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Growth, Normal Capacity Utilization and the Long-Run Saving Ratio: A Comment

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Abstract

Trezzini (2015) presents a methodological approach for the study of the saving ratio that does not rely on normal capacity utilization positions. To explain the saving ratio he focuses instead on the fluctuations of consumption and investment. Precisely that focus requires I would argue a different kind of approach. Once the traditional theory of saving is discarded, the 'indeterminacy' of the saving ratio opens the way to an analysis of the evolution of consumption, and of how that evolution affects aggregate demand. The generation and evolution of autonomous demand are matters of obvious relevance to the classical-Keynesian approach to the analysis of growth. In this comment I take Duesenberry's criticism of demand theory as the first step for focusing on the evolving standard of consumption and autonomous ('innovative') investment, therefore addressing directly the investment-consumption relationship. It seems to me that in a framework centered on the pace of accumulation this is a more fruitful line of investigation.

There are of course a number of complicated questions involved and they are far from being satisfactorily analyzed. They are part of the necessary task of articulating a theory of consumption consistent with demand-led growth and forward-looking investment decisions.

1. Introduction

In 'Growth without Normal Capacity Utilization and the Meaning of the Long-Run Saving Ratio', Attilio Trezzini (2015) discusses the long-run saving ratio in light of a methodological approach that is based on neither steady states nor positions of normal capacity utilization. Trezzini's argument concerns the long-run theory of output that is central to the modern revival of classical political economy.[1] This comment sketches an alternative route for developing this approach. It argues that the saving ratio can be better understood by focusing on what appears to be the issue Trezzini avoids, a theoretical treatment of consumption. In addition to helping us to explain the saving ratio, that puts in a new light the fundamental role played by investment in the growth process: Consumption and investment interact to bring about an evolution of the structure of the economic system.

Trezzini does not follow up with the implications of his own analysis and spends much effort in a methodological discussion that is only a premise to any substantive development. To move forward in the direction he and others set out, it is necessary to take a look at issues that they mention but leave unexplored—issues that should be part of any theory of growth based on classical-Keynesian premises.

2. The Methodological Question and Normal Capacity Positions

Taking account of aggregate demand requires going beyond the investigation of growth paths characterized by normal capacity utilization, conceived as an average over the course of cyclical fluctuations. The latter approach assumes the independent existence of a 'normal' capacity level. The problem is that 'the process of adjustment of capacity to demand has effects on aggregate demand and its evolution. This adjustment occurs through investment that creates both productive

[1] The origins of this theoretical approach can be traced back to Garegnani (1962, 1978–79, 1983); other early contributions are Vianello (1985), Ciccone (1986) and Kurz (1986, 1990). The main contributions on the question of long-run capacity utilization are Garegnani (1992), Serrano (1995), Bortis (1997) and Trezzini (1995).

capacity and additional aggregate demand. It is thus very hard to argue that the demand effects of investment do not affect the position upon which the economy is supposed to converge' (Trezzini 2015, p. 188). In the approach proposed by Trezzini, 'the growth path is not conceived as a theoretical entity that exists independently of the fluctuations of the economy but as a trend determined by the fluctuations themselves and as such not independent from them' (ibid.).

This change in method carries over to the theory of the saving ratio. A constant value of the saving ratio is another instance

> of identifying long-run tendencies with theoretical positions characterized by normal (or a constant deviation from normal) utilization. But when the evolution of output over time is studied without assuming normal capacity utilization as a property of long-run positions, there is no ground for supposing that a single and constant value of the saving ratio will characterize the positions defining the theoretical trend of the economy. (ibid., p. 190)

The relevant magnitude is instead the 'simple average of the values assumed by the same magnitudes in each individual period of the cycle…' (ibid., p. 191). Thus the tendency of capacity to adjust to demand 'does not imply the effective and complete adjustment of the whole stock of capacity to aggregate demand, not even on average over the course of the cycle' (ibid., p. 192).

The average indicated by Trezzini is defined with respect to the phases of expansion and recession, i.e. with respect to the fluctuations that investment entails. Rather than disturbances with respect to a theoretically defined trend they are incorporated into the theory. Indeed fluctuations and trend cannot and should not be separated.

3. The Long-Run Saving Ratio and the Treatment of Consumption

What determines the oscillations of the saving ratio? In the simplified model used by Trezzini the focus is on consumption and investment. Aggregate consumption is the sum of a 'structural' component of consumption and a proportional component that depends on the marginal propensity to consume. In the short run, the first component is called autonomous, i.e. independent from income, so that it can be taken as given. In a long-run context, Trezzini argues, it cannot be taken as given because 'It evolves period after period in accordance with dynamics independent of

current income and generally determined by the past evolution of consumption' (ibid., p. 192). At the basis of the latter are 'habit formation' and 'the constant acquisition of changing standards of consumption' (ibid., footnote 11). The term 'structural' is therefore more appropriate. Many other phenomena—such as product innovation, changes in income distribution, and institutional changes—affect this evolution. They are not considered in the simplified model, but the framework 'is capable of taking account of their influence' (ibid., p. 192). As far as investment is concerned Trezzini argues that we need to retain only two 'essential assumptions': (i) investment fluctuates, and therefore affects output and income; and (ii) the trend of investment 'is determined by the tendency of capacity to adjust to demand' (ibid.).

These assumptions serve to drive home the main point: 'The average value of the ratio of saving to aggregate income over the business cycle is the joint result of a set of circumstances.' It depends on thrift, i.e. the behavior of households and institutions with respect to allocation of income between consumption and saving.[2] The other circumstances concern the intensity of the process of accumulation, i.e. the growth rates of investment, which are different during the expansion and the recession phases. Furthermore, the intensities and durations of fluctuations have an impact. In sum: what matter are consumption and saving behavior, the average rate of growth of investment, and the pattern of the business cycle.

The unique determination of the saving ratio by the rate of growth and accumulation is then shown by Trezzini to be unwarranted and dependent on the normal capacity utilization hypothesis**:** 'if we assume that normal capacity utilization is a characteristic of a trend, and also that growth is uniform' then the saving ratio is constant and is 'determined independently of the characteristics through which an average rate of growth takes place.' Only on this ground can one argue that the

[2] 'In particular, the average value of the saving ratio over the business cycle in inversely proportional to the marginal propensity to consume *c* and inversely proportional to the rates of growth of the structural component of consumption during expansion and recession…' (ibid., p. **XX**).

saving ratio is 'univocally associated with a rate of growth and accumulation (given the propensity to save)' (Trezzini 2015, p. **XXX**). This is the case of the 'supermultiplier'.

In concluding the examination of Trezzini's argument we can observe that: A) The discussion of the saving ratio is not based on a theory of savings as such, rather on the role of consumption and investment. B) An important role is that of the structural component of aggregate consumption, which is said to reflect an evolution of consumption based on habit formation and changing standards of consumption.

4. The Non-Neoclassical Theory of Saving: The Residual

The very fact that the saving ratio is not the result of allocation decisions, as reiterated by Trezzini at the beginning of his article, represents the rejection of the conventional theory of saving. That is in line with the idea of saving as a residual, which is the unifying element of the non-neoclassical theory of saving.

Comparing alternative analytical traditions in economics, Marglin (1984) has observed that most theories that do not make reference to intertemporal maximization of utility rely on some sort of 'disequilibrium hypothesis.' In equilibrium 'the pressures to spend are supposed to be too great for a typical household to resist.' Saving would arise therefore as a disequilibrium phenomenon, as a residual, 'that occurs only when income is increasing at a faster rate than households can learn to spend' (ibid. p. 144). This is consistent with the view that 'the consumer is a creature of habit who requires time to adjust his consumption to changes in income' (ibid. p. 361) In Marglin's view saving is the result of two 'cultural pressures,' one on spending and the other on saving, exerted on households and individuals by the system of values embedded in society. On the one hand, 'there can be no such a thing as 'enough' once commodities begin to serve the needs of prestige and esteem'. (ibid. p. 362) On the other, there is a powerful 'cultural belief in the virtue of saving' (ibid. p.364); the first pressure undermines but does not eliminate the second.

The institutional framework determines the two parameters of the consumption function drawn from the disequilibrium hypothesis. The change in consumption spending is a function of

previous level of savings, current income, and the first difference of income, weighted by two parameters, representing the learning of consumers and a measure of unmet wants.[3] Marglin concludes: 'In the disequilibrium view, the household will, with constant income, just maintain its assets. However, as income varies from one period to the next the household will find itself with more or less income than it is accustomed to. Saving takes place when income rises on average and households are on balance facing the relatively easier and more pleasant task of learning to spend income rather than the harder task of pulling in their horns.' (ibid. pp. 364-365)

5. Duesenberry's Relative Income Hypothesis: The 'Ratchet Effect'

Clearly, viewing saving as a residual implies some hypothesis about why consumption changes. Before going into the matter, a brief recapitulation of the standard theory of the long-run (average) saving ratio, including the role played within that theory by Duesenberry's relative income hypothesis, might be useful.

5.1. The Consumption Function and the Long-Run Saving Ratio

The psychological law embodied in Keynes's marginal propensity to consume is an admittedly oversimplified theory of consumption. Since by definition the propensity to consume is less than one, the law implies that there is a built-in tendency for consumption to grow less quickly than income. If we maintain that the absolute level of income determines the level of consumption spending, then, given the short-run consumption propensity, the *average saving ratio, is bound to increase.* This, however, contradicts the observed constancy of the ratio in the long run. In the early debate on the consumption function, Keynesians attempted to rescue the proposition that the aggregate consumption if a function of the absolute level of aggregate income—the Absolute Income Hypothesis—by introducing trend factors that could in the long run have a positive effect

[3] The Cambridge theory of saving posits distinct saving propensities for two social classes. In the same way, these parameters may vary for different social groups.

on consumption expenditure.[4] James Duesenberry (1949) put forward an alternative to the Absolute Income Hypothesis. The macroeconomic implications of this alternative account of consumption enable us to resolve the internal contradiction of the Keynesian consumption function. And that is where the ratchet effect is fundamental.

The distinguishing feature of the Relative Income Hypothesis is the rejection of the conventional theory of demand; the macroeconomic implications follow from that. Individuals do not determine the level and composition of their consumption in isolation from the social context, Duesenberry hypothesized; they follow the lead of upper income groups. Thus tastes are interdependent. If tastes are interdependent the separation between utility maximization and individual and social psychology dimensions breaks down. We cannot say 'the system adapts to the data if the data are changing with the adaptation' (Duesenberry, 1949 , p. 14). Even if you are convinced that rational choice cuts through culture and psychology, the interdependence of preferences undermines the very foundation of the separation between psychology and economics.[5] On the other hand, 'habits' of consumption, and consequently a certain proportion between income and the consumption spending needed to support these habits will not adjust in response to a reversal of income dynamics. There is a 'ratchet effect' at work (ibid., p. 115). As a result, in the long run the average saving ratio remains constant.

Trezzini has picked on the issue and argued that the ratchet effect is at the basis of the irreversibility of consumption. Garegnani and Trezzini (2010) have argued that the irreversibility of consumption entails a tendency for aggregate demand continually to rise, so that consumption

[4] Later both Milton Friedman and Franco Modigliani sought to provide neoclassical microfoundations for the consumption-saving choice.

[5] 'If no changes in taste except autonomous ones occurred, the preference system scheme would serve its purpose [i.e. enable us to avoid relying upon psychological assumptions]. But if tastes are interdependent, a dynamic development in taste is implied. Analysis in the dynamics of tastes requires an analysis of the driving forces in the development' (Duesenberry, 1949, p. 17).

operates as an endogenous source of demand-driven growth (see also Trezzini, 2011). That however is only part of the story told by Duesenberry.

5.2. The Quality and the Social Significance of Consumption

He argues that if we assume that 'physical needs are a given datum' and that 'most of the activities carried out by an individual can be predicted if we know his age, occupation, social status, and marital status', the choice between consumption and saving is ultimately a choice of 'the quality of the goods and services [the consumer] uses for any purpose' (Duesenberry, 1949, p. 23). But what drives the search for quality? In other words, what is the 'source of a drive sufficiently strong to account for the amount of work people do, and for the small size of their savings in face of considerable insecurity'? The answer, according to Duesenberry, derives from the fact that we live in 'a society in which one of the principal social goals is a higher standard of living.' Culture and public policy both operate to reinforce this goal 'as an end in itself'; consequently 'the desire to get superior goods takes on a life of its own' (Duesenberry, ibid. p. 28).

'Habit formation' is a defensive tool that helps us to resist this pull by restricting our purchases to those we have defined as acceptable. On the other hand, the consumption expenditure of others operates, through the 'demonstration effect', as a powerful habit-breaker. Resistance to the impulse to spend depends on the frequency of contact with superior patterns of consumption and on the intensity of the inclination to save. This demonstration effect 'need not depend at all on consideration of emulation or "conspicuous consumption".' Many features of our society work to boost consumption by integrating it into the goals of the individual, quite independently of its prime, natural purpose, the satisfaction of needs. For Duesenberry this is 'the social significance of consumption'(ibid. p. 28)

6. A Theory of Consumption

Duesenberry argues that, because of a customary standard of living (habits of consumption), consumption spending will not decrease as income contracts. This sustains the average consumption ratio; in a sense the ratchet effect 'extracts' more spending from consumers. That

aspect is at the basis of consumption irreversibility discussed by Trezzini, although not in this most recent analysis of the saving ratio. Duesenberry however introduced into the macroeconomics literature a further novelty. His criticism of the conventional theory of consumer choice leads him beyond interdependence of taste to examine the dynamic process by which consumption evolves. We can interpret in this light the social goal of a higher standard of living by means of superior goods. That opens up a line of investigation useful to an approach to consumption in the spirit of the classical view of the long run.[6]

There is another and potentially a more fruitful way to develop Duesenberry's insights. Indeed, habit formation is one thing (see, e.g. Pollak 1969, 1970) and an evolving standard of consumption is quite another. Trezzini's structural component of consumption includes both. He does note that changing standards of consumption do not depend only on past consumption but also on *other phenomena,* including product innovation, but he simply argues that these can be accommodated in the basic model.

To be sure: the two issues are related. That can be clearly seen following Duesenberry's argument on the ratchet effect. Habits of consumption are fundamental to understand the level of consumption spending but spending concerns a set of goods (a pattern of consumption) that defines the standard of living and that clearly evolves through time and by means of product innovation. But that is the end of it. If the problem – as identified by the structural component of consumption – is that of the dynamics of consumption beyond the short-run we need to keep them distinct. To discuss a theory of consumption appropriate to the analysis of accumulation our focus must be on the latter. What Trezzini leaves out is the very problem he has formulated. We need to focus in particular on quality and superior goods as the fundamental habit breaker driven by the demonstration effect.

To develop this approach we need to focus on the actual process of transformation of the material basis for the satisfaction of needs.

[6] Duesenberry's book has had little impact on the conventional theory of saving. The non-neoclassical theory of savings, however, has incorporated elements of his argument (e.g. Marglin, 1984).

7. An evolving standard of consumption and investment

Taste formation and the social significance of consumption in capitalist market societies are based on quality, argues Duesenberry. He however does not look beyond the social pressures which motivate consumers to pursue better products and a higher standard of living, leaving open the search for a more complete explanation of the evolution of consumption patterns. In particular the reference to superior goods suggest that a key aspect of the evolution of the standards of consumption is product innovation.

If product innovation is central to the pursuit of an improved standard of living, we are dealing with the basic process of change in consumption which substantiates the evolution of consumption. Habit formation is instead a defensive tool; in an economic expansion, it *restrains* the impulse to consume fueled by the search for goods of superior quality and by the demonstration effect. During a downturn these habits limit the contraction of consumption spending in face of a fall of income. It is rather clear however that some different process of determination must lie behind the constant incentive, arguably the social pressure, to break these habit and go further in the in the pursuit of a higher standard of living and superior goods.[7]

The foregoing suggests that habit formation and changes in the standard of consumption are responding to different determining factors. If we are concerned with the pursuit of an improved standard of living we are primarily concerned with an evolving standard of consumption, that is, with the evolution of consumption patterns. We must focus on the process of innovation in consumption. That is rather complex process (Gualerzi, 1998), but if we do not retreat into traditional demand theory it is necessary to recognize the role played by product innovation. Hence we need to explain the process by which new products emerge. That process involves investment, technical change and production. In trying to understand this key aspect we are therefore led right

[7] In other words, the ratchet effect and its effect of aggregate spending is part of an analysis that it is not limited to that

back to the theory of investment and in particular to investment explicitly aimed at changing consumption.

When we look at investment as the driver of change we can see that investment has two aspects: it creates new products, and it creates new capacity once a new market is defined as an outlet for sales (Gualerzi, 2010, p. 140). But developing this insight requires us to reconsider the role of consumption. The initial investment needs to be validated by the evolution of consumption. In other words, the process of change in consumption initiated by the introduction of new products entails the establishment of those new products in the structure of consumption and ultimately results in innovation in consumption (Gualerzi, 2010, chapter 3). What the investment ultimately achieves will depend on the ability of firms to insert their new products in the patterns of consumption, thereby affecting the consumption patterns. That is subject to a number of conditions that we need not consider here.[8] The reconsideration of the role of consumption adds a further element to the analysis. A change in consumption patterns must now be understood as part of the process that drives growth and may determine further investment. I have tried to clarify this point arguing that in the short run consumption is 'passive', i.e. the level of spending responds to income, except for the autonomous component. In a sense in the long run it becomes an 'active' causal element in the process of growth (Gualerzi, 2012, pp. 27–29).

Autonomous investment in innovation and novelty simultaneously influences the evolving standards of consumption and aggregate demand.[9] We can think of a reinforcing mechanism linking investment and changes in consumption patterns, which are the two sides of effective demand in the long run.

Efforts to extend Keynes's principle of effective demand to the long run have generally focused on the capacity-creating and income-creating effects of investment, implicitly assuming that the capacity creation is merely expanding the existing lines of production. But investment doesn't simply enlarge capacity and generate income; it is also an agent of structural change. That

[8] They attain to the question of development of needs, the evolution of the consumption sphere and market creation. (Gualerzi, 2001 and 2010)
[9] For this reason I have used the term 'innovative investment' (Gualerzi, 2010, chapter 9).

raises the issue of how the composition demand evolves in the course of economic growth. Investment drives growth by constantly reshaping the Consumption Sphere (Gualerzi, 2001, p. 71; 2010, p. 35). By directing our attention to investment as the force of change in the structure of production and consumption, this approach goes to the roots of what ultimately drives the 'analyses of growth based on the modern revival of classical political economy' (Trezzini, 2015, p. **XXX**). To fully account for the role of evolving patterns of consumption in the growth process it is necessary to dig into to relationship between investment and the creation of new markets, via new products and the development of need. But that is beyond the purpose of this comment.[10]

8. Concluding Remarks

In the approach to the analysis of consumption outlined above, oscillations in consumption and the effects of those oscillations on the saving ratio are the results of the evolution of consumption patterns. That approach brings into play influences on the saving ratio that are otherwise generally included in the vast set of unspecified 'circumstances' affecting the growth process. It compels us to confront the demanding task of developing a theory of consumption appropriate to the analysis of growth. We might also note that in this approach, investment aims at redirecting production in light of an anticipated process of future development. That raises a number of analytical complications that await elaboration. Nevertheless, the approach directly addresses the endogenous creation of demand in the context of a demand-driven view of growth. The theory of consumption patterns needs to be part of that view of growth.

It might be useful to conclude by recalling Pierangelo Garegnani's insistence that when addressing issues which lie outside the 'core' of the classical approach to the value and distribution, we must adopt a different way of theorizing (see Garegnani 1984). The theoretical challenges posed by demand-led can be met only by enlarging the scope of a research agenda on growth that has generally been confined within a straitjacket of rigor without exploring what indeed needs to be explored. Bolder steps towards a theory of accumulation are possible.

[10] I have dealt with these questions in Gualerzi (2001, 2010, 2012).

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