MICHAL KALECKI: A DYNAMIC ANALYSIS
OF CAPITALISM

THESIS

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By

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Michal Kalecki was not a mere precursor of Keynes, but a contemporary whose analysis provides insights into the nature of capitalism. His contribution to the understanding of the capitalist economy is central to this four chapter thesis. Chapter one develops a biographical sketch of Kalecki. Chapter two examines the components of his General Theory. Chapter three considers the differences between Kalecki and Keynes. Kalecki's contributions to the Keynesian revolution are presented along with the hopelessness he foresaw in incorporating any basic reforms into a capitalist economy. The final chapter looks to the present fruit of Kalecki's dynamic analysis—Post-Keynesian economics. The Post-Keynesian synthesis reflects the Kaleckian framework and the Keynesian optimism out of which policy may arise to affect the structural problems plaguing capitalism today.
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CHAPTER I

INTRODUCTION

This thesis purports to demonstrate that instead of being a precursor of Keynes, Kalecki was a major contributor to the understanding of the dynamic nature of capitalism. Such an understanding is important, given the present context of capitalist economies and the developing world. If economists hope to cure stagflation, they must reexamine reality and the sources of the persistent problems that appear as dilemmas. Such a reexamination exists among heterodox economists who are participating in a developing post-Keynesian synthesis. This "synthesis," or developing paradigm, exploits knowledge without consideration for any ideological bias. In this spirit, then, it is able to draw upon the earlier contributions of Kalecki, contributions that were ignored by the United States neoclassical synthesis of the Keynesian revolution. Recently, several authors have examined this synthesis and criticized the analysis proffered by the neoclassical construct. Their analysis proceeds upon a basis not unlike that offered by Kalecki.

My awareness and interest in Kalecki began with an article in an issue of Challenge magazine that promised an explanation of the "recent emergence of a new framework of
economic analysis" (13, p. 2). An article by Alfred S. Eichner in this issue introduced me to Kalecki by arguing that it was difficult to determine who "exerted the greater influence on the development of post-Keynesian theory, Keynes himself, or Kalecki" (2, p. 6). Eichner extolled Kalecki's concern for the distributional effects of investment and savings as essential elements for the economic analysis of capitalism. As this concern was absent from the conventional "received knowledge" proffered to this student, Kalecki became a source of enlightenment.

Following this introduction and a brief biographical sketch, this thesis will examine Kalecki's contribution in the following way. Chapter two will examine the components of Kalecki's General Theory. The primary source for this adventure is Michal Kalecki. George Feiwel offers an in-depth examination of this in his book, The Intellectual Capital of Michal Kalecki (3), but Kalecki is easier to comprehend if discovered through his own work. Chapter three examines the differences between Kalecki and Keynes. Kalecki's critical contributions to the Keynesian revolution are presented along with the hopelessness he foresaw in any capitalist reform. This hopelessness prevails in his "political business cycle" and the "imperialist-armament complex" (6). The final chapter looks to the present fruit of Kalecki's dynamic analysis of capitalism--Post-Keynesian economics. There is no intention directed towards presenting
the total scope of this developing post-Keynesian synthesis. Instead, those elements where the Kaleckian influence exists are considered. This synthesis reflects the Kaleckian framework and the Keynesian optimism out of which possible policy may arise to affect the structural problems plaguing capitalism today.

The Nature of Michal Kalecki

Michal Kalecki's concern for the plight of the common man was the driving force behind his studies of income distribution, full-employment, economic growth, war economies, effective demand, and others. This concern fostered his criticism of capitalism, but unlike orthodox marxists, he was not committed to its destruction. His General Theory places emphasis upon the many inconsistencies of the capitalist system, but he also shows how the system could be made to work better. He was critical of economic scientists who, rather than approach the problems affecting society's welfare, were content to concentrate on refinements of theories with no immediate relevancy. As George Feiwel writes, "He felt that many of today's economists, no matter what the social system under which they live, are more interested in discovering cures for nonexistent ills than in finding cures for our actual diseases--that economists have often strayed into the realm of fantasy" (3, pp. 4-5).
Politically, he was always a socialist. He was unorthodox, though, for he did not support socialism from the knowledge that it was better, but rather from the vantage of believing that it might be a better system. "He did not expect the socialist system to fulfill all dreams, merely to bring some improvement" (3, pp. 4-5). The socialist system was superior to the capitalist system because economic planners could manipulate wages and prices, thus reducing fluctuations with its tolls of unemployment and because it was more likely to provide a fairer distribution than possible under capitalism. His pacifist leanings led to an intensified criticism, in the Vietnam period, of American capitalism and its apparent need to maintain prosperity through war spending rather than through beneficial social expenditures. This, and his experience with McCarthyist repression, assured a strong dislike for American capitalism.

The Life of Michal Kalecki

Kalecki was born in Lodz, Poland, on June 22, 1899. His father was the owner of a small spinning mill which was lost in 1911. Thereafter, his father was a bookkeeper until losing his job in 1923. At the age of fourteen, Kalecki undertook several odd jobs and became a self-supporting and contributing member of his family. In 1917 he finished grammar school in Lodz and entered Warsaw Polytechnic, where
he studied engineering until called up for military service in 1918. Upon finishing three years of military duty, he returned to school and entered Gdansk Polytechnic. However, as he was an engineering student, Kalecki never participated in any formal economic training. After leaving the Polytechnic, he entered a period in which experience would provide the economic training he lacked and he eventually published several articles as an economic journalist. His first articles were devoted to analysis of the business cycle and to a description of the domestic and international activities of big business. The merits of his journalistic efforts eventually led to a job at the Research Institute of Business Cycles and Prices in Warsaw at the end of 1929. Here, he was able to pursue his interest through research on the nature of the business cycle. He worked with one of the most prominent polish economists of the day, Ludwik Landau, in conducting research on the Polish national income (Landau was eventually murdered by the Gestapo). They collaborated in the preparation of three works which are still the basis for studying Polish economic development.

Kalecki concurrently pursued his own theoretical studies that eventually culminated in the Institute's publication in 1933 of a book containing the essentials of the Keynesian revolution. Written in Polish, this was Kalecki's An Attempt at a Business Cycle Theory (4; 11, pp. 1-8). The breadth of this effort began with his exposure to the
Marxian schemes of reproduction and reflected the experience gained through observation, and the national income and cycle studies developed with Landau. However, the impact of his study was unrecognized by the prevailing orthodoxy. A later version was presented to a professional audience at the International Econometrics Association in 1933, and published in its journal the following year. It appeared in English, entitled "A Macrodynamic Theory of Business Cycles" in the July, 1935, issue of *Econometrica* (3, pp. 4-9; 7; 11, pp. 1-8). Though few recognized the work of this obscure Polish economist, his efforts eventually resulted in a Rockefeller Foundation scholarship in 1936. This enabled him to take a year's leave of absence from the Institute and, with his wife, go to Sweden and write the General Theory.

While in Stockholm he read Keynes' book and discovered it was the book he intended to write. Kalecki realized that Keynes was well-known and possessed the ability to get ideas considered by those who would not bother with an unknown Polish economist. Thus he went to England to seek out Keynes, for he believed that Keynes could carry the General Theory through to its application. Upon arrival, he wrote Joan Robinson because she had recently published an essay containing some of his own ideas. Robinson notes that she received a letter from a stranger "who said he was interested in my article as it was close to some work of his
own" (12, p. 8). She was amazed to find someone who could claim work similar to that of the Keynesian revolution. Upon their first meeting, she notes that in a discussion of the General Theory, she "could not tell whether it was I speaking or he," and "he could challenge a weak point in Keynes' formulation and quickly subdued my feeble attempts to defend it" (12, p. 8).

Robinson introduced Kalecki into the "Cambridge circus," whose members introduced him to Keynes. Keynes was not impressed, having no patience with the ideas of others, and accused Kalecki of being too monetarist. And as Robinson writes, "Keynes did not sympathize with Kalecki's political presupposition and by background and temperament they could not be further apart" (12, p. 9). Fortunately, Keynes got a research project set up for Kalecki to provide him a job. Keynes was never aware of Kalecki's earlier claim to the General Theory, for Kalecki did not acknowledge his priority to Keynes, nor did he do so publicly until after his own death in the introduction to Selected Essays on the Dynamics of the Capitalist Economy (8; 12, p. 9).

At the end of 1936, his closest friends and collaborators at the Warsaw Institute, Marek Breit and Ludwik Landau, published a negative report on their country's economic position. The government retaliated and in a fit of prejudice and political repression took disciplinary
action and discharged them. Kalecki, shocked, resigned in protest in early 1937, and decided to stay on in Cambridge (11, p. 6).

He continued his studies and introduced into his theoretical system a theory of income distribution. The result of this endeavor was his 1939 book, *Essays in the Theory of Economic Fluctuations* (5). Within this book the theory of business cycles was shown on the wide background of the economic problems of the capitalist system. He explicitly uses the notion of Keynesian ideas, which were like his own, while clearly showing the Marxist origin of his theoretical construct (11, p. 6).

In January, 1940, he obtained work at the Oxford Institute of Statistics where he contributed many notes and essays to its *Bulletin*, while pursuing his own theoretical studies. These studies, along with the results of his previous studies at Cambridge, culminated in 1943 with another book entitled *Studies in Economic Dynamics*, which furthered the work of his 1939 publication. Both of these were eventually revised and published in a single volume entitled *Theory of Economic Dynamics* (9; 10; 11, p. 8).

After the world war, Kalecki spent a short period in Warsaw as the economic counselor to the Central Planning Office and the Ministry of Finance. He left this post in 1946, after receiving the Polish authorities' approval to become a deputy director at the United Nations Secretariat's
economic department in New York. His chief purpose was to prepare the World Economic Reports, but bureaucratic organizations seldom accommodate those of Kalecki's individuality and with the McCarthyist tendencies of the period, the intellectual climate was not conducive to the dispassionate consideration of the unorthodox ideas espoused by Kalecki (1, p. 31). Even the Secretariat was affected by the tragic reign of McCarthyism. It began limiting Kalecki's pursuits and in the spring of 1954, a chapter from the report on the Chinese Peoples' Republic was completely disfigured. Kalecki protested the changes. A reorganization ensued with the successful intent to limit Kalecki's influence upon the World Economic Reports (11, p. 8). Facing such political constraints upon his analysis, Kalecki obtained the consent of the Polish authorities, tendered his resignation, and left the United States at the end of 1954 (1, p. 31; 11, p. 8).

Upon his return to Poland and before his eventual resignation, Kalecki's activities followed two successful lines—advisory, and research with teaching. From May, 1955, to March, 1957, he was the economic counselor with the office of Ministers' Council and the Planning Commission. He was the chairman of the Commission for Perspective Planning from 1957 until 1960, where he developed the first version of Poland's perspective economic growth plan encompassing the period 1960 to 1980. Even though he was active in several
other advisory roles before his death, he was also able to distinguish himself as a teacher and researcher. His intellectual interests were realized in three areas, the first of which is the theme of this thesis. They were the theoretical problems of capitalist countries, of socialist economies, and those of the developing countries. These pursuits were to earn him, in 1956, the academic title of professor from the Polish Central Qualification Committee and the election to associate member of the Polish Academy of Science (11, p. 8).

The last years of Kalecki were sad, bitter years. Political reprisals had transformed Polish economics into an intellectual wasteland in the aftermath of repression that occurred in the late sixties. Kalecki, as before, resigned his posts and entered into voluntary seclusion. His best students and followers were dispersed throughout the world or else effectively silenced at home. Many former friends turned from him in fear of political reprisal after he was accused of not being a Marxist. This accusation came from a mediocre economist, Dymitr Sokolow, who argued that Kalecki, instead of being influenced by his Marxist disciples, had influenced them with "non-Marxist" research methods. In this period of hysteria, it became popular to blame Kalecki for the failures of the Polish economic plan. The charges were more political than real and Kalecki chose not to dignify them with a defense. However, in a reply to
Sokolow, Kalecki retorted that if Sokolow were the epitome of a Marxist, he wanted nothing to do with Marxism (3, pp. 447-455).

When Michal Kalecki died on April 17, 1970, he was a broken and despondent man. While his concern for the common man was the original propelling force behind his career, at its close he possessed a pessimistic view of humanity that he perceived as justified by the wave of repression of the late sixties. As Feiwel notes, this tragic individual "once made the sad but true observation that the story of his life was one that could be compressed into a series of resignations in protest--against tyranny, prejudice, and oppression" (3, p. 455).


CHAPTER II

THE GENERAL THEORY OF MICHAL KALECKI

Introduction

This chapter presents the fundamental elements of Michal Kalecki's General Theory. The first section examines the effect of distributional factors upon income. This is followed with a structural examination of the income accruing to the capitalist and worker classes. This involves a Marxian view of capitalist reproduction and the resulting class struggle. The third section entails a presentation of Kalecki's dynamic investment model and a mechanistic explanation of income determination. Finally, this chapter concludes with contemplation of the inherent crisis that persists with capitalist relations.

Class Distribution Theory

Labor and Property Income

The lineage of Michal Kalecki's distribution theory is explicitly Marxian. Throughout his analysis the class struggle is implicitly present. A Marxian departmental analysis is used to explain capitalist production. Three departments are used. Department I produces capital, department II produces capitalist consumption goods, and
department III produces goods for worker consumption (16, p. 47). The capitalist controls the means of production which enables the realization of profit through the creation and sale of surplus value. Workers are paid with wages that represent their subsistence. Therefore, they will use these earnings to further or maintain consumption (11, pp. 51, 75; 16, pp. 46-47). Since workers must spend their earnings on consumption, Kalecki reasoned that workers do not save (4, p. 4). This assumption follows throughout his work.

The department III capitalist realizes profit through the sale of surplus-bearing commodities to the workers of department I and department II. Department III production is equal to the sum of wages paid in all three departments. Since wages of departments I and II are determined by their own output and they in turn determine department III production, Kalecki argued that an economy's output is solely determined by capitalists' consumption and investment decisions (8, p. 96). Further, since the wages paid in departments I and II equal the department III profits, then it follows that the summation of department I and II production equates to the economy's gross profit (16, p. 47). It would seem, then, that one could follow with the assertion that the decisions of capitalists determine gross profit rather than profits determining decisions (see Appendix).

Kalecki pursued this with the following Marxian relation:
Gross profits = Gross I + capitalist's consumption

which he addressed with

What is the proper meaning of this equation? Does it mean that profits in a certain period determine capitalists' consumption and investment, or the other way around? The answer to this question depends on which of these quantities is directly subject to the decisions of capitalists. Now it is clear that they may decide to consume and to invest more in a certain short period than in the preceding period, but they cannot decide to earn more. It is therefore their investment and consumption decisions which determine profits, and not the other way around (17, p. 259).

The capitalist class not only determines its own gain but the income of the worker class. This ability is enhanced by distributional factors that affect the allocation of production between worker and capitalist. Kalecki furthered this with

Given that profits are determined by capitalists' consumption and investment, it is the workers' income . . . which is determined "distributional factors." In this way capitalists' consumption and investment conjointly with distributional factors determine the worker consumption and consequently the national output and employment (16, p. 47).

These factors received great emphasis in Kalecki's analysis. Changes among these factors affect changes in the relative share of wages. He felt that changes were determined by "trends in the degree of monopoly, in prices of raw materials in relation to unit wage costs and in industrial composition" (11, p. 36).
Distributional Factors

Distributional factors affect the capitalists' ability to maintain a certain pricing structure and exploit desired amounts of surplus labor power (16, p. 47). The following will be concerned with an understanding of this pricing structure and the effect of the degree of monopoly upon it. However, some simplifying assumptions that Kalecki normally asserted must be mentioned before the above is considered.

Kalecki's General Theory is not structured on any tacit assumption of competitive markets. Indeed, rather than using marginal analysis, he considers the relevant range of output where elasticity of supply and stability of prime costs are incompatible with perfect competition (5, p. 45). Within this range, any concern of increasing or decreasing returns is irrelevant. Surplus capacity in manufacturing is assumed to be a typical phenomena (4, p. 4; 19, pp. 261-266). Such underutilization assures flexible supply with horizontal cost curves controlled by distributional factors. Price administration by the firm is the rule, not equilibrium values arising from some ubiquitous market. Such administration does not assure profit maximization for as he wrote, "In view of the uncertainties faced in the process of price fixing it will not be assumed that the firm attempts to maximize its profits in any precise sort of manner" (5, p. 45). Further, in examining the pricing of a firm, Kalecki wrote "In fixing the price the firm takes into
consideration its average prime costs and prices of other firms producing similar products" (5, p. 44). Obviously, the world as seen through Kalecki's eyes was different than that perceived by conventional economic orthodoxy.

Kalecki's explanation of market pricing behavior considered the firm's price setting ability. Each firm within an industry sets its price by marking up average unit prime costs (which embody raw material unit costs and wage unit costs) enough to cover overhead and assure profit (4, p. 4). The price is considered in relation to average prime costs, and care is taken to assure that the ratio of the firm's price to the industry average price \( \frac{P}{\bar{P}} \) is not too high (5, p. 44). The firm's price will not reflect increases of average prime costs unless the industry average price does. If the industry price change is less than proportional to the rise in average prime costs, then the firm's relative increase must be less also. Any behavior to maintain profits could result in a decline of the firm's market share (5, p. 44). The mark-up is dependent upon the relation between the ensuing price \( P \) to the average industry price \( \bar{P} \), \( [f \left( \frac{\bar{P}}{P} \right)] \) (4, p. 4). Once determined, the mark-up over prime costs can be measured as the excess of unit output price over average prime costs \( \frac{P - U}{U} \) (15, p. 9). Alternately, the mark-up is also equal to unit overhead costs plus desired average profit over
average prime costs \( \frac{O+R}{U} \) (4, p. 4). Or:

\[
\frac{O+R}{U} = \frac{P-U}{U} = f \left( \frac{P}{P} \right).
\]

Mark-up may be conceived in the form of a coefficient \( K \), \( f \left( \frac{P}{P} \right) = K \), by which the average prime cost is multiplied in order to obtain the price, \( K \) being greater than one (15, p. 9). \( K \) is an increasing coefficient that reflects distributional factors, such as the degree of monopoly. Kalecki wrote, "The more intensive these factors are, the higher is \( f \left( \frac{P}{P} \right) \) corresponding to a given relation \( \frac{P}{P} \)" (4, pp. 4-5). It follows, then, that the higher the degree of monopoly, the higher the mark-up and the resulting profit. If the degree of monopoly is known one can determine the proportion of price to average prime costs. If the degree of monopoly rises, then the industries' average price will rise relative to its average prime costs (5, p. 49). Furthermore, such an industry will reallocate the value of its output from workers to capitalists.

Kalecki linked the ratio of price to prime costs \( \frac{P}{U} \) of an industry to the relative share of wages in the value added to raw materials by that industry. The value added in the product of an industry is equal to the summation of wages, overhead costs, and profit. Denoting wages as \( W \) and raw materials as \( M \), Kalecki considered the following relation (11, pp. 29-32):

\[
\text{overheads + profit} = (K-1) (W+M)
\]
where $K$, as above, is determined by the degree of monopoly. He sought the relative share of wages in the value added of an industry by introducing the ratio of aggregate materials cost to wage bill denoted as $j$ with the following equation (9, p. 28):

$$W = \frac{1}{1 + (K-1)(j-1)} \quad 2.2$$

Kalecki summarized the above with

The relative share of wages in the value added of manufacturing is determined, apart from the industrial composition of the value added, by the degree of monopoly and by the ratio of raw material prices to unit wage costs. A rise in the degree of monopoly or in raw material prices in relation to unit wage costs causes a fall of the relative share of wages in the value added (9, p. 28).

**Changing Degree of Monopoly**

Kalecki noted that the degree of monopoly was experiencing a long run increase (11, pp. 29-32). This rise not only affects the distribution of income between workers and capitalists, but also within the capitalist class (11, p. 33). He attributed this change to three factors. One was the increasing concentration among industries. As an industry became dominated by fewer and bigger firms, the degree of monopoly rose. As a firm increases its market share, any price change it makes will be reflected through a similar change in the average industry price. Its market control affects the industry price. Thus, the price increase of an industry leader could effectively push the
price of other firms in the same direction. Such a leader can fix its price at a higher level relative to the industry price than a smaller firm can (11, pp. 29-32). Kalecki also noted that such concentration "results in a relative shift of income to industries dominated by such corporations from other industries. In this way income is redistributed from small to big business" (5, pp. 51-52).

Advertising is a second factor affecting monopoly power. Sales promotions, artificial product differentiation, and other methods of nonprice competition have increased in importance. Price competition has been replaced by advertising competition with the result of increasing the concentration in major industries to a few firms with tremendous market control and increasing monopoly power. A third factor is rooted in tacit industry agreements to allow prices to rise relative to costs for profit protection. This could occur especially in a depression when a rising level of overhead in relation to prime costs is allowed to occur. Such a depression-inspired profit squeeze necessitates an increase in monopoly power to protect the profit margin (5, p. 50).

Another factor exists that can constrain the degree of monopoly. He believed that union activity could assert a weakening influence upon the degree of monopoly (5, p. 51). Unions can restrain the mark-up or administered pricing flexibility of the capitalist. If they do not, any supposed
wage gain is illusory because prices will just go up to reflect the wage increase along with an additional mark-up. If this occurs, the price level will rise and no one will gain in real terms. Therefore, any real gain must be substantiated with some restriction on the degree of monopoly. This is possible since "an industry will not like such a process making its products more and more expensive and thus less competitive with products of other industries" (4, p. 6). The union that is encouraged by high mark-ups to bargain for higher wages may restrict the degree of monopoly and thus the mark-up ability of the capitalist.

Kalecki summarized the potential of the union with

The power of trade unions manifests itself in the scale of wage rises demanded and achieved. If an increase in bargaining capacity is demonstrated by spectacular achievements, there is a downward shift in functions \( f \left( \frac{P}{P} \right) \) and the mark-ups decline (4, pp. 5-6).

If the union gains while depressing the mark-up ability of the industry, the result is an increase in output. A redistribution from capitalist to workers will stimulate an increase in employment and output as worker consumption increases. The output and employment in department I and II may not change, but the consumption of workers in all three departments will rise, as will department III profits, employment, and output. Kalecki summarizes with

In other words, the volume of investments and capitalists' consumption remains constant, while workers' consumption will increase. Such an
expansion of total output and employment will be feasible because our model ... presupposes the existence of excess capacities (4, p. 6).

**Consumption and Capital Accumulation**

In Kalecki's General Theory, capitalist consumption and investment levels are determined by past decisions. He realized that their present volume could not be explained solely by such decisions due to unexpected inventory changes, but that such changes were over-emphasized. He further wrote, "The real gross profits in a given short period are determined by decisions of capitalists with respect to their consumption and investment shaped in the past, subject to correction for unexpected changes in the volume of stocks" (17, p. 260).

Therefore, departments I and II output levels are determined by decisions shaped in the past. These decisions, along with distributional factors, determine department III profits, along with worker income, output, and employment. One can see the effect of capitalists' decisions. But, how are these decisions financed? Was the capitalist class assured of available savings to support such capital accumulation? Kalecki saw no problem. He demonstrated that capitalist investment would finance itself (7, p. 84; 11, pp. 42-50). High interest rates did not restrict capital accumulation. In fact, since investment was self-financing,
Interest rates were irrelevant as a mechanism regulating savings and investment.

Whatever the distribution, the value of society's output is divided among workers, capitalists, and government. Therefore, the total product will be equal to gross profits less taxes, wages and salaries less taxes, plus all direct or indirect taxes flowing to the government. With these relations, Kalecki used a balance sheet approach to present society's total product from an income and expenditure viewpoint. This method was used to illustrate the inherent equality between capitalist savings and gross private investment. It further serves to demonstrate the self-financing nature of capitalist investment (7, pp. 79-83; 11, pp. 42-50; 15, pp. 42-50). The following income-expenditure balance sheet begins his analysis:

<table>
<thead>
<tr>
<th>Income</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>gross profit</td>
<td>gross private investment +</td>
</tr>
<tr>
<td>net of direct taxes, +</td>
<td>export surplus +</td>
</tr>
<tr>
<td>wages and salaries</td>
<td>gov. expenditures +</td>
</tr>
<tr>
<td>net of direct taxes, +</td>
<td>capitalist consumption +</td>
</tr>
<tr>
<td>taxes, direct and indirect</td>
<td>workers consumption</td>
</tr>
<tr>
<td>GNP</td>
<td>GNP</td>
</tr>
</tbody>
</table>

Kalecki reasoned that the taxes flowed back in the form of transfers, while the remainder financed government expenditures. Taxes were subtracted from both sides of the balance sheet and any difference between tax financing and expenditures was reconciled in the form of a budget surplus or
deficit, while transfers appear as an explicit entry on the income side. Then with wages, salaries, and transfers net of taxes removed from both sides of the balance sheet, the following general equation was given:

\[
\text{gross profits} - \text{net of taxes} = + \text{gross private investment} \\
\quad + \text{export surplus} \\
\quad + \text{budget deficit} \\
\quad - \text{workers' savings} \\
\quad + \text{capitalists' consumption}
\]

With the simplifying assumption of accepting the budget and foreign trade as balanced and workers not saving, the following equation develops, giving:

Gross profit after tax = Gross private I + capitalist C.

This is, of course, the relation between capitalist income and department I and II production. Kalecki examined the self-financing ability of capitalist investment by subtracting from both sides of the general equation profits, capitalists' consumption, and adding workers' savings. The following was obtained:

\[
\text{capitalists' gross saving} - \text{workers' savings} = \text{Gross private Investment} \\
\quad \text{export surplus} \\
\quad \text{budget deficit}
\]

And, invoking the above simplification, the following equation results:

\[
\text{capitalists' gross saving} = \text{gross private investment} 2.3
\]
which is equivalent to

Gross profits = Gross private investment + capitalists' consumption

Kalecki emphasized that the equality between capitalists' saving and investment would be valid under all circumstances and, "In particular, it will be independent of the level of the rate of interest" (7, p. 83). And further he wrote, "The rate of interest cannot be determined by the demand for and supply of new capital because investment 'finances itself'" (7, 84). He summarized the above analysis with the following.

In the present conception investment, once carried out automatically, provides the savings necessary to finance it. Indeed, in our simplified model, profits in a given period are the direct outcome of capitalists' consumption and investment in that period. If investment increases by a certain amount, savings out of profits are pro tanto higher (7, p. 83).

**Capital Accumulation**

Kalecki's consideration of the equality between saving and investing examined the self-financing nature of investment in a capitalist economy. He believed that "as long as there is idle capacity and unemployed labor, it is investment that determines the level of saving and not saving that imposes a limit on the size of capital accumulation" (2, p. 117). This source of saving will always correspond to the money flow of investments (18, p. 85). This flow will arise from the capitalist class, where the propensity to
save out of profits surpasses that of wages (11, pp. 75-77). Again, Kalecki reasons, "that workers do not save," and he discounts any consideration of workers saving. This assumption was justified with, "for the savings of workers certainly do not play an important part in the economic process, while to take it into consideration can often obscure some essential features of the capitalist economy" (18, p. 77). Savings are not considered a function of income, rather savings are seen as a function of the stratification of classes. Savings, which are generated by variations in investment activity within the capitalist class, accrue specifically to profit earners (11, p. 78).

**Labor Income**

Kalecki found that the wage component (as determined earlier) within private gross income would tend to reflect the fluctuations of income over the cycle. However, he broadened this measure with the inclusion of salaries as a component of the real wage bill (9, p. 76; 11, pp. 31-32, 81-84). Since salaries differed from wages in any reaction to cyclical fluctuations, the activity of this variable changed. "Salaries, because of their 'overhead' character, are likely to fall less during the depression and rise less during the boom than wages" (9, p. 76). As a result, the real labor costs have stabilized as a component of income and fluctuate less during the course of the cycle than real
private gross income, $Y$ (9, p. 76). The real labor costs can be approximated by removing real gross profits, $P$, from real private gross income, $Y$ (9, p. 76). Or

$$Y_t - P_t = V$$

"This will be also approximately the level of the labour costs associated with old equipment because the new capacities put to use in the year considered are small in relation to those of the total existing capital equipment" (19, p. 267). It should be evident by the method used to approximate the real labor costs, that this component or share is determined by the "distributional" factors. 

Kalecki explicitly states this with

$$V = \alpha Y + B$$

where $B$ is a positive short term constant subject to long-term changes that represents the minimum labor share of income. The income coefficient, $\alpha$, embodies the effect of the degree of monopoly upon the value of real labor costs. This coefficient is less than one and decreases as the degree of monopoly increases. Accordingly, as the degree of monopoly rises, the effect will be to depress real labor costs, $V$, as the relative profit share rises (9, p. 76).

The impact of the degree of monopoly on price administration was considered earlier. This can be summarized in the present context, with Kalecki's comment, "The relative
share of labour prime costs in the national income depends on the mark-up over prime costs and the relation between unit wage costs and the prices of basic raw materials" (19, p. 265). And continuing, "The 'pricing formulae' of firms determine, as I showed, the ratio of aggregate proceeds to aggregate prime costs. It is the set of parameters of these formulae that constitutes the degree of monopoly" (19, p. 265). Now remembering

\[ Y - P = V, \]

the above equation is expressed as

\[ Y - P = \alpha Y + B \]

Now solving for income:

\[ Y_t = \frac{P_t + B}{1 - \alpha} \]

Within this equation the effect of the degree of monopoly \((1 - \alpha)\) and profit upon income is evident since profit is determined by past investment decisions and the level of worker consumption is a slowly changing historical constant. Any increase in monopoly power will depress income. As Kalecki noted, "The role of distributional factors is thus to determine income or product on the basis of profits which are in turn determined by investment" (7, pp. 80-81). Investment will be considered shortly.
Property Income

Capitalists' consumption propensities differ from workers' for they consume only a small proportion of their property or profit income. Their propensity to consume can be approximated by (7, pp. 86-87; 15, pp. 59-60; 16, p. 54-17, pp. 258-267; 19, pp. 264-265):

\[ C_t = qP_{t-w} + A(t) \] 2.6

The lag \((t-w)\) reflects a delayed reaction between capitalists' consumption and any change in their current income, \(P\). This equation consists of a stable part \(A\) that "is a certain slowly changing magnitude dependent on past economic and social developments" (19, p. 265). Thus, it is a slowly changing function of time, \(A(t)\). Since capitalists consume only a small proportion of their income, the coefficient \(q\) is a rather small fraction, being positive and less than one. Abstracting from the public sector, assuming foreign trade as balanced, and asserting the basic Kaleckian assumption that workers do not save, capitalists' income can be expressed as:

\[ P = I + C_t \] 2.7

And expanding through substitution,

\[ P_t = I + qP_{t-w} + A(t) \] 2.8

which illustrates the source of capitalist income (7, pp. 86-
Current real profits are determined by current investment (which, as will be seen, is a product of previous decisions) and a stream of past profits (in which each descending period's profits are determined by that period's investment and its respective flow of past profits).

Kalecki summed this relation by writing, "Profits will thus be a function both of current investment in the near past, or roughly speaking, profits will follow investment with a time lag" (16, pp. 53-54). Therefore, this equation reflects that capitalists earn what they consume. This can be expressed as

\[ P_t = f(I_{t-w}) \]

where \( w \) is the time lag between investment and capitalists' income. This can be restated as (16, pp. 43-54)

\[ P_t = f(I_{t-w}) = \frac{I_{t-w} + A(t)}{1 - q} \]

And further simplified by denoting the effect of capitalists' savings \( \frac{1}{1 - q} \) = \( m \) separately in the following restatement:

\[ P_t = m \left( I_{t-w} + A(t) \right) \]

Since \( q \) is small, \( m \) cannot be much greater than one. As this equation implicitly contains \( C_t \), the determinants of profits are reduced to past investment decisions (19, p. 265).
The self-financing nature of investment was considered earlier. And with this equation, saving appears to lead profits. Indeed, Kalecki noted

This result may appear paradoxical. "Common sense" would suggest the opposite sequence—namely, that savings are determined by profits. This, however, is not the case. Capitalists' consumption in a certain period is the result of their decisions based on past profits. Since profits usually change in the meantime, actual savings do not correspond to the intended disposition of income. Indeed, actual savings which are equal to investment will "lead" profits as shown by the above equation (16, p. 55).

This equation implicitly contains the ingredients of the Kalecki inspired verse, "workers spend what they earn while capitalists earn what they spend" (20, p. ix). The meaning is evident since the present expenditures of capitalists on investment will generate their future earnings. And this expenditure results in a "multiplying effect." As Kalecki expressed it,

In other words, gross income or product increases more than investment owing to the effect of the rise in investment upon capitalists' consumption [factor $1/(1 - q)$] and upon workers' income [factor $1/(1 - \alpha)$]. Since workers' consumption is here assumed to be equal to their income, this means that income increases more than investment because of the influence of the increase in investment upon capitalists' and workers' consumption (8, p. 96).

Theory of Investment

Capitalists carefully scrutinize the profitability of new investment in hopes of determining what level of capital investment will yield a gross rate of profit
compatible with their expectations (19, pp. 266-269).

Therefore, this determination is influenced by any increase in profits per unit of time. The value of any resulting investment decision will reflect the contribution of the change of profits per unit of time to the rate of investment decisions. Any positive change in profits within the relevant period renders certain projects feasible which were formerly unattractive, permitting an expansion of investment decisions. Profits are considered in relation to the current prices of investment goods. Thus, when profitability is being evaluated, expected "real" profits (profits deflated by the appropriate index) are considered in relation to the value of the new capital equipment. And as Kalecki wrote, "we can say that the rate of investment decisions, \( D \), is an increasing function of \( \frac{\Delta P}{\Delta t} \)" (6, p. 112; 15, pp. 61-62).

Another factor contributing to an investment decision is a firm's "internal" accumulation of capital (6, p. 111). This represents undistributed earnings and depreciation, or the ability to utilize internal financing. The larger the investment relative to the firm's entrepreneurial capital, the less the potential profitability (19, p. 266).

Additional investment will eventually cease to be profitable due to limited markets, increasing risk, and to limitations of the availability of rentier savings from capital markets (6, pp. 110-111; 15, pp. 61-62).
Kalecki noted two reasons for the existence of increasing risk. First, the greater the investment, the more ones' wealth is endangered in the event of a firm's failure and second, the danger of illiquidity. A quick sale of a large piece of capital will usually entail a loss, thus any physical capital must be considered an illiquid asset if a sudden need for financial capital should arise (14, p. 16).

The firm's ability to achieve access to some desired level of rentier capital is largely determined by its own entrepreneurial capital (10, p. 105). Rentier capital embodies rentier class savings that permeate financial markets. Together, these sum to the total gross savings (assuming workers only consume) that may be available for investment. The rentier class will only loan capital up to some level determined by a firm's entrepreneurial capital. The rentier class is cautious of the firm's solvency and ability to repay loaned capital. Any attempt of a firm to float a bond issue beyond the level supportable by entrepreneurial capital would be foolish and result in an issue not being fully subscribed, regardless of the offered interest rate (6, p. 111; 10, pp. 105-106). Thus, as Kalecki wrote, "it follows that a firm's expansion depends on its accumulation of capital out of current profits. This will enable new investment without the obstacles of limited rentier capital or increasing risk" (10, pp. 105-106).
Kalecki viewed this as central to the paradoxical nature of the capitalist system. He wrote,

The limitation of the size of the firm by the availability of entrepreneurial capital goes to the very heart of the capitalist system. Many economists assume, at least in their abstract theories, a state of business democracy where anybody endowed with entrepreneurial ability can obtain capital for starting a business venture. This picture of the activities of the "pure" entrepreneur is the ownership of capital (10, pp. 105-106).

Investment decisions are clearly an increasing function of current gross accumulation, as. The coefficient a indicates by how much investment decisions, D, increase with any accumulation. This coefficient is influenced by the factors just discussed. Due to the composition of gross accumulation or savings, the increment of internal savings is less than S. Thus the effect of rentier savings will tend to make a less than one. But internal savings, or entrepreneurial capital, will enable a firm to attract rentier savings at a higher rate if the investment is perceived as desirable. Therefore, investment decisions tend to be greater than a firm's internal savings. Unfortunately, this leaves us unable to determine whether the coefficient of S is greater than or less than one (6, p. 120).

Another major determinant is the existence of capital equipment. Investment orders are a decreasing function of the volume of capital equipment (15, p. 10). Kalecki wrote that a "net increment of capital equipment per unit of time
adversely affects the rate of investment decisions" (6, p. 111; 15, pp. 61-64). Indeed, recalling the earlier discussion of technical progress, any increase in the volume of capital equipment will entail a reduction in profit captured by existing capital and a diminishing level of profits for any new or future investment. Further, as an increase in present profits may render additional investment feasible, any accumulation of capital equipment will tend to restrict investment plans. Therefore, if the real value of capital stock (deflated by an appropriate index) is denoted as $K$, it can be said that the rate of investment decisions, $D$, is, ceteris paribus, a decreasing function of $\frac{\Delta K}{\Delta t}$ (15, pp. 61-64).

Kalecki viewed the effect of the capital stock upon investment as a paradox. He wrote,

"What causes the periodical crisis?" could be answered shortly: the fact that investment is not only produced but also producing. Investment considered as capitalists' spending is the source of prosperity, and every increase of it improves business and stimulates a further rise of spending for investment. But at the same time investment is an addition to the capital equipment and right from birth it competes with the older generation of this equipment. The tragedy of investment is that it calls forth the crisis because it is useful. I do not wonder that many consider this theory paradoxical. But it is not the theory which is paradoxical but its subject—capitalist economy (18, pp. 95-96).

One additional determinant is necessary to account for investment stimulus arising from innovations. The chronic capital underutilization of capitalism will only afford
additional increments of capital a small proportion of the existing quantity of profits (19, p. 269). Therefore, such additions must be innovative to assure a higher level of profitability. This is accomplished through the technical progress attributable to innovation. This involves the ability of new physical equipment to incorporate labor saving processes into production. Such innovations will provide a reduction in the real labor costs associated with production. Thus, labor saving processes will increase the profitability of new equipment at the expense of old capital equipment. And as Kalecki explained,

Assuming that the distributional factors do not change through rising productivity induced by technical progress, the profit yield of old capital will fall as output rises shifting production from old high cost capital to new low cost innovative capital (19, p. 267).

So, when considering new investment projects any potential rise in productivity due to technological progress is appraised. Kalecki incorporates the effect of innovations upon investment decisions into his model in the form of a semi-autonomous variable that is a slowly changing magnitude dependent upon past economic, social, and technological developments. Thus, this variable is considered as a slowly changing function of time, \( d(t) \) (19, p. 269).

The following equation embodies a restatement of the above (6, p. 113; 15, pp. 61-69; 19, pp. 267-269).

\[
D = aS + b \frac{\Delta P}{\Delta t} - c \frac{\Delta K}{\Delta t} + d
\]

2.12
However, this equation must be rewritten to account for the time lag between the decision to invest and the actual delivery of new equipment. Further, adjustments must be made to include the effect of inventory changes.

The value of present investment output is the result of former investment decisions due to the relatively long time necessary for project completion. Kalecki noted that "This fact is of fundamental importance to the dynamics of an economic system" (18, pp. 80-81). He further wrote "the investments of a given moment fail to be a variable dependent on other factors at this moment and become a datum inherited from the past like capital equipment" (18, pp. 80-81). Therefore, a time lag exists between investment decisions and the actual investment. This lag is largely due to the period of construction, but also reflects other factors that may occur during three stages of investment activity. The three stages of investment activity begin with investment orders for reproducing capital equipment, then the production of investment goods, and finally the deliveries of finished equipment per unit of time. Though this period will vary among different types of investment, Kalecki assumes this lag to be the average construction period (13, p. 4). In essence, the relation between the investment orders and the deliveries of physical equipment at time $t$ is $t + \gamma$. Denoting the quantity of fixed capital decisions as $D$, and the resulting
investment in fixed capital by $f$, Kalecki established the relation (6, p. 110):

$$f_t + \gamma = D_t$$  \hspace{1cm} (2.13)

Now we have an equation for investment in fixed capital at time $t + \gamma$:

$$f_t + \gamma = aS_t + b \frac{\Delta P_t}{\Delta t} - c \frac{\Delta K_t}{\Delta t} + d$$  \hspace{1cm} (2.14)

The existing stock of real capital equipment, $K$, fluctuates as new equipment varies from the value of depreciation. Kalecki assumed that the average replacement requirement resulting from depreciable capital would remain at a constant level in the course of the business cycle. And accordingly, the rate of change in fixed capital equipment was viewed as equal to such investment net of the period's capital depreciation (13, p. 6). Or

$$\frac{\Delta K}{\Delta t} = f - \delta$$  \hspace{1cm} (2.15)

where $\delta$ embodies the value of depreciation. Restating his basic equation:

$$f_t + \gamma = aS_t + b \frac{\Delta P_t}{\Delta t} - c(f_t - \delta) + d$$  \hspace{1cm} (2.16)

Through manipulation, the following equation evolved:

$$F_{t+\theta} = \frac{a}{1 + c} S_t + \frac{b}{1 + c} \frac{\Delta P_t}{\Delta t} + \frac{c\delta + d}{1 + c}$$  \hspace{1cm} (2.17)
where $F_t + \theta$ is the weighted average of $f_t + \gamma$ and $f_c$. The investment determinants are reduced to past savings and the past rate of change in profits. The negative effect of capital stock does not disappear, but is reflected in the denominator, $1 + c$. Kalecki then simplified his form by denoting

$$b' = \frac{b}{1 + c} \quad \text{and} \quad d' = \frac{c\delta + d}{1 + c}$$

However, simplifications were not used to reexpress $\frac{a}{1 + c}$. This was not restated because of its dependence upon the coefficient of savings, $a$, and the role of change in the stock of capital equipment. Again with a further restatement, the equation appears as

$$F_t + \theta = \frac{a}{1 + c}S_t + b'\frac{\Delta P_t}{\Delta t} + d'$$  \hspace{1cm} 2.18

where $d'$ now reflects depreciation, which will vary in the long run in line with the volume of capital equipment (6, p. 119).

Kalecki perceived three major factors that affected the influence of $d'$ upon fixed capital investment. These were innovations, rentier savings, and changes in purchasing power (15, pp. 80-92; 16, pp. 157-161).

Any new invention will improve the profitability of certain new investments. Such an occurrence is comparable to an increase in profits (15, p. 89; 16, p. 158). Kalecki
wrote that "Each new invention like each increase in profits gives rise to certain additional investment decisions" (16, p. 158). He further noted, "It should be added that the effect of innovations upon the level of investment can be assumed *ceteris paribus* to be higher the larger is the volume of capital equipment" (16, p. 158). Unfortunately, as the intensity of innovations decline, a retardation of the capitalist long-run development results (15, pp. 91-92; 16, p. 158). Kalecki attributed this declining intensity within mature capitalist economies to three broad reasons.

The most obvious is the diminishing importance of opening up new sources of raw materials, etc. Another is the hampering of application of new inventions which results from the increasingly monopolistic character of capitalism (16, p. 159).

And the third was the changing nature of innovation. With the changing workplace, "technological progress is largely concentrated on 'scientific organization' of the assembly process which does not involve heavy investment" (16, p. 159).

Rentiers' incomes are relatively stable and usually large enough to make them savers. Their savings, then, are assumed to be positive. This saving is accompanied by a continuous increase in entrepreneur indebtedness towards rentiers and a consequent long-run shrinking of capital equipment. If total gross savings are equal to depreciation, rentier savings will assure that internal savings are below the depreciation level (15, p. 86). This will tend to depress investment decisions below that level (16, p. 159).
Therefore, the rentiers' saving, if taken in isolation from other factors, creates a negative trend (15, p. 86).

It should be clear that the combined effect of innovations and rentiers' savings will determine the long-run development. Further, "a decline in the intensity of innovations or a rise in rentiers' savings in relation to the stock of capital will produce a retardation in this trend" (16, p. 159).

A third factor considered was the growth in population. Kalecki agreed that a growing population might stimulate economic growth, but he also noted the possibility of the swelling of the "reserve army of unemployed." Population growth would exert pressure on money wages. Since a fall in money wages weakens unions, there would tend to be an increase in the degree of monopoly. Rather than increase output and income, as it was discussed earlier, the opposite could occur. If, however, an increase in purchasing power occurs, the resulting higher demand will promote growth (15, pp. 86-89; 16, pp. 159-161). Thus, it is not the size of the population, but its purchasing power, for, as Kalecki wrote, "An increase in the number of paupers does not broaden the market" (16, p. 160).

With the previous consideration of the coefficient \( \alpha \), conflicting factors rendered any determination of the effect of savings upon investment impossible. However, some assertions concerning the coefficient \( \frac{a}{1 + c} \) can be made.
Since $c$ is positive, the coefficient $\frac{a}{1 + c}$ is smaller than $a$. This reflects the negative influence upon investment decisions arising from an increasing capital stock. Kalecki found, upon analysis of historical data, that the value of $\frac{a}{1 + c}$ in the United States was significantly less than one. He noted that since $\frac{a}{1 + c}$ was less than one and that the coefficient, $c$, was very small, that $a$ could not be much greater than one (6, pp. 120-121).

The breadth of the present equation is limited to fixed capital investment. However, an additional component must be considered that enlarges the spectrum to total investment. This inclusion embodies the contribution of inventories to total investment.

Kalecki accepted the argument that the rate of change in the volume of inventories is roughly proportionate to the rate of change in output. This is the acceleration principle. However, he noted empirical efforts considering changes in inventories that found a significant time lag between the cause of inventory changes and the resulting change. This was due to the time of increased sales and the resulting need to increase inventories. Therefore, he related the investment in inventories, $J$, to the rate of change in output of the private sector, $\frac{\Delta O}{\Delta t}$, with a certain time lag (6, pp. 120-121). He assumed that this lag could be likened to the previously considered fixed investment lag. The output of the private sector differs from gross national
product and the income of the private sector, \( Y \). This difference results from the value of government product (measured in terms of public payrolls) and the amount of indirect taxes, \( E \), that are not reflected in gross private income. Therefore, gross private product, \( O \), is defined by the following relation (8, p. 102; 11, p. 50):

\[
O_t = Y_t + E
\]

Or

\[
O_t = \frac{P_t + B}{1 - \alpha} + E
\]

His inventory equation is

\[
J_{t+\theta} = e \frac{\Delta O_t}{\Delta t}
\]

where the coefficient \( e \) and the time lag, \( \theta \) are averages. Now, by adding this to the earlier equation, the total investment equation appears as (6, pp. 121-123)

\[
I_{t+\theta} = \frac{a}{1 + c} S_t + b' \frac{\Delta P_t}{\Delta t} + e \frac{\Delta O_t}{\Delta t} + d'
\]

where \( S_t \) depends on the level of economic activity, while \( \frac{\Delta P_t}{\Delta t} \) and \( \frac{\Delta O_t}{\Delta t} \) depend on the rate of change at this level. As Kalecki stated, "The total investment thus depends, according to our theory, on both the level of economic activity and the rate of change in this level at some earlier time" (6, p. 123).
One can deduce through thoughtful examination that gross income, $Y_t$, is fully determined by past investment, $I_{t-w}$. The equation for $Y_t$ reflects the distributional factors and the resulting effect upon the allocation of income shares. Kalecki described their role with

The gross income, $Y_t$, is pushed up to a point at which profits out of it, as determined by the "distributional factors" correspond to the level of investment, $I_{t-w}$. The role of "distributional factors" is thus to determine income or product on the basis of profits which are in turn determined by investment (8, p. 95).

Changes do not occur in the distribution of income, $Y_t$, because of changes in profit, $P_t$. They occur through changes in the distributional factors affecting income. For example, let's posit a fear among capitalists of decreasing profits due to a depression. They may react by explicitly or tacitly taking measures to increase their degree of monopoly. This could be implemented by increasing concentration, promulgating new waves of non-price competition to maintain markets, or through tacit industry agreements which reduce any potential threat of competition. If successful,
the relative share of $P_t$ in $Y_t$ will rise as the degree of monopoly depresses the wage share. However, they will be frustrated in their efforts to increase absolute profit. Since profits are determined by past investment decisions, absolute profits will remain unchanged, though the relative share does rise. But, real wages and salaries, along with gross income will fall. Income, $Y_t$ will fall to the point at which the higher relative share of profit yields the same absolute level as existed before the change in the degree of monopoly (8, p. 95). This effect can be considered by examining the income equation 2.5. As the rising degree of monopoly depresses $\alpha$, the numerator $(1 - \alpha)$ will rise and the relative share of income accruing to labor will fall. However, $P_t$ will not change since its absolute value is predetermined by past investment, $I_{t-W}$. And $B$ is taken as a constant representing labor's minimum share of income. Thus, no corresponding change is affected in the denominator. This results in a fall of income and a coinciding decline in the relative share accruing to the working class. This will entail a fall in worker consumption and will exacerbate the original fear of decreasing profits.

Therefore, capitalists seeking to protect or increase target profits will find the attempts foiled as income falls. It is indeed paradoxical that the primary incentive within a capitalistic economy nurtures the embryo of an economic contraction. This is the paradox of profit. This paradox is
analogous to the well-known paradox of thrift, where any concerted effort to increase society's absolute level of saving is frustrated as income and employment fall. Some individuals lose their jobs and are forced to dissave. Instead of increased saving, a redistribution occurs from those forced to dissave to those able to save. Thus, as the relative savings of some increase, it is at the expense of others and no absolute change occurs.

The attempt to protect or increase profits through the degree of monopoly fails since it affects income distribution and not the absolute level of profits. The result is a redistribution of income from the worker to the capitalist. This shift will reduce worker consumption and the consequent level of income, output, and employment. Further, such a change will also be reflected in the distribution of income within the capitalist class. For, just as savings were reallocated among savers, profits are reallocated among capitalists. Those capitalists depending upon worker consumption to realize surplus value will suffer lost income. The growth of corporations wielding monopoly power will result in a relative shift of income to industries they dominate. "In this way income is redistributed from small to big business" (5, pp. 51-52). Therefore, present pre-determined profits are reallocated with a resulting rise in concentration as small capitalists are forced into the worker class.
Foreign and "Domestic Exports"

The earlier exploration concerning the composition of aggregate profits assumed that international transactions had no net effect upon changing profits. Foreign trade was balanced. Though this simplification eased the discussion of profits, Kalecki did not ignore any possible effects. He released this assumption and considered the implications of foreign trade and "domestic exports" upon economic activity (7, pp. 84-86; 12).

A balanced increase in trade will not affect profitability or induce investment. A net trade surplus is required before any expansionary income growth occurs. Even though some capitalists may benefit from exports arising from a balanced trade increase, others will lose from an equal quantity of imports and no net gain will result (12, p. 17).

A surplus is similar to an investment boom. It entails an increase in production and higher unit profits, which results in an increase in aggregate profits equal to the trade surplus. Any increase in exports will initially stimulate activity. This effect is hampered because it creates a greater demand for indispensible raw materials, some of which will be imported. Thus, a rise in production will promote a rise in imports. Essentially, this means that only part of total exports will contribute to a trade surplus. Accordingly, then, any rise in exports must be
greater than the impending imports for a positive effect upon aggregate profits or investment (12, pp. 16-18).

The surplus arising from foreign trade represents a reduction of foreign debts or an increase of foreign claims by capitalists. This surplus may be directly or indirectly funded by the capitalist class. A foreign country may obtain the money to finance their imports by issuing bonds to capitalists. These funds will flow back to the capitalist through the purchases of commodities. The resulting increase in their profits is equal to the value of the foreign bond, which in turn is equal to the surplus secured by foreign trade. Therefore, the capitalist benefits through the loan of funds by receiving bond interest and a resulting increase in profits equal to the generated surplus (12, p. 19).

This surplus may be financed by the capitalist who accepts an influx of foreign currency. This currency is exchanged for national currency through the central bank. This results in an increase in circulation of national currency or the repayment of credits to the central bank equal to the export surplus. This results in a rise of the central banks' foreign claims corresponding to the surplus. Therefore, foreign countries, with the central bank as intermediary, become indebted to the extent of the surplus. Of course, the capitalist benefits as profits rise by a like amount (12, pp. 19-20).
Capitalists may achieve similar results by financing the expenditures of their governments. The effect of increasing claims against government is equivalent to that resulting from funding an export surplus. Kalecki used the term "domestic exports" to characterize such an increase of government indebtedness to capitalists. Domestic exports will stimulate production just as a foreign export surplus does. Again, this will generate increased profits equal to the domestic exports, which will stimulate investment activity (12, p. 19).

However, the effectiveness of these two forms of exports is not the same. The use of domestic exports to stimulate an upswing will affect a rise in imports and a resulting negative trade balance. This is unavoidable since increasing production will generate a stronger demand for indispensible materials that are not domestically procurable. Since there is no reason for a corresponding increase in exports, domestic exports will lead to a deterioration in the balance of trade. Such a deterioration may be offset by the attraction of foreign capital seeking to take advantage of the resulting increase in profitability attributable to domestic exports. But this attraction of foreign capital is usually hampered by anxieties as to the solvency of the country among foreign capitalists due to the deterioration of the trade balance (12, pp. 20-22).
Therefore, due to the uncontrollable needs for imports, government action to stimulate the economy may be dampened. Unfortunately, this dilemma is not only limited to "unnatural" stimulus. As Kalecki noted in the following:

It is now clear what are the advantages of an upswing stimulated by means of securing a surplus in foreign trade. It is worth mentioning that the "natural" upswing based on the automatic increase in investment activity does not enjoy these advantages, and if there is no influx of foreign capital, it will be confronted with the same balance of payments difficulties as the upswing based on "domestic exports" (12, p. 25).

The Inherent Crisis

Kalecki identified the inherent fluctuations in investment as the source of crisis. This inevitable recurrence is due to "the fact that investment is not only produced but also producing" (1, pp. 221-225; 11, p. 148). This understanding is central to his explanation of business cycles. He abstracted from the dynamic nature of the capitalist economy and considered the mechanism of the cycle in terms of the trendless static economy (3, pp. 124-137; 15, pp. 59-79; 16, pp. 119-121). This is a simplification that he eventually attempted to reconcile (19, pp. 263-276). However, since the bulk of his cycle analysis posited a trendless economy, that simplification will be followed here.

Within this context, the replacement requirements arising from depreciation will be assumed constant throughout
the course of the cycle. Further, this level is equal to the average deliveries of new capital equipment over the cycle. The mechanism of the cycle embodies four elements which will soon be developed. These are as follows (1, pp. 221-225; 6, pp. 111-112; 11, p. 148; 13, pp. 6-10; 15, pp. 62-64).

1. The time lag between placing investment orders and their resulting delivery; as before, this lag is the average construction period.

2. The production of investment goods is equal to gross accumulation.

3. The deliveries of capital equipment may lead to an increase in the volume of capital equipment.

4. Investment orders are an increasing function of gross accumulation and changing profit rates while they are a decreasing function of capital stock.

Starting from a recovery, the following results. As investment orders begin to increase, the production of capital goods begins to rise. A corresponding rise in gross accumulation results because of the self-financing nature of capitalist investment. This accelerating activity promotes further capital investment. Because of the lag between orders and deliveries, orders above the replacement requirements are made. As these are delivered the capital stock begins to swell. This rise will entail a reduction in investment activity as orders fall. They will continue to
fall until deliveries of equipment are well below depreciation needs. At this time the economy would have traversed the route of recovery, prosperity, recession, and will be rising from a depression. It is impossible to maintain a high level of economic activity, for a resulting increase in the capital stock will depress investment orders (13, pp. 10-11). Kalecki noted that "stability" could only occur at the depreciation level of activity. However, the lag between decisions and realization make this impossible. And as he frequently mentioned, it is impossible to stabilize investment activity at a level exceeding or not meeting replacement requirements (13, p. 11). The result, then, is an inherent automatic business cycle that contributes to economic instability.

The Automatic Business Cycle

So far, the following equations have been developed to describe a dynamic process.

\[ P_t = \frac{I_{t-w} + A}{1 - q} \quad 2.11 \]

\[ Y_t = \frac{P_t + B}{1 - \alpha} \quad 2.5 \]

\[ O_t = \frac{P_t + B}{1 - \alpha} + E \quad 2.20 \]

\[ S = I \quad 2.3 \]
\[ I_{t+\theta} = \frac{a}{1 + c} I_t + b' \frac{\Delta P_t}{\Delta t} + e \frac{\Delta O_t}{\Delta t} + d' \]  

\[ \text{(Incorporating equation 2.3 with 2.21)} \]

When Kalecki considered the business cycle, he usually abstracted from long run trends and rendered the above equations into a static form that only reflected cyclical fluctuations. This was accomplished by assuming A, B, and E constant. Now the relevant equations are reduced to a major statement.

\[ \text{Of:} \quad \frac{\Delta O_t}{\Delta t} = \frac{1}{(1 - q)(1 - \alpha)} \frac{\Delta I_{t-w}}{\Delta t} \]

where the rate of change in \( P_t \) and \( O_t \) are expressed in terms of the rate of change of lagged investment. The resulting investment equation is restated as:

\[ I_{t+\theta} = \frac{a}{1 + c} I_t + \frac{1}{1 - q} \left( b' + \frac{e}{1 - \alpha} \right) \frac{\Delta I_{t-w}}{\Delta t} + d' \]  

\[ \text{(2.22)} \]

Now \( I_{t+\theta} \) is merely a function of investment at time \( t \) and of the rate of change of investment at time \( t-w \) (3, p. 127; 16, p. 121).

However, any trend within \( d' \) must be abstracted from to render Kalecki's analysis static. \( d' \) must be such that the system will tend towards a level where \( I_t \) is equal to depreciation. So, with \( \delta \) symbolizing depreciation, then \( I = \delta \). Investment must be stable at the level where depreciation
requirements are met and $\frac{\Delta I}{\Delta t} = 0$. At depreciation, then, the variable $\frac{1}{1 - q} (b' + \frac{e}{1 - \alpha}) \frac{\Delta I}{\Delta t}$ renders no influence upon investment and the following equation results:

$$I = \delta = \frac{a}{1 + c} \delta + d'$$ \hspace{1cm} (2.23)

which means that $d'$ must assure that the system generates enough investment to satisfy depreciation requirements. Since $\frac{a}{1 + c}$ is less than one, $d'$ must be of a magnitude adequate to offset any dampening effect that may result from $\frac{a}{1 + c}$. Since the cycle is due to variations around this level, Kalecki restates the investment equation in terms of variation, $i$, of investment around the depreciation level, $I - \delta$. With $i = I - \delta$, the resulting business cycle equation is

$$i_{t+\theta} = \frac{a}{1 + c} i_t + \frac{1}{1 - q} (b' + \frac{e}{1 - \alpha}) \frac{\Delta i t - w}{\Delta t}$$ \hspace{1cm} (2.24)

This was further simplified by denoting

$$\frac{1}{1 - q} (b' + \frac{e}{1 - \alpha}) = u$$

which resulted in the following equation that served as the basis for Kalecki's analysis of the business cycle mechanism (3, p. 128; 16, p. 122).

$$i_{t+\theta} = \frac{a}{1 + c} i_t + u \frac{\Delta i t - w}{\Delta t}$$ \hspace{1cm} (2.25)
Kalecki studied the cyclical tendencies of the variations within the business cycle equation and compared this effort favorably to the cyclical history of American capitalism (16, pp. 137-142). If there is no variation, \( I_t = 0 \), this means that investment is equal to depreciation. This can be found at point A in the above figure (3, p. 129; 16, p. 123; 15, p. 70). If \( \frac{\Delta I_{t-w}}{\Delta t} \) is positive, investment was rising from below and increasing towards the level where \( I_t = 0 \). However, investment will continue to rise beyond this level because \( I_{t+\theta} \) is positive. This effect is in accord with \( \left( \frac{a}{1 + c} \right) I = 0 \) and the positive value of \( \frac{\Delta I_{t-w}}{\Delta t} \). Accordingly, when \( I_t = A, I_{t+\theta} = B \). In essence, when there is no variation from the level of depreciation, the influence of the component \( u \frac{\Delta I_{t-w}}{\Delta t} \) will affect investment orders above the stable level. Therefore, when the
deliveries are made, it will be at point B above depreciation. The continuation of this rise depends upon the influence of the coefficients \( \frac{a}{1 + c} \) and \( u \) upon this process (3, p. 128; 16, p. 122).

This cannot continue for some ceiling may eventually be approached. For, as Kalecki wrote, "The situation alters when deliveries of investment goods begin to exceed the level of maintenance. From then onwards capital equipment keeps expanding and the process is retarded" (11, pp. 143-144). This ceiling depends upon the combined influence of the coefficients. As it was demonstrated, \( \frac{a}{1 + c} \) is less than one, therefore \( \left( \frac{a}{1 + c} \right)I \) tends to pull \( I_{t+\theta} \) below the level of \( I_t \). However, since investment was rising before it reached \( I_t = 0 \), the second coefficient will continue to raise \( I_{t+\theta} \) after \( I_t = 0 \). Eventually the ceiling may be reached at point C. But as it was earlier noted, this level cannot be maintained and will begin a decline. At C - D, \( I = I_{\text{top}} \) and \( \frac{\Delta I_t - w}{\Delta t} = 0 \). And \( I_{t+\theta} \) which is now at point E can only decrease since \( \left( \frac{a}{1 + c} \right)I_{\text{top}} \) is less than \( I_{\text{top}} \).

Thus \( I_{t+\theta} \) is less than \( I_{\text{top}} \). This affects a downward fall in investment \( A' \) where the above sequence is repeated, but in reverse. And, with a little reflection upon the equations before the transformation to variations, one can see the implications of this mechanism. As Kalecki wrote, "These fluctuations in investment will be accompanied by
fluctuations in incomes, output, and employment" (3, p. 130; 16, p. 125). Further, he wrote (likely expecting skeptics), "Doubtless many people will consider this theory paradoxical. But it is not the theory which is paradoxical, but its subject--the capitalist economy" (11, p. 149).
CHAPTER BIBLIOGRAPHY


CHAPTER III

THE KEYNESIAN REVOLUTION

Introduction

Kalecki was not a precursor of Keynes, but a contemporary with a passion for improving the lot of humankind. In this spirit, he joined with the Keynesians and offered critical contributions to the understanding of capitalist dynamics. He used their preconceptions to fracture the concept of equilibrium and presented alternatives unencumbered by any traditional need for equilibrium. As Joan Robinson remembers of their first meeting, "He could challenge a weak point in Keynes's formulation and quickly subdue my feeble attempt to defend it" (26, p. 8).

Within this chapter, four topics will be presented: (1) a consideration of the basic differences between Kalecki and Keynes, (2) an examination of Kalecki's critique of the "weak points" of Keynes's General Theory, (3) a look at the implications of Kalecki's "Political Business Cycle," and (4) the problem of the Imperialist-Armament complex.

Kalecki and Keynes

Marx's reproduction schemes constitute a natural framework for Kalecki's analysis of capitalism. Beginning with a Marxist perspective, it is not an accident that Kalecki
should "arrive at the same results as Keynes insofar as the kernal of his ideas are concerned and without the tortuous rejection of received notions that Keynes had to go through" (2, pp. 107-108).

Keynes's vision was founded upon neoclassical preconceptions. He unquestioningly accepted the prevailing orthodoxy and came to be rated as a brilliant representative of the neoclassical school. As such, Paul Sweezy notes "he never really felt at home except in argument with his neoclassical colleagues" (28, p. 21). This alludes to the true nature of Keynes's achievement. He was able to demonstrate to his peers that by accepting Say's Law they were asserting the impossibility of reality. With this vantage point, he ably developed a penetrating analysis of the capitalist economy. He was to demonstrate that depression and unemployment are the norms to which the capitalist economy tends and demolish the myth of a harmonious relation between private and public interests, which was the cornerstone of nineteenth century liberalism. But his critique ceased at this point, for his mission was to reform neoclassical economics and bring it back to the real world from which it had strayed. His orthodox excellence enabled him to successfully exercise a profound influence upon his colleagues. However, as Sweezy argues, these same reasons account for the fact that "Keynes could never transcend the limitations of the neoclassical approach
which conceives of economic life in abstraction from its historical setting and hence is inherently incapable of providing a scientific guide to social action" (28, pp. 21-23).

Keynes was too preoccupied with immediate problems to think about the real implications of neoclassical theory. At times he found capitalism morally and aesthetically abhorrent, but his objective was to avert its self-destruction. Therefore, he did not press his criticisms of capitalism or its apologists very deeply (21, pp. vii-viii). He believed that the persistent inability of the existing orthodoxy to explain our troubles originated from a failure of intelligence and not from some structural changes or from any breakdown of a social system.

It never occurred to him to question, still less to try to escape from the broader philosophical and social tradition in which he was reared. The major unspoken premise of that tradition is that capitalism is the only possible form of a civilized society (28, p. 24).

Therefore, as Klein explains "the Keynesian approach is clearly to modify capitalism so that full employment can be maintained. Any features of the capitalist system which do not interfere with the achievement of full employment may be preserved, according to this position" (17, p. 166).

Michal Kalecki held a view of capitalism much different from that of Keynes. Kalecki experienced the brutal misery, waste, and havoc wrought by economic crisis in a way Keynes...
never experienced. Kalecki's formal education was in engineering. However, this ceased when a depression forced his father into unemployment. Kalecki, a Jew, then sought employment in a country where overt anti-Semitism existed. George Feiwel succinctly reflected upon Kalecki's plight with "If suffering helps to understand this queer world of ours, Kalecki was well-equipped for understanding it" (7, p. 48).

From outside the mainstream of neoclassical economic theory, Kalecki without any contact with Keynes, discovered all the basic components which entered also into Keynes's analytical system (7, p. 27). He was self-taught in economics and not exposed to the mind set of the existing economic orthodoxy. Therefore, he was able to observe modern capitalism with a clear mind unencumbered by the traditional modes of thought. His self-education was a culmination of reading Tugan Baranovsky, Karl Marx, and Rosa Luxemburg. His ideas came from Marx rather than from Marshall. Joan Robinson, while commenting on Kalecki's Marxian roots, noted that he had one great advantage over Keynes--"he had never learned orthodox economics," while "Keynes could never make head or tail of Marx" (24, p. 96). And while Keynes struggled to shed the shackles of past heresies to explain a phenomenon from a distance, Kalecki had no such burden to contaminate his analysis. Rather, he was able to develop his theories through a close
observation of life. And, as Feiwel stated, "His over-riding passion in life was social justice, full employment, and an adequate and growing living standard for all" (7, p. 49).

The Birth of a General Theory

In 1933, Kalecki published the rudiments of a general theory in "An Attempt at a Business Cycle Theory" (8). This thesis arose from Marxist schemes of reproduction and from his original research concerning the division of national income (19, p. 2). It contained the essentials of Keynes's General Theory and was to lead him to the forefront of the economic revolution (12, p. vii; 23, p. ix). Kalecki did not slur over class differences as Keynes did, but integrated them into the theoretical contributions he proffered throughout his life. His attack upon orthodoxy was more direct, though perhaps more conventional than Keynes. It was conventional in the sense that the problem of the trade cycle was regarded as a special problem separate from the main body of economic doctrine that possessed no satisfactory solution. Joan Robinson postulates that it is for this reason that the significance of Kalecki's ideas were not recognized by his peers. Keynes, though, attacked the main body (in which Kalecki was not schooled) directly and never succeeded in contributing a coherent cycle theory (23, pp. ix-x). However, such an attack by someone as
formidable as Keynes was impossible to ignore and prompted a momentum Kalecki could never achieve.

His theory was presented at the conference of the International Econometric Society in 1935. Maurice Dobb, in reviewing a collection of essays published after Kalecki's death, noted that at the 1935 meeting, "The main lineaments of the theory, indeed, are beautifully simple: yet on their first appearance they had the air of stark paradox for minds schooled in the traditional sophistries about full employment equilibrium" (5, p. 215). Even though few of the society's members appreciated or understood Kalecki's theory, it was published in the Econometric Societies July, 1935, periodical. Along with publishing his little read, mathematical exposition entitled, "A Macrodynamic Theory of Business Cycles," the Society recommended Kalecki to the Rockefeller Foundation as a candidate for a scholarship (19, p. 4).

The scholarship facilitated a year's leave from the institute in Warsaw where he was working. Kalecki left Poland to make intellectual contact with other economists and to write The General Theory of Employment (25, p. 1). He was in Stockholm when Keynes's General Theory of Employment, Interest, and Money was published. Upon its reading, Kalecki discontinued his own endeavor and traveled to England where he was to collaborate with the Keynesian "circus" at Cambridge (15, pp. 4-6; 25, p. 1).
In this way, as a result of particular historical conditions, Kalecki was pressed formally into the Keynesian current, but with his unequivocal socialist attitude, the adjective "left-wing" was usually added to the name "Keynesist" (15, p. 4).

There were inevitable differences between the attitudes and conclusions of Kalecki and Keynes. The latter was a capitalist bent on reform while the former was a socialist and severe critic who viewed capitalism as a paradoxical system (15, pp. 4-6). Kalecki joined the Keynesian "circus" as a student, interpreter, and major contributor to Keynesian thought. However, when considering his critical contributions, one is compelled to acknowledge that he was not a mere precursor of the Keynesian system. Indeed, as Tadeusz Kawalik noted in a biographical sketch, there was a paradoxical nature in the role Kalecki played as a pupil and interpreter of Keynes (15, p. 4). For even with their similarity of results, they differed on almost every major element of Keynes's system from the determinants of investment to the concept of equilibrium in a capitalist economy.

Another member of the "circus," Joan Robinson, reflected upon Kalecki's advent at Cambridge:

He challenged us on a number of weak points in Keynes' analysis and forced us to reconsider them. He introduced a different interpretation of the process by which an increase in investment brings about an increase in savings; Keynes relied upon a "psychological law" that when an individual's income increases, his expenditure for consumption increases by less; an increase in the rate of investment pushes income up to the point where saving has increased correspondingly. Kalecki pointed out
that an increase in investment brings about increased saving by raising profits relatively to wages (25, p. 1).

Savings

The Kaleckian treatment of savings is different from that of Keynes. His theory of savings is linked to the "degree of monopoly" rather than to the psychologically based "propensity to consume." Although the degree of monopoly (as will be shortly examined with the multiplier) plays the same role in Kalecki's theory as the propensity to consume does in Keynes' and may appear as the same formal expression as the propensity to consume, it has a different meaning that indicates a view of savings in Kalecki's formulation that is quite different than that of Keynes (27, p. 544).

Keynes tied the level of savings to the level of income (16, pp. 89-96). His neoclassical departure exists in the separation of savings from the interest rate. However, his neoclassical bent persists where savings become subject to individual consumption decisions to the degree that these savings are part of the individual's income. Nina Shapiro, while making this observation, notes that "this neoclassical aspect of Keynes's treatment of savings is expressed in its attribution of the proportion of savings out of income to the 'propensity to consume'" (27, p. 545). This bent obscures the autonomous character of the Keynesian investment
process by bringing investment funds into the sphere of consumption decisions. To the degree this occurs, investment is made dependent upon such decisions (27, p. 545).

In Kalecki's theory, savings reside as a component of a firm's profit, which it realizes through the sale of commodities in the market. This brings savings within the realm of a firm's expansion decisions rather than any individual consumption decisions. Accordingly, the funds needed for investment do not enter the sphere of consumption decisions. Instead, they are a function of the determinants of profits. And, as developed in chapter two:

\[
\text{capitalist profits} = \text{capitalist savings} + \text{capitalist consumption}
\]

Thus, the problem of determining a saving function is not one of discovering society's psychologically-based consumption behavior, but one of determining the degree of monopoly which affects the distribution of income between wages and profits. Since Kalecki's approach links the proportion of savings out of income to the degree of monopoly, "the level of income and employment no longer depends upon the investment decisions of firms and the consumption decisions of individuals" (27, p. 545). Instead, the degree of monopoly and the investment decisions of capitalists become the determinants of income and employment.
Equilibrium

Kalecki questioned the notion of investment induced in accordance with the marginal efficiency of capital. Keynes assumed that the larger a particular investment, the less the marginal efficiency of any corresponding assets would be (16, p. 136). This was due to a rise of the supply prices of assets needed for capital investment. Any gap between the marginal efficiency of a capital-asset and the interest rate would induce an increase in investment until rising supply prices reduce the marginal efficiency of all assets to the existing level of the interest rate. Or, as Keynes wrote in his General Theory,

Now it is obvious that the actual rate of current investment will be pushed to the point where there is no longer any class of capital asset at which the marginal efficiency exceeds the current rate of interest (16, p. 136).

Kalecki criticized this linkage of investment, MEC, and the interest rate. First, it only indicated that unless the marginal efficiency of capital, calculated in accord with the present level of investment goods prices, was equal to the interest rate, some change in investment will occur until a new situation arises whereby the marginal efficiency of investment equals the interest rate. Nothing was revealed about the rate of investment decisions undertaken by capitalists faced with given market prices of investment goods (14, p. 84). Keynes asserted that this disequilibrium would inspire a change in the rate of investment until the
new level of investment and prices were equal to the interest rate and equilibrium resulted. However, Kalecki noted that this increased investment would entail not only a rise in investment goods prices but also a rise in profit expectations and improve the marginal efficiency of capital-assets. And since the marginal efficiency was again higher than the interest rate, disequilibrium persisted and investment would continue to rise (14, p. 84). Kalecki then asked the question, "If there are schemes which promise a rate of profit greater than the rate of interest, would not each individual enterprise be willing and anxious to carry out an indefinitely large amount of investment?" (4, p. 117; 21, p. 83; 23, p. x). Therefore, given the effect of rising profit expectations, capitalists would invest an infinite amount of financial capital (24, pp. 96-97). It was fruitless to defend this view with the argument that a faster rate of investment would increase the cost of capital goods and reduce the prospective rate of profit, for any rise of costs would "come about as a result of actual investment, \textit{ex post}, while the marginal efficiency of capital concerns investment plans \textit{ex ante}" (23, p. x). And, as Kalecki wrote, 

We see now that the Keynesian conception, which tells us only how great investment will be if the given "disequilibrium" changes into an "equilibrium" encounters a difficulty in this respect also, for it appears that the rise of investment does not lead to "equilibrium" at all (14, p. 84).
He was critical of writers, such as J. R. Hicks and Oskar Lange, who constructed models of Keynesian theory focusing attention upon equilibrium while ignoring changes in capital equipment and failing to distinguish between investment decisions and investment. Such equilibrium was hampered by changes in capital equipment since "investment is generally not at the level of wear and tear" (9, p. 139). For as equipment does change, the state of equilibrium cannot be permanent.

It is not a question of whether some underlying equilibrium tendency does exist, but rather, whether its achievement is merely by accident. As depreciation fosters new investment decisions, the capital stock will increase after a certain lag. This will continue until "equilibrium" is reached at which point investment activity is compatible with the existing labor supply. However, past investment decisions will continue to spawn an increasing stock of capital. This will result in a deterioration of the prospective rate of profit and a decreasing investment rate. Alas, what happened to equilibrium (9, pp. 138-141)?

The interest rate is an important consideration for Keynes and within this context Kalecki ably counters the concept of an equilibrium level of investment and income. But as mentioned in chapter two, the interest rate is not an important consideration for investment. For, "investment 'finances itself' whatever the level of the rate of
interest" (13, p. 73). And further, "it will be inde-
pendent of the level of the rate of interest" (13, p. 50).

Kalecki's approach was not as problematical. It held
no assumptions of equilibrium and separated investment into
two dimensions by recognizing a lag between investment
decisions and actual investment. He introduced into his
model the concept of entrepreneurial capital and its effect
upon investment decisions. Risk was taken to the supply
side and he postulated that the size of a capitalist's
investment decision was an increasing function of the pro-
spective rate of profit, depending upon the amount of
rentier capital his entrepreneurial capital can attract.
Kalecki did not treat investment decisions as if they were
independent of the actual rate of investment. He tied
profits directly to changes in actual investment, which in
turn affect present investment decisions and future de-
liveries. Capital stock was considered as a depressing
factor upon investment decisions since it represented old
capital which competed with new capital for profits. Within
such competition, as examined in chapter two, lay the in-
erent seeds of crisis.

In summary, Keynes's view was an oversimplification that
was centered around an underlying equilibrium where the
marginal efficiency of capital would equal the interest rate.
Kalecki took this framework and demonstrated that due to the
ex ante nature of the investment schedule, increased
profitability would perpetuate itself so that capitalists would react with an infinite level of investment and "equilibrium" would never be reached.

**Multiplier**

The multiplier is not a central concept within Kalecki's General Theory. This, in the view of Joan Robinson, "makes his version in a way less rich than Keynes' though no less forceful" (24, p. 95). Admittedly, the multiplier is not held in high esteem by Kalecki, but neither is it absent from his theory (9, p. 54). And, though it is not stated as such, a multiplier possessing the identical mathematical characteristics of Keynes' is within the Kaleckian theoretical construct. Although the results may appear similar, the implications are not. This multiplier may be stated as

$$\frac{1}{1 - \alpha}$$  \hspace{1cm} 3.1

where \(\alpha\) represents the ratio of workers' income to national income. As discussed earlier, this is determined by the degree of monopoly. Accordingly, if the product of \(\alpha\) and national income provide the workers' share, \(w\), then it must also be true that the product of national income, \(Y\), and \(1 - \alpha\) will provide the share accruing to the non-worker class, \(y\). Or

\[(1 - \alpha)Y = y\]  \hspace{1cm} 3.2
It follows that 3.2 can be restated as

\[ \frac{1}{1 - \alpha} \cdot y = Y \quad 3.3 \]

where the effect of a change in \( y \) on \( Y \) is governed by the degree of monopoly power.

The "richness" of the multiplier is discussed in detail within Kalecki's essay, "Investment and Income" (9, pp. 42-74). Here he develops a generalization that in the Keynesian framework would be construed as an equilibrium inducing relation. It is

\[ Y = \frac{1}{1 - \alpha} \cdot I + \frac{c_o}{1 - \alpha} \quad 3.4 \]

where \( c_o \) = aggregate consumption of non-wage earners. One can easily see that the ratio of an increment of income, \( \Delta Y \), to the corresponding increments of investment, \( \Delta I \), is equal to \( \frac{1}{1 - \alpha} \).

\[ \frac{\Delta Y}{\Delta I} = \frac{1}{1 - \alpha} \quad 3.5 \]

Thus, \( \frac{1}{1 - \alpha} \) is a simple multiplier that appears identical to the Keynesian multiplier. However, several fundamental dissimilarities exist between the Kaleckian and Keynesian context into which this multiplier is placed.

Keynes chose to overlook any class disparities in the explanation of the psychologically-based propensities to
save and consume. This decision was not from his ignorance of existing income inequality. Indeed, he wrote, "I believe that there is social and psychological justification for significant inequalities of incomes and wealth, but not for such disparities as exist today" (16, p. 374; 20, p. 5). Rather, it likely arose from his inability to deal with the class concept and its implications. As Joan Robinson notes, "he was struggling to rediscover Marx's scheme. Kalecki began at that point" (24, p. 96). Keynes's symbolic effort in his General Theory to deal with such inequality can be found within his consideration of a fall in money-wages. He wrote,

It will, therefore, involve some redistribution of real income (a) from wage-earners to other factors entering into the marginal prime cost whose remuneration has not been reduced, and (b) from entrepreneurs to rentiers to whom a certain income fixed in terms of money has been guaranteed (16, p. 262). He then followed with the question, "What will be the effect of this redistribution on the propensity to consume for the community as a whole?" (16, p. 62). Keynes understood that such a transfer would likely diminish the aggregate propensity to consume. He accepted this result, but slighted any implication by not seriously incorporating it into the factors contributing to the community's propensity to consume and save (16, pp. 89-131, 62). Therefore, the reality of income inequality arising from the class structure is absent from the Keynesian multiplier (29, p. 254).
Kalecki interposes the class concept into the multiplier. And, as demonstrated earlier, this permeates his analysis of the economics of capitalism. His perception was not based upon any "Psychological Law." Rather than asserting that increased investment pushes income up to a point where saving is increased by a corresponding amount in accordance with some subjective, psychological propensity, he (as discussed in chapter two) demonstrates the existence of an inevitable equality between capitalists' saving and investment due to the self-financing nature of capitalist investment. He points out that an increase in investment brings about increased saving by raising profits relative to wages (25, p. 1).

Kalecki notes that the savings of workers are so small that they may be neglected, thus identifying total private savings, $S$, with non-worker saving, $s$, which is equal to the difference between non-worker income, $y$, and non-worker consumption, $c$.

\[
\text{Giving: } \quad I = S = s \quad 3.6
\]

\[
\text{And } \quad s = I = y - c \quad 3.7
\]

By neglecting workers, he asserts that their actions (they must consume their earnings) are of no importance in the determination of income. This is evident in equation 3.3, in which changes in non-worker income, $y$, are magnified by
the multiplier and reflected in a new level of national income, \( Y \) (9, p. 54).

Through investigation he found that in the moderately long period a close connection between \( c \) and \( y \) was likely to exist.

\[
\text{Or} \quad c = c(y) \quad 3.8
\]

This enabled him to establish a functional relation between investment, \( I \), and national income, \( Y \). Since the above two equations express the "fact that investment, since it is equal to total savings, is also equal to that of non-wage earners alone, because the saving of wage earners is negligible" (9, p. 54). And since the relative share of worker income in national income is a constant (determined by the degree of monopoly) equation 3.2 determines \( y \), \( \left(\text{profit}/y\right) \). Since combining equations 3.2, 3.7 and 3.8 gives:

\[
I = (1 - \alpha)Y - c(y) \quad 3.9
\]

It follows that

\[
Y = f(I) \quad 3.10
\]

where \( f \) is an increasing function. Thereby again giving the multiplier:

\[
\frac{\Delta Y}{\Delta I} = f'(I) = \frac{1}{1 - \alpha} \quad 3.5
\]
Evidently, regardless of the differences of the variable $\alpha$ between Keynes and Kalecki, the resulting action is the same. A reservation must be interjected. In the Keynesian mode, an increase in society's propensity to consume will result in an increasing multiplier. But in the Kaleckian mode, an increase in the degree of monopoly not only increases the share of income, $y$, going to non-workers, but it also decreases the magnifying nature of the multiplier. This is consistent with the earlier analysis of the dampening effect upon income, output, and employment of an increase in the degree of monopoly. This concept of monopolistic influences upon income is one that, within the Keynesian framework, is attributable to Kalecki (24, p. 95).

Kalecki notes that "there is no 'magic' in the working of the multiplier" (9, p. 54). And that "the formula of the multiplier shows that if some increase in the rate of investment has occurred, income must have increased by an amount which is $\frac{1}{1 - \alpha}$ times as great" (9, p. 54). He also emphasized its limitations:

The multiplier cannot tell us what would happen if, e.g., public works financed by State borrowing were undertaken since other kinds of investment might increase or fall off in consequence (9, p. 54).

In essence, though the multiplier can be found within the Kaleckian model, it is not central to his explanation. In contrast, the multiplier concept provides Keynes with a
questionable ability to explain the workings of a capitalist economy.

Political Business Cycle

Keynes was a reformer. He wanted to reform capitalism in order to assure its survival (17, p. 184). He conceded two outstanding faults within capitalism: (1) its "failure to provide for full employment and (2) its arbitrary and inequitable distribution of wealth and incomes" (16, p. 374). He tried to reconcile the former failure in his construct, but the latter was not perceived of equal value and was accorded only slight consideration. L. R. Klein notes in his book, The Keynesian Revolution, that "Keynes has shown us a way to get higher levels of income, but he had not assured us that this income will be distributed in an equitable manner" (17, p. 184). The inequitable distribution of income was an acknowledged problem, but it was not a predominate concern of Keynes. He stated "There is social and psychological justification for significant inequalities of incomes and wealth, but not for such large disparities as exist today" (16, p. 374). He was willing to accept, more or less, the distribution rendered by capitalism and directed his efforts toward reforming its failure to provide stable employment.

The line of least resistance seemed, evidently, to be to improve the conditions of employment while still maintaining the capitalist market mechanism for allocation of economic resources (17, p. 166).
Thus, the Keynesian approach is to modify or reform capitalism so that full employment can be maintained. Klein defends Keynes' avoidance of distributional problems with "there were more urgent matters at hand" (17, p. 187). Keynes's purpose was not to criticize, but to reform and preserve the capitalist system. He was too preoccupied with the immediate problems at hand to consider what his neoclassical foundation really entailed (21, pp. vii-viii). However, he provided a set of theoretical tools which were to justify government intervention for resolving unemployment.

But there are groups who resist the implementation of any social reform (17, pp. 183-187). Kalecki believed that there are inherent characteristics developed within the capitalist system which will provide insuperable obstacles to the actual carrying out of the necessary measures. The reality of special interest groups who resist any social change supports this view.

They will oppose any measure that endangers their own profit position even at the expense of social maladjustment. Unless entrepreneurs can be brought to look upon the entire system and their social responsibility toward it, the Marxists will be correct in contending that Keynesian policies are not politically feasible (17, p. 185). Keynes addressed the above with the question, "Are the interests which they will thwart stronger and more obvious than those which they will serve?" (16, p. 383). He did not attempt to answer his question, but he observed that "if the
ideas are correct—an hypothesis on which the writer himself must necessarily base what he writes—it would be a mistake, I predict, to dispute their potency over a period of time" (16, p. 383). Keynes did not doubt the power of his ideas and their ability to accord an eventual triumph in the reform of capitalism. This is the implication of the final thought of his General Theory, within which his view of change is embodied. He concluded with, "But soon or late, it is ideas, not vested interests, which are dangerous for good or evil" (16, p. 384).

Kalecki's interpretation was less optimistic than Keynes. "He foresaw a political trade cycle; governments would vacillate between fear of inflation and fear of unemployment; the stop-go cycle would overlay a general trend of accumulation" (21, p. 94). He also dealt with "prescriptions" for achieving and maintaining full employment in a capitalist economy. And like Keynes, he was concerned with the generation of effective demand adequate to secure and maintain full employment (15, pp. 39-58). His methods, albeit with different emphasis, were similar to Keynes. In his essay, "Three Ways to Full Employment" (15, pp. 39-58), Kalecki considers alternatives for maintaining employment.

1. The use of deficit spending to fund public investment and subsidize consumption.
2. The stimulation of private investment.
3. The redistribution of income from higher to lower income classes.
His emphasis was different, for he argued that stimulating private investment was unsatisfactory, while the remaining measures provided adequate means to maintain full employment. However, he was not as willing as Keynes to accept the "power of ideas" in the realm of social change. In a 1943 essay, "Political Aspects of Full Employment," Kalecki charged "the assumption that a government will maintain full employment in a capitalist economy if it only knows how to do it is fallacious" (10, p. 75). He countered the hopes of reform and of the administration of some technical fix by acknowledging the misgivings of a threatened big business towards any government spending for the maintenance of full employment. But the interests of the "captains of finance" would seem to benefit from such policies, since higher output and employment enhance their profits (10, p. 75).

Kalecki answered this paradox by charging "that the business community shared a general hostility toward the attainment of continuous full employment through government spending for three entirely 'rational' reasons" (3, p. 222; 10, p. 76).

1. Government interference in the problem of employment would reduce the dependence of the economic performance upon private investment.

2. Government spending on public investment and subsidizing consumption could eventually expand in directions inimical to the interests of the "captains of industry."
3. The maintenance of full employment could enable the development of social and political changes that could threaten their position (3, p. 222; 10, p. 76).

Kalecki noted,

Any widening of state activity is looked upon by "business" with suspicion, but the creation of employment by government spending has a special aspect which makes the opposition particularly intense (10, p. 76).

The importance of business confidence places tremendous power in the hands of the "industrial leaders."

This gives to the capitalists a powerful indirect control over a government policy: everything which may shake the state of confidence must be carefully avoided because it would cause an economic crisis (10, p. 76).

However, as government learns the trick of using its purchases to maintain employment, the powerful control of the "captains of industry" loses its edge. "Hence budget deficits necessary to carry out government intervention must be regarded as perilous" (10, p. 77). And "The social function of the doctrine of 'sound finance' is to make the level of employment dependent on the 'state of confidence'" (10, p. 77). Therefore, their opposition is rooted in a conflict over economic power.

Their dislike of government spending policy encompasses two areas. The first areas is one of political control, while the second arises from the potential "class threat" that social change might entail. Though they would accept government intervention in the areas that do not compete
with their interests, it is feared that the government may eventually be tempted to nationalize industries so as to gain a new sphere in which to carry out investment (10, p. 77). One might expect that industrial leaders would prefer the subsidizing of mass consumption, since this would not be embarking on any sort of business "enterprise."

But as Kalecki noted, this is not the case.

Indeed, subsidizing mass consumption is much more violently opposed by these "experts" than is public investment. For here a "moral" principle of the highest importance is at stake. The fundamentals of capitalist ethics require that "You shall earn your bread in sweat"—unless you happen to have private means (10, p. 78).

Even if the above political reasons could be overcome, the maintenance of full employment would spawn an environment conducive to social change which would give new impetus to business opposition. The threat of unemployment and impoverishment would cease to be a sanction to be wielded by the "boss." In describing this change, Kalecki wrote, "The social position of the boss would be undermined and the self-assurance and class consciousness of the working class would grow" (10, p. 78). Even though profits would be higher under a regime of full employment, our "captains of industry" would resist in the name of higher productivity. Furthermore, "political stability" is more important than profits. "Their class instinct tells them that lasting full employment is unsound from their point of view and that
unemployment is an integral part of the normal capitalist system" (10, p. 78).

Therefore, in the Kaleckian view, an inherent tendency exists for the politically inspired failure of using a Keynesian fix to maintain full employment. And from within the capitalist womb springs the inevitable birth of a political business cycle and the futility of any reform. Industrial leaders agree that something must be done in a slump, but a conflict exists as to the direction of government intervention and as to whether it would merely alleviate slumps or secure permanent full employment (10, p. 80). Business sees itself as the proper medium through which intervention should be conducted. This can be accomplished by stimulating private investment. Such intervention does not involve the government in public investment or "wasteful consumption subsidization." However, if business is not confident in the political situation, such subsidy will not be successful.

Unfortunately, stimulating private investment does not eliminate the forces which cause cyclical fluctuations in a capitalist economy. As the recurring slumps develop, so will the increasing need for private investment stimulation. Eventually, subsidies would be necessary to rise from a slump or maintain full employment. And since the business forum still is to be considered, their reactions could negate any stimulus to improve economic activity. This
"regime" of the political business cycle is summarized by Kalecki.

This state of affairs is perhaps symptomatic of the future economic regime of capitalist democracies. In the slump, either under the pressure of the masses, or even without it, public investment financed by borrowing will be undertaken to prevent large scale unemployment. But if attempts are made to apply this method in order to maintain the high level of employment reached in the subsequent boom, a strong opposition of "business leaders" is likely to be encountered. As has already been argued, lasting full employment is not at all to their liking. The workers would "get out of hand" and the "captains of industry" would be anxious to "teach them a lesson." Moreover, the price increase in the upswing is to the disadvantage of small and big rentiers and makes them "boom tired."

In this situation a powerful bloc is likely to be formed between big business and the rentier interests, and they would probably find more than one economist to declare that the situation was manifestly unsound. The pressure of all these factors and in particular that of big business, would most probably induce the government to return to the orthodox policy of cutting down the budget deficit. A slump would follow, in which government spending policy would come again into its own (10, pp. 82-83).

The Imperialist-Armament Complex

If the "business community" succeeds in subverting any capitalist reform, other tragic avenues that exist may gain momentum. The forced idleness of unemployment breeds a perverse social ill upon which the demagogue thrives. "The psychology of the unemployed worker is such that he is willing to listen to many dangerous arguments if they hold promise of a job" (17, p. 166). If fascistic demagogues
(such as those who festered in Nazi Germany) can promise jobs, followers will be found. Klein argues that

There is one type of solution to the unemployment problem in a capitalistic economy which will be brought about by natural forces if we adopt a do-nothing attitude. There will appear on the scene the fascist, who will bring about full employment by producing armaments in preparation for war (17, p. 167).

Kalecki was hopeful that the progressive forces could enable the capitalist democracy to achieve full employment and prevent the recurrence of fascism. Fascism represents the worst stage of capitalism. Unfortunately, it is a transition that may be unavoidable if progressive forces are unable to reform capitalism.

Such a tragic transition would overcome any reasons the industrial leaders may have for subverting government inspired full employment. The resistance to government spending is overcome by concentrating such efforts on armaments (10, p. 79). However, such expenditures entail profound implications for the economic character of society. The expansion of war goods will affect an expansion of the armed forces and lead to their preparation for war. This will induce hot competitive rearmament among nations which will in turn cause an explicit shift of government resources from social welfare to maximum war efficiency. This reallocation may present a facade of prosperity, but only at the expense of an inevitable conflict that will prevail as the war economy explodes (10, p. 79). Kalecki saw evidence of
such "competitive rearmament" or militarism in the United States economy (10, pp. 85-97). He also perceived a growing prevalence towards fascism forming to subvert government economic intervention (10, pp. 99-105). These symptoms of mature capitalism will be briefly considered below.

The second world war induced considerable expansion of capital equipment oriented towards rapid rearmament. This expansion was financed by government and in the post-war period sold to private big business at low prices (10, p. 86). The reconversion of this productive capacity from war goods to new armament production and consumer goods was actuated by pent-up demand for consumer durables. Rapidly increasing labor productivity provided the labor-power to utilize this tremendous productive capital. The capital combined with labor made it possible to double the national product (10, p. 86). However, Kalecki noted, the existence of such powerful productive forces does not explain their effective utilization. And, as he asserted, "Indeed, the discrepancy between the development of productive forces and the markets for their products constitutes one of the main contradictions inherent in the capitalist system" (10, p. 87).

Kalecki considered the continuing militarism of the United States economy as the reason for its high degree of utilization. This militarism aided the absorption of the United States surplus and the maintenance of employment by using expenditures of the "armament-imperialist" complex to
purchase business products and by increasing the size of the armed forces along with the number of government bureaucrats. These methods hamper a rise in the standard of living. However, the rise in labor productivity entailed an increasing level of GNP in spite of the non-producing methods used to assure absorption of the surplus (10, p. 95). With these observations, he argued, "the way in which the reduction of unemployment and the relatively rapid increase in the standard of living was achieved point to the elements of decay in monopoly capitalism" (10, p. 96).

Kalecki explained the functioning of the American armament-imperialist complex in terms of the following "triangle."

1. Imperialism contributes to a relatively high level of employment through expenditures on armaments and ancillary purposes and through the maintenance of a large body of armed forces and government employees.

2. The mass communications media working under the auspices of the ruling class, emits propaganda aimed at securing the support of the population for this armament-imperialist set-up.

3. The high level of employment and the standard of living increased considerably as compared with before the war (as a result of the rise in the productivity of labor) and this facilitated the absorption of this propaganda by the broad masses of the population (10, p. 96).

The above triangle supports the needs of the imperialist-armament complex and assures that no significant opposition persists in opposing the cold war apparatus (10, pp. 96-97). One may assert that the present United States economy
differs from that of the immediate post-world war economy. Perhaps, but it is possible to consider the events of the past thirty years in light of Kalecki's triangle since neither the substance nor the direction of United States capitalism has changed.

The use of fascism to justify government economic intervention is no longer needed since such intervention is firmly entrenched into "reformed" capitalism (10, pp. 100-101). Fascism can no longer proclaim the slogan of eliminating unemployment because employment is maintained at a rather high level in developed capitalist countries. Instead, while sustaining a cold war demagogy, government interference in the economy and social welfare programs are attacked. This "reverse ideology" is prevalent in the United States today with the vehement attacks upon welfare programs and the development of several "proposition 13" movements. And in tune with the recent cold war advocates, Kalecki wrote, "In all cases the fascist ranks are reinforced by anti-communist fanatics who are the product of prolonged propaganda spread through the mass communications media" (10, p. 102). According to Kalecki, this fascism, fueled by "predatory" groups of big business and other "angry" elements of the developed capitalist economies, exists to support the use of militarism for the absorption of the economic surplus (1, pp. 170-217; 10, p. 105; 12, p. 155). "This explains the fact that in the United States
there is no significant opposition to armaments and the cold war" (10, p. 96).

The Power of Ideas

In many respects Kalecki's model is superior to that of Keynes' in that it is explicitly dynamic. Keynes ignores the distributional problems of monopoly and the distorting effect it has upon income distribution and resource utilization (18, p. 448; 29, p. 254). Kalecki, however, takes the distribution as well as the level of income into account. Robinson argues that "Kalecki produced a more coherent version of the General Theory which brought imperfect competition into the analysis and emphasized the influence of investment on the share of profits. Kalecki's version was in some ways more truly a general theory than Keynes'" (20, p. 5). Maurice Dobb asserts further that "economists could have spoken (and some have) of the 'Kaleckian revolution'" (6, p. 221). However, Kalecki's version of the theory was lost in the United States while, as Robinson notes, "Keynes was accepted and, in garbled form, incorporated into current teaching" (22, p. 8). In this form, Keynes's theory was "melted down and moulded into a 'neoclassical synthesis'" (26, p. 17). While explaining why Kalecki's version was ignored in the United States, Robinson wrote, "Both were holding a mirror up to modern capitalism, but Keynes' mirror
was somewhat misty while Kalecki's was too bright for comfort" (22, p. 8).

Kalecki's interpretation of the General Theory was less optimistic than Keynes'. And regarding their respective roots (neoclassical vs. Marxian), it should be expected that they would arrive at different conclusions. Keynes held that the strength of his ideas would enable the eventual reform of capitalism. However, as L. R. Klein noted, "unless entrepreneurs can be brought to look upon the entire system and their social responsibility toward it, the Marxist will be correct in contending that Keynesian policies are not politically feasible" (17, p. 185). Kalecki would agree. However, he held no hope of any such transition. Within the context of his analysis of a political business cycle, the foe of reform is evident. The foe of capitalism is not the Marxist with a critique. The foe can be found within the class structure dominated by interests that persistently resist any social change or reform. Perhaps this would have been realized had Kalecki's version been acceptable for United States consumption. With the dimensions that Kalecki contributed to the General Theory, it is a shame that the Keynesian revolution came from Keynes rather than Kalecki.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

POST-KEYNESIAN ECONOMICS: THE KALECKIAN CONTRIBUTION

Introduction: A New Synthesis

Even though Keynes's contribution has been hailed as revolutionizing economic thinking, to those who were ardent members of the Cambridge circus, the revolution proved largely abortive. Many of their critical insights into the workings of an industrial market economy seem to have been ignored, with the result that there has been little fundamental change in the way economists perceive the world (5, p. 1293). While these associates, along with their followers, were trying to enlarge the break with neoclassical theory, others within the economics profession were working to contain the Keynesian heresy (3, pp. 9-10). In the United States, with the help of Paul Samuelson, Keynes's theory was successfully remolded into a neoclassical synthesis by grafting the macroeconomic model onto the prevailing microeconomic theory (3, pp. 9-10; 22, p. 8). Michal Kalecki, with his emphasis upon distributional and effects of investment and saving, proved indigestible and was simply ignored by American orthodoxy and its synthesis (23, p. 8). Now, as Joan Robinson hopefully notes, "that
disillusionment with the synthesis is setting in, perhaps he will get a hearing at last" (23, p. 8).

George Feiwel writes, "The Keynesian revolution supplied the remedies which could cure the mortal ills of the ailing patient. The fact that the patient is still not well after more than thirty years is not a reflection so much on the potency of antidotes as on their misuse and often disuse" (6, p. 231). The persistence of these "mortal ills" has nurtured an undercurrent of economists questioning the neoclassical synthesis. This rift is the basis for a heterodox synthesis known as post-Keynesian economics. It has taken over the hypothesis suggested by Kalecki and Keynes and refined and enlarged them to deal with the recent experience of industrial market economies (21, p. vii). This synthesis, in the view of J. K. Galbraith, accepts the decline of the market and is therefore concerned with gaining control of price and income (7, p. 10).

Kalecki and Keynes represent two separate strands of classical Keynesianism. In A Guide to Post-Keynesian Economics, Alfred S. Eichner argues that "it is difficult to say who . . . exerted the greater influence on the development of post-Keynesian theory" (3, p. 7). Keynes contributed a monetary perspective while Kalecki provided a real sector analysis of capitalism, both of which are essential for a comprehensive "analysis of production over time in a money-using economic system" (3, p. 7).
Regardless of who the major contributor of post-Keynesian economics may be, it represents a movement toward the development of economic theory which is intended to apply to reality. This movement is not muddled by ideological differences, for its purpose is to provide a theoretical framework that can be applied to reality. The ideological trap can only frustrate the intent. This should not be a problem, for as Robinson asserts,

An economic theory which is seriously intended to apply to reality is neither an ideological doctrine, such as the presumption in favour of laissez-faire, nor a tautology true by definition, such as the so-called quantity formula, \( MV = PQ \); it is an hypothesis about how an actual economy works (7, p. xvii).

This endeavor to develop relevant economic theory does not waste resources upon ideological questions. Therefore, the promiscuity of ideas is encouraged. This is evident when considering the source of the present contributors to this synthesis. For as Eichner notes,

Its members represent the coming together of several dissident traditions within economics--that of the American institutionalists and the continental Marxists, as well as that of Keynes' closest associates. Their work, taken together, potentially offers a comprehensive alternative to the prevailing orthodoxy in economic theory, an orthodoxy which, because of its lack of relevance, stands as the principal obstacle to intelligent economic policy (3, p. 4).

Even though this developing post-Keynesian paradigm has not settled into a rigid orthodoxy, Eichner has attributed five essential elements within its present development (3, pp. 11-16). First, it proffers a theory that explains
economic growth and income distribution. Possessing a Kaleckian bent, these are inexorably linked to one another. Second, the economic facts of past centuries are not overlooked. It differs from other modes of economic analysis since it is "concerned primarily with the depiction of an economic system expanding over time in the context of history" (5, p. 1294). The growth rate, along with the basis for change, is included in the post-Keynesian analysis. This leads into the third element where the developing paradigm is concerned with the dynamic behavior of an actual economic system. The influence of past history and the effect of future expectations upon decisions that shape change are taken into account by explicitly incorporating into the analysis the role of investment and saving into both the macro and micro level of economic analysis (5, p. 1294). The distinction of being rooted in a dynamic process sets the post-Keynesian approach apart from the neoclassical model. This can be traced to the influence of the Harrod-Domar growth formula and its Kaleckian refinement (5, pp. 1294-1295); 20, p. 12; 24, p. 547). The fourth element involves the description of an economic system with advanced monetary institutions and their credit extension ability. As Eichner argues, "This is in contrast to the neoclassical model, including its monetary offshoots, in which money does not matter insofar as real output is concerned" (3, p. 14). And finally, the last element
recognizes the existence of the powerful multinational and the lesser unions. Accordingly, the use of some competitive mechanism to determine prices represents only one dimension of reality. Such a mechanism may prevail in world commodity markets, but given the technologically advanced capitalist economies, the post-Keynesians adopt the Kaleckian examination by dividing markets into two categories. These are competitive "flexprice" markets and "fixprice" markets where both wages and prices are assumed to be administered (3, p. 15). In the view of post-Keynesians, the activity of fixprice markets present the more important part of the modern private enterprise sector (13, p. 35).

However, the purpose of the present chapter is to consider the Kaleckian influence upon this impending synthesis. Therefore this chapter does not afford a complete development of the post-Keynesian paradigm. With this in mind, this chapter will be limited to the following topics. They are Capital Accumulation, Income Distribution, and the Microeconomic Base. It is a difficult task to encounter these as explicitly separate areas, for they are interrelated in a macrodynamic sense. However, this is the task at hand. Once completed, this chapter will end with a general summary encompassing the breadth of this thesis.
Capital Accumulation

The development of the post-Keynesian treatment of accumulation translates the Harrod fundamental equation into one devoid of any neoclassical trappings. This equation was inspired by Keynes's *Treatise on Money*, which advanced the view that the relation between the amount saved out of income and the amount devoted to real capital investment was the prime cause of tendencies toward expansion or contraction (2, p. 227). Harrod wrote in "An Essay in Dynamic Theory" that his equation constituted "the marriage of the acceleration principle and the multiplier theory" (10, p. 256). This marriage is "the first of its kind in modern economics which formulates the problem of growth as one specifying the conditions within which growth can be sustained" (24, p. 547). These conditions are the exogenously determined variables within Harrod's fundamental equation which is

$$ G_W = \frac{S}{C} $$

4.1

The symbol $G_W$ represents an economy's warranted or self-reproducing rate of growth. The term warranted was selected to avoid the linguistic assignment of equilibrium (10, p. 227). His equation was never intended to demonstrate an equilibrium growth path. Rather, as Joan Robinson argues, it projects into the concepts of the *General Theory* the long run (19, p. 109). C represents the value of capital goods
necessary for the production of an incremental unit of output. This is the capital output ratio and it is a function of technical conditions. $s$ is determined by the thriftiness of the economy. The higher the "thriftiness," the higher the warranted rate of growth (18, p. 404).

However, the attainment of this path is hampered since accumulation comes about through decisions taken by profit seeking firms and there is no guarantee that the rate of investment in uncontrolled private enterprise will be either steady or at a desirable level (19, p. 109). This reality is reflected in what Harrod calls the natural or actual growth rate (10, p. 259; 18, p. 405). This rate is dictated by population growth and technical progress and requires a certain rate of investment to implement it (18, p. 405). Stability will exist only when the warranted growth rate is equal to the natural growth rate. If the investment decisions of firms produce a shortfall in the natural rate, causing a departure from the warranted rate, then "there will be a redundance of capital goods, and a depressing influence will be exerted; this will cause a further divergence and still a depressing influence" (10, p. 264). If the natural rate should rise above the warranted rate, then growth stimulation along with inflation will occur. As the system is stimulated to further expansion, the natural rate will move away from the warranted rate in an upward direction. And as Harrod notes, "the farther it
diverges, the greater the stimulus to expansion will be" (10, p. 264). A failure to obtain the proper rate is not remedied by any self-equilibrating force. Indeed, Harrod asserts that the actual growth path is highly unstable. He argues that "A departure from equilibrium, instead of being self-righting, will be self-aggravating (10, p. 264). Further, any departure "would set up a cumulative tendency to further departure in the same direction" (2, p. 228).

In Harrod's theory, growth is a process that generates its own conditions and depends on conditions independent of the growth process. This contradictory treatment results in the "knife-edge," for if any of the exogenous or fundamental conditions change so does the relation between the warranted and natural rate of growth, thereby generating instability (24, p. 547). This process is amplified due to the neoclassical character of his savings function. Savings are tied to the consumption decisions of individuals. This connection of investment funds to consumption decisions implies the dependence of growth upon consumption. Therefore, the self-reproducing growth rate must be consistent with the propensity to save of individuals (24, p. 548). This vestige enables a neoclassical seizure of this fundamental equation and a pre-Keynesian interpretation which re-institutes mechanical equilibrium. The rate of savings governs the rate of investment and the resulting warranted rate is synonymous with the natural rate of equilibrium.
The mechanics are as follows. Whenever saving is greater than what is necessary to maintain the natural rate of growth, the warranted rate will exceed the natural rate. Given a neoclassical production function, this excess saving will, via a fall in the interest rate, raise the capital to output ratio by an equal proportion. As the capital output ratio rises, the savings required to assure the maintenance of the natural growth rate is increasing which depresses the increasing capital output ratio until equilibrium is obtained and the natural growth rates and the warranted growth rates are equal. The interaction between savings and the capital output ratio via the interest rate assures a stable warranted growth rate with the economy growing at a constant rate (9, pp. 30-31; 19, pp. 110-112).

Even though Harrod cracked the door for such a mechanistic interpretation, it was one he found unacceptable (9, p. 31). He argues that "It can not be affirmed that there are 'natural forces' at work, via the interest rate, to keep $G_w$ at a constant value" (9, p. 31). There are no forces to assure that firms will carry out accumulation at the warranted rate (19, p. 112); especially, he argues, with the apparent lack of "animal spirits" in the United States and the United Kingdom (9, p. 20). Finally, for Harrod, an increasing propensity to save plays a role opposite to that asserted by his neoclassical counterparts. Instead of promoting growth, "it is an impediment to any growth at all."
This fundamental equation provides the starting point for the dynamic growth theory offered by post-Keynesians (5, pp. 1294-1295). However, by slighting the implications of income distribution among wage and profit earners in favor of a savings function tied to individual consumption decisions, the knife-edge phenomena appears (16, p. 16). This disappears with the recognition that profits provide the main source of saving and that investment is self-financing (1, pp. 26-29; 5, p. 1295; 16, p. 16; 18, pp. 405-406; 19, p. 103). This progress is attributable to the earlier efforts of Kalecki.

The knife-edge disappears from the post-Keynesian development of Harrod's fundamental equation because the neoclassical side of his theory is removed through the replacement of Harrod's treatment of savings with that of Kalecki. Specifically, as Shapiro explains, two distinct but related steps successfully eliminate the neoclassical aspect (24, p. 547). The first is the connection of savings to profit. As it was earlier enunciated, Kalecki readily accepts the proposition that wage earners do not save. Instead, profits represent the only significant source of savings in a capitalist economy. This same assumption is usually carried forth in post-Keynesian analysis. However, Luigi Pasinetti argues that such a simplification is unnecessary since workers are not "in the position to carry on the process of production and the process of capital
accumulation" (17, p. 113). He demonstrates that the relation between capitalists' savings and capital accumulation is not dependent upon any simplifying assumptions of workers not saving. Regardless of the necessity of Kalecki's simplification, it does not distort his analysis of "distributional factors." The second step is the connection of profits and investment activity. As developed by Kalecki, investment is the determinant of profits. Therefore, profits become both the means of expansion and the product of that expansion. Accordingly, capitalists are the "masters of their own fate" since they "earn what they spend." Investment, as earlier developed, is a self-financing process that is affected by the degree of monopoly which determines the distribution of income between wages and profits. These steps, argues Shapiro, bring savings within the realm of the production or, more precisely, the expansion decisions of firms rather than the consumption decisions of individuals. It thus separates the funds required for investment from the consumption needs of individuals, and ties these funds, instead, to the expansion needs of firms (24, p. 545).

The knife-edge is created by the unnatural assumption that the savings ratio is a function of consumer psychology rather than requirements of firms. The replacement of this assumption with the recognition that profits are the main source of savings and that investment generates the profits it needs incorporates the post-Keynesian view and eliminates the knife-edge phenomena.
Indeed, the view of accumulation as a self-sustaining process possesses much of Kalecki and underlies the argument of the post-Keynesian theory of accumulation as a whole. And as Shapiro concludes, "The special contribution of post-Keynesian economics to the theory of accumulation is precisely the analysis of the particular way in which the expansion of firms generates the markets and profits that it requires" (24, p. 548).

Income Distribution

The post-Keynesian treatment of self-sustaining accumulation is tied to an account of distribution that links the distribution of income between wages and profits and the rate of profit to capital expansion (24, p. 549). Within post-Keynesian theory the distribution of income is an integral part of any explanation of economic activity. Simple models have been developed to illustrate how control over investment activity implies control over income distribution and the rate of profit. These models can be traced to Kalecki's work of the 1930s (5, p. 1296). He was a major contributor to this method with an approach based directly upon the relationship of investment and prices to income distribution (14, pp. 51-52).

The theoretical base is provided by classical economists and presented within the modern aggregate framework. Kalecki divided national income into the profits received
by capitalists and into the wages received by workers.
"One group receives a wage determined by market forces, collective bargaining, or custom while the other receives the residual income of all the producing units in the system" (5, p. 1296). The national product is divided into the investment and the consumption undertaken by capitalists and the consumption activity of workers. He illustrated this using a balance sheet encompassing the above distinctions. In simple form

\[
\text{Gross Profits} + \text{Wages & Salaries} = \text{Gross Investment} + \text{Capitalists' Consumption} + \text{Workers' Consumption}
\]

\[
\text{Gross National Product} = \text{Gross National Product}
\]

Then by use of a simplifying assumption, Kalecki posited that workers' income was exhausted through consumption. Therefore it follows that aggregate wages are equal to the value of workers' consumption goods produced and that profits will be equal to the value of the consumption and investment activity of capitalists. Thus it follows that

\[
\text{Gross Profits} = \text{Gross Investment} + \text{Capitalists' Consumption}
\]

Recalling the earlier exposition of chapter two, this framework enabled Kalecki to explain the self-financing nature of capitalist investment and to demonstrate that:

\[
\text{Gross Capitalist Savings} = \text{Gross Capitalist Investment}
\]
The above framework provides the basis from which post-Keynesian distribution theory arises (14, p. 53). It further emphasizes the Kaleckian view of the capitalists' ability to control their future income. As Paul Eichner explains in *The Megacorp and Oligopoly*, "the more capitalists as the property-owning class invest, the larger will be the share of national income they command in the form of profits" (4, p. 178). The Kaleckian bent is evident with Eichner's reasoning. He continues with "This is because the higher the rate of accumulation, the greater will be the proportion of total output that must be made unavailable to workers for consumption" (4, p. 178). The self-financing nature of capitalist accumulation is implicit in his analysis for he notes that "the curtailment of consumption [is] being reflected in the relative increase of profits, or savings" (4, p. 178).

The conclusions arising from the above classification scheme are that capitalists can increase their share of national income in the form of rising profits simply by increasing the amount spent on investment. This increased investment leads to an increase in aggregate output. However, and this is consistent with Kalecki, capitalists can maintain their income share without investing. Even if they
consume their profits in high living, they do not suffer a reduction in their profit income. As J. A. Kregel argues, "As far as capitalist income is concerned, it is maintained independently of how it is spent" (14, p. 53).

In an analysis of the post-Keynesian approach to income distribution, Kregel noted the following core emphasis (14, p. 53).

1. The control of the profit recipients' investment activity and control over producer pricing. The effect of corporate power upon both of these activities is explicitly considered.

2. The dependence of productivity upon the rate of gross investment and technical progress.

3. The interdependence between the growth of output and the distribution of income between wages and profits. These elements highlight the view that firms (entrepreneurial or large corporations) not only determine their investment plans, but also the prices at which they will sell their output. When this is combined with demand, which is determined by the aggregate level of investment and consumption, they can, given costs, determine their profit.

Indeed, such a view is consistent with Kalecki's examination of cost and prices. Since society's income flows can be explained independently of any direct relation to individual or class productivity, it is not acceptable to justify unequal incomes on the basis of differential
productivity. As Kregel argues, "Income differentials are thus neither natural or economic facts, but the result of social and political custom and decisions, as well as market power" (14, p. 58).

Kalecki's work is the basis of the post-Keynesian models independently elaborated by Joan Robinson and Nicholas Kaldor (11; 15, p. 110; 18). Their efforts can be examined through the formulation afforded by Kaldor. He took Harrod's fundamental equation and inserted it into Kalecki's "Ricardian-Marxian" model of distribution. Writing $S_w$ and $S_p$ for the aggregate savings out of wages and profits, Kaldor begins with the following identities (11, p. 229):

\[
\begin{align*}
Y &= W + P \\
I &= S \\
S &= S_w + S_p
\end{align*}
\]

The value of total savings, $S$, reflects the savings activities of workers and capitalists. This propensity is reflected by a proportional relation that is notated as $s_w$ for wage earners and $s_c$ for capitalists. The relation between these proportions and the affected income class is represented by (11, p. 229)

\[
S_w = s_w W \quad \text{and} \quad S_p = s_c P
\]

Then, by assuming that the amount of investment necessary
to cope with population growth is actually carried out, he wrote (11, p. 229; 17, p. 105):

\[ I = s_c P + s_w W = s_c P + s_w (Y - P) = (s_c - s_w)P + s_w Y \quad 4.6 \]

Whence (17, p. 105):

\[ \frac{P}{Y} = \frac{1}{s_c - s_w} \frac{I}{Y} - \frac{s_w}{s_c - s_w} \quad 4.7 \]

and

\[ \frac{P}{K} = \frac{1}{s_c - s_w} \frac{I}{K} - \frac{s_w}{s_c - s_w} \quad 4.8 \]

and

\[ \frac{I}{Y} = (s_c - s_w) \frac{P}{Y} + s_w \quad 4.9 \]

which means, as Kaldor concludes, "given the wage-earners' and the capitalists' propensities to save, the share of profits in income depends simply on the ratio of investment to output" (11, p. 229). Furthermore, there is a distribution of income between wages and profits and equation (2) remains satisfied through time (17, p. 105).

Kaldor notes that in the "limiting case" where \( s_w = 0 \) the amount of profit is equal to the sum of investment and capitalist consumption (11, p. 230). In this case, the above equations can be restated with the two following:

\[ \frac{P}{Y} = \frac{1}{s_c} \frac{I}{Y} \quad 4.10a \]

and

\[ \frac{P}{K} = \frac{1}{s_c} \frac{I}{K} \quad 4.10b \]

Kaldor views this simplification as necessary for Kalecki's
theory of profits which he paraphrases as "Capitalists earn what they spend, and workers spend what they earn" (11, p. 230). A positive $s_w$ is viewed as a complication that invites instability. The value of $\frac{1}{s_c - s_w}$, which is described by Kaldor represents the change in distribution following a change in the investment rate. The greater $s_w$, the greater the coefficient, and the greater any resulting distributional shift favoring $\frac{P}{Y}$ (11, pp. 230-231).

However, Pasinetti has demonstrated that regardless of $s_w$, the implications resulting from Kaldor's "limiting case" still hold. Pasinetti sees an error in logic in Kaldor's analysis for "when any individual saves a part of his income, he must be allowed to own it, otherwise he would not save at all" (17, p. 106). He argues that the stock of capital is owned by those who made the corresponding savings in the past. This ownership entitles the owner to a rate of interest. Therefore if workers save, they will own part of the capital stock and will accordingly receive a share of total profits. To attribute all profits to capitalists is to accept the absurdity that "worker's savings are always totally transferred as a gift to capitalists" (17, p. 107).

He offers a "correct" reformulation of this model by introducing another identity. It is

$$P + P_c + P_w$$

where $P_c$ and $P_w$ are profits accruing to capitalists and
workers, respectively. This entails a different savings function:

\[ S_w = s_w(W + P_w) \quad \text{and} \quad S_p = s_c P_c \]

Whence:

\[ I = s_w(W + P_w) + s_p P_c = s_w Y + (s_p - s_w) P_c \quad 4.12 \]

Thereby giving:

\[ \frac{P_c}{Y} = \frac{1}{s_c - s_w} \frac{I}{Y} - \frac{s_w}{s_c - s_w} \quad 4.13 \]

And

\[ \frac{P_c}{K} = \frac{1}{s_c - s_w} \frac{I}{K} - \frac{s_w}{s_c - s_w} \frac{Y}{K} \quad 4.14 \]

By comparing these with equations 4.7 and 4.8, Pasinetti argues that an error exists since Kaldor's formulations do not refer to total profits. Instead, they only refer to that part of profits accruing to capitalists (17, p. 107). He proceeds to develop suitable expressions for:

\[ \frac{P}{Y} = \frac{P_c}{Y} + \frac{P_w}{Y} \quad \text{and} \quad \frac{P}{K} = \frac{P_c}{K} + \frac{P_w}{K} \]

First, the effect of workers upon \( \frac{P}{K} \) is included in equation 4.14 by writing \( K_w \) for the worker's savings loaned to capitalists and \( i \) for the rate of interest on these loans. \( i \) represents the profits accruing to workers. The reformulation is

\[ \frac{P}{K} = \frac{1}{s_c - s_w} \frac{I}{K} - \frac{s_w}{s_c - s_w} \frac{Y}{K} + \frac{i K_w}{K} \quad 4.15 \]
with \[
\frac{K_W}{K} = \frac{S_W S_C}{S_C - S_W} \frac{Y}{I} - \frac{S_W}{S_C - S_W}
\]

thus giving after substitution:

\[
\frac{P}{K} = \frac{l}{S_C - S_W} \frac{I}{K} - \frac{S_W}{S_C - S_W} \frac{Y}{K} + i\left(\frac{S_W S_C}{S_C - S_W} \frac{Y}{I} - \frac{S_W}{S_C - S_W}\right)
\]

4.16

And by using the same procedure, equation 4.13 comes out as:

\[
\frac{P}{Y} = \frac{l}{S_C - S_W} \frac{I}{Y} - \frac{S_W}{S_C - S_W} + i\left(\frac{S_W S_C}{S_C - S_W} \frac{K}{I} - \frac{S_W}{S_C - S_W} \frac{K}{Y}\right)
\]

4.17

With the above general equations, Pasinetti is able to correct the post-Keynesian theory of income, distribution, and profit as presented by Kaldor. Equation 4.8 \((\frac{P}{K})\) is replaced by equation 4.16; and equation 4.7 \((\frac{P}{Y})\) is replaced by two distinct equations: equation 4.13 for the distribution of income between workers and capitalists, and equation 4.17 for the distribution between wages and profits (17, pp. 107-109).

Pasinetti simplifies the above, and in the process develops some intuitive implications. He notes that "in order to say anything about share and rate of profits, one needs first a theory of the rate of interest" (17, p. 109). He accepts the hypothesis that in the long run the rate of interest is equal to the rate of profit. Then, by
substituting $\frac{P}{K}$ for $i$ in equations 4.16 and 4.17 and simplifying, he gives:

\[
\frac{P}{K} = \frac{1}{S_c} \frac{I}{K} \quad \text{and} \quad \frac{P}{Y} = \frac{1}{S_c} \frac{I}{Y}
\]

4.10a, 4.10b

which was the result earlier derived from Kaldor's formulation.

The virtue of this exercise is that the results Kaldor attributed to the "limiting case" of $s_w = 0$ are valid regardless of the workers propensity to save. In essence, the simplifying assumption concerning workers saving that Kalecki made (and he did realize that workers might save, albeit insignificant) was unnecessary. The implications of this can be drawn with two conclusions. First of all, the irrelevance of workers saving gives the post-Keynesian model wide generality. As Pasinetti writes, "Since the rate of profit and the income distribution between profits and wages are determined independently of $s_w$, there is no need for any hypothesis whatever on the aggregate savings behavior of the workers" (17, p. 112). Secondly, the relevance of capitalists' propensity to save uncovers the strategic importance of capitalists' decisions upon the economic system. While the saving decision of this group determines the proportion that profits bare to savings in the whole system, similar decisions to save by workers do not count (17, p. 112). Workers have no power or influence at all.
These conclusions shed new light on the classical idea of a relation between the savings of those individuals who are in the position to carry on the process of production and the process of capital accumulation. Pasinetti's effort demonstrates that the post-Keynesian analysis is valid independently of any of the traditional simplifications. As he concludes, "It is valid whatever the saving behavior of the workers may be" (16, pp. 161-169; 17, p. 113).

Microfoundations

The neoclassical theory of the firm treats competition as the process by which a market clearing price is reached and as a description of a market structure. Competition is perceived as a market structure that, under stringent assumptions, assures through the "Law of Equal Advantage" that resources are allocated in a socially optimal manner. However, as Peter Kenyon argues, the process and the end-state are confused (13, p. 36). When orthodox economists examine imperfectly competitive situations, they do so by analyzing the degree of deviation from optimal allocation. The end-state is examined without looking at the process by which it is achieved (13, p. 36). The process is assumed implicit to the structure.

This assumption is absent from the post-Keynesian microeconomic base. The world where firms are seen as price
takers ruled by the laws of supply and demand where marginal cost and marginal revenue assure the optimal allocation of resources is far from the real world. Nor is the marginal productivity of a resource seen as a factor determining the income flow accruing to the resource owner. As Shapiro describes the inclusion of processes into this theoretical construct, the treatment of price "contains within it the conception of exchange as the process of the realization of the funds required for the expansion of capital rather than the process of the allocation of scarce resources" (24, p. 549).

Post-Keynesian theory draws upon classical and Marxian theory, as did Kalecki, for an alternative explanation of competition. Competition involves the process by which resources are allocated between social classes over time rather than just their allocation among individuals at a point in time. "This emphasis reflects the preoccupation of the classical economists (particularly Ricardo and Marx) with the concept of capital and the process of capital accumulation" (13, p. 37). In this view of accumulation, the existence of exchange as a process affecting the expansion of capital is implied in its specification of the way in which accumulation finances itself. The series of exchanges between firms, and between firms and workers, is the process through which the funds needed for expansion are generated (24, p. 549). With this dynamic, classical
view of the competitive process, "rivalry between the constituent firms in an industry need only be sufficient to ensure that no profitable investment opportunities are forgone" (13, p. 37). With this emphasis, profit maximization is not an end in itself, but rather a means to an end. The key interest becomes the level of capital expenditures flowing from investment plans of firms. Competition becomes focused upon the firms' relative growth rates and relative market shares. Profits become the medium that enables a firm to expand over time and increase its market share.

This return to the classical mode of analysis places an emphasis upon accumulation and on competition among firms as the force behind accumulation. This entails an approach Kenyon describes as "periodization" (13, p. 38). By directing concern to causal links, the effects in one time period are examined in terms of antecedent causes of an earlier period. Kenyon argues that "This view can be contrasted with the methodological approach of neoclassical economics, in which all factors are deemed to influence each other simultaneously" (13, p. 38). The inclusion of periodization depicts an economic system expanding over time in the context of history. Present decisions necessarily reflect past experience and project expectations into the future concerning the results of those decisions. This is an explicit component of the post-Keynesian view
of wage and price determination and is lacking in the methods afforded by neoclassical economics.

As it was developed earlier, the marginal productivity of any factor has very little to do with income distribution. Thus, the justification of present inequities as representing some return due to their contribution is unwarranted in post-Keynesian economics. The real wage is set by the rate of discretionary expenditures that society demands and the relative distribution of income between profit and wage recipients (5, p. 1305). The difference between the nominal and real wage is crucial to the macro adjustment process. The nominal wage is seen as exogenously determined by distributional factors. One factor Kalecki emphasized was the bargaining strength of the trade union movement and its ability to restrain the capitalists' degree of monopoly (5, p. 1305; 12, pp. 156-164). In essence, factors that are more than strictly economic provide explanations for the nominal wage rate. Eichner and Kregel write that "A corollary proposition is that the major role played by the level of money wages is in the determination of money prices" (5, p. 1305). They further argue that while some may be uncomfortable with an exogenously determined money wage rate, there are two advantages. It agrees with the situation observable in most countries and introduces another instrumental variable for influencing the aggregate
price level (5, p. 1305). To understand this variable, one must consider the post-Keynesian pricing model.

It is within the Kaleckian tradition that the connections between the process of price formation at the level of the individual firm and the accumulation of capital are concretely developed. The significance of the post-Keynesian theory of prices is that it ties the price of a product to the firm's gross profit margin. This is the firm's major source of investment funds. As Shapiro argues, Kalecki's link of price to the gross profit margin is implicitly the connection of price to the firm's ability to expand its capital (24, p. 549). Kalecki's theory of price determination was developed in chapter two. It is sufficient to assert that his influence extends to the post-Keynesian view described below.

The cornerstone of this theory of price is the relationship between the savings and investment plans of capitalists along with the degree of monopoly which is the basis for this relationship (13, p. 34; 16, p. 134). These theorists divide markets into two categories: flexprice competitive markets in which prices are determined as neoclassical theory approximates; and fixprice markets where prices reflect both the normal production costs and the demand for entrepreneurial capital to finance planned investment expenditures. These fixprice markets are seen as the predominant market structures existing in advanced
market economies. The supply offered by these markets differ from those described by neoclassical theorists. The fixprice markets provide commodities that are produced through means provided by other commodities. Production is both flexible and responsive to unanticipated variations of demand because planned excess capacity is a predominant feature of these markets. Thus, as Kenyon explains, while "in flexprice markets price adjusts depending on the level of buyers' demand, in fixprice markets changes in demand are met mainly by a change in the volume of output with prices tending to remain relatively unaffected" (13, p. 34). This concept of elastic supply is a basic Kaleckian assumption that permeates this analysis.

Josef Steindl provides an explanation for this excess capacity in his book, *Maturity and Stagnation in American Capitalism* (25). In his analysis the producer maintains a certain level of planned excess capacity in an effort to assure the necessary flexibility to provide for greater output when needed. The producer wants to be able to meet fluctuations in demand and provide the capability to expand sales when the opportunity arises. Survival necessitates the ability to be in on the first of any boom to prevent the loss of any sales to new competitors who will threaten the existing market at the demise of the boom (25, p. 9). As Steindl argues, the producer cannot wait and expand capacity as the market expands, "because the individualism
of a competitive system does not permit this solution. Each of the competing producers wants to take part in an eventual expansion of sales, and not to have it snatched away by new competitors" (25, p. 9).

He continues, "A planned and deliberate reserve of excess capacity is at all times held by most producers, with good reason from their point of view, even though a part of it, at least, is waste from the point of view of the community" (25, p. 10). This elasticity of supply, in the view of both Kalecki and Steindl, is one of the most striking characteristics of capitalism.

The result of this planned excess capacity is that, within the relevant range of production, the firm escapes the law of diminishing returns. Instead, it faces constant unit costs until full-capacity utilization of plant is reached. At this point costs rise rapidly, giving the firm a backward L shaped cost curve. This differs from the U shaped cost curve offered by neoclassical theory. However, as previously examined, firms do not operate at the point of increasing costs. Rather, they choose, as a matter of policy, to insulate themselves by maintaining excess capacity (4, pp. 45-59; 16, pp. 131-153). This excess provides a margin for the firm with which to meet growing demand. This is necessary for "when firms are battling to divide a given market it is costly to be caught without excess capacity which allows short delivery times"
(16, p. 135). It further allows for changes in output without any accompanying changes in prices. This helps to minimize price as a determining factor in market decisions since prices are insulated from demand pressures.

In the post-Keynesian view, a megacorp-price leader acts as a surrogate for its fellow oligopolists due to the need to avoid price competition that will be destructive to all industry members. Such a firm can decide price, for if it is the least-cost producer, no other firm is likely to suffer a greater sales loss due to a price increase (4, p. 55). No explicit industry collusion is necessary and "no other firm is likely to announce a price that would be more acceptable to the industry as a whole" (4, p. 55). In essence, Kalecki's degree of monopoly plays an important role in this view.

There is an average industry mark-up over cost that will be compatible with a given rate of investment (16, p. 135). This mark-up, as Kenyon notes, is merely the most visible element of a quite comprehensive and tightly constructed body of theory that constitutes the microeconomic foundations of post-Keynesian analysis (13, p. 34). This mark-up is the result of a complex set of economic forces operating to produce the growth and distribution that is observable at the macroeconomic level. This concept is in the tradition of classical political economy where prices are seen as production-oriented (13, p. 34-40). Affected
by the actions of the megacorp or industry leader, the
mark-up provides a uniform rate of profit that is associ-
ated with the growth rate produced by the rate of investment,
as well as the distribution of income between wages and
profits (16, p. 134).

The actions of the megacorp are influenced by the
state of business confidence. This confidence affects
investment plans, which in turn has an effect upon any
actions concerning the mark-up. As Kenyon writes, "Invest-
ment plans and the size of the mark-up are inexorably
linked through the demand and supply of funds in the form
of retained profits with which the firm finances proposed
investment projects" (13, p. 40). This linkage entails a
conclusion concerning the effects of fluctuations in demand
upon price changes. Actual prices do not reflect current
demand. Instead, present prices reflect the pressure for
funds to satisfy the planned investment expenditures that
firms consider necessary to facilitate adjustment of
planned excess capacity to assure that future expected
demand will be met (13, p. 40).

The link between the pricing decisions of oligopolistic
(fixprice) firms and investment plans and levels of expendi-
ture has been a feature throughout much of the post-
Keynesian literature (8, pp. 449-477). These economists
argue that "the pricing behavior of oligopolistic firms in
the manufacturing sector of industrialist-capitalist
economies can be explained by the demand for funds from internal sources for purposes of investment expenditure" (13, p. 38). This pricing formula is a refined version of the commonly used cost-plus approach. As Eichner explains, "The 'plus' added to variable and fixed costs is the corporate levy—that is, the amount of internal funds required by the megacorp to finance its planned investment expenditures" (4, p. 56). Since excess capacity assures that fixed and variable costs are constant, any change in price can be attributed to a change in the required corporate levy. Such a change will depend upon the megacorp's demand for and supply of internally generated funds. So as previously examined, the pricing decision is intimately bound up within the capital accumulation process.

Kregel outlines the process of price determination in his book, *The Reconstruction of Political Economy*. The elements are as follows:

1. The firm makes a decision over its future investment plans.

2. It chooses a mark-up that will produce the required profits, and sticks to this mark-up and implied price, allowing capacity utilization to vary around some expected level associated with the chosen mark-up.

3. Any change in demand is met by a change in output and utilization instead of changing price or investment plans.

4. Investment is planned to assure that capacity grows in step with expected growth in demand. And excess capacity is also planned at a constant average level.
5. Prices are set to reflect a mark-up set to provide the necessary financing for investment.

6. These decisions are made with reference to the state of demand that experience and market research suggest as reasonable.

7. The actual price charged is determined less by demand than by mark-ups necessary to generate profits needed to finance investment necessary to meet future expectations of demand (16, p. 137).

One can conclude that in the context of this examination, firms have two related decisions that are directly related to capital accumulation--price and capacity utilization (16, p. 137). The investment plans reflect the need to maintain a constant average level of capacity utilization (assuring planned underutilization) at a chosen mark-up reflecting the corporate levy as affected by the industry leader. These combine to provide a price that is insensitive to fluctuations in demand. The macro version details the self-financing nature of capitalist investment. At the micro-level the firms attempt to set prices that will give them the profits that they need to finance investment. In essence, within the post-Keynesian exposition there exists a consistency that one finds absent from the present orthodox construct.

Conclusion

Kalecki offers a dynamic theory of capitalist development with a consistency between its microfoundations and macrodynamics that is lacking in the neoclassical synthesis.
of the Keynesian revolution. He explains the persistent cyclical problems arising from capitalist relations using a Marxian view of capitalist reproduction and the resulting class struggle. This "class struggle" reflects distributional factors that are central to Kalecki's construct. Throughout his exposition of self-financing capitalist investment, price administration, and income determination, the concept of the micro based degree of monopoly with its macro effect is explicitly considered as a determining factor. This degree of monopoly is a class concept representing the relative allocation of power. This power enables the capitalist class to protect their income share to the detriment of the worker class and society as a whole. In Kalecki's analysis, it is the degree of monopoly along with the reproducing nature of capitalist investment that assures the eventual and periodical crisis. This invokes what Kalecki sees as a paradox; that investment calls forth a crisis in capitalism for the same reason that it is undertaken--because it is useful.

As a contemporary of Keynes, with a passion for improving the lot of humankind, Kalecki became a critical and contributing member of the Keynesian revolution. He adapted to the orthodox tools and preconceptions and used them to fracture the concept of equilibrium. He was critical of the Keynesian psychologically based treatment of savings and the value attributed to the resulting multiplier. He
was not satisfied just to criticize. Therefore, he provided an alternative based upon the effects of the degree of monopoly. While Keynes was a reformer, Kalecki saw little hope of reform implementation. Keynes believed that the power of his ideas would enable capitalism to adopt the necessary reforms for survival. Kalecki rejected this optimism, for he saw a foe to reform existing within a class structure dominated by class interests with the power to resist change. He feared that the power of the vested interests was far greater than the power of ideas.

Because of the implications resulting from Kalecki's analysis, his ideas were not well received in the United States when the Keynesian revolution took hold. By incorporating imperfect competition into his analysis and emphasizing the influence of investment upon profit, Kalecki produced a more coherent version of the General Theory than that of Keynes. Keynes barely addressed distributional problems and readily accepted a necessity for an elite class. Kalecki's analysis included distribution as central to any explanation or reform of capitalism. Regardless of who proffered the better theory, Kalecki was to be ignored for, as Joan Robinson explains, "Both were holding a mirror up to modern capitalism, but Keynes's mirror was somewhat misty while Kalecki's was too bright for comfort" (22, p. 8).

Present economic policy reflects the neoclassical paradigm that involves the same conceptual framework
formulated to demonstrate the self-correcting nature of market mechanisms that early Keynesians tried to overcome. In essence, present policy has yet to relinquish its hold upon a pre-Keynesian paradigm. This hold is reflected by the neoclassical synthesis of Keynesian theory that, under competitive conditions, still regards supply and demand as the correct approach for analyzing the functioning of our modern, technologically advanced economy. Recent dissatisfaction with the neoclassical synthesis has renewed interest of iconoclastic economists in the ideas of Kalecki. This interest is evolving toward a developing paradigm known as post-Keynesian economics. Kalecki is by no means the sole source of this synthesis, but his indelible imprint is alive throughout the post-Keynesian analysis. Eichner differentiates this shift with "The advantage of the post-Keynesian approach is that it enables one to confront the problems directly and openly rather than to conceal them under simplifying assumptions" (3, p. 168). This is a "bias" towards reality that permeates Kalecki's work as well as the post-Keynesian contribution. Perhaps this Kaleckian bent will succeed where Keynes failed; succeed by replacing the current neoclassical orthodoxy with the alternative post-Keynesian paradigm.
CHAPTER BIBLIOGRAPHY


APPENDIX

Department  I     II     III
Product     K      Kc     Wc

Value  
  wages1  wages2  wages3  
  profits1 profits2 profits3

Definition:  
  K = capitalist investment
  Kc = capitalist consumption goods
  Wc = worker consumption goods

Assuming that workers consume all that they earn:

Then,
  Wc = w1 + w2 + w3

Also:
  Wc = w3 + r3

∴  w1 + w2 + w3 = w3 + r3

-w3:
  w1 + w2 = r3

In summary, the wages paid in department I and II will determine department III profits.

  K = w1 + r1

  Kc = w2 + r2

  K + Kc = w1 + r1 + w2 + r2
Since $r_3 = w_1 + w_2$

Then: $K + K_c = r_3 + r_1 + r_2$

Thus, it follows that the summation of department I and II production will equate to the economy's gross profit.

From the above mathematical exposition flows Kalecki's verse, "workers spend what they earn while capitalists earn what they spend."
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