Profit, the rate of interest and ›entrepreneurship‹ in contemporary capitalism

John Smithin

Introduction

In Smithin (2001a),[1] I was critical of contemporary mainstream macroeconomic research, grounded in methodological individualism and the search for ›micro-foundations‹ based on representative agents. The context was a discussion of the methodological perspectives of ›critical realism‹ (Lawson 1997, Fleetwood 1999, Lewis and Runde 2001), and it was argued, specifically, that the social ontology sponsored by critical realism is attractive, and might provide foundations for a more useful macroeconomics. In particular, the focus on social structure, and the view of social institutions as ›continually reproduced interdependencies‹ Lawson (1997), seems to steer a desirable middle course between the extremes of reductionism and determinism in the social sciences.

A case was made that the style of research which would emerge would be a more traditional macroeconomics in the manner of (e.g.) Keynes or the contemporary Post Keynesian school. The key to successful substantive research, moreover, would be to identify those social institutions and mechanisms that have been relatively enduring in the course of a particular historical epoch. It was further suggested that under ›capitalism‹ the most crucial such institutions are (a) money and finance, (b) the business firm or ›entrepreneurial‹ activity, and (c) wage labor. All of these have undergone considerable change and evolution over time. However, the *relative* persistence of these basic activities and structures, up to the present time, is what justifies discussion of a coherent, albeit evolving, capitalist ›mode of production‹ (Marx 1859), in the first place.

The purpose of the present paper is to formalize these ideas in a further revision of a theoretical construct put forward earlier in Smithin (2001b) and Smithin (1997). This resembles traditional Keynesian models in that demand growth is an important determinant of economic growth. However, it is also suggested that the rate of interest, defined more generally as the rate of return to financial capital, and the net profit share,[2] meaning by this the share of entrepreneurial capital[3] in current income, will impact on growth in various ways. The results are intended to provide insight into the political economy of a capitalist-type economic system.

Given the reference above to critical realism it should immediately be conceded that the degree of formalism in what follows most likely does *not* conform

precisely to critical realist methodological prescriptions. Critical realists tend to be skeptical of ›mathematical‹ expositions of theory, on the grounds that formal methods may pre-suppose atomism and axiomatic-deductive reasoning. My own view, however, is that *macro* methods involving aggregative functions, ›propensities‹, accounting relationships, etc., may already comprehend some of the internal/organic relationships between the social partners, and need not entail reductionism (Smithin 2001a). In effect, the working out of the macro model is regarded as an attempt to *identify* some of the relevant ›tendencies and mechanisms‹ (Lawson 1997), which are nonetheless believed to exist in the real system, in a quasi-experimental way.

Interest, Profit and Wages

Recognition of the social institution of money entails notice not only of the ›primary concept‹ of a ›money of account‹ (Keynes 1930) making possible price lists, monetary calculation, and accounting, but also the entire apparatus of banks, central banks, and other financial institutions, involved in the production of money, its social control, and the granting of credit. According to Ingham (1996) ›money is a social relation‹. In other words, like laws, language, customs, and other such things, it is a relation between agents, as opposed to the usual concerns of neoclassical economics with the relationship between agents and goods (consumption), or goods and goods (production). Such a perspective is congruent with Schumpeter's (1954) distinction between ›monetary‹ and ›real‹ analysis (Rogers 1989), and Keynes's concept of ›monetary production‹ (Rotheim 1999). In monetary production, those responsible for setting production in train, whether they are entrepreneurs or corporations, must first acquire monetary resources to do so. The proceeds of productive activity from the sales of goods and services are also sums of money. Therefore, output and employment outcomes depend upon expectations of money receipts relative to cost. Moreover, the reward structure of the society, and the distribution of power and prestige, also depends on the accumulation of wealth denominated in financial terms. There is a tacit social arrangement entailing that possessors of money, as validated by custom and convention, should have unique claims to the social product. In such an environment, both the endogeneity of the money supply, as stressed by Post Keynesian horizontalists and the circuit school (Nell and Deleplace 1996), and the ›terms on which‹ (Keynes 1936) the necessary financial resources are obtainable, are of vital importance. This is contrary to the general stance of neoclassical economics that ›money does not matter‹ or ›money is a veil‹ over a system the fundamental basis of which is assumed to be the rational barter transactions of atomistic agents.

It is true that monetary systems, practices, and structures evolve over time (Chick 1986, Hicks 1989). However, it is also reasonable to argue that there has been a substantial degree of reproduction and continuity of this particular social institution from the early modern period. In other words, there is no doubt that (e.g.) a Lorenzo de Medici, Henry Thornton, or Walter Bagehot, if they were brought back to life today, would easily be able to understand the role and functions of contemporary central banks, commercial banks, and financial markets. Moreover, they would surely also understand that modern surface phenomena, such as the

computerization of the payments system, mainly represent a change of form rather than substance.

Another relatively enduring feature of capitalist monetary production is the concept of the firm or enterprise. This is also closely connected with the social phenomenon of money. According to Dillard (1988):

> ... a monetary theory of production requires a theory of business enterprise ... the dominant economic institution of modern civilization. Money has very special meaning for business. It is both the means and the end of business activity.

Dillard also quotes Keynes from an early draft of the *General Theory*:

> The firm is dealing throughout in terms of money. It has no object in the world except to end up with more money than it started with. That is the essential characteristic of an entrepreneur economy.

In terms of the evolution of social systems, the implication is that monetary concepts must be antecedent to the development of business firms. However, once given notions of money, there is a ›pecuniary logic‹ (Dillard 1988) to the development of specialized social institutions devoted to the practical realization of Marx's M-C-M‹. The business firm itself also evolves, from single proprietorships, to partnerships, to limited liability concerns, to multinational corporations. Schumpeter (1934) originally made the individual entrepreneur the hero of his particular social drama. Moreover, this view now enjoys a considerable revival, as in the proliferation of courses on ›entrepreneurship‹ in business schools. However, it can be argued that in reality, both the ›innovative entrepreneur‹, and the hidebound ›old economy‹ corporation trying to preserve market share, have the same object in view. They are both trying to ›make money‹. The difference in business strategy boils down to a question of how best to do this in a given set of circumstances. In concrete applications such nuances about the relative dynamism of the system would need to be taken into account and evaluated. The point made here, however, is that the element of relative continuity is also present, in that an enduring feature of capitalism is some kind of institution organized for the purpose of literally making money by business activity.

Implicit in the above discussion is a sharp distinction between the return to the lending of financial resources, and the return to ›entrepreneurship‹ or productive activity as such. The former can be defined as the rate of interest, while the latter is profit. These ideas clearly differ from the neoclassical conception in which the (rate of) profit is literally identified with the rate of interest. The view taken here is that the process of making financial investments of various kinds, called ›placements‹ in the useful terminology of Robinson (1956), is a sociologically distinct activity from that of organizing production. Hence, the forces of ›capital arbitrage‹ (Nell 1998) may be strong within income categories, but not necessarily across them.

Given contemporary ›shareholder capitalism‹ with organized stock markets, and a separation of ownership from control in corporate governance, it is obviously important to decide on which side of the line dividend incomes should fall. It can be argued, in fact, that to a large extent contemporary equity investment is most usefully seen as simply another form of rentier activity. Joan Robinson (1956), for example, already wrote as follows:

Legally, a shareholder is a part owner of ... (the) ... business ... but ... limited liability and ... facilities for dealing in shares at second hand (the Stock Exchange) has brought about a divorce between ownership and control ... many shareholders ... (are) ... much more like lenders than entrepreneurs.

The implication, therefore, is that although there may be arbitrage between returns on fixed income securities and shares (with due allowance for ›risk‹, the specifics of the particular issue, and so forth), profits should actually be seen as the *surplus* remaining to the firm over both production costs and all ›financing‹ costs, including dividend payments.

The third important social institution of capitalism, then, is wage labor. If money is important in the social system in terms of basic survival, and power and prestige, and there is no other avenue for acquiring it, working for money wages in the employ of the business firm is a basic *modus vivendi* for most of the actors in the system. Again, labor as an institution also changes over time. For example, labor unions may be weaker or stronger at different periods, as may be social regulation of hours of work or minimum wages. But the basic idea of (having to) work for money-wages, whether as a laborer or computer programmer, has clearly been an enduring feature of capitalism.

The discussion so far has not dealt explicitly with the role of the state, and no extensive treatment is attempted. However, the state is inevitably bound up with, and has an internal relationship to, the other social and economic institutions. As a practical matter, governments have had the decisive role in the operation of the monetary system, and in money creation. Modern ›neo-chartalists‹, such as Wray (1998), have therefore revived the theory of Knapp (1924), suggesting that money is literally a ›creature of the state‹ (Wray 1998). See also Keynes (1930). What does seem indisputable in the modern world is that control over money is also a prerequisite for effective control of the other levers of policy, such as fiscal policy, social policy, and labor legislation, as can be seen (e.g.) in the contemporary debate over the ›single currency‹ in Europe (Marterbauer and Smithin 2000).

Production, the Supply of Output and the Functional Distribution of Income

In order to formally model the suggested macroeconomic interdependencies, let the relationship between aggregate output, $Y(t)$, and aggregate labor input, $N(t)$, be as follows:

$$(1) \quad Y(t) = A(t)N(t)$$

where $A(t)$ is average labor productivity. However, given the basic premise of capitalist monetary production, it is important to recognize the inevitable lapse of time between the planning and execution of the production project, including the acquisition of the necessary finance (via endogenous credit money), and sales in the marketplace. This is the essential ›bet‹ entailed in the production decision (Parguez 1996, Rochon 1999). A time dimension should therefore be introduced, e.g. by assuming that output produced in the current period (t) will not actually be available for sale until period $(t+1)$. It is not suggested that a uniform one-period marketing lag is literally realistically descriptive. It is a heuristic device to introdu-

ce the notion that the overall production/sales process takes time. This latter general idea, however, is asserted to be both realistic and fundamental. The most important implication is that interest charges are recognized as an integral part of final production prices.

On the above assumptions, a forward looking estimate of next period's GDP,[4] viewed from the perspective of those making decisions in the current period, will be:

$$(2) \quad P(t+1)Y(t) = [1 + k(t)][1 + i(t)]W(t)N(t)$$

where $P(t)$ is the aggregate price level, $W(t)$ and $i(t)$ are the nominal wage level and nominal interest rate respectively, and $k(t)$ is the expected profit share (actually realized in $t+1$). Now taking logarithms of equation (2) and re-arranging, this will yield:

$$(3) \quad a(t) = k(t) + r(t) + [w(t) - p(t)]$$

where $r(t)$ is the real rate of interest prevailing in time t, and (e.g.) $lnN(t) = n(t)$. Equation (3) is an ›interest-wage-profit frontier‹, and is arguably the fundamental relationship on the supply-side in a money-using capitalist economy. It suggests that the average product of labor must resolve itself into three shares in the functional distribution, the profit share, the real rate of interest, and real wages.

To derive a more complete macroeconomic model we make the following assumptions: (a) that in keeping with the earlier discussion of the socio/political framework we can think of the level of real interest rates as being determined essentially by the policy of the central bank, (b) that real wages will tend to increase with growth, and (c) that productivity is itself endogenous, and is positively related to the rate of growth.

The first assumption implies that the underlying monetary theory is that of the Post Keynesian ›horizontalist‹ school (Kaldor 1982, Moore1988, Lavoie 1992, Rochon 1999). Note, however, that the central bank is assumed to have substantial influence, not just over nominal rates, but also over the real rate (Smithin 1994). Clearly, such control may not obtain with absolute precision in practice given the underlying ambiguities of the real rate concept. Nonetheless the view *is* taken that the policy stance of the central bank is what sets the real rate in a ›rough and ready‹ fashion. It is assumed that whenever the central bank adjusts its nominal interest rate policy instrument, there is a clear idea of what this change implies for real rates, as viewed by the majority of economic actors from that point in time. There is therefore a ›monetary theory of the real rate of interest‹, as opposed to a ›real theory of the real rate of interest‹ (Burstein 1995).[5]

The second assumption, that real wages rise with growth, is a hypothesis about the determinants of real wages at the systemic level, not a labor supply function derived from the theory of labor/leisure choice. The argument is simply that the bargaining power of labor is likely to be enhanced in a fast-growing economy. It is not suggested, however, that the parameters derive from microeconomic labor supply elasticities, or that the employment/unemployment pattern which emerges is necessarily a chosen position on the part of labor. For example:

$$(4)\quad [w(t) - p(t)] = w_0 + hg(t), \qquad h > 0$$

where w_0 is some base level of real wages (determined by sociological and institutional considerations), and $g(t)$ is the growth rate.

The third assumption allows for some contribution of capital investment to productivity, and also productivity enhancement through such factors as ›learning by doing‹, and increasing returns. One possible specification in the present context would be:

$$(5)\quad a(t) = a_0 + vg(t\text{-}1), \qquad v > 0$$

This allows for exogenous ›productivity shocks‹, and also an endogenous component, whereby current productivity depends on past growth. As pointed out by Marterbauer (2000) this is similar to ›Verdoorn's law‹ after Verdoorn (1949).[6] Now using (4) and (5) in (3), and assuming that the real rate of interest is kept steady at r by monetary policy, the ›supply-side‹ of the model becomes:

$$(6)\quad k(t) = a_0 + vg(t\text{-}1) - r - w_0 - hg(t)$$

Aggregate Demand Considerations and the Steady-State

Letting $d(t)$ stand for demand growth,[7] and given an equilibrium condition $d(t) = g(t)$, we can add a demand-side:

$$(7)\quad g(t) = \Theta + ek(t)$$

where Θ is the growth of ›autonomous demand‹ (treated henceforth as a parameter), and the second term on the left-hand side suggests that demand growth will increase with profitability due to the absorption of output by firms. Given equation (5), however, we do not need to inquire in too much detail how far this so-called ›investment‹ actually contributes to any productive ›capital stock‹. This may well be the intention of some individual firms/entrepreneurs making the investments (whether they succeed or not), and there may also be a discernible aggregative empirical relationship between the total of such spending and productivity.[8] Equally, however, firms may use their surplus simply to absorb goods and services for their own sake (re-decorate the boardroom, buy an executive jet, schedule a sales conference at a golf resort, etc.). These types of activities add to demand, but would not be thought of as productive in any technical sense. In the Keynesian tradition, therefore, the demand-creating aspects of ›investment‹ are taken as seriously as the technical specifications of any new machines.

Equations (6) and (7) constitute a complete macro model which can be solved for the time paths of both GDP growth (the business cycle), and the profit share. If $|ev/(1+eh)| < 1$, the system will converge, giving steady-state solutions:

$$(8)\quad g = \{1/[1+e(h-v)]\}\Theta + \{e/[1+e(h-v)]\}(a_0 - r - w_0)$$
$$(9)\quad k = \{(v-h)/[1+e(h-v)]\}\Theta + \{1/[1+e(h-v)]\}(a_0 - r - w_0)$$

Equations (8) and (9) summarize the long-run determinants of the growth rate and the profit share respectively, or, at least (recalling the opening discussion), they do so on the assumption that the original specifications were ›realistic‹ and that there is no radical change in the underlying social structure over the same long-run.

Interpretation of the Formal Results

The above results can be visualized in a simple graphical framework by constructing the loci:

(10) $k = a_0 - r - w_0 + (v\text{-}h)g$
(11) $k = (1/e)(g - \Theta$

Equations (10) and (11) both illustrate relationships between the profit share and growth rate. Equation (11), summarizing the ›demand-side‹, is upward-sloping in k,g space.[9] The slope of equation (10), however, relating to income distribution, is ambiguous. It will be downward-sloping for $h > v$, and upward-sloping otherwise. The issue at stake is the impact of growth on the profit share. In a system which is not technologically progressive, and/or in which the bargaining power of labor over real wages is strong, growth will tend to reduce profits, because real wages will increase faster than productivity. On the other hand, if growth enhances productivity by more than enough to offset any increases in real wages, the profit share can increase.

There are therefore three possible configurations, which (very loosely), can be labeled the *pseudo-Marxian, golden-age Keynesian,* and *austere neoclassical,* cases, respectively. The first of these, with $h > v$, is illustrated in Figure 1 in the Appendix. The reason for calling this ›pseudo-Marxian‹ is not for any sound doctrine-historical reasons, but simply because it allows for a ›falling rate of profit‹ (rather, a falling profit share). As can be seen, there will a definite relationship between real interest rates, economic growth, and profitability. A higher real rate of interest will reduce both the rate of growth and profits. Vice-versa for a fall in interest rates. Note, however, the specific way in which interest and profit are related in this context. As mentioned, there is no tendency for the two to be equal, profit and interest are two different concepts. The fact that an increase in the rate of interest tends to *reduce* profitability does seems to accord with common-sense notions of the likely impact on industry of monetary tightening, although it differs from what has sometimes been suggested in theoretical discussion.[10] Another Keynesian-style result which seems to follow is that an increase in the (growth of) autonomous demand increases the growth rate. Moreover this is a permanent or ›long-run‹ effect, as was the interest rate result discussed above. Neither is an artifact of ephemeral short-run rigidities or misperceptions. In our ›pseudo-Marxian‹ case, however, the increased growth and employment caused by a demand expansion is accompanied by a *fall* in profit share. In terms of political economy, this may go some way towards explaining the apparent hostility even of non-financial business to ›Keynesian economics‹ in some periods. The mechanism by which the fall in profit occurs is simply a question of increased growth improving the bargaining po-

wer of labor and hence real wages, thereby cutting into profits. This need not occur in the case of growth stimulated by lower interest rates, as in that case there is space for an increase in both wages and profits.

A more harmonious regime would prevail if $v > h$, but with the slope of equation (10) flatter than that of equation (11). This is illustrated in Figure 2. The system is now sufficiently technically progressive that growth stimulates an adequate improvement in productivity. This allows the profit share to increase, even though there may also be an increase in real wages. This case is described as ›golden-age Keynesian‹ simply on the conjecture that some such conditions may have prevailed during the so-called ›golden age of capitalism‹ (Marglin and Schor 1990), in the industrialized nations in the third quarter of the twentieth century. Something of the sort would seem to have been necessary to make the putatively Keynesian policies of the period palatable to both ›big business‹ and ›big labor‹. The difference from the more pessimistic scenario is that as demand growth now causes an increase in both economic growth and profitability there is no reason for entrepreneurial capital to oppose expansion. As for interest rate changes, the same results continue to apply, so in this context we still see some conflict of interest between ›financial‹ and ›industrial‹ capitalists. This scenario also raises the possibility that one element in the disruption of the Keynesian consensus (which occurred historically in the 1970s) may have been a switch, for whatever reason, from the second regime to the first. This would reinforce, rather than contradict, arguments advanced elsewhere about real interest rates turning negative in that decade (Smithin 1996).

We now turn to changes in the parameters a_0 and w_0. As might be expected, a positive ›productivity shock‹ (an increase in a_0), always tends to increase both growth and profits. The opposite conclusion holds for an increase in w_0, the intercept term in the wage equation. This latter result requires careful interpretation, however. There is a positive correlation here between *actual* real wages and GDP growth, unlike the much criticized ›textbook Keynesian‹ model, which only allows a reduction in unemployment if real wages fall. Growth itself causes the hypothesized increase in the bargaining power of labor. A change in the intercept term, however, represents a different type of change in labor's bargaining position, which occurs even in the absence of an increase in activity. This may come about, for example, through social legislation favoring labor unions or other historical/institutional changes. An improvement in labor's position in this sense, tends to reduce both profitability and the growth rate. Such developments may therefore be strongly resisted by ›management‹. Some such mechanism has been suggested to explain lagging productivity growth in the well-documented case of Britain before the 1980s (Kilpatrick and Lawson 1980). However, note that this is a different result to those usually emerging in ›canonical‹ Kaleckian/Post Keynesian models (Lavoie 1992) stressing the impact of real wages on demand.

In the last of the three potential configurations, illustrated in Figure 3, equation (10) now has a steeper slope than equation (11). This is the ›austere neoclassical‹ case because austerity-type policies as recommended by neoclassical economics now seem to ›work‹. In other words, a *reduction* in the demand parameter Θ now apparently leads to an increase in both the rate of growth and the profit share. So this would be a solution in the spirit of fiscal conservatism, IMF-type policy pak-

kages, etc. However, this will not be a viable scenario in practice as the slopes of the schedules now violate the stability condition, $|ev/(1+eh)| < 1$. Therefore the only two relevant scenarios are actually our ›pseudo Marxist‹ and ›golden age Keynesian‹ cases respectively. Presumably, the best recipe for economic success in a capitalist-type system would be the latter, which requires that the system be technologically progressive in a particular sense.

Conclusions

This paper has suggested an approach to economic growth in a system with generally capitalist social institutions, emphasizing the interaction of the real interest rate, the profit share, and the rate of growth of autonomous demand. The premise is a monetary production economy with endogenous money, in which the overall production/sales process takes time, and requires finance. The real rate of interest on money enters primarily as a component of the cost of production, and it is argued that this concept should be sharply distinguished from profit. The key relationship in the model is an interest-profit-wage frontier, the characteristics of which depend on the bargaining power of labor, monetary policy, and technical change.

One main result is that a cheap money policy (lower real rates of interest) will tend to increase *both* the growth rate and the share of entrepreneurial profit. Also, an increase in the growth of autonomous demand will increase the growth rate. However, in this case if the endogenous rate of increase in technical progress is not strong, the expansion tends rather to *reduce* the profit share. This may help to explain the otherwise puzzling phenomenon, in some circumstances, of business hostility to ›Keynesian economics‹. An exogenous improvement in technical progress increases both the growth rate and profitability. Hence, the incentives for innovation under capitalism.

If investment and growth do sufficiently improve productivity via a technical progress function, the growth/profit relationship may be altered to become upward-sloping. In this case, the rate of increase in productivity is more than enough to offset improvements in the real wage caused by the improved bargaining power of labor. This would imply a more harmonious relationship between labor and entrepreneurial capital, as now both profits and real wages can increase with demand-led growth. However, it may also provide at least a partial explanation of periods of breakdown or crisis, in situations where, for some reason, the rate of increase in productivity does not keep pace.

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Notes

1 Some of the passages in this paper draw on material from the later stages of Smithin (2001a) and, conversely, from the introductory sections of Smithin (2001b). They therefore bring together what might otherwise have seemed to be separate lines of enquiry.
2 Strictly speaking, the alternative usage of the ›rate of profit‹ would only be correct in a pure circulating capital model, entailing that any absorption of output by firms is for consumption purposes only, and that technical progress is embodied in the single productive factor. The model presented here might well be interpreted in those terms, but to allow for a more ›general‹ interpretation the expression ›profit share‹ seems preferable. I am grateful to Marc Lavoie for discussion of this point.
3 I am grateful to Markus Marterbauer for suggesting this term, which seems more meaningful in context than the alternative of ›industrial capital‹. Compare (e.g.) Smithin (1996) and Marterbauer and Smithin (2000). See also Robinson (1956).
4 It does not make any difference for present purposes whether all the goods produced are eventually sold or not. Unintended inventory accumulation at current prices can be counted as part of GDP.
5 Choosing the real rate as an independent variable does have the advantage of enabling the discussion to focus only on the so-called ›real‹ variables of the model rather than inflation. A number of different inflation theories would be compatible with the underlying growth theory.
6 According to evidence presented by Marterbauer (2000) for the European case, the best specification on empirical grounds would involve both lagged and contemporaneous growth terms. However, adding an extra coefficient would not affect the qualitative results worked out below.
7 That is (given the ›marketing‹ lag) growth between t and $t+1$.
8 These effects and others are already implicitly included in equation (5).
9 On the reasons for this see (e.g.) the discussion of the ›social structuralist‹ model by Gordon (1995).
10 See, for example, the discussion by Mongiovi (1996) of some of the relevant literature.

References

Burstein, M.L. (1995) *Classical Macroeconomics for the Next Century*, unpublished manuscript, York University, Toronto.
Chick, V. (1986) ›The evolution of the banking system and the theory of saving, investment and interest‹, *Economies et Societes* 20: 237–50.
Dillard, D. (1988) ›The barter illusion in classical and neoclassical economics‹, *Eastern Economic Journal* 14: 299–318.
Fleetwood, S. (ed.) (1999) *Critical Realism in Economics: Development and Debate*, London: Routledge.
Gordon, D.M. (1995) ›Growth, distribution and the rules of the game: social structuralist macro foundations for a democratic economic policy‹, in G.A. Epstein and H.M. Gintis (eds), *Macroeconomic Policy after the Conservative Era*, Cambridge: CUP.
Hicks, J.R. (1989) *A Market Theory of Money*, Oxford: OUP.
Ingham, G. (1996) ›Money is a social relation‹, *Review of Social Economy* 54: 243–75.
Kaldor, N. (1982) *The Scourge of Monetarism*, Oxford: OUP.
Keynes, J. M (1930) *A Treatise on Money* (2 vols), London: Macmillan.
Keynes, J. M (1936) *The General Theory of Employment Interest and Money*, London: Macmillan.
Kilpatrick, A. and T. Lawson (1980) ›On the nature of industrial decline in the UK‹, *Cambridge Journal of Economics* 4: 85-102.
Knapp, F.G. (1973 [1924]) *The State Theory of Money*, Clifton, NJ: Augustus M. Kelley.
Lavoie, M. (1992) *Foundations of Post-Keynesian Economic Analysis*, Aldershot: Edward Elgar.
Lawson, T. (1997) *Economics and Reality*, London: Routledge.
Lewis, P.A and J. Runde (2001) ›Intersubjectivity in the socio-economic world: a critical realist perspective‹, in E. Fullbrook (ed.) *Intersubjectivity in Economics*, London: Routledge.

Marglin, S.A. and J.B. Schor (eds) (1990) *The Golden Age of Capitalism: Reinterpreting the Post-war Experience*, Oxford: Clarendon.

Marterbauer, M. (2000) ›Economic growth and unemployment in Europe: old questions, some new answers‹, unpublished, York University, Toronto.

Marterbauer, M. and J. Smithin (2000) ›Fiscal policy for the small open economy within the framework of monetary union‹, WIFO Working Paper 137/2000, Vienna, November.

Marx, K. (1970 [1859]) *A Contribution to the Critique of Political Economy*, Moscow: Progress Publishers.

Moore, B.M. (1988) *Horizontalists and Verticalists: The Macroeconomics of Credit Money*, Cambridge, CUP.

Mongiovi, G. (1996) ›Some critical observations on Post Keynesian macroeconomics‹, in S. Pressman (ed.), *Interactions in Political Economy: Malvern after Ten Years*, London: Routledge.

Nell, E. J. (1998) *The General Theory of Transformational Growth: Keynes After Sraffa*, Cambridge: CUP.

Nell, E. J. and G. Deleplace (eds) (1996) *Money in Motion: The Post Keynesian and Circulation Approaches*, London: Macmillan.

Parguez, A. (1996) ›Beyond scarcity: a reappraisal of the theory of the monetary circuit‹, in Nell Deleplace (eds).

Robinson, J. (1956) *The Accumulation of Capital*, London: Macmillan.

Rochon, L-P. (1999) *Credit, Money and Production*, Cheltenham: Edward Elgar.

Rogers, C. (1989) *Money, Interest and Capital: A Study in the Foundations of Monetary Theory*, Cambridge: CUP.

Rotheim, R.J. (1999) ›Post Keynesian economics and realist philosophy‹, *Journal of Post Keynesian Economics*, 22: 71-103.

Schumpeter, J.A. (1983 [1934]) *The Theory of Economic Development*, New Brunswick, NJ: Transaction Publishers.

Smithin, J. (1994 [1954]) *History of Economic Analysis*, London: Routledge.

Smithin, J. (1994) *Controversies in Monetary Economics: Ideas, Issues and Policy*, Aldershot: Edward Elgar.

Smithin, J. (1996) *Macroeconomic Policy and the Future of Capitalism: The Revenge of the Rentiers and the Threat to Prosperity*, Aldershot: Edward Elgar.

Smithin, J. (1997) ›An alternative monetary model of inflation and growth‹, *Review of Political Economy* 9: 395-409.

Smithin, J. (2001a) ›Macroeconomic theory, (critical) realism and capitalism‹, in P.A. Lewis (ed.) *Transforming Economics: Perspectives on the Critical Realist Project*, London: Routledge.

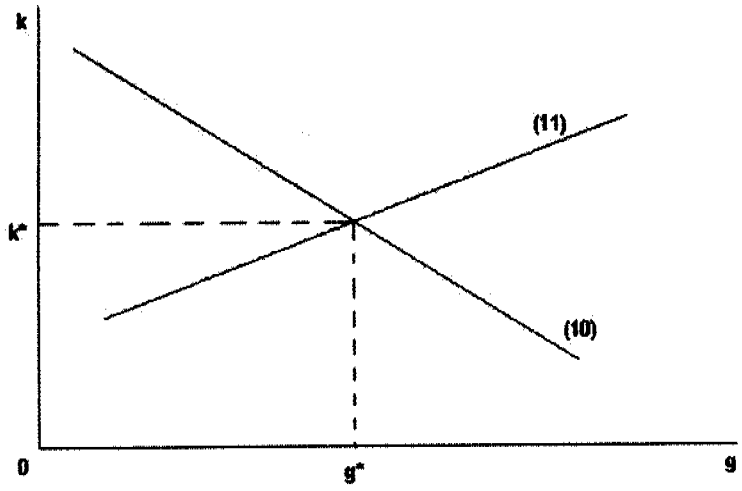
Smithin, J. (2001b) ›Interest rates, profits, and economic growth‹, in E.J. Nell (ed.), *Reinventing Functional Finance: Transformational Growth and Full Employment*, Cheltenham: Edward Elgar.

Verdoorn, P.J. (1949) ›Fattori che regolano sviluppo della produttiva del lavaro‹, *L'Industria* 1: S.3–10.

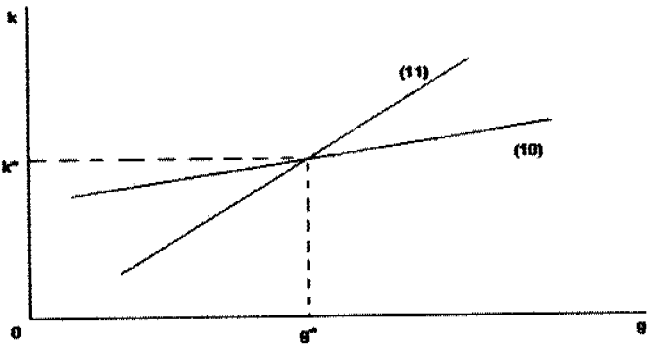
Wray, L.R. (1998) *Understanding Modern Money*, Cheltenham: Edward Elgar.

Appendix

Figur 1



Figur 2



Figur 3