ASPECTS OF A NEW CONCEPTUAL INTEGRATION OF KEYNES'S
TREATISE ON MONEY AND THE GENERAL THEORY:
LOGICAL TIME UNITS AND MACROECONOMIC PRICE FORMATION

by

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ABSTRACT

The paper reviews Keynes's original analysis of macroeconomic price formation in the *Treatise on Money* and describes how Austrian time concepts permeated his theory, especially of the 'Credit Cycle'. With the abandonment of these time concepts in the *General Theory* in favour of a Marshallian short-period framework, the effect was to exclude one important explanation of macroeconomic price formation that was essential to Keynes of the *Treatise*--- the link between investment and inflation. It is in the writings of such Post-Keynesian economists as Augusto Graziani that such a relation still prevails.

Keywords: Austrian time concepts, Credit cycle theory, Macroeconomic price formation, Keynesian period
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1. Introduction

As is well known, time and price formation are inextricably linked in research developed along Austrian lines. From Böhm-Bawerk to Hayek, the Austrians' analysis of logical time units, especially in their theories of capital and interest, served as the basic building blocks for their micro and macroeconomic models of price determination that were developed during the half-century between the years 1890 and 1940. These developments were, perhaps, of greatest importance at the macroeconomic level since the work of such important Austrian writers, as Mises and Hayek, directly impacted on the then emerging literature on the business cycle. However, this latter connection with aggregate price formation and the business cycle was a development largely made possible owing to the innovative research first undertaken by Wicksell at the turn of the twentieth century. In his work, Wicksell had tried to explain the evolution of aggregate prices as a result of changes in the time structure of production originating from a state of disequilibrium in the capital market. Advancing on Wicksell's earlier insights, during the first few decades of the twentieth century, a number of 'over-investment' writers (as Haberler (1937) was to describe them) extended the research to the new area of business-cycle theory.

The notion of 'time structure of production' was a terribly elusive concept that ultimately did not withstand successfully the test of correspondence with real world phenomena. This failure was so despite the heroic attempts to salvage it by such well-known Austrian economists as Machlup (1935). Yet, these original developments by Wicksell were of heuristic importance and did serve to spawn a complete literature on aggregate price formation and the business cycle whose subsequent developments have, in part, been summarized in Seccareccia (1990, 1992). However, in addition to the Austrian and Swedish followers of Wicksell, this view also came to permeate the theoretical work of certain British writers, of whom the most distinguished was Keynes himself in his *Treatise on Money*.

The object of this article is to describe the extent to which this Austro-Swedish view of the time profile of production became implanted in Keynes's early thought, before the publication of his most celebrated work in economics, and to show what insights this knowledge may bring to an understanding of his theory of macroeconomic price formation in both the Treatise and the General Theory. In this regard, the paper contributes directly to the broader ongoing debate between those scholars who argue that there was a fundamental continuity in Keynes's thought between his *Treatise on Money* and the *General Theory* (cf. Amadeo 1989, Marcuzzo 1998, and Fontana 2002) and those who emphasize that there was an underlying methodological break (see, inter alia, Ertürk 1998). By studying closely Keynes's macroeconomic analysis of investment and price formation within the temporal analytical framework specific to each of his two major works, it will become apparent that the *General Theory*'s break with previous writings, especially the *Treatise*, has been considerably overstated. Moreover, the profoundness of Keynes's theory of macroeconomic price formation in the *Treatise* was such that it still permeates some current-day post-Keynesian writings, of which the work of Augusto Graziani (1981, 1987, 1990, 1994) represents perhaps the most developed version of Keynes's *Treatise* analysis that is embedded in a comprehensive model of endogenous money and monetary circulation.
2. Keynes's fundamental equations of the Treatise: an exposition

Keynes's formulation of the fundamental equations in the Treatise on Money reflects a trend that became fashionable especially among continental writers, well versed in the work of Wicksell, who had become dissatisfied with traditional quantity theory analysis that focused on a single overall price level and imposed an aggregative treatment of monetary influences. As Wicksell himself and many of his nineteenth-century predecessors of the loanable funds theory had surmised, it was the relation between saving and investment that was the primary source of dynamic change in the price level. Keynes's treatment of the fundamental equations of the Treatise was one among many early twentieth-century attempts undertaken by disparate continental writers, such as Lindahl and Hayek, of providing a more disaggregative approach in terms of consumption and investment-goods prices. All of these approaches, including that of Keynes in the Treatise, focused on the investment-saving relation in explaining the short-run oscillation of prices.

Keynes's knowledge of this continental literature was partial and possibly came by way of Robertson. As can be demonstrated by the evidence provided by Moggridge (1973), Keynes had probably been introduced to some of the ideas of the continental over-investment theorists, such as Spiethoff, Labordère and Aftalion, by his reading of Robertson's fellowship dissertation which was submitted to Trinity College, Cambridge, in 1913 and which was later published as A Study of Industrial Fluctuation in 1915. Indeed, in a paper read to the Political Economy Club in London on December 3, 1913, Keynes presented his first important ideas on industrial fluctuations. Like the other over-investment writers of the period, he began his paper by criticizing Fisher's quantity theory explanation. Any movement in cash reserves (and, thus, in the money stock) is, according to Keynes, "a symptom but it is not at all a fundamental cause." The mainspring of cyclical fluctuations is, instead, investment spending as it affects activity "in those industries which are chiefly concerned in the production of capital goods." Or, more precisely, it is the level of investment spending either set in relation to the community's savings or financed through bank credit, which governs the process of expansion and contraction in economic activity. Keynes (1913) writes:

"Of the resources of the community earned or available within a given year, a certain part is saved, a certain part is spent, and a certain part is held, so far as the individual is concerned, in suspense---it is kept as free resources to be spent or saved according as future circumstances may determine. (...)

Hence, in any year the value of material goods actually utilised for capital works may run ahead of or fall behind the value deliberately saved, according as the advances of bankers are made, to a greater or less extent, for the purpose of capital expenditure. I should say that there is a tendency to over-investment (...) when the proportion of the funds in the hands of the bankers which is fixed in permanent capital works is increasing." (J.M. Keynes, Collected Writings, Vol. 13, 1973: 4-5).

Yet, though the terms 'saving' and 'investment' were very loosely defined in this early paper, and may not necessarily let preclude the Robertsonian conceptions of saving or 'lacking' (including what was later to become Robertson's 1926 concept of 'abortive lacking' or hoarding), from the above quotation one may legitimately argue that an embryo of the Robertsonian analytics was already in place in Keynes's pre-W.W.I writings. Moreover, as did Spiethoff (1923), Robertson (1915) and most over-investment theorists of the period, Keynes also placed great emphasis on the role of inventions and the opening up of new markets in explaining the periodic spurs in investment spending.
Except for this very early paper relating to business-cycle questions, Keynes did not return to this matter until after the publication of his *Tract on Monetary Reform* (1923), the latter book being an attempt to understand the early post-hoc monetary phenomena within the Marshallian framework of the quantity theory. In conformity with what has also been emphasized by numerous historians of economic thought, such as Eshag (1963) and Patinkin (1976), Keynes's research in monetary theory was very deeply rooted in the work of other well-known Cambridge economists of the period and advocates of the cash balance version of the quantity theory, notably Marshall and Pigou. As of 1924, influenced by some of Robertson's dynamic analysis, he quickly returned to his pre-war interest on business cycle theory. As in his 1913 paper, Keynes (1924, 1928) argued that, broadly speaking, inflation is a symptom of over-investment, that is, a result of the recurrent imbalance between the overall structure of demand and output. In Keynes's own terms, general over-investment takes place whenever the flow of income or 'buying power' (that firms transfer to households during a given period) exceeds the stream of available 'liquid' consumption goods. This state of general over-investment, which should be distinguished from any specific form of 'misdirected' investment, can occur only because of the existence of credit. In effect, an elastic monetary system allows the value of investment to exceed the money value of these 'liquid' goods that the community has abstained from consuming.

Keynes' formulation of what he was to describe later as a 'monetary theory of production' depicted productive activity as taking place within two main branches --- the sector producing 'liquid' or 'available' output of consumption goods and the one supplying the 'non-available' output of investment goods. The liquid or available output was composed of both the physical commodities flowing from the final stages of production during a given period and the flow of services of any consumer durable good, while the non-available output was made up of the net increment in fixed and working capital (i.e., the net increase in the production of machinery and equipment, in inventories, and of goods in process at the earlier stages of production).

The critical concept in Keynes's *Treatise* which offers a direct link with Robertson's ideas and which was widely debated before, during, and after the publication of his book is his definition of saving. Because of his concern with the inequality of investment and saving in determining the price level, Robertson had originally proposed an operational concept of saving defined in relation to his notion of an expenditure lag, the latter time-unit being defined in terms of "finite but indivisible atoms of time to be called 'days'." From this, Robertson had postulated a definition of saving that took into account his hypothesized expenditure lag:

\[ S_t = Y_{t-1} - C_t \]  

where \( Y_{t-1} \) is the flow of income of the preceding period, while \( C_t \) is the current period's consumption expenditures. In the *Treatise*, Keynes deviated slightly from the Robertsonian definition of saving. In accordance with the Marshallian concept of normal equilibrium (cf. De Vroey 2000), he defined it instead as the difference between the flow of income (which can be considered to be 'normal' by the factors of production) and the current period's consumption expenditures:

\[ S_t = Y^* - C_t \]  

where, according to Keynes (1930), \( Y^* \) is 'normal' income (it being the sum of factor earnings, including the entrepreneurs' 'normal' remuneration) as against current income, \( Y \) (which is the *ex post* receipts accruing to all the factors of production).
Following the Marshallian tradition, the difference between the actual remuneration, \( Y \), and the 'normal' remuneration, \( Y^* \), is termed pure 'profit', \( A \), or quasi-rent (cf. Opie 1931). This value can be either positive or negative. Indeed, since by definition the sum of receipts must be equal to the gross expenditures in the system \( Y_t = C_t + I_t \) and since, from equation (2) above, \( S_t = Y^* - C_t \), then according to Keynes (1930), we get that "the value of the increment of the wealth of the community is measured by Savings plus Profits" \(^{11}\) [Emphasis in original]; i.e.,

\[
I_t = S_t + At. \quad [3]
\]

In Robertsonian terms, \( S_t \) is the 'spontaneous lacking' and \( At \) is the 'imposed' or 'automatic lacking'. \(^{12}\) Given Keynes's definition, it follows that the value of investment could differ from saving, unless the expected 'normal' incomes are realized by entrepreneurs during the period.

From Keynes's concept of saving, one can easily arrive at the First Fundamental Equation of the Treatise. As has been shown elsewhere (Seccareccia 1983, 1984), his first fundamental relationship can be derived without relying upon any such ambiguous aggregative measures of output and prices 'in general'. Unfortunately, Keynes's Treatise was very much plagued by such controversial concepts as 'output in general', the 'price level of output as a whole', Wicksell's 'natural rate of interest', and the aggregate 'coefficient of efficiency'. Despite Keynes's own acute criticism of Robertson for using similar aggregative concepts, \(^{13}\) he was unable to break away completely from the quantity theory framework which permeated both Robertson's 1926 book and Keynes's own previous analysis in the Tract. In the Treatise, Keynes's questionable aggregative analysis became most apparent when deriving his First and Second Fundamental Equations by postulating additivity of heterogeneous outputs. He had assumed namely:

\[
QT = QC + Qi \quad [4]
\]

where \( QT \) is output 'in general' and, in this two-sector world, \( QC \) and \( Qi \) are outputs of the consumption and investment-goods sectors respectively. With the exception of the trivial one-commodity case, numerous economists during the early thirties pointed to the obvious conceptual problem of aggregating output in a two-sector model of the type described in Keynes's Treatise. Among these we find Hayek (1931) and Hansen (1932), who argued that Keynes had "an entirely irrelevant criterion" for measuring output. \(^{14}\) Hart (1933) emphasized the conceptual impossibility of specifying "a bill of goods for which (an index) so developed would be a price relative, owing to the lack of a simple common denominator in the expressions ...." \(^{15}\) It is only in the General Theory that Keynes was to tackle the problem of aggregation seriously and to propose what he felt to be a more promising method of measuring 'output in general' in terms of labour units. \(^{16}\)

The problem of measurement notwithstanding, Keynes arrived at his particular formulation of the First Fundamental Equation by means of his definition of saving. Indeed, since \( S = Y^* - PCQC \) and \( QT = QC + Qi \), then we get that:

\[
PCQC = \left( Y^* / QT \right) (QC + Qi) - S. \quad [5]
\]

Assuming, as Keynes did implicitly in the Treatise, that the share of 'normal' income, \( Y^* \), accruing to the investment-goods sector is equivalent to the share of investment out of total output \( (Qi/QT) \), and defining the multiplicative expression of these values \( Y^*(Qi/QT) \) as the cost of production of investment goods, \( I' \),
then equation [5] above becomes

\[ PCQC = \left( \frac{Y^*}{QT} \right)QC + (I' - S) \] [6]

or, on a per unit basis,

\[ PC = \left( \frac{Y^*}{QT} \right) + \left( \frac{I' - S}{QC} \right) \] [7]

which is Keynes's First Fundamental Equation.

As presented by Keynes in the Treatise, this equation is but an identity that merely classifies in a specific fashion an actual economic phenomenon retrospectively. Indeed, it is a snapshot or \textit{ex post} portrayal of an entire process that has already taken place during a certain lapse of time. Given the system’s history, the first term of the fundamental equation incorporates for Keynes all the relevant information that would have gone into formulating the expectations of economic agents at the beginning of a unit-period if all parameters of the system remained unchanged,\(^\text{17}\) while the second term reports what actually took place during the period. Whenever the flow of income in the investment-goods sector (I’), financed by credit creation, exceeds the quantity of that amount of purchasing power which the community has withheld from spending on consumption during the period, then the price of consumption goods, PC, must exceed its 'normal' value given to us by the first term of the fundamental equation. A windfall profit, AC, will thus have arisen in the consumption-goods industry.\(^\text{18}\) In fact, since AC is, by definition, the difference between total sales proceeds and costs of production in the consumption-goods industry, we have

\[ AC = PCQC - Y^* \left( \frac{QC}{QT} \right) \] [8]

from which we then get

\[ AC = \left( \frac{Y^* - S}{Y^* - I'} \right) = I' - S \] [9]

which is, of course, the second term of the First Fundamental Equation.

In much the same way, Keynes also derives his Second Fundamental Equation of the Treatise. If one would be prepared to abstract from Keynes’s conundrum of aggregating output (as in the one-commodity case), we can just as easily obtain his equation for the price level of output 'in general':

\[ PT = \left( \frac{Y^*}{QT} \right) + \left( \frac{I-S}{QT} \right) \] [10]

where I = PIQI, the money flow of investment.\(^\text{19}\) Just like the First Fundamental Equation, this latter relation describes the basic underlying statement of the Treatise: total proceeds going to entrepreneurs in the system must be made up of two components, the expected proceeds (contained in Y*) and the unexpected proceeds or windfall profits (defined by I-S).\(^\text{20}\)

These two equations are 'instantaneous pictures', to use Keynes's expression (1936: vii), taken at a given moment in time. In themselves, they are no more dynamic in character than the 'static' quantity-theory equations of which Keynes was to become so critical. Indeed, as was emphasized in the Treatise:

" ... all these equations are purely formal; they are mere identities; truisms which tell us nothing in themselves .... Their only point is to analyze and arrange out material in what will turn out to
be a useful way for tracing cause and effect, ...." (Keynes, 1930, Vol. I, p. 138).

To go from mere tautologies to behavioural relations, Keynes makes a crucial assumption concerning his narrowly-defined term ---- 'profit'. For a system to be at rest, he concludes that this term should have a zero value in equilibrium. That is,

\[ AC = AI = A = 0 \]

where \( AI \) and \( A \) are profits in the investment-goods sector and total profits respectively.\(^{21}\) Keynes (1930) was thus able to establish, by means of this strict Marshallian assumption for long-period equilibrium, the connecting link between the first and the second terms of the fundamental equations. This is a link which, as Shackle (1968: iv-xviii) argued, forms the basis of Keynes's sequence analysis --- a technique that he had borrowed from both the Swedish writers and from Robertson (1926).\(^{22}\) Any discrepancy between the volume of saving and the value of investment sets a process in motion. However, contrary to the Marshallian and, indeed, the classical tradition, as will be shown below, the time path that the system was presumed to follow was not a stable one. As soon as a discrepancy arises between \( I \) and \( S \), this would trigger, for a time, a (constrained) cumulative process of the Wicksellian variety. This time path is carefully described in Keynes's analysis of the 'Credit Cycle' in the *Treatise* of which we shall now seek to provide an outline.

3. Keynes's theory of the inflationary process and the credit cycle

Keynes's fundamental equations of the *Treatise* allowed him to provide a particular typology of the possible sources of inflationary pressures. These sources pertain to either the first or second terms of the fundamental equations. To understand Keynes's analysis, let us begin with some more definitions found in the *Treatise*:

- \( W^* \) = the rate of (normal) earnings per unit of human effort,
- \( a \) = the coefficient of efficiency,
- and, \( w^* \) = the rate of efficiency earnings,

such that \( w^* = W^*/a \) whereby \( w^* \) can be considered as the normal costs per unit of output. In \( W^* \), there would be included not only wages, salaries and supplementary labour income, but also dividends, interest payments by firms on their longer-term debts, and other elements of 'normal' return. At the same time, one would exclude windfall gains, some of which would emerge *ex post* as business retained earnings. Now, since \( a = QT/LT \), we then have that:

\[ w^* = W^*/(QT/LT) = (W^*LT)/QT = Y^*/QT \] \[12\]

From this, we can then modify appropriately the fundamental equations of the *Treatise*. For instance, the Second Fundamental Equation becomes:

\[ PT = W^*/a + (I - S)/QT \] \[13\]

with the condition for long-period equilibrium being that:

\[ PT = w^* \] \[14\]

As Keynes states it, "the long-period or equilibrium norm of the Purchasing Power of Money is given by the
money rate of efficiency earnings of the Factors of Production; whilst the actual Purchasing Power oscillates below or above this equilibrium level according as the cost of current investment is running ahead of, or falling behind, saving." (Keynes, 1930: Vol. I, 152-53).

Keynes’s discussion of the long-period norm is pure Marshallian comparative statics. Indeed, he does not attempt to offer any explanation of how the transition between equilibrium states takes place. For any "coup de main on the part of Trade Unions", a 'spontaneous' rise in $W^*$ brings about a proportional shift in the long-period norm (Keynes, 1930: Vol. I, 157). Similarly, a change in the coefficient of efficiency, $\alpha$, due to technical change, would result in an inverse causal change in $PC$ or $PT$. In general, therefore, the trend value or long-period norm of the price level is modified as a result of a 'spontaneous' or 'induced' change "either in the method of fixing wages or in the coefficient of efficiency." (Keynes 1930: Vol. I, 157) Keynes dubs this type of inflation (or deflation), which affects the first term of the fundamental equation, 'Income inflation'. The form of its movement can be described as a non-oscillatory once-and-for-all disturbance in prices. Diagrammatically, this movement can be portrayed as shown in Figure 1 below.

In the figure below, prices are assumed to oscillate around a trend value, $w^*$, unless some exogenous disturbance in money wages shifts the long-term value from $w^*$ to $w^*$. Yet, Keynes (1930) provides very little analysis of the transition phase. Presumably, an increase in $W^*$ would affect not only the first term of the fundamental equations but also the second via its impact on the cost of producing investment goods, $I'$. Given this type of obvious interdependence, how then can the system reach a new long-period position? No answer can be found within this comparative static framework that Keynes, unfortunately, was also to adopt in the General Theory. What we are told is merely that a new long-period norm ought to be the outcome of the process.23

**INSERT FIG. 1 APPROXIMATELY HERE**

While Keynes discussed in some details the possibility of an exogenous rise in remunerations, at one point in Vol. II of the Treatise he argues that the money rates of efficiency earnings are a 'sticky' factor in the fundamental equations, and thus considering such disturbances to be of relatively minor theoretical and practical importance (Keynes, 1930: Vol. II, 205). It is primarily the oscillatory movement around this trend path that is of critical significance. In other words, Keynes's prime concern in the Treatise is the dynamic Wicksellian process analyzed within a business-cycle perspective that had become fashionable during the inter-war period. In agreement with the work of the over-investment theorists, behind this cyclical movement in prices and output is the critical role played by investment. Keynes was to label this accompanying seesaw movement in prices and output as the regular 'Credit Cycle'. As will be shown, contrary to conventional wisdom, therefore, Keynes's Treatise presents a fairly sophisticated model of the business cycle borrowed from the Austro-Swedish writers of the period and from Robertson. Hence, even a superficial reading of the Treatise can never substantiate the view put forward by a number of orthodox writers that:

"... the Treatise leads to a very strained reading of what seems to be a fairly straightforward example of pre-Depression thinking on business cycles. The main objective of the book is to try to understand fluctuations in economic activity about a secular trend in which real magnitudes are determined by the real considerations of neoclassical value theory and in which nominal prices are governed by the quantity theory of money." (R.E. Lucas 1980: 699) 24
Nothing can be further from the truth than this textbook interpretation that depicts Keynes's *Treatise* within the confines of some Patinkinesque dichotomy between the monetary and real sector. Despite its many shortcomings, as a number of writers have pointed out (see Bellofiore 1992, and Realfonzo 1998) Keynes's work held a fully-integrated view of money and production which even Hawtrey (1932: 359) at the time had quite facetiously described as a "non-monetary theory of money." This integration is best revealed in Keynes's analysis of the "investment factors" underlying his theory of the Credit Cycle. In much the same way, the traditional portrait of the *Treatise* in which is supposedly assumed, as Moggridge (1992: 484) presents it, "a 'full employment' level of output with the adjustment to monetary influences occurring through changes in prices" is also fundamentally problematic. As we shall see, a closer scrutiny of Keynes's formal model of the "Credit Cycle" in the *Treatise* would suggest that the mechanism of employment and output adjustments was very much there, although not emphasized to the extent found in the *General Theory*. In order to dispel any doubt about the inaccuracy of the above-mentioned interpretations of the *Treatise*, it becomes essential to provide a more precise description of his analysis of the Credit Cycle.

For Keynes, as for the over-investment writers of the period, the initiating cause of the Credit Cycle could be any one of a number of exogenous non-monetary disturbances that might modify entrepreneurs' expectations of what is the 'natural rate of interest' (to use Wicksellian terminology) or, simply, the rate of profit. For instance, a technical innovation, a war, or even a shift in expectations about the future course of prices, may lead to anticipation of a higher rate of profit. A change in any of these parameters would drive the system out of its long-period equilibrium norm, of $PC = Pr = w^*$, and would result in a divergence between investment and saving. In all likelihood, this increased I or I' would be financed by means of credit-money created endogenously within the banking system. Alternatively, and anticipating somewhat his monetary analysis in the *General Theory*, this increased investment may also be financed, Keynes (1930: Vol. I, 302) argues, "almost unnoticed, out of the general slack of the system, or may be supplied by a falling off in the requirements of the Financial Circulation without any change in the total volume of money." In either case, Keynes assumes a fairly elastic supply of money.

In the *Treatise*, Keynes classifies Credit Cycles into three Lindahlian categories that were in vogue during the late 1920s. The first and simplest model (to be named Model I), which may have misled writers to believe that Keynes had a full-employment model, is that in which investment is exclusively in fixed capital and total output remains constant, so that what essentially occurs is a redistribution of resources in favour of investment-goods production. Given these restrictive assumptions, the effects of a disturbance can then be easily traced out.

Let us assume that the exogenous shock affecting the relationship between the 'money rate' and the Wicksellian 'natural rate' occurs in period t0 and that, during the period, firms are able to obtain the necessary credit advances needed to finance investment in excess of 'available' saving. For convenience, we shall define our time-unit, t, as the period of time required by entrepreneurs to acquire the relevant information originating in the capital markets, obtain the necessary bank financing, and take the decision regarding investment. For analytical purposes, this unit period t would be considered similar to the Robertsonian 'day' or the Hicksian 'week', and would serve as our reference unit. If such an exogenous increase in the 'natural rate' were to occur, in period t1 factor resources previously employed in the consumption-goods sector are now suddenly withdrawn from the latter and shifted to the production of investment goods. Concurrently, as firms attempt to attract resources from the consumption-goods sector, the prices of investment goods will also be bid up in some proportion to the endogenous flow of credit-money. We know, however, that the production of both consumption and investment goods can neither decline nor increase instantly. For a time,
goods in process will continue to flow out of the consumption-goods sector. If we further assume, for simplicity of exposition, that firms do not hold any inventories of the various goods at period to, then output will not decline in the consumption-goods sector before one full period of production of the consumption goods has elapsed. As a result, unless wages rise in either sector, consumer prices will start to increase only after one full period of production of the consumption goods that we shall assume to be equal to, say, two of our unit-periods.26 The analytics of this is depicted in Figure 2. Panel A shows that prices will change in relation to movements in the composition of output, as represented by changes in the structure of employment in Panel B. Indeed, from the beginning of the second period of production in the consumption-goods sector (at t3) until the end of the period of production of the fixed capital (at, say, t6, in which case we are arbitrarily supposing the latter good's period of production to be five unit periods), consumer prices will rise ultimately by the amount by which \( I' \), the cost of production of the new investment, exceeds the flow of saving, S.

**INSERT FIG. 2 APPROXIMATELY HERE**

In other words, what Keynes was saying was that, given the assumption of constant output, and given money rates of earnings, any exogenous shift of resources from the production of consumption goods must necessarily bring about a reduction in real consumption by the same amount as the increase in investment. This can come about through voluntary saving at the end of the period of production of the consumption goods (t2), or through 'forced saving' (i.e., inflation) for the remaining period. This constant-output case was perfectly compatible with much of the analysis of the neo-Wicksellian writers of the period (see M. Seccareccia, 1990). In the diagram above, 't1-t3' is the length of time for completing production of consumption goods, 't3-t6' is the length of the period of production of the new investment goods, and 't1-t6' is the period of inflation. However, as shown by the dotted lines in Figure 2 above, the rise in prices of consumption goods during the period 't3-t6' is further influenced by whether or not the coefficients of efficiency differ between the two sectors. Indeed, to the extent that the investment-goods sector is more capital intensive than the consumption-goods sector and, therefore, \( a_i > a_C \), the rate of inflation in \( P_C \) will be higher and the level of total employment, \( L_T \), would be lower than if \( a_i = a_C \). As depicted in the Figure 2, the opposite would be the case when \( a_i < a_C \). Moreover, Keynes also notes that, in this expansionary phase of the cycle, factor remunerations may also rise through competitive bidding by entrepreneurs. Although 'Income Inflation' may also appear during this process of expansion, these rising costs merely shift upwards \( w^* \) to \( w^* \), and thus compound the effects of the underlying 'Commodity Inflation' which is reflected in changes in the second term of the fundamental equations.

From period t6, the process can pursue the following possible time path. If no additional exogenous disturbances come to dislodge the system from its original trajectory described above, then, from the end of the fixed capital's production period, prices will continue to rise even if resources were somehow to move back immediately to producing consumption goods again. As shown in Figure 3, this inflation will persist until another full period of production in the consumption-goods sector has expired. Indeed, by period t8, \( P_C \) reaches a peak and begins to decline until, by period t10, consumer prices would have fallen back to their long-period norm. Unfortunately, Keynes does not explore these different avenues in his original analysis. Essentially, he leaves us at t6 and merely implies that prices should fall subsequently.27

**INSERT FIG. 3 APPROXIMATELY HERE**

Implicit in Keynes's original formulation are the usual assumptions of competitive markets with a high
degree of mobility of factor resources. Otherwise, PC would not necessarily behave in the manner depicted above. Moreover, Keynes's arguments retain a certain level of simplicity only on the assumption that there are two sectors and that within the two industries each competitive firm produces a homogeneous output with a given technology so as to guarantee that the production process within each sector is uniform in length. Between the two sectors, however, it becomes crucial that these lengths differ. Specifically, the length of the period of production in the investment-goods sector ought to exceed that in the consumption-goods sector. If this were not so, then the extent of the 'Commodity Inflation' would be less clear.

While Keynes's first model of the credit cycle (that we have just sketched) may tend to corroborate the view that the Treatise still stood very much in the Wicksellian constant output (or full-employment) world, the analytical framework of his second model clearly sets out the distinguishing characteristic of Keynesian thought. Indeed, while he begins with the same investment decision as the initiating cause in both Models I and II (i.e., investment in fixed capital), total output and employment is assumed to vary in the latter case. He believes this to be a much more reasonable supposition since workers cannot be shifted from sector to sector "at short notice" as was assumed in Model I. In order to introduce more realism into his model of the Credit Cycle, Keynes (1930) thus makes the assumption of a fairly widespread "involuntary unemployment" of factors at the initial phase of the cycle.28 He writes:

"This assumes, of course, that the factors of production are not fully employed at the moment when the Cycle begins its upward course; but then that generally is the case, whether as the result of the slump which had ensued on the previous cycle or for some other cause." (Keynes, 1930: Vol. I, 284-85)

In this primary phase of the credit cycle, any growth of employment ought to be reflected in a proportional increase of firms' working capital by an amount equal to a multiple of the money wage. Except for the existence of a minor Robertsonian expenditure lag, as the overall wage bill rises, prices of consumption goods will begin to increase almost immediately in some proportion to the growth of employment, since \(I' > S\). Keynes describes this process as the primary phase of the cycle and it has emerged because of the increased investment arising from generally enhanced expectations of profits by entrepreneurs.

The secondary phase of the economic expansion results from a separate set of conditions that are vital to the logic of his variable output model. The buoyant conditions now existing in the consumption-goods sector generate accelerator effects and spill over as further increases in demand for investment goods. This expansion in employment in the investment-goods sector then triggers a still further rise in the demand for consumption goods. The whole process thus takes the form of a cumulative expansion in both prices and employment in all sectors along the lines of the accelerator models put forth by such well-known over-investment theorists as Aftalion (1913).

It is during this phase of overall expansion that, according to Keynes, 'Income Inflation' is most likely to occur since the economy would be approaching full capacity utilization such that "in certain cases specialized factors of production will be fully employed, ...." (Keynes 1930: Vol. I, 288). However, as long as prices are expected to rise further, firms will go increasingly into debt and 'Commodity Inflation' will persist or even heighten with the possible speculative hoarding of goods engendered by these swollen expectations.

The tertiary phase, or what Keynes denotes as the 'collapse', is inevitable and ensues directly from this speculative build-up. In effect, as soon as commodities from the newly produced fixed capital start to gush out at ever increasing rates, the speculative bubble bursts and entrepreneurs begin to face windfall losses.
Keynes provides two reasons as to why this should be so. Firstly, in the product market, the downward pressure on prices coupled with higher money earnings secured in the previous upswing will induce entrepreneurs to reduce production and to disinvest in both working and fixed capital. Secondly, as Keynes (1930: Vol. I, 304) points out, "the evaporation of the attractions of new investments" consequent on the speculative outburst contributes to unhealthy developments in the money and financial markets. Presaging somewhat the analysis in the *General Theory*, the rise in the bearish sentiments in the financial markets will bring about a reduction in the volume of money destined for 'Financial Circulation' and thus a decline in total velocity. Inevitably, these developments would have further negative consequences on employment and investment. In much the same way as in the previous upswing, Keynes concludes that the downswing will also feed on itself, and that "the interval between the beginning of a downward swing on the other side of the equilibrium position and the beginning of the reaction may be connected with the length of [the productive] life of important capital-goods and, more generally, with the duration of the existing contracts between entrepreneurs and the factors of production, ..."29

Diagrammatically, the movement in $P_c$ can be depicted in the following manner. Simplifying the exposition to the case where there is only 'Commodity Inflation' and deflation (i.e., excluding 'Income Inflation' and the spillover effects on wages arising during the secondary phase of the cycle), the movement in prices and output should follow some simple pattern as shown in the diagram below. In Figure 4, we again have that $t_1-t_3 = t_6-t_8 = t_8-t_{10}$ = the composite period of production of consumption goods, $t_1-t_6$ = the period of production of the fixed capital, and $t_8-t_{12}$ = the length of life of the fixed capital equipment and/or the duration of labour contracts. In his algebraic presentation of this model, Keynes shows how, by including the various spillover effects, the fluctuations are smoothed out and come to form a more regular sinusoidal pattern.

**INSERT FIG. 4 APPROXIMATELY HERE**

Finally, his Model III of the Credit Cycle represents to all intents and purposes only a trivial departure from his critical Model II. Indeed, in this third model, factor resources previously unemployed are now committed to the production of consumption goods (including investment in inventories) instead of fixed capital. However, on the logical assumption that the composite average period of production in the consumption-goods sector is somewhat shorter than in the investment-goods sector, the ensuing Credit Cycle will be of a shorter duration and amplitude. Much like Wicksell before him, Keynes considered this third model to be quite characteristic of the Credit Cycle, although not in its purest form, but most commonly as a slight mixture of the latter two.30 From this elaborate analysis, Keynes (1930) concluded that it is the duty of the central banking authorities to mitigate the violent fluctuations in prices and output, typical of the Credit Cycle, via a Wicksellian interest rate policy.

4. The link between the *Treatise* and the *General Theory*: another possible interpretation?

Despite some of the above-mentioned difficulties with his fundamental equations, Keynes's *Treatise* seeks to explain the dynamic properties of the fundamental variable of his system --- investment. Investment is both a creator of profit, in the narrow sense defined by Keynes, and, at the same time, determined by it. Indeed, by means of a rudimentary period analysis, he demonstrates how an initial investment decision normally gives rise to a set of expectations that may trigger further changes in the investment variable over a range of unit periods. These time paths can be sketched out on the basis of Keynes's various assumptions as to the nature of the Credit Cycle.
Aggregate price formation is intimately linked with investment activity. It is primarily by means of the price variable that, for instance, unanticipated changes in profit may take place. In the competitive environment about which Keynes was theorizing in the *Treatise* prices can be shown to follow a sequential pattern of the neo-Wicksellian type. Because of the resulting changes in the composition of output, prices of consumption goods would usually chase, with a certain time lag, any variation in investment-good prices. Movements in investment activity, fuelled by sequential adjustments in expectations, are thus the *causa causans* behind all cyclical variations within Keynes's monetary system of production in the *Treatise*.

This dynamics of the *Treatise* rather forcibly coalesces into the comparative statics of the *General Theory*. While in the former work Keynes attempts to understand how changes in expectations affect movements in investment activity, in the latter book he simply parameterizes this state of expectations and thus takes as given the level of the capital stock. The bulk of the *General Theory* is basically concerned with Marshallian short-period comparative static analysis in the context of exogenous long-term developments. While in the *General Theory* we are brutally left to wonder what determines this state of long-term expectations, in the *Treatise* expectations are themselves endogenous to this wavelike pattern of behaviour inherent to the logic of the Credit Cycle.

Yet, there are obvious connections between these two works. This is especially noteworthy in his discussion of financial markets where the arguments are almost identical. As Marcuzzo (1998) points out, the Keynes of the *General Theory* frequently tries to impress this view on us. For instance, in his Chapter 22 on the Trade Cycle, he makes it reasonably clear that the details of his argument ought to be found in Book IV of the *Treatise* (cf. Keynes, 1936: 319). As much as the *General Theory* was a struggle to escape from received wisdom, it was by no means a significant break from the *Treatise*. Quite generally, Keynes attempts to solve in his *General Theory* any conceptual conundrums that were evident in the *Treatise* without ever rejecting the essence of his former work. Indeed, in addition to proposing a less ambiguous method of aggregation whereby he defines all his 'real' variables in terms of labour units, among many other things, Keynes also substitutes the term "wage-unit" for his rather vague "rate of earnings per unit of human effort", and for Wicksell's dubious "natural rate of interest" he substitutes a purely subjective-psychological variable --- "the marginal efficiency of capital".31

In carefully examining the two works, one acquires the obvious impression that, with some inevitable modifications, the *General Theory* could be incorporated into the *Treatise* perhaps, as an additional volume on the workings of a particular phase of the Credit Cycle. As the diagram below tries to highlight, one essential difference between these two works pertains to the time framework of their analysis. In the presentation of the theory of the Credit Cycle, the *Treatise* takes us through a logical process covering a complete cycle (represented by the full length 'I' in Figure 5). Conversely, in the *General Theory*, he limits himself to the notional space 'J' representing an interval of logical time within which the level of investment, the capital stock and the state of long-term expectations are all given. In this respect, one may conceive the time-space of Keynes's Credit Cycle in the *Treatise* as merely a long sequence of such Marshallian short periods of the *General Theory*32. The investment process, propelled forward by revisions of expectations, supplied the connecting link and allowed time to unfold and proceed unidirectionally as a temporal sequence of such notional states adopted by Keynes in his 1936 work.

**INSERT FIG. 5 APPROXIMATELY HERE**

To first present a static short-period analytical framework where longer-term parameter values are given to us for the major portion of the *General Theory*, then to fall into a discussion of some of the determinants of
these long-term values in his "Notes on the Trade Cycle", and, finally, to refer back to the *Treatise* for some of the details regarding the cycle, all of this seems to be rather clear with regard to the object that Keynes had in mind. His pondering over the *Treatise* at the most discrete moments, so as to ensure that some of the logical errors of the *Treatise* appear to be fully resolved, would imply that Keynes perhaps hoped to erect a more complete behavioural model of the economy applicable to varying conditions and, in particular, to different analytical time frameworks. It is thus in this sense that one can explain Keynes's insistence on constructing a "complete theory of a Monetary Economy" (Keynes, 1936: 293).

Contrary to the *Treatise*, however, why did the Keynes of the *General Theory* emphasize primarily output rather than price adjustments? Was it because the *General Theory* is 'Depression Economics' with Hicksian fix-price assumptions? While there may inevitably be an element of truth in the statement that Keynes became less interested in price movements at a time when output adjustments were of such significant magnitude in the 1930s, there may also be another important reason why Keynes of the *General Theory* placed less emphasis on price adjustments unless, of course, they arose out of changes in the wage-unit.

As various commentators have argued (cf., among others, Lavoie (1985)), inflation in the *General Theory* pertains primarily to the behaviour of wage costs per unit of output. At less than full employment, an increase in effective demand would "spend itself partly in increasing the cost-unit and partly in increasing output" (Keynes, 1936: 303). However, at full employment, he continues: "When a further increase in the quantity of effective demand produces no further increase in output and entirely spends itself in an increase in the cost-unit fully proportionate to an increase in effective demand, we have reached a condition which might be appropriately designated as one of true inflation." (Keynes 1936: 303) Hence, it is a matter of the degree of elasticity of wage changes to labour demand which would ultimately determine whether or not an economy enters a state of 'true inflation'. Whether it be the traditional post-W.W.II Keynesians and advocates of what became the Phillips Curve approach or whether it be some of the more fundamentalist Post-Keynesians who pointed, instead, to the largely 'autonomous' nature of the wage-unit, such as Weintraub (1978), the focus of the analysis of inflation was dramatically narrowed and restricted to what in the *Treatise* was a mere feature of 'Income Inflation'.

This shift of emphasis in favour of 'Income Inflation' and/ or output adjustment (accompanied by the almost complete exclusion of inflation arising because of 'investment factors') may have much to do with the peculiar analytical framework of the *General Theory*. The Marshallian 'short period' was a logical time construct that, although being a powerful tool, highly restricted Keynes's field of research in the *General Theory*. Within the Marshallian short period, increases in effective demand could only correctly be analyzed if they lead to a change in output of the consumption-goods sector. This is because, at the macroeconomic scale, changes in output of the investment-goods sector would analytically have taken Keynes outside of the theoretical confines of Marshall's short period within which the capital stock is presumed fixed. Given the constraint of his logical time framework, only variations of output in the consumption-goods sector could be legitimately analyzed in which the period of production was supposed shorter than that of the investment-goods sector.

If the temporal toile de fond of the *Treatise* were to be applied to the *General Theory*, one would be forced to infer that the Marshallian short period adopted by Keynes would have to be a very precise time dimension. For the macroeconomic application of this Marshallian time concept, its length ought logically to be shorter than the period of production in the investment-goods sector (so that the aggregate capital stock would remain unchanged during the period) but longer than the period of production in the consumption-goods sector (so as to permit overall adjustments in output). Given the methodological straitjacket within which
he had placed himself in the General Theory, one could perhaps easily surmise why, except for changes in the wage-unit, Keynes did not address what had been the principal concern of the Treatise— the link between inflation and investment. This latter connection was one of the important casualties not only of this restrictive Marshallian methodology that he had adopted but also of the early post-war success of the General Theory. With the exception of the monetarist revival of the quantity theory, the broad Keynesian literature on inflation during the fifties and sixties became almost exclusively focused on the role of the wage-unit as it is affected by conditions in the labour market within the framework of the Phillips Curve. The original Treatise relation between investment and macroeconomic price formation virtually vanished from the literature.35 As partly summarized in Seccareccia (1984), only during the last few decades has this important link been revived by Post-Keynesian writers such as Graziani (1981, 1987, 1990, 1994), as well as in the writings of Eichner and Harcourt who during the 1970s formally established a connection between oligopolistic pricing behaviour and investment, in this case, via firms' targeting of internal finance. However, the richness of some of the original Treatise interpretation, that emphasized the relation between macroeconomic price formation and changes in the temporal dimension of production, has completely disappeared, ironically even among present-day Austrian writers (cf., van Zijp and Visser, 1995).

Footnotes:


2. As to Wicksell's work, it was probably known to Keynes because of Wicksell's article published in the Economic Journal in 1907. It had, however, not achieved the popularity found on the European continent. Indeed, it was, perhaps, not before the late 1920s that Keynes had been seriously exposed to it because of its growing popularity in continental Europe.

3. J.M. Keynes, "How far are bankers responsible for the alternations of crisis and depression?" (1913: 9), in the Collected Writings, Vol. 13.


5. He writes: "Subject to a certain time lag, over-investment must raise commodity prices because it increases the stream of buying faster than the stream of liquid goods available to be bought --- this is the meaning of over-investment. Subject to time lag, therefore, the course of prices proves whether or not there is over-investment (I am assuming that there is no observable tendency for costs of production to rise)." J.M. Keynes, "Is there inflation in the United States?" (1928: 54), Collected Writings, Vol. 13.

6. In a letter to C. Snyder on October 2, 1928, Keynes makes this distinction: "Over-investment in particular directions is quite a different thing from the general over-investment which is associated with inflation." J.M. Keynes, Collected Writings, Vol. 13, p. 64.

7. In a strictly Robertsonian manner, Keynes argues that "Price instability must result whenever the rates of saving and of investment part company. But it is only the existence of a currency and banking system (i.e., of money) which makes it possible that they should part company." J.M. Keynes. "A variorum of drafts of Chapter 23 of the Treatise" Collected Writings, Vol. 13, p. 93.

9. J.M. Keynes (1933: 701) wrote: "If so, it may be that my definition of saving is equivalent to that as defined by Mr. Robertson, aggregated from a base period when business profits may be considered to have been in some sense normal." [Emphasis my own].

10. Keynes (1930) embraced the Marshallian concept of 'normal' costs and, therefore, defined normal income as "that rate of remuneration which, if they were open to make new bargains with all the factors of production at the currently prevailing rates of earnings, would leave them under no motive either to increase or to decrease their scale of operations." (J.M. Keynes, 1930: 125).


12. An excellent summary statement of this relationship is given by R.F. Kahn (1929) who, perhaps, more than anyone else, may have debated Wicksell's ideas with Keynes during the long gestation period of the Treatise In a letter to Keynes, he wrote: "Profits are, in the first place, an effect rather than a cause. It would be absurd to add them to savings, because if this were done, it would be impossible to fall off (assuming that no portion of profits is spent ...). They are indeed, 'automaticlacking', ... and as such cannot be regrouped with savings." R.F. Kahn, "Letter to Keynes, December 17, 1929," Collected Writings, Vol. 13, p. 121. A more extensive presentation of the link between Keynes' concept of saving and that of Robertson is given by Keynes in his "Notes on the definition of saving" (1932: 275-89), Collected Writings, Vol. 13.

13. For instance, Keynes (1931: 419) argues: "I do not, by the way, understand the relevance of the quantity equation with which Mr. Robertson concludes his #5. We are discussing the relation between prices of consumption goods and of investment goods .... But neither of these price levels occur in his equations, which are concerned with the price level of output as a whole and the price level of transactions."


16. For further discussion of this problem of measurement, see M. Seccareccia (1982: 134-37).

17. As was restated by A.H. Hansen and H. Tout (1933: 125), "the first term ... represents the normal long-run tendency of the price level and it is not liable to sudden changes".

18. Since the fundamental equation is an ex post concept, this prompted Hawtrey (1932) to argue that one cannot breathe any causality into the relation. For instance, he wrote: " ... a difference between savings and investment cannot be regarded as the cause of a windfall loss or gain, for it is the windfall loss or gain." R.G. Hawtrey (1932: 349). As we shall see, this is no more equivocal than giving a causal role to the money stock in the quantity equation for determining prices. It is all a matter of the appropriateness of the underlying theoretical framework in which the relation is embedded.

19. Equation [10] is obtained as follows. Since $PTQT = PCQC + PIQI$ or, on a per unit basis, that $PT = (PCQC/QT) + (PIQi/QT)$, then substituting for $PCQC$, one obtains $PT = (\bar{Y}^*-S)/QT + \ldots$
20. Admittedly, the concepts of expected and unexpected (or windfall) are questionable concepts in Keynes's *Treatise* since "expected" pertains to the Marshallian notion of "normality" and are therefore of relevance in a "static" framework of analysis. Surely, entrepreneurs could "expect" above normal profits during a particular period! In this case, Keynes's "windfalls" in the *Treatise* would actually include both expected (in the sense of above normal profits) and the purely unexpected. Several writers, such as F.A. Hayek (1931: Part I, 282-84, and A.W. Marget (1938: Vol. I, 38-40), had criticized Keynes for the static nature of his equations.

21. One is abstracting from some very important issues in the determination of profits in the *Treatise* raised by Vallageas (1986, 1996).

22. For a brief description of this Swedish sequence analysis, see M. Seccareccia (1990: 137-54).

23. The only discussion about the possible transition phase from $w^*$ to $w^*$' can be found with respect to the reactions of the monetary authorities. Keynes argues that the monetary authorities can do one of two things in a situation of Income Inflation. Firstly, they can accommodate the demand for credit-money arising from firms' needs for financing their working-capital requirements. The effect of this policy would be to allow prices to rise proportionally with wages without any significant impact on the net income receipts of entrepreneurs. Or secondly, within a quantity theory setting, the monetary authorities could try to limit monetary expansion. In this case, the second term of the fundamental equations would also be affected and both the income velocity of money and unemployment may change in the process. Vide, for instance, J.M. Keynes (1930: Vol. I, 285).

24. References to the issue of monetary neutrality and non-neutrality in the *Treatise* are discussed by A.H. Meltzer (1988: 63-64).

25. This may have been voiced in opposition to Keynes's own proposal for what he was to dub later a "monetary theory of production."


27. In addition, Keynes does not define the form of his fixed capital investment. For example, if his fixed capital happened to have been a commercial building, then chances are that consumer prices could theoretically fall back to their initial level at $t_{10}$. If, instead, the fixed capital good produced was a more efficient machinery to be used in the consumption-goods sector, then $P_C$ may be forced to take a much steeper dive since $a_C$ would also be affected by the investment process, along later Kaldorian lines.

28. For instance, in his criticism of D.H. Robertson over the economic losses due to deflation, Keynes (1930) describes the accompanying loss in output as derived from "involuntary unemployment". Cf J.M. Keynes (1930: Vol. I, 295).

29. J.M. Keynes (1930: Vol. I, 278). It is interesting to notice in the above quotation that there are still a few examples in the *Treatise* (as in his latter statement in the above quotation) where Keynes gives some role to the neoclassical mechanism for regulating unemployment. However,
just one year after the publication of the Treatise Keynes rejected outright the neoclassical mechanism of wage adjustment in clearing the labour market. See J.M. Keynes, "An Economic Analysis of Unemployment" (1931: 369), in Collected Writings, Vol. 13.

30. For Wicksell's discussion of the importance of inventory adjustment over the cycle, see Knut Wicksell (1953: 58-78).

31. Keynes's recantation in his "Preface" to the General Theory that, in the Treatise, he had "failed to deal thoroughly with the effects of changes in the level output" (1936: vii), should in no way lead the reader to think that he had necessarily rejected his analysis of output adjustment in the Treatise. One would thus agree with Marcuzzo (1998) and Dimand (1988: 44) when the latter concludes that "Keynes' development from the Treatise to the General Theory can thus be seen as a continuing struggle to remedy deficiencies in the earlier work and to round out its analysis." There does not appear to be any major break between the two works.

32. This is the sense, for instance, in which one can interpret Asimakopulos's insistence on linking a series of such short periods. Vide, for instance, A. Asimakopulos (1978: 53-S10), and A. Asimakopulos (1991: 9).

33. This view of inflation prompted Hicks to remark that Keynes's theory seems "to give the impression that there are just two 'states' of the economy: a 'state of unemployment' in which money wages are constant, and a 'state of full employment' in which pressure of demand causes wages to rise." (J. Hicks, 1974: 60) A close reading of Keynes would suggest that such is not true. For a defense of Keynes, see, for instance, R.F. Kahn (1978: 555).

34. There are number of serious problems with the macroeconomic application of Marshallian partial equilibrium analysis that numerous writers have addressed, especially in reference to Keynes's aggregate demand/supply analytics. For an interesting defense of Keynes's approach when pitted against conventional general equilibrium theory, see V. Chick (1985: 196-7).

35. Another important exception to the ones to be discussed below is the work by Parguez (1994) who develops a variant of the Treatise model of inflation. He asserts, for instance, that "The existence of a state of full employment is not a pre-condition for inflation, the latter of which merely depends upon the relative importance of the rate of investment." (Parguez, 1994: 14).

Bibliography


