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# Spring Cleaning

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I am one of the few survivors of the generation that learned economic theory before the Keynesian revolution. Alfred Marshall was the overmastering influence on teaching in the English-speaking world. There were many disputed points within the Marshallian canon, such as the meaning of the "representative firm", but other schools – Walras, Pareto, the Austrians – were dismissed in footnotes. We used to say in Cambridge "Everything is in Marshall". I added later: the trouble is that everything else is as well.

The general practical moral of Marshallian teaching was the defense of *laissez faire*. Interference with the "free play of market forces", however well meant, will do more harm than good. Thus the devastating unemployment of the 1930s and Keynes' plea to do something about it created a confrontation.

Everything is in Marshall. The most coherent and useable part of Marshall's theory is the analysis of the Short Period. The short period is not a length of time, but a situation at a moment of time when equipment and stocks of inputs in existence and the available labour force provide for a potential supply of output which may be less or more fully utilised. Marshall, using his one at a time method, analysed this question in terms of the fishing industry. Keynes adapted it to deal with changes in the general level of effective demand in an industrial economy.

The coverage of the *General Theory*, is narrow. It says very little about international trade. The influence of the flow of investment on employment is a central topic but accumulation as a historical process is very scappily dealt with; the distribution of the flow of gross income between wages and profits is discussed but the formation of an overall

rate of profit is left hazy. Much remained to be discussed, but the complacent equilibrium theory was deeply shaken.

After the Second World War, the baton of leadership in teaching economics, along with leadership in the capitalist world, passed to the United States. Instead of meeting the challenge of the Keynesian revolution head on, the profession in America split the subject into two parts, macro and micro. In the macro section it was permissible to contemplate fluctuations in employment and even to hint at remedies for a deficiency in effective demand, while micro theory returned to the analysis of equilibrium established by the free play of market forces. Keynesian ideas were allowed a certain sphere of operation while the central doctrine was safely walled off from them. Professor Heilbroner (*The New Economics*, *New York Review of Books*, February 21, 1980) describes the result:

“Microeconomics is concerned with aspects of the economy that are centred in the act of choice, allocation, decision-making. Macroeconomics is devoted to the performance of the economy as a whole, especially with regard to employment and output and inflation. This seems, on the surface, like a very convenient way of examining the economy from two different vantage points, micro yielding a worm’s eye view, macro a bird’s eye view. But what is strange is that there is no way of going from one view to the other. One would think that by opening up the worm’s eye lens one would eventually take in the entire flow of output or employment that originates in the „micro“ acts of individuals or firms – but no such comprehensive view emerges, only a blur. Conversely, it would appear that by closing down the macro lens we could bring into sharp focus the individual actions that are the constituent elements of the flow of output or the rise in prices, but again no such picture emerges: the macro lens simply cannot distinguish the individual actors. Thus macro and micro are not the complementary slides of a stereopticon giving us a single complete picture from two incomplete ones. They are, rather, two quite different pictures that cannot be combined.”

The position in what is sometimes called main-line teaching is even more unsatisfactory than Heilbroner allows, for micro theory in turn is split into two sections – a theory of exchange and a theory of production. Exchange and the *relative* prices of particular commodities are treated in terms of auctions of readymade goods, as elaborated by Walras, while production is treated in terms of “supply curves” derived from Marshall by Pigou and elaborated by the early Joan Robinson. The two types of analysis are essentially incompatible because the underlying models have completely different time schemes. In Walrasian markets prices are varying from day to day to reconcile demand to supply while, in the Pigovian scheme, prices are governed by costs of production „in the long run“. In the textbook the two theories generally lie side by side without attempt being made to reconcile them. There is also a long-period macro theory in terms of “factors of production”; this has run into trouble over the meaning and measurement of a “quantity of capital” regarded as a “factor”.

The attempt (whether deliberate or instinctive) to save equilibrium theory from Keynes has landed it in a number of contradictions.

First of all, on the analytical plane, there is the problem about time. *When* is the date when equilibrium is going to rule? It is usually said that, at any moment, markets are *tending* towards equilibrium, or that demand governs supply *in the long run*. Equilibrium, it seems, lies in the future. Why has it not been established already? Jam tomorrow but never jam today.

There is a contradiction also on the plane of ideology. The burden of the equilibrium theory is still the same as in Marshall's day – the presumption in favour of *laissez faire*, of the beneficial effects of the “free play of market forces”, which brings about the maximisation of the flow of “utilities” to be got from “given resources”. The free play of market forces necessarily brings about inequality. If it did not, it would have no effect. It operates by rewarding success and penalising failure. Thus freedom necessarily produces inequality not only in the “rewards” to be earned in each generation but in the distribution of handicaps – inherited wealth and education – from one generation to the next. This comes into conflict with the claim that the market system is efficient for a flow of output cannot be measured just in tons of stuff – it is supposed to be measured by its power to offer “satisfaction” or “utilities”. Because of the principle of diminishing utility of additional consumption, a given flow of goods produces less total utility for a given population if it is very unequally distributed. Some individuals are near starvation while others are spoiling their livers by overeating. It has to be admitted that inequality in the distribution of consuming power amongst a given number of human beings reduces the amount of satisfaction to be got from a given flow of consumption.

At gone time the neoclassics (particularly the Austrian branch of the school) tried to get out of this by appealing to the principle of “no bridge” between subjective consciousnesses so that a comparison of quantities of utility has no meaning. In that case, comparisons of quantities of products has no meaning either.

The whole subject is so embarrassing that in fact it is scarcely mentioned. There is no treatment at all of the determination of the distribution of income in orthodox teaching, and precious little about its consequences. What to the general public appears one of the most interesting of all questions in economics is simply left out of the syllabus.

In its general influence on educated public opinion, orthodox teaching has been not merely feeble and confused but positively pernicious. It gives support to the view that expenditure by a government that is beneficial to the inhabitants of its territory is “socialism” and must be prevented at all costs, which leaves only military expenditure as a legitimate sphere for government outlay to boost effective demand. This reconciles an otherwise more or less sane and benevolent public opinion to the arms race which seems to be dragging us all to destruction. But that is another story.

It seems to me that the whole complex of theories and models in the textbooks is in need of a thorough spring cleaning. We should throw out all selfcontradictory propositions, unmeasurable quantities and indefinable concepts and reconstruct a logical basis for analysis with what, if anything, remains.

The first notion to be discarded, in such a process, must be "equilibrium in the long run". It is possible to conceive of a particular market being in equilibrium in the short run in the sense that the prices of commodities and the flows of receipts being experienced today are setting up expectations that they will be the same next week, provided that no relevant "change in the news" occurs meanwhile, so that the same situation will be experienced again next week. This conception needs to be handled with care; when accumulation or depletion of stocks is going on, the mere fact that next week follows this week causes the situation in the market to have changed, but there may be periods in history when it is not unreasonable to form fairly clear expectations about the very short run. It is strange that the concept of "rational expectations" over the long run has come into fashion among economists just at a moment (1980) when prospects for the capitalist world are more uncertain and more threatening than they have been ever since capitalism into existence.

The given position in an economy is a purely logical structure – an elaborate thought experiment. There is no causation and no change. At each moment, in any one system, the stock of inputs required for its technology and its growth rate has already come into existence, which implies that in the past when stocks were being replaced, there must have been correct foresight of what "today" would be like, so that the profit-maximising variety of technology has been installed – in short the distinction between the future and the past, as viewed from "today", has been abolished.

For this reason, the characteristics of a technological system can be described only in terms of imaginary comparisons – what would be different if . . . There is no room here for short-period "Keynesian" movements in the level of utilisation of stocks of inputs or employment of labour. The language of change may be used, for it is difficult to describe a map without using the language of moving about on it, but essentially the argument is conducted strictly in terms of comparisons of logically possible positions.

"Keynesian" analysis, by contrast, is developed by making predictions about the consequences of change – what would follow if . . . For this reason, Keynesian analysis has proved more fruitful than long-period theory. It proceeds by making predictions of what consequences can be expected to follow from events now taking place. When the expected consequences do not follow, the analysis is proved to be mistaken and can be corrected.

Keynesian analysis starts ever afresh from the short-period situation

that past history has brought into existence "today" and attempts to understand what consequences will follow from recent changes in it. The Keynesians may not get them right but they can learn their own and each other's mistakes so that it is at least possible gradually to gain more insight as time goes by, while long-run theory must remain in a perpetual fog.

### 3

The most troublesome point to clear up has been the concept of "capital" as a "factor of production" because of the problem of "normal prices". When are normal prices going to obtain? Marshall was very much troubled about this. In a rare burst of candour, in Appendix H in the *Principles*, he admitted that it had him beat but in the main text he tried to bluff his way through the problem as usual. At a low level of abstraction, he described profit as the "reward" "of business ability in command of capital". Here, if we take "capital" to mean finance that can be used to acquire productive equipment and pay out wages, this is merely a description of how an industrial economy works. At a more philosophical level, *interest* (identified with the rate of profit) is described as the reward of *waiting*, but *waiting* only means owning property and refraining from selling out and consuming it. The "reward" of owning property is the advantage of having it, in which its power to earn interest is only one element. All this remained in an impenetrable fog during the reign of Alfred Marshall and, for the most part, it still does so today.

Keynes was somewhat troubled by the lack of a coherent theory of the rate of profit on capital<sup>1</sup> but he could get on well enough without it, for his main concern was with forward-looking expectations of the rate of return on investment and the flows of current profits being received at a moment of time.

On this basis some progress has been made in interpreting current events and the effects of national policies under the slogan: History *versus* equilibria.

### 4

Piero Sraffa had a programme of spring cleaning of his own. He tells us in the preface to *Production of Commodities by Means of commodities* that he tried to discuss it with Keynes in 1928 but it was not published until 1960. Meanwhile he kept his ideas very much to himself though some leaked out in his *Introduction to Ricardo's Principles*.

His main attack was upon "marginal products" and supply curves based on proportions of "factors of production".

No changes in output and (at any rate in Parts I and II) no changes in the proportions in which different means of production are used by an

industry are considered, so that no question arises as to the variation or constancy of returns. The investigation is concerned exclusively with such properties of an economic system as do not depend on changes in the scale of production or in the proportions of "factors".

This standpoint, which is that of the old classical economists from Adam Smith to Ricardo, has been submerged and forgotten since the advent of the "marginal" method. The reason is obvious. The marginal approach requires attention to be focused on change, for without change either in the scale of an industry or in the "proportions of the factors of production" there can be neither marginal product nor marginal cost. In a system in which, day after day, production continued unchanged in those respects, the marginal product of a factor (or alternatively the marginal cost of a product) would not merely be hard to find – it just would not be there to be found.

Sraffa approaches the problem by setting up the input-output table for an integrated industrial economy in physical terms. Of course, in reality it would not be possible to describe in full detail the technology for a wheel stall, let alone for a complex industrial economy. The argument is conducted at the level of abstract principles, far above that of operational analysis.

Now if the necessary real wage per man-year is given in physical terms (as the classical economists were inclined to assume) then the prices of all commodities in money-wage units and the overall rate of profit uniform throughout the system, are determined. Sraffa breaks out of this strait-jacket by allowing the wage to be a *share* in net output. Then he traces the behaviour of prices and the uniform rate of profit (for the given technical system) for every value of the share from unity to zero (or to the minimum which will support life).

This ingenious and elegant analysis forms the core of the argument. Here is a solution for the much vexed problem of what is meant by a "quantity of capital". For a given technique and rate of net output, the physical quantity of capital is a list of specific inputs required to implement the technique. When the share of wages in net output is known, Sraffa shows that the prices of commodities and inputs which will correspond to a rate of profit uniform throughout the system are determined. This is illustrated by a diagram in which the x axis represents the rate of profits, uniform throughout the economy and the y axis the flow of net output in physical terms measured in units of the standard commodity.

The definition of the standard commodity takes up a great part of Sraffa's argument but personally I have never found it worth the candle. Each technical system has its own standard commodity so that one quantity cannot be compared with another. This is not the unit of value like a unit of length or of weight that Ricardo was looking for. It is simpler to take the money-wage bill as the numeraire and allow the level of money prices to represent the share of profits (the ratio of exploitation).

There are some further puzzles in the exposition. To define *net* output

it is necessary to suppose that inputs are replaced in kind as they are used up whereas Sraffa seems to permit them to be replaced, as they might be in reality, by something physically different. When part of profit may be consumed by capitalists it would be natural to suppose that physical output is influenced by distribution so that it varies with the rate of profit. These are puzzles and complications in Sraffa's analysis but they do not give any help or comfort to marginal productivity.

The main difficulty is that suddenly, without warning (apart from the hint in the preface quoted above) the question is changed. In part III we are to consider the choice of technique by "a producer who builds a new plant" (p. 81).

Choice depends upon profitability and the producer is conceived to "switch" from one technique to another with changes in the rate of profits.

Now, we can imagine a variety of techniques for producing a single flow output set up in a "book of blueprints" but we cannot imagine switching from one to another at an instant of time. A switch would require availability of the appropriate stocks of inputs already in existence. Moreover, differences in techniques are introduced successively through time as research and developments go on responding to historical changes not merely to shifts in the rate of profit.

To put the point in methodological terms, it is not correct to draw two or more wage-profit curves in the same axes, for the y axis represents the flow of net output in only one particular technique.

It seems that its own author has been puzzled by the exposition of this enigmatic book, but that does not mean that we cannot make use of it in reconstructing analysis after the spring cleaning has been completed.

## 5

To reconcile the two parts of Sraffa's analysis we may treat it as follows. The "system" of production in use in an economy at a moment of time, and the stocks of inputs required to implement it, are set out in terms of a physical input-output table. It does not represent a stationary state or an equilibrium position. It is simply the position that has been reached, "today", as a result of accumulation of stocks and of technical knowledge over past history.

At a moment of time there can be no change but if accumulation or decumulation is going on, say from week to week or from year to year, there must be technical change to accommodate changes in the relations of inputs to employment of labour and even when the total stock is in some sense constant choices are required about the form in which replacements are being made of items used up. Thus, as history marches on, there is slow gradual change. There may also be bouts of important changes from time to time, following major discoveries, and "Keyne-

sian" swings of effective demand run to and fro over the long-term evolution.

The control of production may in principle be appropriate to any social and political system – socialist, cooperative or capitalist. Where the land and stocks are owned by a class of capitalists they are paying a certain wage bill per annum in terms of dollars. Dollar prices then determine the real wage rate per man year of employment and the share of gross and net profits in proceeds. The ratio of net profit in dollars to the wage bill is the ratio of exploitation. According to Sraffa, the prices of commodities are such as to make the rate of profit on the dollar value of capital uniform and constant through time, but in real life this condition is not exactly fulfilled.

The rate of exploitation (with the corresponding level of the rate of profits) may, in principle, be anything between zero (which permits only enough gross profit to keep stocks intact) and the maximum which permits the labour force just to exist and reproduce itself.

There does not seem to be much point in making further systematic generalisations. We have here a broad frame within which detailed studies of actual history can be carried out.

This is where Sraffa leaves us and hands us over to Keynes.

## Notes

- 1 See M. Milgate "Keynes on the 'classical' theory of interest", *Cambridge Journal of Economics*, September 1977.
- 2 Preface, *Production of Commodities by Means of Commodities* p. v.