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THE MARGINALIST CONTROVERSY

Published in Handbook of Economic Methodology (J. Davis, W. Hands and U. Maki eds, London, Edward Elgar, 1997, p.558-562)

Between 1946 and 1953 the American Economic Review (A.E.R.) published several papers on the relevance or otherwise of the « marginalist » theory of the firm (the term « neo-classical » was not yet in popular use). The leading articles were by Lester (1946) and Machlup (1946), who took aggressively opposite stands. This collection of papers constitutes the « marginalist controversy » *stricto sensu*. In a broader sense, which will be the sense considered here, the expression « marginalist controversy » also refers to closely related discussions over the theory of the firm that took place for a longer span of time (from 1939 to around 1955), and in a variety of English and American journals and conferences. The « full-cost pricing » (FCP) controversy, which was started by the Oxford economists Hall and Hitch (1939), is the single most important of these related discussions. Although the economics involved in the « marginalist controversy » antedates modern industrial organization and will strike one as both rudimentary and outdated, there are at least two reasons why not only historians, but also methodologists and philosophers of science should be interested in them. For one, they influenced the thinking of those writers, like Machlup and Friedman, who reorganized the methodological defence of orthodox economics around « irrealism of assumptions ». For another, and more importantly, these debates provide for illuminating case studies: they illustrate the economists' decisions about the content and boundaries of the received theory when the latter is faced with unfavourable evidence.

The 40s and 50s witnessed extensive research on the price-setting behaviour of individual firms. It was pursued partly with a view of giving a more factual basis to the then prevailing theories of imperfect competition (notably, Joan Robinson's marginalist theory in The Economics of Imperfect Competition, 1933), partly in the hope of clarifying macroeconomic and economic policy issues (such as price rigidity in the face of low output, as evidenced in the 30s). The leading study in the field of industrial prices was by Hall and Hitch (1939). It was published along with other findings by Oxford economists and, as Harrod pointed out, shared with them a disquieting feature: all the results of the Oxford surveys appeared to conflict with the received doctrine of the time. Hall and Hitch had used the questionnaire method and gathered an unrepresentative sample of 38 firms; they had found that a high proportion of these firms set their prices in a « full-cost » way. Typically, the company would make an *ex ante* estimate of average cost, as determined by some notion of its « normal » output, and then add to it one or more percentage margins (the « mark-up »). Hall and Hitch said little on how margins vary with demand

conditions. They insisted that this pricing mechanism is a « rule of thumb » and could result in maximum profits by accident only; hence the clash with Robinson's theory of imperfect competition. Hall and Hitch justified FCP on the grounds that « producers cannot know their demand or marginal revenue curves ». Despite their heterodox pronouncements, they were ambivalent towards existing theory, and sketched an alternative account of industrial pricing. That alternative argument is based on the « kinked demand curve », a minor but interesting case of simultaneous discovery in economics. The « kinked demand curve » was independently introduced by Sweezy in 1939 and might already be in Chamberlin. It formalizes the following peculiarity of oligopolistic markets: a price raise will not be followed by competitors and should thus be accompanied by a heavy fall in demand; a price cut will be followed by competitors and can then bring about only a limited rise in demand; accordingly, the demand to the firm exhibits a kink at the prevailing market price. This piece of doctrine can be used to account for price rigidity on oligopolistic markets; it was one of the many answers given to the riddle of the 30's - falling output instead of falling prices. It did not belong to Robinson's « box of tools » but was consistent with her profit-maximization assumption; actually, profit-maximization was required together with the kinked demand curve to derive an account of price rigidity. Hall and Hitch used it that way, in flat contradiction with their claim that firms know nothing about demand.

Various inquiries followed Hall and Hitch's. Part of this work, notably Andrews's Manufacturing Business (1949) and Harrod's non-optimizing model in his Economic Essays (1952), carries with it the heterodox suggestion that profit-maximization should be replaced with the « full-cost principle », to be understood as a novel theoretical construct. However, the more widespread view of the 40s and 50s was that FCP referred to an empirical datum rather than a theoretical principle -- it was a well-evidenced piece of behaviour which raised a problem for the profit-maximizing theory of the firm but was not necessarily in contradiction with that theory. The marginalists respondents, in particular Austin Robinson, Machlup and Heflebower, simultaneously debased the claim that FCP was the starting point of an alternative theory, and argued that FCP as a datum could be reconciled with (sophisticated) marginalism. In retrospect, they were successful in both strategies. The discussion in America came to a rest after 1953, when the conference Business Concentration and Price Policy took place and Heflebower read a carefully designed report which impressed the attendants. On the theoretical side he argued that the « full-costers »' work « short-cuts a deep understanding of the market ». On the empirical side he concluded that FCP evidence is not incompatible with profit-maximization. Although Heflebower had just sketched a reconciling model, the issue was regarded as settled to the benefit of marginalism by the majority of the profession in America. The British story is not so easy to tell, due to the persisting heterodoxy of Andrews and part of the Oxford group, but it is best seen as culminating in A. Robinson's devastating review (1950) of Andrews's Manufacturing Business and the ensuing controversy in the Economic Journal. Around 1955 a majority of British economists had probably reached a conclusion no different from that of their American colleagues but they had seen the matter slightly differently -- more as a

contest between two principles than as an empirical test of marginalism. Elsewhere than in America and England, the FCP controversy was derivative.

The FCP controversy came to be intermingled with the « marginalist controversy » in the narrow sense when Machlup (1946) attempted to answer in the same breath both Hall and Hitch, and the American economist Lester, who had attacked the received theory for reasons of his own. Lester (1946) had been intrigued by the paradoxical consequences of a change in the North-South wage differential in the United States: the employment in some relevant industries had increased more in the South than in the North *after* a minimum wage had been established in the South around 1940, a decision which of course changed relative labour costs unfavourably. Using a questionnaire, he found that the companies' most frequent reactions to increased relative costs were, in that order, to (1) increase production efficiency, (2) implement labour-saving devices, (3) make increased sale efforts, (4) change the price or quality of products, and finally (5) reduce output and employment. Lester was struck by the fact that adjustment (5), which is the competitive adjustment par excellence, came last in the list, and that adjustments (3) and (4), which are predicted by the imperfect or monopolistic competition models, fared just a little better. He interpreted (1), and ambiguously (2), as indicating unexploited profit possibilities before the relative cost change. He concluded that his data shook confidence in marginalism as a whole. Machlup's first answer was to cast doubts on questionnaire data in general on the grounds that questionnaires lead to unrepresentative samples, unnoticed manipulation and semantically ambiguous conclusions. Then, he proceeded to argue that Lester's data, exactly as Hall and Hitch's, established only that the textbook model of short-run profit-maximization under perfect competition was inadequate, but that virtually any other model in the marginalist toolkit could be reconciled with the evidence. He clearly took Hall and Hitch's work more seriously than Lester's, and made some effort to explain how FCP can be reconstructed as a « cartel device » in some cases, and a « clue to demand elasticity » in other oligopolistic contexts. A controversy ensued in the 1946-1947-1948 issues of the American Economic Review. Some of the participants attempted to arbitrate the initial conflict, in particular Oliver, who noted in 1947 that the antimarginalists had at least shaken the marginalist's caricature of a businessman in a continuous state of alert, ready to adjust to any exogeneous change. The Lester-Machlup debate contributed to popularize the notion of the company as making infrequent decisions that are primarily influenced by expectations of its competitors' policies. This is an important insight but little was done to formalize it beyond Machlup's hints. Although no contribution to the AER controversy can be said to be decisive, it can be conjectured that it influenced American economists into thinking that Robinson's and Chamberlin's initial models had to be refined, but that the profit-maximizing framework was flexible enough to accommodate the available evidence.

It is difficult to keep the FCP and AER controversies separate from an ongoing discussion in the 40s and 50s on the shape of cost curves. Most of the literature on FCP either argues on the basis of evidence or just takes for granted that the average

cost curve was flat on the normal operating interval. This explains why « full-costers » were vague about the output level at which average costs were computed in the FCP formula : it simply did not matter. Interestingly, some marginalists, such as Stigler, accepted the empirical claim that average costs are approximately constant. A curious dissenter from this view is Eiteman (1947), who published the results of a questionnaire on average cost curves, and concluded that the businessmen's typical perceived curve is decreasing throughout, i.e., up to the point of full capacity. From this finding and other assumptions it was possible to argue that profit-maximization was refuted. A discussion on Eiteman took place in the AER from 1947 to 1953. It casts light on Lester's related point that reserve capacity might be difficult to reconcile with profit-maximization.

Beside disputing the relevance of questionnaire data and attempting to account for the evidence in marginalist terms, Machlup had sketched a third, primarily methodological defence of the received doctrine. Using the metaphor of the automobile driver, he had claimed that the economist's concepts are helpful only to predict « the probable effect of change », by which he meant « in what direction output, prices and employment are likely to be altered ». Since part of Lester's and Hall and Hitch's work was critically concerned with just that sort of predictions, Machlup's claim in itself did not carry much force. At best, it could serve to reject outside the boundaries of economics that other part of Hall and Hitch's work which was concerned with « rules of thumb » and the procedural side of business decisions. However limited its relevance in the present context, Machlup's 1946 methodological pronouncement is important because it is perhaps the first dramatic occurrence of a doctrine which has later become influential throughout economics. In 1955 Machlup formulated it more precisely: economics aims at deriving observable changes in prices and quantities from observable changes in exogeneous variables (e.g., demand or technology); theoretical assumptions really act as an « engine of analysis » by making it possible to derive such predictions; there are two kinds of theoretical assumptions in the marginalist theory of the firm, one is fixed and truly fundamental (profit-maximization), the others can be freely modified depending on the context (the firm's competitive time, its cost curve and time-horizon). Machlup's assignment of the aim and scope of economics in 1955 is sometimes wrongly attributed to Friedman, who was never as precise about what counts as a consequence and what counts as an assumption. On the other hand, Machlup's wording in 1955 reveals a strong influence of Friedman's 1953 essay. The paper has an instrumentalist undertone that was absent from the eclectic piece against Lester. It makes a spectacular application of the « irrationalism of assumptions » thesis by suggesting that the economist should empirically check neither his fundamental assumption *nor even his auxiliary assumptions*: the firm's competitive type is a matter for theoretical decision rather than empirical investigation.

We have just shown that the « marginalist controversy » constituted one of the sources of an influential methodology, a connection particularly stressed in Mongin (1986). There have been other interpretations. Lee (1984) emphasized the connection

with the « reformist » theories of the firm that flourished from the late 50's onwards: Baumol's sales maximization hypothesis, Marris's « managerial » conception, Cyert and March's « behavioral theory of the firm », to cite a few. It is correct to note that these writers were acquainted with, and to a significant extent influenced by, the discussions just reviewed. However, it would be a mistake to believe that these writers were representative of the majority of the economics profession. Such drastic adjustments in the theory of the firm were not *needed* to resolve the « marginalist controversy ». Contemporary textbooks sometimes emphasize the connection between the latter and the early work on oligopoly by Bain, Modigliani and Sylos-Labini, around 1960, which directly anticipates on today's « theories of industrial organization ». Again, it is a fact that these writers learnt something from the « marginalist controversy » but it would be incorrect to think that they provided it with its final episode. As emphasized in Mongin (1992), the controversy had been resolved earlier and in terms of standard pre-war marginalism.

To illustrate, consider Heflebower's account of FCP. He showed that this pricing mechanism was not acknowledged beyond doubt outside the following contexts: (i) oligopoly with a leading firm whose cost figures are borrowed by followers; (ii) oligopoly with explicit agreement to use conventional cost figures; (iii) oligopoly with implicit agreement such as was involved in cases brought to the courts. He also effectively summarized the scattered evidence on margins: he showed that they varied through time, roughly in agreement with demand conditions as reflected by the business cycle. He also found that *actual* selling prices departed from full-cost computations in a cyclical way. All this is truly good empirical work given the standard of the time and the available industrial statistics. What is surprising is that Heflebower made so little of his findings. He made no serious effort to tighten the connection between FCP and collusive oligopoly. His view of demand was influenced by a famous formula in Joan Robinson's analysis of monopoly: $(P-MC) / P = 1/e$, where P is price, MC marginal cost and e the price-elasticity of demand. The left-hand side defines a concept of margin, which the right-hand side says is influenced by demand in a certain way. It would have been possible to subject this very precise formula to a test. Heflebower did not even make a coarse attempt at such a test. He was satisfied with the comment that contrary to some of the « full-costers »' predictions, the received doctrine *somehow* took demand into account: hence the former were refuted and the latter was borne out! These were the conclusions that roughly speaking emerged from the 1953 conference. The FCP debate is a fascinating example of inconsistent application of empirical methods to economics.

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