Keynes's *General Theory of Employment* After (Almost) a Century

by

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Abstract

This purpose of this paper is to provide a summary of my views, as they have developed over time, on Keynes's original theory of employment in his *General Theory* (Keynes 1936). He did not call it a theory of *un*employment. There will be a particular emphasis here on how the so-called 'aggregate supply schedule' should be constructed. This issue, it will be recalled, was of particular concern to the first generation of the 'Post Keynesian' school of economists in the United States. These scholars had made the case (which was undoubtedly correct) that the aggregate supply schedule was largely neglected in mainstream discussions of Keynes's contribution very much to the detriment of the development of macroeconomic theory in general. I plan for this essay to eventually appear in a forthcoming volume of my *Selected Essays*, to stand in place of the various papers/notes/comments, *etc*., that I have written on this topic over the years.

1. Introduction

John Maynard Keynes, writing mainly in the period between the two World Wars of the twentieth century, may well have been the most famous monetary economist of all time. He claimed to have decisively refuted what he called the 'Classical theory', only for the Monetarist school, 'New-Classical' economists, Austrians, and others, later to claim to have refuted Keynes. However, these debates seem never to have been resolved down to the present day.

One factor that might explain some of the confusion was that the *General Theory* itself was not a stand-alone contribution but the third volume of a trilogy, of which the other two works were *A Tract on Monetary Reform* (Keynes 1923), and *A Treatise on Money* (Keynes 1930). It is difficult to get a complete picture of Keynes's thought without a thorough consideration of all three of these books. Also, there were inevitably some inconsistences and changes of emphasis between each of the books, several of which combined to eventually reduce the total impact on the economics profession of Keynes's original contribution.

For example, in the *Treatise* (correctly in my opinion) there are already extensive discussions of the ontology of money and hence of banking, central banking, the importance of credit and money creation, endogenous money, and so on. However, by the time of the *General Theory* Keynes had made the fateful decision to let 'technical monetary detail … [fall] … into the background' (Keynes 1936, vii) and the money supply, *M*, was treated as an exogenous variable. It became a 'given' at any point in time and could only be changed by a deliberate act of policy. This made the whole discussion difficult to distinguish from (*e.g.*) later Monetarism and ultimately the whole textbook tradition of the second half of the twentieth century. On the other hand, Keynes in the *General Theory* clearly did intend to break quite radically with orthodoxy on the question of interest rate determination. He tried to provide 'a monetary theory of the real rate of interest' (Burstein 1995, 1) *via* the liquidity preference theory of interest rates, whereas in the *Treatise* he had accepted and made explicit analytical use of Wicksell's idea of a 'natural rate' of interest. Unfortunately, in the *General Theory* liquidity preference theory was bound to fail once he had reverted to the assumption of a fixed nominal supply of money. In retrospect, what Keynes *should* have done in moving from the *Treatise* to the *General Theory* was (certainly) to drop the natural rate idea, but to have retained the more sophisticated theory of banking and endogenous money in the earlier book (Smithin 2013a, 48-52).

On the fundamental question of monetary 'neutrality' *versus* 'non-neutrality', that is, what effect monetary changes might have on the supposedly 'real' economic variables, there can again be little doubt in my view that Keynes was trying to argue that both monetary policy (changes in the policy rate of interest of the central bank) and fiscal policy (changes in government spending and taxation) were non-neutral. Moreover, that they were non-neutral in both the short-run and the long-run. However, and this is going to be precisely the focus of the

present paper, it would be difficult to argue that he ever succeeded in persuading the rest of the economics profession that he had achieved this goal (Salant 1985, Meltzer 1988, Smithin 2003, 2009). A very common interpretation of Keynes's heroic intellectual effort (see, for example, Laidler 1999) was that he had only provided the same sort of arguments as some of the Classical economists and the later Monetarists. That is, although he claimed to have shown that an economy could become permanently depressed, and stagnate, most people thought that he had simply re-cycled the age-old argument that temporary wage rigidities or the like can cause temporary unemployment. As we will see, there is support for this in the various texts, but nonetheless in the 'big picture' of political economy, geo-politics, and the rise and fall of civilizations, it is ultimately misleading about what Keynes was *trying t*o do.

A main reason for this failure of communication is that, for the first time in the context of the trilogy – and even though the topic was macroeconomics and money – Keynes, in the *General Theory*, nonetheless wanted to couch the argument in terms of standard 'Marshallian microeconomics' (named for his mentor Alfred Marshall). This meant using marginalist mathematics, at least to some extent, and even more importantly a general presumption that so-called perfect competition prevailed in all markets. I have speculated that these dubious features, (by which I mean dubious from the point of view of practical reality) were included to prove his theoretical *bona fides* to the rest of the economics profession. If so, given Keynes's fame at the time, and obvious intellectual stature, this would be a damning indictment of the role of peer group pressure in academia (then as now). Their inclusion was bound to lead to mistakes.

Probably the more important of these two points was that about the assumption of perfect competition rather than marginalism. This is because among the conditions defining a state of prefect competition is the idea that each firm in each industry is so small in relation to the market

that it simply believes that it will always be able to sell all that it wants to at the 'going price'. This is far removed from reality. However, if our assumption is that firms do believe this, and act on it, it should already be quite clear that any discussion of expectations, *etc.*, is irrelevant. There would no possible theory that could be devised that would make changes in the amount of money aggregate demand have any permanent effect on the firms' behaviour. The only escape from such a conclusion would be precisely such things as nominal wage or prices rigidities that serve to 'throw a spanner in the works' (Leijonhufvud 1981, 4-6) and temporarily prevent some actors from carrying out their plans – but only temporarily.

In this paper, therefore, our objective will be to try to work through these issues in some detail, is an attempt to see what sort of modifications there would have to be to rehabilitate the basic Keynesian ideas. Those ideas in themselves I would strongly argue, are still of fundamental importance. The argument will stay within the parameters set down by Keynes himself, and his interpreters and critics in the second half of the twentieth century, in that it deals with the determination of the *levels* of the various economic variables, the level of employment, the level of output, the aggregate price level, and so on, rather than the rates of change of these variables. But elsewhere, for example, in my *Essays in the Fundamental Theory of Monetary Economics and Macroeconomics* (Smithin 2013a), *Rethinking the Theory of Money Credit and Macroeconomics* (Smithin 2018), and *Beyond Barter* (Smithin 2022), I have shown how the entire theory may be recast in dynamic terms, involving rates of economic growth and inflation, with the relationship between the *un*employment rate and the growth rate being modelled along the lines of the so-called 'Okun's Law' (Okun 1962).[1]

2. The Theory of 'Effective Demand' in Chapter 3 of the *General Theory*

[1] With twenty-first century parameters rather than those of the 1960s!

The monetary theory put forward in the pivotal early chapter 3 of the *General Theory* has often been called the theory of 'effective demand' and Victoria Chick (1983, 65) has made it clear that there is an important distinction to be made between effective demand, as such, and aggregate demand. She writes as follows:

> … effective demand in contrast to aggregate demand, is not a schedule … it is the *point* on the schedule which is 'made effective' by firm's production decisions (emphasis added)

This means that the principle of effective demand was missing from the standard presentations of aggregate demand and supply analysis in most textbooks in the late twentieth century (and beyond). Such constructs do have a downward-sloping aggregate demand schedule, which can be derived in its most basic form simply by re-arranging the equation of exchange from the quantity theory of money. If M is stands for the money supply, V for the so-called income velocity of circulation, P for the aggregate price level, and Y for the level of real gross domestic product (real GDP), the equation of exchange is $MV = PY$. The aggregate demand function in P, Y space thus becomes:

$$P = MV/Y \tag{1}$$

However, in these sorts of models demand itself ultimately plays no role in determining output. The level of real GDP depends only on supply side factors involving technology and the labour market (Chick 2000, 124).

In contrast, Keynes's original demand and supply functions are both described as upward-sloping[2] in Z & D, N space, where Z is the 'aggregate supply price of the output from employing N men' and N is the level of employment (Keynes 1936, 23-5). The supply price represents 'the expectation of the proceeds which will just make it worth the while of the

[2] I have come to understand that upward-sloping aggregate demand (AD) curves are the very hallmark of a correct presentation of Keynesian economics, whether it be in (Z, N) space as in Keynes, in Samuelson's (1948) 'Keynesian Cross' diagram, or as in my own work (*e.g.*, Smithin 2018, 2022), in inflation/growth (p, y) space.

entrepreneurs to give that level of employment' and the relationship between Z and N is known as the aggregate supply function. There is similarly an aggregate demand function or 'demand price', D, defined as the 'proceeds … entrepreneurs expect to receive from the employment of N men'. In equilibrium Z and D are equal, determining the amount of employment.

Inferences about the slopes of the demand and supply schedules can be reconstructed from the text of chapter 3. For the demand price, Keynes (1936, 29) splits D into two parts:

(2) $$D = D1 + D2.$$

And it is then argued that the first part, $D1$, is a function of employment N, while $D2$ is taken as being exogenous:

(3) $$D1 = X(N). \qquad 0 < X'(N) < 1$$

Therefore, the aggregate demand function itself is also a function of employment:

(4) $$D = X(N) + D2$$

As Paul Davidson (2011, 33-41) has pointed out, it is very significant that at this stage Keynes simply labelled the two demand categories $D1$ and $D2$, rather than the usual C and I for 'consumption' and 'investment' (purchases of physical capital equipment). It highlights the fact that what is important about $D2$ is that it is that portion of current demand *not* dependent on current employment or current income - rather than the idea that this might include spending on capital goods. Meanwhile what $D1$ represents is the portion of current demand that is so dependent. The fact is that all Keynes really needed to do to break the classical 'Say's Law' (that supply creates its own demand) was to assert the mere existence of the $D2$ category. From this point of view is does not matter if this money is spent on physical capital equipment or anything else. It just needs to be spent. This becomes important when we start to argue that things like

government spending on goods and services, autonomous consumption spending itself, and spending on net exports, can also increase aggregate demand.

If we start to use the usual *C* and *I* notation, which (very unfortunately in my opinion) Keynes does begin to do later in the third book (the *GT*) of the trilogy (starting on p. 89, chapter 7) then - in order to reinstate the relationship to employment - we will have to add a 'consumption function' along the lines of $C = C(Y)$ - with $C'(Y) > 0$ - and a production function $Y = F(N)$ - with $F'(N) > 0$ - to specify the relationship between output, *Y*, and employment, *N*. Thus, we have:

(5) $$D = C(F(N)) + \underline{I}$$

The underscore notation that is used here for $\underline{I}$ (investment) is to indicate that it is taken to be exogenous, a given sum of money (supposedly) spent on capital goods.[3]

Turning now to Keynes's *Z* function, we must first note Keynes's own statement, from earlier in the book (Keynes 1936, 5, 17), that he accepts what he calls the 'first postulate' of 'Classical economics', namely that '(t)he … [real] … wage is equal to the marginal product of labour'. Therefore, letting *W* stand for the nominal or money wage and *P,* once again, for the aggregate price level, we would have (just as in conventional neoclassical economics):

(6) $$W/P = F'(N)$$

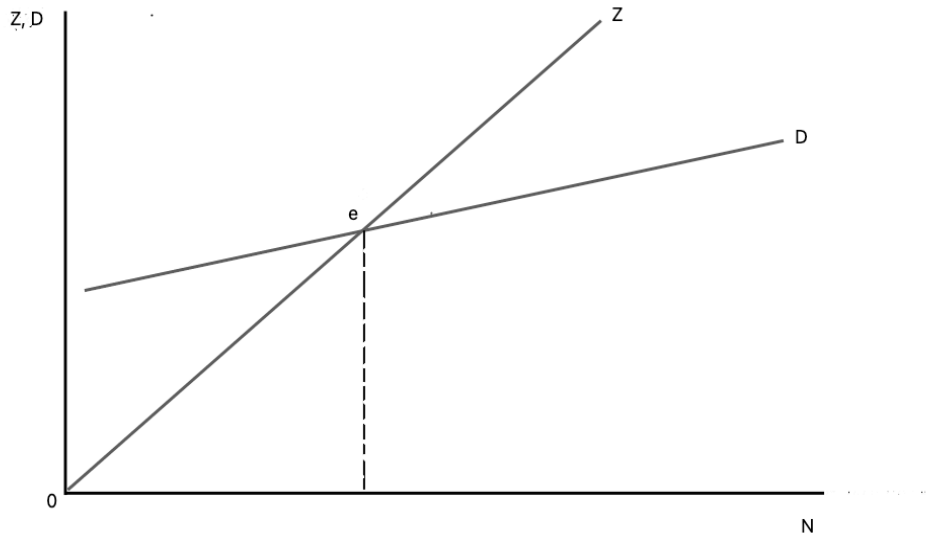
A generalized version of the aggregate supply function would therefore be:

(7) $$Z = PY = WF(N)/F'(N)$$

[3] Paul Davidson (2003-04, 246-8), as he had done on many previous occasions, correctly points to the role of fundamental uncertainty in driving investment fluctuations in Keynes's overall macroeconomic system. On this topic, I agree with both Davidson and Keynes that the correct way to simulate this sort of effect in a non-ergodic environment is *via* exogenous shifts in the relevant variable in an otherwise deterministic system. However, it remains problematic to try to identify the *D2* term with an increment to a supposed physical 'capital stock' which in any event is forever undefinable. What about 'conspicuous consumption' by the firms, re-decorating the boardroom, buying a corporate jet, scheduling a sales conference in an exotic location? What about consumer spending on durable goods? What about intended investment which ultimately misfires? All of these add to aggregate demand, and are capable of stimulating new production as much as anything else (Smithin 2018, 124-8).

One very strange thing about Keynes exposition of these matters in chapter 3 is that although he describes the various schedules in some detail, he never actually draws them! In fact, there is only one graph in the entire book, which has nothing to do with the *D* and *Z* functions. It is, rather, a diagram illustrating the theory of interest determination and appears in chapter 14 of the *GT* (Keynes 1936, 180). This being the case (given that there are no actual graphs of the aggregate demand and supply schedules in the book) it is perhaps reasonable to simplify things a bit by assuming both a proportional consumption function, $C = cY$, where c is both the marginal and average propensity to consume - with $0 < c < 1$ - and a 'proportional' production function, $Y = AN$ - where A is the average productivity of labour, and $A > 0$.

Figure 1: The Point of Effective Demand



This gives a linear aggregate demand function:

(8) $$D = cAN + \underline{I}$$

And a linear aggregate supply schedule:

(9) $$Z = PAN$$

The slope of the *D* function is less than that of the *Z* function and will therefore cut the *Z* function from below. These linear schedules are illustrated in Figure 1. The point of effective demand, determining the level of employment, is at point '*e*'.

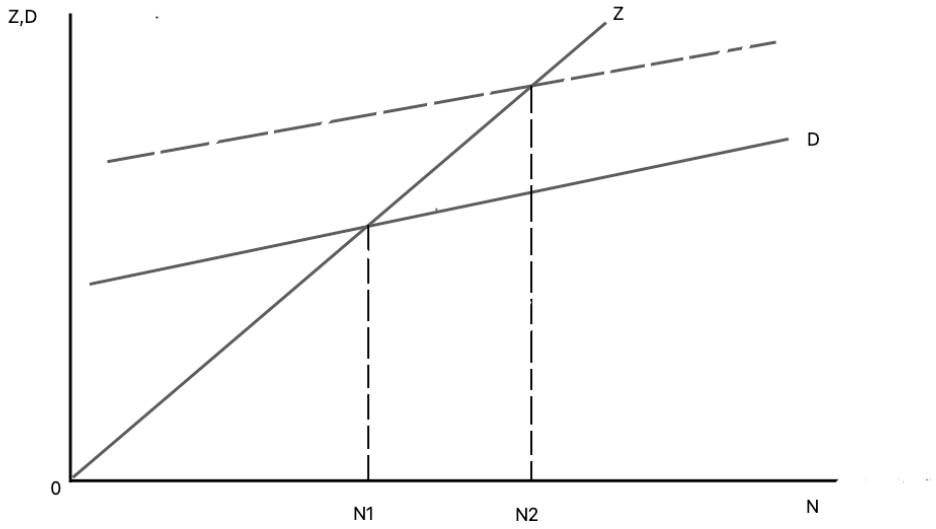
Evidently, the equilibrium is conditional on the given level of dollar/money investment spending, $\underline{I}$, and the current price level, *P*. The argument then goes that if the amount of money spent on investment goods increases from say $\underline{I}_1$ to $\underline{I}_2$ the aggregate demand schedule will shift upwards and to the right (aggregate demand will increase) and the level of employment will also increase from N_1 to N_2, as shown in Figure 2. Notice that, so far, there has been no mention of *un*employment *per se* which is consistent with the actual title of Keynes's book. Unfortunately, this degree of consistency will last very long, at all, when we start to go through the actual text of the *General Theory*.

In any event, suffice it to say that despite the seemingly (very) intuitive nature of the above results,[4] this sort of analysis has always apparently caused great distress, for example, to the neoclassical economists of Keynes's own day and, if possible, even more so to today's technically (mathematically) trained economists. The main interest of modern economists, for example, seems to be nothing more than the elaboration of mathematical theories of choice - typically involving solutions to the 'dynamic optimization problems' faced by the supposed 'representative agent'.[5] In contrast, the sorts of problems (which are real problems in the actual economy) that Keynes was trying to address, are quite literally incomprehensible within this kind of framework. Therefore, given the limited knowledge of the history of economic thought, and *a*

[4] As Keynes himself said (Keynes 1936, viii) 'The ideas which are expressed here so labouriously are extremely simple and should be obvious. The difficulty lies, not in the new ideas but in escaping from the old ones …'.
[5] A very negative development in the macroeconomic literature of the late twentieth and early twenty-first centuries, it must be said, was the rise to dominance of the purely mathematically based notion of the 'micro-foundations of macroeconomics'. The effect of this was to throw out the macroeconomic baby with microeconomic bathwater, and inevitably to redirect attention away from the genuinely important issues - which primarily have to do with the nature of money. See King (2012) for a detailed discussion of the various problems that this tendency has caused.

fortiori, one assumes, social ontology, on the part of the vast majority of academic economists of today, these real social problems are routinely assumed away or, more likely, simply ignored. And, in fact, albeit at different levels of mathematical 'sophistication' at various times, this has been pretty much the preferred strategy ever since the *General Theory* was first published.

Figure 2: The Effect on Employment of An Increase in Autonomous Spending



There have usually been two main lines of attack. One such, prominent in the 1930s and 1940s, is that according to neoclassical economic theory it is impossible for the total of aggregate demand to be increased simply because the level of investment spending increases. This is an attack primarily from the demand-side of the macroeconomic model. To put the point as straightforwardly as possible, the argument is that that even if the dollar amount of investment spending does increase, nonetheless because of the need for savings to (supposedly) 'finance' investment, the dollar amount of consumption spending must decrease by exactly the same amount, leaving the total dollar amount of aggregate demand unchanged. It should be clear that

in a world of bank credit creation and endogenous money the argument is entirely fallacious. However, it took up an inordinate amount of time in the academic debate from the 1930s right down to the 1970s, when the present author was a graduate student. Vestiges of it still linger on in some quarters today, another fifty years on. The reference is to such things as the debates over the rival 'liquidity preference' *versus* 'loanable funds' theories of interest rate determination, the notion of 'crowding out', the 'Treasury view', the results of Hicks's (1937) IS/LM (or IS/LL) model,[6] endogenous money *versus* exogenous money, and so forth. I have commented exhaustively on these sorts of issues in many different places (*e.g*., Smithin 2013a, 2017, 2018, 2022), and they need not detain us further here.

Therefore, if we do allow (entirely realistically it must continue to be stressed) for the possibility of autonomous changes in aggregate demand, from whatever source, the other main attack on Keynesian ideas has to come on the 'supply-side' of the macroeconomic model, which is more directly relevant to the main concerns of the present paper. This is the idea that, whatever happens on the demand-side, then if there is sufficient wage and price flexibility in the economy that will always be enough to restore 'full employment'. In short, that all the necessary adjustment can be achieved by the ubiquitous 'market-forces'. Therefore, from the point of view of mainstream microeconomists teaching in the universities, both in the 1930s and (quite remarkably when one comes to think about it) still nowadays nearly ninety years later, diagrams such as those in Figures 1 and 2 are not only unfamiliar, but also seem to quite heretical from a doctrinal point of view. For example, it may will be observed that the diagrams relate various nominal (or money) magnitudes (*D*, *Z*) to a real magnitude (*N*, the level of employment).

[6] Hicks's actual notation was IS/LL (Hicks 1937, with 'IS' standing for investment/saving and the 'Ls' for liquidity. The later 'LM' is supposed to stand for liquidity/money, with the 'money supply' ('*M*' in the notation of this paper) usually taken to be a fixed quantity.

Therefore, as drawn in the two Figures, the aggregate price level is a shift variable for the aggregate supply function. It might thus always be argued that the results depend on the assumption that the aggregate price level is fixed or 'rigid'. Another version of the same kind of argument, as we will see, suggests that the results depend alternatively on nominal wage rigidity. In sections 3, 4, 5 and 6, below, we will go on to further explore these arguments.

3. Aggregate Demand and Supply in 'Real' Terms

A first step is obviously to try to re-express the argument in real terms. Here, we can draw on the interesting research by Patinkin (1976, 1982) on the details of Keynes's theory which shows how this can be achieved by deflating the various money values by the 'wage unit'. This latter is a term introduced by Keynes himself in the *GT* (Keynes 1936, 90-6).

On the simplifying assumption of 'homogenous labour' (Chick 1983, 69; Hicks 1967, 127) the wage unit can be identified with the nominal aggregate wage rate, W. It is then possible to divide both the D and Z expressions through by W to determine real aggregate demand and supply in wage units. If we make real consumption, C_W in Keynes's notation, a direct function real income (Y_W), then the total of real aggregate demand in wage units is:

$$D_W = C(Y_W) + I_W, \qquad 0 < C'(Y_W) < 1 \tag{10}$$

Presumably, also, we can identify the level of real income Y_W with the level of output determined along the supply schedule, Z_W. Therefore, we have:

$$Y_W = Z_W = PY/W = Y/F'(N) = F(N)/F'(N) \tag{11}$$

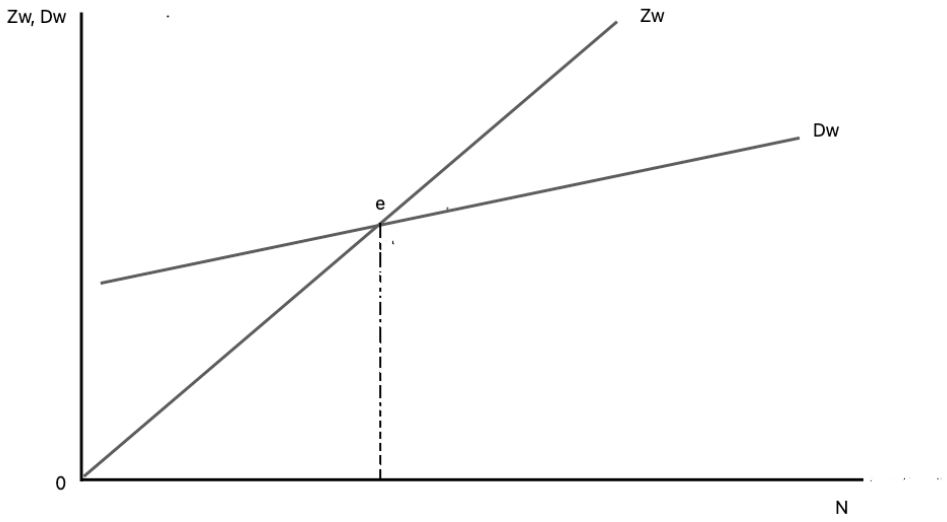
Thus, the real aggregate demand and supply schedules measured in wage units are given by:

$$D_W = C(F(N)/F'(N)) + I_W \tag{12}$$

$$Z_W = F(N)/F'(N) \tag{13}$$

We graphically illustrate these aggregate demand and supply functions in Figure 3. For convenience, we can once again make both schedules linear by assuming specific functional forms for the consumption and production functions - such as those suggested by Patinkin (1982, 134-5). Specifically, in this diagram let $C(Y_W) = cY_W$ and (following Patinkin), $Y = A_0N^{\alpha}$ with $0 < \alpha < 1$. The slope of the supply function is therefore $1/\alpha$, which is greater than one, and steeper than the slope of the supply function, c/α. In the diagram the point of effective demand is again at point '*e*'.

Figure 3: Aggregate Demand and Supply in Real Terms (in Wage Units)



The diagram has now therefore been reconstructed in real terms, thereby dealing with one of the standard criticisms made of Figures 1 and 2 above. However, there are still other critiques likely to occur to orthodox Neo-Classical or mainstream economists. Patinkin (1982, 123-58) mentions a number of these, which have mainly to do with doctrine-historical questions, such as the role played by profit-maximization in Keynes's theory, whether or not Keynes correctly applied marginalist economic theory, and the treatment of expectations. He (Patinkin) concedes

nonetheless that each of these issues might be resolved by making the appropriate changes to the text (Patinkin 1983, 153).

But even though the analysis has now been put into real terms there still remains the major objection already mentioned. This is (again) that if the level of employment determined by the intersection of the D_W and Z_W schedules at point '*e*', happens to be less than the 'full employment' level of employment, *Nf*, then, according to Neo-Classical Economics the situation can always be resolved given sufficient wage and/or price flexibility, by adjustments on the supply-side. There would be need for an expansion of demand. In the analysis of Figures 1 and 2, it can be argued that as the price level *P* is a shift variable for the original *Z* schedule, the whole argument depends on price rigidity or 'stickiness'. In Figure 3, the argument would shift to a reliance on nominal wage rigidity, or stickiness. In the next section of the paper we go on to address this latter objection in more detail.

4. The Dubious Concept of 'Full Employment': Voluntary *versus* Involuntary Unemployment

From the beginning, I think that there has always been a problem with the Keynesian narrative due essentially to Keynes's own error (as I see it) by introducing what he called the 'Classical postulates' about the labour market at a very early stage in the book. (In connection with this the general presumption that the economy being studied operates under perfection competition). The two postulates are as follows:

1. *The wage is equal to the marginal product of labour.*
2. *The utility of the wage when a given volume of labour is employed is equal to the marginal disutility of that amount of employment*

In conventional economics these two postulates are taken as defining the aggregate labour demand and labour supply curves, respectively. Keynes tells us that he accepts the first

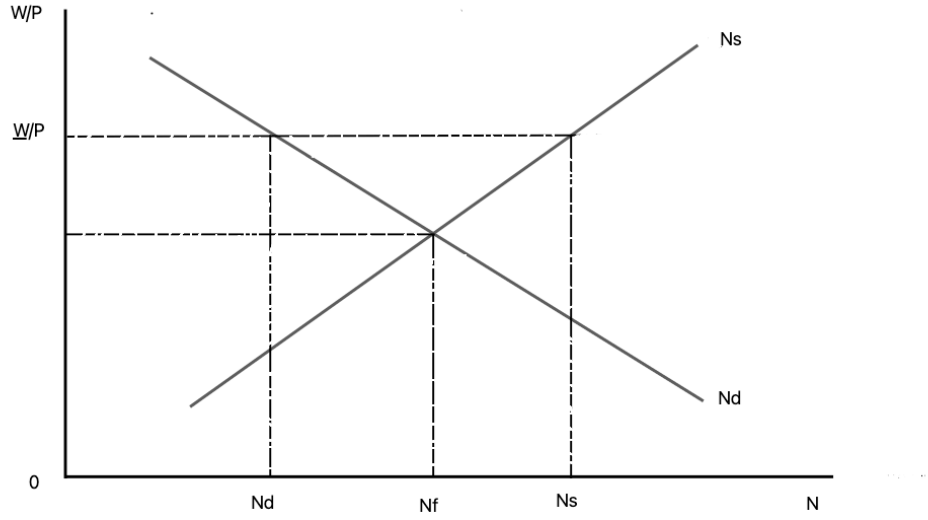
postulate but not the second. Having tacitly accepted the underlying framework, by which I mean the underlying social ontology of the labour market, the question is bound to be asked why it is that one postulate is deemed to hold but not the other. The critics could always argue, and always have argued, that Keynes's explanation for unemployment for unemployment can only be some form of nominal wage rigidity which prevents economic adjustment as prices fall in a downturn, and hence allows for 'involuntary unemployment' (Keynes 1936, 15). From a technical the two postulates translated into real terms, are taken to provide the materials for the construction of the aggregate labour demand and supply schedules in real wage/employment space. Postulate 1 relates to the demand for labour, and postulate 2 to the labour supply function. The 'real wage' now means the nominal or money wage W (which we earlier called the wage unit) deflated by the aggregate price level, P. These aggregate labour demand and supply schedules are illustrated in Figure 4 where, for simplicity, we once again assume linear functions.

The argument is that if the labour market is working correctly, if there is enough wage and price flexibility, the market will settle down to a so-called full employment equilibrium, Nf, determined by the intersection of the real labour demand and supply curves. At this point there will be a unique equilibrium real wage rate $(W/P)f$. The full employment equilibrium has the property that any *un*employment that remains (to the right of the equilibrium position) is supposedly purely voluntary, that is, it is entirely due to people not being willing to work for the going real wage rate. This notion of full employment also seems immutable, as the putative labour demand schedule is determined solely by the technical factors*, i.e.*, labour productivity.

Conversely, if nominal wages are not sufficiently flexible, the presumed adjustment mechanism will not work and there can then be involuntary unemployment. Suppose, for example, that the money wage is stuck at the level of $\underline{W}$ and cannot fall below this level. If the

current price level, *P*, is lower than is compatible with the full employment real wage rate, (*W/P*)*f*, there will be involuntary unemployment in the amount *Ns – Nd*. It is 'involuntary' precisely because there are more people who would be willing to work at the current real wage *W/P* than there are jobs being offered at that wage.

Figure 4: Equilibrium *versus* Disequilibrium in the Labour Market According to Neoclassical Economics.



Looking at matters in this way, the Keynesian remedy for reducing unemployment by increasing total aggregate demand is reduced merely to a device to increase the aggregate price level by 'throwing money at the problem'. All of this would be unnecessary, according to Neo-Classical economics, if only money wages were allowed to fall.

It seems to me that what is happening here is that Keynes gets into trouble by *not* focusing on a theory of employment, as promised in his title, and by accepting of this orthodox language of involuntary unemployment, voluntary unemployment, 'full' employment, *etc*. This phraseology is subjective, it is something of a trap. It seems almost expressly designed to

ultimately place the blame for any unemployment that does exist on the unemployed themselves, rather than on the 'system' or the establishment.

Regardless, it is surely the exact opposite of what would seem to be the common-sense approach to the theory of employment (to anyone other than a well-trained Neo-Classical economist)? It automatically lends itself to all sorts of ambiguities and obscurities of measurement and interpretation when trying to discuss practical problems. The right way to go, I would think, would be to try to define a more-or-less unambiguous notion of 'maximum employment' – which is a term coined by Allan Meltzer (1981, 1983, 1988) - and then simply compare that benchmark with existing level of employment. Unemployment would just be the difference between the two. This 'maximum' level of employment would be a situation in which (given some standard/agreed definition of the length of the working day, what consists full-time *versus* part-time employment, *etc*.) all those of working age, willing and able to work, are gainfully employed at the maximum possible level of real wages. Moreover, even within the confines of standard Neo-Classical 'welfare' economics, it can also be shown that this would always be a preferred position (from the point of view of the economy or society as a whole) than the alternative.[7]

Meltzer (1981, 36) has argued that to define unemployment in this way was actually what Keynes had meant to do. My own view, though, is that such an interpretation cannot be sustained by Keynes's text, however useful the idea of maximum employment may be in principle. On the contrary, as already stated Keynes does seem to me to have himself confused the issue by the various references to voluntary *versus* involuntary unemployment, utility, disutility, *etc*., thereby

[7] In effect this would be a question of being able to shift the labour demand curve along the putative 'labour supply curve', as will be discussed in section 7 below.

inevitably laying himself open to the charge that the results do ultimately depend on money wage rigidity. We go on to further discuss this issue in the next section

5. Does Keynes's Argument Depend on Nominal Wage Rigidity?

The prominent Post Keynesian economist, Paul Davidson, co-founder of the *Journal of Post Keynesian Economics*, has strongly argued that a correct interpretation of Keynesian theory would *not* identify the marginal product of labour schedule with the demand for labour (the latter being a view he attributes to the Nobel Prize winning economist Franco Modigliani), nor would it rely on an assumption of money wage rigidity (Davidson, 2003-4, 247-8). For myself, I agree in principle with these views. In the interpretation presented in section 7 below, which is based on imperfect competition or 'monopolistic competition', neither of these conditions is present. At the same time, however, Davidson (2003-4, 248-9) has *also* denied that the so-called 'imperfection competition revolution' in Cambridge in the 1930s (which took place at roughly the same time as the 'Keynesian revolution') has any relevance to Keynesian economics. This is therefore another paradox/puzzle that needs eventually to be addressed.

In any event, as already suggested, the main problem, in general, with this sort of argument is that throughout much of Keynes's book, certainly up to and including the summary of the entire theory in chapter 18, 'The General Theory of Employment Re-Stated' (which ends on p. 254), [8] there is more than enough material to support the interpretations of Modigliani and others. Walter Salant (1985, 1180), for example, who was himself a direct student of Keynes in the 1930s, has written about these confusions in a 1985 review article (of a volume containing contributions by many of the most famous economists of the day) as follows:

> It is a sad commentary that a half century after its publication the opinions of professional students range between an assertion that the *General Theory* assumes that money wages are

[8] This represents a full two-thirds of the text of book.

> inflexible or sticky downwards and that this assumption is an essential element of its main thesis, and an assertion that the book does not even make that assumption.

In that same year, I published a brief note in the academic journal *History of Political Economy* (Smithin 1985) to try to come up with some sort of conclusion about the issue based on the text of the *General Theory* itself. We have already noted that Keynes (1936, 17) did accept, at least provisionally, the so-called 'first postulate' of Classical economics about wages and the marginal product of labour. I was also able to show that Keynes's definitions of full employment and involuntary unemployment were broadly consistent with the usual textbook presentations, and inconsistent with the existence of market-clearing equilibrium (Smithin 1985, 219).

To see this note that Keynes's actual definition of involuntary unemployment is as follows (Keynes 1936, 15):

> Men are involuntarily unemployed if, in the event of a small rise if the price of wage goods, both the aggregate supply of labour willing to work for the current money wage and the aggregate demand for it at that wage would be greater than the existing volume of employment.

Immediately after this passage he remarks:

> An alternative definition which amounts, however, to the same thing will be given in the next chapter …

The alternative (Keynes 1936, 26) turns out to be:

> … a situation in which aggregate employment is inelastic in response to an increase in the effective demand for its output.

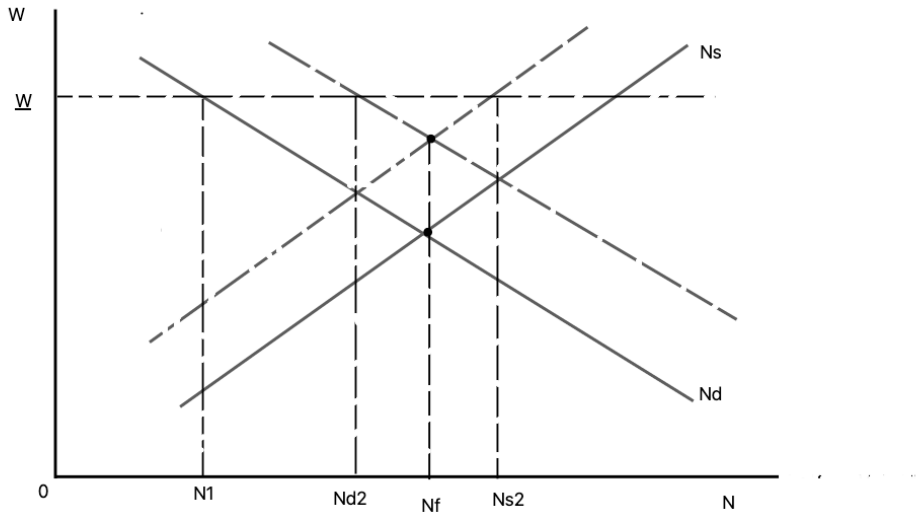
In Figure 5, we can see how Keynes's definitions relate to the standard interpretations on the one hand and (*e.g.*) Meltzer's ideas on the other. The diagram is a conventional representation of the labour market, but now with the money wage rate, *W*, shown on the vertical axis rather than the real wage rate. The price level, *P*, must therefore be treated as a shift variable for both the demand 'curve'[9] and supply curve of labour. If there is perfect wage and price

[9] I continue to use the standard academic jargon, the schedule as drawn is linear, of course.

flexibility both curves will shift freely, maintaining the level of employment at *Nf*, the so-called full employment level

Suppose that the original labour demand and supply curves are *Nd* and *Ns* respectively. The 'current money wage' is *W* which is such that the real wage is greater than is consistent with market-clearing. The 'existing volume of employment' is *N1*.

Figure 5: Labour Demand and Supply and Money Wages



Next consider 'a small rise in the price of wage goods'. In terms more familiar to the modern economist we may take it that this also implies a rise in the aggregate price index, *P*. The labour demand and supply curves will both shift upwards. Keynes's definition of involuntary unemployment relates to the quantities of labour supplied and demanded *after* these shifts. There will not be a complete adjustment as there is only a 'small' price rise We can see that the both the demand for and supply of labour, *Nd2* and *Ns2*, are now 'greater than the existing volume of employment', *N1*. Thus, Keynes definition of involuntary unemployment is consistent with the textbook definition. However, if we had repeated the exercise starting from the full employment

level, *Nf,* while it would still be true that the new demand for labour Nd_2 would be greater than the original volume of employment, the new labour supply, *Ns2*, is less than *Nf*. So, Keynes's definition would thus be inconsistent with market-clearing equilibrium.

As for Keynes's alternative definition of full employment on (p. 26 of the *GT*) note that he does not define full employment as the point at which the *supply curve of labour* is inelastic (which would be one definition of the feasible maximum of employment), but the point at which '*employment* is inelastic' (emphasis added). Again, there is no inconsistency here with the position taken in the textbooks. On the conventional definition of full employment the usual aggregate supply curve of output, in *P, Y* space, itself becomes vertical. Output, and hence employment, therefore can legitimately be said to be 'inelastic' to further increases in demand. In short, the textual evidence does not support the suggestion that Keynes's concepts of full employment and involuntary unemployment are significantly different from those which later became conventional in the literature.

6. Changes in Money Wages

Patinkin (1976, 1982), in the two works cited earlier, offers an alternative interpretation that Keynes's approach was not so much a theory of wage or price rigidity but, rather, a theory of the sluggish adjustment of nominal wages and prices, and hence dynamic disequilibrium. This issue has also been discussed by several other authors, including the Nobel Prize winner James Tobin (Tobin 1975), Medio and Musu (1983), Howitt (1988), and myself (Smithin 1984, 1988).[10] However, I do not think that this in any way negates the argument just made in the section 5.

Keynes (1936, 27), of course, did make the claim that:

> … the … character of the argument is precisely the same whether or not money-wages

[10] See also an early working paper co-authored by myself and my University of Calgary colleague Soren Lemche (Lemche & Smithin, 1983).

> are liable to change.

And he also contributed an entire chapter (chapter 19 of the *General Theory*) on the effects of 'Changes in Money Wages' (Keynes 1936, 257-76). But here is what Keynes (1936, 257) says at the beginning of chapter 19:

> It would have been an advantage if the effects of a change in money wages could have been discussed in an earlier chapter. For the Classical Theory has been accustomed to rest the supposedly self-adjusting character of the economic system on an assumed fluidity of money wages; and, when there is rigidity, to lay on this rigidity the blame for maladjustment … It was not possible, however, to discuss this matter fully until our own theory had been developed. For the consequences of a change in money wages are complicated. A reduction in money wages is quite capable of affording a stimulus to output, as the classical theory supposes. My difference from this theory is primarily a difference of analysis; so it could not be set forth clearly until the reader was acquainted with my own method.

In effect, then, Keynes does here seem here to be admitting that up to this point the whole analysis had been conducted on the assumption of a fixed money wage - up to and including chapter 18 'The General Theory of Employment Re-Stated'. And, moreover, he agrees that wage cuts can indeed, 'in some circumstances', have precisely the effect of increasing employment. So, chapter 19, presumably is supposed to deal mainly with some exceptions and caveats to this case. Regardless, given its position in the book it cannot (or so it seems to me) be taken to be the central part of Keynes's thesis. But it is only in this chapter is it suggested the case of slow or sluggish adjustment might (sometimes) be different than that of instantaneous adjustment.

In Smithin (1984, 168-9) I suggested the following simple mathematical model, based originally on the work of Medio and Musu (1983), to look further into this question of less than instantaneous adjustment:

$$(14) \qquad dW/dt = \lambda_1[N(W/P) - Nf], \qquad \lambda_1 > 0,\ N'(W/P) < 0$$

$$(15) \qquad dP/dt = \lambda_2[Y(P) - Z(\mathrm{W/P})]. \qquad \lambda_2 > 0,\ Y'(P) < 0,\ Z'(W/P) < 0$$

Following most of the literature, this framework attempted to reinterpret Keynes's informal arguments from chapter 19 in the idiom of the standard aggregate demand and supply

curves (in *P, Y*) space of the textbooks. This includes a 'real balance effect' in the aggregate demand function, which we have not allowed for up to now. Having taken these steps, I would now concede (some forty years on) that it is fair to say that the results are only suggestive, even if couched in what seems to be a superficially more technical/mathematical form compared with the level of analysis conducted so far. Nonetheless, they will still suffice to give the reader some idea of the issues that are at stake.

In equations (14) and (15), W is the nominal wage rate, P is the aggregate price level $N(W/P)$ is the demand for labour, Nf is the full employment level of employment, Y is real aggregate demand, and Z is real aggregate supply (here appropriating Keynes's symbol but letting it stand for a 'real' magnitude). The model suggests, conventionally, that if the demand for labour is greater than the full employment level of labour money wages will rise, and similarly, if the supply of output is less than the demand for output prices will rise. Next, totally differentiate the system and express the results in matrix form:

$$(16) \qquad \begin{vmatrix} d(dW/dt) \\ \\ d(dP/dt \end{vmatrix} = \begin{vmatrix} \lambda_1 N'(W/P)P^{-1} & -\lambda_1[N'(W/P)](W/P)P^{-1} \\ \\ -\lambda_2 Z'(W/P)P^{-1} & \lambda_2\{Y'(P) + [Z'(W/P)](W/P)P^{-1}\} \end{vmatrix} \begin{vmatrix} dW \\ \\ dP \end{vmatrix}$$

Let the symbol, B, stand for is the right-hand-side (RHS) matrix of coefficients then globality stability of the system requires that the trace of B (trB) is negative, and that the determinant ($detB$) is positive. Both conditions are satisfied because we have:

$$(17) \qquad trB = \lambda_1 N'(W/P)P^{-1} + \lambda_2\{Y'(P) + [Z'(W/P)](W/P)P^{-1}\} < 0.$$

And:

$$(18). \qquad detB = \lambda_1\lambda_2 N'(W/P)P^{-1}[Y'(P)] > 0.$$

So far, therefore, a less than instantaneous adjustment of money wages and prices seems not to make much difference to the case for wage and price flexibility.

What Keynes added to this in chapter 19, however, was the idea that less than instantaneous reductions in money wage rates, while continuing to increase aggregate supply might also have a negative effective on aggregate demand. According to Howitt (1988, 62):

> Keynes … [in chapter 19) … pointed to several channels through which a wage reduction might reduce aggregate demand.

The three most prominent channels were an 'expectation effect' whereby slowly falling wages would engender expectations of further cuts to come, and so damage confidence, a 'distribution effect' between wage earners and other groups, and a 'debt effect' *via* increases in the real burden of nominal debt. In what follows, we can sum up these argument by rewriting the aggregate demand function as $Y = Y(P, W)$ where $Y'(P)$ is negative, as before, and $Y'(W)$ is also negative. The change means that the coefficient matrix B will be given by:

$$(19) \qquad B = \begin{vmatrix} \lambda_1 N'(W/P)P^{-1} & -\lambda_1[N'(W/P)](W/P)P^{-1} \\ \lambda_2[Y'(W) - Z'(W/P)P^{-1}] & \lambda_2\{Y'(P) + [Z'(W/P)](W/P)P^{-1}\} \end{vmatrix}$$

which raises the possibility that the determinant of B might itself become negative rather than positive. This would require:

$$(20) \qquad detB = \lambda_1\lambda_2 N'(W/P)P^{-1}[Y'(P)] - \lambda_1\lambda_2\{[N'(W/P)](W/P)P^{-1}[\mathrm{Y'(W)}]\}. \qquad < 0$$

And this may now happen, as the term $\lambda_1\lambda_2\{[N'(W/P)](W/P)P^{-1}[Y'(W)]\}$ is positive. For the determinant itself to be positive the second term in equation (20) would still have to outweigh the first. However, if this turns out to be true the equilibrium will now be a saddle-point rather than globally stable.

The best way to interpret this result is to think of sets of conventional downward-sloping aggregate demand curves, and upward-sloping short-run aggregate supply curves, in *P, Y* space. Under normal circumstances, when money wages start to fall the set of supply curves will progressively shift downwards, and eventually the full employment level of output would be reached. However, if the arguments about the negative effect of falling money wages on aggregate demand have any force, the aggregate demand curves will also shift downwards, in this case towards the origin. If this effect is large enough it may outweigh the supply shifts in the opposite direction. In that case all of output, employment, and the price level will be continuously falling. This is therefore a possible interpretation of instability in the case of less than instantaneous adjustment of nominal wages and prices. But it is evidently an ambiguous result. For it to happen would require several assumptions about the strength of the various effects, orders of magnitude, timing, and so forth. It is not likely, one feels, that Keynes would have intended this *possibility* to be the centrepiece of his entire argument.

Moreover, it must be said that this idea of continuously falling output, employment, and prices was not (and is not) how Keynesian economics is usually presented. Based originally on the experience of Great Britain in the 1920s and 1930s the idea, rather, was that unemployment could persist for long periods of time, and at very high levels, without any tendency for relief *via* 'market forces'. The expression often used was 'under-employment equilibrium'. The economy could get stuck, so to speak, or stagnate - thereby requiring some decisive action to break the deadlock. Keynes himself (1936, 249) put the point as follows:

> … it is an outstanding characteristic of the economic system in which we live thar, whilst it is subject to severe fluctuations in respect of output and employment, it is not violently unstable. Indeed it seems capable of remaining in a chronic condition of sub-normal activity for a considerable period without any marked tendency either towards recovery or towards complete collapse. Moreover, the evidence indicates that full, or even approximately full, employment is of rare and short-lived occurrence. Fluctuations may start briskly but seem to wear themselves out before they have proceeded to great extremes, and an intermediate situation which is neither desperate nor satisfactory is

> our normal lot.

And a few pages later (Keynes, 1936, 254):

> … we oscillate, avoiding the gravest extremes of fluctuation in employment and in prices in both directions, round an intermediate position appreciably below full employment and appreciably below above the minimum employment a decline below which would endanger life.

My point here is simply that this scenario does not really correspond to the mathematical sketch of the chapter 19 argument that was attempted above. Incidentally I do not think that the situation would be any different if we had used an aggregate demand schedule that is vertical in *P, Y* space, rather than downward sloping.[11] Then there would be questions also about the very existence of equilibrium in the model, let alone the stability issue. Once again, the mathematics *per se* would not be compatible with the idea of an under-employment 'equilibrium', *i.e.*, practically with prolonged stagnation short of a complete collapse.

7. The Second Cambridge 'Revolution' and the Importance of Imperfect Competition

Kaldor (1983, 11-15) argues that the key strategic error made by Keynes in all of this was the attempt to combine the theory of effective demand with the Classical and Neo-Classical notion of perfect competition. Kaldor, of course, was also a Cambridge economist albeit after Keynes's own day, and he is referring to the other intellectual 'revolution' that took place at Cambridge University in the 1930s alongside the Keynesian revolution. Namely the 'imperfect competition revolution' sparked by Joan Robinson's book *The Economics of Imperfect Competition* (Robinson 1933). Kaldor is questioning why there was not more interaction between these two intellectual trends.

[11] And would thus be more directly comparable with the truly Keynesian aggregate demand schedule discussed above.

According to Kaldor, the correct foundation for a theory of effective demand would be a generalized notion of imperfect competition, at both the microeconomic and macroeconomic levels. As he put it (Kaldor 1983, 11) '… the acceptance of Marshallian microeconomics …' on the part of Keynes was a mistake. This is because (as already mentioned in section 2 above) the theory of perfect competition simply *assumes* that the firms can sell all that they want to at the going price. In Kaldor's (1983, 11) view on the contrary:

> … the very notion of production in the aggregate being limited by demand … [should pre-suppose] … a state of affairs in which the production of individual firms of all sizes is limited by a lack of orders and not by productive capacity … the individual producer faces a … limited demand for his product – not an infinitely elastic demand …

Hence, the competitive marginalist condition should be replaced. Either by:

$$P = [(\eta + 1)/\eta][W/F'(N)]. \tag{21}$$

or by a similar version involving average cost pricing. At the macro level (Kaldor 1983, 11) the 'η' term would be defined as:

> … the … [aggregate of] …the elasticities of demand facing the individual producer[s]…

On the other hand, and as previously mentioned in section 5, Davidson (2003-04, 247-9) has strongly denied, as against Kaldor and Kalecki, that imperfect competition, or as he puts it 'monopolistic competition', has any decisive role to play in Keynesian economics. Here is what he has had to say on the subject (Davidson 2011, 249):

> … Keynes specifically indicated that monopolistic competition is neither a necessary nor sufficient condition for involuntary unemployment. Keynes claimed his analysis was applicable to 'any degree of competition' (Keynes 1936, 245), including a perfectly competitive market. Keynes reiterated this rejection of requiring monopolistic competition to explain unemployment in his rejoinder to Tarshis and Dunlop in 1939 (Keynes 1939).

But this is not quite what Keynes had really said. His actual words (Keynes 1936, 245) were:

> We take as given … the degree of competition … as well as the social structure including the forces, other than the variables set forth below, which determine the distribution of the national income.

Now, a condition of pure theoretical perfect competition would be just one possibility among very many possible 'degrees of competition'. Moreover, it is one which we can be sure never has existed in reality - and will never do so. All the other 'degrees of competition', up to and including a giant monopoly firm encompassing the whole economy, must, by definition, involve some degree of imperfect competition. Keynes does not draw attention to the point later made by Kaldor, that the theoretical requirement of *perfect* competition is literally an assumption that each firm believes that it can sell all that it wants to at the going price. But as already stressed, this assumption would rule out any consideration whatsoever of demand, expectations and so on. Keynesian economics can therefore only logically be applied, not to this case, but to any one of the 'degrees of competition' that fall short of the perfect. There is, however, an infinity of such cases. Otherwise why mention the idea of the 'degree of competition' at all?

As for the Dunlop-Keynes-Tarshis exchange the issue here, as we have seen, was that Keynes's theory of involuntary employment, as presented in the *GT*, predicted that real wages should move counter-cyclically, *i.e*., that for employment to increase and unemployment to fall it would be necessary for real wages to fall. However, Dunlop (1938) and Tarshis (1939) presented evidence that either the opposite was true or, in some other cases that there was little change in real wages over the cycle. Either of these two results could be consistent with an assumption of imperfection competition, but not with Keynes's own theory as presented in the *General Theory*. However, Keynes did *not* reject these ideas out of hand. He naturally defended his own position, in the sense of explaining why he thought it reasonable to have made the assumptions that he did. He also went into some detail about the various statistical issues involved and the history the debate going back into the nineteenth century. But in the end he conceded that pro-cyclical real

wages would help rather than hinder in the truly important task from his point of view of making clear the role of effective demand. Keynes (1939, 40) put the point in the following way:

> That I was an easy victim of the traditional conclusion because it fitted my theory is the opposite of the truth. For my own theory this conclusion was inconvenient, since it had a tendency to offset the influence of the main forces which I was discussing and made it necessary for me to introduce qualifications, which I need not have troubled with if I could have adopted the contrary generalization favoured by Foxwell, Mr. Dunlop and Mr. Tarshis.

In my own view, and with hindsight, this idea of imperfect competition and limited demand at both the individual firm level and at the macro level, does in fact turn out to be the crucial issue on the supply-side for a 'more general'[12] theory of aggregate demand and supply. Although it seems astonishing after the passage of so much time (and so much academic debate) the point is not more widely recognized, nonetheless it can be demonstrated that in this way Keynes's theory of employment can be rendered immune to the second of the two main charges traditionally levelled against it. Downward-sloping demand curves facing the individual firm translate easily into the typically Keynesian upward-sloping demand and supply curves at the macroeconomic level. To derive the equivalent of Keynes's macroeconomic Z function in this context, define the aggregate mark-up factor K, where $K = 1 + k$, as follows:

(22) $$K = 1 + k = [(\eta + 1)\eta]$$

In Smithin (2013, 153) I further suggested that this K will tend to decrease as the level of output (real GDP) increases. The reasoning was that if the real money value of aggregate demand does increase as indexed by the level of real GDP the representative producer will expect to share in this. At the same time, the price elasticity for demand of demand for each individual firm's own product would also be expected to increase. Therefore, the mark-up K, both for the

[12] In the years after the *General Theory* was published it became the fashion, for a while, for other economists to claim that their own theory was somehow 'even more general'. In fact, I am implicitly doing just that in this paper! A notable early work is this genre was Chamberlin's *Towards a More General Theory of Value* (Chamberlin, 1957). Chamberlin was also a contributor to the imperfect competition revolution as here discussed.

representative firm and in aggregate, is expected to fall. I was able to show that the result would be an upward-sloping between Y (real GDP) and N, which resembles Keynes's Z_W function, but uses the modern concept of real GDP. For our present purposes, however, we will not actually need to take this step. It will suffice simply to assume that K is a constant as was often done, for example, in the now neglected Post Keynesian literature of the 1950s and 1960s.[13] The key idea that remains in play is that the real wage is no longer equal to the marginal product of labour (MPN) but is always greater than the MPN.

(23) $$W/P = K[F'(N)]$$

We can now think about how to reconstruct the aggregate demand and supply in real terms (in D_W, Z_W space) under this regime of imperfect competition to compare with the regime of the perfect competition in Figure 3. The aggregate demand function will again be something along the lines of:

(24) $$D_W = C(Y_W) + I_W$$

And, presumably, we can identify the Y_W term with the level of output supplied along to the Z_W function. Therefore, we have:

(25) $$Y_W = Z_W = PY/W = Y/KF'(N)$$

Moreover, we can finally reduce everything to simple linear functions (as we have always done in the present paper) in this case by assuming that $C = cY_W$ - with $0 < c < 1$, and $Y = AN$ - with $A > 0$, while retaining the assumption that K is a constant. The results are therefore:

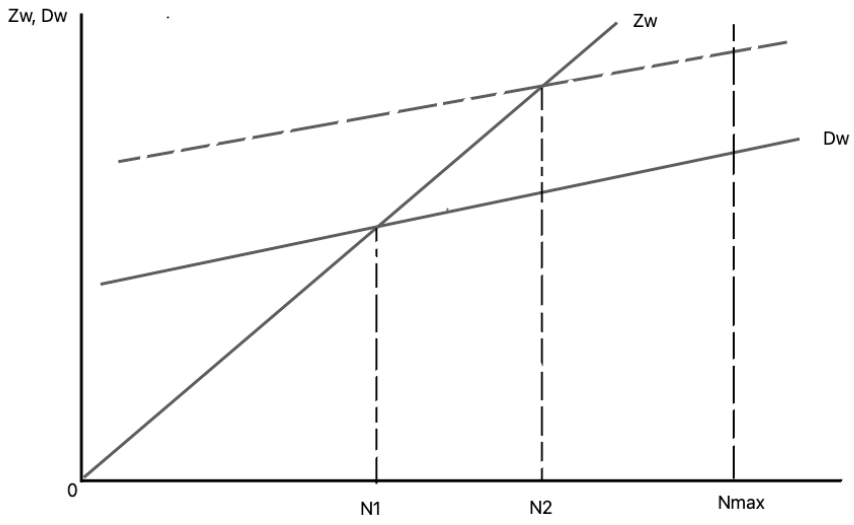
[13] I am not suggesting that this would be an appropriate assumption in the complete macro model. In my own work, for example, the complete model is presented graphically in inflation/growth (p, y) space. The fundamental equation for income distribution *is* $k = a - r - w$ where the 'k' term is the same at that which appears in equation (22), a is the natural logarithm of labour productivity, r is the average ex-post real interest rate across all terms to maturity, and w is the natural logarithm of the average real wage rate (Smithin 2022, 164). In this approach the mark-up is determined residually once labour productivity, the real wage rate, and the real interest rate are determined. This is consistent with the argument in the text about the counter-cyclical markup and also with the various co-movements of the macroeconomic variables that can identified empirically (Collis 2018). However, it is not necessary to go into this degree of detail for the purposes of the present argument.

(26) $D_W = cKN + I_W$ aggregate demand schedule

(27) $Z_W = KN$ aggregate supply schedule

These rather simple relationships are graphed in Figure 6. As before the aggregate supply function has steeper slope that the aggregate demand function, such that the aggregate demand function cuts it from below, as always turned out to be case in the graphical analyses carried out thus far in the paper, regardless of the different detailed specifications of the various functions.

Figure 6: Reconstructed Aggregate Demand and Supply Functions



When there is an increase in aggregate demand that shifts the D_W schedule out and to the right, the level of employment will increase from *N1* to *N2*. The big difference from the analysis in Figure 3 is that that now there need be no discussion about voluntary *versus* involuntary unemployment, nor to resort to shifting and ambiguous definitions of what constitutes full employment. In fact, it might easily be argued that 'labour demand equals labour supply', in some sense, at both the *N1* and *N2* positions. What we are now doing is compare each of these positions with the technologically defined maximum level of employment *Nmax*. It can

unambiguously be stated both that employment has increased, and unemployment has declined. Moreover, that this is a preferred position from the point of view of society as whole. Finally, picking up again on the long-ago exchange between Keynes and Dunlop/Tarshis, as discussed above, the average level of real wages has increased rather than decreased. Increases in employment are not 'bought' at the expense of falling real wages, quite the contrary.

Going back to Keynes's two 'Classical postulates' about the labour market, as discussed in section 4, it might now seem tempting to suggest that if Keynes, in the *General Theory*, retained postulate I and dismissed postulate 2, the theory just outlined has simply reversed these choices. This, however, would be misleading. It is certainly true that postulate 1 fails, the real wage is not equal to the marginal product of labour. But this in itself does nothing to reinstate questionable propositions about the supposed 'utility' of wages, and 'disutility' of labour, the sort of things that are the hallmark of Classical theory. It is true that there is likely to be empirically a positive relationship between real wages and the level of employment on the supply-side of the labour market. However, it is not useful, in my view, to think of this as being related to the Neo-Classical theory of labour/leisure choice. It should be predicated (much more simply and realistically) on the fact that when employment increases the bargaining power of labour increases. In the past I have called this a 'wage function' (*e.g.*, Smithin 2018, 28; 2022, 70), which is a term borrowed from some of the mainstream literature. In short *both* 'Classical postulates' should be rejected. What lies behind this sort of argument is a completely different understanding of the social ontology of labour relations.

In my view, we have now arrived at a theoretically consistent, 'watertight', exposition of Keynes's theory of employment. This, however, was a thing that neither Keynes himself, nor his followers over the next several decades, seemed able to do. Nonetheless I would say that the fact

that it is indeed *possible* to do so does show that Keynes's basic instincts about the determinants of the level of employment in a monetary economy were sound. The actual failure to pursue these ideas any further, therefore, seems to me to have been very much a dereliction of duty on the part of the economics profession. A great deal has been lost in terms of the development of both a viable theory of monetary macroeconomics, and of the actual conduct of the macroeconomic management of the economy, over the period of what is now almost a century.

8. Conclusion

Paul Davidson, whose work has already been cited several times above, once added an appendix to a book of his, *The Keynes Solution* (Davidson 2009, 161-79), which was entitled 'Why Keynes's Ideas Were Never Taught in American Universities'. In the relevant period, moreover, if they were not taught in universities in the United States, they would not have been taught anywhere else either.

As we have seen part of the blame does lie with Keynes's own exposition. At the end of the day, however, probably a great deal more with the way in which those ideas were interpreted by mainstream economists, and how they entered the textbooks. Not very much effort was expended in trying to identify the important ways in which Keynes's ideas *did* differ from what had gone before. It was far more a case of trying to fit them into already pre-determined boxes, and thereby ultimately minimize their impact.

It has been argued above that Keynes's exposition could, in fact, have been made immune to the idea that the results depended solely on nominal wage or price rigidities. All that would have been required is to use the notion of imperfect competition as the background for macroeconomic analysis rather than the unrealistic, indeed totally abstract, idea of perfect competition. To reconstruct Keynes's theory along these lines, however, it would have had to

have been recognized that there was also very much more work to be done to be on the theory of interest determination and endogenous money – a point which naturally has also been touched on in this essay. But this was very much more than many of the economists who described themselves as ‘Keynesians’ were prepared to do. They would have had to have undertaken something like a complete revision of the entire *corpus* of monetary macroeconomics.

Acknowledgments

TBA

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