Contributions to Modern Economics

Joan Robinson

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JOAN ROBINSON

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PREFACE

These papers are drawn from the work of fifty years. They include contributions to two great intellectual upheavals in economic theory – the Keynesian Revolution and the revival of the classical theory of profits led by Piero Sraffa – as well as some discussions of the formation of prices in capitalist and socialist economies and of international trade.

'Reminiscences', which serves as an introduction, relates the evolution of these ideas to the personal and historical events that influenced them.

The pieces selected are those which have been found most useful for students, but some, especially 'The new mercantilism' and 'What has become of employment policy?', may be of wider interest.

I am grateful to John Eatwell of Trinity College, Cambridge, for encouragement and help in producing this volume, and to Murray Milgate for reading the proofs.

Cambridge 1978 Joan Robinson

REMINISCENCES

1

Marshall and Pigou

When I came up to Cambridge (in October 1921) to read economics, I did not have much idea of what it was about. I had some vague hope that it would help me to understand poverty and how it could be cured. And I hoped that it would offer more scope for rational argument than history (my school subject) as it was taught in those days.

I was somewhat disappointed on both counts. Alfred Marshall was the all-dominating influence on the Cambridge faculty; the last item in this volume (24) indicates how I took to him. I felt smothered by the moralizing and mystified by the theory; in particular, no one seemed to know what was meant by the 'representative firm'.

When I returned to Cambridge in 1929, they were still arguing about the representative firm (*Economic Journal*, March 1930) but meanwhile Piero Sraffa had turned up, rescued by Keynes from Mussolini. He was calmly committing the sacrilege of pointing out inconsistencies in Marshall, and, moreover, introducing us to other contemporary schools of thought (but they were no better).

My first book, *Economics of Imperfect Competition*, though inspired by a hint from Sraffa, was mainly influenced by Professor Pigou. Pigou seemed to have reduced Marshall's *Principles* to a logical and consistent scheme but there was an obvious defect in it. The whole argument turns on 'price equals marginal cost'. This entails that the sales of an industrial firm are limited by the capacity of its equipment. Short-period profit per unit of output is equal to marginal cost minus average prime cost. Plants that are yielding any gross profit at all are working up to capacity (with rising marginal costs) and the rest are shut down and kept in moth balls.

This was evidently absurd, particularly in the slump when most plants were working part time. With the aid of Richard Kahn, who had been studying actual pricing policy in the British cotton industry, I used the newly invented concept of 'marginal revenue' to show how short-period profits are positive even at under-capacity working.

With this apparatus, we produced a complete restatement of the Pigovian system with various amendments, in particular, the demonstration that, in Pigou's own terms, it is not true that wages are equal to the value of the marginal product of labour.

A few months before *Imperfect Competition* was published, Edward Chamberlin's *Monopolistic Competition* appeared. He was upset by the coincidence and all the rest of his work was devoted to showing that my theory was quite different from his. During his reign at Harvard, it used to be said that you could always get a good degree by abusing Mrs. Robinson.

I recognized that several of the questions that he raised, such as deliberate product differentiation as a means of competition, were more interesting than mine but obviously there was a very large overlap between the two books. I suppose that Chamberlin was annoyed at having to share all his footnotes and reviews with me, and he resented Nicky Kaldor's comment that he went in for unnecessary product differentiation, but there was a deeper reason.

I had been very well pleased to refute the orthodox theory of wages, which had stuck in my gizzard as a student, while Chamberlin refused to admit that his argument damaged the image of the market producing the optimum allocation of given resources between alternative uses. This ideological difference underlay an otherwise unnecessary controversy.

I soon abandoned the field; when I came under the influence of the incipient Keynesian revolution, I realized that my Pigovian book was leading up a blind alley.

First of all, it was all conceived *a priori*; some scraps of observation were introduced into the assumptions here and there but, in general, it was all a deduction from Marshallian assumptions as interpreted by Pigou. Keynes, by contrast, was concerned with an actual phenomenon – unemployment – and was trying to find out a theory to account for it.

Secondly, the whole problem of time was fudged. There is no clear distinction in the book between short and long-period relationships or between the future and the past, though I avoided the horrible neoclassical methodology of drawing a plane diagram showing a timeless relation between two variables and then moving about on it. (This point is raised in the 'Lecture delivered at Oxford' (13) below.) Keynes had instinctively recognized the nature of historical time in which today is an ever-moving break between the irrevocable past and the unknown future, though he did not express the point clearly till after the *General Theory* was published.[1]

[1] See 'The general theory of employment', 1937, *JMK*, Vol. XIV.

My own impressions of my book after thirty years are included in this volume – *'Imperfect Competition' Revisited* (14).

After passing through another intellectual revolution, I took a more kindly view of Marshall. Though he fudged the problem of time, he was aware of it, and he took pains to avoid the spurious neoclassical methodology. It was Pigou who had flattened him out into stationary equilibrium. When I republished the 'Lecture' and some other pieces (in *CEP*, Vol. IV) I wrote:

> These essays were written in a hilarious mood after reading Piero Sraffa's *Introduction* to Ricardo's *Principles*, which caused me to see that the concept of the rate of profit on capital is essentially the same in Ricardo, Marx, Marshall and Keynes; while the essential difference between these, on the one side, and Walras, Pigou and the latter-day textbooks on the other, is that the Ricardians are describing an historical process of accumulation in a changing world, while the Walrasians dwell in timeless equilibrium where there is no distinction between the future and the past.

2

Effective Demand

In the summer of 1930 Keynes was lecturing from the proof sheets of his *Treatise on Money* and the book was published in October. Meanwhile Kahn had produced the first draft of what became his famous article on the multiplier.[2] In the term beginning in April 1931, we got up a circus, as we called it, to discuss the *Treatise*, and from then till the completion of the *General Theory of Employment, Interest and Money* in the winter of 1935, and beyond, I was involved, along with Kahn, in a continuous series of discussions, writings, lectures and correspondence around the development of Keynes' ideas.

It is difficult to convey an impression of Keynes to someone who did not know him. In the world, he was considered arrogant and harsh; this was because he loved to put a pin into any pompous balloon that he encountered. With us in Cambridge he was far from harsh. He had exacting standards but withal he was warm-hearted and generous. He was conscious of being far more intelligent than nearly everyone whom he met, but that was just a fact; he had no need to puff himself up. He had a sense of absolute values; he was willing to argue with anyone on the merits of the case in

[2] 'The relation of home investment to unemployment', *Economic Journal*, June 1931. Reprinted in *Selected Essays on Employment and Growth*, Cambridge University Press, 1972.

hand; he could be ferociously obstinate but it never occurred to him to use his authority and eminence to crush a younger disputant and he was ready to take an interest in fresh ideas wherever they came from.

He was great fun; even a boring committee meeting could be amusing when he was present. At a party, he did not lapse into talking college shop as so many academics do, but entertained the company by enlarging on some striking thesis, such as that the continent of North America cannot support human life.

His mind worked many times faster than anyone else's so that, however much work he was doing, there was always plenty of time in his day. Above all, he was blessedly free from the vice of wanting to have been right. He quickly absorbed the criticisms of the *Treatise* (conveyed to him by Kahn) that were raised at the circus; immediately, his mind began to race towards new formulations.

In those days seminars were unknown. Our circus, first proposed by Piero Sraffa, was organized as an unofficial venture. The main speakers were Kahn, James Meade, who was spending a year in Cambridge in order to transplant economics to Oxford, Sraffa (who was secretly sceptical of the new ideas), Austin Robinson and myself. Only students who were considered up to it were allowed to come.[3]

To understand the argument at the circus, it is necessary to recapture the central position of the *Treatise*. When he was writing it, Keynes believed that 'monetary theory' was only about prices. On the plane of policy, he had supported Lloyd George's scheme to conquer unemployment by expenditure on public works, but in the high abstraction of the *Treatise*, employment was hardly mentioned.

The argument postulates a position of equilibrium at a moment of time when saving is equal to investment and the level of profits is normal. Then an increase in investment causes prices to rise and so profits to increase. Owing to peculiar definitions, this is called an excess of investment over saving. This excess is not reduced by expenditure on consumption, for if part of profits are spent, prices rise all the more; profits are a widow's cruse that cannot be exhausted. On the other tack, if entrepreneurs reduce consumption in order to save more, 'the cruse becomes a Danaid jar which can never be filled up'.[4]

One of the main topics at the circus was the relation between demand and output. Austin Robinson immediately spotted the fallacy in the widow's cruse at a time of unemployment. If businessmen increase

[3] See *JMK*, Vol. XIII, Chapter 5.

[4] Quoted, loc. cit., p. 339.

consumption when profits rise, there will be an increase in the output of goods and services, with not necessarily any rise in prices at all.

This was the first step from the theory of money to the analysis of output which is described in my article of 1933 (2), included in this volume.

A second topic was the amendment of the *Treatise* definitions. Kahn's article was expressed in the language of the *Treatise*, but he now discovered that the saving over any period is necessarily equal to investment in that period. This was described as Mr. Meade's relation, because James had assisted in the discovery.

There was some confusion at this time between an accounting identity that must be true by definition and a causal relationship. The important point was the causal relationship, that is, the manner (shown in the multiplier) in which a given increase in investment leads income to go on rising until it reaches the level where saving is increased by an equal amount. At the same time, what was most shocking to Marshallian orthodoxy, a reduction of expenditure on consumption (with investment unchanged) will not increase saving but only reduce income.

Kahn reinforced the point (unwittingly following the Marxian schema of expanded reproduction) by imagining cordons drawn round the investment and the consumption-good industries and studying the trade between them. The excess of the income of the consumption sector over its own consumption – that is, its savings – is equal to the expenditure on consumption of the investment sector. Thus the sum of the savings of the consumption sector and of the investment sector is equal to the value of investment.

Another point which we took up was the notion of normal profits. If, as Kahn argued, there is a supply curve of output as a whole (given money wage rates) in a short-period situation with fixed total productive capacity, then, corresponding to any given state of demand, there is a particular amount of employment, level of prices and flow of gross profits. There is no one level of profits that is more 'normal' than any other.

It is interesting that Gunnar Myrdal, in *Monetary Equilibrium*, found almost the same way of reconciling Wicksell's theory with the experience of unemployment.

There was one more topic, though I do not remember if it came up at the circus or later – that was the 'buckets-in-a-well' fallacy. Dennis Robertson tried to maintain that whenever there was an increase in saving, more money would be passed to the Stock Exchange and used to finance a corresponding increase in investment. This view arises from the all-too-prevalent confusion between a flow of income and a stock of wealth. A reduction of expenditure on consumption does not increase the total flow of saving if the flow of investment remains the same, but causes income to run down until the new flow of saving is equal to the old flow of investment. At the same time, when net investment is going on, the total of wealth is growing and part of the corresponding savings are made by individual owners of wealth, who may hold them in the first instance as an addition to their money balances and later use them to reduce debt or purchase other assets. The demands for money and other assets relatively to the stocks in existence at a moment of time affect the level of interest rates and the value of shares (common stock), which have only a secondary and indirect influence on the flow of investment.

It is worthwhile to repeat these old arguments, for modern teaching has been confused by J. R. Hicks' attempt to reduce the General Theory to a version of static equilibrium with the formula IS/LM. Hicks has now repented[5] and changed his name from J. R. to John, but it will take a long time for the effects of his teaching to wear off.

Dennis Robertson was sarcastic about the circus, and came to only one meeting. He had an ambivalent attitude to Keynes, who had been a close friend. He admired Maynard's intellectual daring and yet was frightened by it. He clung on to old doctrines, such as that a cut in wages must necessarily increase employment, and he kept up a running fire of criticisms, some of which were useful, though on peripheral points.

As the argument went on, he became embittered. He tried to prevent me from expounding the new theory in my lectures (but Pigou ruled in favour of free speech). Lord Robbins[6] and others have drawn a pathetic picture of Dennis, but it was Keynes who was grieved by his hostility. After Keynes' death, when Robertson had returned to Cambridge as Pigou's successor, he created a lasting schism in the faculty by trying to re-schedule the syllabus so that Keynes' theory could not be taught (if at all) before the final year.

In the days following the meetings of the circus, there was a clear distinction between those who had seen the point and those who had not. Austin Robinson said that we went about asking: Brother, are you saved? George Shackle has given a touching account of his conversion.[7]

All this time, controversy over public-works policy was raging between Keynes (who was supported by Pigou although from a quite different theoretical position) and Professor Hayek, at the London School of

[5] Cf. Joan Robinson, 'What are the questions', *Journal of Economic Literature*, December 1977, reprinted in *CEP*, Vol. V.

[6] See *The Autobiography of an Economist*, Macmillan, 1971, p. 222.

[7] See *The Nature of Economic Thought*, p. 53.

Economics, supported by Robbins, who has since expressed regret at having been on the wrong side.[8]

A delegation led by Abba Lerner (then a graduate student at LSE) came to Cambridge to suggest that the young generation on each side should get together and settle the debate amongst themselves. The *Review of Economic Studies* was founded as a forum for discussion (it later evolved into something quite different) and a weekend meeting was arranged at an inn half-way between London and Cambridge.

Cambridge was represented by Kahn, Austin Robinson and myself, and James Meade who had been back in Oxford for a year but was (at that time) in complete accord with us. Abba Lerner brought three contemporaries (none of whom remained in the profession). It was agreed that there should be no appeal to authority; every point must be argued out on its merits.

At the first session, James explained the multiplier; Kahn, who came later, went over it again. Then it was the turn of London. They said that before they could discuss employment they must analyse what would happen if everyone confidently expected that the world was coming to an end in six months time. We went over the ground with them; it would make an interesting tripos question. The point was to distinguish what capital goods could be consumed in six months, by ceasing replacements, from what would have to be left.

At the end of the session James very earnestly asked: Before we rise, could you tell us whether this illustrates the boom or the slump? but none of them was prepared to say. Next day, Abba asked to go over the multiplier argument. With some help, he repeated it correctly and seemed to be convinced. His companions were quite shocked and were seen afterwards walking him up and down the lawn, trying to restore his faith.

On the last evening we relaxed the rule about mentioning names and asked them to explain what Hayek really meant by 'capital consumption', but it was not a success.

Abba came to spend a term in Cambridge. He had been used to being the intellectual leader of his group and he very candidly admitted that he had been distressed to meet an argument that he could not answer. After passing the term in mental agony, he found out that saving is necessarily equal to investment and became for some time an only too fanatical supporter of Keynes.

This volume contains some of the pieces which I wrote to elucidate points in the *General Theory* or draw riders from it: 'The concept of hoarding'(4), 'The rate of interest' (5) and 'Beggar-my-neighbour remedies

[8] Op. cit., pp. 152–5.

for unemployment' (17). The lecture: 'Obstacles to full employment' (3) was one of many which I gave after the war in various European countries to expound and defend the new theory. Reading it now, it seems to have been prescient. It points out that the great unsolved problem of a regime of near-full employment is going to be inflation and it argues that, once the idea of employment policy has been accepted, the question should be changed from: Can governments influence the level of production? to: What kind of production should they support? This is the theme of the first piece in this collection: 'The second crisis of economic theory' (1) which summarizes all the rest. The article written in collaboration with Frank Wilkinson (23) reflects upon the situation as it appeared in 1976.

3

Capital and Profits

Michał Kalecki came to Cambridge just after the *General Theory* was published. This volume contains a paper (6) in which I described our first meeting and mentioned some of the important amendments that he made in Keynes' theory. His work was the most original and important of any in the inter-war years, which is now at last beginning to be recognized, and later he made applications of the new theory to problems of socialism and of the Third World. He did not have, like Keynes, a long struggle to escape from Marshall, but approached his problems directly from Marx.

In Marx's system of analysis, the problem of 'realizing the surplus' – that is of effective demand – is somehow separate from the process of accumulation. Kalecki developed, from the 'schema of expanded reproduction' in Volume II of *Capital*, an integrated analysis. He showed (more clearly than Keynes had done) that profits provide not only the motive for investment, but also the finance to support it, while he emphasized that development does not depend only on investment (the output of Department I) but also requires an adequate increase in the output of wage goods (Department II).

However, his model, in which the workers spend what they get and the capitalists get what they spend, shows the determination only of the flow of profit in national income; it does not discuss the formation of the rate of profit on capital. To define the *rate* of profit it is necessary to define the value of the stock of capital, and that no one seemed able to do.

Harrod's *Towards a Dynamic Economics*, 1949 (expanding ideas conceived in 1938), opened up a discussion of long-run growth in Keynesian terms, but he also lacked a rate of profit. I had innumerable discussions with Piero

Sraffa but they always consisted in his heading me off from errors; he would never say anything positive. Thus it was not till I found the 'corn economy' in his *Introduction* to Ricardo's *Principles* that I saw a gleam of light on the question of the rate of profit on capital. This led to a new upheaval in ideas, comparable in excitement, though not in immediate practical importance, to the Keynesian revolution itself.

The first round was my article of 1953 (8). I wrote about it in 1974:[9]

> 'The Production Function and the Theory of Capital' was met, not only with incomprehension, but with ridicule and indignation. I can understand this now better than I did at the time. In Cambridge, the meaning of the capital to labour ratio in a long-period sense was a well-known unsettled question that Dennis Robertson has left in an admittedly unsatisfactory state.[10] Elsewhere, as I since found, there was a convention of agreeing to believe that it was no problem. My article (written in a somewhat light-hearted style) was innocently remarking that the Emperor had no clothes.

After this, I worked out, rather clumsily, a number of points that became clearer with the publication of Sraffa's *Production of Commodities by Means of Commodities*. In particular, I constructed what later became known as a pseudo-production function. I interpreted the neoclassical conception of 'a given state of technical knowledge' as a 'book of blueprints' showing a variety of techniques for producing a whole flow of net output in a particular economy, each with the stock of physical inputs that its technique requires. The value of any stock, in general, varies with the rate of profit. There is nothing surprising in this; costs are made up of two parts, a wages bill and an interest bill (the rate of interest, in perfect tranquillity, being equal to the rate of profit) and these vary inversely to each other – a higher rate of profit corresponding to a lower level of cost per unit of labour. Thus the cost of capital goods relatively to a unit of net output is higher or lower, with a higher rate of profit, according to whether the capital to labour ratio is higher or lower in investment good industries than in final output. Only in the special case where the ratio of capital to labour is the same in all industries do labour-value prices rule, so that the value of a given physical stock of capital is independent of the rate of profit. This should always have been obvious, but since it cut the ground from under the feet of the theory

[9] Introduction to 2nd edition of *CEP*, Vol. II.
[10] See below p. 77 note 3.

that the rate of interest measures the 'marginal product of capital', it was not acceptable.

Professor Samuelson had taken over 'marginal productivity' from J. B. Clark and he maintained that, though 'capital' is not really made of putty that can be squeezed into various forms without loss of its substance, yet it is *like* putty in the relevant respect. He evidently took this on faith and had not given it much thought.

In 1961 I was invited to take a couple of seminars at MIT. I chose the subject: The Use and Abuse of the Production Function. During the first session, I asked Samuelson: When you define the marginal product of labour, what do you keep constant? For a moment, he was quite disconcerted, and then started off on some baffling rigmarole. I cut in: Paul, I asked you a simple question, can't you give me a simple answer? He replied that he would have to think it over. This scene was long remembered by the students at MIT who witnessed it.

Samuelson turned the joke against himself. He put round a paper next day as follows: Thursday at 4.40, Mrs. Robinson asks the question. Professor Samuelson: Well I mean to say, the Kings of England were William the First, and William the Second . . . Mrs. Robinson: Come, come sir, answer the question!

Friday 6.30 a.m. (implying a sleepless night) the answer is that either you keep all physical inputs constant or you keep the rate of interest constant.

This clue would have led him to the heart of the matter if he had followed it up, but he was deflected by the notion of a book of blueprints and produced his own pseudo-production function. In setting up the assumptions, he stumbled upon the conditions for labour-value prices, so that his diagram *looks* like a production function on which a technique that offers a higher output per unit of labour always requires a higher value of capital.

When the great 're-switching' debate broke out, Samuelson had to admit that, in the general case, a pseudo-production function may have any shape and that, at some points, the technique with the higher output per man may show a *lower* value of capital per man.

It was fun to tease Samuleson, but this debate took attention away from the main issue. A pseudo-production function is an imaginary comparison of stocks of physical capital each already in being; each must be supposed to have been produced by investment in the past and to be now kept intact because the future is expected to be like the past. When the future is expected to be different from the past, say because the current rate of profit has altered, it would not be possible to change the stock of capital except by a long process of investment and dis-investment.

After years of argument, the neo-neoclassics still refuse to understand the difference between a comparison of timeless equilibrium positions and the effects to be expected from a change taking place at a particular moment.

These controversies are described (naturally, from my point of view) in 'Capital theory up-to-date' (10) (1970) and in 'The meaning of capital' (11), written a few years later.

Though the 'Cambridge critics' were never answered, mainstream teaching, till today, seems to go on in the same old way.

I was delighted to find in a dictionary the word mumpsimus, which means stubborn persistence in an error after it has been exposed.

4

Prices

In the pre-Keynesian doctrine there was a sharp distinction between the analysis of the general price level, which was treated in terms of money, and the theory of value which dealt with relative prices of particular commodities, determined by supply and demand. This dichotomy was broken down in the *General Theory*, which treats money prices of commodities and of investment goods as being governed by their costs of production in money terms.

As my education passed from Marshall to Keynes, I was never subjected to the now prevalent dominance of general equilibrium and the theory of the allocation of scarce means between alternative uses. When I was a student, Walrasian doctrines were in vogue at the London School of Economics and it was customary there to mock at the logical inconsistency in Marshall's method of treating markets for commodities 'one at a time', but the logical flaw in their own system was still more crippling. How can the market allocate resources between various uses when all endowments of means of production are already given in physical form? An equilibrium position could exist today only if all parties concerned had made investments in the past in the light of correct expectations about what today was going to be like in all relevant respects. The conception of a world of correct foresight, whether absolute or contingent, is a plaything for mathematicians without application. Moreover, the concept of equilibrium cannot be used to discuss the *effects* of *change*. It can only deal with *comparisons* of imagined *differences*. This point is elaborated in the paper on 'History versus Equilibrium' (12).

Pigou's marginal costs and my imperfect competition were no improvement, in this respect, on Walrasian tastes and endowments. The problem of the behaviour of prices in historic time remained to be solved.

Kalecki distinguished between two different areas of price formation. For many types of primary commodities a market is formed by dealers and there the operation of something like Marshallian supply and demand rules, though it by no means tends to establish equilibrium. For manufactures, the producer sets prices in advance and demand determines how much he sells. Here prices are formed by adding a gross margin to prime costs. Kalecki took over from imperfect competition the notion that the level of margins is governed by the *degree of monopoly* in the markets for various commodities. This has been much discussed, amended and submitted to empirical investigation.

We now have a more or less satisfactory theory of prices in a short-period situation, with given plant embodying technology, given money wage rates and given expectations. And we have an analysis of long-period normal prices corresponding to a uniform rate of profit on capital. But all important and interesting questions lie in the gap between the two.

I could never understand the claim that the free play of market forces establishes an optimum pattern of prices, but discussions with Polish and Soviet economists made me realize that there are very great merits in a system of prices for consumer goods in which flows of demand for particular commodities are in line with available supplies. Distribution according to queuing power is no more just and much more wasteful than distribution according to purchasing power, and it moreover invites corruption.

This question, among others, is raised in 'The philosophy of prices'. (14)

> In 1957 a group of visiting economists were kindly entertained at the Academy of Sciences in Moscow. When it was my turn to put a question, I asked how the labour theory of value applies in agriculture. Khrushchev's reforms had recently raised prices for the products of the collective farms. I picked up a lump of sugar, and asked: 'Has the labour value of this increased?' At first, the answer was evasive: 'A lump of sugar is not an agricultural commodity. It is highly processed.' 'Very well. Take the labour value of raw sugar on the farm.' 'That is a very difficult question.'
>
> I was asked to write a piece on this problem for *Voprosi Ekonomiki*, but when I sent in my 'Philosophy of prices' it was not accepted for publication.[11]

[11] *Introduction* to *CEP*, Vol. II.