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Abstract

This paper examines the logic of the arguments for negative interest rates. These arise from a Wicksellian theoretical framework that attributes low investment to a ‘natural’ or ‘real’ rate of interest (that is the rate of profit on real investments) that is below the money rate of interest. At near zero money rates of interest the low investment is presumed to be caused by a negative natural rate of interest. The paper outlines Kalecki’s reasons for believing that in fact the rate of profit for the economy as a whole is in general positive and, in any case, the rate of profit is differentiated in the economy by industry and firm. This removes the Wicksellian rationale for negative interest rates.

Keywords: Kalecki, monetary theory, rate of interest.

JEL Classification: E12, E32, E43, E52.

1. Introduction

In the discussion over negative (or even near-zero) interest rates, the case for such extremely low or negative interest rests on three arguments: an appeal to a 'natural' rate of interest that is thought to be negative at a time of 'secular stagnation'; a belief that 'in the absence of inflation real interest rates cannot fall far enough to clear the world market for savings' (*The Economist* September 24 2016, p. 23); and/or a belief that money accumulations need to be taxed, rather than rewarded with interest, in order to force them into circulation.

In this paper it is argued that these arguments do not hold. The latter two arguments for negative interest rates, are familiar to readers of Keynes's *General Theory* and therefore do not require repetition of the argument that interest rates do not clear 'savings' (as supposed, for example, in Bernanke 2005), or that economic activity does not respond to incentives for monetary circulation (see Ilgmann 2016). It is the presumed relationship between 'natural' or equilibrium 'real' rates of interest, and 'real' money rates of interest, that is the axis on which contemporary macroeconomic theory and policy revolves. This paper therefore concentrates on clarifying that relationship by showing how the arguments for negative interest rates miss-specify the function of interest in a business economy with a sophisticated financial system. The focus of the discussion on the constraints faced by short term interest rates which would otherwise resolve the growth problems of market economies, distracts from a much more serious problem arising from policies of interest rates around the zero bound and quantitative easing, namely the flattening of the yield curve that weakens the structure of the financial system.

2. The Natural Rate of Interest

The most common argument for negative interest rates rests on the notion that these are necessary because the ‘natural’ rate of interest is so low, or even negative, that only negative money interest rates will secure a profit to ensure a sufficient rate of investment to generate an economic recovery. With money interest rates at, or near, zero, falling prices mean that a ‘real’ rate of interest after inflation, must be stubbornly positive. Correspondingly, the rate of profit on investment, the so-called ‘natural’ real rate of interest, must be close to negative in step with falling prices (Summers 2013, Williams 2016). The natural rate of interest is defined as ‘the short-term real (inflation-adjusted) interest rate that balances monetary policy in such a way that it is neither accommodative nor contractionary in terms of growth and inflation... in an economy at full strength.’ (Williams 2016, pp. 1-2). A ‘market’ real money rate of interest in the main financial centres, estimated from the yields on inflation-indexed bonds, as opposed to official rates of interest set by central banks, indeed showed the real money rates of interest turning negative in 2012 and 2013 (King and Low 2014). The conclusion that is supposed to follow from this is that a sustained economic recovery requires even more negative real money rates of interest, to push the cost of financing below the real ‘natural’ or equilibrium rate of interest (the return on new investments) (see *The Economist* 2016).

The flaw in this argument is that it is missing a theory of how profits are generated. It rests on either a neo-classical theory of saving and investment or on a neo-Wicksellian model. The neo-classical theory of saving and investment is the one Keynes advanced in his *Treatise on Money* to explain business cycles: booms being caused by an excess of investment over saving, and slumps being caused by an excess of saving over investment. Since the function of the rate of interest is to make saving equal to investment, economic instability is supposed to be caused by the failure of the rate of interest to make saving and investment equal. By the time he came to write his *General Theory* Keynes had realised that saving by definition always is equal to investment¹. Nevertheless, Summers, like most economists is untroubled by the volatile insights of Keynes. Summers has argued that various trends, including a lower

¹ ‘Unlike the neo-classical school, who believe that saving and investment can be actually unequal, the classical school proper has accepted the view that they are equal.’ (Keynes 1936, p. 177) ‘... Marshall and Pigou and Henderson and myself until quite recently ... whom I shall call “neo-classicals”.’ (Keynes 1973, p. 24). See also Keynes (1930, chapter 27).

rate of growth of the population and trends in investment technologies such as the modest outlays required in Information and Communications Technology, have pushed down the investment function, so that it now crosses with the saving function at a negative equilibrium real rate of interest.

However, without a theory of profits, or returns on investment, this argument becomes circular: Since the negative ‘real’ equilibrium rate of interest cannot be observed, it is inferred from the evidence (low rates of investment) that it is supposed to explain. Moreover, this shows that the ‘natural rate of interest’ cannot be independent of the ‘real’ money rate of interest, since the negative ‘natural’ rate is inferred from any recession that is prolonged beyond the time when the *money* rate of interest approaches zero.

The notion that there is a negative ‘real’ equilibrium rate of interest that requires a negative ‘real’ money rate of interest in order to revive investment, is effectively disposed of in one of the fragmentary discussions of monetary theory that Kalecki scattered among his writings in the 1930s and the 1940s. Shortly after publication of Keynes’s *General Theory* Joan Robinson had published her own extension, into the ‘long-term’, of what she considered then to be Keynes’s short-term argument, showing the influence on her, perhaps, of Richard Kahn’s work translating into English Wicksell’s *Interest and Prices* (Robinson 1936, Wicksell 1898/1936).

In her paper, the long-period is defined as the equilibrium where the (decreasing) marginal efficiency of capital is equal to the rate of interest. The marginal efficiency of capital was Keynes’s term for the expected return from business investment, from which was deducted the long-term rate of interest, representing the cost of financing that investment. In Keynes, in the short term, that expected return from investment was subject to uncertainty and volatile expectations (Keynes 1936, chapter 11). In the long-run, Robinson argued, uncertainty and expectations fell out of the analysis, and the rate of interest converged on the marginal efficiency of capital through the usual process of arbitrage between production, with decreasing returns to capital investment, and the long-term rate of interest. She argued that unemployment may still remain intractable in this long-term equilibrium, since she dismissed the effectiveness of the ‘Keynes effect’, the possibility that unemployment would cause wages and prices to fall, causing interest rates to fall until investment restarted. The only way of obtaining full employment would be by successive reductions in interest rates: each

reduction would stimulate investment, until the capital stock stabilised, so that in order to maintain a given level of investment, successive cuts in interest rates were necessary (Robinson 1936).

In 1942, Kalecki had published his explanation of how money profits are generated in a capitalist economy, in the first version of his paper ‘A Theory of Profits’ (Kalecki 1942). He included that paper in a small volume of his most recent essays that was published in the following year under the title *Studies in Economic Dynamics* (Kalecki 1943). In its second edition, the paper was largely unchanged, except for the addition of a new conclusion which he entitled ‘The Rate of Profit and the Rate of Interest in the Long Period’. In this Kalecki examined exactly the same question as that Joan Robinson had looked at six years earlier: the relationship of the rate of profit to the long-term rate of interest to determine whether it was possible for the economy to sustain over a long period a level of activity in which the long-term rate of interest is in excess of the rate of profit.

In his paper Kalecki defined the long-term rate of interest as the average expected short-term rate, with a risk premium and net of tax. Profit he derived from the identity between income and expenditure, an argument that may be summarised as follows:

Assuming for simplicity of exposition a closed economy, with no government, in a given period Saving (S) will therefore equal Investment (I), $S \equiv I$

With two classes in society, workers and capitalists, saving may be divided into the saving of capitalists (S_c) and the saving of workers, (S_w):

$$S \equiv I \equiv S_c + S_w$$

The income of capitalists (P) is either saved, or spent on their own consumption (C_c):

$$P \equiv S_c + C_c = I + C_c - S_w$$

He went on ‘What is the proper meaning of this equation? Does it mean that profits in a certain period determine capitalists’ consumption and investment, or the other way around? The answer to this question depends on which of these items is directly subject to the

decisions of capitalists. Now it is clear that they may decide to consume and to invest more in a certain short period than in the preceding period, but they cannot decide to earn more. It is therefore their investment and consumption decisions which determine profits, and not vice versa.’ (Kalecki 1943, pp. 48-49).

In yet a third version of this paper, Kalecki explained why investment always equals saving: ‘... investment, once carried out, automatically provides the savings necessary to finance it... if some capitalists increase their investment by using for this purpose their liquid reserves, the profits of other capitalists will rise *pro tanto* and thus the liquid reserves invested will pass into the possession of the latter. If additional investment is financed by bank credit, the spending of the amounts in question will cause equal amounts of saved profits to accumulate as bank deposits. The investing capitalists will thus find it possible to float bonds to some extent and thus to repay the bank credits... One important consequence of this is that the rate of interest cannot be determined by the demand for and supply of new capital [i.e., saving – JT] because investment “finances itself”.’ (Kalecki 1954, p. 50).

Kalecki then calculated an average rate of profit by dividing profits by the value of the capital stock at the start of the period. His conclusion, in his first (1942) version of his paper, was that capitalists’ consumption, being more stable than fixed investment, would, if high enough, tend to keep the rate of profit above the rate of interest. But were it to be very low, there was always the possibility that the short-term rate of interest would be reduced to below the long-term rate, thereby reducing that long-term rate. If that was insufficient to prevent ‘dissaving’ by capitalists (their running down of their existing productive capital stock) then the possibility that a long-period economic ‘deadlock’ may arise (Kalecki 1942).

In his revised (1943) conclusion, Kalecki pointed out that in a state where investment is reduced to a minimum, the average rate of profit would remain stable and may even equal the long-term rate of interest because of the stable part of capitalists’ consumption, and the minimal level of fixed investment. In that situation, the short-term rate of interest may end up below the average rate of profit. But the long-term rate of interest will not fall below the floor given by risk involved in fluctuations in bond prices. In long periods, therefore, the relationship between the rate of profit and the rate of interest ‘depends to a great extent on ... the ratio of the average of the stable part of capitalists’ consumption over the period ... to the volume of capital ... at the beginning of the period.’ The long-term rate of interest sets a

critical level for this ratio. If the ratio exceeds this critical level, then over successive long periods, the rate of profit will exceed the long-term rate of interest. If the ratio falls below the critical level, then the rate of profit may equal the long-term rate of interest, or fall below it.

It was, however, in his following chapter on the business cycle that Kalecki considered what effect the long-term rate of interest has on the all-important investment. Not much, he concluded ‘because of the stability of the long-term rate of interest as compared with the rate of profit it seems to be not very important.’ (Kalecki 1943, p. 64). His later conclusion was even stronger: ‘Some authors have attributed to the rate of interest an important role among the forces underlying economic fluctuations... it is the long-term rate that is relevant to the determination of investment and thus to the mechanism of the cyclical process... in view of the fact that the long-term rate of interest... does not show marked cyclical fluctuations, it can hardly be considered an important element in the mechanism of the business cycle.’ (Kalecki 1954, p. 88). Indeed, this stability of the bond rate of interest was widely discussed following publication of Keynes’s *General Theory* and featured in, for example, Hawtrey’s critique of Keynes’s theory in Hawtrey’s Marshall Lectures at Cambridge in November 1937 (Hawtrey 1938).

Kalecki’s theory of profits provides the crucial factor left undefined in the theories of Wicksell and Keynes (in the latter’s *General Theory*). Both Wicksell and Keynes placed the rate of interest in a key position in determining the level of investment, and then proceeded to explain why this determination may prove to be ineffective: in Wicksell’s case the falling natural rate of interest, in Keynes’s case ‘animal spirits’ and uncertainty. With his theory of profits, Kalecki defined actual profits as the main factor determining investment and the business cycle, and found that the rate of interest had only a weak and decreasing influence on investment. But his theory of profits, accumulated as bank deposits, also explained how investment was, in fact, ‘self-financing’.

In Kalecki’s view, the rate of interest is a purely monetary and financial variable. The rate of interest does not reconcile investment and saving, but the *margin* on the short-term rate of interest creates the financing structures to reconcile the financing and liquidity (i.e., refinancing) needs of business with the liquidity provided by banks of issue (or central banks), or those intermediaries willing to advance bank deposits against illiquid assets. In this respect Kalecki was in agreement with Keynes. In his critique of the Wicksellian interpretation of

Keynes's monetary theory put forward by Joan Robinson, Kalecki argued that the rate of profit could not be negative, and that a long period of under-employment was due to under-investment rather than any adverse relationship between the rate of interest and the rate of profit. The same argument holds for the current discussion about negative interest rates, and removes the rationale for such monetary policy.

3. The ‘Natural Rate of Interest’ as a Marginal Return

Kalecki’s theory of profits and critique of the Wicksellian theory was at an aggregate level. As he was later to note, capitalists do many things as a class. But they do not invest as a class (Kalecki 1971, p. 152). Nor do they receive profits as a class (a flaw in recent ‘neo-Kaleckian’ critiques of the distribution of income). Hence, the *average* rate of profit for an economy cannot logically explain the investment behaviour of the individual firm. The calculating capitalist invests not because he expects all capitalists to receive some average rate of profit, but because he expects his enterprise to earn a return on its investment. Following Marshall, economists have inferred that the return obtained on an investment is determined by some nebulous marginal product of capital. Kalecki’s solution to this is to have the return on capital differentiated according to the market power of any given firm. Imperfect competition therefore gives a range of rates of profit for firms according to their size and market power, with the largest corporations receiving the highest rates of profit, a rate that diminishes with size and market power, down to even negative rates among small and medium-sized enterprises (Kalecki 1943, chapter 1. See also Steindl 1945).

The relationship of the rates of return on the capital of individual firms to the aggregate flow of profits in the economy, outlined in the previous section, is through the market process and the price system which jointly distribute that profit flow among the firms in the economy. The total profits in an economy are not in practice obtained by mere adding up the profits of individual capitalists and firms, but through the expenditure of those capitalists and firms, and their market activity which causes that expenditure to accrue as ‘saved profits’ in the bank accounts of firms in proportion to their respective market power (Kriesler 1987, chapter 7).

To understand properly the ‘reality’ behind the ‘real’ natural rate of profit of Wicksell and contemporary neo-Wicksellians, including Summers, the average rate of profit needs to be disaggregated. At any one time a range of profit rates exists in the economy. That range may become more or less extensive in a boom or a recession, or move up and down with some profits cycle. However, the market forces equalising rates of profit across the economy, (suggested by Marx and, following him, by Anwar Shaikh, see Shaikh 2016), are weak. So that particular ‘long run’ has never been attained. The practical reality is that a range of profit rates always exists. That practical reality also undermines the argument of those neo-

Wicksellians who attribute slow growth or under-investment to a very low or negative real natural or 'equilibrium' rate of interest (return on new investment) without specifying which firms are supposed to be inhibited by such modest returns.

The existence of a range of profit rates suggests very strongly that there are always some firms that have a positive rate of return on their productive capital, even after paying near zero rates of interest. The question that arises is why these firms do not invest, in accordance with the standard theoretical imperative of profit-maximisation. The answer is obviously that they suffer from excess capacity in their existing plant and machinery. This is undoubtedly the main factor behind what is alleged to be the negative 'real' natural rate of interest that is supposed to warrant negative 'real' money interest rates. However, excess capacity is a problem of aggregate demand rather than monetary policy.

4. Interest Rates Have a Financial Function

Negative interest rates are supposed to address the apparent macroeconomic ineffectiveness of monetary policy in Europe and North America since the financial crisis of 2008. That monetary policy has been roughly in two stages. The initial response was to reduce official rates of interest down to near zero. In the second stage, since 2010, this policy of negligible interest rates has been reinforced by ‘quantitative easing’, or the buying of securities. While monetary policy in the first stage brought down the short-term rate of interest, the second stage of ‘quantitative easing’ brought down rest of the yield curve where yields on government bonds (German *bunds* in Europe – see below) had already been laid low by the financial crisis. In September 2016, the Bank of Japan, which had been working through these first two stages of monetary easing since 2001, introduced what might be a third stage of such easing called ‘Quantitative and Qualitative Easing’, the qualitative part being full control over the yield curve, as well as driving down the yield on ten-year government bonds below zero.

What is striking about this policy is the way in which considerations of financial fragility, that is the stability of the financial system, appear to have been dropped since the advent of quantitative easing, when the flooding of the money markets with bank reserves was deemed to have solved the problem of bank fragility, with the exception of countries in the European Monetary Union such as Italy, where that fragility has been considered to be structural rather than monetary.

In fact financial fragility is being reinforced by the flattening of the yield curve. The yield curve expresses the rate of interest as the rate of exchange of one type of financing for another. Complex financial systems work because financial intermediaries are prepared to arbitrage between different rates of interest in the yield curve, in this way providing liquidity in markets for risky or longer-term securities. Since the crisis that liquidity has been provided by central banks, insofar as through quantitative easing they have taken markets in longer-term securities onto their balance sheets. However, now that central banks are winding down their quantitative easing programmes, the stability of financial systems depends on commercial financial intermediaries returning to their arbitrage activities. Whether this will happen depends on the slope of the yield curve. If the slope of the yield curve remains flat, then financial intermediaries will not provide liquidity to longer-term markets, and more

financial breakdowns are likely. As central banks resume the drive to raise their (short-term) interest rates, the ‘normalisation’ of the yield curve depends on the long-term rate of interest rising faster than the central bank rate of interest. But that would impose capital losses on holders of long-term assets, notably central banks.

Quite how this might work out is indicated in a recent paper from the Bank for International Settlements. Its researchers had found that, as the yield on ten-year German government bonds fell from 2% to nearly zero, in 2014-2015, German insurance companies were obliged to buy more of them to match the duration of their liabilities. At the beginning of 2014, those companies were holding €60 billion of government bonds. A year later, this had increased to €80 billion (Domanski, Shin and Sushko 2017). Locking such capital losses into their portfolios has been widespread among the regulated pension funds and insurance companies that have been the main purchasers of long-term securities in the capital markets of Europe and North America.

5. Conclusion

Neo-Wicksellian theory suggests that monetary policy is sufficient to regulate inflation and economic activity. However, the case for negative interest rates arises out of the failure of monetary policy and rests on conjecture rather than systematic analysis. More careful examination indicates that the problem of deficient effective demand that lies behind notions of a negative ‘real’ equilibrium or natural rate of interest that requires an even more negative ‘real’ money rate of interest, have to be addressed with measures to deal with that insufficient demand.

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