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DETERMINANTS OF MACRODISTRIBUTION UNDER IMPERFECT COMPETITION

GEORGE R. FEIWEL

INTRODUCTION

The general discontent with the complacency of text-book economics found its main expression in Keynes' *General Theory*, and the theory of employment was, of course, far more important, both for analysis and for policy, than anything concerned with the theory of individual prices. Keynes himself was not much interested in price theory, but the two streams of thought were combined by Michal Kalecki.^{1a}

Kalecki's theory of distribution of the national product between wages and profits derives geneologically from the Ricardian tradition.¹ His theory is not merely a deviation or departure from the neo-classical marginal productivity theory (or what Frank Hahn called the neo-classical production function approach to the theory of distribution, employing a model of perfect competition in permanent equilibrium).² He simply never started from it. Kalecki proceeded from a different approach in building his analytical construct and marginal productivity did not enter into his argument.³ Kalecki did not simply relax the restrictive assumption of universal rule of perfect competition. The model of perfect competition is foreign to his method of attacking economic problems. He argued that only by dropping the untenable assumption of perfect competition and penetrating the real world of industrial and market structures (imperfect competition and oligopoly) can any plausible propositions about determinants of macrodistribution be advanced.⁴ Kalecki's theory of distribution "is important

¹ Kalecki originally formulated his argument in "The Determinants of Distribution of the National Income", *Econometrica*, April, 1938, pp. 97-112. An amended version appeared in *Essays in the Theory of Economic Fluctuations* (London: Allen and Unwin, 1939). Important alterations were made in the version which became *Essay I* in *Studies in Economic Dynamics* (London: Allen and Unwin, 1943). While the gist of the argument remained, substantial modifications were introduced in *Theory of Economic Dynamics* (London: Allen and Unwin, 1954, 1965). He then returned to the subject in "Trend and Business Cycles Reconsidered", *Economic Journal*, June, 1968, pp. 263-76 and "Class Struggle, and the Distribution of National Income", *Kyklos*, No. 1, 1971, pp. 1-9.

^{1a} Joan Robinson, *Collected Economic Papers II* (Oxford: Blackwell, 1960) p. 241.

² F. H. Hahn, *The Share of Wages in the National Income* (London: Weidenfeld and Nicolson, 1972), p. 2 and Chapter 1.

³ As Nicolas Kaldor remarked, referring to what he called the Ricardian-Marxian, the Keynesian and the Kaleckian theories of distribution, "I am not sure where 'marginal productivity' comes in, in all this." Kaldor, *Essays on Value and Distribution* (London: Gerald Duckworth, 1960), p. 236.

⁴ Once the assumption of perfect competition is abandoned, "the production function approach is useless and other means must be found to analyze the distribution of income." Hahn, *op. cit.*, p. 35.

both because his theory is important in its own right and because it focuses attention on an aspect of distribution theory which had hitherto been neglected because of the preoccupation of earlier writers with the production function and perfect competition.”⁵

While his argument is derived from the precepts of imperfect competition, Kalecki's contribution seems to lie in integrating micro and macro theory; in building a macrodistribution theory on firmer foundations of a more plausible theory of the firm; in bringing the strength of the forces of market imperfection, or degree of monopoly (a term he later regretted), in touch not only with the mode of behavior and pricing policy of the firm and process of price formation in an industry, but in incorporating forces of market imperfection in his model of the economy as a whole; and in demonstrating that the intensity of the degree of monopoly is pertinent to the determination of distributive shares and thus closely tied in with the theory of effective demand and Kalecki's conception about the typical state of underutilization of productive resources in a modern capitalist economy. “It was Michal Kalecki rather than I”, wrote Joan Robinson one of the inventors of the theory of imperfect competition in the Preface to the second edition of her classic *The Economics of Imperfect Competition* “who brought imperfect competition into touch with the theory of employment.” (p. viii). But clearly Kalecki was here influenced by the work of Joan Robinson and Abba P. Lerner.⁶

Originally Kalecki undertook his investigation of the distribution of national income prompted by a desire to provide an explanatory hypothesis for the relative constancy of distributive shares in the long run—enunciated as Bowley's Law.⁷ Subsequent scrutiny of economic statistics has shown that the Law was

⁵ *Ibid.*, p. 37. Ashok Mitra praised Kalecki's pathbreaking theory as “certainly the only significant attempt in contemporary economics to answer directly the problem of macroeconomic income distribution”, *The Share of Wages in National Income* (Rotterdam: Netherlands School of Economics, Ph.D. dissertation, 1954), p. 88. Cf. Kurt Rothchild, “Some Recent Contributions to a Macro-Economic Theory of Income Distribution”, *Scottish Journal of Political Economy*, No. 8, 1961, pp. 173–179. On importance of Kalecki's theory of distribution and its marked contrast to alternative approaches to theory of distribution see, Edward J. Neil, “Two Books on the Theory of Distribution”, *JEL*, June 1972, pp. 450–452. The significance of Kalecki's contribution in light of other approaches to distribution is stressed, *inter alia*, by Paul Davidson, *Theories of Aggregate Income Distribution*, New Brunswick, N.J., Rutgers University Press, 1960 and J.A. Kregel, *Rate of Profit, Distribution and Growth* (Chicago: Aldine, 1971), p. 101.

⁶ Joan Robinson, *The Economics of Imperfect Competition* (London Macmillan, 1933, 1969), p. viii; Abba P. Lerner, “The Concept of Monopoly and the Measurement of Monopoly Power”, *Review of Economic Studies*, June 1934, 157–175, also reprinted in his *Essays in Economic Analysis*, London Macmillan, 1953. Cf. Kalecki, *Essays in the Theory of Economic Fluctuations*, London: Allen and Unwin, 1939, p. 19 and G. L. S. Shackle, *The Years of High Theory* (Cambridge: Cambridge U. P. 1967), Chapters 3–6.

⁷ Keynes was vastly impressed by the “stability of the proportion of national dividend accruing to labor”, irrespective of the level of aggregate output and of the phase of business fluctuations, which he considered an “undisputed fact” of economic statistics. He spoke of it as a “bit of a miracle.” The only explanation of this phenomenon, Keynes wrote in 1939, was offered by Kalecki “in the brilliant article which has been published in *Econometrica*” (April, 1938). In

at variance with facts. The record seems to indicate slight signs of upward wage share movements without, however, sufficient basis to predict the probable course of labor's share in the future. If the constancy is really illusory, some economists argue that there is much ado about nothing. They then argue that since Bowley's Law is invalid, Kalecki's theory of income distribution flounders.⁸

Whatever may be said about great constants in economics,⁹ Kalecki's theory does not need to be propped up by the validity of Bowley's Law. Even if economic statistics would record approximate constancy of distributive shares in the long run, this would be a special case where the net effect of configuration of determinants produces such a result. But Kalecki did not claim overall stability of labor's share in modern capitalist economies. Indeed, if Bowley's Law were to be universally valid, Kalecki's theory could be criticized for not providing a hypothesis to explain why changes in one determinant (or combination of determinants) should always be nearly counterbalanced by changes in other (or others).

Essentially there are two theories in Kalecki: 1) The short run theory of distribution connected with the controversial notion of the "degree of monopoly", and 2) workers spend what they earn and capitalists earn what they spend. From the latter proposition is derived the conception that the rate of profit on capital is governed by the rate of investment and the propensity to save of profit earners. "Kaldor has called this the Keynesian theory of distribution, since it is adumbrated in the *Treatise*, but, like the *General Theory* itself, it has a separate source in Kalecki."¹⁰ The article that follows is concerned largely with point 2.

DISTRIBUTION AS THE "PRINCIPAL PROBLEM"

In Ricardo's view the "principal problem" in political economy was the division

that article Kalecki "employs a highly original technique of analysis into the distributional problem between the factors of production in conditions of imperfect competition, which may prove to be an important piece of pioneer work." "Relative Movements of Real Wages and Output", *Economic Journal*, March, 1939, p. 49.

⁸ Cf. Jan Pen, *Income Distribution* (New York: Praeger, 1971), passim. For a discussion of the controversy see Martin Bronfenbrenner, *Income Distribution Theory* (Chicago: Aldine, 1971), 407ff. For critical review of Pen and Bronfenbrenner in treatment of Kalecki's theory of distribution see Edward J. Neil, "Two Books on the Theory of Income Distribution", *Journal Economic Literature*, June 1972, pp. 451.

⁹ Interesting comments on the great constants, with particular reference to Bowley's Law may be found in Simon Kuznets, "Quantitative Aspects of Economic Growth of Nations", *Economic Development and Cultural Change*, April, 1959, p. 56; L. R. Klein and R. F. Hosobud, "Some Econometrics of Growth: Great Ratios in Economics", *Quarterly Journal of Economics*, May, 1961, pp. 173-98; and P. A. Samuelson, "The General Theory", in Robert Lekachman (ed.), *Keynes' General Theory: Reports of Three Decades* (London: Macmillan, 1964), p. 336. Charles H. Feinstein, *National Income, Expenditure and Output of the United Kingdom, 1885-1965*, Cambridge, Cambridge University Press, 1972, passim.

¹⁰ Joan Robinson, "Kalecki and Keynes" in *Problems of Economic Dynamics and Planning: Essays in Honour of Michal Kalecki* (Warsaw: PWN, 1964), p. 341.

of the national product between social classes.¹¹ In an often quoted passage from a letter of October 9, 1920 to his friend, Thomas Malthus, Ricardo stressed the difference in their individual approaches to this principal problem:

Political Economy you think is an enquiry into the nature and causes of wealth [income]. I think it should rather be called an enquiry into the laws which determine the division of the produce of industry amongst the classes who concur in its formation. No law can be laid down respecting quantity, but a tolerably correct one can be laid down respecting proportions. Every day I am more satisfied that the former enquiry is vain and delusive and the latter only true object of the science.¹²

Since Ricardo there have been sporadic revivals in investigating the causes and consequences of partition of national product between wages and profits.¹³

¹¹ As Piero Sraffa authoritatively comments, in the course of an investigation of the laws which govern the distributive shares, Ricardo was troubled by the fact that the size of national product appears to alter when the division changes. Ricardo conceived the need to measure the aggregate that was to be distributed. The "problem of value which interested Ricardo was how to find a measure of value which would be invariant to changes in the division of the product; for, if a rise or fall of wages by itself brought about a change in the magnitude of the social product, it would be hard to determine accurately the effect on profits." Sraffa, "Introduction", *The Works and Correspondence of David Ricardo, I, On the Principles of Political Economy and Taxation*, edited by Piero Sraffa, with the collaboration of M. H. Dobb (Cambridge: Cambridge University Press, 1970), p. xviii. On this intricate subject see Sraffa, *Production of Commodities by Means of Commodities* (Cambridge: Cambridge University Press, 1960). Cf. G. C. Harcourt, *Some Cambridge Controversies in the Theory of Capital* (Cambridge: Cambridge University Press, 1972), especially Appendix to Chapter 4 and references therein.

¹² *Works and Correspondence of David Ricardo, op. cit.* VII, p. 278. The opening paragraph of the preface to the *Principles* reads: "The produce of the earth—all that is derived from its surface by the united application of labour, machinery, and capital, is divided among three classes of the community; namely, the proprietor of the land, the owner of the stock or capital necessary for its cultivation, and the labourers by whose industry it is cultivated.

But in different stages of society, the proportions of the whole produce of the earth which will be allotted to each of these classes, under the names of rent, profit, and wages, will be essentially different to determine the laws which regulate this distribution is the principal problem in political Economy." *The Works and Correspondence of David Ricardo, op. cit.*, I, p. 5. Cf. J. M. Keynes, *Essays in Biography* (London: Rupert Hart-Davis, 1951), pp. 115–23 and *General Theory of Employment, Interest, and Money* (London: Macmillan, 1935), p. 4.

¹³ For criticism of Ricardo's approach see, *inter alia*, Frank H. Knight "The Ricardian Theory of Production and Distribution", *Canadian Journal of Economics*, 1935, Part I, February 1935, pp. 3–25; Part II, May 1935, 171–196; J. A. Schumpeter, *History of Economic Analysis* (New York: Oxford University Press, 1954), pp. 472–483 and M. Blaug, *Economic Theory in Retrospect* (Homewood: Irwin, 1968), pp. 92–144 and references therein. For an authoritative and brilliant analysis of Ricardo's economic system see Sraffa's Introduction *op. cit.* The work of one of Sraffa's foremost students Pierangelo Garegnani, *Il capitale nelle teorie della distribuzione* (Milan: Giuffrè, 1960), English edition in preparation, is highly recommended. Recently, Milton Friedman, *inter alia*, questioned the emphasis placed by some economists on the relative class distributive shares (functional distribution). Friedman sees the sole concern of the theory of distribution with factor price determination (microdistribution) and finds it inconceivable that anyone could be interested "in the particular figure of the percentage of aggregate income that goes to wages." David McCord Wright (ed.) *The Impact of the Union* (New York: Harcourt, Brace, 1951), p. 306.

In the neo-classical schools of thought the problem of distribution is treated just as one aspect of the theory of determination of relative prices.¹⁴ The neo-classical (marginal productivity) “theory of distribution is simply a special case of price theory. The income of any factor of production (and hence the amount of national product that it is able to command) depends on the price that is paid for the factor and the amount that is used. If we wish to build up a theory of distribution we thus need a theory of factor prices and quantities. Such a theory is a special case of the theory of price.”¹⁵ But clearly, the group of writers commonly compressed under the classification of “neoclassical school” is a heterogeneous one, marked by a variety of approaches. It can be brought under a common umbrella only at the expense of great oversimplification.¹⁶

Most major exponents of marginal productivity theory disregarded Ricardo’s “principal problem,”¹⁷ or at best it received only marginal attention. The Ricardian treatment of the macrodistribution problem was touched upon briefly by such neo-classical giants as Wicksell (who attempted to integrate the Austrian

¹⁴ In the neo-classical or marginalist theories, as contrasted with Ricardian, Marxian, and what Kaldor called Keynesian theories of distribution, “the problem of distribution is merely one aspect of the general pricing process; it has no particular theoretical significance apart from the importance of the question *per se*. Nor do these theories yield a ‘macro-economic model’ of the kind that exhibits the reaction-mechanism of the system through the choice of a strictly limited number of dependent and independent variables.” Nicolas Kaldor, *Essays on Value and Distribution* (London: Gerald Duckworth, 1960), p. 211.

¹⁵ R. G. Lipsey, *Introduction to Positive Economics* (London: Weidenfeld and Nicolson, 1966), p. 407; Cf. G. J. Stigler, *Production and Distribution Theories* (New York: Macmillan, 1946); and C. E. Ferguson, *The Neoclassical Theory of Production and Distribution* (Cambridge: Cambridge University Press, 1969).

¹⁶ For a brief account of some of the neo-classical theories of distribution see Kaldor, *op. cit.*, pp. 210–11 and 218–23; and Paul Davidson, *Theories of Aggregate Income Distribution* (New Brunswick: Rutgers University Press, 1959), pp. 36–43. Part IV of *The Distribution of National Income* edited by Jean Marchal and Bernard Ducros (London: Macmillan, 1968) contains interesting papers on theories of distribution. For a sympathetic exposition of the marginal productivity theory in the neo-classical version of income distribution, relying on the Cobb-Douglas macroeconomic function, see Martin Bronfenbrenner in Marchal and Ducros (eds.), *op. cit.*, pp. 476–501, and the instructive critical comments by Luigi Pasinetti in the same volume, pp. 501–50. An expanded treatment could be found in Bronfenbrenner, *Income Distribution* (Chicago: Aldine, 1971) where a strong preference is evinced for the neo-classical theory, but where some of the major objections to its are analyzed in depth. See also the controversial book by Ferguson, *op. cit.* and the review by Joan Robinson, *Economic Journal*, June, 1970, pp. 336–339. For an authoritative statement of rudiments of modern neo-classical theory of distribution and pricing of the productive factors see P. A. Samuelson, *Economics* (New York: McGraw Hill, 1970), Part IV. See also Charles E. Ferguson, “Two Books on the Theory of Income Distribution,” *JEL* (Journal of Economic Literature), June, 1972, pp. 437–442 and another review article already referred to under the same title of Bronfenbrenner’s and Pen’s books by Neil, *ibid.*, pp. 443–453.

¹⁷ Cf. E. K. Hunt and Jesse G. Schwartz, (eds.) *A Critique of Economic Theory* (Harmondsworth: Penguin Books Ltd., 1972), Parts I–III; and Joan Robinson, *Economic Philosophy* (Chicago: Aldine, 1962), Chapters 2–3.

capital theory with Walrasian general equilibrium theory) and Bohm-Bawerk,¹⁸ and has been the subject now and then of ingenious, if inconclusive, abstract formulations largely to the effect that anything may happen. This, according to a recent critic of Ricardo, “is not due to any conspiracy of silence or deliberate neglect. It has simply not been found to be a tractable analytical problem—a negative but a perfectly sound conclusion.”¹⁹

For Ricardo value and relative prices were rather a facet of the distribution problem. Neo-classical economics shifted the inquiry from the laws governing the determination of the relative class shares in functional income distribution to the determination of relative prices—a primary concentration on the question of how products and factors of production get priced by supply and demand mechanism in the market, where pricing takes place. Demand for factors of production is derived indirectly from the demand of the final user for the product (or in Walras’ interpretation, though it is true that factors “are bought and sold in their special markets, nevertheless the prices of these services are determined in the market for products.”²⁰). To investigate demand for factors of production (income distribution), the enquiry turns to the general pricing mechanism for commodities, to the technical laws governing production and to constraints imposed by nature, to the state of technology and factor endowments, to cost conditions (technical and economic efficiency), to the maximizing behavior of units of economic activity, and to markets. “We can understand the economic question of distribution primarily by focusing on the markets where factors of production get prices.”²¹ With fixed supplies of all means of production, whether a factor will be employed and in what quantities depends on its contribution to production; on the revenue gained from sales of marginal physical products obtained by employing additional unit of the factor. In the absence of increasing returns to scale, every factor will be hired until the marginal benefit from its hire exceeds (or is equal) to the cost that the firm must incur to secure the marginal unit of the factor. Any variable factor in supply will earn a reward which, if competitive conditions are satisfied, must correspond to its contribution to production as measured by marginal products. Under competition, the marginal physical product can be sold by the price taker at the ruling market price, without

¹⁸ Cf. Davidson, *op. cit.*, pp. 42ff; Kaldor, *op. cit.*, pp. 219–22; and Garegani, *op. cit.*, passim.

¹⁹ T. W. Hutchison, “Some Questions About Ricardo”, *Economica*, November 1952, p. 424; Cf. Robert M. Solow, “Distribution in the Long and Short Run” in Marchal and Ducros (eds.), *op. cit.*, pp. 449–75 and “A Skeptical Note on the Constancy of Relative Shares”, *American Economic Review*, September 1958, pp. 618–631.

²⁰ L. Walras, *Elements of Pure Economics* (London: Allen and Unwin, 1954), p. 422. Or, in the Austrian version, prices of goods of “higher order” hence factor prices are imputed from the prices of goods of “first order.”

²¹ Samuelson, *op. cit.*, p. 513. Cf. William Fellner and Bernard F. Haley, *Readings in the Theory of Income Distribution*, Homewood, Illinois, (Richard D. Irwin: 1951) and Harry G. Johnson, *The Theory of Income Distribution* (London: Gray-Mills Publishing, 1972).

reducing the price. With each economic agent maximizing his gain, the forces of unimpeded competition will bring about throughout the system equality of factor proportions and marginal products. Competition is to ensure that the entire aggregate product is distributed among the factors by each getting its remuneration equal to its exact marginal product.²² When the marginal products of a factor in alternative uses are all equal to their market remuneration rate, resources are considered employed efficiently, and any reshuffle *ceteris paribus* would lead to a less efficient allocation of resources.

Under simplifying assumptions, the argument is extended to the system as a whole to show how the marginal productivity theory distributes the aggregate product between productive inputs.²³ The neoclassical macrodistribution theory (the Cobb-Douglas type version of neo-classical macro-dynamics) has been based on two principal notions aggregated from the theory of pricing of factors of pro-

²² A leading representative of the marginal productivity school, J. B. Clark, emphasized the supreme importance of the distribution of wealth (income) among the different claimants participating in its creation. He asked whether there is a "natural law" according to which the income of society is distributed into wages, interest, and profit, and if so, what is that law? His answer was that where "natural laws have their way, the share of income that attaches to any production function is gauged by the actual product of it." His aim was to demonstrate that unhindered competition, in terms of the product which the agent produces, tends to "give to labor what labor creates", to capital what capital produces, and to entrepreneurs what the coordinating function contributes. To each agent of production "a distinguishable share in production, and to each a corresponding reward—such is the natural law of distribution." The welfare of labor and other social classes depends on whether they get much or little of the national product, but the relationship between classes chiefly depends on whether the amount accruing to labor, be it large or small, is what labor produces. If it could be shown that exploitation exists, i.e., that labor produces an identifiable ample amount of produce and gets only a part of it, conditions would be created for social unrest. The maldistribution would breed revolutionaries. Clark adds, with his usual ethical overtones, that laborers "would have the right to do so." J. B. Clark, *The Distribution of Wealth* (London: Macmillan, 1899), pp. 1–4. For instance, such critics of neoclassical theory as Joan Robinson argue that notion of 'productivity and capital' is to justify the income of its *owners*, i.e., neoclassical system was to justify *owning* of capital as a productive activity. See Joan Robinson, *Collected Economic Papers*, Vol. 3 (Oxford: Blackwell, 1965), pp. 36–47; for an opposing view see Robert Solow, *Capital Theory and the Rate of Return* (Chicago: McNally, 1965).

²³ For a critique of the approach see Luigi Pasinetti, "Comment on Neo-Classical Distribution Theory" in Marchal and Ducros (eds.) *op. cit.*, pp. 501–503. This is not the place to review the sharp controversy concerning the very foundations of neoclassical economics started by Sraffa's magnum opus. Noteworthy, the book is subtitled *Prelude to a Critique of Economic Theory* and the subtitle itself gave rise to heated outbursts of controversy and emotion. Piero Sraffa is not actively engaged in the debate that he started. What is exactly the meaning of the "Sraffa Revolution" and what is the real substance of the controversy does not need to retain us here. G. C. Harcourt who sympathizes with the Robinson-Kaldor-Pasinetti position surveyed the growing body of literature in *Some Cambridge Controversies in the Theory of Capital* (Cambridge: Cambridge University Press, 1972). Some of the contributions to the controversy, including several of those criticized were reprinted by Harcourt and N. F. Laing (eds.), *Capital and Growth* (Harmondsworth: Penguin, 1971). Joan Robinson's position is stated in *Economic Heresies* (London: Macmillan, 1971). Among many other contributions see especially the symposium on "Paradoxes in Capital Theory," in *Quarterly Journal of Economics*, November, 1966, pp. 508–83; Pasinetti, *A New Theoretical Approach to the Problem of Economic Growth* (Vatican: Scripta Varia, 1965); and *Collected Economic Papers of Paul A. Samuelson, III*, (Cambridge, Mass: MIT Press, 1972), pp. 187–229.

duction (microdistribution):²⁴ 1) Aggregate production function employing for convenient simplification on the linear and homogeneous macroeconomic production function of the Cobb-Douglas type; and 2) the elasticity of substitution or specific assumptions as to the values of elasticities of substitution (the elasticity of substitution between capital and labor always equals one, so that relative shares of wages and profit in national income are always constant. But inadequacy of the approach which regards relative distributive shares as being determined by the marginal rate of substitution between capital and labor “becomes evident as soon as it is realized that the marginal rate of substitution between Capital and Labour . . . can only be determined once the rate of profit and the rate of wages are already known.”²⁵ As Bronfenbrenner pointed out in his survey of the characteristics of and objections to the Cobb-Douglas type function, “the Cobb-Douglas verification of marginal-productivity theory, or what we should today call their evidence for neo-classical macro-distribution theory, has seemed, since 1928 ‘too good to be true.’ Objections have accordingly crowded thick and fast.”²⁶

While Bronfenbrenner’s account should be studied, it should be noted, en passant, that critics have emphasized, inter alia, that the marginal productivity theory was originally developed with reference to microeconomics.²⁷ In a most fundamental sense it is a micro-economic theory and was adopted and extended to grapple with the macroeconomic problems by the means of the analytical tool of production function. Thus that a specific form of production function was chosen for the analysis was obviously a consideration of fundamental importance. As Robert Solow admitted, presentation of marginal productivity theory “in macroeconomic terms is an act of empirical desperation.”²⁸

The “Sraffian” critics argue that it is precisely the extension of the microeconomic conceptual framework to the sphere of macroeconomics that makes the neo-classical theory vulnerable; they focus attention on the necessary conditions for the validity of neo-classical theory and what the fulfillment of these conditions entails. The dissenters argue that the neo-classical theory has been thoroughly exploded maintaining that failure to meet these conditions has disastrous consequences for the neo-classical theory.²⁹ A review of the discussion and controversy

²⁴ Bronfenbrenner in Marchal and Ducros (eds.), *op. cit.*, pp. 476–510, and *Income Distribution, op. cit.*, Chapter 16.

²⁵ Kaldor, *op. cit.*, pp. 222–23. For a brief discussion of the conditions necessary for the validity of neo-classical theory of income distribution see D. M. Nuti, “‘Vulgar Economy’ in the Theory of Income Distribution”, *De Economist*, vol. 118, 1970, pp. 363–69; and Joan Robinson, “Capital Theory Up To Date”, *Canadian Journal of Economics*, vol. 3, 1970, pp. 309–17.

²⁶ Bronfenbrenner in Marchal and Ducros (eds.), *op. cit.*, p. 483.

²⁷ Davidson, *op. cit.*, Chapter 4; and Bronfenbrenner, *Income Distribution, op. cit.*, Chapter 16.

²⁸ For his elaborate argument see Solow in Marchal and Ducros, (eds.), *op. cit.*, pp. 449–50.

²⁹ For a brief account of the above argument see Nuti in Hunt and Schwartz (eds.) *op. cit.*, pp. 222–23. The rationale of the critique is defended by Dobb, *loc. cit.*, pp. 205–21 and by Joan Robinson, pp. 233–44 and Garegani, pp. 245–91. Also the crucial objection is raised, if capital is non-measurable as a quantity (i.e., non-measurable theoretically) the notion is as inapplicable at the micro-level as at the macro-level.

about the foundations of neo-classical economics and marginal productivity is on the fringe of this discussion but we would be remiss not to mention it. Anyway most of the storm came after Kalecki's original contribution. The neo-classical theorists were not answering Kalecki, but ignored him.

However a recent statement by Frank Hahn, who is not unsympathetic to the neo-classical mode of analysis, may be noted in this context. He contended that the neo-classical theory of distribution

has nothing simple to offer in answer to the question why is the share of wages, or profits, what it is? The question is prompted by our interest in the distribution of income between social classes, and social class is not an explanatory variable of neo-classical theory. The latter is not formulated in terms of workers and capitalists but in terms of inputs and outputs. This lack of contact between the economic theory and sociological reality may well be the most damaging criticism of the neo-classical construction.³⁰

Dissatisfaction with the solution of the distribution problem by the marginal productivity theory, or rejection of the whole approach, gave rise to many vocal dissenting views that adopted a mode of analysis that rejects or radically departs from conventional theory, or builds theory on different premises.³¹ Bronfenbrenner, who underrates and tends to downgrade Kalecki's contribution, in this field, remarked that since the unveiling of the Cobb-Douglas production function the "initial analytical dissent"—against what Bronfenbrenner called the Good Old Macro-distribution Theory, alias the Conventional Wisdom—"is the monopoly theory of the distinguished Polish socialist economist Michal Kalecki. . . . This theory dominated British macro-distribution thinking for nearly a generation."³²

The "good old theory" was unsatisfactory in the 1930s, and the critics argue that the contributions of the neo-classical persuasion that were inoculated afterwards have been shown "not to hold water." At any rate neo-classical theory has nothing coherent to say when perfect competition is abandoned and/or when there are increasing returns. Kalecki did have something important to say. He

³⁰ Hahn, *op. cit.*, p. 2.

³¹ For an exposition and scrutiny of the dissenting economists see Bronfenbrenner, *Income Distribution, op. cit.*, pp. 407–44. Bronfenbrenner distinguishes 1) Kalecki's monopoly (monopolistic exploitation) theory; 2) Boulding's accounting identities; 3) Kaldor's saving-investment and magic constancy theories; and 4) sociological and institutional theories. See also W. Krelle, "The Laws of Income Distribution in the Short and Long Run" in Marchal and Ducros (eds.), *op. cit.*, pp. 413–48. In his review of Bronfenbrenner's book, Neil distinguished among the main rivals in approaches to the theory of distribution: 1) the neoclassical (aggregate production function), neoclassical (social rate of return), neo-Keynesian (Kaldor) and neo-Marxian (Kalecki), Kalecki's "approach stands out in marked contrast to all the rest," JEL, p. 450. On whether neoclassical distribution theory abandoned or generalized see Collected Scientific Papers of Samuelson, Vol. III, pp. 205–207.

³² Bronfenbrenner, *Income Distribution, op. cit.*, p. 408. According to Solow, the main contributions since Paul Douglas's pathbreaking macroeconomic function were: the work of Kalecki in original and reformulated versions and the subsequent writings of Kenneth Boulding, Kaldor, and Hahn. Solow on the Constancy, AER, Sept. 1958, p. 618.

offered a new starting point. In a sense it was the neo-classics who dissented from Kalecki.

THE DETERMINANTS OF MACRODISTRIBUTION

Micro-Foundations

Kalecki's argument is developed from micro to macro. One of the essential differences of Kalecki's macrodistribution theory is his novel approach to the micro-economic behavior of the firm and changed assumptions as to the shape of cost curves; the firm's price policy; relevant rates of output; and capacity underutilization. Again Kalecki's model represents more useful micro-economic account as well as its crucial integration with the theory of output and distribution as a whole.

Macroeconomic models require a microeconomic foundation. While it is not at all reprehensible to concentrate on building macro-economic models without paying much attention to the underlying micro-relations, the efforts of those who attempt to provide such an underpinning are particularly commendable. As Professor Fritz Machlup has pointed out:

"While it is, of course, possible to concentrate on macro-theory, taking the micro-relations as given without being concerned about their composition, the macro-theorist wanting to understand his subject more profoundly will proceed to study the micro-theoretical underpinning of his macro-models."³³

In building his macrodistribution theory, Kalecki proceeded from an unorthodox concept of the theory of the firm. He assumed surplus capacity as a typical phenomenon in manufacturing and perfect competition rather the exception in the economic system as a whole. He then focused attention on the firm's price *making* opportunities and constraints and the policy decisions that the entrepreneurs actually have to make about prices and other forms of non-price competition and factors hire under various types of imperfect markets.³⁴ Kalecki's special assumptions about micro-economic behavior are:

1. Supply is elastic. Firms with a given plant and equipment operate normally *below* the point of practical capacity.³⁵

³³ Fritz Machlup, *Essays on Economic Semantics* (Englewood Cliffs: Prentice Hall, 1963), p. 140.

³⁴ As contrasted with the price-taking quantity adjuster behavior of the entrepreneur. Under competitive conditions in order to sell a larger output the firm does not have to lower its price or to incur increased selling promotion costs. With imperfect competition, there is a degree of freedom and an element of judgement in price formation, sales promotion, and prevention of potential competitors. The entrepreneur can make a profit while operating at less than full capacity.

³⁵ For criticism of Kalecki's assumption of excess capacity (depression economics) see Hahn, *op. cit.*, pp. 40-41. For Kalecki's defense in his latest writings of his contention that underutilization of productive capacity is a *typical* condition of the modern capitalist economy (save for periods of war and war-type conditions) see, inter alia, "Trend and Business Cycles Reconsidered", *Economic Journal*, June, 1968, pp. 261-266; "Class Struggle and the Distribution of National Income", *Kyklos*, No. 1, 1971, pp. 2-8; and "Theories of Growth in Different Social

2. Contrary to the "customary assumption" in the theory of the firm that cost curves are (or tend to be) U-shaped, Kalecki's assumption, in Sraffa's footsteps,³⁶ underlying cost-price relations, is that the unit prime (variable) cost is independent of the degree of utilization of plant and equipment (ratio of actual to capacity output) and that the limit of practical capacity of the plant (beyond which cost curves marginal cost MC sharply slope upwards) is not "normally" reached. Since under utilization of capacity is a typical condition in the greater part of the manufacturing industries, short period prime costs per unit of output (costs that can be avoided if that output were not produced) are more or less stable over the "relevant range of output", up to the point (neighborhood) of practical capacity.³⁷ Kalecki qualified this statement by acknowledging that in fact unit prime costs tend to fall somewhat in many instances as output increases (short-period increasing returns), but he considered this complication of no major importance. The assumption of constancy of unit prime costs is considered only as a first approximation of reality. Kalecki based it on the following hypotheses, which reflected empirical observations: a) The short-run MC curve is usually almost horizontal over the relevant range of production (i.e., MC is approximately equal to average prime cost)³⁸ which the entrepreneur identifies with unit prime cost

Systems", *Scientia*, May-June, 1970, pp. 311-314. It is true that the prevalence of surplus capacity has much sharper relevance to prewar depression-ridden economy than to the postwar period. It cannot be overemphasized that Kalecki considered his explanation of determination of investment decisions only as a first attempt to advance somewhat towards a plausible solution in this complex field. But Kalecki is probably right in claiming that "even contemporary capitalism, where deep depressions are avoided as a result of Government intervention, is generally still fairly remote from such a state of full utilization of resources. This is best shown by the fact that prices of finished goods are fixed on cost basis rather than determined by demands." "Class Struggle, and the Distribution of National Income," *op. cit.*, p. 8. See also Kalecki, "A. Note on Long-Run Unemployment," *Review of Economic Studies*, No. 1, 1949-1950, pp 62-64 and on empirical evidence L. R. Klein, R. J. Preston, "Some New Results in the Measurement of Capacity Utilization," *AER*, (American Economic Review) March 1967, pp. 34-58.

³⁶ Piero Sraffa, "The Laws of Returns Under Competitive Conditions," *Economic Journal*, December, 1926, pp. 535-550.

³⁷ Kalecki's assumptions as to the elasticity of supply and approximate constancy of unit prime costs over the relevant range are incompatible with perfect competition. For, under perfect competition, the occurrence of surplus of the price over MC would drive the entrepreneur to expand production up to the full capacity output. Any firm staying in business would operate up to the point of full capacity and the price would be pushed up to the level which equilibrates demand and supply. The excess of price over MC will disappear under the action of forces of competition (the mark of the absence of monopolistic price formation is the equality of price to MC).

³⁸ The study of the National Bureau of Economic Research, *Cost Behavior and Price Policy* (New York: National Bureau of Economic Research, 1943) tentatively concluded that contrary to the customary assumptions in economic theory, that marginal costs describe a smooth U-shaped curve, marginal costs must necessarily rise from a certain point on (by cause of the law of variable proportions), empirical studies indicate a linear cost-output relationship over large ranges of output in the majority of manufacturing industries, at least over the broad interval of output which the producer considers relevant. However this seems to be the case largely under conditions of depression-ridden economy. On the rationale of the assumption of a U-shaped marginal cost curve and scrutiny of results of empirical research see Machlup, *Political Economy of Monopoly*, (Baltimore: Johns Hopkins Press, 1952), pp. 513-16 and passim, and Machlup, Presidential Address, *AER*, March, "Theories of the Firm: Marginalist, Behavioral, Managerial", *American Economic Review*, March 1967, pp. 1-33. The empirical evidence on the shape of the cost curve was scrutinized by John Johnston, *Statistical Cost Analysis* (New York: McGraw-Hill, 1960), and Bela Gold, "New Perspectives on Cost Theory and Empirical Findings", *Journal of Industrial Economics*, April 1966, pp. 161-194.

in the short period.³⁹ b) The main components of MC are (non-overhead) wages (w) and cost of materials (r). The change in cost resulting from producing an additional unit with a given and not fully used plant, is made up of the sum of short-period cost of overhead (o) and wages (notably salaries are included in overheads) and raw materials ($MC = w + r + o$). c) The cost of overhead manual labor and materials usually accounts for only a very small proportion of the total cost of these cost components, within normal variations in the scale of output and thus can be treated as negligible (near 0) in relation to the cost of labor and materials and, consequently, can be discarded. Insofar as this is the case, the principal components of MC are cost of materials and (non-overhead) labor, always within the relevant range and below the point of the practical capacity of the plant ($MC = w + r$).

Keynes opposed the assumption of approximate constancy of marginal costs.⁴⁰ He argued that the identification of marginal cost with the marginal wage (wages plus materials) cost is dangerous in that it ignores "marginal user cost." This is an alternative way of accounting for the fact that prices are greater than marginal costs. Keynes maintained that marginal user cost is likely to increase when output is expanding even long before point of full capacity is reached; that generally marginal total cost could be expected to increase more than marginal wage cost; and that the short run period cost curve would turn upwards accordingly. If the rate of production is very substantially below capacity, so that even the most efficient plant and labor are greatly underemployed, marginal real cost is likely to fall with the expansion of production within a certain range, or, at worst, to remain independent of the rate of production. But Keynes asserted "a point must surely come, *long before* plant and labour are fully employed, when less efficient plant and labour have to be brought into commission or the less efficient organization employed beyond the optimum degree of intensiveness."⁴¹ Even conceding that the course of short-run MC is downwards in its early reaches, Keynes maintained that Kahn's assumption that it "eventually turn upwards is, on general common sense grounds, surely beyond reasonable question, and that this happens moreover, on a part of the curve which is highly relevant for practical purposes. Certainly it would require more convincing evidence than yet exists to persuade me to give up this presumption."⁴²

3. In view of the uncertainties faced in the process of price formation,

³⁹ For a summary of the pertinent literature on price fixing behavior see the survey by Aubrey Silberston, "Price Behaviour of Firms", *Economic Journal*, September, 1970, pp. 511-582.

⁴⁰ Kalecki's assumptions of constancy of marginal cost were also criticized, inter alia, by P. T. Bauer, "A Note on Monopoly", *Economic Journal*, May, 1941, p. 201.

⁴¹ Keynes, "Relative Movements of Real Wages and Output", *Economic Journal*, March, 1939, p. 44 (emphasis supplied).

⁴² *Ibid.*, p. 45; Cf. J. M. Keynes, *General Theory of Employment, Interest and Money* (London: Macmillan, 1936), Appendix to Chapter 6.

Kalecki explicitly states: "it will not be assumed that the firm attempts to maximize its profits in any precise sort of manner."⁴³ However, he sharply differentiated his theory from the so-called full cost theory,⁴⁴ on the grounds that the degree of monopoly (reflected in the mark up on prime costs) *may*, but need not necessarily increase due to a rise in overheads in relation to prime costs; and that the price-setting process is influenced by the prices of rival firms—about which later.

At the expense of oversimplification of Kalecki's austere argument of the influence of the degree of monopoly upon price formation, each firm in an industry⁴⁵ fixes the price for its product by "marking up" its average unit prime cost in order to cover overheads and to achieve profits,⁴⁶ i.e., prices are formed by adding a proportionate mark-up on to the prime cost. The definitional framework can be shown schematically as follows:⁴⁷

⁴³ *Economic Dynamics*, p. 12. On the controversial assumption of profit maximization and its critique see, in particular, Silberston, *op. cit.*

⁴⁴ The full-cost pricing principle, at least in its original version, maintains that the price which a manufacturer will normally quote for a particular product will equal the estimated average prime cost per unit taken as the base; a percentage addition is made to cover overheads, and further addition is made for "customary profits". Cf. P. W. S. Andrews, *Manufacturing Business* (London: Macmillan, 1949), especially, Chapter 5. The essence of the problem is how the margin is determined, or how the "standard" volume of output and "something for profit" or the "customary profit" are arrived at. For Kalecki's criticism of the full-cost principle, which he contended has no precise theoretical meaning because the amount that is added for profit makes quite a lot of difference to the price and more still to the gross margin, see *Studies in Economic Dynamics*, p. 27. He remarked that the manager of a modern cotton spinning mill described once to him at great length the elaborate work of the cost-calculating department. To Kalecki's question whether the results were used in price-setting, the manager replied: "Oh, the prices are fixed by the market." *Ibid.*, p. 27. Interestingly, Keynes admitted in 1939 that in practice producers often follow full cost pricing policy and thus rising *MC* may not be reflected in rising prices. "Relative Movements of Real Wages and Output", *op. cit.*, pp 46-48. The full cost principle is analyzed at great length by Paulo Sylos-Labini, *Oligopoly and Technical Progress* (Cambridge, Mass: Harvard University Press, 1969), especially Part I.

⁴⁵ "By an 'industry' is meant here manufacturing and selling of a certain group of products which fulfills the following conditions: (i) The price fixing for a product by a firm is influenced mainly by the prices of other products in the group and the expected price reactions of firms manufacturing them, and only to a much lesser degree by prices and price reactions outside the group. (ii) The proportionate changes of the unit prime costs (unit costs of materials and wages) of the various products of an "industry" are not very divergent.

It is obvious that this definition is not clear cut. The broader the group the better condition (i) is fulfilled, and the worse in general condition (ii). The group must thus be formed so as to achieve a compromise between these two requirements and therefore the scope of the industry is within certain limits arbitrary." *Studies in Economic Dynamics*, p. 9. London: Allen and Unwin 1944.

⁴⁶ Cf. *Economic Dynamics*, p. 12.

⁴⁷ Needless to say, our schematic presentation is for illustrative purposes only and the relative "areas" do not purport to reflect likely relative shares in the "real world".

p — price per unit of output

Unit prime cost consists of:

m — raw materials cost per unit of output

w — wage costs per unit of output

o — overhead per unit of output

r — profit per unit of output

s — gross profit per unit of output

$$p = \underbrace{m+w}_{\text{unit prime costs (u)}} + \underbrace{o+r}_{\text{unit gross profits (s)}}$$

$$p = u + s$$

Price per unit of output	}	PROFITS	}	Average gross profits determined by the degree of monopoly
		OVERHEAD		
		DIRECT WAGES	}	Average prime (direct) costs
		RAW MATERIALS		

The mark-up over prime costs is measured as the excess of price per unit of output over unit prime costs to the unit prime costs

$$\frac{p-u}{u}$$

Clearly the mark up is equal to gross profit margin to cover overhead and achieve profits in relation to prime costs

$$\frac{\text{overhead plus profits } o+r}{\text{prime costs } u}$$

Alternatively, the mark-up may be conceived in the form of a coefficient k by which unit prime cost is multiplied in order to obtain price ($p = ku$), where k is generally larger than unity⁴⁸

$$k = 1 + \frac{p-u}{u}$$

or k is a coefficient which brings u into equality with p . The relationship between the mark-up on prime costs and k is simply

$$\frac{p-u}{u} = k - 1$$

⁴⁸ In accordance with the adopted tautological framework:

$$p = u + \frac{p-u}{u}u = u + s$$

$$p = ku = \left(1 + \frac{p-u}{u}\right)u$$

or, if $u = 100$ and $p = 150$

$$\frac{p-u}{u} = 0.5 \text{ and } k = 1.5$$

INTRODUCTION OF BEHAVIORAL RELATIONSHIPS

The crucial proposition is that the mark-up depends on the process of industrial concentration; on the vigor and weaknesses in competition; on market imperfections; on industrial setting; on the morphology of markets; on the degree of freedom and constraints in price setting; and on income distribution. Thus the mark up is governed by a firm's price fixing policy in relation (or as a reaction) to price formation in an industry. Its determination is a key to arriving at class shares of national income, in turn affecting spending propensities and the degree of utilization of resources. True, the margin is a "catch-all" term, grouping the numerous factors that affects its size.⁴⁹ It is *determined* by and *reflects* what Kalecki called semi-monopolistic and monopolistic influences resulting from imperfect competition or oligopoly (for short-degree of monopoly).⁵⁰ The widely

⁴⁹ It was suggested that Kalecki's theory of distribution, against its author's intention, was used to support the popular belief that all gross profits are suspect as the result of a monopolistic racket, cunning, and exploitation; and that it gives the wrong impression that the entire difference between price and average prime costs represents the share of national income going to businessmen and shareholders, notwithstanding that a substantial part of labor force constitutes non-manual labor which is not actually employed directly in the process of production and the margin includes normal capital cost allowances. P. W. S. Andrews, *Manufacturing Business* (London: Macmillan, 1949), p. 26. Cf. Roswell Whitman, "A Note on the Concept of 'Degree of Monopoly,'" *Economic Journal*, June, September, 1941, p. 265. Kalecki, "Mr. Whitman on the Concept of 'Degree of Monopoly'—Comment". *Economic Journal*, April, 1942, pp. 125-27. Jan Pen stressed more recently that very many factors influence distribution and that Kalecki oversimplified the problem. *Income Distribution* (London: The Penguin Press, 1971), pp. 177-79.

⁵⁰ In his original formulation, Kalecki employed Lerner's measure of the firm's degree of monopoly power. In subsequent reformulations, Kalecki abandoned this measure. He also relaxed the assumption of profit maximization. If equality of (rising) *MC* and price is taken as a criterion of perfect competition (mark of absence of monopoly), the inequality of *MC* and price is prima facie evidence of the presence and extent of monopolistic power to fix prices and to restrict output. Lerner suggested that the relative size of the variance $(p - MC)/p$ was an index of the degree of monopoly, often written as $1/n$. According to the fundamental theorem of imperfect competition, also known as the Amorose-Robinson Relation, $MR = P(1 - 1/n)$, Lerner's formula resembles the inverse of the formula of the elasticity of demand for the product of an enterprise. It differs from this formula only in that the term *MC* replaces the term marginal revenue. Since in equilibrium $MC = MR$, Lerner's measure become identical with the inverse of elasticity of demand.

Kaldor argued that on closer scrutiny, the elasticity of the demand curve facing an individual firm turns out to be no less a broken reed than its counterpart, the elasticity of substitution between factors. That, indeed, the very concept of a demand curve confronting an individual producer is illegitimate, or non-existent, as such a curve is indeterminate since it depends on mutual interaction of rivals; the action of one seller depends on the anticipated reaction of others which are mutually interdependent. Thus, under the prevailing conditions of oligopoly, the "theory of games" becomes relevant and prices charged by different sellers cannot be assumed to be independent of each other; i.e., demand curves for individual sellers must not

Continued on next page

held view that Kalecki's theory is "tautological" is a *non sequitur*.⁵¹ True, Kalecki starts, as we have seen, with a definitional equation (identity) and manipulates the equation so as to provide a theoretical explanation which, of course, can be proven right or wrong, plausible or logically inconsistent, or can be refused by economic statistics—but this is a different matter. But once atten-

be drawn on the assumption that shift parameters, including rivals' prices, are held invarient, to the extent that oligopoly is dominant in industry and probably the analysis could be applied to other sectors, say, services. Kaldor cites a lack of evidence to support the assertion that firms operating in imperfect markets fix their prices by reference to the elasticity of their demand function, or that short-period pricing is the result of any deliberate attempt to maximize profits by reference to an independent revenue and cost function. As Professor Kaldor informs me, this and similar arguments, first expressed in personal interchanges at the London School of Economics, were responsible for a shift in Kalecki's position.

Kalecki's degree of monopoly is still often linked with the elasticity of demand curve which probably adds to the confusion about Kalecki's analytical construct. True, the original formulation appears to be clearer than the successive presentations, especially that in *Economic Dynamics*. This probably is the reason why even the scant accounts of Kalecki's theory draw on his original presentation as slightly amended in *Economic Fluctuations*. For instance, the latest account by Bronfenbrenner is based on Rothschild, *op. cit.*, which in turn is based on Kalecki's 1938 article. Students in Cambridge tend to read *Economic Fluctuations* rather than *Economic Dynamics*. As it often happens in economics, and with Kalecki in particular, successive reformulations are closer to reality, but not without expense for the elegance of the presentation. Kalecki always displayed a strong preference to sacrifice the second for the first. While the very essence of Kalecki's argument remained fundamentally unchanged over the years, substantial modifications were introduced. His latest formulations cannot be disregarded and it is advisable to refer to *Economic Dynamics*, or even subsequent reformulations as we have attempted to do.

Lerner's measure is clearly presented in previously noted "The Concept of Monopoly and the Measurement of Monopoly Power", *Review of Economic Studies*, June, 1934. Kalecki was also criticized for misusing Lerner's measure by P. T. Bauer, "A Note on Monopoly", *Economica*, May, 1941, pp. 197-200; Roswell H. Whitman, "A Note on the Concept of 'Degree of Monopoly'", *Economic Journal*, June-September, 1941, p. 262; and F. Machlup, *Political Economy of Monopoly* (Baltimore: Johns Hopkins University Press, 1952), p. 517. Kaldor's argument is stated in his *Essays*, pp. 53-95 and 224-26. Comprehensive references to the literature on oligopoly can be found in Sylos-Labini, *op. cit.*, pp. 224-32. See also Kenneth Boulding and George Stigler (eds.), *Readings in Price Theory*, Homewood, Illinois, Richard D. Irwin, 1952.

⁵¹ Kaldor, *op. cit.*, pp. 224-25 where Kaldor refers to Kalecki's original formulation. However, in personal conversation, he contended that the same applied to Kalecki's subsequent formulations. While I share Professor Kaldor's feeling about the complexity of the problem and that there are formidable problems of measurement and conceptual refinement, this is a different matter from tautology. Kalecki's theory was also criticized for being tautological, inter alia, by Machlup, *Political Economy of Monopoly* (Baltimore: Johns Hopkins Press, 1952), pp. 517-18 and more recently by Pen, *op. cit.*, pp. 175ff. Bronfenbrenner also tends to support this position. *Income Distribution*, pp. 410-11. For opposite views see Joan Robinson, *Collected Economic Papers II* (Oxford, Basil Blackwell, 1960), pp. 97-98; and the valuable contributions by K. W. Rothschild, "Some Recent Contributions to a Macro-economic Theory of Income Distribution," *Scottish Journal of Political Economy*, October, 1961; and Peter A. Riach, "Kalecki's 'Degree of Monopoly' Reconsidered", *Australian Economic Papers*, June, 1971.

tion shifts to the major factors underlying changes in the degree of monopoly, a behavioral relationship is introduced.

Here exits tautology—so to speak—and we enter the field of theorizing where the aim is to explain observable reality. The hypothesis could be verified or disproved by facts. It is common knowledge that hypotheses about reality in general, and in the social sciences in particular, greatly oversimplify and distort reality. The explanatory value of hypotheses depends on the question raised and propositions advanced that help to illuminate facts and processes. Kalecki offered a hypothesis as to the major causes of change in the degree of monopoly, or rather a framework for the study of chief determinants affecting distribution of national income. True, it might be difficult to quantify the many influences that play on the degree of monopoly. One could argue that Kalecki did not provide quite a satisfactory measure. The problem is not only how much is still to be done and how far Kalecki advanced towards a solution, but whether he took a significant step in the right direction. He never claimed that he solved all the problems of this thorny issue. His several reformulations are *prima facie* evidence that he considered it merely as a first serious attempt to tackle the formidable problem. In this context, it has been suggested to extend Kalecki's theory by incorporating various entry barrier classifications and measures of industrial concentration.⁵²

It is noteworthy that the mark-up is not defined *as* the degree of monopoly, but depends on and is a symptom of the degree of monopoly. It reflects the changes in the state of market imperfection and oligopoly. It is not an *ex post* quantity, but is governed by pricing policy.⁵³ Thirty years after the publication of his original article, reflecting on the reception his distribution theory received, Kalecki stressed that:

As long as the resources of the economy are far from being fully utilized—and this I believe to be the typical condition of a developed capitalist economy—the mark ups are determined by semimonopolistic and monopolistic factors which I nicknamed the “degree of monopoly”. It is this term, I think, that facilitated the dismissal of the *Theory of Economic Dynamics*⁵⁴ I showed, I believe, that in any case no problem of *tautology* is involved.⁵⁵

With surplus capacity and constant prime costs over the relevant range of

⁵² Riach argued that in modern corporation one would expect long-run planning and profit objectives to be in terms of profit on capital invested, rather than “gross margin.” He suggested that a plausible interpretation of the degree of monopoly involves, in the long run, substituting the rate of return on capital invested for the ratio of gross profit to sales revenue “as dependent variable thus creating the need to incorporate technical progress as an additional determinant of distribution.” *Op. cit.*, p. 59.

⁵³ In Kalecki's pricing formula the coefficients “characterizing the price fixing policy of the firm reflect what may be called the degree of monopoly of the firm's position.” *Economic Dynamics*, pp. 12–13.

⁵⁴ Kalecki refers to *Economic Dynamics*, pp. 11–19.

⁵⁵ “Trends and Business Cycles,” *op. cit.*, p. 265.

output, the firm fixes the price of the product taking into consideration mainly its prime costs per unit of output and the prices of other sellers in an industry, producing similar products (and only to a much lesser degree is price-fixing influenced by prices and expected reactions outside the product group or an industry). Prices are fixed by allowing for the "mobility of customers" (market imperfections) and the influence of their own prices and expected reactions on those of their rivals (oligopoly). The firm must be satisfied that the price fixed is more advantageous than a higher or lower one. As Kalecki put it, the price fixing firm "must make sure that the price does not become too high in relation to prices of other firms, for this would drastically reduce sales, and that the price does not become too low in relation to its average prime cost, for this would drastically reduce the profit margin."⁵⁶ This is now recognized as being the right approach, though, *admittedly* Kalecki is oversimplified.

When each firm in an industry sets the price of its products in relation to unit prime cost (u), and the price-maker exercises care that the ratio of the price set by the firm (p) to the weighted average price of all rival firms constituting the industry (\bar{p}) (weighted by the respective outputs of various firms constituting an industry including the firm in question) does not become excessively high. In reconsidering prices, when wage rates of material costs increase, p can be increased proportionately only if \bar{p} rises proportionately as well. However, if p increases less than u , p will also be raised less than u . In other words, in setting p , the firm must satisfy the condition that the markup is not out of step with competition, as it depends on the relation of the ensuing p to \bar{p} .

The mark-up over the prime costs ($p - u/u$) is an increasing function of \bar{p}/p : the lower p in relation to \bar{p} , the higher the mark-up that will be fixed; or alternatively,

$$\frac{p-u}{u} = f(\bar{p}/p)$$

where f is the increasing function.⁵⁷ Rearranging the terms, Kalecki obtains:

$$p = u [1 + f(\bar{p}/p)]$$

⁵⁶ *Economic Dynamics*, p. 12.

⁵⁷ This is a more general formulation than that presented in the pricing formula ($p = mu + n\bar{p}$, where both m and n are positive coefficients and n is postulated to be smaller than unity) describing semi-monopolistic price formation in *Economic Dynamics*, pp. 12-16, where the coefficients m and n , reflecting the degree of monopoly of the firm's position, specify linear relationship.

It may be noted in this context that, in generalizing his results for price formation in an industry where the coefficients m and n differ from firm to firm, Kalecki arrives at pricing equation for general use: $p = \bar{m}u + \bar{n}\bar{p}$, where the barred terms designate weighted averages. By a simple manipulation of this equation and rearrangement of terms, Kalecki obtains the formula:

$$\bar{p} = \frac{\bar{m}}{1-\bar{n}} \frac{1}{u} \quad \text{and} \quad \frac{\bar{p}}{\bar{u}} = \frac{\bar{m}}{1-\bar{n}}$$

or the ratio of average price in industry to average unit prime cost is measured by the set of

Only in a special case could f be the same for various firms in an industry. As a general case f will be different from firm to firm in an industry.⁵⁸ The function will reflect the influences on price-fixing policy of the firm (mark-up) resulting from imperfect competition or oligopoly.⁵⁹ The stronger the degree of monopoly (semi-monopolistic factors), the higher is $f(\bar{p}/p)$ corresponding to a given relation \bar{p}/p . Prices fixed by individual firms will be in general different for various firms in an industry because of dispersion of prime costs (given similarity between cost conditions of various firms in an industry because of dispersion of prime costs (given similarity between cost conditions of various firms their unit prime costs differ),⁶⁰ and because of differences in f . Save for basic raw materials produced frequently in conditions approaching perfect competition (largely demand determined prices), for most of the products prices are generally non-uniform,⁶¹ Kalecki notes that the argument applies strictly to imperfect competition only or to differentiated (imperfect) oligopoly, but not to homogeneous (non-differentiated) oligopoly or monopoly.⁶²

To continue with Kalecki's argument, the mark-ups ($(p - u)/u = k - 1$) are determined by the degree of monopoly; the ratio of average price to average prime cost is equal to the ratio of aggregate proceeds of an industry to aggregate prime costs of an industry, and thus the relationship between unit price and unit prime costs is determined by the degree of monopoly. Subject to the assumption of elastic supply, the "ratio of average price to average prime cost is equal to the ratio of aggregate proceeds of industry to aggregate prime costs of industry" and "the ratio of proceeds to prime costs is stable, increases or diminishes depending on what happens to the degree of monopoly."⁶³

Starting from his variant of the model of the firm and after discussing the influence of monopoly on price formation in an industry, the next step in the development of the argument is to link the ratio of proceeds to prime costs in an

parameters (weighted averages of the coefficients m and n for individual firms) reflecting the degree of monopoly. Again $\bar{m}/(1 - \bar{n})$ is not simply defined as the degree of monopoly, but the magnitudes of coefficients \bar{m} and \bar{n} reflect the strength and weaknesses of forces of competition. A rise in the degree of monopoly is reflected in the increase of $\bar{m}/(1 - \bar{n})$ and conversely. In other words, \bar{p} is proportionate to \bar{u} if the degree of monopoly is given, and if the degree of monopoly increases, the right hand side of the equation must be altered accordingly to reflect the change, and \bar{p} rises in relation to \bar{u} . Kalecki clearly shows the changes in the degree of monopoly in a diagrammatic presentation. *Economic Dynamics*, pp. 13-14.

⁵⁸ *Ibid.*, p. 16.

⁵⁹ *Ibid.*, pp. 11-16.

⁶⁰ For a treatment of price formation in an industry with differences in unit prime costs see *Economic Dynamics*, pp. 14-16.

⁶¹ Completely identical products with uniform transport costs, but different delivery dates may have different prices.

⁶² Kalecki, "Class Struggle . . .", *op. cit.*, pp. 4-5. Cf. Sylos-Labini, *op. cit.*, pp. 12-14 and Part I, Chapter I.

⁶³ *Economic Dynamics*, p. 16, emphasis supplied.

industry with the relative share of wages in the contribution to output by that industry. Then the following step in Kalecki's derivation is to proceed from a single industry to the manufacturing industry as a whole (account for industrial composition of value added) and to generalize the theorizing to embrace the determinants of relative share of wages in the economy as a whole (private sector only). Thus, we can proceed through successive stages of aggregation to a general macrodistribution theorem. Briefly, revenue from the sales of an industry's output (or average price times average quantity) (T)⁶⁴ is composed of prime costs (U)⁶⁵ which in turn are made up of labor prime costs (aggregate wage bill of an industry) (W) and basic raw material costs (aggregate raw material bill of an industry) (M), and gross profits (S) consisting of overheads (O) and profit (R). Hence: $T = W + M + O + R$ Gross profit (overhead plus profits) equals the excess of an industry's sales revenue over its prime costs:

$$O + R = T - (W + M)$$

Since,
$$T = K(W + M) = \frac{p-u}{u}(W + M) = (W + M)\left(1 + \frac{p-u}{u}\right)$$

By substitution,
$$O + R = K(W + M) - (W + M) = (K - 1)(W + M)$$

Or, alternatively,
$$O + R = (W + M)\left(1 + \frac{p-u}{u}\right) - (W + M) = \frac{p-u}{u}(W + M)$$

With the sales value of an industry's output equal to $K(W + M)$, or alternatively $(W + M)[(1 + (p - u)/u)]$, the share of prime costs paid out to wages and to raw materials producers, the excess of sales revenue over prime costs is equal to $(K - 1)(W + M)$; or the amount of gross profit is equal to the product of the amount of prime costs times the mark-up coefficient (noteworthy the mark-up is on both wage and material elements of prime costs). To obtain the relative share of wages in net output (and to avoid multiple counting in determining the national product), the gross value of output is reduced, as usual, to the net by deducting the cost of raw material inputs. Thus, the value added by an industry, measured by the sales value of that industry's output, else the cost of material procured ($T - M$),⁶⁶ is equal to the sum of wages and gross profits ($T - M = W + O + R$). Thus the value added—the denominator in the ratio of relative share of wages in net output can be represented as:

$$Y_1 = W + O + R = W + (K - 1)(W + M)$$

Clearly, the relative share of wages in the value added of that industry is:

$$\frac{W}{Y_1} = \frac{W}{W + (K - 1)(W + M)}$$

⁶⁴ Appropriately weighted and aggregated for an industry.

⁶⁵ Capital letters refer to the magnitudes of an industry as a whole.

⁶⁶ For simplification, subscripts are avoided, but Y is identified in order to avoid confusion with the value added of the system as a whole.

By dividing the numerator and denominator by W , we get:⁶⁷

$$\frac{W}{Y_1} = \frac{1}{1 + (K-1)(1 + M/W)}$$

The above formula shows that the relative share of wages (other than overheads) in the net output (or value added) is determined by the degree of monopoly and by the ratio of the raw materials bill to the wage bill. The degree of monopoly (reflected in the mark-up determines the distribution of the net output between wages on the one hand and profits, plus overheads on the other, if, in addition, the relation of the cost of materials to the wage bill is given. The share of net output accruing to (non-overhead) labor is a diminishing function of the degree of intensity of monopoly and the proportion of the prime costs spent on materials. Labor's share will decrease with an increase in the degree of monopoly or an increase in the share of prime costs going to primary producers. If, however, a change in the degree of monopoly tends to compress the ratio of proceeds to prime costs (mark-up on prime costs), it tends to increase *ceteris paribus*, the relative share of net output going to wage earners. And, *ceteris paribus*, the distributive share of wages in product is determined by how strong or weak the degree of monopoly is. Monopoly tends to distort the relative shares. But apart from the forces that play on the mark-up, grouped together as the degree of monopoly,⁶⁸ the relative share of wages in the product depends on the share of material costs in prime costs (on the ratio of material costs to wage costs). The wage share falls when the cost of materials increases in relation to that of the cost of labor. Conversely, only in the absence of other variations, is the degree of monopoly *the* central determinant of the distribution of product of industry between wages and profit.⁶⁹ As this is not usually the case, attention focuses on the principal determinants. Obviously, propositions about reality are always great oversimplifications. Further research and theorizing usually expands the number of determinants. Kalecki's theory is a great oversimplification of reality, but its strength

⁶⁷ Or, alternatively, since $(K - 1) = (p - u)/u$

$$\frac{W}{Y_1} = \frac{W}{1 + [(p-u)/u](1 + M/W)}$$

⁶⁸ In *Studies on Economic Dynamics* Kalecki speaks of changes in the state of imperfect competition and oligopoly, in the ratio of prime selling costs, and in bottlenecks of available manufacturing capacities, p. 17.

⁶⁹ Andrews noted that as a consequence of Kalecki's theory of distribution there "has been the spread of an unjustified belief that the extent of actual monopoly in our economic system holds constant the share of the national income going to labour. Mr. Kalecki is not responsible for this—the misconceptions that have arisen come from sources where the terminology and the argument have been loosely repeated, but the statistical figures have been given clearly enough. Often it is simply asserted, especially in verbal discussion, that this constancy of the share-out of the national income is due to the degree of monopoly." Andrews, *op. cit.*, p. 26.

lies in clearing the path to identification of the crucial forces.⁷⁰ Clearly the degree of monopoly is not the only determinant of class shares in national income. Despite its classification as a monopoly theory of distribution, Kalecki's distribution theory is broader than this term implies.

To proceed with the determinants of global distribution, a similar equation to that derived for a single industry can be written for the manufacturing sector as a whole. But here the mark-up and the ratio of the material bill to the wage bill are also conditioned by the composition of industrial structure. Substituting K' and M'/W' for K and M/W respectively, the equation of the relative share of wages in value added for the manufacturing industry as a whole (W') can be written as:

$$W' = \frac{1}{1 + (K' - 1)(M'/W' + 1)}$$

where the ratios K' and M'/W' are adjusted in such a way as to eliminate the effect of changes in the importance (weights) of particular industries in manufacturing taken as a whole. W' so ascertained diverges from the actual relative share of wages by an amount attributed to changes in the industrial composition of value added. The parameter K' is determined by the degree of monopoly in the manufacturing industries. (Prices of materials are determined by the prices of primary products, wage costs at the lower stages of production and by the degree of monopoly at those stages). Roughly, the ratio of unit material costs of unit wage costs is determined by the ratio of prices of primary products to unit wage costs and by the degree of monopoly in manufacturing industries.⁷¹

A digression on Kalecki's distinction between cost-determined and demand-determined prices is in order. As contrasted with short-run changes in prices of finished products which are mainly cost-determined, short-run variations in the prices of primary products are considered largely to reflect variations in demand (demand-determined). According to Kalecki, the distinction between these two types of price formations arises out of divergent conditions of supply in short periods. The output of finished goods is elastic due to a prevalence of surplus capacity. A rise in demand is met chiefly by an increase in the rate of production and the price changes that do occur are caused chiefly by changes in costs of production. While generally, prices of finished goods are mainly determined by changes in cost of production, they are affected, of course, by any demand-determined variations in the prices of raw materials, but it is through the medium of costs that the impulses are transmitted. The supply of raw materials is usually

⁷⁰ Paul Sweezy praised Kalecki's contribution: "One of the first big steps toward a real theory of monopoly capitalism was taken by Kalecki when he introduced what he called 'the degree of monopoly' into an analysis of the capitalist accumulation process." "On the Theory of Monopoly Capitalism", *Monthly Review*, April, 1972, p. 13; see also Paul A. Baran and Paul M. Sweezy, *Monopoly Capital* (New York: Monthly Review Press, 1966), especially p. 56.

⁷¹ *Economic Dynamics*, p. 29.

inelastic in the short run. Increasing the supply of agricultural products takes considerable time. In a more restricted sense, the same applies to mining. In supply-constrained activities, in the short run, a rise in demand causes disinvestment in inventories and a consequent rise in price (the initial price movement is frequently accompanied by secondary speculative demand, making it even more difficult in the short period for output to catch up with increased demand). The demand-determined prices of raw materials (inclusive of primary foodstuffs) tend to decline considerably during slumps and to rise considerably during upswings in economic activity. Even with invariable wage rates, the prices of raw materials tend to fall in a depression owing to a fall in "real" demand. Thus the ratio of prices of raw materials to unit wage costs is a function of the rate of aggregate economic activity and effective demand for raw materials in relation to their inelastic supply in the short run.

Thus the relative share of wages in the value added of manufacturing is determined by the degree of monopoly, the ratio of raw material prices to unit wage costs and the industrial composition of value added. Extending the analysis to sectors such as construction, transportation, and services, where the pattern of price formation roughly resembles that in manufacturing, the theorem is derived that for this group as a whole, the "relative share of wages in the aggregate value added will decrease with an increase in the degree of monopoly or an increase in the ratio of prices of primary products to unit wage costs."⁷² This is subject to the provision that the outcome will be affected by changes in the sectoral composition of value added of the composite. Then, this theorem is generalized to comprise the whole economic system (excluding the public sector).⁷³

Kalecki concludes that, broadly speaking, the principal determinants of the relative share of wages in gross domestically produced national income—national income gross of depreciation, exclusive of incomes of government employees and derived from foreign investments—(in the private sector only) are:

- (i) the degree of monopoly
- (ii) the ratio of prices of raw materials to unit wage costs
- (iii) the structural composition of the value of the gross income of the private sector.⁷⁴

There is no a priori reason why changes in (i) and (ii), *ceteris paribus*, should exactly counteract each other, or that on balance variations in (i) always nearly counterbalance variations in (ii), in combination with or independently of varia-

⁷² *Economic Dynamics*, p. 30.

⁷³ In agriculture and extractive industries the outputs are raw materials and the relative share of wages in the value added depends primarily on the ratio of prices of raw materials produced to their unit wage costs. In contrast, in communications, public utilities, trade, real estate, and finance, the relative share of wages in value added is rather small.

⁷⁴ Alterations in industrial (sectoral) composition depend not merely on variations in the volume of industrial components, but also on the relative movements of the respective prices. *Economic Dynamics*, p. 30.

tions in (iii).

Various forms of the determinants of the wage share equation may be applied, and were originally employed so by Kalecki, to try to explain the alleged magic stability of the proportion of the national product accruing to labor. But this was only one application of the equation to explain, what appeared then on the basis of generalization of economic facts, the approximate stability of functional shares in advanced capitalist economies. If the facts fit, the magic constant may be explained as a balance between two offsetting tendencies, or that one kind of variation always just serves exactly to compensate for another. But, actually a hypothesis is needed to show why this is so, what are the forces operating behind the scene. Kalecki attempted to provide an explanatory hypothesis of the determinants of changes in macrodistribution in the long and short run. But he did not specify the quantitative dimensions and did not argue that (i) and (ii) must necessarily offset each other. Contrariwise, he emphasized that no a priori statement is possible as to the long-run trend of the relative share of wages in income, but it is possible to be more specific about variations in the relative share in the course of a business cycle.

DETERMINANTS OF LONG- AND SHORT-RUN CHANGES IN DISTRIBUTION

As we have seen, apart from the industrial and sectoral composition of value added, the relative share of labor in national income depends on the mark-ups and the relation between unit wage costs and prices of basic materials. The mark-ups are determined by the play of factors nicknamed the degree of monopoly. This shifts attention on the causes of variations in the degree of monopoly in the first place, and indeed, on the more general question of the forces behind the long- and short-run variation in the distributive shares.

Among the chief causal factors of changes in the degree of monopoly in a modern capitalist economy, the first and foremost force is attributed to the process of industrial concentration leading to the formation of corporate giants accounting for a substantial share of an industry's output.⁷⁵ In such an industrial structure the seller knows that the price he fixes influences appreciably price formation in the industry and that the other sellers will be pushed in the same direction because their price formation depends on the average price. Therefore, the price-maker can set his price at a level higher than that which would prevail in the absence of protection stemming from a highly concentrated industry, im-

⁷⁵ Cf. Joe S. Bain, *International Differences in Industrial Structures* (New Haven: Yale University Press, 1965); J. K. Galbraith, *New Industrial State* (Boston: Houghton Mifflin, 1967); L. J. Zimmerman, *The Propensity to Monopolize* (Amsterdam: North Holland Publishing, 1951); and H. Michael Mann, "Sellers Concentration, Barriers to Entry and Rates of Return in Thirty Industries, 1950-1960", *Review of Economics and Statistics*, August 1966, pp. 296-307.

perfection of competition, and forms of oligopoly.⁷⁶ A similar game is played by other big firms. If unchecked and not offset by other factors,⁷⁷ the degree of monopoly tends to increase substantially as time goes by.⁷⁸ Many branches of industry become oligopolistic and oligopolies may be transformed into cartels. Also the progressive concentration in industry is likely to enhance the degree of oligopoly.

The propensity of the degree of monopoly to rise is reinforced by tacit agreement which may take many forms: *inter alia*, price leadership when the price fixing is exercised by one large firm ("The Leader"), while other sellers "loyally" follow behavior the Leader and adapt themselves accordingly.⁷⁹ Tacit agreements may result in more or less formal cartel arrangements. In such a case full scale monopolization is restrained merely by fear of new entrants and checked by fear of public discontent.⁸⁰ In practice industries do exist which are dominated by one firm or a cartel, but in a modern capitalist economy manufacturing industry operates predominantly under conditions of imperfect competition and oligopoly (with a more typical situation where sellers prefer survival and offensive neutrality to profit maximization and outward cut-throat tactics for supremacy. Even "pure monopolies" must reckon with potential outsiders. This makes their pattern of behavior broadly similar to that of oligopolies.⁸¹

Kalecki singles out the development of marketing and high pressure salesmanship as the second crucial factor underlying the rise in the degree of monopoly. Under competition there is no need to spend on persuading the buyer to buy more as the producer is a price taker and quantity adjuster. He need not reduce price or incur sales promotion expenses in order to sell more. At a certain stage of development of the capitalist economy, the expansion of advertisement may in many cases create an "artificial" market imperfection. Price competition is

⁷⁶ Cf. Joan Robinson, "Imperfect Competition Revisited", *Collected Economic Papers II*, pp. 222-38; and Sylos-Labini, *op. cit.*, pp. 1-15 especially on the process of industrial concentration and market forms (imperfect competition, differentiated and concentrated oligopoly); and Bain, *Barriers to New Competition* (Cambridge, Mass.: Harvard University Press, 1956).

⁷⁷ See Kalecki, *Economic Fluctuations*, p. 32 and *Economic Dynamics*, pp. 17 and 34. Professor Sidney Weintraub noted that Kalecki insisted first on a systematic long-run rise in monopoly power and only in the revised account (in *Economic Dynamics*) did he qualify his conclusion somewhat. Weintraub, *An Approach to the Theory of Distribution* (Philadelphia: Chilton, 1958), pp. 82-83. The offsetting factors were already stressed in *Economic Fluctuations* but their importance was accentuated in *Economic Dynamics*.

⁷⁸ Until recently the evidence does not seem to support this statement. C. Baran and Sweezy, *op. cit.*; and Morris A. Adelman, "The Measurement of Industrial Concentration", *Review of Economics and Statistics*, November, 1951, pp. 269-296.

⁷⁹ Cf. Kaldor, *op. cit.*, Part III; and Joan Robinson *Collected Economic Papers II*, pp. 229-34; and A. D. H. Kaplan, J. B. Dirlam, and R. F. Lanzilotti, *Pricing in Big Business* (Washington: Bookings, 1958). On price behavior in theory and practice see Silberston, *op. cit.*

⁸⁰ *Economic Dynamics*, p. 17.

⁸¹ *Studies in Economic Dynamics*, pp. 20-22.

replaced by non-price competition, contrived product differentiation, proliferation of services, etc., to shape and perhaps distort consumer demand (to bamboozle the consumer).⁸² Sales promotion campaigns create or maintain consumer demand, protect the seller, and lead to high prices and profits to the detriment of the public, and account for the bulk of wastefulness of market imperfections.

In addition to the above determinants of change in the degree of monopoly, Kalecki considers two other factors: 1) The impact of changes in the level of overheads in relation to prime costs; and 2) the influence of the trade union's power.

The degree of monopoly may rise as a consequence of a rise of overheads in relation to prime costs. A substantial rise in the level of overheads in relation to prime costs entails constriction of profits, unless the ratio of proceeds to prime costs is allowed to rise. This may give rise to tacit defensive and protective agreements among the rival sellers to guard profits, thus giving rise to a propensity to increase prices in relation to unit prime costs.⁸³

The potency of the drive to avoid a "squeeze of profits" manifests itself especially during periods of pepped economic activity. However, the production of profits is by no means an automatic force, but merely a tendency which may even not materialize. According to Kalecki, the basic tendency operates as follows: Aggregate proceeds tend to decline in the same proportion as prime costs if the degree of monopoly remains unaltered. Simultaneously, aggregate overheads, by their very nature (largely independent of the rate of production within a certain range), fall in depression less than prime costs. This situation provides the setting for tacit conspiracy not to lower prices in the same proportion as prime costs. While in some instances the process of cut-throat competition may develop in the slump, there appears to be a basic tendency for the degree of monopoly to rise in a slump, a tendency which seems to be reversed in prosperous times—more about which later. Admittedly, all this merely shows a channel through which overheads may influence price formation, but their influence upon prices is much less definite than that of prime costs. "The degree of monopoly *may*, but need not necessarily increase as a result of a rise in overheads in relation to prime costs."⁸⁴

The cost-price relations previously discussed were based on short period considerations (a firm with a given capital equipment). The *f* function (or the

⁸² Cf. Kenneth Galbraith, *American Capitalism* (Boston: Houghton Mifflin, 1952), pp. 101–102. For forms of non-price competition see Joan Robinson, *Collected Economic Papers II*, pp. 228–29; and Silberston, *op. cit.*; and Baran and Sweezy, *op. cit.*, Chapter 5; Edwin Mansfield (ed.), *Monopoly Power and Economic Performance* (New York: W. W. Norton, 1964) and Keith Cowling (Editor), *Market Structure and Corporate Behaviour* (London: Gray-Mills Publishing, 1972), and Robin Marris, *The Economics of 'Managerial' Capitalism* (London: Macmillan, 1964).

⁸³ Cf. Kalecki, "Mr. Whitman on the Concept of Monopoly—A Comment", *op. cit.*, p. 123.

⁸⁴ *Economic Dynamics*, p. 18.

coefficients m and n in the pricing formula),⁸⁵ reflecting the degree of monopoly, may, but by no means have to, change in the long run. In the absence of such alterations the long period variations in prices will reflect only the long period change in prime costs per unit of output. Technological advance will tend to lower the unit prime cost. However, Kalecki maintained, the *relations* between prices and unit prime costs can be affected by changes in capital goods and production techniques *only to the extent to which they affect the degree of monopoly*. This is subject to the assumption of elastic supply, stable unit prime costs until the limit of practical capacity,⁸⁶ and investment decisions.

The existence of powerful trade unions restrains the mark-ups, i.e., it causes the values $f(\bar{p}/p)$ to be lower than they otherwise would be. High mark-ups strengthen the bargaining position of trade unions in the pressures for higher wages as they know that the firms can afford to meet them (i.e., at the existing price levels, additional wage costs are not incompatible with what is considered reasonable profits). If wage increases are granted, but the function f is not changed, prices will also be raised; which in turn would provoke a new round of pressures for wage increases. High mark-ups cannot be maintained without "wage (cost) push" pressures and the process tends to go on with price levels steadily rising. This process adversely affects the competitive position of a firm or an industry (bargaining usually proceeds by industries) and induces adoption of a policy of lower (more reasonable or tolerable) profit margins. Thus the degree of monopoly is restrained to a certain extent by the pressures of organized labor. The power of trade unions manifests itself in the scale of wage increases demanded, com-

⁸⁵ The only parameters which enter the short-run price equation are the coefficient m and n , reflecting the degree of monopoly. These may, but need not necessarily, change in the long run. Changes in prices will reflect only the long-run changes in unit prime costs. *Economic Dynamics*, p. 19.

⁸⁶ *Economic Dynamics*, p. 19. Kalecki emphasized that his approach to this subject is in contradiction with the widely held contention that in consequence of rising capital intensity of production there is necessarily a continuous rise in the ratio of price to unit prime cost. This argument is based on the quite arbitrary assumption that the sum of overheads and profits (gross profits) varies in the long run roughly proportionately with the value of capital. Rising capital intensity of production is translated into a higher ratio of gross profits to proceeds and, thus, into an increase in the ratio of prices to unit prime costs. Kalecki argued that not only the underlying assumption and the above argument are untenable, but he cited evidence (pertaining to capital intensity and the ratio of proceeds to prime costs in the American manufacturing industry for the period 1899–1944) indicating that despite the fact that fixed capital rose continuously in relation to output (the value of production fell in relation to the value of fixed capital—both in relation to its "book value" and in relation to valuation in current prices), the ratio of proceeds to prime costs remained roughly invariant over the period considered. This is so since gross profits indicated long-run decline in relation to the value of capital. Consequently, the ratio of prices to unit prime costs remained roughly stable, despite steady and considerable rise in capital intensity. *Economic Dynamics*, pp. 19–20, and for Kalecki's criticism of the underlying assumptions and objections raised against the above argument see *Studies in Economic Dynamics*, pp. 28–30.

pared to those obtained.⁸⁷ If a rise in bargaining power evinced by a spectacular wage rise there is a downward shift in the function $f(\bar{p}/p)$ and the mark-ups are depressed. The change in the degree of monopoly produces a redistribution of national income from profits to wages. But this redistribution effect is much smaller than it could be if prices were stable. The rise in wages is to a great extent shifted to consumers. "Normal" wage increases will usually leave the function f unaffected while otherwise mark-ups may tend to get higher because of the rise in labor productivity. Nevertheless, the daily bargaining process is a significant co-determinant of the division of national product between wages and profits.

The argument here presented draws on Kalecki's last article on the modern capitalist economy, published posthumously. The conclusions may seem somewhat startling to certain economists.⁸⁸ We are told that trade unions indeed may affect the distribution of income, but in a much more sophisticated fashion than expounded by the traditional doctrine. A rise (decline) in trade union bargaining power leads to a rise (fall) in employment. Redistribution of income in favor of labor's share is feasible only if surplus capacity exists. But if this is not the case, wages in relation to prices of wages good cannot be increased, for prices are determined by demand. But surplus capacity is by and large a typical phenomenon of a developed capitalist economy:

⁸⁷ One of the objectives of the trade unions is to secure a larger share of national income for labor. Pressure for higher wage rates is one of the devices to achieve this end. Opinions sharply differ on the following pregnant questions: Did labor gain in the long run by manipulating wages above the level that would have been achieved without the trade unions' powerful pressures? To what extent can the trade unions affect the overall long run rate? Findings on the effects of unionization on raising real wages are inconclusive. Not surprisingly, some researchers claim that unions succeeded in raising real wages above the level at which they otherwise would have been, while others blame organized labor for artificially escalating wages and tampering with the resource allocation mechanism of the market. For contrasting viewpoints see, *inter alia*, Albert Rees, *Wage Inflation* (New York: National Industrial Conference Board, 1957); Lyod G. Reynolds and Cynthia H. Taft, *The Evolution of Wage Structure* (New Haven: Yale University Press, 1956); and Harold G. Lewis, *Unionism and Relative Wages in the United States* (Chicago: University of Chicago Press, 1963). Bronfenbrenner recently argued that on the whole studies on the impact of American trade unions on labor's share of national income concluded that there does not seem to be any significant correlation between increases in union strength and changes in labor's relative share. *Income Distribution*, p. 87.

⁸⁸ "For Marxists, the problem of the relation of the price level to movements in money-wage rates has been a stumbling block. It was easy enough to accept the argument that cutting wages in a slump will only lower prices and increase unemployment. But then how could Marx be right in asserting that raising money wages will not raise prices? On the other hand to preach to the trade unions that raising wage rates does their members no good is clearly a deception. . . . Kalecki works out the consequences of continuously raising money-wage rates, and shows that while the main effect is to raise prices, yet it may also to some extent raise real wages. It is of no use to advocate 'incomes policy' as a remedy for inflation, without taking account of its political content." Joan Robinson, "Michal Kalecki", *Cambridge Review*, October 22, 1971, p. 2.

... a wage rise showing an increase in the trade union power leads—contrary to the percepts of classical economics—to an increase in employment. And conversely, a fall in wages showing a weakening in their bargaining power leads to a decline in employment. The weakness of trade unions in a depression manifested in permitting wage cuts contributes to deepening of unemployment rather than to relieving it.

... trade-union bargaining may affect the distribution of national income but in a more sophisticated fashion than expressed by the crude doctrine: when wages are raised, profits fall *pro tanto*. This doctrine proves to be entirely wrong. Such shifts that occur are: (a) connected with widespread imperfect competition and oligopoly in capitalist system; and (b) they are contained in fairly narrow limits. However, the day-by-day bargaining process is an important co-determinant of the distribution of national income.

It should be noted that it is possible to devise other forms of class struggle than wage bargaining, which would affect the distribution of national income in a more direct way. For instance, actions may be undertaken for keeping down the cost of living. The latter might be achieved by price controls which, however, may prove difficult to administer. But there exists an alternative: subsidizing of prices of wage goods which is financed by direct taxation of profits... The same is true of the effect of price controls. And, if such measures cannot be carried out by political parties associated with trade unions in the parliament, the power of the trade unions may be used to mobilize supporting strike movements. The classical day-by-day bargaining for wages is not the only way of influencing the distribution of national income to the advantage of the workers.

... redistribution of income from profits to wages ... is feasible only if excess capacity is in existence. Otherwise it is impossible to increase wages in relation to price of wage goods because prices are determined by demand, and functions to become defunct...

Price control of wage goods will lead under the circumstances to scarcities of goods and haphazard distribution. Also subsidizing prices of wage goods (financed by direct taxation of profits) can reduce prices only in the longer run by stimulating investment in wage good industries.

It should be noted, however, that even contemporary capitalism, where deep depressions are avoided as a result of Government intervention, is in general still fairly remote from such a state of full utilisation of resources. This is best shown by the fact that prices of finished goods are fixed on a cost basis rather than determined by demand.⁸⁹

Generalizing on the probable effect of the degree of monopoly on long-run variations in the distribution of national income between “workers and capitalists”, Kalecki concluded that in *Economic Dynamics* the degree of monopoly displays a “general tendency to increase in the long run and thus to depress the relative share of wages in income, although ... this tendency is much stronger in some periods than others.”⁹⁰

It is venturesome to generalize about probable relations of raw materials prices to wage costs which are a function of long-term shifts in the demand-supply situation of raw materials (or to generalize about trends in exploitation of raw material producers and benefits accruing to the working class in advanced

⁸⁹ Kalecki, “Class Struggle and Distribution of National Income,” p. 9.

⁹⁰ *Economic Dynamics*, p. 30.

capitalist countries partly derived from exploitation of labor in materials-producing (mostly underdeveloped countries), as well as to predict changes in industrial and sectoral composition of production. Kalecki seems to prefer to remain uncommitted and to leave the question of likely movements of industrial structure and terms of trade open. It would be interesting to extend his theory by incorporating some hypothesis as to the probable trends in these areas.⁹¹ In final analysis, "no *a priori* statement is therefore possible as to the long-run trend of the relative share of wages in income."⁹²

Kalecki was much less reluctant to commit himself more specifically about variations in the relative share of wages in income during the course of a business cycle. Contary to Harrod's argument that the degree of monopoly increases in the boom and falls in the slump, Kalecki maintained that the degree of monopoly changes in the opposite direction to variations in output. Kalecki found, as stated above, that "there is a tendency for the degree of monopoly to rise in the slump, a tendency which is reversed in the boom."⁹³

According to Harrod's Law of Diminishing Elasticity of Demand, the degree of monopoly increases as activity increases because the ordinary consumer finds it increasingly less compelling to search for bargains and to scrutinize rival shops as his budget constraint is progressively relaxed. The same force of habit, which in times of prosperity tends to make the consumer an imperfect buyer, renders him more cautious and demanding when he is compelled to economize. A fall in consumer's income in the slump forces him to search for bargains; to be more careful and price conscious in his purchases; and to resist the curtailment of his satisfaction, thus increasing the elasticity of demand. In turn, the shopkeeper, being under the consumer's pressures, also searches for bargains and tries to reduce his costs. Therefore, once the slump has set in, demand becomes much more elastic, imperfection of competition is reduced and the degree of monopoly tends to diminish, whereas the opposite tendencies are manifested in the course of the upswing.⁹⁴

⁹¹ Cf. Rothschild, *op. cit.*, pp. 178-79; Rothschild (ed.), *Power in Economics* (Harmondsworth: Penguin, 1971); and Werner Sishel (ed.), *Industrial Organization and Public Policy* (Boston: Houghton Mifflin, 1967).

⁹² *Economic Dynamics*, p. 31.

⁹³ *Economic Dynamics*, p. 18. A. C. Pigou also observed that in practice monopolists frequently decide to exercise their monopolistic power *more fully* during periods of depression than in periods of prosperity. Pigou, *Employment and Equilibrium* (London: Macmillan, 1929), pp. 189-90. Cf. Keynes, "Relative Movements of Real Wages and Output", *Economic Journal*, March, 1939, pp. 38ff. R. R. Neild, *Pricing and Employment in the Trade Cycle* (Cambridge: Cambridge University Press, 1963); Sho-Chieh Tsiang, *The Variations of Real Wages and Profit Margins in Relation to the Trade Cycle* (London: Macmillan, 1947); and profit *Economic Journal*, September 1972, pp. 853-882.

⁹⁴ R. F. Harrod, *The Trade Cycle* (London: Oxford University Press, 1936), pp. 86-97, and Harrod, "Imperfect Competition and the Trade Cycle", *Review of Economic Studies*, No. 2, 1936, pp. 84-88. For a contrary view see Galbraith, "Monopoly Power and Price Rigidities", *Quarterly Journal of Economics*, 1936, p. 463. See also R. F. Harrod, "Imperfect Competition, Aggregate Demand and Inflation," *Economic Journal*, March 1972 (Supplement), pp. 392-401.

Harrod was criticized on the grounds that powerful factors, which he disregarded, influence the degree of monopoly in the opposite direction. The degree of monopoly is affected not only by "the imperfection of the market for a commodity, but also [by] the number of separate units of control engaged in selling it, and, since the fear of loss is more powerful than the hope of gain, the tendency towards restrictive combinations is stronger in a slump than in a boom. This is a factor tending to amplify the swings of activity, and works against the operation of Mr. Harrod's Law."⁹⁵ Formation of cartels to save profits, price-fixing agreements, and other devices to reduce competition and raise barriers to entry are fostered by the low level of activity. This increases the degree of monopoly and likely more than counteracts the impact of Harrod's Law. On the contrary, when activity revives, the cartels are dissolved because of improving prospects of independent action and the emergence of outsiders.⁹⁶ But even more important, despite the decline of raw materials prices and wages, some prices of finished products display a relative rigidity in the slump. This stickiness of prices is due partly to the fact that firms avoid price cuts because they fear the reaction of their competitors.⁹⁷

The possible influence of changes in structural composition of output cannot be usually abstracted from as they tend to reduce the relative share of wages during a slump. In fact, these changes are ruled by a greater reduction in production of investment goods than in the manufacturing industry as a whole. The relative share of wages in the income of investment goods sector is higher than in the rest of the manufacturing industry. Consequently, the relative decline of output of investment goods during a slump tends to reduce the relative distributive share of labor in the net output of manufacturing as a whole. During a depression there is a tendency for a relative shift in the distribution of national income away from "wage-paying" industries, and within the "wage-paying" industries from activities

⁹⁵ Joan Robinson, "Review of R. F. Harrod, *Trade Cycle*", *Economic Journal*, December, 1936, pp. 590-3, reprinted in *Collected Economic Papers I* (Oxford: Blackwell, 1951), pp. 59-61.

⁹⁶ As noted, during a depression, there is a tendency to raise mark-ups in an attempt to increase revenue to cover overheads. Given a considerable fall in unit prime costs, if the percentage mark-up were unchanged, there would be marked decline of the volume of gross profit because output is reduced sharply as well. The potential deterioration of financial position prompts the seller to increase his mark-up in anticipation of other sellers acting likewise. "If they do not he is lost, but so he would be if he reduced his prices proportionately to average prime costs. If such is the prevailing attitude, a 'tacit agreement' is established and [the mark-up] is higher than it otherwise would be." During recovery, the mark-ups will fall because the rise in unit prime costs and volume of output removes the very necessity of tacit conspiracy; because of the fear of new entrants; and even more to prevent reemergence of plants closed down during the depression. Kalecki, *Studies in Economic Dynamics*, p. 18.

⁹⁷ Kalecki, *Economic Fluctuations*, pp. 35-36 and *Economic Dynamics*, p. 25. Cf. Kaldor, *Essays on Value and Distribution*, passim.

with a higher relative share to those with a lower wage share in output.⁹⁸ The data examined by Kalecki indicated no pronounced changes in the relative share of wages in national income during the course of the business cycle. The net effect of changes in (1) the degree of monopoly; (2) prices of raw materials in relation to wages; and (3) industrial composition of the relative share of wages in income—"of which the first and the third are negative and the second positive—appears to small. Thus, the relative share of wages, whether in the value added of an industrial group or in the gross income of the private sector as a whole, does not seem to show marked cyclical fluctuations."⁹⁹

While the relative share of wages in national income tends to be fairly invariant in the course of the cycle, this is not the case with the relative share of wages plus salaries combined. As salaries are largely independent of volume of output (within a certain range), they are likely to fall less during the slump and rise less during the boom than wages taken alone. The fluctuation of "real" wage and salary bill are likely to be less pronounced during the course of the cycle than the real gross income. Admittedly, the application of the theory of income distribution to the analysis of long-term variations in distributive share of wages and salaries combined would encounter difficulties in view of the growing share of salaries in the sum of overheads and profits due to increasing concentration in industry.¹⁰⁰

When Kalecki's theory is applied to the conditions of price formation during the course of a business cycle, the problem of its applicability during the boom arises. However, we should note that Kalecki started the argument in the slump. Instead of developing it, the modern representatives of the neo-classical school went off on another, which seems to be improper track.

In fact, during expansion, plants may be operated at the limit of practical capacity and a further rise in demand may entail price increases above the level indicated by the price fixing considerations (the pricing formula) noted previously.

⁹⁸ For instance, statistics of changes in relative share of wages in the U.S. and Great Britain during the Great Depression seem to show that the adverse effect on labor's share of the rise of the degree of monopoly and changes in industrial composition were roughly counterbalanced by the fall of prices of raw materials in relation to unit wage costs. Data for recovery from 1933-37 indicate increase in relative wage share, reflecting the relatively great reduction in the degree of monopoly resulting from the increased power of trade unions. Of course, this is not meant to suggest that the results pertaining to the Great Depression (recovery) periods can be generalized as having universal validity.

⁹⁹ *Economic Dynamics*, p. 31.

¹⁰⁰ *Ibid.*, pp. 36-38. One of the problems in ascertaining the distributive shares is the fact that in the postwar period an increasing part of profits is paid out in the form of salary supplements or salary-type payments. And statistically, surely, 'salaries' is a very heterogeneous, even quite dubious, category, with its upper boundary not easily distinguishable from profit. Cf. Charles H. Feinstein, "Changes in the Distribution of the National Income in the United Kingdom Since 1860," in Marchal and Ducros (eds.), *The Distribution of the National Income* (London: Macmillan, 1968), pp. 115-139.

Thus, when demand increases in relation to available capacity, the price charged by the firm may be increased so as to bring into equilibrium rising demand with limited supply in spite of the fact that unit prime costs and the degree of monopoly remain unchanged. However, the price-maker may prefer to maintain the level of the price (mark-up) for some time (fearing adverse effects of rising prices) while the firm allows order to pile up and delays delivery (lengthen delivery dates).¹⁰¹ Kalecki maintained, as we know, that availability of surplus capacity is a typical phenomenon. In view of the possibility of expanding capacity whenever bottlenecks occur,¹⁰² this situation is not likely to be a normal occurrence even close to the top of the boom. The situation seems to be "restricted to war or post-war developments, where shortages of raw materials or equipment limit severely the supply in relation to demand. It is this type of increase in prices which is the basic reason for the inflationary developments prevailing in such periods."¹⁰³

SUMMING-UP

Kalecki offered a theory of distribution that was independent of the neo-classical tradition. The state, merit, and failures of neoclassical theory are subject to controversy and debate questioning the very premises of the theory. This is not the place to add to the controversy or to try to resolve it. Whatever else may be said on the subject, in a certain sense, it is sufficient to note that neoclassical theory has nothing coherent to say when perfect competition is abandoned and/or when there are increasing returns. Kalecki did have something important to say and came forward with a promising alternative theory of distribution, even if it lacked a comprehensively formulated theory of market behavior and was in some respects deficient in dealing with the formidable problem of investment decision.

Here we may recall and paraphrase Pigou's observation about Keynes' *General Theory*: Kalecki has devised a new way of tackling a seldom climbed mountain. Although we may regret that this did not lead him to the very top, we must credit him for the pointers and advances he made towards reaching the destination.

The content of Kalecki's distribution theory is in some respects negative: He tried to show that income distribution has nothing to do with marginal productivity and with the production function. It depends entirely on the forces of

¹⁰¹ Nearly all empirical research indicates that domestic prices of manufactured products are rather sticky and tend to remain unchanged for months or even years at a time. An important exception is when a raw material, which fluctuates widely in price, constitutes a high share of costs. Under such circumstances, the prices of final products are likely to change when costs of raw materials change appreciably. The above case excepted, short-run price stability is the general case and short-run demand variations do not normally lead to price changes. Silberston, *op. cit.*; Cf. Kalecki, *Studies in Economic Dynamics*, pp. 19-20.

¹⁰² See *Studies in Economic Dynamics*, pp. 15-21 and *Economic Dynamics*, p. 20; and Hahn, *op. cit.*, p. 41.

¹⁰³ *Economic Dynamics*, p. 20.

the market, i.e., on market power, or monopoly. In practice, this takes many shapes. Therefore, Kalecki can only give a general framework and terminology for this complex of factors of power over the market.

To build a realistic theory of distribution, Kalecki offered an explanation how prices in fact are formed by mark-up on prime costs. This use of mark-up to cover overheads is very important then, though it involves monopoly power, it is not synonymous with it.

In a personal communication to this author, Professor Abba P. Lerner observed that among those contributions of Kalecki to economics that he has found particularly useful was "the use of the concept of the 'degree of monopoly' in explaining the distribution of income between capital and labor. . . . His use of the degree of monopoly I once rather played down as being too tautological, but recently I have come to find it extremely useful."*

The influence of Kalecki's theory of distribution in recent years has been growing, propagated particularly through the writings of Professors Joan Robinson and Nicolas Kaldor:

Kalecki transformed the highly academic theory of imperfect competition into a realistic account of the formation of prices by a mark-up on prime cost. The contention that profits per unit of output depend upon the 'degree of monopoly' is reconciled with the view that profits per annum depend upon capitalists' outlay by the argument that a higher level of prices, with a given volume of money demand, must lead to a lower level of utilization of plant and lower employment, so that the *share* of profit is increased only by reducing the amount of wages paid out. This has always been well-known to any businessman, but it was not formerly brought into the canon of economic theory.**

The theory of profits which in economic literature is called Keynesian really derived from Kalecki. In the next paper we will turn to a more detailed examination of Kalecki's profit theory and the place of the factors determining the distribution of national income in this theory.

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* Letter from Abba P. Lerner, dated February 18, 1971.

** Joan Robinson, "Michal Kalecki", p. 2.