PART I

KEYNES AND KEYNESIAN MACROECONOMICS

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Keynes's *General Theory* and the Emergence of Modern Macroeconomics

> When a modern economist reads *The General Theory*, the experience is both exhilarating and frustrating. On the one hand, the book is the work of a great mind being applied to a social problem whose currency and enormity cannot be questioned. On the other hand, although the book is extensive in its analysis, it somehow seems incomplete as a matter of logic. Too many threads are left hanging. The reader keeps asking, what, precisely, is the economic model that ties together all the pieces? (Mankiw 2006: 31)

My study must start with John Maynard Keynes's book, *The General Theory of Employment, Interest, and Money* (1936). Before writing it, Keynes was already internationally famous, a towering figure in the economics profession, as well as in policy decision making in the United Kingdom, but this book definitively placed him in the pantheon of great economists.[1] Although he had a solid reputation among academics, for a long time Keynes's main activity was providing expertise on monetary matters to the British government and international organizations. *The Treatise on Money* (Keynes 1930) was his first important foray into high theory. Sadly, Keynes's great hopes for this book were not fulfilled. Soon recognizing its flaws, he started working on what was to become *The General Theory*.

Keynes's aim in writing this book was to identify the causes of the mass unemployment that affected all developed economies in the Great Depression years. The 1930s were also a time during which Russia was witnessing strong economic results to the effect that a possible electoral victory of parties leaning toward communism (or their taking power in more unorthodox ways) was a

[1] Two renowned biographies of Keynes are Moggridge's (1992) and Skidelsky's three-volume work (1983, 1992, and 2000).

possibility that could not be discarded. In short, capitalism was in peril, both economically and politically, and Keynes realized that its survival implied important changes in its functioning. As noted by Robert Skidelsky, the task ahead intertwined theory and persuasion:

> Keynes understood that his theory had to be usable for politicians and administrators: easily applied, offering political dividends. But he also understood that, before he could win the political argument, he had to win the intellectual argument. (Skidelsky 1992: 344)

The main diagnosis about the crisis available to economists at the time was of "Austrian" inspiration. The crisis, the story ran, signaled a situation of overinvestment and misallocation of resources, a state of affairs that required for its solution a process of 'liquidation,' a real wage deflation, on the one hand, and some sanctioning of the firms that had engaged in wrong investment decisions, on the other. Flexibility was thus the motto. The more flexible prices and wages were, the faster the liquidation process would come to an end and conditions for prosperity would be reestablished. However, when the depression kept its course without wages deflation exerting its proclaimed effect, economists started to waver about the virtues of laissez-faire and to wonder whether, this doctrine to the contrary notwithstanding, governments should engage more actively in the economy. Thus, economists were torn between the policy conclusions following from accepted theory and their gut feeling that another path should be taken. Keynes's project was to remove this contradiction by providing a theoretical argument in favor of the gut feeling. *The General Theory* ensued.

It was received enthusiastically – greeted as a "liberating revelation" in Leijonhufvud's words (1968: 31) – especially by young economists.[2] There were a few dissenting voices, focusing on the shortcomings of Keynes's reasoning, but the pressure to produce a new theoretical framework that might account for the obvious dysfunctions in the market system was such that they did not gain much traction. Keynesian theory took off rapidly. As a paradigm, it held sway until the 1970s when it came under strong attack, first by Friedman and Phelps and then by Lucas.

Today, Keynes's theory is divisive. In the wake of the 2008 recession, after more than two decades during which Lucasian macroeconomics held sway, many economists have claimed the need to return to the master (Skidelsky 2009). In terms of Leijonhufvud's decision-tree image, this implies a long, drawn-out backtracking process, a return either to square one (*The General*

[2] "One of the exciting things, of course, for a nineteen-year old was the sense of intellectual revolution, overturning the obsolete wisdom encrusted in the past, especially when the new theory was on the side of promising to do something constructive about the main problems that concerned me and people of my generation" (Tobin's interview with Snowdon and Vane [1993] 2005: 149).

Theory) or to the first subsequent node, the IS-LM bifurcation. For their part, mainstream macroeconomists reacted with outrage to this suggestion.

This is the type of divide that can hardly be settled, with the two camps talking at cross purposes and digging in their heels. There is, however, one aspect of this debate on which I have reached a firm conclusion. From the outset, 'the economics of Keynes' as well as 'Keynesian economics' (to borrow Leijonhufvud's terminology [1968]) were plagued with conceptual issues which, for the sake of pragmatism, were swept under the rug and have almost never been addressed since.[3] Patinkin once observed that the fundamental problem facing the reader of *The General Theory* is that Keynes "never pulled together its various analytical components into an explicit and complete model: this task was left for its contemporary interpreters" (Patinkin 1990: 234). In itself, this would not have been dramatic, but things were actually worse. Even if Keynes had decided to take up the task of constructing the "complete model" to which Patinkin was referring, he would have been bound to fail. Many of Keynes's admirers will find this judgment too harsh. Once things are put into perspective, I think that it is not the case. Keynes could simply accomplish no more than what was possible given the state of economic theory at the time. The program he pursued was extremely ambitious, more than he realized, and he lacked the means to achieve it.

This observation explains the way in which I have chosen to deal with Keynes in this inaugural chapter, that is, by focusing on the difficulties which he encountered. I start by presenting my reconstruction of Keynes's project when he was writing *The General Theory*. Next, I bring out the obstacles to his program. I argue in particular that there was no room for a rationing outcome (and hence unemployment) in the theoretical framework Keynes wanted to use, Marshallian theory, except for the trivial wage floor assumption. I also show that economists writing after Alfred Marshall and before Keynes made scant progress on the front of unemployment theory. The chapter continues first with a presentation and next with a critique of Keynes's effective demand model, *The General Theory*'s core model. Finally, in the last section of the chapter, I briefly sketch out how Keynes's theory was transformed into Keynesian macroeconomics.

THE RESEARCH PROGRAM IN *THE GENERAL THEORY*

Since the publication of *The General Theory*, a seemingly unending flow of books have been written with the purpose of deciphering its central message. Significantly enough, after all these years no consensus has been reached, and the chances are high that there will never be one. My own reconstruction

[3] For the meaning of Leijonhufvud's Economics of Keynes/Keynesian economics distinction, the reader is referred to Note 2 in the Preface.

of the research program underpinning *The General Theory* can be summarized as follows:

a) Keynes aimed at demonstrating the theoretical existence of involuntary unemployment. The latter, he recognized, was a phenomenon whose real-world existence was compelling, especially in the years of the Great Depression, yet for which the economic theory of the time had no room. In view of the peaks to which unemployment rose in the wake of the Great Depression, Keynes decided to split unemployment into frictional and involuntary unemployment, the former considered normal and the latter abnormal. Taking for granted that the former was well understood, he zeroed in on elucidating the latter. Keynes regarded involuntary unemployment as a violation of the second classical "postulate," referring to a state of equality between the marginal utility of consumption and the marginal disutility of labor. In modern terms, taking the standard derivation of labor supply as a reference, the criterion for the existence of involuntary is that at the closure of a given period of exchange some agents find themselves excluded from participating in the labor market in spite of the fact the market wage is higher than their reservation wage. This means that the involuntary unemployed agents, unlike the employed ones, are unable to make their optimizing plan come through, a state that can be characterized as 'individual disequilibrium,' Such an outcome implies that agents are heterogeneous: the unemployed enjoy less immediate utility than the employed. Looking at the matter from the market level, the situation is one in which the labor features an excess labor market supply or, in other words, a case of labor rationing.
b) The received view of the time was that unemployment was caused by wages rigidity. Keynes was eager to dismiss this view. That is, he wanted to exonerate wage rigidity from being responsible for the presence of involuntary unemployment.
c) Keynes's interest in involuntary unemployment followed from the presumption that it expressed some system failure, a systemic problem affecting the working of decentralized economies. More specifically, he wanted to link involuntary unemployment with a deficiency in aggregate demand for the output as a whole, which was itself associated with some leakage from the productive towards the financial sector. The result of such a state of affairs was that the optimistic interpretation of the market economy put forward by economists since Adam Smith needed to be tempered.
d) Keynes wrote in the Preface to the French edition of *The General Theory*, "I have called my theory a *general* theory. I mean by this that I am chiefly concerned with the behavior of the economic system as a whole" (Keynes 1939). In other words, he perceived that involuntary unemployment should be accounted for in general equilibrium terms (although he did

not use this expression): but its origin had to be sought in other parts of the economy than the labor market.[4] Yet, Keynes's decision to adopt an interdependency perspective should not be interpreted as an adhesion to the Walrasian general equilibrium approach.[5] To him, the route to be taken was to generalize Marshallian analysis.

e) Instead of joining the imperfect competition line of argumentation which was emerging at the time in Cambridge, Keynes wanted to use the perfect competition framework – presumably because he associated imperfect competition with collusion, unions, and so on, whereas he wanted to bring something deeper to the fore.

f) The remedy for involuntary unemployment which Keynes proposed was a state-induced demand activation, combined with a policy of low interest rates as well as some dose of income redistribution. To Keynes, all these measures hardly amounted to introducing socialism. On the contrary, their aim was to prevent it from arising and to preserve democratic capitalism. Hence, his characterization of his theory as "moderate conservative" (Keynes 1936: 377).

g) After some wavering, Keynes decided to develop his argumentation within the canons of existing theory, that is, Marshallian theory.[6] That is, his aim was to sustain his contentions with as minimal as possible changes in this theory.

ANIMAL SPIRITS

This analysis is my personal rational reconstruction of *The General Theory*. Keynes himself did not spell out his project in these terms. Likewise, none of the many accounts of what Keynes might have had in mind that can be found in the literature is exactly like mine. Still, I am of the opinion that my presentation of Keynes's project can easily be reconciled with most of them.

I readily admit that it is incomplete. Indeed, it leaves aside what, in an article reacting to some critics and published one year after his book, Keynes declared to be its central message, namely, the radical uncertainty surrounding investment decisions (Keynes 1937). Keynes's declaration is somewhat surprising as

[4] For example, in his Appendix to chapter 19, where he criticized Pigou, Keynes wrote the following: "I maintain that the real wage … is not primarily determined by 'wage adjustment'… but by other forces of the system … in particular the relation between the schedule of the marginal efficiency of capital and the rate of interest" (1936: 278).

[5] At the time, Walras's views were hardly appreciated in Cambridge and, for better or worse, Keynes did not think that Walras's theory could be of any help for his own project. Clower quotes an extract of a letter from Keynes to Georgescu-Rodan, dated December 1934: "All the same, I shall hope to convince you some day that Walras's theory and all the others along those lines are little better than nonsense!" (Clower 1975, reprinted in Walker 1984: 190).

[6] On Keynes's Marshallian roots, see Clower ([1979] 1984), Leijonhufvud (1968, 1999) and De Vroey (2011b).

uncertainty is only present in one chapter, Chapter 12, which deals with long-term expectations. Herein Keynes used the felicitous 'animal spirits' expression to refer to "a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative beliefs multiplied by quantitative probabilities" (Keynes 1936: 161). Chapter 12 is a fascinating read, yet its content is nonetheless extraneous to the rest of the book. In the latter, Keynes separated the short- and the long-period working of the economy, zeroing in on the more tractable issue, that is, the short-period determination of the level of employment, and basing his analysis on the perfect information assumption – the very opposite of animal spirits. My reconstruction of Keynes's program relates to this analytical core. As for the 1937 article, I regard it as expressing Keynes's regret about what he would have liked to analyze in his book yet was unable to.

Others have a different opinion. For example, in several papers and books, G. L. S. Shackle heralded that the idea of radical uncertainty is what should be retained from Keynes's book, much more than his analytical developments.

> Keynes in *The General Theory* attempted a rational theory of a field of conduct which by the nature of its terms could be only semi-rational. But sober economists graving upholding a faith in the calculability of human affairs could not bring themselves to acknowledge that this could be his purpose. They sought to interpret *The General Theory* as just one more manual of political arithmetic. In so far as it failed the test, they found it wrong, or obscure. (Shackle 1967: 129)

Shackle's point is appealing. The problem, however, is what to do once his conclusion has been attained, except repeating the same idea in different ways. Expanding the animal spirit idea has proven to be a hard nut to crack. There have only been a few interesting attempts, and then only decades after the publication of Keynes's book, and they have not yet gained much ascendancy.

THE OBSTACLES TO KEYNES'S PROJECT

The problem with Keynes's research program is that it was overambitious, in particular with respect to the state of economic theory at the time. Three difficulties seem paramount to me.

A first one relates to Keynes's project of generalizing Marshall's partial equilibrium analysis. At the time, Marshallian general equilibrium was non-existent and deemed unnecessary. As Joseph Schumpeter put it in his semi-centennial appraisal of Marshall's *Principles*, "A full elaboration of the theory of general equilibrium [by Marshall] could only have duplicated the work of Walras" (Schumpeter [1941] 1952: 100). I disagree with Schumpeter's judgment. As for Keynes, my view is that achieving his generalizing goal in a rigorous way was beyond his capabilities and time constraints.

A second difficulty is that at the beginning of his inquiry Keynes wanted to highlight a malfunction of the equilibration mechanism by displaying an impediment to the adjustment process. Later, Leijonhufvud labeled this process

the "laws of motions" of markets, these motions following from agents' reactions to market signals (Leijonhufvud 2006a). In Marshall's theory, the two distinct issues of the static determination of equilibrium and that of the equilibration dynamics were unequally addressed; whereas the former came close to receiving a mathematical treatment, the second one remained unaddressed. "Individual adaptive learning and market equilibrating processes were loosely sketched at best" (Leijonhufvud 2006a: 29–30). Marshall was hardly bothered by this defect as he took it for granted that these laws of motion worked well in reality. The contrary was true for Keynes as the economic situation he observed seemed a testimony to their malfunctioning. However, he lacked the means to make progress on the matter. This explains that he ended up setting aside the "laws of motions" research theme to content himself with static analysis. As stated by Leijonhufvud:

> To find a manageable static model that would capture the essence of his theory, he [Keynes] had to reason through the dynamics 'verbally' while dealing with this system that was mathematically intractable! . . . He was really operating beyond the limits of what Marshall's method could accomplish. (Leijonhufvud 2006b: 70)

A third obstacle facing Keynes, the existence of which he actually was unaware, was that his project of improving on existing theory of unemployment by adding a theory of involuntary unemployment to the supposedly existing theory of frictional unemployment, all this within a Marshallian framework, was more daunting than he imagined. The reason is that Marshallian theory has no room for any kind of unemployment, being it involuntary or frictional unemployment, except for the trivial exogenous wage or price floor assumption. This point deserves a more in-depth analysis.

No Room for Unemployment in Marshall's Principles

Let me begin with recalling the main tenets of Marshall's value theory. The latter is based on the assumption that trade is confined to well-defined periods of exchange with production taking place before trade. Take his corn market model in Chapter 2 of Book V of the *Principles* (Marshall 1920) or his fishing industry model (Marshall 1920: 307), the two markets that Marshall considered exemplary. In these markets, at the end of a given period of exchange, the market finds itself in a state that he called "temporary equilibrium." This result is what we now understand by market clearing. Put negatively, rationing is absent.[7] Turning to the issue of how this outcome is reached,

[7] Rationing is a case of short-side trading. Take a standard supply and demand graph and draw a horizontal line from the ordinate at the given price. If this lines crosses the supply and demand functions at their intersection, rationing is absent. Otherwise, the first function the line intersects is the short side. Although the agents on the short side of the market achieve their desired trade, those on the long side do not and are called rationed.

Marshall assumed that all agents have a perfect knowledge of market conditions. In his words:

> *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. ... I assume that there is only one price in the market at one and the same time. (Marshall 1920: 341; my emphasis)[8]

Thus, agents are supposedly able to mentally reconstruct the exact equilibrium allocation. In such a case, neither a supplier nor a demander will ever find an agent from the opposite side of the market wanting to trade at a price either higher or lower than the equilibrium price. As a result, exchanges will take place only at the market equilibrium price and quantity mix.

This analysis bears on a single period of exchange (hence the 'temporary' qualifier). It needs to be extended to a broader time range covering several such periods and their intervals. This extension can be visualized by referring to the week device put forward by Hicks in *Value and Capital* (1946: 122–23). The period of analysis is now a given succession of weeks. In this scheme, every week, production takes place from Tuesday to say Saturday (if Sunday is a holiday), with trading occurring exclusively on the next Mondays.

Once this broader perspective is adopted, a second, more fundamental, equilibrium concept enters the picture, equilibrium as a state of rest. Marshall called it 'normal equilibrium.' Two new distinctions must be considered. First a distinction must be drawn between the market and the normal supply and demand functions. Second, two types of normal equilibrium have to be separated: 'short-period normal equilibrium' acting as a center of gravity in a fixed-capital stock context, and 'long-period equilibrium' acting thusly when the capital stock is variable. Hicks ([1957] 1967:149) re-baptized Marshall's notion as 'full equilibrium.' It is achieved whenever the market-day allocation (temporary equilibrium or the matching of *market* supply and demand) coincides with the normal allocation (the matching of *normal* supply and demand). Only then do agents lack any incentive to change their behavior. The same proposition can also be expressed in reference to agents' expectations by stating that normal equilibrium is a state in which agents' expectations have been fulfilled.

Marshall's analysis perfectly admits that, at the closure of the period of exchange (or market period) producers have an incentive to change their behavior. In other words, a combination of market clearing and disequilibrium,

[8] In a Marshallian framework, the variable that agents bargain over is the nominal price. The nominal price (and not the real one) is the variable operative in ensuring the matching of supply and demand. This principle holds for the labor market even if workers care about the real wage. Cf. Lipsey (2000: 70), Branson (1972: ch. 6) and De Vroey (2004: 63).

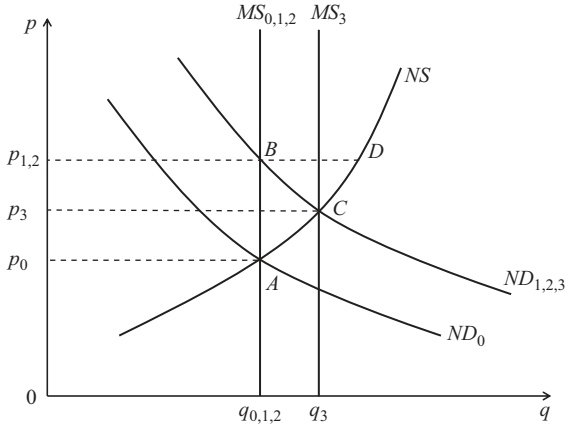

FIGURE 1.1 Temporary and normal equilibrium: Marshall's fish market

understood as a lack of full equilibrium, is a possible occurrence.[9] Figure 1.1 illustrates this point with respect to Marshall's fish market example.

Starting from a state of full equilibrium at t_o (point *A*), a change in normal demand (*ND*) of a moderate length occurs at t_1 (I suppose that market and normal demand coincide). As for supply, a distinction has to be drawn between market supply (*MS*), which is vertical due to the perishable nature of fish, and short-period normal supply (*NS*) expressing firms' optimal plan when they can change their output by using more variable capital. The initial result of the change in demand is that at t_1 the market equilibrium price rises to the distance $o\text{-}p_1$. At *B*, the market is in disequilibrium because 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 firms to adapt and produce the new optimal quantity of fish; as a result, the market remains in the state of disequilibrium at t_2. The short-period normal equilibrium is reached on the third week at point *C*.

Sluggishness is thus present in Marshall's theory, yet it concerns only the formation of normal equilibrium. One cannot assume that it also affects the formation of temporary equilibrium. Actually, it does not matter whether temporary equilibrium is reached quickly or slowly. Think of an auction market: whether the sale is conducted in five minutes or in an hour is of anecdotal importance. The same applies to the bargaining process across the perfectly informed agents participating in any given Marshallian market.

[9] This view stands in contrast to the present-day widespread view according to which disequilibrium and market non-clearing are considered identical (a view that originates from the Walrasian vision of equilibrium).