

# The Marshallian roots of Keynes's *General Theory*

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# The Marshallian roots of Keynes's *General Theory*

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## Abstract

The aim of this paper is to elucidate Keynes's Marshallian lineage. I argue that the result of bringing out the Marshallian antecedents of the *General Theory* highlights Keynes's failure to achieve the theoretical project he was striving at, namely to demonstrate an involuntary unemployment result in the arising of which nominal wage rigidity would play no role.

In the first part of the paper, I reexamine Marshall's theory of value. This section's main conclusion is that no theory of unemployment is to be found in Marshall's writings. In section two, I study the literature spanning from Marshall to Keynes, focusing on Beveridge, Hicks and Pigou, in order to see whether the lacuna present in Marshall's writings happened to be filled. Documenting the emergence of the notion of frictional unemployment, I come to the conclusion that its arising went along with little theoretical elaboration. The third and last part of the paper is a critical reflection on the *General Theory*. I start by making the point that Keynes's theory of effective demand ought to be viewed as an extension of Marshall's analysis of firms' short-period production decisions. This enables me to bring out the decisive role played by the wage rigidity assumption in Keynes's reasoning. I claim that, except for this assumption, the differences between 'effective demand *à la* Marshall' and 'effective demand *à la* Keynes' are minor. I close my analysis of Keynes's reasoning by showing that no real removal of the nominal rigidity assumption is to be found in chapter 19 of the *General Theory*.

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## INTRODUCTION

Many authors (e.g. Clower, 1975; Leijonhufvud, 2006; Hayes, 2006; Lawlor, 2006) have defended the view that a correct understanding of Keynes's *General Theory* (1936) requires a central place to be given to his Marshallian lineage. While agreeing with these authors, I differ from them as far as the implications of their views are concerned. It is true that reading the *General Theory* in this way is enlightening. However, it does not follow that Keynes's theory is thereby reinforced, as several of these authors seem to take for granted. On the contrary, I shall argue that such a reading points to Keynes's failure to achieve the theoretical project he was striving for, namely to demonstrate an involuntary unemployment result in the origins of which nominal wage rigidity would play no role.

In the first part of this paper, I re-examine Marshall's theory of value.<sup>1</sup> Three specific points are dealt with: Marshall's account of the working of the market day (the corn model); his conceptualization of time; and his analysis of firms' optimizing production decision in the short term. This section's main conclusion is that no theory of unemployment is to be found in Marshall's writings. In section two, I study the literature of the period between Marshall and Keynes in order to see whether the lacuna in Marshall's writings was filled in this period. Documenting the emergence of the notion of frictional unemployment, I come to the conclusion that its elaboration was not accompanied by much theoretical elaboration. This means that when Keynes started to write the *General Theory*, unemployment theory was almost non-existent. The third and last part of the paper is a critical reflection on the *General Theory*. Its aim is to assess the implications of anchoring Keynes's theory more firmly in the Marshallian tradition. I start by developing the point (already made by Clower) that Keynes's theory of effective demand ought to be viewed as an extension of Marshall's analysis of firms' short-period production decisions. This enables me to bring out the decisive role played by the wage rigidity assumption in Keynes's reasoning. I shall claim that, except for this assumption, the differences between 'effective demand *à la* Marshall' and 'effective demand *à la* Keynes' are minor. I close my analysis of Keynes's reasoning by showing that, contrary to what is usually claimed, no real removal of the nominal rigidity assumption is to be found in Chapter 19 of the *General Theory*.

Before entering into these questions, a preliminary methodological remark is useful. Leijonhufvud has recurrently observed (e.g. in Leijonhufvud 2006) that a distinction should

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<sup>1</sup> There is more than one way in which to be Marshallian. While many present-day authors like to emphasize the institutional and evolutionist aspects of Marshall's work, I shall stick to Marshall the neoclassical value theorist — that is, mainly to the ideas that were developed in Book V of the *Principles*, a fine recasting of which can be found in Frisch (1950).

be drawn between a theory and a model. To him, a theory is a set of beliefs about reality, propositions claiming to tell the truth about some real-world occurrences. In turn, a model is a formal representation of these beliefs or a part of them. Usually, it takes a mathematical form but reasoning in prose or with the support of graphs is also possible. Here the aim is to draw logical inferences, to defend the validity of the reality-gearred proposition through a demonstrative procedure. My aim in this paper is to assess unemployment as present in Marshall's and Keynes's models even if, following the usual practice, I often use the term 'theory' (e. g. Keynes's theory of effective demand) when in all rigor I should say 'model'.

## MARSHALL<sup>2</sup>

### *Marshall's time framework*

Marshall was keenly aware that “man's powers are limited” while “almost every one of nature's riddles is complex”. “Breaking up a complex question, studying one bit at a time, and at last combining his partial solutions with a supreme effort of his whole small strength into some sort of an attempt at a solution of the whole riddle” was his strategy (Marshall 1920: 366). This partitioning process, he claimed, should proceed along two lines, dividing the economy into separate industries, on the one hand, and dividing time into three categories — the market (the unit period of exchange), the short period and the long period — on the other. This led Marshall to separate three equilibrium concepts associated with these three time categories. Each of them could be the subject of a separate analysis: market-day equilibrium (in short, market equilibrium), short-run equilibrium and long-run equilibrium. Marshall engaged in these separate analyses but, as is well known, his theory evolved on robust grounds only for the short-run equilibrium aspect. He also argued that the relationship between these categories should be viewed as a gravitational process.

### *The lack of any rationing (and hence unemployment) result in Marshall's theory of value*

Marshall's main interest when constructing his theory of value lay in what he called the study of normal equilibrium, the centre of gravitation for market outcomes. Nonetheless he must be credited for having addressed the issue of market-day equilibrium, the outcome of the working of markets on a daily basis, in Chapter II of Book V of the *Principles*. Let me retrace Marshall's reasoning in this chapter.

From the outset, the reader is provided with information about the market supply and demand schedules enabling him to calculate what Marshall calls the 'true equilibrium' — 700 hundred

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<sup>2</sup> Here I draw on De Vroey (2007).

quarters traded at the unit price of 36 shillings.<sup>3</sup> Marshall suggests that this is the result of a bargaining process between agents, the “haggling and bargaining of the price around the 36 shillings mark”. Eventually, he claims, the price of 36 shillings will impose itself. What is the underlying mechanism? Scrap the rhetorical effects, and it turns out that the attainment of market equilibrium results from agents’ ability to form correct conjectures about equilibrium values or, in other words, from their being as knowledgeable about market conditions as the outside economist. In short, it must be assumed that agents hold perfect information. Under this assumption, all sellers will be ready to trade at a price above the equilibrium price, but they will never find trading partners from the other side of the market; the converse is true for purchasers. As a result, trade will occur at the equilibrium price only.

However, Marshall is aware that this assumption is too heroic. Hence his next move is to show that the same result comes close to being realized when the assumption of perfect information is removed or, more precisely, limited to one side of the market. To this end, it is necessary to assume that the marginal utility of money is constant, which, in turn, requires expenditure made in the market under study to represent only a small proportion of total income. Now market equilibrium is attained gradually through successive false trading without income effects being generated. The end result is almost the same as in the perfect information case. The quantity of corn traded and the price of corn in the last transaction are the same as in true equilibrium, but agents end up with different money balances.

Although a testimony to Marshall’s cleverness, this last step of his reasoning cannot win the day because the idea of a constant marginal utility of money (or income) is *ad hoc*, and cannot be generalized. Actually, Marshall fails to refer to it later on, and falls back, be it only implicitly, on the perfect information assumption. An important conclusion follows: the Marshallian market always features a match between market supply and demand, i.e. market clearing.

Three implications ought to be drawn. First, whenever the perfect information assumption is adopted, the idea that duration matters ceases to be relevant. On any market day, equilibrium can be arrived at quickly or slowly, yet this hardly matters. Applying Occam’s razor, we can consider the formation of market equilibrium to occur in logical time, i.e. instantaneously. In other words, once the perfect information assumption predominates, the idea that equilibrium follows from negotiations between sellers and purchasers turns out to be just a rhetorical varnish.

Second, I must raise the question of whether Marshall’s account of the corn market can be extended to the labor market. My answer is ‘yes’. At the end of his chapter on the corn market

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<sup>3</sup> This shows that Marshall, unlike Walras, was not interested in demonstrating the logical existence of equilibrium. Rather, he wanted to elucidate how agents’ interactions could end up making these equilibrium values effective.

model, Marshall admits that the constant marginal utility of money assumption is inappropriate when it comes to the labor market. Moreover, his scattered remarks in the *Principles* about labor pertain to the particularities of the demand for, and supply of, labor rather than to the functioning of the labor market. He never argues that the labor market functions differently from the corn market. The bottom line must be that, to Marshall, the labor market operated on the same principles as the corn market, in which case it would not be an exception to the market clearing principle. In other words, there is no room for the notion of unemployment in Marshall's value theory. There is one exception, but it is trivial (and not even considered by Marshall). It follows from assuming an exogenous wage floor. If this is above the market-clearing level, unemployment rises. Not that Marshall remained silent on the topic of unemployment. It is just that he had limited interest in it. As Matthews noted:

The social problem that disturbed *his* conscience was poverty; and poverty might have a number of causes, of which unemployment was only one (Matthews 1990: 33).

Cyclical unemployment was *par excellence* a 'Vol. II' subject, along with business cycles generally. It does get some treatment in the *Principles*, but to a large extent Marshall's views have to be pieced together from his various writings. Those are often fragmentary or aphoristic (Matthews 1990: 35).<sup>4</sup>

My third remark is that the permanent realization of market clearing in Marshall's analysis does not preclude it having some room for frictions. It is just that these frictions should not be viewed as causes of market non-clearing. Since this point has been an important source of confusion, it is worth delving into it.

In Marshallian theory, the study of market equilibrium cannot be separated from the more fundamental equilibrium concept, which Marshall calls 'normal equilibrium', towards which market equilibrium outcomes are assumed to gravitate.<sup>5</sup> States of divergence between the market equilibrium price and the normal equilibrium price can be considered to be states of disequilibrium. This means that Marshall's theory features the possibility of co-existence between market clearing and disequilibrium, a trait that makes little sense with respect to the Walrasian approach.

To look more closely at this point, about which confusion exist, I will use Marshall's well-known fishing industry example (1920, p. 307). In this passage he studied the reaction of suppliers to changes in the demand for fish. I will confine my attention to the effect of an

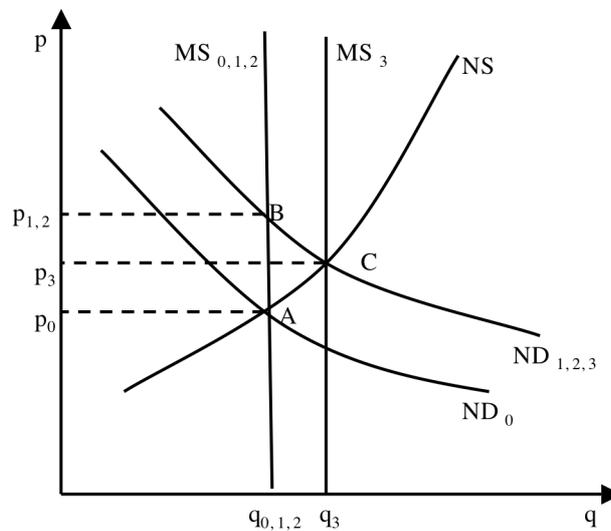
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<sup>4</sup> In his 2006 book, which devotes a chapter to "The treatment of labor markets in Marshallian economics", Lawlor praises Marshall for emphasizing "the non-deterministic influence of social institutions a work in labor markets" and for his account the actual institutional details of wage practices (2006: 69). But when it comes to unemployment, Lawlor is compelled to admit that "Marshall had something of a blind spot" (2006: 61).

<sup>5</sup> At present, normal equilibrium is often (misleadingly) called 'long-period equilibrium'.

increase in demand of moderate duration. Marshall supposes that the new equilibrium price and quantity will quickly be arrived at, without being more precise. In so far as production takes place in advance, and as the change in demand is unanticipated, disequilibrium will be present at least on the market day when the shock manifests itself. If the change in variable capital can be made before the next period of exchange, the new equilibrium will be reached in this next period. But the adjustment process can also be longer, because putting variable capital to work can be a time-consuming process. In this case, disequilibrium will extend over several periods. The scenario is illustrated in Figure 1.

Figure 1. Disequilibrium with market clearing



Starting from a state of equilibrium at  $t_0$  (A), a change in normal demand (ND) of a moderate length occurs at  $t_1$ . As to supply, a distinction has to be drawn between market-day supply (MS), which is vertical due to fish's perishable nature, and short-period normal supply (NS) expressing firms' optimal plan when they can change their variable capital. The initial result of the change in demand is that at  $t_1$  the market equilibrium price rises to  $p_1$ . At B, the market is in disequilibrium, since the short-period normal equilibrium is not attained. Note, however, that market clearing prevails. *Normal* supply and demand do not match but *market* supply and demand do. Assume that it takes two weeks for the new optimal quantity of variable capital to deliver the new planned production, so that the market remains in the state of disequilibrium at  $t_2$ . The short-period equilibrium is reached on the third week at point C. When the departure from permanent values comes to an end, the market returns to A. This slow adjustment to normal equilibrium (accompanied by an instantaneous adjustment to market equilibrium) can be considered to be due to frictions. However, it should not be assumed that such frictions are a *cause* of market rationing.

*Firms' equilibrium in the short period*

The perfect information assumption also underpins Marshall study of firms' optimal short-period production decisions in a given industry (to be found in Book V, Chapter 5 of the *Principles*). This analysis bears on firms' individual equilibrium, i.e. the determination of their optimal trading plans. As is well known, each firm's optimizing plan is to equalize marginal revenue and marginal cost. To get this result, firms must decide about both the supply of outputs and the demand for factors. When they establish their supply curves (their marginal cost functions) they need to make conjectures about the cost of their inputs, in accordance with the possible varying levels of demand. To this end, the firms need to estimate the magnitude of a series of variables, which, at the time of their decision-making, are still virtual. The wage rate is one of them. That is, the firms need to make conjectures about the labor market outcomes. The fact that Marshall's jumps at once from individual equilibrium (optimal planning) to interactive equilibrium (the industry equilibrium) means that he implicitly assumes that these conjectures are correct. If not, he should have entered into an analysis of what goes on when they are wrong. In other words, the determination of normal equilibrium in a given branch first occurs as a thought-experiment in the minds of firms' managers, which is only later implemented as an objective observable market experiment. This implies that firms hold perfect information.<sup>6</sup>

The following quotations from Marshall's *Principles* can be adduced in support of my interpretation.

We assume that the forces of supply and demand have free play; that there is no close combination among dealers on either side, but each acts for himself, and there is much free competition; that is buyers generally compete freely with buyers, and sellers compete freely with sellers. *Though everyone acts for himself, his knowledge of what others are doing is supposed to be generally sufficient to prevent him from taking a lower or paying a higher price than others are doing.* This is assumed provisionally to be true both of finished goods and of their factors of production, of the hire of labor and of the borrowing of capital. We have already inquired to some extent, and I shall have to inquire further, how far these assumptions are in accordance with the actual facts of life. But meanwhile, this is the supposition on which I proceed; I assume that there is only one price in the market at one and the same time (1920: 341; my emphasis).

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<sup>6</sup> The underlying reasoning is as follows. Assume that firms incorporate an incorrect nominal wage (i.e. a market non-clearing value). Since market supply and demand always match in Marshallian analysis, in the labor market as in other markets, a discrepancy would arise between the actual wage (the market-clearing wage) and the wage incorporated by the firms. This would result in their engaging in a change of behavior. But then Marshall's reasoning cannot be considered to describe an equilibrium state. For this to be the case, firms' conjectures about the labor market have to be correct.

Here Marshall has no qualms about assuming perfect competition and perfect knowledge.<sup>7</sup> The implications of the sentence in italics should be clarified. If agents refuse any price other than the single market-day equilibrium, it means that they know the equilibrium price. The question to be addressed then becomes, how this may be true. Again, omniscience is the only possible answer.<sup>8</sup>

The same stance is taken — though only implicitly — by Frisch in his canonical exposition of Marshall's value theory (Frisch 1950).

If the price is given and there are for instance three firms in the market, one strong, one average, and one weak, I get a situation as indicated in Figure 3 [not shown]. The unbroken curves I and II for each firm represent respectively the unit cost curves for all factors and for the variable factors. The broken curves are the marginal cost curves. The shaded ones are the individual supply schedules. The supply schedule of the market (not drawn) is derived in the usual manner by horizontal addition of the individual supply curves (the shaded ones). ... The point of intersection between the supply schedule of the market and the demand schedule of the market determines the normal equilibrium price with reference to short periods (Frisch 1950: 503-4).

Frisch states that the price is given. But where does it come from? Certainly, no auctioneer is present. The only conceivable answer is that firms have conjectured the price on the basis of past information and their expectations of present conditions. Next, the reader's attention should be drawn on the last sentence of the quotation, which states that normal equilibrium is achieved. This is not an innocuous statement. It asserts that firms' conjectures about the equilibrium price have been confirmed. But, then, the coincidence between the conjectured and the realized normal equilibrium requires that all firms have perfect knowledge of the different underlying factors, in particular the market demand and its underpinnings in terms of agents' preferences, the technological characteristics of the other firms, each firm's share of the market, and the market supply function. There is thus a twist. The beginning of the passage is concerned with firms' optimizing production decisions, taking the price as a parameter, while its last sentence indicates that normal equilibrium is realized. How is the shift from the former to the latter achieved? The only answer I can think of is perfect knowledge.

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<sup>7</sup> Admittedly, he wrote almost the opposite in other passages of the *Principles*, (e.g. Marshall, 1920: 540-1).

<sup>8</sup> Perfect information à la Marshall should not be ascribed to Marshall exclusively. It is, for example, also present in Jevons' *Theory of Political Economy*: "It is the very essence of trade to have wide and constant information. A market, then, is theoretically perfect only when all traders have perfect knowledge of the conditions of supply and demand, and the consequent ratio of exchange" ([1871] 1970: 143). The same idea was taken up by later Marshallian economists such as Stigler ([1957] 1965: 252) and Knight (1921: 76 ff.). None of these authors had the feeling that this assumption was too heroic to make.

## UNEMPLOYMENT THEORY BETWEEN MARSHALL AND KEYNES

The previous section has shown that there is no value-theoretical study of unemployment in Marshall's *Principles*. In this section, I examine whether post-Marshall but pre-Keynes economists improved on this state of affairs. As an exhaustive examination of the literature is beyond the scope of this study, I shall content myself with surveying a few key works. The authors discussed below are Robbins (1926), Dobb (1928), Beveridge (1908), Hicks (1932) and Pigou (1933).<sup>9</sup>

### *Robbins and Dobb*

In 1926, Lionel Robbins published a ninety-page book entitled *Wages: An Introductory Analysis of the Wage System under Modern Capitalism*. As its title makes clear, it made no claim to present cutting-edge research; its aim was purely pedagogical. The topics addressed were the nature and measurement of wages, wages and the cost of labor, the determination of wages, fluctuations in wages, trade unions and wages, and the state and wages. Robbins's discussion is institutional and down-to-earth with no theoretical reference.

Maurice Dobb's essay, *Wages*, came out in 1928 in the *Cambridge Economic Handbook* series edited by Keynes. Subsequently, it underwent several revisions and reprints. According to Lawlor (2006), it can be considered as the expression of the orthodox Cambridge view of the time. Lawlor finds this book praiseworthy for its "wealth of institutional details" (Lawlor 2006: 63). It provides a detailed description of distinct methods of wage fixing and contracts between employers and employees. Dobb also offers a historical account of wage formation from classical to marginalist economics, with Marshallian supply and demand analysis being viewed as the apex of this evolution.

For the purposes of my inquiry, the striking common feature of these two pieces lies in what they omit, the issue of unemployment. We have here two authors, one of them with a socialist inclination, writing on wages at a time where unemployment had become a looming social problem, who felt no need to address unemployment in their discussions.

### *Beveridge*

In his book, *Unemployment: A Problem of Industry* (first edition 1908; third edition 1912), Beveridge criticized existing theory for having neglected to address the issue of unemployment (without explicitly mentioning Marshall in this respect).<sup>10</sup> It is noteworthy that he takes it for granted that unemployment is *frictional* unemployment.

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<sup>9</sup> For a similar discussion of other authors, in particular Clay and Cannan, see Casson (1983).

<sup>10</sup> There is only one reference to Marshall in the whole book.

The weakness alike of theory and practice in regard to unemployment in the past has been the assumption that this adjustment was already substantially secured; in other words that the force of friction might be neglected (Beveridge, 1912: 216).<sup>11</sup>

Beveridge emphasizes three specific imperfections of adjustment, the analysis of which is the main object of his book: changes in the industrial structure, fluctuations of industrial activities, and the need for a reserve of labor. The reserve of labor is mainly for casual work, such as dock work. It is present in trades which experience a high volatility of activity, where a permanent reserve is needed to meet these fluctuations. “The men forming these reserves are constantly passing into and out of employment” (Beveridge, 1912: 13). The common factor underlying these different imperfections is the plurality of labor markets.

Why should it be the normal condition of the labour market to have more sellers than buyers, two men to every job and at least as often two jobs for every man? The explanation of the paradox is really a very simple one — that there is no one labour market but only an infinite number of separate labour markets (Beveridge, 1912: 70).<sup>12</sup>

According to Beveridge, the solution to the problem is as straightforward as its diagnosis: the labor market needs to be better organized, that is to become more centralized.<sup>13</sup> “There shall be known centres or offices or Exchanges, to which employers shall send or go when they want workpeople, to which workpeople shall go when they want employment” (Beveridge, 1912: 198).

Beveridge’s book is an excellent work, still impressive today. It provides the reader with a wealth of data at a time where statistics were scarce. It studies institutional aspects in a detailed way. However, it is hardly a theoretical piece. It may well have introduced the notion of frictional unemployment but it fails to explain it theoretically.

### *Hicks*

Hicks’s book, *The Theory of Wages*, published in 1932 is a theoretical essay.<sup>14</sup> It addresses issues such as the equality between wages and the marginal product, or the coexistence of

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<sup>11</sup> Unlike Keynes, who opposed the notions of involuntary unemployment and frictional unemployment, Beveridge considered frictional unemployment to be involuntary (Beveridge, 1912: 3).

<sup>12</sup> Excess supply is also deemed to be due to increases in population (Beveridge, 1912: 70).

<sup>13</sup> In the case of dock workers, “The total number of men practically required to do the work without delay (and by consequence the number of reserve labourers) is, in fact, increased by every barrier to free movement from one wharf to another, and can correspondingly be decreased by everything tending to the organization of the whole ten [wharves] into a single labour market” (Beveridge, 1912: 78).

<sup>14</sup> A second edition was published in 1963. In the latter, Hicks admits that 1932, the blackest year of the Great Depression, was not a lucky date for the appearance of his book. Operating at a high level of abstraction, it had nothing to say about the situation of the time, and this was certainly shocking. Moreover, the book was published on the eve of the appearance of Robinson’s book on imperfect competition and Keynes’s *General Theory*, which were to radically change economists’ vision.

wage increases and unemployment. Here, I will focus on Hicks's explanation of unemployment. Note first that he (and for that matter all the authors surveyed) took it as a fact that real-world labor markets are usually not in a state of equilibrium (Hicks, 1932: 42), an opinion with which most economists concurred, both at the time and in subsequent decades, until Lucas radically questioned it in the 1970s.

Hicks's book is a convoluted piece unceasingly weighing the pros and cons of theoretical propositions. Its main message is that 'pure theory', i.e. Marshallian theory, should not be applied too hastily:

If a labour market could be found which was genuinely in equilibrium, so that every employer could go on employing the same men, and every man could go on working for the same employer, without either party having any incentive to make a change; and if then the employers' opportunities of profitably employing labour were suddenly reduced, or the number of labourers available suddenly increased, unemployment would result. If the new conditions remained unchanged indefinitely, then, under competitive conditions, this unemployment must lead to a fall in wages, going on until the excess of labor was absorbed. But these artificial conditions, although they may serve as a convenient model for analysis, are not a description of what really happens (Hicks, 1932: 56)

Hicks's main interest was in what really happens, and how this involves departures from pure theory. For example, theory states that wages must decrease in the presence of unemployment. It can be observed that this does not happen. Why is that so, asks Hicks. He suggests three reasons. First, an irrepressible level of unemployment always exists because of the presence of 'unemployable' workers whose efficiency is subnormal and who are long-term unemployed. A second reason lies in the existence of a non-competitive labor market where trade unions play a central role. Third, even when the economy is in a stationary state, frictional unemployment is present:

For although the industry as a whole is stationary, some firms in it will be closing down or contracting their sphere of operations, others will be arising or expanding to take their place. Some firms, then will be dismissing, others taking on, labour; and when they are not situated close together, so that knowledge of opportunities is imperfect, and transference is attended by all the difficulties of finding housing accommodation, and the uprooting and transplanting of social ties, it is not surprising that an interval of time elapses between dismissal and re-engagement, during which the workman is unemployed (Hicks, 1932: 45).

To Hicks, frictional unemployment is an equilibrium phenomenon. Firms have no interest in profiting from the existence of unemployment to cut wages. Such attempts would ultimately

prove futile. “By reducing wages he [the employer] has reduced his chances of getting good workmen; and sooner or later he will find that he suffers” (Hicks, 1932: 46).

Hicks’s analysis calls for two observations. First, as the author of *Value and Capital* (1939), Hicks is rightly considered an important contributor to economic theory. However, drawing on his book on wages, published in the same decade, it is striking to note what limited faith Hicks had in economic theory (although he did not seek to repudiate it). His reasoning can be summarized in the following three steps: (a) pure theory has little room for unemployment; (b) unemployment is nonetheless an undeniable fact of life; (c) there are discrepancies between the pure theory model and reality — explaining unemployment involves resorting to factors relating to the interstices between them. To all intents and purposes, this amounts to foregoing providing a theoretical explanation of unemployment.

My second observation is that even the little room that Hicks grants unemployment in pure theory is unwarranted. Look at the following quotation summarizing his standpoint:

Wages, say the textbooks, tend to that level where demand and supply are equal. If supply exceeds demand, some men will be unemployed, and in their efforts to regain employment they will reduce the wage they ask to that level which makes it just worthwhile for employers to take them on. If demand exceeds supply employers will be unable to obtain all the labour they require, and will therefore offer higher wages in order to attract labour from elsewhere (Hicks, 1932: 4).

At first glance, everybody will accept this statement. To me, however, it is flawed as it betrays Marshallian value theory (as analyzed above). Hicks errs because of his failure to separate the formation of *market* and *normal* equilibrium. As far as market equilibrium is concerned, false trading ought to be excluded as soon as the constant marginal utility of income cannot be applied, which is the case for the labor market. The implication is that market disequilibrium has only a virtual existence, being eliminated before becoming effective. Hicks is thus wrong to take for granted the existence of unemployment in Marshallian theory as a result of the slow adjustment of wages. Whenever present in the Marshallian framework, slow adjustment pertains to the formation of normal equilibrium but not of market equilibrium. This is the point that Hicks and the textbooks have missed. He falls prey to the mistake, pointed out earlier in this paper, of believing that slow adjustment can explain unemployment. We may suspect that, if an economist as sharp as Hicks could misunderstand Marshallian theory in this way, so too would the majority of other economists at the time.

To summarize the discussion on Hicks, we can conclude that, except for his slow adjustment argument, he viewed unemployment as a topic that could not be dealt with by pure theory. In a sense, he was right: I have shown that unemployment cannot be integrated into the standard

Marshallian model. However, he failed to take the next step of understanding that other theoretical formulations (search theory) could be pursued more profitably.

### *Pigou*

Pigou wrote a short introductory essay, entitled *Unemployment*, in 1914 and, later, a more elaborate book, *Theory of Unemployment* (1933). Keynes took it as his foil in the *General Theory*, as if his book was the perfect incarnation of classical orthodoxy. As noted by Hicks in his IS-LM paper, Pigou's book was new and difficult, and "to most people, its doctrine seemed quite as strange and novel as the doctrines of Mr. Keynes himself" (Hicks, 1937: 126).

Like the other authors examined here, Pigou takes it as a compelling fact of life that an excess supply of labor is the normal state of affairs. As a result, all his analyses are conducted on the premise that labor demand plays the active role in the determination of employment (and hence of unemployment as well): "The quantity of employment is equal to the quantity of labour demanded" (Pigou, 1933: 9).<sup>15</sup> That is, firms determine employment unilaterally. For all his having been Marshall's favorite pupil, Pigou failed to realize that this premise departed from Marshallian orthodoxy by a long way. The orthodoxy would rather have it as: the quantity of employment is determined by the intersection of the supply of and demand for labor. Pigou is not explicit about the reasons behind the permanent excess supply of labor. Most commentators think that Pigou only examined fixed real wages.<sup>16</sup>

Pigou's book is frustrating. The reader expects to learn about unemployment and, in view of the time when it appeared, about massive unemployment, but Pigou fails to deliver. Moreover, there is a gap between the book's title and its contents. The book comprises about three hundred pages. Two hundred forty of these are devoted to the study of the short-period elasticity of the real demand for labor, and of the factors affecting this demand, a rather excruciating read. The motivation for this study is to ascertain what changes in wages are required to make the demand for labor (and hence employment) increase. This may be a fine motivation, but it leads Pigou into laborious detours. It is only in Part V of the book, starting on p. 247, that the subject of the causation of employment and unemployment is broached. At this juncture it is doubtful whether readers will find the substance of what Pigou has to say to be worth all the preliminaries. In effect, Pigou's views look trivial and insufficiently elaborated:

With perfectly free competition among workpeople and labour perfect mobility, the nature of the relationship [between the real wage and demand] will be very

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<sup>15</sup> Pigou qualifies this statement by adding that the number of unfilled vacancies should be subtracted from the quantity of labor demanded.

<sup>16</sup> See Klausinger (1998: 54). Further references can be found in this article.

simple. There will always be at work a strong tendency for wage-rates to be so related to demand that everybody is employed. Hence, in stable conditions everybody is employed. The implication is that such unemployment as exists at any time is due wholly to the fact that changes in demand conditions are continually taking place and that frictional resistances prevent the appropriate wage adjustment from being made instantaneously (Pigou 1933: 252).

Frictions are thus declared to be the cause of unemployment. The impression is given that once this cause is uncovered, nothing more remains to be done. There is no need to theorize frictions. While frictions are the culprit, wage policy is an aggravating factor:

There is reason to believe that the goal at which wage policy aims is sometimes, in some centres of production at all events, a wage-rate substantially higher than the rate which, if adopted everywhere, would yield nil unemployment (Pigou, 1933: 253).

Like Hicks, Pigou's reasoning evolves at a high level of abstraction. His book has little relevance to the problems that were plaguing the western economies at the time. When he eventually comes to utter a few remarks about the post-war period, Pigou could hardly have been more orthodox:

Our general conclusion then must be that, as a remedy for the heavy unemployment of the post-war period, a mere correction of wage inequalities would probably have proved, not merely unavailing, but actually harmful. This would have been so even were labour perfectly mobile, and in actual conditions the argument is *a fortiori*. To reduce unemployment from the side of wages it would have been necessary, after wage inequalities had been reduced and labour appropriately redistributed, *also* to reduce the average rate of real wages (Pigou, 1933: 270).

It is true that Keynes's criticism of Pigou was often off-target. Nonetheless, Keynes's annoyance with Pigou's book is understandable. Not only did it defend retrograde policy conclusions, but also, like Hicks's writings, it presented a poor image of the economic profession as consisting of people engaged in abstract work and unable to come to grips with the problems that were plaguing the times.

### *Conclusion*

The pitfall of a retrospective reading of past works is that one tends to be too hard on past authors. Things that look obvious to us seem to have escaped their attention. This being so, I am nonetheless struck by the rudimentary character of pre-Keynesian theories of unemployment. Explanatory factors are brought forward and commented upon, but any attempt to demonstrate them is lacking. What is called theory only consists of expressing

opinions about reality, and a general discourse around and about the subject. Moreover, when reading books like Pigou's and Hicks's, it is hard to imagine that they were written in the midst of the Great Depression. Read in isolation, Keynes's diatribe in Chapter Two of the *General Theory* against economists, comparing them to Cándides cultivating their gardens while proclaiming that everything is for the best in the best of all possible worlds, may look like a somewhat bewildering piece of rhetoric. But Keynes's outburst becomes more comprehensible when related to the theoretical literature of the time, which was indeed disconnected from what was happening in reality.<sup>17</sup> Beyond doubt, there was something wrong with economic theory. The issue of unemployment had to be considered afresh.

## KEYNES'S *GENERAL THEORY*

### *Reconstructing Keynes's theoretical project*

Keynes's *General Theory* (1936) is a complex book, intertwining different types of arguments developed at distinct levels of abstraction. Most commentators agree that Keynes's aim in this book was to demonstrate the theoretical existence of involuntary unemployment. The latter, he recognized, had found no room in economic theory in spite of its compelling real-world existence. Bridging this gulf was the task he set himself. The line he took was to state that involuntary unemployment resulted from a deficiency in aggregate demand, which was itself the result of insufficient investment.

The broader research program in which this aim was embedded can be called 'Keynes's program'. I view it as consisting of the following four objectives, to be fulfilled jointly:

- (1) demonstrating the existence of involuntary unemployment;
- (2) demonstrating that wage rigidity is not its cause;
- (3) giving a general equilibrium or interdependency explanation of the phenomenon while adopting a perfect competition framework;
- (4) demonstrating that demand stimulation rather than wage deflation is the proper remedy for the problem.

The usual reasoning in Keynes's time was that unemployment was the result of excessive wages or of wages that adjust too slowly. Another feature of traditional theory was that it was put forward against the background of a Marshallian analysis in which one market, in this case the labor market, is considered in isolation from the rest of the economy. Keynes wished to escape from this framework in two ways. On the one hand, he wanted to exonerate

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<sup>17</sup> Hence my contention that the most interesting of the early works is Beveridge's book, because it pursues the modest aim of providing a detailed descriptive account of the working of markets.

excessive wages from any responsibility for the existence of involuntary unemployment. On the other hand, he believed that its cause had to be looked for outside the labor market. What Keynes was actually striving for was to move the analysis of unemployment from a partial to a general equilibrium framework (although this terminology did not exist in his time). However, his willingness to adopt an interdependency perspective should not be interpreted as adherence to the Walrasian general equilibrium approach. In Keynes's time, Walras's views were little known in Cambridge and, for better or worse, Keynes did not think that Walras's theory would be of any help in his own project. Moreover, Keynes did not want to join the imperfect competition line of argument, which was emerging at the time in Cambridge. He wanted to formulate his argument in terms of perfect competition, possibly because he associated imperfect competition with collusion, unions, etc. His concern was to bring to the fore something deeper, namely the idea that unemployment was possible even when the labor market was functioning in a perfectly competitive way, without either frictions or market power.

#### *Different kinds of unemployment?*

In Chapter Two of the *General Theory*, Keynes claims that different types of unemployment exist, including frictional unemployment and involuntary unemployment. He also gives the impression that economic theory is on solid ground as far as the explanation of frictional unemployment is concerned.<sup>18</sup> What is needed, according to Keynes, is the consideration of an additional type of unemployment, involuntary unemployment. Fulfilling this task is the main purpose of his book.

Does the alleged real-world co-existence of frictional unemployment and involuntary unemployment extend to theory? That is, did Keynes propose a theory in which these two types of unemployment co-exist? The answer is 'No'. When it came to developing his theory, Keynes only considered one kind of unemployment, involuntary unemployment, i.e. unemployment caused by a deficiency in effective demand. Either involuntary unemployment is present or there is no unemployment at all, and the Marshallian state of a match between supply of and demand for labor exists. Hence the adjective is unnecessary.

#### *Effective demand à la Keynes versus effective demand à la Marshall*

Keynes introduces the notion of effective demand in Chapter Three of the *General Theory*. He defines it as the intersection between aggregate demand and supply, both of which are a function of the quantity of goods produced, and hence of employment. He claims that involuntary unemployment is present whenever the employment level associated with effective demand is lower than full employment. Hence his central claim is that the cause of

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<sup>18</sup> My survey has cast doubt on this view. Nothing worth being called a theory of frictional unemployment existed at the time.

involuntary unemployment lies in a deficiency of effective demand. This deficiency is underpinned by what he calls the ‘fundamental psychological law’ of a decreasing marginal propensity to consume out of income. Involuntary unemployment results when this proportionate decrease in consumption fails to be matched by a sufficient demand for investment goods.

I fully agree with Clower (1997: 42) when he claims that Keynes’s theory of effective demand merely restates in aggregate form a Marshallian partial equilibrium supply and demand model. More precisely, Keynes’s aggregate supply/demand analysis is an extrapolation of Marshall’s analysis of firms’ optimal short-period production decision, which was discussed above. That is, the formation of effective demand is accounted for in the same way as the formation of the representative firm’s equilibrium values. It occurs first in entrepreneurs’ minds as the result of a thought-experiment on market outcomes. The entrepreneurs make conjectures about the aggregate supply price and the aggregate demand price functions, and derive effective demand as their intersection. As in Marshall’s model, there is no problem of realization. In other words, it is implicitly assumed that these conjectured values actually arise once the economy starts to unfold. None of this would happen if the entrepreneurs did not have perfect information. The heroic character of the assumption is even stronger in Keynes’s model than in Marshall’s, since the exercise now bears on the whole economy.

Of course, there are some differences between Keynes’s and Marshall’s models, but these are minor. Keynes considered proceeds (i.e. price times quantity) as the dependent variable rather than price alone. He also took employment, not the quantity produced, as the independent variable. Finally, he reasoned as if his analysis concerned the whole of the economy, or at least its manufacturing sector, but this makes no difference because the economy is viewed as a single sector. This change is purely semantic.

The conclusion to be drawn is that Keynes’s theory of effective demand is less original than it appears to readers who are unfamiliar with Marshallian theory. This raises another question: what explains that, unlike ‘effective demand *à la* Marshall’, ‘effective demand *à la* Keynes’ features a market non-clearing result?

My answer runs as follows. The sole element of Marshallian reasoning which Keynes abandoned, is the view that the aggregate supply price function incorporates the cost of inputs at their market-clearing values, at least as far as labor is concerned. Instead, he assumes that the wage rate upon which firms elaborate their supply price function is a ‘false’ (i.e. non-market-clearing) wage. To retain the assumption that firms are correct in their conjectures (as stated above, if this assumption is dropped, a theory of learning is needed), I must conclude that their incorporation of a false wage into their conjecture follows from their correct anticipation that this is indeed what will happen in the labor market. As to the factor explaining the prevalence of the false wage, there exists only one candidate: exogenous wage

rigidity. Therefore, all the claims to the contrary notwithstanding, it is difficult to escape the view that Keynes's effective-demand reasoning is based on a fixed-wage hypothesis. The reason for unemployment lies in the labor market, and no fuss should be made about effective demand being the cause of unemployment. The existence of unemployment logically precedes the determination of effective demand rather than the other way round.

That Keynes adopted the nominal-wage rigidity assumption in Chapter 3 is beyond dispute. But he stated that its introduction served only a simplifying purpose, and that it would be removed later in the book without harming his theory. To settle the issue, I need to assess Chapter 19 of the *General Theory*, where this removal is allegedly made. This will be done later. At this juncture, I will simply note that the introduction of this assumption is intriguing. What an oddity to have brought it into the picture! Keynes was well aware that the wage-rigidity assumption was the main, if not the only, rival to his own preferred explanation. It is unusual to introduce a rival explanation as a simplifying device in one's own argument. In order to remove any ambiguity, would it not have been safer to avoid this explanation altogether, albeit at the price of a more complicated demonstration?

#### *The time framework of Keynes's analysis*

In the *General Theory*, Keynes treads in Marshall's footsteps by deciding to analyze the short- and the long-period separately. I have already discussed the rationale for this strategy: the theory's *explanandum* is too complex to be studied as a whole. But it has several drawbacks. Two of them are visible in the *General Theory*. The first is a lack of consistency. Keynes uses the perfect-information assumption to study the short period, but when it comes to the long period he goes for the radical-uncertainty assumption. The issue of how the short and long periods interact is left unaddressed.

A second ambiguity pertains to the time framework adopted by Keynes when developing his aggregate-demand deficiency. He argues that this is a short-period analysis. From Hicks's inaugural paper onwards, IS-LM models have followed suit — “thus I assume that I am dealing with a short period in which the quantity of physical equipment of all kinds available can be taken as fixed.” (Hicks, 1937: 127). But is this so obvious? The point is to see what the ‘short period’ means. Does it designate a single period of exchange (Hicks's Monday or, in reference to Marshall's model, the single day on which the corn market was studied) or a short sequence of periods of exchange? The latter is the Marshallian definition of the short period. Returning to the *General Theory*, if the issue to be solved is the emergence of involuntary unemployment, the period of exchange (or market day) ought to be the relevant time framework for studying it. In effect, involuntary unemployment must necessarily occur on a given market day. I must insist on this point. Were we just wanting to make a descriptive assessment, we might look at quarterly statistics and observe, for example, that

unemployment increased by a certain percentage over a given quarter. But such a statement will not do when it comes to a theoretical discourse (here understood as modeled reasoning).

*Any salvation from Chapter 19?*

If the analysis above is valid, one cannot but be skeptical about Keynes's ability to deliver on his Chapter 3 promise to lift the nominal wage rigidity assumption later in the book without impairing the aggregate-demand deficiency claim. This task, he claims, is performed in Chapter 19. To Patinkin, an eminent Keynes scholar, this chapter constitutes the apex of the *General Theory*, proving "that, the many contentions to the contrary notwithstanding, the analysis of this book does not depend on the assumption of absolutely rigid money wages" (Patinkin, 1987: 28).<sup>19</sup> Keynes's claim can be summarized as follows: it can be concluded that too high wages are not the cause of involuntary unemployment as soon as it has been demonstrated that a decrease in the wage rate results in an increase in unemployment. In order for employment to increase, it is necessary that the decrease in wages causes either an increase in the marginal efficiency of capital or a decline in the interest rate, but neither of these effects is bound to occur.

As a prerequisite of gauging Keynes's claim, I need to clarify whether it relates to the real world or to a fictitious theoretical universe. As to the issue of whether decreases in nominal wages succeeded in decreasing mass unemployment during the Great Depression, most economists agree that they did not. For my part, I want to insist on the point that what is at stake is the ability to generate this result in a theoretical model. In this context, it is crucial that the time assumptions are precise. This is where Keynes errs.

While the emergence of involuntary unemployment was studied in the market-day framework, Chapter 19 considers another object of study, the success (or the lack thereof) of the adjustment process across market days. Two separate adjustment processes need thus to be disentangled, the adjustment within the market day and the adjustment across market days. Whenever the object of analysis is effective demand, the impediment to adjustment caused by wage rigidity occurs within the market day. This is the type of wage rigidity that needs to be removed and replaced with the flexibility assumption. But then this is the very thing that Keynes does not do in Chapter 19. The issue that he actually tackles relates to the adjustment process across market days — will employment increase if wages decrease from one market day to the next? This question does not address the wage formation process on a given market day. Thus, it must be presumed that the assumption made earlier in this respect still prevails:

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<sup>19</sup> Many commentators have trod in Patinkin's footsteps. To give just one example: "It is true that Keynes assumed a fixed money wage for the first eighteen chapters of the book, but this, as he explained, was just 'to facilitate the exposition'. In Chapter 19, entitled 'Changes in Money Wages' he relaxed the assumption and argued that it made no difference to the conclusions of the previous eighteen chapters" (Howitt, 1990: 72). See also Trevithick (1992).

the labor market is under the spell of an exogenous wage floor. That is, an exogenously rigid wage is assumed at each trading round, but it may be different across these rounds. Would employment increase if the exogenous wage floor were lower on market day  $t_2$  than on market day  $t_1$ ? This is the question addressed in Chapter 19. Now, Keynes may well have clinched a point by stating that this can fail to happen but this is hardly tantamount to removing the point-in-time rigidity assumption, the task that needed to be addressed to exonerate nominal rigidity from causing involuntary unemployment during a given period of exchange. So, contrary to what Keynes, Patinkin and others have claimed, the rigid wage assumption, as introduced in Chapter 3 and pertaining to a given market day, is not removed in Chapter 19.

### CONCLUDING REMARKS

The aim of this paper was to assess the implication of trying to anchor Keynes's theory more firmly in Marshallian theory. Many other authors have emphasized the need for such an anchorage, but they have assumed that it would reinforce the validity of Keynes's argument. I have shown that the contrary is true. This anchorage leads to the conclusion that Keynes was unable to achieve his program, the main stumbling block being to demonstrate simultaneously the existence of involuntary unemployment and the exoneration of wage rigidity as its cause. However, we should not blame Keynes for his failure. The task was beyond the reach of any economist in the 1930s, in view of the state of the discipline at the time. To have started the quest in the way he did was already a considerable feat. The claim made in this paper is not that Keynes was wrong. It is rather that he was unable to rigorously modelize his intuitions.

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