Roy Harrod and the Oxford Economists’ Research Group’s inquiry on prices and interest, 1936–39

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In 1936–39, a group of Oxford tutors inquired, by means of interviews with entrepreneurs, on price policy and investment decisions. A chronology of the inquiry is outlined, based on the surviving documents found in various archives, focusing on the choice of the subject, on the attempts to provide a theoretical interpretation of the phenomena that were discovered, and on the publication of the results. The role of Harrod is highlighted: it is assessed how far his theoretical approach to the cycle influenced the inquiry, and to what extent he modified his view as a consequence of the group’s findings.

‘Our group . . . best represents the collective mind of economists in Oxford’ (Harrod to the other members of the OERG, 21 April 1939, in ABP 45 and 170).

1. Introduction

In 1936, a group of economists in Oxford (Hubert D. Henderson as the chairman, Roy F. Harrod, James E. Meade, Redvers Opie, Henry Phelps Brown, Russell F. Bretherton, Jacob Marschak, Robert Hall, Charles Hitch, later joined by D. H. MacGregor, Maurice Allen, Eric L. Hargraves, Frank A. Burchardt, Marian Bowley, Philip W. Andrews, Arthur J. Brown, George L. S. Shackle, and others) initiated an empirical inquiry on various aspects of entrepreneurs’ behaviour. Within a few years, they had gathered enough evidence to feel entitled to suggest

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¹ In references to unpublished documents, incipit have occasionally been summarised, rather than cited in extenso; alterations, however, are indicated by square brackets or ellipses. References to the repositories of unpublished papers is given after the first citation. The following abbreviations have been adopted: ABP indicated the Andrews–Brunner Papers at the British Library of Political and Economic Science, London; DHR indicated the Robertson Papers at the Wren Library, Trinity College, Cambridge; FDR indicates the Roosevelt Papers, in Franklin D. Roosevelt Library, Hyde Park, New York; HCN indicates the Harrod Collection at the Nagoya University of Commerce and Business Administration, in Nishinshi, Japan; HHP indicates the Hubert Henderson Papers, Nuffield College, Oxford; HP indicates the Harrod Papers, Chiba University of Commerce, Ichikawa, Japan; HPBL indicates the Harrod Papers at the British Library, London; HTRY indicates the Hawtrey Papers, Churchill College, Cambridge; JMP indicated the James Meade Papers, British Library of Political and Economic Science, London; JVR indicates the Joan Robinson Papers, King’s College, Cambridge; KHLM indicates the Keynes–Harrod Letters and Memoranda, University of Tokyo; RAC indicates the Rockefeller Archives Center, Tarrytown.
two generalisations: the ‘full cost principle’, according to which, in conditions of oligopoly, firms tend to determine prices on the basis of average total rather than marginal costs; and the proposition that changes in the rate of interest are seldom considered when taking decisions as to expenditure on stocks and the expansion of equipment.

The group’s procedures and conclusions have been described in the introductory notes to the articles in which its members published the results of their research (e.g. Meade and Andrews, 1938; Hall and Hitch, 1939; Harrod, 1953), and have subsequently been discussed in some detail in the literature (E. A. G. Robinson, 1939; Lee, 1981, 1991; Young and Lee, 1993, ch.5). However, a number of reasons suggest that it would be interesting to re-open the case. The first is methodological: historical assessments so far have been partially based on recollections of, and interviews with, some members of the group (Lee, 1981, 1991). But memory is often fallacious, not only because it fades with increasing distance from events but also, and especially, because the intervening time is filled with hopes, expectations (some realised, some disappointed), and unforeseen theoretical developments, which guide the interpretation of the past. Research should be based instead on contemporary documents, which reveal what people were actually doing and thinking.

Fortunately, a number of libraries have opened their archives, enabling scholars to collate documents from different sources and relate them to published documents. While it was believed that at the outburst of the war Harrod and Andrews burned all the evidence relating to the group’s activities (Lee, 1981, p.348), it turned out that two voluminous batches of documents (minutes of meetings and of interviews, unpublished papers, questionnaires, replies, and other notes) survive among Andrews’ and Harrod’s private papers. The Andrews papers have been accessible for some time, but the Harrod collection, housed at the Nagoya University of Commerce and Business Administration, was only recently opened to researchers. Taken together, they complement each other, and form an almost complete set: judging from the cross-references, in fact, only a few questionnaires and minutes of meetings seem to be missing. These materials, together with the surviving correspondence and other documents, enable one to work out a chronology of the events, to characterise the actual procedures, and to understand the decisions which had to be taken at certain crucial points of the inquiry. The time therefore seems to be ripe for examining the group’s activity in the light of these newly accessible documents.

Furthermore, the role of the individual contributions in shaping the analytical framework in which the group’s work took place has not yet been defined with precision, nor is it always clear how far the group’s research affected the members’ subsequent theoretical approaches. In this paper I examine this issue with reference to one of the prominent members of the group, Roy Harrod, whose part in defining the notional framework in which the discussions took place seems to have been underrated. By this, I do not want to imply that the role of other members of the
group was merely subordinate. However, his case is of special interest because of
the particular interaction between the results of the group’s research and Harrod’s
own approach to the trade cycle. On the one hand, the full cost principle seems to
have contributed to Harrod’s decision to abandon his attempt, in The Trade Cycle
(1936), to use the price mechanism to explain how the macro-dynamic factors
determining the oscillations of the magnitudes relating to the economic system as a
whole are transmitted to the individual’s decisions to expand or contract output.
On the other hand, the results on the influence of the rate of interest on investment
decisions strengthened Harrod’s belief that the relationship between these two
variables can only be very indirect, and induced him to drop, almost altogether,
references to interest in the subsequent version of his theory. Besides the histori-
ographical purpose outlined above, this paper thus aims at exploring the mutual
influences of Harrod’s theoretical research and the empirical research of the OERG.

I will proceed as follows. In Section 2 I describe the activities of the Oxford
Economists’ Research Group in their chronological sequence, from the preliminary
outlining of the premises of the inquiry and the discussions as to the kind of
approach to be adopted to the outbreak of the war. This is necessary in order to
provide a chronological framework within which to examine the extent to which
the OERG research might have affected, and might have been affected by, the
development of Harrod’s line of thought. This is also offered as a partial guide
through the documentary evidence scattered in a number of archives, some of
which are located in remote parts of the world; as a complement to the existing
literature on the group; as a correction of some inaccurate impressions resulting
from the interview method; and as a brief history of the origin of Oxford Economic
Papers.

In Section 3 I begin by examining how far Harrod’s nicknaming of the OERG as
‘the trade cycle group’ was appropriate to characterise the group’s approach and
interests. I continue by showing how Harrod influenced the notional and concep-
tual framework of debates internal to the group concerning the trade cycle, and
conclude by pointing out how the group’s results—suggesting that oligopolistic
firms tend to maintain somewhat rigid prices during depressions—introduced an
additional difficulty to Harrod’s explanation of the adaptation of individual entre-
preneurs to the dictates of the global dynamic forces determining the fluctuation of
output, which was based on the flexibility of the general price level.

Finally, in Section 4, I show how the results of the group’s research into the rate
of interest could not have affected Harrod’s formulation in The Trade Cycle,
although it strengthened his belief that the main cause of fluctuation of investment

2The decision to concentrate on Harrod suggested limiting the period under examination to the inter-
war years. First, the consequences of Harrod’s participation in the work of the OERG outlined above
took effect almost immediately, as can be seen from Harrod’s recasting of his theory of the cycle in 1938
(Harrod, 1996). Second, although the group resumed its activities after the war, from the surviving
documents it would seem that Harrod’s own interest in them considerably diminished.
lies elsewhere and also induced further pessimism about the possibility of providing a remedy to the depression by means of monetary policy alone.

2. The OERG research: a chronology

The actual inquiry began in January 1936. However, the activity of the OERG was preceded by an intense phase of preparation, in which the scope and method of the research were discussed (Section 2.1). The collection of businessmen’s opinions, by means of personal interviews at first, and a printed questionnaire at a later stage, was undertaken until 1939. Two topics emerged as suitable for inquiry: price policy (Section 2.2) and the influence of the rate of interest on entrepreneurs’ decisions. The first attempts to draw some conclusions were made at the end of 1936, and by the summer of 1937 the first results were made public (Section 2.3).

2.1 Methodological premises

The preliminary phase of preparation to the activity of the OERG during 1934 and 1935 and the climate of ‘grounded empiricism’ prevailing in Oxford among the young tutors in the early 1930s is described by Young and Lee (1993, pp.119–30). Here it is only necessary to focus on Harrod’s role and on the significance of empirical research in his methodology.

Harrod welcomed the other tutors’ interest in empirical research with enthusiasm, and actually seems to have contributed to stimulate it (Phelps Brown to Harrod, 5 November 1930 and 19 January 1931, in KHLM 198 and HPBL 71190/148). He saw in these developments an escape from the decreasing returns of purely deductive methods (Harrod, 1937b, p.761). This view stemmed from his adherence to the logical positivist interpretation of theoretical statements, with which Harrod became familiar at first through his frequent contact with Frank Ramsey and later via the appointment of Alfred Ayer at Christ Church. According to this line of thought, a meaningful (non metaphysical) proposition is either purely deductive or empirical. Harrod explained his position to Robertson as follows:

A valid generalization, in my view, is either a tautology or based on empirical evidence. Unhappily the number of generalizations in economics based on empirical evidence is extremely small. And if you decry tautology, you are decrying almost the whole of economic theory. (Harrod to Robertson, 15 November 1935, in DHR 3/2 5±6)

Harrod’s problem was that of reconciling the logical stringency of pure deduction with the necessity of providing empirical content to economic theorems. His solution consisted in a peculiar interpretation of the role of induction as providing the empirical generalisations from which further deductive systems could be

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In an article in which he described the Oxford teaching method, Harrod ascribed to Wesley Mitchell’s visits in Oxford during 1931–2 an influence which slowly changed the attitude of the Oxford economists from pure theory towards a more empirical approach: Harrod, (1937a, pp.87–8). See also Rockefeller Foundation, Resolution RF 37015 (in RAC, RF 1.1, series 401S, box 75, folder 984, item 37054) and Harrod (1949) (the latter is also cited in Young and Lee, 1993, pp.119–22).
developed. This theme was fully developed in Harrod 1938, in an unfinished book at which he worked in 1940–41 (The Known and the Unknown, in HP V/70–71) and of course in his 1956 monograph on the Foundations of Inductive Logic. But the division between the fields of pure theory, where theorems are developed, and empirical work, where concepts are given quantitative content, is already reflected in Harrod’s 1934 ‘Memo. On Economic Studies in Oxford’ (in RAC, RF 1.1, series 401S, box 75, fld 984). In the same year, we already find precise hints as to the direction in which his thought was moving: for instance, he considered the downward sloping curve of demand as ‘a notable instance of the assistance which the inductive method may give to the course of a priori reasoning’, and praised ‘the notable and useful part’ which tautologies have played in economic theory (Harrod 1934b, p.443, and 1934c, p.477; see also 1934a, p.21).

It is against this background that in June 1934 Harrod proposed to Henderson a meeting to examine whether ‘specific problems which are susceptible of factual inquiry might emerge’. Harrod offered to himself write a memorandum ‘to define the limits & purpose of some subsequent enquiry, which could be conducted by ourselves severally or jointly or by others, at a later stage’ (Harrod to Henderson, 11 and 17 June 1934, in HHP 22 A/6 and JMP 2/4/9–11). Analogously, he wrote to Meade suggesting the formation of a committee ‘to discover what subjects of investigation would yield results actually required by working theorists’, and offered himself to act as Secretary (4 October 1934, in JMP 2/4/12–14). In November, Harrod suggested to Henderson as a possible topic of investigation for their proposed institute ‘how far [the demand of major capital consumers] is dependent on gilt-edged rates’ (letter of 20 November 1934, in HHP 22A/6). The surviving correspondence thus indicates that Harrod played an essential role as the proposer of the research, which has not so far been recognised, while often credits have been attributed (also by Harrod himself, in his 1953 tribute) almost exclusively to Henderson (Lee, 1991).

However, the actual team-wide investigation into ‘issues of fact upon which the major economic controversies of the day really turn’, by means of interviews with businessmen, was proposed by Henderson. As a possible topic of inquiry, Henderson suggested verification of Hawtrey’s point that the bank rate of interest is an important determinant of wholesalers’ volume of stocks (letter to Harrod of 20 February 1935, in HHP 22A/6). This idea was greeted with enthusiasm in the

\footnote{In his contributions on the history of the group, Lee suggests that it originated from the tutors’ ‘concern over the adequacy of the Marshallian framework for analyzing the real world’ (1981, p.339 and \textit{passim}) and that it aimed at challenging marginalism by reaching ‘paradoxical results’ (1991, p.491 and \textit{passim}). Although some members might have pursued such scope, I haven’t been able to find any documentary evidence supporting the view that this was the group’s intent. As to Harrod, I have shown elsewhere that he actually aimed at generalising the partial equilibrium approach by extending its domain of application, rather than refuting its logical premises (Besomi, 1997a).}

\footnote{Harrod’s later claim that ‘the economists’ partiality, to the extent that they had one, was all on the side of getting the entrepreneurs to confirm the doctrine that were their stock-in-trade’ (1952, pp.x–xi) does not therefore correspond to the actual laying of the premises of the research.}
sub-faculty meeting (Harrod to Henderson, 25 February 1935, in HHP 22A/6), and the actual inquiry began at the end of January 1936.

2.2 The inquiry

Descriptions of the interviewing process have been given in the literature (Harrod, 1953, p.60, and 1952, pp.x–xi; Lee, 1981, p.340) and will not be repeated here. It is interesting, instead, to show how the two main topics of inquiry emerged from the original unfocused set of questions. Several questionnaires and revised versions survive. Although they only provided guidelines for the interviews rather than rigid formats, an examination of their sequence proves interesting in revealing the intentions and expectations of the interviewers. The questions in the first questionnaire concerned the determination of profits and their distribution between dividends, reserves, purchase of securities, and extension or improvements of plants. Another question focused on the importance of the short- and long-term rates of interest on capital extension and on the level of stocks. A third set of questions looked at the determination of prices, the computation of costs—with special attention to overheads—and of depreciation allowance, price policy during depressions (in particular, the OERG was interested in the response of demand to price cuts), and marketing policies and costs.

This first questionnaire was revised several times. The ultimate version is dated 12 March 1936, and was used as a generic basis for interviewing a number of entrepreneurs till the end of 1938. Although it covered the same ground as the first questionnaire, the questions were rearranged and there was a shift of emphasis. While the first questionnaire asked impersonal questions on ‘the average business concern’, the revised questionnaire directly addressed the entrepreneur. As a preliminary, entrepreneurs were asked about the factors affecting their business during the last ten years. The questions on the determination of prices and costs were asked first and were much more precise, particularly those regarding the composition of costs and the marketing of the product; a reference to the degree of competition was introduced. Questions on the
firm’s policy regarding stocks were added, while the questions on profits referred more specifically to the firm’s practice with regard to their undistributed part. Additional questionnaires, specifically addressed to bankers and to retailers and wholesalers, inquired into the composition of costs, the margins applied on price, marketing policy, and movements of prices and stocks during depressions.

A comparison of the various questionnaires with the responses given by entrepreneurs and the debates occurring within the OERG shows that the process of revision reflected the evolution of the group’s understanding of the implications of their questions, and was not primarily aiming at helping the businessmen ‘understand and focus on the particular concerns of the group’ (Lee, 1991, pp.492 and 493).

By October 1936, 21 entrepreneurs had been interviewed and a first attempt to analyse their answers was made (Meade, ‘Analysis of reports of interviews with business men. February–October 1936’, in ABP 171). The most relevant points in the answers were summarised, and the degree of concordance in the replies was assessed. It emerged that in most cases, entrepreneurs’ opinions diverged, sometimes for no apparent reason, sometimes reflecting the type of product. There were, however, two main exceptions, and naturally it was on these that the attention of the group eventually focused as a ‘negative’ choice, dictated by the impossibility of making sense of the other replies. Lee presents this choice as a natural consequence of the interests of the members of the group (1991, p.491); this, as we shall see in Section 3 below, overrates the group’s original interest in the trade cycle.

The first question giving rise to unanimous negative replies was whether the Bank Rate is an important consideration in the decision regarding expansion or contraction of activity; there was only one exception to the chorus of denial of any connection between increase of stocks and a fall in the Bank Rate. All but two entrepreneurs also denied the influence of the long-term rate of interest. Secondly, the answers to the group of questions on costs, allocation of overheads, and price policy showed a remarkable consistency: the firms that managed to ‘shelter themselves from the full force of competition . . . incline on the whole to base price policy on costs’; ‘those which have not . . . take what they can get’ (Meade, ‘Analysis . . . ’).9

When this document was discussed, the members of the group seemed to be at

9 It must be observed that the wording of the question itself implied such a division. It was asked: ‘What is the relative importance [for the determination of prices] of consideration of (i) cost as determined by Accountants and (ii) what the market will bear, taking competition into account?’ (‘General Questionnaire No. II . . . ’, question 2(b)). This formulation presupposes treating the two blades of the demand and supply scissors as independent. It is thus not surprising that those who felt that the demand blade was blunt (e.g., because they were sheltered from competition) attributed all the weight of their decisions to their cost structure.
loss as to the meaning and significance of what they found. As to costing, which seems to have been the most stimulating theme, Henderson and Harrod ventured to offer a preliminary theoretical interpretation of entrepreneurial behaviour. Henderson suggested that business men had a vague prudential consideration in mind rather than any desire to maximise profits this year or next year. Harrod suggested that entrepreneurs act according to different principles and with varying degrees of rationality according to the degree of uncertainty on their data. As to the interest rates, at this stage the entrepreneurs’ almost universal agreement raised more questions than tentative answers from the members of the group (Meade, ‘Summary of Discussion’, in ABP 45, 46, and 171).

While the group continued interviewing entrepreneurs (‘List of Reports of Interviews received up to December 5, 1936’, in HCN 4.11.2), Harrod felt it was time to try to produce an explanation of the pricing procedure which seemed to have emerged, and to develop his notion that it was necessary to ‘attempt to classify the psychological principles of different entrepreneurs—e.g. managers of old and of new business—as such psychological principles would be of great importance when business men seemed to behave as economic theory said they should not behave’ (Meade, ‘Summary of Discussion’, p.2). He went through the reports, summarised for himself the replies concerning pricing principles (‘Summary of Replies on Prices and Costs’, in HCN 4.10.5), and drafted extensive ‘Notes on interviews with entrepreneurs’ (in ABP 173 and HCN 4.21.1). In these Notes, Harrod attempted to classify the different kinds of ignorance, and focused on the full cost principle as a consequence of incomplete knowledge of the relevant magnitudes affecting a business. The paper was circulated and discussed by the group a few weeks later (untitled agenda relating to the meeting of 5 February, 1937, in ABP 45). The minutes of the meeting do not seem to have survived. However, the extant documents indicate that the point which raised most interest was Harrod’s discussion of the implications of one or other price policy (based on average total cost including overheads, or on immediate reaction to short-term market conditions) on the amplitude of fluctuations. In the preface of a ‘Memorandum on the cyclical mechanism within the firm’ drafted in February, Phelps Brown explained that ‘there was some discussion of the possibility of observing the play of cyclical mechanism within the working of the single firm’, and he was asked to suggest some points on which the group might seek information (in ABP 46, 172 and 630 and HCN 4.26.1).

10 The proposals were later summarised in ‘Suggestions for Improvement of Questionnaire No. II’ (HCN 4.2.2 and ABP 45). Even before discussing the analysis, at the end of November some members of the group (among whom were Henderson, MacGregor, Harrod, and Meade) had a conversation in Oxford with A. Loveday, the Director of the Financial Section and Economic Intelligence Service of the League of Nations, who was particularly impressed with the preliminary results of the interviews. D. H. Robertson too was reported to share Loveday’s view that ‘the first-hand investigation of the way in which entrepreneurs actually behave in the various phases of the business cycle would be a contribution of distinct importance to economic theory’ (Kettredge to Van Sickle, 5 January 1937, in RAC, RF 1.1 series 401S, Box 75, Fld. 984).
In September the topic was taken up by Hall, and a few weeks later Hitch entered the debate.\textsuperscript{11} The three men reached different conclusions as to whether a price policy based upon costs would, by stabilising prices, dampen the amplitude of fluctuations: each, in fact, emphasised different factors. More interesting is the contrast between their interpretations of the pricing policy displayed by the interviewees. Harrod interpreted the ‘full cost’ principle as a rule of thumb which entrepreneurs have to adopt because the imperfection of their knowledge of the relevant data prevents them from being able to calculate marginal costs and revenues.\textsuperscript{12} In these conditions, knowledge of some data would only enable entrepreneurs to determine rationally the limits within which price and quantities must lie, forcing them to resort to some other kind of guiding beacon or consolidated habit—such as the full cost principle—to determine the actual price. Hitch and Hall focused however on the difference in the degree of competition. They emphasised that relatively competitive firms are more sensitive to changes in the elasticity of demand while oligopolistic firms tend to fix their prices from a longer-term perspective. The latter therefore aim to cover their average total cost (including a ‘fair’ profit allowance) rather than maximise their profit in the short run.

In the meantime, Harrod read a paper before the British Association on the programme of the OERG. Possibly as a consequence of the difference in emphasis between his view and Hitch and Hall’s, Harrod did not pursue the attempt at classification of irrationality he made in his ‘Notes’. He continued to stress the role of ignorance, but dwelled more on the methodological aspect of the OERG research (British Association 1937, pp.56–8; Harrod, ‘[Business Experience and Economists’ assumptions]’, in HCN 5.13.2). By that time, Harrod was convinced that the OERG results were mainly of a negative character, indicating that ‘certain assumptions [economists] used to make regarding [entrepreneurs’] motivation won’t hold water’ and suggesting not to ‘undertake the construction of elaborate superstructures based on these supposed reactions’ as economists ‘might have done earlier’ (Van Sickle, ‘Memorandum: Oxford University—Conversation JVS with Mr. Harrod, Geneva, September 8, 1937’, in RF 1.1, Series 401S, Box 75, folder 989).

Following the subsequent debates within the group, however, a positive result was about to emerge: Hitch and Hall’s article on the kinked demand curve (1939). In December the group discussed various aspects of Harrod’s, Hitch’s, and Hall’s

\textsuperscript{11} Hall, ‘Notes on the behavior of entrepreneurs during trade depression’ (in ABP 46, 171 and 173; HCN 4.25.1); Hitch, ‘Notes on Imperfect Competition and the Trade Cycle’ (ABP 46 and 173, and HCN 4.23.1).

\textsuperscript{12} Harrod had already suggested that entrepreneurs follow some rule of thumb in correspondence with Henderson in February 1936. While Henderson argued (in a letter to Harrod dated 21 February 1936, in HP IV–480–4, with reference to Harrod’s Trade Cycle, pp.75–88) that entrepreneurs do not, and cannot, think in terms of maximisation of income, Harrod objected that they must follow some ‘mystic formula’, he treated the maximising behaviour as a first approximation, and suggested that the interview should aim at discovering more about what guides their conduct (Harrod to Henderson, 21 and 23 February 1936, both in HHP 22A/6.).
memoranda. In his notes, Hitch had questioned Harrod’s argument that the practice of full cost pricing, by determining a bias in favour of higher prices during depressions relative to the optimum (theoretical) level, determines a competitive disadvantage for the firm and a shift from profits in the industry, and thereby reduces the amplitude of fluctuations. Harrod admitted that his conclusion ‘might be the result of fallacious reasoning from the part to the whole’. However, while Hitch maintained that unless the elasticity of demand was fairly high—a condition which he thought to be unlikely—the tendency to maintain prices would increase the absolute and relative share of profits in an industry, Harrod did not find it possible to agree.\(^{13}\) Although Hitch, Hall, and Harrod were asked by the group to draft an agreed statement, they could not find a common ground (Andrews, Reports of the meeting of 7 December 1937 and 14 January 1938, both in ABP 45 and 171 and HCN 4.5). Later on they met again, but only with the aim of preparing a memorandum on cost (which, if it was written, unfortunately does not seem to have survived) in view of the prospected publication of the group’s findings on price policy in *Oxford Economic Papers* (Andrews, Reports on the meetings of 7 October and 18 November 1938, in ABP 45 and 171, the first also in HCN 4.9.1; Harrod, 1939b; Hall and Hitch, 1939).

### 2.3 Publishing the results

In the meantime the inquiry continued. By July 1937 the number of entrepreneurs interviewed by the group was up to 35 (‘List of Questionnaires, Reports etc. to July 1st, 1937’, in ABP 170), and a supplement to the first general analysis of responses was drafted (‘[Analysis of reports, cont.]’, in HCN 4.10.2–4). In September, the second main point of convergence in the entrepreneurs’ replies was given a careful examination. Meade proposed an ‘Analysis of Information received on factors determining the volume of investment’, which consisted in a summary of the replies concerning the rate of interest and investment in plants and stocks and a few tentative generalisations and conclusions (in ABP 46, 173, and 630, and HCN 4.30.1—the latter with annotations in Harrod’s hand). When the group discussed Meade’s report, they thought that it was a good example of what the group could publish. Therefore, the accuracy of the summaries was verified, and the proposed interpretation was thoroughly discussed. In particular, some qualifications were specified regarding Meade’s observation that the unanimous negative response on the question on the influence of short-term

\(^{13}\) Harrod’s annotations on margin of Hall’s paper show that from the beginning he had doubts and queries about the assumptions on which Hall based his criticism. In particular, he was puzzled by Hall’s statement regarding the optimising price policy corresponding to the maximisation of profits and to the maintenance of output; by Hall’s assertion that with a ‘normal’ degree of elasticity of demand receipts could be maximised at a much lower price than that which would maximise profits; and by his suggestion that taking unemployed pay into account the maintenance of salaried staff could be more stabilising than the maintenance of output: see Hall, ‘Notes on the behavior . . .’, HCN 4.25.1, pp.4, 5 and verso of p.22.
rates of interest on investment (either in stocks or in fixed capital) suggested that this factor is unimportant. It was pointed out that this is probably true in normal conditions, but it was observed that it would be important to inquire upon the willingness of banks to lend, and that the sample did not include many firms struggling to survive (for which the rate of interest could be much more important) nor any wholesalers (‘Report of the meeting of 26th November, 1937’, in ABP 45, 46, and 176).

On 7 December, it was revealed that Oxford University Press was prepared to consider the publication of a monograph. A week later a ‘finding’ committee was appointed, consisting of Harrod, Henderson, and Opie. Hall and Opie were asked to invite the Board of the Faculty of Social Studies ‘to consider setting up an editorial committee for the serial publication of Economic Research Studies’. On 14 January 1938 the finding committee ‘reported that they had discussed possible publications, and that in this connection Mr. Henderson had prepared an introductory memorandum on the Rate of Interest’ (Andrews, Reports of the meetings held on 7 and 14 December 1937, and 14 January 1938, all in ABP 45 and 171, and HCN 4.5). Henderson’s paper was circulated accompanied by a note revealing that the plan of a monograph had been abandoned while the possibility of a serial publication was under consideration instead. On March 1st it was reported that ‘the Sub-Faculty had approved the suggestion for the establishment of Oxford Research Studies in Economics, and had appointed Messrs. Harrod, Henderson, Marschak and Opie to act as Editorial Committee. It was understood that the Oxford University Press had given its approval and that the Social Science Research Committee had made suitable financial arrangements; a share of the costs, however, was paid by the OERG. In October 1938, Opie was eventually appointed as General Editor of Oxford Economic Papers (Andrews, Reports of the meetings of 1 March and 7 October 1938, and 16 January 1939, all in ABP 45 and 171, the first two in HCN 4.7.1 and 4.9.1).

The first two issues of the journals were entirely devoted to the researches carried out by the Institute of Statistics, the OERG, and the sub-groups working under their auspices. In fact, while the main research on entrepreneurs’ behaviour was carried out, some of its members undertook related inquiries: a working group was engaged to research the timing of public works; another, under the direction of Phelps Brown, embarked upon a statistical inquiry into British trade fluctuations; a third looked at re-employment policy in Britain, Germany, and the United States; while a further group investigated the published accounts of British companies. Documents relating to the study on the mobility of labour and a preliminary draft

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14 Henderson, ‘Note’ (ABP 173 and 630, and HCN 4.29.1); for an exhaustive description of the proposed content of the first volume, see Henderson to Kittredge, 26 January 1938 (RF 1.1, Series 401S, Box 75, Folder 990). Henderson’s paper was thoroughly discussed on 21 February 1938: see Andrew’s Report of that meeting (ABP 45 and 171, and HCN 4.6.1).
of Brown, 1938, are also preserved among the Andrews papers, and were presumably discussed by the members of the group. 15

As to the OERG's contributions to OEP, in October 1938 Meade and Andrews summarised the entrepreneurs' replies about interest rates, with an introductory essay by Henderson written to remedy the misleading impression Meade's and Andrew's paper could have created if it stood by itself, 'e.g., in suggesting that [the group was] trying to prove that the rate of interest was of no importance', (Henderson, 'Note'). In May 1939, Harrod discussed the methodology and the implications of the group's research for the traditional approach to cost and price theory, while Hall and Hitch presented a theorisation of price policy in conditions of oligopoly.

The latter of these articles was elaborated from a paper that Hall was asked by the group to read before the Economic section of the British Association in August 1938, which on that occasion was chaired by Harrod (Meade and Andrews, 1938; Henderson, 1938; Harrod, 1939b; Hall and Hitch, 1939). 16 Hall's paper supplemented the facts presented by Harrod the year before and 'attempted to include them in a theoretical structure'. To explain the entrepreneurs' 'general belief in the inelasticity of the marked demand', and their 'general awareness that competitors are likely to follow price cuts and thus reduce the business for the individual firm even where there is a good deal of market imperfection', Hall suggested that 'the demand curve for the individual firm [is] inflected at the point where the price actually stands':

Above this point the curve is elastic, because an increase of price will not be followed by competitors who produce fairly close substitutes and who will be glad to take any extra sales. Below the point, however, the demand is inelastic because a reduction in the prices of any one firm will be followed eventually by competitors who would otherwise lose business. 17

This is the point which, as a consequence of the numerous discussions described in Section 2.2, was later elaborated by Hall and Hitch as the 'kinked demand curve' in their joint article in Oxford Economic Papers (1939, pp.116–18).

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15 See Henderson (1936), Institute of Statistics, 'Annual Report... 1938–39' (RF 1.1, Series 401S, Box 75, Folder 991) and Young and Lee (1993, pp.135–6). Two memoranda on the mobility of labour, preliminary to Makower et al. (1938), are in ABP 172 and 631, while Brown's memorandum on 'The Liquidity-Preference Schedules of Banks' is in ABP 173 and 630 (in the published version, Brown thanks the members of the OERG for the 'many valuable criticisms and suggestions': 1938, p.49). The research program for the Public Works group was outlined by Bretherton, Burchardt, Hall, Meade, and Opie ('Memorandum prepared by the Sub-Committee... ', in ABP 45, 46, 4630).

16 On the occasion, other papers relating to the activities of the OERG or the Institute of Statistics were delivered: Bretherton discussed 'Public investment and trade cycle policy' and Marschak 'Measurement of the mobility of labour' (British Association, 1938, pp.452 and 454).

17 Hall, 'The Business View of the Relation between Price and Cost', pp.13–4 (ABP 173 and HCN 4.31.6). This principle was already hinted at in Hall's 'Notes on the behavior of entrepreneurs during trade depression', p.5.
For publication or communication of the results of the research, it was decided that the Group should adopt the rule that the papers are presented on the responsibility of their authors or editors. Articles would, therefore, generally be over the authors’ names, with possibly an indication of the degree of concurrence among members of the Group (Andrews, ‘Report of [meeting of] 21st February 1938 . . . ’, in ABP 45 and 171, and HCN 4.6.1). However, as we have seen, papers were discussed in detail during the meetings of the group, and the final drafts certainly reflected the effects of this process of exchange of opinion and criticism.

While the first findings were made public, the interviewing process continued, with the help of a few new questionnaires. At the time of writing his paper for the British Association, Hall could refer to 39 reports of interviews; the number rose to at least 51 by November 1938 (OERG, ‘[list of 51 interviews]’). Besides the interviews taking place at Oxford, individual members of the group visited ‘different representative industrial centres, with a view to obtaining a wider range of representative answers on the matters dealt with in the questionnaires (Social Studies Research Committee, 1937, p.13).

In November it was decided to extend the inquiry on the rate of interest by circulating on a large scale a questionnaire inquiring into the influence of the rates of interest and the yield of securities on decisions about expenditure on plant extension, maintenance and holding of stocks. The final draft was approved on 16 January, and the questionnaire was sent out on 22 February 1939. It was accompanied by an offprint of Meade’s and Andrew’s article in the *Oxford Economic Papers* and by a covering letter written by Harrod, in which the previous stage of the research was illustrated. Having explained that the interviews had thrown some doubts on the customary assumption that the rate of interest is of paramount importance to investment decisions, Harrod expounded the aim of the investigation:

> We are now extending our enquiries by sending a written list of questions to a large number (about 1,300). In order to obtain general acceptance for our final conclusions, we must be able to show that it is based on a wide sample. I therefore ask you most earnestly to be good enough to provide us with answers to the enclosed questions. A

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18. OERG, ‘Questionnaire No. V, Building’ (ABP 173); Questionnaire on the Capital Market (No. VI) (ABP 170), ‘Q. VII [for Merchants]’ (ABP 49 and 170 and RAC, RF, 1.1, series 401s, box 75, folder 991), ‘Questionnaire for Accountants, Q 8’ (ABP 49 and 170 and RAC, RF, 1.1, series 401s, box 75, folder 991), ‘Q. 2. R. A.’, later revised again as ‘Q. 10’ (ABP 49 and 170 and RAC, RF, 1.1, series 401s, box 75, folder 991).

19. Andrews, Reports of meetings of 18 November 1938 and 16 January 1939 (both in ABP 45 and 171); OERG, ‘Draft I of Q. 11’ (ABP 170 and HCN 4.13.1); ‘Q11R’ (ABP 173); ‘Q11’ (ABP 47 and RAC, RF, 1.1, series 401s, box 75, folder 991). Q11 is reproduced in Andrews (1940).

20. The questionnaire was actually sent to 1,308 entrepreneurs: see Andrews (1940, p.33), and Andrew’s autograph note on the copy of the questionnaire held by the RAC. It is interesting to notice that originally it was planned to dispatch the questionnaire to about 3,000 entrepreneurs (Harrod, circular letter to 1,308 entrepreneurs, 22 February 1939, preliminary draft, in ABP 46). No evidence survives explaining why this decision was changed.
definite conclusion, based on ample evidence, might be of considerable national importance in influencing policy (Harrod, circular letter to 1,308 entrepreneurs, 22 February 1939, in ABP 49).

The results of this further inquiry were gathered and published by Andrews in 1940.

With the renewal of the Rockefeller grant till the end of 1940, a number of members of the group formulated new research projects. Moreover, the possibility of forming an ‘Economic Observation’ group was explored, with the intention of collecting information for the capital goods industries by means of a questionnaire on the volume of sales and of orders received and completed month by month, to be circulated among the firms who co-operated by supplying information. A preliminary Advisory Board consisted of Harrod, Arnold Plant of the LSE, and C. Douglas Campbell of the University of Liverpool. The OERG was to have right of publication of the results. Although a sub-committee was appointed to examine these research projects, most of these had to be renounced or postponed due to the imminence of the war. In particular, Hall and Hitch ‘were asked to prepare a questionnaire on Costs for large-scale circulation, to be sent out early in Michaelmas term’.

3. The trade cycle

For some time, Harrod occasionally labelled the OERG ‘the trade cycle group’, both in private correspondence and in the heading of one of the papers discussing the results of the inquiry. This might induce into thinking that the group’s inquiry

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21 The returned questionnaires, some with accompanying letters, are preserved in ABP 47 and 48. One of the entrepreneurs complained that the research was not free of preconceived ideas, since Harrod’s letter indicated the result they expected to obtain (Cheney to Harrod, 28 February 1939, in ABP 48). In Harrod’s absence, Andrews admitted that the criticism was sound, but explained that Harrod ‘felt that he should explain the reason for his inquiry as fully as possible, and that he should refer to our previous printed work as an example of the use which we made of confidential information’ (Andrews to Cheney, 2 August 1940, in ABP 48).

22 Anonymous to Harrod, 27 May 1939, and Economic Observation, untitled (both in ABP 228).


24 The name ‘Oxford Economists’ Research Group’ was definitively established after March 1936: some earlier documents, such as the first questionnaire (OERG, ‘Questions for Discussion’), Harrod’s report on the ‘Visit of Sir Kenneth Lee on 21.ii.36’ (ABP 46) and the ‘Agenda for [12 March 1936] Meeting’ (in HCN 5.2.7), bore the name ‘Oxford Economic Research Group’. Two years later, however, Henderson mentioned the group as ‘Economics Tutors Research Group’ (letter to Kittredge, 26 January 1938, in RF 1.1, Series 401S, Box 75, Folder 990).

Harrod’s denomination of the OERG as the ‘Trade Cycle Group’ could mislead one into thinking that the two groups had an independent existence (see for instance Young, 1989, pp.xiii and passim). This nickname occurs four times in Harrod’s unpublished writings. Two of these do not help in settling the matter. The other two, however, do not leave any doubts that this was not the case. In fact, one occurs in the heading of Harrod’s ‘Notes on Interviews with Entrepreneurs’, which is listed among the OERG
was mainly addressed to trade cycle problems. This impression is strengthened by the fact that in several of the publications and in the speeches before the British Association by members of the OERG it was pointed out that the group was studying problems connected with the trade cycle.25 As a matter of fact, however, none of the papers published in the inter-war years explicitly discussed questions relating to economic fluctuations, although some of the discussion memoranda were connected with this topic. The repeated reference to the group’s interest in economic fluctuations might be explained by the fact that the OERG’s inquiry was financed from the beginning of 1937 by a Rockefeller Foundation grant in support of trade cycle research.26

In any case, the themes on which the group originally inquired were somehow connected to the trade cycle: in fact, some of the questions looked at firms’ policy on stocks, prices, and the use of dividends during depressions or periods of bad trade. Nonetheless, in their comments on the relevance of the replies to trade cycle theory, a number of members regretted that more specific questions were not asked, thereby revealing that the original aim of the research was not principally the characterisation of business fluctuations. Improvements to the basic questionnaire in this direction were suggested,27 but nothing seems to have followed. This


26 Marschak was informed that ‘the interest of the [Rockefeller] Foundation would be the promotion of a series of special studies of problems of the business cycle, particularly in the period from 1925 to 1936 in Great Britain’ (Kettredge to Marschak, 31 December 1936, in RAC, RF 1.1 series 401S, Box 75, Fld. 984). Accordingly, the group’s program was described as pursuing the previous research which ‘on the analysis of the various factors which have influenced trade cycle developments in Great Britain from 1926 to the present time’. The proposed resolution was headed ‘Business cycle research program, University of Oxford’ (Kettredge [‘Proposed resolution’], in RAC, RF 1.1 series 401S, Box 75, Fld. 984, and the Rockefeller Foundation folder, where the documents relating to the grant are preserved, is accordingly labelled ‘Business Cycle Research’).

When it was time to file an application for a new grant for the extension of the research, Harrod communicated to the other members of the OERG that he had ‘been informed that the interest of the [Rockefeller] Foundation has now moved away from trade cycle study towards that of growth and structural change’. He commented, however, that he did ‘not think that this change need be seriously inconsistent with continuity in our own research aims’ (Harrod to OERG, 21 April 1939).

27 It was already pointed out in Section 2.2 that Phelps Brown was asked to provide suggestions as to the kind of information it would be necessary to acquire in order to be able to inquire on fluctuations within individual businesses (‘Memorandum on cyclical mechanism within the firm’). The lack of information was clearly felt when they attempted to analyse the phenomenon. Hall stressed that the questionnaire was not designed to elicit direct information on cyclical changes in the factors he thought to be more important, viz. the liquidity, the output and the rate of renewal of the firm (‘Notes on the behaviour of entrepreneurs during trade depression’, pp.2–3). Hitch pointed out that it would have been interesting
indicates that the members of the group realised afterwards that the results of the inquiry offered interesting considerations regarding the cycle. This, however, was only a side issue which was not part of the initial scope of the group’s research nor was it pursued in more detail at a later stage.

Harrod’s personal interest in the topic is, however, incontrovertible. When the research took off, he was writing his book on *The Trade Cycle*, in which he proposed certain propositions as to how the behaviour of firms is affected by the dynamic forces determining the state of the system as a whole. Debates within the group on the reciprocal influence of trade fluctuations and business behaviour must be seen against this background. First, it was Harrod raising this question, and the three other memoranda on the subject stemmed from the discussion of Harrod’s contribution. This aspect has already been discussed in the chronology outlined in Section 2.2 above, and does not need further elaboration.

Second, the model and the system of notions in terms of which the problem was discussed by members of the group clearly reflected Harrod’s approach and terminology. In his book on *The Trade Cycle*, Harrod first expounded the factors determining the level of output. He considered four ‘static determinants’: (i) The rates of pay at which prime factors of production can be secured. (ii) The efficiency of the prime factors. (iii) The elasticity of demand for commodities. (iv) The general price-level’ (Harrod, 1936, p.50). The first three were nothing else than the traditional costs and demand considerations re-framed in terms of independent forces; the third determinant generalised the Marshallian approach by introducing imperfect competition (see, for a discussion, Besomi, 1997a, pp.95–7). In Harrod’s scheme, individual entrepreneurs decide how much to produce on the grounds of the balance of these forces. The first three exert a stabilising effect, deterring entrepreneurs from indefinitely expanding output: prime cost are ‘plastic’, efficiency obeys the Law of Diminishing Returns, while the Law of Diminishing Elasticity of Demand reflects the difficulties of marketing additional quantities of the product in conditions of imperfect competition. Appropriate fluctuations in the price level, however, could counteract the restrictive effect of the three stabilisers.

Harrod used the same method of analysis for explaining the rate of change of output of the system as a whole. The mechanism is based on the interaction of the multiplier and the accelerator (which he called ‘Relation’). Their effect depend on the strength of three dynamic determinants: the propensity to save and the distribution of income affect the multiplier, while the intensity of the accelerator depends on the amount of capital used in production. As income increases, the first two forces counteract further expansions: the propensity to save increases as income increases, and profits are redistributed in favour of more thrifty classes.

to ask specific questions on changes in the elasticity of demand in the course of the cycle (‘Notes on Imperfect Competition and the Trade Cycle’, p.17). In all these memoranda suggestions as to improvements to the questionnaire were formulated.
Changes in technology, rate of interest, or other factors affecting the accelerating coefficient can, for some time, counterbalance the restrictive effect of the first two dynamic determinants, thereby maintaining a steady rate of advance. However, as soon as there is a decline, this is cumulative: a diminished rate of increase of income induces less than proportionate investment (accelerator), which causes a further reduction of the rate of increase of income (multiplier), and so on (see, for a more detailed discussion, Besomi, 1999, Ch.4).

This scheme of thought provided the reference framework for the discussions taking place within the OERG on the implications of their results on the trade cycle. In his own memorandum on price policy, Harrod examined the consequences of the full cost principle for distribution of income, given his assumption that the elasticity of demand decreases with prosperity and increases in periods of bad trade (the ‘law of decreasing elasticity of demand’).28 He argued that during depressions the full cost policy determines a rigidity of prices, which fall less than the state of elasticity of demand would require for the maximisation of profits. This determines a redistribution in favour of lower incomes (‘shift away from profits’) which favourably affects the multiplier and therefore reduces the amplitude of fluctuations (‘Notes on interviews with entrepreneurs’, §§ 15 and 16).

Phelps Brown, in his ‘Memorandum on cyclical mechanisms within the firm’, classified the components of a cyclical mechanism within a firm in terms of the multiplier, the Relation, a number of lags, the function of saving, and the Law of Decreasing Elasticity of Demand. Lags were the only component extraneous to Harrod’s thought: in spite of Harrod’s aversion to them, an increasing number of mathematical models based on lagged functional equations were attracting economists’ attention, and Oxford was no exception.29 Hall and Hitch, in their discussions of Harrod’s conclusion, accepted his notional framework but shifted the balance of emphasis in favour of other factors that might play a part. Hall pointed out that maximisation of profits would require price cuts in depressions only if the elasticity of demand were unusually high. However, he agreed overall with Harrod’s conclusion about the dampening effect of the full cost principle: maintaining prices during depression enables entrepreneurs not to dismiss as many salaried staff as they would under maximising policies; this, added to the fact that ‘men who are dismissed will get unemployment pay as a rule’, raises the proportion of income distributed in favour of people with a low propensity to save, and thus increases the multiplier (‘Notes on the behavior of entrepreneurs during trade depression’, p.5). Hitch questioned instead the practical importance of Harrod’s law of diminishing elasticity of demand for the study of the cycle, both because he thought it to be more relevant in the long run and because ‘it is not sufficient for

28 Incidentally, it should be noted that this law was recognised by commentators as one of the most innovative contributions of Harrod’s book (see e.g. Haberler, 1937, p.692, and Hansen, 1937, pp.520 and 530)—the other being, of course, the multiplier–accelerator mechanism (see for instance Samuelson, 1939, and Hansen, 1937).

29 On the methodological and epistemic reasons for Harrod’s aversion to lags see Besomi (1998).
elasticities to become greater in depression; they must be known by the entrepre-
neurs to become greater’. He thought instead that the tendency to break rings
during depressions is a more important price destabiliser. Hitch argued his point
by comparing the course of the cycle resulting from two simple models based on
difference equations whose driving force was the interaction of the multiplier and
the Relation (‘Notes on Imperfect Competition and the Trade Cycle’, pp.18–
20). Other elements of Harrod’s terminology which are found in these and other
writings by members of the OERG—such as the ‘breathing space’ at the end of the
boom, or the analysis of stabilising and de-stabilising factors—clearly add strength
to the impression that Harrod’s approach to the cycle provided the theoretical
framework for the discussion of related problems within the group.

Thirdly, the findings of the group raised some serious difficulties for Harrod’s
treatment, which may well have played an important part in his subsequent aban-
donment of the attempt to provide macro-foundations for micro-fluctuations. In
The Trade Cycle, Harrod had devised a very complicated mechanism relating static
and dynamic forces. The static forces induce the individual entrepreneur to adapt
the amount he produces according to his costs and the consumers’ preferences. The
dynamic forces determine the fluctuation of total output by amplifying local
changes and transmitting their effects to all the components of the economic
system. The link between static and dynamic forces is the level of prices. The
dynamic forces, besides regulating quantities, determine the general level of
prices, which affects individual profits by counteracting the resistance to change
exerted by the static stabilisers, thereby inducing entrepreneurs to adapt their indi-
vidual decisions to the state of the whole system. Harrod justified this role of price
fluctuations by reference to the facts of the cycle: since the static forces based on
preferences and costs normally operate against changes in output, and since
changes in output de facto occur, the price level, as the only remaining static
force, must perforce act as a destabiliser and counteract the resultant of the
other determinants. Harrod explicitly acknowledged that this reference to the
facts of the cycle introduced a ‘change of method’, for the other static forces
were studied by introspection.30

The mechanism Harrod had devised to explain in detail the transmission of
instructions from the dynamic, systemic forces to the static, individual determi-
nants, which was based on the fluctuations of the velocity of circulation of money,
was already cumbersome in itself: its explanation took over twenty pages of the
book (Harrod 1936, pp.125–45). A supplementary difficulty was introduced by the
discovery that the adoption of the full cost principle tends to introduce an element
of rigidity in the firm’s price policy. Harrod’s apparatus, in fact, worked on the
assumption that prices were free to fluctuate and could thereby act as a ‘lubricant of

30 For a more detailed description of the causal nexuses in the Trade Cycle, see Besomi (1997b, pp.203–
7). It must be noted that the passages in Harrod’s book where the change of method was introduced were
written in December 1935 or January 1936, before the interviews began (Harrod, 1936, pp.37–42).
the system’. If it is true that the rigidity could be theoretically accounted for by adjusting the amount of burden each determinant has to carry in the determination of the overall balance of forces, certainly the role of the price level would have had to be reduced, and it would have been difficult to devise a new link between the velocity of circulation and the other force (the general price level) with a destabilising role.

It seems likely that this difficulty to some extent helped to induce Harrod to abandon his attempt to find an explicit link between statics and dynamics. Three other factors, however, may have played a part. The first was Hawtrey’s criticism of the unsatisfactory character of Harrod’s change of method (Hawtrey, 1937, p.327). The second lies in the general lack of understanding of the role of the analysis of individual behaviour in Harrod’s theory on the part of his contemporary commentators: very much to his dismay, several readers considered it as an extraneous element to the explanation of the cycle, and their comments disappointed Harrod and might have helped discourage him from pursuing this line of thought.31 The third is again connected with the OERG’s research. Harrod recollected that the impression given by the entrepreneurs’ replies, especially as theoretically framed by Hitch and Hall (1939), was that the deductive theory of imperfect competition was in drastic need of revision (Harrod, 1952, p.ix). It is therefore possible that the system of static forces that he devised as a generalisation (allowing for imperfect competition) of the partial equilibrium approach suddenly appeared to him as unsuitable for the purpose (it should be noted, however, that this source of information is asynchronous: Harrod’s interpretation could therefore have been influenced by the intervening events). Whatever the reason, in Harrod’s subsequent contributions to trade cycle theory only the dynamic forces retained their place in the various refinements of his multiplier-accelerator model, while nothing was said of the determinants of entrepreneurs’ decisions and their effects upon the amplitude of fluctuations.

4. The rate of interest

By mid-January 1936, Harrod had already written ‘the best part’ of the chapter of The Trade Cycle in which money and the rate of interest were discussed. The chapter on monetary policy came later, but a draft was ready by the end of April (Harrod to Meade, 13 January 1936, in JMP 2/4/24–25, and Meade to Harrod, 1 May 1936, in HP IV–745–767/11). The first OERG interview took place on 31 January 1936, too late to exert any influence on the theoretical layout of Harrod’s book. It also seems unlikely that the interviews could affect his view on policy, since

31 For instance, in her review of The Trade Cycle Joan Robinson considered Harrod’s static analysis ‘an odd masquerade’ (Robinson, 1936, p.693). In correspondence, readers such as Hubert Henderson and Keynes showed lack of understanding of Harrod’s procedure. See for a discussion and full references Besomi (1999, ch. 7.5).
only four interviews took place before May and in any case the first analysis of results was only undertaken after October.

Harrod’s theory of the cycle was essentially based on the operation of real forces: as we have seen in the preceding section, the price level (the ‘monetary determinant’) was only meant to transmit ‘instructions’ from the global, dynamic set of forces to the static, individual determinants. The amount of money in circulation did not play an active part in the cycle mechanism, while fluctuations in the velocity of circulation were a residual magnitude with no other analytical role than permitting price fluctuations (Besomi, 1997b, pp.203–5). In this set-up, the rate of interest was the only, tenuous link between the real and monetary part of the system. Its role, however, was admittedly a subordinate one (Harrod, 1936, p.110). It was one of the factors—together with technology and the relation between the price-level of capital goods and that of consumable goods—influencing one of the three dynamics determinants, namely, the amount of capital used in production. In Harrod’s words, the rate of interest affects both decisions as to the cheapest possible productive method in the circumstances and also the decision of consumers in what proportion to divide their money between consumable goods having more or less capital embodied in them (ibid., p.111).

A fall in the rate of interest would thus increase the amount of capital used in production, and thereby exert an expansive force by means of the accelerator. This influence, however, is only indirect, for it operates through variations in the capital–output ratio which in turn adjust investment decisions to the expected increase in consumption. The latter is thus the locomotive force of the investment process, while the rate of interest affects the intensity of the incentive ultimately provided by the growth of output and income.

Given this theoretical premise, it is not surprising that Harrod could not share the ‘high hopes on the clever manipulation of the long-term rate by banking policy’ and concluded instead that ‘it seems improbable that banking policy however inspired and well informed, could secure a sufficient fluctuation in long-term rates to ensure a steady advance’ (Harrod, 1936, pp.124–5). In the first place, Harrod was pessimistic about the possibility that manipulation of the rate of interest could avoid a depression. Although an appropriate fall in the rate of interest could stimulate investment and thereby offset the restrictive influence of a fall in the value of the multiplier, Harrod thought that such a drop in the interest rate could be effective only if introduced timely and if of appreciable magnitude. The latter qualification was required by the ‘wide margin of uncertainty’ surrounding investment decisions. Harrod suggested that:

unless the safe rate of interest is thought to have fallen by at least, say, ½ per cent., the change is likely to have no effect. In making his calculation, the entrepreneur takes pencil and paper and writes down, say, 4 per cent., or, say, 3½ per cent. Nicer distinctions are not likely to be regarded as worth considering (Harrod, 1936, p.112).
Moreover, in Harrod’s view the reduction of the interest rate should occur within the breathing space, i.e. the short interval at the end of the boom ‘in which the rate of new orders for capital goods has begun to decline, but the amount of new capital goods in the course of construction, owing to outstanding orders, is not yet seriously affected’ (Harrod, 1936, p.110–11; see also pp.104, and 168–9). The argument Harrod supplied in support of his conclusion clearly reveals the primacy of the rate of increase of consumption over the rate of interest in the decisions regarding investment:

Once the breathing space is past and consumption begins to decline, it is not likely that any behaviour of the interest rates can prevent, though a sufficient fall may mitigate, a large depression. For once the production of consumption goods begins to fall, net investment is reduced to the excess of the value of replacements over that of amortisation funds. The low rate of interest may ensure that plant when replaced is more ‘capitalistic’. But the level of net investment, when depending entirely on replacements, is likely to be much lower, whatever the rate of interest, than it is when some advance is going forward (ibid., p.113).

Secondly, Harrod considered the possibility of ensuring a steady advance unlikely, even if it were possible to doctor the appropriate variations in the rate of interest. On the one hand, the rate of advance should be adapted to the increase of population and efficiency: a higher rate would soon set in operation the law of diminishing returns, which would in turn cause a shift to profits and thus operate restrictively on the second dynamic determinant, while a lower rate would increase unemployment; therefore such a policy would be practicable only starting from the ‘highly improbable initial condition’ ‘in which employment was fairly full and in which, none the less, the preceding period had not been one of advance greater than that of the secular trend’. On the other hand, even starting from this happy initial position,

if a steady advance is to be maintained, the rate of interest must move as to provide a force which, when operating conjointly with the forces exerted by the propensity to save, the elasticity of demand for goods and inventions, causes the three dynamic determinants to justify a continuance of advance.

The maintenance of steady growth would thus require a very accurate manipulation of the interest rate, failing which, a full depression would ensue (Harrod, 1936, pp.114–19).

Finally, Harrod thought that the power of control over the fluctuations of the interest rate is far from being absolute, for it depends on the possibility of convincing people that the steady advance will be maintained; but the banking system ‘cannot use as an argument to convince [the dealers] the inevitable advent of a state of affairs, which is only inevitable if they are convinced, and is highly unlikely to happen if they are not’ (Harrod, 1936, p.125).

Moreover, Harrod maintained that it would be extremely difficult to manoeuvre the long-term interest rate within the short period of the breathing space; that open-market operations ‘which increase the quantity of money available to be held
as a capital asset, may not have a great effect in certain phases of the cycle in reducing the long-term rate of interest; and finally that the possibility of manipulating the long-term rate by banking policy would, on certain occasions, be hindered by an increased elasticity of the liquidity preference schedule:

If the prevailing view is that the rate will be at a certain level a few years hence, a small fall in the rate below this level reduces the prospective yield of fixed interest-bearing securities to zero, and for any rate below this it is better to hold money. At this point the elasticity of demand for fixed interest securities may become almost infinite, or, to put it otherwise, the banks may be able to inject an unlimited amount of money through open-market operations without being able to raise the price of fixed interest-bearing securities appreciably. And at this point the monetary recipe can do no more. (Harrod, 1936, pp.180, 141, 124 and 180–1 respectively)

It is important to note that reservations as to the efficacy of policies based on manipulation of the rate of interest were expressed well before Harrod wrote The Trade Cycle. In 1932–3, taking part in the debates on monetary policy, in several occasion Harrod expressed his doubts on cheap money policies. One should keep in mind that those debates were still centred on price, rather than quantity, adjustments, reflecting a pre-General Theory theoretical framework. Nevertheless, Harrod did not change his mind through the inter-war years: he consistently asserted that injection of credit by means of low interest rates would not be sufficient to encourage new capital undertakings unless accompanied by public works financed by a budget deficit. At first, he argued that the 1932 stagnation was ‘so great that the joint stock banks might fail to put the money placed at their disposal into active circulation’ (Harrod, 1932; Harrod to Runcimann, 22 June and 6 July 1932, in HP IV-1109–14.). Later he also submitted that in the course of a deep depression there might be ‘such an excess of productive capacity in the form of plant already existing, that the demand for new capital plant cannot be much expanded by a low interest rate’ (Harrod, et al. to Roosevelt, 20 November 1933, in FDR PPF 1820, Box 1; see also Harrod, 1933a and 1933b, p.581), and that

the value of capital goods depends on the future demand for the consumable goods, the production of which the capital is designed to facilitate. After a prolonged depression producers will be more than usually sceptical about future prospects. Enterprise directed towards the production of capital goods is thus inhibited (Harrod, 1933b, p.581).

In the light of his view of the part played by the rate of interest and monetary policy, Harrod could not have been much startled by the results of the OERG inquiry. Indeed, from the entrepreneurs’ replies he concluded ‘that the general answer was that [entrepreneurs] do not consider interest rates at all; they would say that they take account of other factors such as price changes, depreciation allowances, etc.’ (OERG, ‘Report of the meeting [of] 26 November, 1937’, p.2).

The group’s empirical research certainly did not come in time to affect Harrod’s exposition of his theory. However, its results certainly strengthened his belief that
the rate of interest can affect the entrepreneurs’ decisions only very indirectly, and that monetary policies on their own can hardly hope to stimulate revival. This emerges from the correspondence he had with Hawtrey and Joan Robinson on these topics, and as a consequence he reshaped his theory of the cycle for the *Economic Journal*.

In the course of his 1937 correspondence with Hawtrey on *Capital and Employment*, Harrod agreed with Hawtrey ‘in thinking the effect of the long term-rate too delayed to be very effective in averting a slump promptly. For you this means averting the vicious spiral of deflation, (where does the spiral end?), for me preventing net investment [from] falling to zero’. On the other hand, Harrod thought that Hawtrey’s point, that the short-term rate affects traders, was ‘entirely mythological’, for ‘producers usually have a standardized habit of laying in stock 2 or 3 months in advance from which they seldom diverge’ (Harrod to Hawtrey, 4 March 1937, in HTRY 10/49). Hawtrey replied that ‘in general it is safe to assume that the consignments can be reduced a long way below three months or two months’ supply at a slighter extra cost’, so that the dealers can take steps to reduce the overdrafts in case of an increase in interest charges. He then enquired whence Harrod got the idea of the standardised practice of laying in stocks, and concluded as follows: ‘I am quite sure a detailed investigation would disclose a wide divergence of practice, and that the practice of any one concern would vary according to the circumstances’ (Hawtrey to Harrod, 24 April 1937, in HP IV–449). This gave Harrod occasion to mention the OERG research:

> With regard to the question of stocks, I fear it is a matter of that very unfair process of killing a theory with a fact. You may indeed well challenge my fact. I am open to believe that I am wrong, but I feel some measure of confidence. In our Oxford questionnaire of business men we have had some dozens before us and have questioned 2 or 3 dozens more individually. They have been drawn from various types of industry, large-scale and small-scale, flourishing and depressed. It is only a small sample, but there has been no difference of opinions at all. When we ask them whether they would change the size of their stocks in response to changes in the rate of interest, they do not answer with a doubtful no. They say, ‘it is quite out of question, ’ ‘We shouldn’t dream of it,’ ‘It couldn’t possibly be a consideration’ etc. I should be very surprised if our sample was so unrepresentative that it did not reveal the prevalent attitude. Theory, after all, can only say that the bank rate is an influence tending to regulating the size of stocks. But if they reply that there are other influences so vastly more important that this one has no effect, I do not see that theory can reply. No doubt insensible differences often operate, like the fall of tobacco by 4d, which each individual would deny. It would be rash therefore to deny some effect of rate changes, but when you reduce the matter to quantitative terms (p.4) and speak of a 10% change, I say on the strength of this evidence non credo. (Harrod to Hawtrey, 1 October 1937, in HP IV–446–477)

It is important to note that Harrod was strengthened in his belief that the rate of interest scarcely affects the accumulation process by an additional source of empirical evidence. In the same letter to Hawtrey, Harrod in fact added:

My attitude is confirmed by quite a different kind of research. Tinbergen working at Geneva has adopted the most subtle and refined statistical methods propounded by Frisch for detecting correlations and he cannot find that the rate of interest has any appreciable effect on trade fluctuations. 33

Harrod later took up the matter again in correspondence with Joan Robinson. She observed:

As for the view that seems to be capturing Oxford that the rate of interest does not affect investment I am quite open minded. You notice I always mention houses, because I would expect to find interest fairly important for building & negligible for industrial plants. But do point out to your anti Keynesian colleagues 34 that it is the Classical Theory, not the General Theory that goes down if they are right. (Robinson to Harrod, 11 March 1938, in HP IV–1089–107)

33 The reference is to Tinbergen (1937, p.25). This exchange had a sequel, which is interesting in the light of the debates, in the 1950s and 1960s, on the criticism to the rigidity of Harrod's growth equation (see footnote 36), and as an example of how memory can be deceived. In 1951, Hawtrey sent Harrod for comments the TS of the additional paragraphs of the chapter on Harrod's dynamics in the revised edition of Capital and Employment, where Hawtrey argued that the appeal to practical evidence ('the chorus of merchants and traders and producers have testified in the negative') made Harrod's argument against the sensitivity of traders' stocks to the short term rate of interest very thin (Hawtrey, 1952, pp.298–9). Harrod replied as follows:

I am amused by your correcting me out of my own questionnaire. It certainly seems that I have overstated the case in my reference to the 'chorus'. This is bad. Actually I did not have that questionnaire in mind & had forgotten about it. I was at that time already absorbed in war work and, tho' retaining the nominal position of chairman, could not give much attention to it. I suppose I must have read it.

What influenced me were the interviews with business men, a very different matter, the results of which appeared in Oxford Econ. Papers no. 1 [Meade and Andrews 1938]. I always think a written questionnaire unsatisfactory. The interviews were vastly superior, since the whole group cross-questioned our witnesses on successive occasions & satisfied itself that it had (probed) the matter to the bottom. Mind you, our initial bias was on your side. On the whole our members wanted to prove that the rate of interest did have influence.

As we have seen, however, the letter cited in Section 2.1 above in which Henderson proposed the course of the research to be carried out with explicit reference to Hawtrey's theory proves the opposite:

My recollection is that we could not get any affirmative evidence at all, so far as the direct impact of higher cost of borrowing was concerned, tho' a few conceded that they had in earlier days used the Bank Rate as a barometer indicating the probable future trend of sales or prices. However I grant you that my language is a little too strong! I still feel that whatever influence interest may exert on a minority, it is not likely to be strong enough to deal into the cycle, if the sole or main corrective. And I doubt the wisdom of having a much fluctuating rate if—that is no doubt the question—we want a low long period rate of interest. A fluctuating interest rate must make the long term rate substantially higher than it could otherwise be (Harrod to Hawtrey, 17 May, 1951, in HTRY 10/49).

34 Joan Robinson probably referred in particular to Henderson, who did not accept The General Theory's point of view. It is interesting to note that Harrod and Henderson happily collaborated in the OERG's empirical inquiry in spite of their disagreement on theoretical grounds, of which there are deep traces in their extensive correspondence relating to Harrod's Trade Cycle and Henderson’s 'Mr. Keynes's Theories' (Marshall Society, Cambridge. May 2nd 1936) (these letters are housed in different files in HP and HHP).
Harrod answered ‘I agree that, shall I call it, the Oxford view about interest is fatal to the classical theory. But it is also inimical to placing too much hope on manipulation of the interest rate’ (Harrod to Robinson, 14 March, 1938, in JVR vii/ Harrod (25)).

This short and sharp reply illustrates how, in the years that lapsed between *The Trade Cycle* and the ‘Essay’, the empirical evidence provided by the entrepreneurs’ witnesses and by Tinbergen’s research further shook Harrod’s already scanty confidence in the strength of the link between rate of interest and investment decisions. The consequence of these developments can be seen in Harrod’s restatement of his theory in his famous ‘Essay in Dynamic Theory’. The rate of interest, in fact, was barely mentioned in the 1938 draft, except for a paragraph on the influence of interest on the acceleration coefficient and thus on the warranted rate of growth. There, however, Harrod took care to specify that it was not suggested ‘that a low rate of interest has sufficient power of its own to keep down the warranted rate without the assistance of a programme of public works to be kept permanently in operation’ (Harrod, 1996, p.272; see also 1939a, p.32). Only in the revised version, and on specific insistence from Keynes, did Harrod add a few parenthetical notes including the rate of interest and the state of confidence, along with technology, as the circumstances affecting the capital–output ratio (see Besomi, 1995, p.334, and 1996, p.282).

5. Conclusion

Harrod played an important role within the OERG. He was the proposer of the research; in the first stages of the inquiry he took upon himself a good deal of the drafting and polishing of the reports;35 he attempted the first systematisation of the results concerning prices and costs; he presented the group’s activity before the British Association; he channelled the first discussions on the pricing principle towards its implications for the trade cycle, while his book on *The Trade Cycle* provided the notional and conceptual reference framework for all the discussions on the topic occurring within the group.

The outcome of the OERG research affected the development of Harrod’s thought beyond his book on *The Trade Cycle*. This influence, however, corroborated his beliefs rather than providing the original impetus for change. In fact, with regard to the power of monetary policy and the rate of interest as a determinant of investment, Harrod had been sceptical long before the entrepreneurs confirmed his preliminary opinion.36 And with regard to the additional difficulty

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35 See for instance the three drafts of ‘Visit of Mr. H. F. Scott-Stokes on 31.1.36’, in HCN 5.1.

36 In replying to neo-classical critics as to the presumed rigidity of the acceleration coefficient in the so-called Harrod–Domar model, Harrod pointed out that in 1939 he was ‘somewhat influenced by the view, which was prevalent in those days, that producers were but little influenced by the rate of interest in their choice of more or less capital-intensive methods of production’, and implicitly referred to the OERG research as to the source of this belief (Harrod, 1960, p.278).
for his analysis of the transmission mechanism from global to individual forces
created by the full cost principle, this was only one of a number of factors dis-
couraging him from pursuing this line of thought.

The surviving evidence thus seems to indicate that Harrod influenced the general
line of the OERG research to a deeper extent than his approach was affected by its
ensuing results. However, consideration of his participation in this experiment is
important for an understanding of Harrod’s intellectual development. It shows, in
fact, that he was committed to a methodological stance which saw empirical inqui-
ries as a fundamental source for axioms based on inductive generalisations. First,
his earliest documented reflections on this topic date from 1934, that is to say
shortly before his proposal of the research plan which eventuated in the OERG
inquiries.37 Second, Harrod expressed the hope that the inquiry could provide a
better empirical basis for some of his theoretical statements:

Further, I think that my proposition (in The Trade Cycle) that elasticity of demand is
inversely related to the size of income (law of diminishing elasticity of demand) is quite
probably worthy to be erected into a fundamental proposition of economics, though I
seem to recollect inserting provisos at several places that this was a generalization which
would have to be tested and couldn’t be taken as a demonstrable certainty. Both our
speakers have confirmed it. Lee said in words that might almost have been taken from
my book, that, as the world has grown richer, people had hardened in their buying
habits and price differences were much less important. Stokes did not put it in this way,
but said something the implications of which were the same, that price concessions on
goods bought by richer people had far less effect (he suggested no effect) than those on
goods bought by poorer people (RFH to Henderson, 24 February 1936, in HHP 22A/6).

Third, in his address describing the research programme and its first results
before the British Association in 1937, Harrod extensively discussed its methodo-
logical implications. Fourth, the place of induction and deduction in economic
theory was the topic of the presidential address he delivered before the same
assembly one year later; there, Harrod explicitly mentioned the OERG research
as one of the possible lines of empirical inquiry enabling one to infer some general-
isations as to the entrepreneur’s behaviour (Harrod, 1938, pp.409–10). Consistently
with this methodological stance, the ‘Essay in Dynamic Theory’ was a deductive
analysis based on three axioms, one of which (saving equals investment) was a
truism while the other two were interpreted as empirical generalisations (Harrod,
1939, p.14; see Besomi, 1999, section 5.1). Finally, shortly after the beginning of the
war, Harrod started working on a book on this subject, which was further devel-
oped into his 1956 treatise on Induction (Harrod, The Known and the Unknown
and 1956). In conclusion, even if it is difficult to establish to what extent taking part
in the OERG research affected Harrod’s thought on methodological matters, it
certainly reveals that he was methodologically prepared for it: as Marschak put it.

37 Harrod’s articles, already mentioned in Section 2.1, were published in March and May 1934, while the
research proposal was hinted at in a letter to Henderson written on 11 June 1934 (HHP 22 A/6).
Harrod... although not seriously engaged himself in empirical research (except as a member of the 'Economists Research Group' which interprets the 'behaviour of entrepreneurs') [holds] methodological views... such as to favour the type of work pursued hitherto by the Institute [of Statistics] (Marschak to Willitis, 28 April 1939, in RAC RF 1.1, Series 401S, Box 75, Folder 991).

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