imperial and Local Government revenues, regulations and undertakings. Economic relations and obligations of the various social classes. The organization of effort for the removal of poverty and the furthering of progress.)

B. Secondary Economic Papers

4. History of economic doctrine. (Socialism to be included.)
5. Mathematico-economic and statistical methods.

C. Politics

6. The Structure and Functions of the Modern State. (involving a comparative study of existing institutions)
7. Political Philosophy. (i.e., an examination of the nature of the State with a survey of the history of political speculation)
8. Public International Law and existing diplomatic relations.
9. A Special Study of some existing policy. (other than the British)

D. Law

10. Mercantile Law.
11. Private International Law.

E. Essays

A typed scheme for the proposed Economics and Politics Tripos sent by Marshall to Foxwell in May 1901 after his appointment to a committee with Ward and Lowes-Dickinson to investigate possibilities for improving the possibilities for Economics and Politics studies in the University.

APPENDIX 4: The Implemented Economics and Politics Tripos, 1905

The General Arrangement of the Tripos

The following is the schedule of the examination; the subjects marked with an asterisk are compulsory. In Part II the student must take not less than two and not more than five papers besides those which are compulsory:

Part I
1. Subject 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

Part I must be taken generally in the second year of residence: but a student who has already been placed in any other Tripos or Part of a Tripos may take it in his third or fourth year. Part II may be taken in the third or fourth year.

Some of the papers in each Part will include quotations from French and German writers.

The Examiners are to have regard to the style and method of the answers.

[Extracts From] Details Relating to Part I

The scheme of lectures provided by the Board for those preparing for Part I runs on well-defined lines; because every candidate has to take all the seven papers in it. As regards Economics, to which the student is expected generally to give about half his time, the courses offered are arranged, more or less, in progressive order of difficulty. He should therefore attend a full course on it in his first year and another in his second. If however he should start with any considerable knowledge of it, he may take in his first year the course that is specially designed for the second year; and in his second year may perhaps take a more advanced course. With a view to the needs of such students, it is arranged that the course of lectures should be varied as much as possible from year to year. Every student should as a rule take two courses of history in his first year, and one in his second year.
[Extracts From] Details Relating to Part II

In Part II an attempt is made to introduce into the Tripos system some of that elasticity and freedom of choice for each individual student, which in some other Universities is obtained by a *viva voce* examination directed specially to branches of study which the candidate has selected for himself; his choice being, of course, subject to the condition that they shall be sufficiently broad, and yet have a certain unity.

The main purpose of the three compulsory papers on General Economics is to secure that those who take Part II of this Tripos after another Tripos (or a Part of it), should have a sound knowledge of the main principles of Economics at large; and that those who have already taken Part I of this Tripos should not specialize even their later studies too narrowly. In addition, these papers are to lay stress on Public Finance, the Economic Functions of Government, and the ethical aspects of Economics generally; since all these matters are more appropriate to the later than to the earlier years of a student's career. But that work in Economics which is most distinctive of Part II must necessarily be directed into rather narrower channels: for no one can do really advanced work over the whole field. And here a double bifurcation is required.

The first bifurcation has reference to the divergent needs of active life and of professional study. Those who are preparing for public or private business, must generally be content with what study of analytical subtleties they have been able to make in their past two years; in their third year they need to give their chief attention to realistic work, the facts of business life, and to the direct application of economic principles to them. Accordingly two papers, arranged specially for this class of students, are to be mainly realistic. Two similar papers are to be of a more exclusively academic character, and make provision (a) for some of the more obscure problems of value, such as those connected with the shifting and ultimate incidence of the burden of taxes; (b) for the history of Economic doctrines; and (c) for mathematical problems in Economics and Statistics. But there is nothing to prevent any student from taking all these four papers.

The second bifurcation has reference to the different groups of subjects which are included under the broad title "Economics." They are all ultimately connected with one another. There is scarcely any of these which can be studied at all thoroughly without some considerable knowledge of almost every other. But yet each professional student according to his bent of mind, and each man of affairs according to his work in life, will wish to give his chief attention to certain branches: and accordingly it has been arranged that, while each of the four papers on Advanced Economics shall contain some general questions, the majority of the questions in each paper shall be divided in about equal proportion among the four groups A, B, C, D, defined below:

A. Structure and problems of modern industry. Modern methods of production, transport, and marketing; and their influences on prices and on industrial and social life. Industrial Combinations. The recent development of joint-stock companies. Combinations and monopolies. Railway and shipping organization and rates.

B. Wages and conditions of employment. Causes and results of recent changes
in the wages and salaries of different classes of workers, in profits, and in rents. Relations between employers and employees. Trade Unions. Employers' Associations. Conciliation and Arbitration. Profit sharing.


D. International trade and its policy. The courses of trade as affected by and affecting the character and organization of national industries, trade combinations, etc. International levels of prices. International aspects of credit and currency. Foreign Exchanges. Tariffs, protective and for revenue. Bounties and transport facilities in regard to foreign trade.

No one is allowed to answer more than half the questions in any one of these four papers. And consequently any one who, together with a sound knowledge of General Economics, had made a thorough study of any one of the groups A, B, C or D, would find most of his time in the examination room fully occupied with questions not very different from those which would be proposed to him in a viva voce examination adjusted to his requirements. Most students, however, will probably select two of the groups for about equal attention.

It is obvious that A and B will be of special interest to those who expect to be employers of labour, or landowners, or to be engaged in the service of railways, or in the administration of government, central or local. C and D, together with the latter part of A, will meet the needs of those who are to be engaged in large financial transactions, as bankers, members of the Stock Exchange, etc., while merchants and those members of manufacturing firms who are chiefly responsible for the external relations of the business rather than its internal organisation, will perhaps give their chief attention to D and part of either C or A. Those who expect to be engaged in the service of the poor will give the first place to B. The interests of any one who hopes to take part in legislation, like those of an academic student, will be specialized according to the bent of mind and character, rather than the force of external circumstances. His studies need to be broad: but he may reasonably specialize to some extent on any one, or even any two of the four.

**Specimen Examination Questions**

No examination has yet been held in Part II, where the chief provision is to be made for the realistic treatment of Economics. But the following questions, selected from those set for Part I in 1905 may suffice to indicate that many of the subjects, to which students are invited to give their attention, have an intimate bearing on the affairs of life; and that they appeal to such various interests as to afford a broad and liberal education.

**Economics**

Give a brief discussion of the advantages and disadvantages of the system of piece-work; and, by reference to specific industries, show how their relative importance varies in different circumstances.
Give illustrations of the varying meaning of the term *profit* in everyday language. State how you would use the term for economic purposes, and enquire how far profit, as used by you, partakes of the nature of rent, interest, wages respectively.

Describe the function of the speculative in the organization of industry. Distinguish the speculative element in the work of the manufacturer and the wholesale merchant, and indicate the new kinds of speculation which have been made possible by modern business methods.

In constructing an ideal banking system, what elements, if any, would you take from the English, French, German, and American systems respectively?

How is the output of a monopolistic industry likely to be affected if, having hitherto been allowed to discriminate between its customers it is prevented by law from doing this? What light does your answer throw on the problem of governmental interference with the rates chargeable by railway companies?

Enumerate the principal items in the mutual indebtedness of nations, and indicate the ways in which recorded imports can increase without any corresponding increase of recorded exports.

"Le fait est que l’abondance ou la rareté de l’argent, de la monnaie, ou de tout ce qui en tient lieu, n’influe pas du tout sur le taux de l’intérêt, pas plus que l’abondance ou la rareté de la cannelle, du froment, ou des étoffes de sois." Examine critically this statement.

Explain the process by which an alteration in the rate of discount in a country operates on the foreign exchanges. Why is a movement in the rate of exchange on Paris in London always immediately followed by a corresponding movement in the rate on London in Paris, and vice versa?

Discuss the place and functions of (a) death duties, (b) an income tax, (c) taxes on commodities, considered as parts of a general system of taxation.

*Subjects for essays*

The causes and effects of the growth of large cities.

"Things are in the saddle and ride mankind."

The influence of finance on international politics.

*[Extracts from] Courses of Reading*

The reading of each student is partly decided by his own choice, under the guidance of instructors who indicate the purposes and qualities of many books on each branch of his studies. But the following lists have been published by the Board as generally suitable for all candidates for Part I; while the larger lists are added of books which may with advantage be read or consulted so far as time suffices.

*Economics.* Students are expected to read the general treatises by Hadley, Marshall and Pierson, together with at least one of those by J. S. Mill, Nicholson and Sidgwick; Bowley, *Elements of Statistics*, Part I; Keynes, *Scope and Method of Political Economy*; Seignobos, *La méthode historique appliquée aux sciences so-
ciales; Bagehot, Lombard Street; Bastable, International Trade; Goschen, Foreign Exchanges; Clare, The Money Market; Dunbar, Theory and History of Banking; Jevons, Money; Jevons, Investigations in Finance; J. B. Clark, The Control of Trade; Emery, Stock and Produce Exchanges; Greene, Corporation Finance; Hadley, Railway Transportation; Jenks, Trusts; Booth, Life and Labour in London, Second Series (Industry), vol. 5; Gilman, Dividend to Labour; Jevons, The State in Relation to Labour; Levasseur, La population française comparée à celle des autres nations, vol. 3, part 1; Bastable, Public Finance; Adam Smith, Wealth of Nations.


APPENDIX 5: Books on Economics Studies Read by Students Entering Marshall’s Classes 1890–1908 (Selected Years)

The table in this appendix is compiled from data in Marshall’s student registration card file preserved in the Marshall Library (Large Brown Box). An example of such cards is reproduced in Appendix 6. This table shows the title of books which feature in these lists on at least two occasions, classified in alphabetical order by author but with short title only and no publication details. Columns headed by the academic year in question (with number of students registered for that year indicated in brackets) indicate the number of students for that year who claim to have read the book in whole or in part.

There is little need to present detailed comment on these data fully reproduced in the accompanying table. However, the following may be noted. Only a few books remained central among student reading in the period covered: these include Bagehot’s Lombard Street, Bastable’s International Trade, Jevons’ Money, J. N. Keynes’ Scope and Method, Mill’s Principles, Smith’s Wealth of Nations, and not surprisingly in the light of the manner in which Marshall lectured, Marshall’s Principles.

In the light of the later comment by D. H. Robertson (1951, 111–12) that nobody read J. N. Keynes work in his student days, this result is interesting though it would not be surprising to those familiar with the fact that the book went through several editions. It is also interesting to note that Mill’s popularity started to decline from the end of the first decade of the twentieth century and that in spite of Marshall’s alleged love of the classical economists, Riccardo and Malthus do not feature more frequently as important reading. Continental authors are also absent with the exception of Cournot (whom two people claim to have read in 1904–5, Cassell’s Nature and Necessity of Interest and Pantaleoni’s Elements of Pure Economics. These books had of course all been translated into English.

Finally, it may be noticed that the earlier Economics of Industry written with Mary Paley, was read in 1898 by a Girton student and in 1904–5 by a student from Marshall’s own college but had otherwise been effectively replaced by Marshall’s own product.
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APPENDIX 6: Specimen Registration Card as Used by Marshall to Gather Information about his Students' Background in Economics (Reproduced from the original now held with the Marshall Library papers in the Marshall Library, Faculty of Economics and Politics, University of Cambridge, with permission of the Librarian and members of the Faculty.)

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List of Books on Economics which you have read, including in brackets the names of any that you have only read briefly:

- Marshall - Principles of Economics
- Ricardo - Principles of Political Economy
- Jevons - Theory of Political Economy
- Marshall - Economics
- Keynes - Intra-Country Exchange
- Brechin - Elements of Political Economy
- Cassel - Theory of International Economics
- Pigou - The Economics of Welfare
- Addison - Elements of Political Economy
- Rawls - Theory of International Economics
- Buchanan - Public Choice
- Tiebout - Public Choice

Advanced Economics, mainly Analytical

1. I am inclined to specialize in
   a. Money, Credit and Prices
   b. International Trade

2. I shall not be able to devote the whole of my time to Economics.
   As I intend to sit for the Civil Service Examination in Aug. 1926,
   I shall be necessary for me to complete my work in the subjects of
   Philosophy (topic, metaphysics, psychology, and ethics) before my
   Trinity, or in my intention to devote only the latter half of June and July
   to exam prep and reading.