2 CHANGE IN OUTPUT IN KEYNES'S
*TREATISE ON MONEY*¹

Edward J. Amadeo

1. Introduction

Volume XIII of Keynes's *Collected Writings*, published in 1973, contains an important document for the study of the transition from the *Treatise on Money* (TREATISE) to the *General Theory of Employment, Interest, and Money* (GENERAL THEORY): a note from five surviving participants of the Cambridge "Circus"² describing their relationship with Keynes, the nature of their criticism of the TREATISE, and their role in the development of the ideas leading to the GENERAL THEORY. The main criticism of the Circus was directed towards the assumption of a given level of aggregate output underlying the TREATISE's fundamental equations. The note attacks the assumption of given output as rendering the TREATISE somewhat irrelevant in light of the severe unemployment facing Britain in the 1920's and especially after 1929. The note also suggests that the Circus, by pointing out to Keynes the consequences of his assumption, played a fundamental part in the transition towards the GENERAL THEORY.

The survivors' view became the conventional view. Moggridge, the editor of Keynes's *Collected Writings*, was responsible for transforming the Circus survivors' view into the official view. Moggridge's arguments may be summarized as follows. First, the specification of the fundamental equations is based on the assumption of given output thus the book's conclusions are "not quite relevant to the conditions of 1930-31" (Moggridge, 1976, p. 89). Second, this assumption makes the equations inconsistent with the "verbal discussions concerning movements in output" (p. 89) contained in the TREATISE itself. Third, Keynes came to realize the shortcomings of the assumption after the book was published through the comments of Hayek and Robertson and, most importantly, the criticism of the Circus (p. 88). Finally, the movement from the TREATISE to the GENERAL THEORY began after these criticisms with Keynes trying to "recast his analysis in terms of changes in output" (p. 90).

The purpose of this paper is to argue that Keynes was, in fact, quite aware of the assumption of given output in the formulation of the fundamental equations and clearly considered changes in output (and unemployment) to be a relevant problem and that given the method of analysis used in the book, the specification of the equations is perfectly consistent with and, indeed, adequate for, the study of changes in output. This implies that the study of changes in output per se does not differentiate the TREATISE from the GENERAL THEORY: the method of analysis on which the study is based is the real differentia.²

J. B. Davis (ed.), *The State of Interpretation of Keynes*  
That Keynes considered changes in the level of output and unemployment a relevant problem is clear from his contributions to debates on policy issues in the 1920's. He opposed the return of Britain to the gold standard at prewar parity on the grounds that it would require a reduction in money wages which could only be achieved through "deliberate intensification of unemployment" (Keynes, 1931, p. 252). His 1929 pamphlet "Can Lloyd George Do It?" is yet another example of a discussion of changes in the levels of output and employment. In what follows, however, we shall concentrate on the consistency and adequacy issues rather than the relevance one.

Recently the notion that Keynes was unaware of the given output assumption has been challenged. Milgate (1983) has pointed out that Pigou, in a letter to Keynes in 1929, inquires if what he "argue[s] impl[ies] that changes in Bank rate cannot affect E [real income] or O [output]?" (JMK, XXIX, p.5). Likewise, Hawtrey, in his comments on the proofs of the TREATISE, argues that "Mr. Keynes's formula only takes account of the reduction in prices in relation to costs, and does not recognize the possibility of a reduction of output being caused directly by a contraction of demand without an intervening fall of price" (JMK, XIII, p. 152). Keynes read and made comments to Pigou's letter; he was also aware of Hawtrey's comments although he only answered them after the publication of the TREATISE.

Keynes was aware of the assumption before the book was published and there is obviously no dispute with Moggridge's first argument that the assumption permeated the specification of the equations. However, changes in output were the subject matter of a few chapters of the TREATISE. Kahn, himself an eminent participant of the Circus, admits that it was an error to conclude that changes in output were not discussed in the book. He writes: "I do not see how we could have attributed to Keynes the assumption of inelastic supply, and I am completely mystified by the questions: a) why we did not see this by ourselves; b) why it did not come out in the course of the discussions between Keynes and me" (Kahn, 1984, p. 108). It also was to "come out in the course of the discussions" between Keynes and Joan Robinson, and Keynes did not quite accept the criticism.

The fact of the matter is that Book III of the TREATISE -- in which the fundamental equations are formulated -- is based on the assumption that the level of output is given; Book IV, however, provides a discussion of credit cycles and has an explicit analysis of changes in output in which the equations play a central role.

The paper is organized as follows. After presenting some conceptual elements in section 2, we shall present a simple model for deriving the fundamental equations in section 3. This is followed by a discussion of how the equations can be used to study changes in output in section 4. Finally, section 5 provides a brief exposition of the steps needed to go from the TREATISE's model to that of the GENERAL THEORY.