Does the Rate of Interest Determine the Rate of Profit?

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Does the rate of interest on money, as fixed by the Central Banking Authorities, determine the rate of profit? There is a suggestion to this effect in Sraffa,[1] and Pivetti[2] has interpreted this to mean that the 'normal' rate of profit, as opposed to the actual, will be governed by the effects of the rate of interest on the ratio of money prices to money wages: a fall (rise) in the rate of interest will lower (raise) costs, so will lead to lower (higher) prices, but there will be no similar effect on money wages. So a fall (rise) in the rate of interest will bring a rise (fall) in the real wage; thus the rate of profit will move in the same direction as, and by a magnitude proportional to the change in the rate of interest. In short, "... lasting changes in interest rates must be followed by corresponding changes in normal profit rates...".[3] Similar arguments have been advanced by Panico, who finds the root of the idea in Keynes' Chapter 17, by Vianello, and by Schefold, who limits the claim by arguing that the mechanism works only under historical conditions of slow accumulation.[4]

The proposition is admitted to be subject to a number of qualifications: the monetary authorities may be institutionally limited in their power to adjust the rate of interest, strong unions may set an inflation barrier, which in a open economy may prevent the raising of prices, the historical or international position of the country may set limits on the acceptable level or movement of the real wage, etc. The double-edged central point, however,

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[1] Cf. P. SRAFFA, *Production of Commodities by Means of Commodities*, Cambridge, Cambridge University Press, 1960, p. 33.

[2] M. PIVETTI, "On the monetary explanation of distribution", *Political Economy - Studies in the Surplus Approach*, vol. 1, 1985, n. 2, pp. 73-103.

[3] *Ibid.*, p. 81.

[4] Cf. C. PANICO, "Market forces and the relation between the rates of interest and profit", *Contribution to Political Economy*, vol. 4, 1985, pp. 37-60; F. VIANELLO, "The Pace of Accumulation", *Political Economy - Studies in the Surplus Approach*, vol. 1, 1985, n. 1, p. 84; B. SCHEFOLD, "Cambridge price theory: special model or general theory of value?", *American Economic Association Papers and Proceedings*, 1985, pp. 144-145.

is that the real wage is set by the ratio of prices to money wages — no labor market jointly determines real wages and employment — and this ratio is governed, not by aggregate demand, but by long-term monetary policy. The first part is Keynes, the second Sraffa.

What is a "lasting change in the rate of interest"? What could this mean, when such a change is a matter of policy? Monetary policy can be changed at any time, and will very likely change with changes in the political climate. The 'normal' rate of profit is the rate obtainable by firms using the dominant technique and producing at the expected capacity levels for normal market conditions; it is not observable, but it is that rate towards which actual profits are always tending as the result of competitive pressures. Such a rate will not vary with evanescent circumstances. How then can it be affected by policies which necessarily change with the political winds? Surely a more appropriate procedure would be to first examine the way a purely private, profit-driven monetary system would establish interest rates and the provision of finance, defining a long-period position in which private banking and private industry interact.[5] (Would not the provision of financial services be a non-basic industry? So the rate of profit would determine the rate of return on such services.) Then it would be possible to consider the effect of introducing a Central Bank as a lender of last resort with regulatory powers and not subject to the profit motive. But following the line suggested by Pivetti and others, surely the best that can be argued is that the current *actual* rate of profit will be set by the temporary ratio of prices to money wages, where the current rate of interest will be one of the influences determining the deviation of the actual ratio of prices to money wages from the normal ratio.

Even this runs into difficulties, however. A chief way in which the monetary authorities set interest rates is by manipulating the money supply; to raise interest rates, the money supply will be constricted, and vice versa to lower them. But if prices move directly with interest rates, where these latter are governed by policy, then prices must move inversely to the supply of money! This flatly contradicts virtually all thinking on the role of the Quantity of Money; we need not accept the Quantity Theory to view an *inverse* relation between the price level and the money supply with suspicion. As a matter of theory it might be possible to accept a decline in interest rates, brought about by an increase in the quantity of money, leading to a fall in prices, since the additional money could be absorbed by idle balances — provided interest rates fall far enough for the rise in liquidity preference to become large enough. But the reverse movement is much more difficult to swallow: the idea that interest rates and prices can both rise, concurrently with the money stock falling, runs into the problem that there need be

[5] See on this E. NELL, "On monetary circulation and the rate of exploitation", *Thames Papers in Political Economy*, London, 1986.

no idle balances to discharge the required money. Velocity could rise, and new forms of money could be created — but then what is the justification for supposing that the monetary authorities can set the long-term real rate of interest? Why do changes in velocity or in money creation, which support increased profits, have to wait on action by the authorities?

A merit of the view under discussion is that it makes sense of the great body of evidence, discussed by Keynes under the heading of 'Gibson's Paradox', which shows that interest rates and the price level are positively rather than inversely correlated.[6] But an equally large body of evidence shows that the price level and the quantity of money are also positively correlated — whichever way the causation may run. It will be hard to reconcile this second body of evidence with the view that a policy-determined rate of interest sets the rate of profit. But these two bodies of evidence are both consistent with the view that the money supply adjusts to demand and that the anticipated growth of demand significantly influences the rate of profit, to which the 'normal' long-term rate of interest, in turn, adapts.[7] (On this view, monetary policy would find its major field of operations in controlling short term rates and the volume of certain kinds of lending, but would have little effect on long-term rates.)

The 'normal' rate of profit is defined in terms of normal capacity output, which implies producing for a normal level of demand. Output is divided at least between consumption goods and capital goods; hence there must be a normal level of investment demand, so a normal rate of growth. Both mainstream and 'Cambridge' theories hold that aggregate demand will tend to move inversely to interest rates; Pivetti, following Garegnani,[8] argues that there will be conflicting tendencies and that no general rule can be asserted.

Consider first the case where a decline in the interest rate stimulates both investment demand, and consumer durable demand. Both capital goods and consumer goods industries find their expected demand has increased and feel the need to increase their capacity (beyond the normal growth they have already planned for.) Their interest costs, however, are down and borrowing terms are easier. If they lower their prices their demand can be expected to increase still further. The question they must ask is, at what prices will their profits be at least sufficient to finance the maintenance and construction of the capacity required to service the expected demand they will face at those prices? If demand is initially at capacity, a rise in demand will require additional plant and equipment; the decline in interest certainly need not add enough to profits to finance this,

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[6] See J. M. KEYNES, *A Treatise on Money*, London, Macmillan, 1930, vol. II, pp. 198-210.

[7] Cf. E. NELL, *Prosperity and Public Spending*, Boston and London, Allen & Unwin, 1988.

[8] P. GAREGNANI, "Notes on consumption, investment and effective demand", in J. EATWELL and M. MILGATE (eds.), *Keynes' Economics and the Theory of Value and Distribution*, Duckworth, London, 1983, pp. 21-69.

let alone to leave enough over for a price cut which will further increase demand. (The cost savings from the decline in interest will depend on the debt-equity ratio on existing capital; the amount needed to finance new capital will depend on the size of the increase in demand, and the capital-output and debt-equity ratios for new capital.) So a decline in interest rates that brought a sufficiently large increase in demand, or occured with techniques having a sufficiently high capital-output ratio, could lead to no change or to a rise in prices.

Next suppose that there is no effect of interest on investment or on worker consumption, but that interest payments provide income to a rentier class, while profits net of interest finance investment. Let subscript k indicate the capital goods sector, and c the consumption goods sector. Let I be investment, $D = Dk + Dc$, debt, K and C the output of capital goods and consumer goods, respectively, where $K = Kk + Kc$, the capital goods used in each sector, and $C = Cr + Cw$, the consumption of rentiers and workers respectively. Pk and Pc will be the two prices, $N = Nk + Nc$, employment, and w will be the fixed money wage.

If competition were to establish

$$r^* = \frac{[IPk - wNk]}{KkPk} = \frac{[CPc - wNc]}{KcPk}$$

there would be no reason why changes in interest costs would affect money prices. Only if interest charges are subtracted as a cost on a par with wages will prices be changed; hence

$$r = \frac{[IPk - iDk - wNk]}{KkPk} = \frac{[CPc - iDc - wNc]}{KcPk}$$

and $rk = I$, indicating that r is adequate to finance g. Also,

$$iD = CrPc \quad \text{and} \quad wN = CwPc, \quad \text{so that} \quad CPc = iD + wN.$$

Profits underwrite investment, interest payments finance rentier consumption and wages support worker consumption.

Now consider a fall in the rate of interest. Any producer can now earn the same rate of profit as before while charging a lower price; each will be tempted to try to expand their market share by undercutting the others. All will therefore cut, and no one will gain. But the price changes will offset the change in the rate of interest:

$$dPk/Pk = [iDk/(iDk + wNk)]di/i,$$

and

$$dPc/Pc = [iDc/(iDc + wNc)]di/i.$$

The competitive price-cutting will only be carried to the point where the lower prices have re-established the original rate of profit. There will be no change in the rate of profit, but the relative price

$$p = \frac{Pk}{Pc},$$

will change, since the price change will be greater in the sector with the higher ratio of interest to wage costs. But the most important effect will be to reduce the income and therefore the consumption of rentiers, while raising the real income of workers. Thus Cr will fall and Cw will rise.

However this result does depend on assuming a very simple kind of capital market, in which there is only one kind of income bearing security. If there were common stock which appreciated at the same rate as real capital accumulated, then stock prices would continue to rise at rate

$$g = \frac{I}{K}.[9]$$

Hence when the interest rate fell, rentiers would tend to switch from bonds to stocks, depressing bond prices and raising the rate of interest. Such arbitrage in the securities market would make it difficult for the authorities to depress the long-term rate of interest. The rentier classe would be able to defend its level of consumption, and the scope of monetary policy would be limited.

This can be argued in another way: for the authorities to try to move the interest rate against the growth rate endangers the stability of the Stock Market. Suppose the growth rate is high and the authorities try to drive interest down. They will have to increase the money supply, which will flood the market and lead to a boom in share prices. Suppose the growth rate is low, and the authorities try to raise interest rates; they will restrict money and credit, which will tend to collapse share prices. If orderly financial markets are to be maintained, the Central Bank's effective control is limited to moving interest rates in the same direction as growth rates.

These examples show that once the level and rate of growth of demand are taken into account changes in the rate of interest cannot easily affect the ratio of prices to money wages in the manner supposed. It is much more plausible to argue that the normal rate of profit determines the long-term normal rate of interest. The real question concerns the way the normal rate of profit is related to the long-term normal growth of demand.

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[9] Cf. E. NELL, "Notes sul le financement, le risque et la depense d'investissment", in A. BARRERE (ed.), *Keynes Aujourd'hui*, Paris, Economica, 1985.