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Hicks on Hayek, Keynes and Wicksell[1]

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and

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Introduction

Sir John Hicks had a ringside seat at the famous and combative debate between Hayek, Keynes, and Sraffa in the early 1930s. Hayek (1931a, 1932), who was Hicks's colleague at the London School of Economics from 1931 to 1935, had launched a scathing attack on Keynes's *Treatise on Money* (1930) in the journal *Economica*. Given the provocation, Keynes (1931) replied in kind. Sraffa (1932a, 1932b) came to Keynes's defence. In the immediate aftermath Hicks (1935, 46) admitted that:

> (a)fter the thunderstorms of recent years it is with diffidence and even apprehension that one ventures to open one's mouth on the subject of money.

Nevertheless, Hicks did open his mouth and take up his pen on this subject, both at the time and for years afterwards. His "A note on the *Treatise*" (Hicks, 1967b) was a significant contribution towards helping later readers gain an understanding of the issues. However, when the topic of "Keynes versus Hayek" comes up for discussion today, the precise timeline of the events of 80 years ago is often blurred. Hayek did *not*, in fact, offer a critique of Keynes's most influential book, the *General Theory of Employment Interest and Money* (1936). In retrospect, Hayek

(1994) conceded that this omission may well have been a tactical mistake, but never gave any indication of what such a critique might have been. The question therefore arises as to what it was that so enraged Hayek *specifically* about the *Treatise on Money* and not about Keynes's better-known book?

One point that is often mentioned in the literature is the inconsistency between the core theory chapters of the *Treatise* (chapters 9 and 10), and the policy analysis and historical illustration in the rest of the two-volume work.[4] In the pure theory chapters the level of output was assumed to be constant, which was inconsistent with the less formal analysis of changes in output and employment in the applied sections. If Hayek's main complaint was along these lines he would have been essentially correct, but then the debate could have been finished and done with very quickly indeed. There must surely be more to it than this?

One clue may be Keynes's emphasis in the *Treatise* on the sectoral price levels, specifically the relative prices of investment goods and consumption goods, in addition to an analysis of the aggregate price level. This must have seemed to Hayek to trespass directly on his home turf. The theory of the business cycle due to Mises (1934) and Hayek (1935) had tried to combine the so-called "Austrian" theory of capital theory with Wicksell-type monetary theory to generate a theory of the business cycle based on changes in inter-temporal prices. In this theory, the interest rate differentials originally postulated by Wicksell (1898), were thought to have "real" effects on the economy (that is, on the business cycle), and not just on the aggregate price level, as in Wicksell. Keynes's own attempt at a Wicksell-type theory in the *Treatise on Money* might therefore well be seen as a direct challenge to the newly-emerging Austrian theory.

To press their case Hayek and others had no compunction in directly accusing Keynes of

ignorance of the German-language literature. Whatever the truth about Keynes's scholarship, however, in reality the theory actually presented in the *Treatise* was arguably closer to the Wicksellian model than was that of the Austrians. In his original book *Interest and Prices* Wicksell (1898) had focused mainly on aggregate price level effects, and did not allow for changes in output. Keynes of the *Treatise* had changes in both relative prices and in the aggregate price level, but similarly, in the pure theory sections, did not allow for real effects. In these circumstances, it can be conjectured that from Hayek's point of view Keynes high profile effort may have seemed a bitter pill to swallow and even to seriously threaten the whole basis of his own approach.

Hicks's "A Note on the Treatise" (1967)

One compelling argument that by Hicks in 1967 (Hicks, 1967b) was that Keynes's *Treatise on Money* (1930) needed to be "translated" for the benefit of the readers of that time. This was because of the great change in macroeconomic theory in the intervening decades, much of it due to Keynes himself. Today, however, another fifty years have passed by, and it seems clear that the issue needs to be addressed once again for a 21st century audience. There are still a large number of problems in comparing the notation used by Hicks in 1967 to that now common in the standard macroeconomic textbooks of the modern era.[5] Moreover some eighteen years after the *Critical Essays in Monetary Theory*, Hicks himself had recognized this difficulty and in his *Method of Economic Dynamics* (1985, 55-6), made a brief attempt to "restate his [Keynes's] analysis in <u>General Theory</u> notation" (emphasis added). That discussion, however, took place in

the context of a much less detailed treatment than the1967 paper. It therefore remains the case

that a first requirement for a modern audience is to restate Hicks's 1967 interpretation of Keynes,

in full, using what is by now a much more familiar notation.

In something like the modern textbook-type notation therefore, Keynes's *Treatise* notion

of "real income" might be written as:

(1) $Y = C + I$

where *Y* stands for real output or real GDP, *C* for real consumption expenditure, and *I* for real

investment. As already discussed, according to Hicks and others the main flaw of the *Treatise,*

and the main difficulty in understanding Keynes's argument, was the fact that both the level and

composition of this "real" magnitude were assumed to be held constant in the formal theoretical

treatment. (For example, this was also the conclusion reached by Keynes's close colleagues in

the famous "circus", the group which retrospectively discussed the *Treatise on Money* at

Cambridge University in the early 1930s).

It should further be noted that as *Y, C,* and *I* are supposed to be stated in real terms, then

according to modern ideas there must also exist an equilibrium aggregate price level (which we

will label, *P*) such that:

(2) $Y = PY/P$

As mentioned, Keynes was also interested in what would happen to the sectoral price

levels, P_C and P_I, the price levels of consumption goods and of investment goods respectively

when *out* of equilibrium. One of the most useful innovations made by Hicks in the 1967 paper

(which Keynes had not done) was to conceive of the disequilibrium sectoral prices as being

index numbers relative to some base. On this interpretation, and in a plausible notation, for the

money value of consumption, goods out of equilibrium, we could write:

(3) $\quad\quad\quad P_C C \;=\; C \;+\; \Pi_C$

And, similarly, for the disequilibrium money value of investment goods;

(4) $\quad\quad\quad P_I I \;=\; I \;+\; \Pi_I$

where the symbols Π_C and Π_I stand for what Keynes called the "windfall profits" (expressed in money terms) in each sector.

There must therefore also be a *disequilibrium* overall aggregate price index, P' (as distinguished from the equilibrium price index, P) which is given by:

(5) $\quad\quad\quad P' \;=\; (P_C C + P_I I)/(C + I)$

Using (3) and (4), equation (5) can alternatively be written:

(6) $\quad\quad\quad P' \;=\; 1 \;+\; (\Pi_C + \Pi_I)/(C + I);$

or, defining total profits as $\Pi = \Pi_C + \Pi_I$:

(7) $\quad\quad\quad P' \;=\; 1 \;+\; \Pi/Y$

According to equation (7) therefore, the disequilibrium aggregate price level depends on the ratio of total windfall profits (Π) to income (Y).

The Fundamental Equation(s)

Keynes had an idiosyncratic definition of savings. The volume of savings, S, was assumed to depend only on income, in Keynes's specific sense of equilibrium income, and *not* on the windfall profits. Therefore, if, following Hicks (1967b, 196), we initially assume that there is no consumption out of profits, and letting s_Y stand for the marginal propensity to save out of

income:

(8) $P_C C = Y - s_Y Y,$

and/or;

(9) $P_C C = Y - S$

which could be re-written as:

(10) $P' = (P_C C + P_I I)/Y$

      The causal factor in Keynes's analysis is actually the "dollar" amount (pounds sterling

for Keynes, Hicks and Hayek), of $P_I I$, that is, the *money* value of investment spending. As Hicks

(1967b, 196) explained the point:

> By far the most important of ... [the behavioural assumptions] ... is that the
> value of investment is considered independently of the ... (other) ... flow
> magnitudes; so far as they are concerned it is exogenous.

Next, we can denote this money value of investment as I', such that:

(11) $I' = P_I I,$

Then, using (6):

(12) $P' = (Y - S - I')/Y,$

      From this expression, it is then possible to move on directly to a very straight-forward

version of Keynes's *second* "fundamental equation" from the *Treatise*. (Hicks, meanwhile,

explains that the *first* fundamental equation, which in Keynes had to do with the price level of

investment goods, is already subsumed in the second). *The* fundamental equation is therefore:

(13) $P' = 1 + [(I' - S)/Y]$

      So, the argument is that if the money level of investment is greater than money savings

this will cause the aggregate price level to rise (and *vice versa*). Clearly, Keynes's special

definitions of investment and savings are the analytical device that allows these two magnitudes

to differ. Comparing equations (13) and (7) we should note also that $\Pi = I' - S$.

Keynes's Use of Wicksell's Natural Rate Concept

In earlier work, Smithin (1994, 2003, 2009, 2013) has consistently argued that Wicksell's (1898)

notion of the "natural rate" of interest is bogus. Moreover, this is far from being a question of

historical importance only, because the *same* idea under different names (such as the

"equilibrium" rate of interest), has survived in 21st century "micro-based" macroeconomics by

various sleights of hand. In the ubiquitous dynamic general equilibrium (DGE) model, for

example, an unobtrusive device that does the trick is the assumption of a constant rate of time

preference which fixes the interest rate for all time. The argument, however, falls apart as soon

as it is allowed that the rate of time preference can change (Kam 2000, 2005; Smithin 2013). It

can certainly be argued that the survival (or revival) of the Wicksellian natural rate in late 20th

and early 21st century mainstream macroeconomics is one of the main reasons, although there

are many others, why that body of theory has been so extremely unsuccessful.

Nevertheless, Keynes *did* introduce Wicksell's idea into the *Treatise on Money* eighty-

five years ago. The natural rate in Keynes (1930) is simply the interest rate at which the money

of investment equals the money rate of saving, $I' = S$. Therefore, the argument of 1930 turns out

to be in reality quite recognizably "Wicksellian", in terms of monetary theory. If the actual rate

of interest is *below* the natural rate, the value of investment I' will be greater than savings S. This

is why, according to equation (13), the price level will then rise. Similarly, if the actual rate of

interest is above the natural rate there will be deflation.

Hayek accused Keynes of not properly understanding the German-language literature, including Wicksell's contribution, and even more particularly, the Austrian theory of capital of the early twentieth century, due to von Mises (1934) and himself (Hayek 1935). However, in retrospect, this argument seems to have been disingenuous. Most frequently "Wicksell-type" arguments have indeed confined themselves to the impact on either the price level or the inflation rate. Moreover, the basic ideas actually pre-date the work of Wicksell himself by nearly a century, having been fully anticipated by Thornton (1802) in the English language work *The Paper Credit of Great Britain.*[6] This was eventually recognized even by Hayek (1939) himself, in a long introduction to a reprint of Thornton's book published in the later 1930s. Only occasionally, in the history of economic thought before Keynes's *General Theory* (1936), do there seem to have been forays into thinking about the real effects of changes in interest rates. Ironically, the Keynes of the *Treatise on Money* was actually in the first camp, whereas the Hayek of *Prices and Production* was one of the few in the latter.[7] As Hicks (1967b, 204) put the point:

> … Wicksell plus Hayek said one thing, Wicksell plus Keynes said
> quite another.

The reason that Hayek said something different to Keynes has much to do with Hayek's (1931, 130) claim that:

> the ideas of Wicksell … are a necessary outgrowth of the most elaborate
> theory of capital we possess, that of Bohm-Bawerk

It is true, as noted by Lindahl (1958, 14-17), that before the publication of *Interest and Prices*, Wicksell had been interested in and written about the capital theory of Bohm-Bawerk, an Austrian school precursor of von Mises and Hayek. Also, Wicksell did explicitly refer to Bohm's theory in the preface of *Interest and Prices* (Wicksell 1898, xxv-xxvi). Crucially, however, the

seems to have been mainly to establish the notion of a non-monetary natural rate of interest to his (Wicksell's) *own s*atisfaction. It did not play any greater role than this in the monetary analysis. And, in fact, Austrian capital theory is not actually a *necessary* condition for there to be a natural rate of interest (in monetary *theory*, there is no natural rate in reality). A theoretical natural rate can also emerge from neoclassical capital theory, for example, with the same implications for monetary theory. See Smithin (2013a, 185-8).

The von Mises/Hayek version of Austrian capital theory had gone on to suggest that the most important effect of a misalignment of interest rates, *e.g.*, in the downward direction, was "over-investment" in real capital equipment, and not just an increase in the money value of investment spending. The supposed over-investment would then eventually have to be painfully undone in the course of a depression. This was the essence of the Austrian explanation of the business cycle. In another paper, written at about the same time as "A note on the *Treatise*", and entitled "(t)he Hayek story" Hicks (1967c) provided a number of arguments as to why the Austrian business cycle theory turned out to be unconvincing, to most observers, as an explanation of real world episodes. This was also (famously) the view of Friedman (1974). In the actual historical circumstances in which it was first presented, the Austrian narrative could have been, and frequently was, perceived even as dangerous to the very survival of the capitalistic economic system of the day. It came across as a sort of economic "catch-22", the implication being that there were no policy actions whatsoever that could be taken to alleviate a bad situation. Moreover, it is certainly true that Keynes in the *General Theory* eventually offered an alternative solution that was much less pessimistic, and this alone is probably enough to account for the popularity of the *later* Keynes theory, and the eclipse of Austrian economics.

However, it must again be stressed that in the early 1930s, at the time of the "thunderstorms", the solution provided in the *General Theory* was *not* actually the issue. The Keynes theory of that time, the theory of the *Treatise on Money,* was arguably the more strictly Wicksellian in its focus on the traditional theoretical themes of monetary economics.

In the original critique of Keynes, Hayek (1931, 122) was, in fact, quite explicit that he was dealing only with the pure theory part of Keynes argument, around the issues of "how profits arise" and whether or not they are a "purely monetary phenomenon". He does not disagree with Keynes's general intuition that "profits are the mainspring of the system" (Hayek, 1931, 124). So, the debate was not about how changes in profits may eventually affect employment or growth, but what it is that is needed for profits to be generated. All that Keynes's fundamental equations really did was to put forward a theory of how profits come about and the role of investment spending (on Keynes's own definition) in generating them. Hayek, in 1931, was objecting to this type of argument (as discussed above) and palpably shied away from any discussion of "practical applications", or "practical [policy] proposals" (Hayek 1931, 122). His stated intention was to focus on what he saw as "the central … [theoretical] … difficulties".

It should be admitted (to return to Hicks) that Hicks himself finally ended up with a much more flexible interpretation of what is meant by both "Keynesian" and "Wicksellian" theory than implied by the foregoing. Actually, he was at some pains to state that he was "by *no means* implying that Wicksell *himself* said the last word in the elaboration of his ideas" (Hicks, 1967b, 201, emphasis added).[8] The work of such writers as Mrydal (1939) and Robertson (1934) was cited as having provided such an elaboration and therefore (presumably, or supposedly) as having been being "more genuinely (sic) Wicksellian … [than Keynes in 1930] …" (Hicks

1967b, 201).[10] Hicks was always a champion of Robertson. However, note that in effect, in the quote about Hayek's and Keynes's differences cited above (Hicks 1967, *op. cit*), he has *already* conceded that such a judgement depends entirely on what we take Wicksell's main point actually to have been.

Widow's Cruse/Danaid Jar

The following passage from the *Treatise* (1930, 125) has always been puzzling:

> "Thus profits, as a source of capital increment for entrepreneurs, are a
> widow's cruse which remains undepleted however much of them may
> be devoted to riotous living"

This is evidently a biblical allusion. A few lines later there is a classical reference to the "Danaid Jar" reflecting the opposite situation of a vessel which can never be filled up, no matter how much is poured into it.

From the point of view of the present discussion the implication is simply that, in some circumstances, there can be consumption out of profits after all. If there *is* consumption out of profits, then;

(14) $\qquad P_C C = (1 - s_Y)Y + (1 - s_\Pi)\Pi$

where s_Π is the propensity to save out of windfall profits. Next, recall that:

(15) $\qquad Y + \Pi = P_C C + P_I I$;

then, from (12), and given that $I' = P_I I$, we obtain:

(16) $\qquad Y + \Pi = Y + \Pi - s_Y Y - S_\Pi \Pi + I'$

which comes down to:

(17) $\qquad I' = S + s_\Pi \Pi$

and, re-arranging:

(18) $\qquad \Pi = (I' - S)/s_\Pi;$

Finally, using (7) we arrive at a modified version of the fundamental equation:

(19) $\qquad P' = 1 + [(I' - S)/s_\Pi]$

This is almost the same as the fundamental equation in equation (13), but with a "multiplier".

Hicks was of the opinion that this was a significant finding, from the perspective of the history of economic thought, given the key role played by the multiplier concept in the later *General Theory*.

What about the unchanged increment to wealth? According to Hicks, Keynes can make this particular claim because he (Keynes) is implicitly "deflating" by P_I, and P_I is not affected by consumption out of profits. "He might .... have explained" is Hicks's (1967b, 199) comment. In short, the real increment to wealth is simply:

(18) $\qquad I = I'/P_I = P_I I/P_I$

In the end, however, these several questions about assumptions, terminology and so forth, do not materially affect the basic analysis. As suggested, the main point at issue is really about the Wicksellian *bona fides* of Keynes's analysis.

In a passage that served to emphasize precisely this issue, Smithin (2013, 125-32) derived a modern neo-Wicksellian model from the so-called "micro-foundations". (The original purpose of this was to demonstrate to graduate students, and others, the many and various pitfalls of the micro-foundations approach itself). After much mathematizing the Wicksell-type model, so constructed, finally came down to:

(19) $$Y = Y^N$$

(20) $$p \; = \; [1/(1\text{-}\gamma)](r^N - r_j), \hspace{5em} 0 \; < \; \gamma \; < \; 1$$

The conclusion was therefore, that in such a model the level of output, Y, is always at its natural

value Y^N. (The so-called "full employment" level, which is also supposedly the same as that

which would prevail in a barter exchange economy). Furthermore, if the "base real policy rate",

that is r_j, is too low relative to Wicksell's natural rate r^N (in modern optimization models

identified with the "rate of time preference"), there will be inflation and *vice versa.* As explained

by Barrows and Smithin (2009, 254-8), and Smithin (2013, 130-2) the r_j are actually the *different*

values that could possibly be taken by the intercept term in a Taylor rule (Taylor 1993) or

similar, as perceived and acted on by the central bank authorities themselves.

It can be shown therefore that the exercise of working through the micro-foundations

really adds nothing new at all to what are by now familiar theoretical propositions. Smithin's

(2013, 131-2) comment on all this was as follows:

> The historically-minded reader will note that the model in … [(16)
> – (17)] … is only a marginal advance from position already reached
> by Keynes (1930, 121-44) in chapter 10 of his *Treatise on Money*.

This seems an unbelievably small reward for what has now been nine decades of intensive

mathematical research in academia.

Conclusion

This paper has returned to Hicks's schematization of 1967 in order (a) to further up-date the

approach using still more modern notation, and (b) thereby demonstrate the explicitly

Wicksellian nature of Keynes's analysis in the *Treatise on Money*. It seems clear that it was the

latter point that got Hayek's attention all those years ago. By the time of the *General Theory*,

however, Keynes (1936, 245) was careful to explicitly repudiate the natural rate concept, before

going on to offer his own detailed theory of changes in output and employment. In Keynes's own

words:

> "(I)t was a mistake to speak of the natural rate or to suggest…[it]...
> would yield a unique value for the rate of interest irrespective of the
> level of employment…I am no longer of the opinion that the concept
> of the natural rate of interest has anything useful or significant to
> contribute to our analysis."

This seemed to Hayek (1994, 90-1) to represent a complete change in the basis of

Keynes's argument, and he later openly admitted to either a disinclination or inability to pursue

the matter any further.

Notes

1. We would like to thank Kam Hon Chu, Pascal Salin, and Mario Seccareccia for helpful comments and suggestions which have improved this paper. Any remaining errors and omissions are the responsibility of the authors.

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4. See Seccarecia (2004) for a detailed discussion of the various other "models" to be found in the different parts of the *Treatise* (and thereby the element of continuity between the *Treatise* and *General Theory* in this respect).

5. To take just one example, in Hicks (1967b, 195) the symbol for real *investment* spending is actually "C" which usually means "consumption" in a modern textbook. It is this kind of thing that is so very confusing for the modern reader.

6. Hicks (1967a) had also made an interesting commentary on the work of Thornton just as he had done on that of both Keynes and Hayek. See also Smithin (1996).

7. There is no evidence that Wicksell himself was aware of the work of Thornton, or of any other precursors, but the point is that these idea were certainly *not* new in the late nineteenth and early twentieth centuries. Nor, of course, were they (anything like) new more than 200 years after Thornton, at the time of the "new consensus" in the early twenty-first century.

8. We are indebted to Kam Hon Chu for reminding us of this important caveat to Hicks's position. From the point of view of later theory, it could alternatively be argued that Keynes's original work in the *Treatise* was actually superior to that of either Wicksell, or the early twenty-first century neo-Wicksellians of the "new consensus", in at least one important respect. Keynes had allowed for "spontaneous" changes in money wages to affect the price level (*i.e.,* for cost-push inflation). In the exposition in this paper, this point has not been emphasized, because of Hicks's (otherwise useful) index-number device.

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