Equilibrium in Keynes: A Note

Rapetti, Martin

Universidad de Buenos Aires, Conicet, CEDES, Equilibra

2025

Equilibrium in Keynes: A Note*

Martin Rapetti[1]

Abstract

This paper investigates the elusive notion of equilibrium in Keynes's *General Theory* and its implications for subsequent interpretations of his work. Through a formal setup of the core relationships in the first eighteen chapters of the book, I show that Keynes's model allows for multiple equilibria that critically depend on fixed nominal wages, expectations and confidence. While this structure resembles the IS-LM model, it diverges in its treatment of price flexibility, speculative motives in money demand, and the central role of expectations and confidence. The paper evaluates four possible interpretations of the *General Theory*, each arising from a different understanding of the notion of equilibrium in Keynes: (1) the neoclassical synthesis view, which relies on nominal wage rigidity; (2) a *Tobinian* view, in which macroeconomic equilibrium is unique but potentially unstable; (3) a social-norms view, where real rigidities à la Akerlof prevent wage adjustments and therefore multiple equilibria are possible; and (4) a *Minskian* interpretation that denies the existence of equilibrium altogether. The first interpretation is incompatible with the view expressed by Keynes in the *General Theory*. The other three, while clearly distinct from each other, are all compatible with Keynes's argument—although they appear with varying degrees of clarity in the book.

Keywords: Keynes, equilibrium, wage rigidity, expectations, General Theory.

JEL classifications: B22, E12, E24.

---

* This paper is part of a volume in honor of Oscar Dancourt, an economist who is modest in manner and brilliant in knowledge. I feel fortunate to have collaborated and interacted with him on several projects and to have built a friendship. I thank the late James Crotty for valuable comments on a previous version of this article.

[1] UBA, CONICET, CEDES y Equilibra

1. Introduction

The concept of equilibrium in the *General Theory* is elusive. Keynes (1936) never defined it with precision, yet he relied on it throughout the book. This ambiguity has had lasting consequences: it opened the door to competing interpretations of his theory.

This paper explores how the vague and underdefined notion of *equilibrium* in Keynes's *General Theory* has shaped subsequent interpretations of his work. To motivate the discussion, I develop a formal model that reconstructs the core assumptions and behavioral relations found in the first eighteen chapters of the *General Theory*. I support my formal representation based on quotations from the original text. The resulting model closely resembles the IS-LM structure but incorporates key distinctions—particularly price flexibility and the role of speculation, expectations and confidence.

This resemblance naturally invites a familiar reading: that the main innovation of Keynes' theory lies in the assumption of *nominal* wage rigidity. I argue that this interpretation is exegetically weak. In the *General Theory*, Keynes explicitly rejected the view that nominal wage and price flexibility could function as effective remedies for unemployment. He emphasized the destabilizing effects of debt-deflation mechanisms, which prevent the economy from self-correcting under conditions of unemployment.

This view raises a broader question about the meaning of *equilibrium* in Keynes's work. Section 3 examines alternative notions of equilibrium in the *General Theory*, which may be linked to the work of Modigliani, Tobin, Akerlof and Minsky. Section 4 concludes some final remarks.

2. The *General Theory* Model

Let us start by summarizing what I think are the building blocks of Keynes's model described in the *General Theory*. As mentioned in many passages of this work, "the ultimate object of [Keynes's] analysis is to discover what determines the volume of employment". Therefore, his work focused on the factors that determinate output and employment levels in an economy. It is worthy clarifying the meaning of "economy" in his framework. Keynes's analysis is eminently institutional and historically determined. As O'Donnel (1989) emphasizes, for Keynes moral sciences "could not be reduced to, or modeled upon the natural sciences". The fact that economic phenomena deal with behaviors "not homogenous through time", like introspection, values, motives, expectations and physiological uncertainties, makes economics a historical and institutional dependent discipline. In this sense, Keynes's *General Theory* is not so general. His model was essentially oriented to the analysis of England and the United States during the Great Depression of the 1930s.

What are the characteristics of such a historically and institutionally determined model? Four key elements need to be recognized. In the *General Theory*, we are dealing with: 1) a short-run analysis, 2) of a mature/developed economy, 3) largely closed to international trade and finance, 4) in which economic units are financially constrained and inherited fixed nominal contracts (i.e. a monetary economy).

The first characteristic implies that the capital stock of the economy is fixed: "the fluctuations in real income under consideration in this book are those which result from applying different quantities of employment to a given capital equipment" (p. 114). Therefore, issues regarding capital accumulation and economic growth are essentially excluded from the discussion.

The second feature means that there are no sharp asymmetries within the economy, either in terms of sectoral productivity, technology adoption, or labor markets, while the third implies that exchange rate and interest parity complications are only considered secondarily. Taken together these two characteristics lead to the construction of one-sector closed-economy model.[2]

The fourth characteristic implies that agents are unable to smooth their consumption over time, making current spending be highly dependent on current income. This is, of course, a key implicit assumption for the development of the consumption multiplier.

It is helpful for the discussion to give Keynes's model a mathematical form. In the short-run, output (*Y*) and employment (*N*) are determined by the "intersection of the aggregate supply function with the aggregate demand function"(p.89). Given a state of technology and a capital stock (*K*), the former is determined by the level of employment. It is important to remember that when Keynes accepted the first postulate of the classical theory, he assumed that firms operate with standard neoclassical production functions, with constant returns to scale: "given the organization, equipment and technique, real wages and the volume of output ... are uniquely correlated, so that, in general, an increase in employment can only occur to the accompaniment of a decline in the rate of real wages" (p.17). To give a mathematical form to our interpretation of the model in the *General Theory*, we can assume the following aggregate supply function:

$$Y = f(\overline{K}, N) \qquad \text{with} \quad f_N > 0 \ \text{and} \ f_{NN} < 0 \qquad (1)$$

[2] Highlighting the institutional features of Keynes's model may appear to be a digression. However, I see it as a crucial lesson to be drawn from his work. In many countries outside the US and the UK, macroeconomics is commonly taught using models that implicitly reflect the institutional context of those two economies, largely one-sector closed-economy models. In Latin American countries, for instance, it may be problematic to analyze macroeconomic phenomena using a model that ignores international trade and financial interactions and overlooks the theoretical implications of sectoral heterogeneities and relative prices.

Aggregate demand is a function with two main components: private consumption (*C*) and investment (*I*). Public expenditure is clearly a third element, which was haunting throughout the whole book, but not explicitly included in the "formal" exposition.

In Book III of the *General Theory*, after analyzing in detail the objective and subjective factors affecting private consumption, Keynes pointed out that "we are left with the conclusion that short-period changes in consumption largely depend on changes in the rate at which income is being earned" (p110). Moreover, he let us know that people "increase their consumption as their income increases, but not by as much as the increase in their income", which implies that the marginal propensity to consume "is positive and less than the unity". I follow standard practice and formulate a textbook Keynesian consumption function, which seems faithful to the spirit of Keynes's *General Theory*.

$$C = C(Y) \qquad \text{with } 0 < C_y < 1 \qquad (2)$$

Investment depends negatively on the interest rate and positively on marginal efficiency of capital (MEC). In Keynes's theoretical framework, there are three types of assets: "money" (including cash and savings accounts), "bonds" (grouping long-term risky assets such as sovereign and corporate bonds and equities) and physical assets. The complex interest rate structure is simplified by assuming a representative interest rate (*i*), defined as the yield on holding the long-term risky financial asset.

The marginal efficiency of capital (λ) is the discount rate that makes the flow of expected returns of an investment equal to the current cost of such an investment. The MEC is essentially determined by the long-run *expectations* and the *confidence* with which these expectations are held. In chapters 5 and 12 and many other parts of the *General Theory*, Keynes elaborated about the nature of expectations and the way they are formed. Several elements influence the process of expectation formation, including history, conventions, institutional arrangements, psychology and current economic events. The complex nature in which these elements interact to form expectations and to determine the state of confidence in an economy makes *expectations* and *confidence* highly volatile and liable to sudden revision. Although they are key elements in the determination of output, Keynes suggested that expectations and confidence are variables almost impossible to theorize about —"there is, however, not much to say about the state of confidence" (p.134)— and called Chapter 12 a "digression" which operates under "a different level of abstraction from most of this book". Given this, we can assume that it is a fair representation of Keynes's view to take the MEC as given in the short run, which can be changed suddenly by the volatile nature of agents' expectations and confidence.[3]

[3] I am aware that this is a controversial point, which has divided opinion among exegetical analyses of the *General Theory*. O'Donnell (1989), for instance, explicitly argues that 'Keynes's framework typically takes LTE [long-term expectations] to be an independent, exogenous variable, incapable

Given the previous discussion, I provide the following a formal representation of investment behavior:

$$I = I(i, \lambda) \qquad \text{with } I_i < 0 \text{ and } I_\lambda > 0 \tag{3}$$

The interest rate is an endogenous variable in Keynes's system; but contrarily to the classical theory, it does not to adjust to clear the goods markets (i.e. to equalize investment and saving). On the contrary, the interest rate adjusts to clear the financial asset markets. For this purpose, Keynes introduced the notion of liquidity preference (L), what in today's jargon is known as the money demand. Besides the traditional motives to demand money (i.e. transactional-motive and precautionary-motive), people may be willing to hold money for speculation purposes. If the price of long-term risky assets are expected to fall (as typically occurs in times of financial distress or crises), switching portfolio to hold money may be a profitable and riskless option. Therefore, following Keynes's own formal representation of the liquidity preference, I model it as a function with two arguments: income and the interest rate.

$$L = L(Y, i) \qquad \text{with } L_Y > 0 \text{ and } L_i < 0 \tag{4}$$

Up to chapter 19, Keynes worked under the assumption that "the money-wage and other factor cost are constant per unit of labour employed" (p.45). Keynes also was emphatic in accepting the first postulate that increases in the employment level require a drop in real wages. It is clear that the assumption, as in the IS-LM model, that both nominal wages and the price level are fixed in the short run collides with the model of the *General Theory*. In chapter 2, Keynes indicates that "prices are governed by marginal prime cost in terms of money and that money-wages largely govern marginal prime cost" (p.12). From these citations, it seems reasonable to assume that prices rise with employment and become very sensible when the economy reaches full employment (N^F). We can express this mathematically as follows:

$$P = \frac{\overline{W}}{f_N} \qquad \text{with } \lim_{N \to N^F} \frac{dP}{dN} = \infty \tag{5}$$

The five equations we have presented so far can help us to summarize in a very simple way what I see as the essence of Keynes's model in the first eighteen chapters of the *General Theory*. To have the system operating fully we need to introduce equilibrium conditions for

---

of being explained by other economic givens' (p. 241). Other scholars such have subscribed this interpretation as well. However, the view that LTE are endogenous has also received strong support. The work of Hyman Minsky (1975, 1986) and James Crotty (1990) emphasizes the role of endogenous LTE as a key element generating endogenous cycles. As discussed below, this analysis—while highly valuable in its own right—was not thoroughly developed in the *General Theory*.

the goods and money markets. Equation (6) represents the former and equation (7) the latter, where $\bar{M}$ represents an exogenously determined stock of outside money (M).

$$Y = C(Y) + I(i, \lambda) \tag{6}$$

$$\frac{\bar{M}}{P} = L(Y, i) \tag{7}$$

Equations (1)-(7) represent my interpretation of Keynes's model in the first eighteen chapters of the *General Theory*. Given the value of the exogenous variables ($\bar{K}$, $\bar{W}$, $\bar{M}$ and λ), the system determines the level of output (Y), investment (I), consumption (C) and employment (N), together with the interest rate (i) and the price level (P) in the short run.

This presentation looks very similar to the IS-LM model. There are, however, three key differences. First, as mentioned above, here we have a flexible-price model which is coherent with Keynes's original presentation. Second, the interest rate enters as an argument of the liquidity preference function to represent the demand for money with speculative motives in contexts of uncertainty instead of a variable that only represents the opportunity cost of holding money. Third, and most important, the model accounts for the MEC explicitly. This is one of the main characters of the *General Theory's* plot: investment, output and employment critically depend on the state of *expectations* and *confidence*, which are included as variables determining the MEC. Notice that our model yields multiple equilibria —which is the main reason why Keynes argued that his theory is more *general* than classical theory— and those equilibria critically depend on the value of the MEC. For low values of λ (i.e. depressed *animal spirits*), our model would show low levels of investment, output and employment, whereas the opposite would occur for high values of λ.

It is now interesting to see how Keynes's model enters into dialogue with classical theory, which assumes that the economy always operates at full employment (N^F). When we assume that $N=N^F$, output gets immediately determined by equation (1) at its full employment level ($Y=Y^F$). Once output is at full employment, the price level gets determined by equation (5) autonomously. As a consequence, we end up with equations (6) and (7) to determine the equilibrium level of only one variable: the interest rate. In this form, the model is over-determined. We therefore need to add another endogenous variable.

One obvious candidate is the nominal wage rate. This would be in line with the spirit of classical theory, in which full employment is guaranteed once prices and wages are fully flexible. The simplest way to reflect this would be to treat nominal wages as endogenous in equation (5), which could be formalized in the following form:

$$P = kW \qquad \text{where } k = \frac{1}{f_{N^F}} \tag{8}$$

For the case of full employment, the model consists in three equations (6), (7) and (8), which determine the equilibrium values of three nominal variables: interest rate, the price level and the nominal wage rate. Notice that for this special case, our model reaches the main results of classical economic theory. Given that $Y=Y^F$, Equation (6) shows that the interest rate adjusts to clear the goods market, making saving equal to investment. Once the interest rate is determined in the goods market, equation (7) turns into a sort of quantity theory of money: the price level is determined by the stock of money. In this system, money is neutral.

Let us review what we have done so far. We set up a mathematical model which attempts to represent the system that Keynes developed in the first eighteen chapters of the *General Theory*. We have given an exegetic account to justify the assumptions that we took to develop the model. Three results are particularly relevant: 1) the model provides multiple equilibria (i.e. the model is a *General Theory* of output and employment determination in the short run); 2) these equilibria depend on the state of expectation and confidence; and 3) money is not neutral. Since Keynes claimed that classical theory is only applicable to the special case of full employment, we introduced the "classical case" to deal with the full employment case. Following the classical tenants, we assumed that there is no restriction for nominal wages to move. With that specification, the special case of (our model of) Keynes's model provides two key classical results: 1) the quantitative theory of money holds (i.e. money is neutral) and 2) the interest rate is the variable that brings investment and saving together. The classical theory appears as a special case of our model of the *General Theory*.

Notice that this interpretation of Keynes's model leads to a controversial conclusion: the key difference between Keynes and the classics is the assumption regarding the behavior of nominal wages. Multiple equilibrium levels of output and employment occur when we are willing to assume rigid nominal wages, as assumed by Keynes in the first eighteen chapters of his book. This interpretation would be the line with that pioneered by Franco Modigliani (1944), who showed that equilibrium with the presence of involuntary unemployment is due entirely to the assumption of fixed nominal wages; when wages are free to move the system becomes determined in a unique equilibrium with full employment. Modigliani categorically pointed out that "the essence of Keynesian economics is wage rigidity. That is Keynes" (cited in Snowdon and Vane, 2005).

It is difficult to agree with that interpretation, given that Keynes was quite emphatic about the inability of price and wage flexibility to do the job of making the economy converge to full employment. This was clearly stated in chapter 19, when he lifted the assumption of wage rigidity and analyzed the potential effects of price and wage deflation as a medicine

for underemployment. In a monetary economy in which nominal contracts are widely spread, a price and wage deflation could lead to massive bankruptcies and further contraction of output and employment. In his own words: “indeed if the fall of wages and prices goes far, the embarrassment of those entrepreneurs who are heavily indebted may soon reach the point of insolvency, with severely adverse effects on investment” (p.264). This is the so-called “Fisher-effect” due to Irvin Fisher (1933) and has been identified as a key element in Keynes’s theory by many authors like Hyman Minsky (1975) and James Tobin (1975), among others.

3. Keynes’s Notion of Equilibrium

In the previous section, it seemed that we had reached a dead end. On the one hand, we built a model that appeared faithful to Keynes’s spirit; on the other, when we tried to turn the classical theory into a special case of it, we arrived at the same conclusion as Modigliani—one that is at odds with Keynes’s view expressed in chapters 2 and 19 of the *General Theory*. This apparent contradiction now leads us to explore Keynes’s notion of equilibrium. We are particularly interested in finding answers to three questions: 1) What did Keynes mean when he stated that the classical theory focused only on one “limiting point of the possible positions of equilibrium”? 2) Is the argument that price and wage deflation is ineffective in restoring full employment equilibrium sufficient to ensure that the economy can have multiple equilibria? 3) Did Keynes’s model have any equilibrium at all?

Let us begin by exploring the first question. We know from the previous section that the distinction between classical theory and Keynes’s theory does not rely on assumptions regarding the behavior of nominal wages. Keynes assumed fixed nominal wages for simplicity and “this simplification, with which we shall dispense later [in chapter 19], [was] introduced solely to facilitate the exposition” (p. 27). Now, if Keynes was right in stating that *nominal* wage flexibility does not restore full employment, as classical theory argues, what is the special classical equilibrium that Keynes admits? In other words, what special macroeconomic equilibrium, as Keynes argued, does classical theory explain? One possible answer to these questions is as follows: both theories accepted nominal wage and price flexibility but differed on the role of inherited nominal contracts in out-of-equilibrium adjustment. Classical theory simply neglects them. It would therefore be a special case of Keynes’s more general theory, in the sense that it applies only to economies with a low level of financial leverage. In this special case, price and wage flexibility—through the “real-balance (or Pigou) effect”—may possibly lead the economy back to full employment.

This answer would be at best partial, because it states that classical theory would apply in a particular case, but it does not explain what the other possible equilibria that Keynes’s theory supposedly accounts for are. As our model of the *General Theory* showed, multiple

equilibria arise under the assumption of fixed *nominal* wage. Does this result still hold once we lift the assumption? We need to explore how Keynes's model works when *nominal* wages are *free* to change because he told us that "the essential character of the argument is precisely the same whether or not money wages are liable to change" (p. 27). Is it?

We know that Keynes adhered to the classical explanation of how nominal wage and price flexibility operates in situations of over-employment. When expectations and other factors are such that they generate an aggregate demand level higher than full employment output, nominal wages and prices increase to eliminate the excess demand in the goods market. As mentioned in several parts of the *General Theory*, especially in chapter 21, Keynes suggested that at full employment the economy faces a horizontal aggregate supply curve and that any excess demand would therefore be eliminated by proportional nominal wage and price increases. Classical and Keynes's theories are identical here.

Another thing we know from the *General Theory* is how pervasive nominal wage and price deflation can be in situations of unemployment. As mentioned above, in chapter 19, Keynes demolished the classical adjustment mechanism to return to full employment equilibrium on several grounds, the "Fisher effect" being probably the most persuasive one. Thus, in Keynes's theory, there appears to be an asymmetric effect of nominal wage and price adjustments on general equilibrium, depending on whether the economy faces excess demand or excess supply. In situations of unemployment, the economy not only lacks a mechanism to return to full employment, but market forces may actually push it further away from it. But, is a situation of being pushed away from full employment a state of equilibrium?

This could lead us to think that the *General Theory* is not a model of multiple equilibria, as argued by its author, but a model with one unstable equilibrium. This is Tobin's (1975) view: "Keynes's General Theory attempted to prove the existence of equilibrium with involuntary unemployment […] Very likely Keynes chose the wrong battleground […] *He did not establish an underemployment equilibrium*. But he did not really need to. Even with stable monetary and fiscal policy, combined with price and wage flexibility, the adjustment mechanism of the economy may be too weak to eliminate persistent unemployment." In other words, once *nominal flexibility* is assumed, both classical and Keynesian models have a unique equilibrium with full employment. The difference is that, in Keynes's model, equilibrium may be unstable: when the economy is hit by a large shock and unemployment is very high, nominal wage and price deflation may lead the economy further away from full employment.[4]

This notion of equilibrium in Keynes, however, is problematic because it contradicts his main claim of having developed a more *general theory* with multiple equilibria. One could

[4] Tobin is not the only one who followed this interpretative line. Others have offered similar interpretations, like Leijonhufvud (1973) with his idea of *corridor* of stability.

argue that he used that claim as a way to persuade his colleagues. After all, the *General Theory* was "chiefly addressed to [his] fellow economists…, whom [he] must first convince." But this would imply certain theoretical disappointment: all the unemployment "equilibria" derived in the bulk of the book (i.e., up to Chapter 18) would not be true equilibria; they could only be regarded as short-run states of the economy that vanish once *nominal* wages start to adjust; in other words, mere snapshots of the economy at given *nominal* wage levels.

Central to this discussion is Keynes's view of the nature of *wages*. If it is seen as a market-clearing variable, then when the labor market is not at equilibrium, this variable should be changing over time to restore balance. Under this view, Tobin's interpretation would be correct: the basic message of Keynes would be that we cannot be in equilibrium with unemployment, because wages are falling— and this would lead the economy further away from full employment equilibrium.

However, wages can be seen in an alternative manner: as a state variable determined not only by the relative scarcity of labor but also by other factors like institutions and social norms. If this is the case, excess supply in the labor market would not necessarily lead to changes in the wage rate, even if wages are *free* to move. This view has been pushed by several authors like George Akerlof, who has offered strong microeconomic foundations for *real* wage rigidity based on social norms of fairness. According to Akerlof (2007), "Wages are sticky not just because of contracts, but because of shared moral judgments that wage cuts are unfair… The idea that wages are sticky due to considerations of fairness has been around since Keynes" (p. 10).

It is important to note that we are not referring to *nominal* stickiness arising from rigidities that impede changes in nominal variables, such as menu costs or staggered nominal wage contracts (or other similar arrangements). We are referring to *real* rigidities that are deeper and go beyond short-term difficulties in adjusting nominal wages or prices. Keynes clearly held the view that wages are, to a relevant extent, set by social norms that are historically and institutionally determined. He was not explicit about this in the *General Theory*, as he was in other writings. For instance, in Keynes (1930), he criticized the classical view that there exists an equilibrium level of wages and claimed that "there is a fairly wide margin […] within which the determining factor [of wages] is, not so much what used to be called economic law, as social and political habits and practices and the trend of public opinion" (p. 5).

When the behavior of wages is conceived this way, the economy would operate as described in our model with rigid wages —not due short-term *nominal stickiness* but deeper *real rigidities*—, and the results would be "precisely the same whether or not money wages are liable to change." Under this view, it may be possible to consider Keynes's model as one with multiple equilibria.

We can finally evaluate whether Keynes's model relies on equilibrium analysis at all. The name of Hyman Minsky comes to mind. According to Minsky (1975), "every reference by Keynes to an equilibrium is best interpreted as a reference to a transitory set of system variables toward which the economy is tending; but […] as the economy moves toward such a set of system variables, endogenously determined changes occur which affect the set of system variables toward which the economy tends. The analogy is that of a moving target, which is never achieved but for a fleeting instant, if at all" (p. 59). This interpretation led him to suggest that "the use of the term equilibrium, however, may be misleading. It may be best to borrow a term from Joan Robinson and call situations in which rapid disruptive changes are not taking place *periods of tranquility*" (Minsky, 1986, p. 197). In terms of the model from the previous section, the inability to reach an equilibrium at all could stem from *expectations* and *confidence* —key determinants of the MEC— being endogenous variables. During *periods of tranquility*, they behave as if they were given (exogenous), yet they change over time. And in times of crises, they become fast-moving and volatile variables.

In Chapter 22, Keynes discussed how his theory could be helpful to explain business cycles, but it is not clear that the idea pushed by Minsky is actually present in the *General Theory*, which was more narrowly concerned with output and employment determination in the short run. Certainly, Minsky heavily drew on Keynes, but the notions of endogenous cycles and the lack of an equilibrium are contributions of his own, not of Keynes. In fact, Minsky (1975) addresses this point explicitly: "In Chapters 12 and 22, in the rebuttal to Viner [i.e., the QJE article (Keynes, 1937)], and in remarks throughout the *General Theory*, a vigorous cycle, which does have booms and crises, is described. However, nowhere in the *General Theory* or in Keynes's few post-*General Theory* articles explicating his new theory are the boom and the crisis adequately defined or explained […] This is the logical hole, the missing point in the *General Theory* [….] In order to complete the picture, we have to fill that hole: Keynes's theory is incomplete without a model of the endogenous generation of boom, crises, and debt deflations" (pp. 60–61).

Conclusions

Through the use of a mathematical representation of Keynes's model in the *General Theory*, we reach an interesting conclusion: different interpretations of this model can be seen as arising from different interpretations of the unclear notion of equilibrium in Keynes.

Taking as a key contribution the idea that macroeconomic equilibrium can occur under conditions of unemployment, the most popular interpretation of Keynes's *General Theory* has emphasized that, to obtain such results, one must assume fixed *nominal* wages. This line of thought was pioneered by Franco Modigliani, popularized by the neoclassical synthesis, and later given microfoundations by some strands of New Keynesian economics

that emphasize *nominal* stickiness in the form of menu costs, staggered wage contracts, and other mechanisms. This interpretation finds exegetical support in the fact that, throughout most of the book —the first eighteen chapters— Keynes worked under the assumption of fixed nominal wages. However, this interpretation is hard to sustain on purely exegetical grounds. In Chapters 2 and 19, Keynes clearly explained why economies can remain stuck in high unemployment even when wages are free to change.

The important points raised in those chapters led to a second interpretation. If unemployment represents a disequilibrium situation, it should trigger a tendency toward nominal wage and price deflation. Since deflation typically undermines agents' ability to repay their debts, bankruptcies are a likely outcome. Market forces can therefore have destabilizing effects on output and employment. Under this view, Keynes's model, like classical theory, features only one equilibrium; but unlike the classical view this equilibrium may be *unstable*. This interpretation has been championed by James Tobin and others.

A third possible interpretation emphasizes that, for Keynes, wages are not a market-clearing variable but rather a state variable shaped, to a large extent, by social norms that are historically and institutionally determined. If that is the case, unemployment should not be interpreted as a disequilibrium in the labor market—or at least not in the traditional sense, which implies a self-correcting mechanism operating through wage adjustments. Within certain margins, where market forces are weak or inoperative, unemployment may not lead to wage changes and the economy end up stuck in a stable state of unemployment. George Akerlof and others have advanced microfoundations for real rigidities affecting wage behavior, which could be consistent with this interpretation.

Finally, a fourth possible interpretation is that Keynes's model lacks an equilibrium altogether. According to this view, the model should be understood as describing an endogenous cycle in which the economy never reaches a stationary state. In exegetical terms, as Hyman Minsky—the main proponent of this hypothesis—acknowledged, this interpretation cannot be directly found in the *General Theory*, but it can be derived from it.

References

Akerlof, George A. "The missing motivation in macroeconomics." *American Economic Review* 97.1 (2007): 5-36.

Crotty, J. (1990). Owner-manager conflict and financial theories of investment instability: A critical assessment of Keynes, Tobin and Minsky. *Journal of Post Keynesian Economics*, 12(4), 519–542.

Fisher, I. (1933). The debt-deflation theory of great depressions. *Econometrica*: Journal of the Econometric Society, 337-357.

Keynes, J. M. (1930). The Question of High Wages. *The Political Quarterly*, 1(1), 110-124.

Keynes, J. M. (1936). The general theory of employment, interest and money, Prometeus Books. [1997]

Leijonhufvud, A. (1973). Effective demand failures. *The Swedish Journal of Economics*, 27-48.

O'Donnell, R. (1989). Keynes: Philosophy, economics and politics. London: Macmillan.

Minsky, H. P. (1975). John Maynard Keynes. New York: Columbia University Press.

Minsky, H. P. (1986). Stabilizing an unstable economy. New Haven: Yale University Press.

Modigliani, F. (1944). Liquidity preference and the theory of interest and money. *Econometrica*, journal of the econometric society, 45-88.

Snowdon, B., & Vane, H. R. (2005). Modern macroeconomics: Its origins, development and current state. Cheltenham: Edward Elgar.

Tobin, J. (1975). Keynesian models of recession and depression. *American Economic Review*, 65(2), 195–202.