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Accounting Theory in the Light of Austrian Economic Analysis.

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Louisiana State University and Agricultural & Mechanical College

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in

The Department of Accounting

by

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgements</td>
<td>ii</td>
</tr>
<tr>
<td>Abstract</td>
<td>vii</td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1. The Central Economic Problem</td>
<td>1</td>
</tr>
<tr>
<td>2. Accounting Theory and the Economic Problem</td>
<td>4</td>
</tr>
<tr>
<td>3. Objectives and Approach of the Study</td>
<td>5</td>
</tr>
<tr>
<td>4. Background of the Austrian School</td>
<td>10</td>
</tr>
<tr>
<td>Part I. The Austrian Economic Analysis</td>
<td></td>
</tr>
<tr>
<td>1. Social Cooperation and Resource Allocation</td>
<td>16</td>
</tr>
<tr>
<td>2. Calculations in Kind under Primitive Economy</td>
<td>16</td>
</tr>
<tr>
<td>3. Calculations in Kind Insufficient in Advanced Economy</td>
<td>19</td>
</tr>
<tr>
<td>Socialist Theory admits inadequacy of calculations in kind</td>
<td>23</td>
</tr>
<tr>
<td>4. The Problem of Coordination</td>
<td>25</td>
</tr>
<tr>
<td>2. Economic Calculation</td>
<td>30</td>
</tr>
<tr>
<td>1. The Role of the Price System</td>
<td>30</td>
</tr>
<tr>
<td>Economic calculation differs from technological calculation</td>
<td>31</td>
</tr>
<tr>
<td>Subjectivity of value</td>
<td>33</td>
</tr>
<tr>
<td>Economic calculation through money prices</td>
<td>35</td>
</tr>
<tr>
<td>The concepts of capital and income</td>
<td>37</td>
</tr>
<tr>
<td>2. Risk and Uncertainty Differ</td>
<td>42</td>
</tr>
<tr>
<td>3. The Tenuousness of Economic Calculation</td>
<td>46</td>
</tr>
<tr>
<td>4. The Rationalizing Effect of Monetary Calculation</td>
<td>48</td>
</tr>
<tr>
<td>5. Coordinative Communication Through Market Prices</td>
<td>50</td>
</tr>
</tbody>
</table>

iii
4. Relevance of the Economic Analysis .............................................. 148

VIII. THE LARGE CORPORATION: EXTENSION OF ACCOUNTING THEORY ........... 151
1. Management and Entrepreneurs .................................................. 154
2. The Goal of Psychological Income .............................................. 162
3. The Goal of Sociological Income .............................................. 176

PART III. CAPITAL AND INCOME

IX. CAPITAL AND INCOME DETERMINATION: ANTICIPATORY CALCULATION ............ 191
1. The Relationship Between Accounting and Economic Calculation ............... 193
Decision-making and accounting perform different tasks ................................ 198
Present positions are not future positions .............................................. 209
Management's expectations provide no solution ........................................ 212
The futility of certainty as a theoretical ideal ....................................... 217

X. CAPITAL AND INCOME: RETROSPECTIVE CALCULATION .......................... 222
1. Accounting and Specialization .................................................. 223
2. Market Data are Essential to the Determination of Capital and Income ........ 225
Capital depends upon market prices .................................................. 225
The changeability of prices calls for current market data ........................... 228
The makeshift nature of capital and income ......................................... 229
Present prices distinguished from anticipatory calculations ...................... 232
Some notes on the capital-income relation ......................................... 237

XI. A LOOK AT THE AUSTRIAN THEORY OF CAPITAL AND CAPITAL ACCOUNTING ....... 241
1. Saving and the Advent of Indirect Production .................................. 241
2. Capital Goods and the Concept of Capital ....................................... 246
3. Capital Maintenance, Capital Consumption, and Capital Accumulation Through Saving ....................................................... 249
4. Indirect Production and Interacting Plans ...................................... 252
5. The Indispensable Role of Capital Accounting . . . . . . . . . . . . . . . . . . . 257

XII. FURTHER IMPLICATIONS FOR ACCOUNTING . . . . . . . . 276

1. Estimated Resale Prices and Estimated Replacement Costs . . . . . . . . . 276
   Money equivalent means opportunity costs . . . . . . . . . . . . . . . . . . . . 276
   Chambers and adaptive capacity . . . . . . . . . . . . . . . . . . . . . . . . . 279
   The replacement cost argument . . . . . . . . . . . . . . . . . . . . . . . . . . 282

2. Determining Current Price Valuations . . . . . . . . . . . . . . . . . . . . . . 293
   The lack of precision . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 293
   The additivity problem . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 297

CONCLUSIONS . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 302

BIBLIOGRAPHY . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 338

VITA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 347
ABSTRACT

Much accounting thought is devoted to the search for a distinct and meaningful conceptualization of the purpose of accounting. Since accounting is not an end in itself, accounting theory must be advanced in terms of a clear notion of what is the function which accounting should be asked to perform. Treatment of particular matters such as asset valuation and income determination likely will be more effective if examined in terms of accounting objectives.

The purpose of the study is to draw and to examine certain implications which the economic theory of the "Austrian School" appears to hold for the development of a theory of the fundamental purpose of financial accounting in a predominantly market economy and for considering aspects of the problems of asset valuation and income determination. A significant part of the study presents the Austrian analysis of the operation of a market economy in order to provide a background for subsequent parts of the study.

From the Austrian view, a rational allocation of scarce resources occurs through economic or monetary calculation based on market prices. The entrepreneur is the driving force of the market process, and his quest for money profit performs a social function through the correction of
resource misallocations. Entrepreneurial profits and losses occur in the market economy solely because of the factor of uncertainty. All production plans undertaken by profit-seeking entrepreneurs are based upon subjective anticipations about the future.

Economic or monetary calculation encompasses the retrospective calculation of profit or loss and the anticipatory calculation of expected revenues and expected costs. The key concepts of economic calculation are the concepts of capital and income. Through capital accounting and profit and loss criteria, the production plans of many individual and specialized producers are coordinated so as to enable the effective dependence upon extensive division of labor and specialization.

The purpose of accounting is to facilitate the allocation of resources so that the more urgently felt wants of the consumers are satisfied. Due to the subjectivity of anticipatory calculations dealing with expected cash flows, accounting is confined to the realm of retrospective monetary calculation. A functional distinction between the entrepreneurial activity and the accounting activity is thereby obtained. The determinations of past profits and losses are useful in guiding future entrepreneurial decisions about resource uses. Since market prices act as signals for determining the employment of scarce resources, accounting determinations of capital and income should be based on current market prices.
Current resale prices are not appropriate for balance sheet valuations of most assets held for productive use and not for direct sale. For many significant assets, there are no current market prices; for others the resale price would be unrealistically low because of institutionalized channels of product distribution. Long-lived productive assets should be valued at estimated replacement costs and expirations of these costs should be shown in the income statement in determining current operating profit. Holding gains and losses reflecting changes in the prices of resources previously acquired should be shown in the income statement separately from operating profit. Current resale prices are the proper basis for valuing completed inventory in the balance sheet and for purposes of determining operating income. Operating income, then, indicates whether or not output values have justified the diversion of scarce resources away from alternative uses whose values are signified by current resource prices. This result is instructive for future production and investment decisions to the extent that results of the past are considered useful indications of future results. Income determination as a guide to future production undertakings is more realistically determined on a "matching" basis as opposed to a change-in-capital approach.
INTRODUCTION

The recommendation that, in the continuous development of knowledge in a given field, attention should be given to related ideas emanating from other fields of inquiry has particular application to this study. Such a recommendation is exemplified by the argument that the disciplines of accounting and economics have much to offer one another. This argument appears justified in view of the fact that both deal with such matters as valuation, cost, capital, and profit or income and both areas of study are concerned with decisions and actions involving the use of productive resources. Accounting thought and economic thought clearly tread upon common ground.

1. The Central Economic Problem

In attempting to provide a step in the direction of reconciling accounting theory and economic theory, this study is predicated upon the recognition of the central economic problem. That problem rests in the relative scarcity of resources necessary to obtaining the satisfaction of human wants. While one may envision the day when all the wants of humanity will be satisfied, surely no one would hold that the realization of such a day is conceivable anytime in the near
future. The discrepancy between present-day wants and the extent to which these desires are satisfied provides ample evidence that a state of satiety is hardly thinkable. Even when old wants are satisfied, people have a relentless propensity to pursue new wants so that, as Schumpeter put it, "satiety becomes a flying goal."

Due to the restraint of limited resources or means, productive efforts to generate want satisfaction must be directed so that the resources are employed in their most desirable uses. Thus, the scarcity of resources creates the need to economize, i.e., to make the best out of the means available. To economize does not mean simply to avoid being wasteful in a purely technical sense given a particular economic operation or activity, although this efficiency is a vital part of economizing. The essence of economizing is that of allocating available resources among their most fruitful employments, given any hierarchy or scale of wants. A machine which is operated efficiently in the technical sense nevertheless can involve uneconomical utilization because it is being used to produce output which is wanted and valued less than some other which it is capable of producing.

Determining how available resources are to be put to various productive uses so as to "make the best of" such means can involve different approaches. Under a socialistic system of social organization, central planning authorities make the basic decisions regarding the way in which resources are used to produce want satisfaction. The production proc-
ess is ordered through centrally issued plans under such an economic arrangement. On the other hand, in a market economy, the form of economic organization relevant to this study, the employment of resources is directed through the mechanism of market prices. Resources tend to flow into those particular lines of use which promise the greatest monetary remuneration. Due to the impossibility of measuring human values or wants, a matter to be discussed at length at a later point, dependence on the market process assumes that those employment possibilities which attract greater amounts of "dollar votes" are the more desirable uses of resources. Dollar values, though incapable of measuring wants, are relied upon to indicate the relative importance of various wants. Machlup makes this point in the following remarks regarding the tendency of the pricing mechanism to distribute the limited supply of a good to those who offer the most money:

This explanation of the exchange mechanism constantly called for treatment of the problem of the comparability of the intensity of wants of different persons; otherwise it was open to question whether the result might not be to satisfy "less important" wants while leaving "more important" wants unsatisfied. It was only when the impossibility of measuring the needs of different individuals came to be recognized that most economists decided to be content with a general prefatory reservation and to assume, for all practical purposes, that the amounts of money offered were the measure of the importance of wants.  

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It is in this sense that this study refers to the effective allocation of scarce resources by the market. As will be explained, the market process tends to guide resources towards the satisfaction of the more urgently felt wants of the members of the market society. It will be seen that this process is quite intricate and complex in a highly industrialized economy.

2. Accounting Theory and the Economic Problem

It is imperative that the development of accounting theory revolve around the question: what is the central purpose or function of the accounting activity? Accounting does not constitute an end in itself and, as a means, must be established totally in terms of its objective. Those who fail to grasp the immense social significance of accounting are bound to place either excessive or inadequate demands upon the profession.

This study aims to show that in seeking theoretically to establish the fundamental purpose of accounting one might start with an understanding of the human economic predicament and the way in which the market process goes about coping with such a situation. By focusing upon the ultimate problem of employing scarce resources so that the more urgently felt wants are satisfied, it is possible to attach a certain real meaning to the role of accounting.

Those who visualize the basic function of accounting to be that of furnishing information which will "help reveal
the efficiency of management" or which will "help direct the
flow of capital" are dealing with important aspects of the
underlying problem. However, they are stopping short of the
root problem for such views are devoid of a developed ra-
tionale that explains why managerial efficiency or capital
movement matter. It is necessary to explore beyond these
matters in order to realize the ultimate source of their sig-
nificance.

This study submits that a meaningful theory of the
purpose of accounting can be formulated by orienting account-
ing thought towards the critical datum that there prevails a
scarcity of resources relative to human wants. Here lies
the interconnection between accounting theory and economic
type. Seen in this light, accounting takes on a vital so-
cial significance in being instrumental in the efficient util-
ization of the limited means available for the satisfaction
of human wants.

3. Objectives and Approach of the Study

This study draws on a particular school of economic
tought, the Austrian School, in an attempt to contribute to
the development of a theory of the purpose and role of the
accounting activity. Based upon the Austrian explanation of
the workings of a market economy, the study seeks to arrive
at a concept of the function of accounting within the overall
market process. This concept encompasses an understanding
of both the purpose that accounting serves and a clear de-
limitation of the domain of accounting. And more specifically, the search for a theory of the role of accounting entails treatment of the controversial problem of asset valuation which is crucial to the primary statements issued by the accountant. Traditional accounting thought in the areas of asset valuation and income determination is being challenged by Chambers, Edwards and Bell, even the American Accounting Association, and others, each of whom advocates moving to a more current basis of asset valuation. And others recommend an even more radical step in the form of basing statement figures upon discounted expected cash flows. This study considers the perplexing valuation problem in the light of the purpose of accounting which is suggested by the Austrian analysis.

In connection with the problem of asset valuation and income determination, it is important to distinguish between the effect of changing specific prices and the effect of the changing value of the monetary unit, the latter change commonly referred to as the change in the general price level. This distinction is important in order to establish clearly the scope of this study.

There is general concern in current accounting thought over the problems raised by the effects of inflation upon the figures reported by the accountant. The American Institute of Certified Public Accountants has devoted a special
research study to this matter\textsuperscript{2} and a similar concern has been expressed by many other accountants, economists, and financial analysts. The underlying concern is that monetary determinations which do not take into account the changing value of the medium of exchange in which such determinations are expressed do not indicate the "real" effect of past business activities. Failing to reflect the effect of the changing value of the monetary unit is seen to falsify to some extent the results reported in the financial statements. It is contended that a more meaningful and accurate determination of income requires the adjustment of certain past valuations so that monetary comparisons are made in comparable money units.

It is important to realize that treatment in the accounting reports of the impact of the so-called "changing price level" is completely different from accounting for the changes in the specific prices of particular types of goods and services. Although the changing value of the monetary unit can have an effect upon the relationship of specific prices, changes in specific prices, as will be explained in detail later, are principally the result of variations in the preferences and expectations of the members of the market society and in the availability of various resources and

products. This means that changes in specific prices can be pervasive even in an economy which does not experience any change in the value of its monetary unit. While adjustments for the changing value of the money unit pertain to a notion of a "general price level" or movement of prices in general, accounting for changes in particular prices pertains to the idea that within the whole array of market prices there can occur changes in the relationship of specific prices with one another and these changes occur irrespective of the change in prices "in general."

It is not within the scope of this study to consider the problem of the changing value of the monetary unit; attention given herein to the subject of price changes is confined to changes in specific prices. This scope limitation is not meant to deny the importance of the problem of the changing value of the monetary unit. However, emphasis here upon the changes in specific prices is based upon the belief that accounting should contend with such changes apart from the problem of a changing price level. Even if the value of the monetary unit were to remain constant, the problem of varying specific prices would still remain. Adjustments for the changing value of the medium of exchange can be superimposed upon the determinations which arise from the valuation approach suggested by the Austrian analysis. This study, however, will not deal with the questions whether such adjustments are justified and how such adjustments should be carried out if warranted.
The plan of study follows the path of first exploring the economic theory of the Austrian School which provides an incisive explanation of the workings of a market economy and its pricing process. The Austrian theory is built solidly upon the problem of allocating scarce resources, and its emphasis upon the process of economic calculation as a means of rational allocation may yield a valuable background for the development of a theory of the role of accounting.

The decision to present a theory of accounting in the light of Austrian analysis is based upon the possibility that the penetrating explanation on the part of the Austrian School provides an untapped and promising source of understanding in the continuing development of accounting theory. It is not intended that this study entail a thorough-going discussion of the Austrian economic analysis. Such an ambition would justify a separate study in itself. The specific goal here is to draw the overall picture of the operation of the market economy as described in the Austrian analysis. Since certain areas within the Austrian explanation are presently generally accepted by economic theorists outside the Austrian School, this picture is not peculiarly "Austrian" in all of its parts. However, it is the complete or whole theory which is uniquely "Austrian."

The study gives particular stress to areas which are deemed more pertinent to a theory of accounting. Then, in light of this background of economic analysis, the study is concerned with determining the role of accounting and some
of the implications of this role for financial reporting. The methodology consists of an effort to employ logical and deductive reasoning in defining generally the role, requirements, and limitations of the accounting activity.

4. Background of the Austrian School

The history of economic thought, like that of other disciplines, reveals an interspersion of systems of thought which come to be conveniently referred to as particular schools of ideas. This manner of generalizing certain ideas of different thinkers serves to concentrate attention on fundamental lines of thought shared by them at the expense of overshadowing their points of difference. The first school of economic thought was manifested in the ideas of the French Physiocrats during the second half of the eighteenth century. Classical economic thought, Marxism, and Socialism subsequently followed. During the latter part of the nineteenth century there emerged from the German-Austrian sector two clashing schools of economic thought: the German Historical School and the Austrian School. The German Historical School sought to discover economic truth through the study of economic history. It was the empirical methodology that in 1883 became the target of the early Austrians, who maintained that economic knowledge arises from theoretical analysis and not from the study of history. For more than two decades, the Methodenstreit, or controversy over methods,
persisted between the two schools of thought.

The Austrian School had its beginnings in Carl Menger, professor of political economy at the University of Vienna during the period 1873-1903. In 1871 Menger produced a theory of value which was to resolve the question that had so long perplexed the great classicals before them. This theory was the subjective theory of value based upon the principle of marginal utility. The theory dispelled the classical notion that the value of a thing is an objective measure intrinsic in the good itself. Economic goods were seen to be valued subjectively in terms of the satisfaction which the user expects to derive from their incremental use. A more thorough treatment of the subjective theory of value, which was to become the edifice upon which the whole Austrian system would be erected, is presented in later sections. It remained for Menger's two great disciples, Friedrich von Wieser and Eugen von Bohm-Bawerk, to refine the subjective theory and to clarify its full ramifications in the areas of cost and capital and interest theory.

Wieser expanded upon Menger's problem of imputation which explained resource prices or costs as being derived

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from the expected prices of the consumers' goods which the resources were used to produce. The formation of value was thus shown to be a circular process, and the concept of costs, a gap in Menger's theory, was tied into the subjective theory of value. Wieser's 'law of cost' or doctrine of alternative costs held that the costs of producing a product reflect the competing offers of other producers for the resources used in production; costs are merely payments made necessary in order to attract resources away from their next most remunerative utilization.

Bohm-Bawerk's great contribution rested in his theory of capital and interest. He emphasized the significance of time in the economic process and defined capital as the produced factors of production. The crucial idea in this analysis was that "roundabout" means of production enable man to increase his productivity, both in terms of increased quantities of goods also producible without equipment and tools and in terms of goods producible only through capital goods. The period of waiting resulting from the usage of indirect processes provided the basis for his explanation of the phenomenon of interest. People value present goods more highly than future goods of similar characteristics, other things equal. This assumption contained the basis for justifying the margin between selling price and costs, the margin which went to the capitalists who supplied the funds for intermediate products or capital goods. Their return was an interest payment for the period of time during which their investments
had been used and was not a matter of worker exploitation as Marx had contended. The subjectivity theory of value, thus, was expanded to include the time preference principle. The Austrian theory of capital later was somewhat revised, but Bohm-Bawerk's essential explanation of interest and the process of roundabout or indirect production has retained a dominant position in present-day Austrian theory.

The more modern links in the Austrian chain are represented by our contemporaries Ludwig von Mises and Friedrich von Hayek. Mises received widespread attention from other economists in the 1920's with his challenge that socialism was totally impossible in a modern economy because of its lack of market prices, for him the indispensable means of rational resource allocation. Both Mises and Hayek have contributed significantly in molding the Austrian theory into an integrated whole. Their explanation of cyclical swings in business as resulting from uncontrolled credit expansion at the hands of government added another unique block to the Austrian structure.

Although the Austrian School is no longer distinguished from other schools of thought in its acceptance of the subjective theory of value, there are marked characteristics inherent in the Austrian approach to economic analysis which have contributed to setting the school apart from others. One important aspect is its rigid methodological position. Reference has been made already to the Methodenstreit which Menger initiated as the result of a publication
Austrian economic analysis is carried out largely on the basis of theoretical, deductive reasoning; empiricism has little place in their economic theory—thus their battle with the German Historical School. Economic phenomena, originating from a social environment, are deemed too complex to permit experimental analysis which the physical scientists are able to employ in their search for truth. Austrian theory is also opposed on methodological grounds to mathematics as a tool of economic analysis. The qualitative essence of phenomena like value, profit, and interest is not considered to be discovered and understood through the use of mathematics. Conceptual understanding, not quantitative relations, is held to be the only meaningful basis of economic science. The father of the Austrian School, Menger, insisted upon and followed this qualitative orientation throughout his works. The same can be said for his successors.

A final important distinction of Austrian theory is its methodological individualism. Economic phenomena are not considered to be the expression of some social force or hypothesized entity like 'society.' Rather they are the result of the conduct of individuals engaged in economic activity. The total economic process cannot be understood, in their view, except through analyzing its ultimate elements, the behavior of individuals. Although the individual is placed

in the center of the picture, he is not placed in an unrealistic and isolated position; his behavior is studied in the context of social interrelationships. This is not an ethical or value judgment but is maintained in a totally scientific vein. More will be said later about this concept of methodological individualism.

The Austrian School was slow in receiving much attention although Menger did live to see his ideas discussed in scientific circles. And, as an integrated whole, it has never held the sway of economic thought. Yet this fact should not prevent its serious study. Accountants should be the first to admit that "general acceptance" is no guaranty of valid and trouble-free principles.
I. SOCIAL COOPERATION AND RESOURCE ALLOCATION

1. Calculations in Kind under Primitive Economy

The task of economizing is as much applicable to man in a situation of isolated self-sufficiency like that of the hypothetical Robinson Crusoe as it is to man as a member of a modern society characterized by extensive division of labor and exchange transactions. In the case of the isolated Robinson Crusoe, his task is to employ those means available to him in those ways which he expects to generate the greatest satisfaction to him. This process of decision and choice is essential to his welfare. Similarly, a society composed of innumerable interacting individuals has the task of making the best use of all available means. And the task is no different whether the choices and decisions are largely left up to a centralized planning board, as envisioned in the theory of socialism, or whether such choices are made more or less freely on the part of individuals acting within a market economy.

A Robinson Crusoe could manage effectively only a limited amount of resources and need make comparatively few plans in terms of how to direct their usage. Due to the
relative simplicity of his range of choice, he probably could make his decisions effectively without any quantitative calculations in common terms with respect to the past or expected results of different courses of action. His ability to assess or anticipate results likely would rest in the mere observation and intuitive grasp of the productive alternatives before him. Calculations in terms of physical output would suffice because his resources would not be highly diversified and each resource type would lack, for him, a significant degree of versatility.

He would have access to some of the original factors of all production--land, including natural resources, and labor. However, due to his limited ability to produce goods in his isolated situation, these original factors could not be converted into a wide range of intermediate products such as various machines and tools. He would be compelled to use the most rudimentary tools since the more intricate and sophisticated machines characteristic of a modern economy would be beyond his lifetime, not to mention the urgency of his present wants for end products. Consequently, his decisions about how he should use the available resources to obtain consumption goods would not be so complicated as to necessitate some sort of objective profit and loss computation, even assuming unrealistically the availability of some common denominator for computational purposes. The uses to which resources could be effectively put would be more or less determinable. The most versatile factor would be his
own labor and contemplative ability, which he would utilize in combination with natural resources to produce ultimately those products that he preferred and whose production was feasible.

His time and energy could be delegated to the various tasks of making a basic tool, hunting for food, building a shelter, and producing clothing as well as to rest and leisure, given his particular wants, without having to compile and compute data about the past or expected success of each of these uses of his own time and energy resources and other factors of production. The limited nature of both his time and energy would prevent his exploiting the complete potential of his island's natural resources. His decisions would be based upon a mental or subjective calculus of profitability for each considered action; and his alternatives would be so limited that he would be able to observe or anticipate the results of his undertakings in real terms in reaching such valuations. And since he would be producing for his own satisfaction, there would be no problem of his being unable to know which good among those producible should be chosen. His own scale of values would be the sole determinant of this decision.

Similarly, a self-sufficient household could manage effectively its economic resources without involved calculations of any sort, particularly when operating on the basis of a gradually developed tradition of resource utilization. Whatever calculations of outcomes are necessary in these
relatively primitive situations, such results could be captured in terms of the various outputs, sometimes referred to as calculations in kind. Due to the absence of exchange relations, there would be no medium of exchange and thus no common denominator for calculation purposes.

2. Calculations in Kind Insufficient in Advanced Economy

Over the centuries there has evolved an alternative approach to that of economic self-sufficiency in coping with the problem of scarcity. This widespread arrangement is that of social cooperation, the basis of what is meaningfully called society. Virtually all people have adopted voluntarily this approach. The enormous increase in productivity resulting from specialization and the division of labor served gradually to undermine the process of self-sufficient provisioning. Yet despite the comparative abundance of products and services emanating from the process of social cooperation, the economic problem remains. Wants continue to exceed the means or resources for their attainment. The quest for satiety is like trying to catch one's shadow. The persistence of the problem of scarcity means that even in a modern, highly developed and productive society, decisions have to be made regarding how the various scarce resources should be utilized in order to see that they are directed to the satisfaction of the more urgently felt wants of the society's members.
The task of determining how the various resources should be used is not as simple in an advanced state of social cooperation as in the primitive state of economic self-sufficiency. In contrast to the situation of Robinson Crusoe, the resources are not as easily scrutinized with respect to the possibilities of uses to which they can be employed. The great enhancement of productivity arising from specialization and the division of labor provides for a considerable increase in the flexibility of resource utilization. The fruits of social cooperation permit the devotion of a major portion of original resources, land and labor, to the direct production of what may be called producers' goods, or intermediate products, which ultimately will give rise to consumers' goods when combined with additional increments of land and labor. Here lies a crucial distinction between the case of economic self-sufficiency and that of social cooperation. The complexity and intricacy of resource employment in a modern economy make for far more involved decisions than those required on the part of Robinson Crusoe.

The increased complication of economic decisions is partly attributable to the immense variety of finished goods and services which a high level economy is capable of generating. Choices have to be made as to which ones should be produced and in what quantity, and the larger the number of alternatives the more difficult the decision. However, decisions concerning ends are not the only vital decisions which must be made. Just as in the case of Robinson Crusoe,
choices which relate resources to ends must be effected. This is a question of means, not ends. What is of great significance here is that the economic resources in an advanced economy are extremely versatile and diversified. Their versatility can be traced to the wide range of usages to which they can be adapted as a result of the advances in technology and productive skills, results which comprise the beneficial effects of the division of labor and specialization. And these numerous adaptations entail the conversion of original factors of production into a diversity of produced resources, thereby creating countless types of particular resources.

It is clear that with such an infinite array of alternative steps which can be taken towards the production of finished products and services, choices of the most economical or fruitful steps cannot be made simply by reviewing calculations in kind. This extensive degree of heterogeneity in society's means makes it impossible rationally to assign and direct original factors of production in the yielding of more refined means of production without some basis for comparison, i.e., some common denominator. For example, iron can be used in the manufacture of locomotives, farm tractor equipment, textile spinning and weaving machinery, building frames, oil drilling equipment, and thousands of other items. Yet there is no way to compare the results of these varied uses of iron without some means of translating their different effects into common terms. And the problem
is compounded when it is realized that for many uses other resources offer effective substitutes. Thus copper, tin, and aluminum can be efficaciously used in the place of iron or steel in many lines. So the problem widens as the full range of alternatives is considered. Decisions concerning resource utilization would be a matter of immense confusion so long as calculations in kind constituted the extent of calculations. The allocation of scarce resources would be chaotic and seriously imprecise.

Once the shackles of self-sufficiency are removed and production for exchange is assumed, the epitome of which is a full-fledged market society, the need for more precise calculations regarding the outcome, both past and expected, of resource uses emerges. And this requirement for keener calculations is met through the very factor which permits exchanges to occur on a widespread basis: the economy's medium of exchange or money. Monetary calculation provides an indispensable means by which a modern economy can translate the myriad of physically different resources and outputs into a common denominator. It is this monetary common denominator which provides the basis for an input-output calculus, a capital-income calculus which is crucial to the allocation of scarce resources and hence to the problems of both the accountant and the economist. This calculus is necessary because the scarcity of means requires the careful comparison of costs and benefits, of inflows and outflows in the production process.
Socialist Theory Admits Inadequacy of Calculations in Kind

It is agreed generally that in a modern economy calculations in kind are not the proper basis for resource allocation. A brief look at how certain leading advocates of socialism came to recognize the inadequacy of calculations in kind reveals that even the most enthusiastic opponents of the market economy now recognize the need for a common denominator for the purpose of rational resource allocation.

In 1920, Ludwig von Mises challenged the theory of socialism when he contended that socialism is unworkable in an advanced economy because of the inadequacies of calculations in kind. He accused the socialist theorists of having ignored the critical task of resource allocation in a modern economy. They had assumed away this problem in their ecstatic belief that socialism is inevitable and thus naturally feasible. Not one eminent spokesman for the cause of socialism had bothered to explain just how decisions would be reached rationally concerning the employment of scarce resources. Now they were forced to face the issue; faith in inexorable laws of history has no place in the realm of scientific discussion and inquiry. The socialist thinkers were challenged to resolve theoretically the problem of calculation.

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Leading socialist theorists subsequently agreed that their theory was in need of an elaboration on this point. Their ideas then came to incorporate an explanation of how they envisioned the process of allocation could be directed by central planners in the absence of competitively established market prices, the indispensable means of resource allocation for Mises. What this explanation amounted to was the recognition that the planning authorities would require some method of calculating in common terms the effects of alternative economic actions. They agreed that Mises was right in pointing out that they had failed to confront this matter in all of their previous works. Calculations in kind are insufficient in the management of a modern economy. Their replies largely culminated in the contention that the central planning authorities could establish prices through trial and error, guided by the existence of surpluses and shortages for each particular good. And these prices, stated in terms of the economy's medium of exchange, would serve as beacons in the task of resource allocation. Shortages called for upward adjustments in the prices of those items; surpluses signalled for price reductions. These price adjustments would lead to proper production adjustments—price in-

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creases would induce supply increases while price decreases would effect supply decreases—so that eventually equilibra-
ting prices would be set, thereby removing various shortages and surpluses in both intermediate and finished goods. Re-
sources would be employed rationally through the monetary guides issued by the central pricing and planning authorities. The socialist position now is that a socialist economy is not doomed to calculations in kind, and that, thanks to Mises, they had been spurred to demonstrate this point.

3. The Problem of Coordination

The overriding difference between self-sufficient production and production on the basis of social cooperation is that only under the latter arrangement is man able to re-
alize the overwhelming benefits of specialization and the division of labor. Accompanying this difference is the sig-
nificant fact that while a self-sufficient producer directs his productive efforts towards the generation of goods for his own satisfaction, an arrangement of social cooperation necessarily means that producers engage themselves in the creation of products for the satisfaction of other people's wants. Practically every person in a modern economy devotes his skills and energies to a highly specialized activity which provides a product or service to be used by someone else. Each person would be in a sad state if all persons were suddenly compelled to produce only for themselves.

The reliance upon the elements of specialization and
division of labor exacerbates the problem of efficient resource allocation because it necessitates some means of unifying or coordinating the separate plans and efforts of many actors. Thus underlying the problem of the division of labor is the problem, as Hayek calls it, of the "division of knowledge," which is "the really central problem of economics as a social science." Hayek has stated the central question as follows:

How can the combination of fragments of knowledge existing in different minds bring about results which, if they were to be brought about deliberately, would require a knowledge on the part of the directing mind which no single person can possess? To show that in this sense the spontaneous actions of individuals will, under conditions which we can define, bring about a distribution of resources which can be understood as if it were made according to a single plan, although nobody has planned it, seems to me indeed an answer to the problem which has sometimes been metaphorically described as that of the "social mind."

The seriousness of this problem of knowledge must not be underrated or obscured. Clearly a system of division of labor harbors the potentiality of chaos and confusion. If it is to work, there must be some means of synchronizing individual decisions and actions throughout the economy. If the preponderance of valuations on the part of the members of a society involves a preference that more timber should go into the production of houses and less in the production of paper

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products, signals must be effectively communicated to induce this shift in resource usage. Otherwise scarce resources will not be employed in the most desirable uses; they will be employed for the satisfaction of less urgently felt human wants.

Yet the conventional model of so-called perfect competition with its assumption of perfect knowledge completely evades treatment of this inescapable task which characterizes the real world. The model assumes that knowledge concerning technology, tastes, etc., is given so that all individual plans are pictured to mesh consistently with one another. Knowledge here is depicted as some sort of data in the nature of objective facts similar to the facts applicable in the realm of physical science. But this view of knowledge misconstrues the nature of knowledge in the area of social science. The knowledge which underlies the decisions and actions of human beings is grossly imperfect because a significant part of the knowledge in the mind of each individual actually consists of suppositions about the future decisions and actions of other individuals. These suppositions are subjective perceptions which are devoid of the relative certainty which is ascribed effectively to the so-called facts used in the physical sciences.

And since the future decisions and actions of other people are likely to change continuously as they gain additional experience about both external objective facts and, from their viewpoint, other people's decisions and actions,
the notion that all separate plans and actions will eventually interlock and that this will result in a static long-run equilibrium is totally unrealistic. By assuming perfect knowledge, the model fails to focus upon the problem of the "division of knowledge," the "really central problem of economics as a social science." The model is a useful analytical construct in assisting the theorist's understanding of the logical result of an atomistic economic process in which unforeseeable changes were to disappear. But it is a construct which must be used carefully if the element of uncertainty is not to be erroneously omitted from the study of the real world.  

So the task of rational resource allocation is not a simple matter of utilizing "given perfect knowledge" in the process of economic decisions and actions. The knowledge which exists is "given" only in innumerable, scattered pieces

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4 It should be pointed out that the model of perfect competition is not the same as the model of an evenly rotating economy to be described in a later section. Although both models picture a world in which there is perfect knowledge about the future, they differ in other important respects. A particular difference lies in the assumed nature of the demand curve faced by the firm. The individual firm in a perfectly competitive economy would have a perfectly elastic or horizontal demand curve. However, in the model of the evenly rotating economy, there is no assumption that each firm faces a perfectly elastic demand curve; a downward-sloping demand curve for each firm is not inconsistent with the notion of an evenly rotating economy. Since the real world generally is not characterized by perfect competition, the concept of an evenly rotating economy is more realistic than is the model of perfect competition. Yet both models must be sharply contrasted with the real world in which perfect knowledge of the future is non-existent.
and not in one single mind. Each individual has unique information regarding his particular circumstances of time and place, and others benefit from the actions taken by each individual because of his being particularly informed about his limited situation. But the fact that his particular information relates to only his limited situation means that he may use his knowledge in a manner which is inconsistent with the plans of others. Social cooperation requires some method that will enable that part of each one's particular knowledge which is relevant to the plans of others to be disseminated as widely as possible. And this method must provide for the continuous dissemination of knowledge in the midst of relentless change. For as Hayek puts it, "... economic problems arise always and only in consequence of change. As long as things continue, or at least as they were expected to, there arise no new problems requiring a decision, no need to form a new plan."\(^5\)

\(^5\)Hayek, "The Use of Knowledge in Society," op. cit., p. 82.
II. ECONOMIC CALCULATION

1. The Role of the Price System

It has been shown that the essence of social cooperation is specialization and the division of both labor and knowledge. Two significant implications for the purposes of this study have come out of this discussion so far. One is that social cooperation results in the production of such a wide range of intermediate and final products that calculations in kind will not serve to allocate scarce resources effectively. A common denominator is indispensable. The other is that the concomitance of decentralized decision-making and social cooperation requires a means of coordinating individual plans. These two requirements are fulfilled simultaneously through the price system of the market economy. Detailed treatment of the workings of the price system will be postponed until later. At this point, it will be sufficient to discuss the price system in general terms in order to demonstrate its dual function as a means of economic calculation and as a means of coordinative communication. Actually, as it will be shown, these two roles are really of a piece; that is, they relate to the same problem of resource allocation under an arrangement of social cooperation and a system of market prices.
Economic Calculation Differs from Technological Calculation

An advanced market society relies upon a medium of exchange, or money, to permit the flow of goods and services for both production and consumption among its specialized members. The process of exchange is carried out through the continuous establishment of market prices for those goods and services that can be bought and sold. These money prices are the indispensable means of economic calculation. It must be reiterated that economic calculation deals with the determination of how scarce and somewhat versatile resources should be used in order to adhere to the preferences of the members of the market society. The alternativeness of resource utilization in a world of scarcity is the key to the economic problem and thus to requiring some form of calculation in common terms which will indicate the effects of alternative courses of economic action.

Economic calculation is not a technological question. Technology can establish quantitatively the causal relations between a particular set of external things which can be used in various combinations to produce a particular result. The nature of technological calculation is $6a + 4b + 3c + \ldots xn$ will likely create the result $8p$. But technology cannot say whether the resulting $8p$ is the most desirable usage of those particular quantities of resources $a$, $b$, $c$, etc., in light of their alternative uses as means to the production of other ends. By the same token, technology is not able to say whether that particular formula for the production of $8p$
is the preferable one when $8p$ is also producible by means of other formulae or combinations of different resources. Mises has illustrated the problem as follows:

The art of engineering can establish how a bridge must be built in order to span a river at a given point and to carry definite loads. But it cannot answer the question whether or not the construction of such a bridge would withdraw material factors of production and labor from an employment in which they could satisfy needs more urgently felt. It cannot tell whether or not the bridge should be built at all, where it should be built, what capacity for bearing burdens it should have, and which of the many possibilities for its construction should be chosen.

Max Weber made the same point in the following statement:

The question of what, in comparative terms, is the cost of the use of the various possible technical means for a single technical end depends in the last analysis on their potential usefulness as a means to other ends.

Technological calculations can only be calculations in kind. They are not sufficient for human decisions and actions because they are devoid of any preferential quality. The ivory-tower theorist may be right in envisioning excellent tunnels of platinum. But monetary calculation makes the issue an economic one, and the practical engineer is thereby discouraged from embarking upon such outlandish schemes so long as platinum has usages deemed more important than that of the construction of tunnels. Technology is

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neutral to human valuation; it has nothing to say about the subjective use-value of the various objective usages to which resources can be put. As Mises has put it, "it ignores the economic problem: to employ the available means in such a way that no want more urgently felt should remain unsatisfied because the means suitable for its attainment were employed--wasted--for the attainment of a want less urgently felt."\(^3\)

Subjectivity of Value

Since the task of resource allocation is to satisfy the more urgently felt human wants, resources must be devoted to their most important employments. Yet the question must be raised as to how these most important wants or usages are determined. It would appear that some means of measuring the value of things is necessary to make these determinations. But this is not the case. There is no such thing as a measuring unit of value; measuring the value of a thing is impossible. Value is a mental, subjective phenomenon which eludes cardinal quantification. A thing's value rests in the mind of the person who is doing the valuing, and this process of evaluating is not a matter of measurement. Valuation is always a matter of preferring on the part of an individual; thus, ordinal numbers are the only type of numerical treatment which can be accorded the problem of valuation.

\(^3\)Mises, \textit{op. cit.}, p. 207.
This is the subjective theory of value which did not enter into economic science until Menger introduced it in his analysis in 1871. Up until that time, economists had searched for a source of value for all goods as if value were objectively inherent or intrinsic in each particularly valued good.

The problem of value measurement is indicated by the fact that not only do different people often value the same thing differently but the same person might value a certain thing differently at different points in time. And under the operation of the law of diminishing marginal utility, a person will always value each additional unit of a given good less than the prior unit's value. If value were quantifiable and measurable, there would exist a standard unit of measure which would be unchanging. It is clear that there is no such immutable unit of measure of the value of a good when different people at the same time and the same person at different times often reach divergent valuations for the same good. Valuation necessarily is manifested in the act of choosing or preferring. One is able to say he values A more than either B or C, but he is unable to say quantifiably how much more he prefers A over B or C. He may qualitatively indicate that his preference of A over B is far more intense than his preference of A over C. In that case, he would be ranking his preferences from first to last in the order of A, C, and B. But this ranking is strictly an ordinal, and not a cardinal, usage of numbers. The allocation of scarce resources cannot be based upon any alleged
method of measuring their values; employment of particular increments of resources can be decided only through ranking one incremental choice over alternative incremental usages of the same or different resources. Resources, since they are means to consumers' goods, derive their ranking from the relative importance of their ultimate products. A more detailed look at the subjective theory of value is presented in the following chapter.

**Economic Calculation Through Money Prices**

It is through the pricing process of the market that the relative importance of the various resources and consumers' goods is translated into common terms in the form of money prices. Money, thus, emerges as the instrument of economic calculation. Money enables man to make economic calculations because it constitutes the common medium of exchange. All goods and services which are bought and sold on the market are exchanged for specific sums of money. These money prices are not measurements of value. Money prices are exchange ratios which are expressive of the ranking of the valuations placed upon increments of goods at a given moment by the participants in market exchanges. Money prices are subject to continuous change due to the changeability of peoples' subjective valuations and because of changes in the supply of the particular goods and services. The propensity of man to conceive changes which he deems improvements in the ways of doing things and in the means of attaining sat-
isfaction prevents the advent of stable prices in the market economy.

The task of resource allocation, as emphasized at previous points, is to see that scarce resources are devoted to those employments which serve to satisfy the preferences of the members of the market society. Economic calculation on the part of the countless decision-makers in the market economy is the indispensable means by which this task is effectively achieved. The crucial assignment of economic calculation is to provide a comparison between input and output, between effort and result, for past or contemplated lines of resource utilization. It has been shown that calculations in kind, as must necessarily characterize technological computations, will not suffice for the task of economic allocations. But money prices related to particular quantities of goods and services permit the calculation of input and output in terms of money costs and money revenues. Economic planning is possible because the actor is able mentally to consider market prices of the past and the market prices he expects to occur in the future with respect to the exchange of various goods and services for certain amounts of money. As all action is purposed to effect a beneficial change, all action is directed to the future, whether to the next hour, day, month, year or longer. This means that economic calculation always deals with the future—every step along the path of resource utilization has a prospective orientation, and each given action is based upon the assumption that its
output or results will exceed its input or effort and that this excess is greater in this particular line than in any other alternative use open to the actor.

Economic calculation entails both the retrospective and the prospective calculation of input and output of a certain project or line of activity. Retrospective economic calculation is the determination of past monetary profit or loss while prospective calculation is a matter of anticipating the money profit or loss expected to result from the undertaking of specific actions. However the calculation of past profit or loss is not a case of economic calculation which is unrelated to the future. The retrospective determination of money costs and money revenues entirely serves to facilitate decisions concerning future courses of action. The establishment of the outcome of past actions is not only significantly instructive for subsequent decisions; it also serves the objective to avoid impairing the future capacity to produce. The latter function gives rise to the concepts of capital and income, the ultimate mental tools of economic calculation.

The Concepts of Capital and Income

The essence of modern economic activities is the devotion of resources to the process of production leading to the generation of consumers' goods and services. The individual producer or business entity, thus, is said to invest funds for the acquisition of productive means by which, it
is anticipated, proceeds will emerge yielding a sufficient increase in monetary wealth. Through money prices, the producer is able to ascertain numerically the economic significance of the factors employed for future production. This concept of a determinable amount of money equivalent devoted toward productive activities is called the concept of capital, and the aim to at least keep this amount intact is called capital maintenance. Mises defines capital in the following way:

Capital is the sum of the money equivalent of all assets minus the sum of the money equivalent of all liabilities as dedicated at a definite date to the conduct of the operations of a definite business unit. It does not matter in what these assets may consist, whether they are pieces of land, buildings, equipment, tools, goods of any kind and order, claims, receivables, cash or whatever.

When productive efforts result in net assets whose money equivalent exceeds the capital devoted to such efforts, the business unit is said to have earned an income equal to that excess. The concept of income is the correlative of the concept of capital. Income is the amount which can be consumed without lowering the capital below the amount dedicated to the business at the start of the period. If consumption is restricted to the amount of income, capital is maintained. On the other hand, if consumption exceeds income, capital is not maintained; this difference is referred to as capital consumption. Capital accumulation takes place

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4Ibid., p. 262.
when consumption is less than the available income, that is, when a portion or all of income is saved. If the business fails to earn income and instead suffers a monetary loss, there is capital consumption and capital is not maintained unless new funds are invested by the producer. Additional investments, in combination with income and consumption effects, make for either capital maintenance, capital accumulation, or a reduction in capital consumption. As Mises states, "among the main tasks of economic calculation are those of establishing the magnitudes of income, saving, and capital consumption." 5

Although capital may be embodied in produced factors of production often called capital goods, the idea of capital refers to a concept existing only in the minds of men. Man is mentally aware of the monetary significance of the means to which he resorts for productive purposes. This concept is an element in economic calculation and provides a basis for appraising the results of future actions and for ordering subsequent steps of consumption and production through capital maintenance. The concrete capital goods are doomed to eventual dissipation; it is only the value of the capital fund that can be constantly preserved or maintained through a proper arrangement of consumption.

The establishment of the outcome of past actions involves the calculation of capital both prior to and after

5Ibid., p. 261.
the actions. The comparison of these two calculations yields
the determination of profit (income) or loss. This retro-
spective form of economic calculation provides a starting
point in the planning of future actions to the extent that
the actor deems the past an indicator of future developments.
In addition to serving instructive aims, the determination
of profit or loss resulting from past actions provides the
only means by which the actor or actors can ascertain whether
or not the capacity of the business unit to produce in the
future has been impaired. Producers are interested in at-
taining the satisfaction of their personal wants like anyone
else, and the calculation of profit or loss reveals the ex-
tent to which they can enjoy consumption expenditures with-
out encroaching upon the capital base necessary to continue
productive operations at a level comparable to that of the
past. This calculation may show that additional investment
is required in order to offset the dissipation of capital as
a result of unprofitable operations or to effect desired cap-
itual accumulation. And the most recent determination of cap-
itual affords a point of comparison for the calculation of
profit or loss resulting from actions taken in the succeeding
period. Thus, retrospective economic calculation is signi-
ficant only because it facilitates the planning of future ac-
tions; without this service it would be merely dead history.

Every productive undertaking is guided by the calcula-
tion of estimated future costs and proceeds expected to re-
sult from the project. The determination of past revenues
and costs may be of substantial assistance in the projection of these results. Only those actions or activities will be pursued that promise a monetary output which sufficiently exceeds the expected monetary input, including capital dissipation, necessary to carry them out. Here lies the means by which a market society strives to direct scarce resources to those employments that satisfy the more urgently felt wants. Entrepreneurs and capitalists direct resources into their most profitable uses as indicated by the calculation of money prices expected to appear on the market for various goods and services. The indispensable role of economic calculation is described by Mises as follows:

Monetary calculation is the guiding star of action under the social system of division of labor. It is the compass of the man embarking upon production. He calculates in order to distinguish the remunerative lines of production from the unprofitable ones, those of which the sovereign consumers are likely to approve from those of which they are likely to disapprove. Every single step of entrepreneurial activities is subject to scrutiny by monetary calculation. The premeditation of planned action becomes commercial precalculation of expected costs and expected proceeds. The retrospective establishment of the outcome of past action becomes accounting of profit and loss.

Retrospective monetary calculation subsequently reveals the success or failure of business undertakings and, thus, reveals the accuracy or inaccuracy of costs and revenues projected in the past. Capital accounting establishes the money prices of the means employed and then confronts

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6Ibid., p. 229.
this amount with the monetary result of action and other factors. This confrontation enables the ascertainment of success or failure, of profit or loss. If there is success, then resources were directed into the most important uses; failure means that resources were diverted from the most important uses. Important here refers to the preferences of consumers whose subjective valuations underlie the prices which arise on the market over time—the pricing process will be explored in a later section. A more thorough explanation of the Austrian theory of capital is presented in the latter part of the study as its implications for accounting valuation are more sharply drawn.

2. Risk and Uncertainty Differ

There is no precision or exactitude in economic calculation because of the uncertain future which pervades all activities in the market economy. Estimated future costs and revenues are anticipations on the part of the entrepreneur who possesses no superhuman ability to know the future. This factor of uncertainty no less affects the retrospective calculation of profit and loss since the most recent calculation of capital is tenuously based upon a money equivalence which the future may not uphold. The individual, planning businessman is unable to know precisely the future preferences of consumers, the future changes in technology, the future plans and actions of other businessmen, and the infinite number of other external events which will occur in the
future. The gathering of empirical data as is done in establish­ing actuarial tables is not practicable for the purposes of entrepreneurial activities in the market economy. Actuarial science is predicated upon determining classes of homogeneous events. Each class is made up of a large number of past similar situations which are subject to statistical analysis revealing the percentage of instances a given event has transpired. But the preponderance of the entrepreneur's dealings is not with matters of a homogeneous nature. To the extent that he does concern himself with actuarially describable events, he resorts to insurance in order to recognize the probable cost of detrimental happenings. But most of his predicaments are of such a comparatively unique nature that the grouping or categorizing of his situations into classes for the purposes of computing class probabilities is impossible.

Frank Knight brilliantly developed this point in distinguishing between risk and uncertainty.7 Risk is subject to numerical computation based upon statistical data pertaining to a large number of similar events which are expected to recur in a fashion highly repetitious of the past. This is the nature of actuarial probabilities. Uncertainty relates to situations which are comparatively unique so that each situation constitutes a case in itself as opposed to

being a member of a class or large number of homogeneous
events or circumstances. Uncertainty is not numerically cal-
culable because of the lack of sufficient past experience re-
lating to the particular set of circumstances being con-
sidered. Comprehensive empirical data is not available in
the innumerable classifications necessary to permit the cal-
culation of probability of success for each of the innumer-
able ventures which are constantly underway. Knight has ex-
plained the problem in the following statements:

The liability of opinion or estimate to error must
be radically distinguished from the probability or
chance of either type (a priori and statistical),
for there is no possibility of forming in any way
groups of instances of sufficient homogeneity to make
possible a quantitative determination of true prob-
ability. Business decisions, for example, deal with
situations which are far too unique, generally speak-
ing, for any sort of statistical tabulation to have
any value for guidance. The conception of an objec-
tively measurable probability or chance is simply in-
applicable. . . . The essential and outstanding fact
is that the "instance" in question is so entirely
unique that there are no others or not a sufficient
number to make it possible to tabulate enough like it
to form a basis for any inference of value about any
real probability in the case we are interested in.
The same obviously applies to the most of conduct and
not to business decisions alone.

Uncertainty is the overwhelming obstacle which each
entrepreneur and capitalist faces in the market economy, and
his attempt to perceive the future is a subjective matter
which escapes mathematical equations and formulae. The busi-
nessman is not dealing with objects whose behavior is pre-
cisely predictable as is the case with the concerns of the

8Ibid., pp. 226, 231.
natural scientist and of technology. The object of the producer's attention are the wants of other people and the plans of other producers, and these objects forbid perfect knowledge about future changes they will undergo. The unexpected innovations and applied inventions on the part of competing producers have often spelled the downfall of less enterprising businesses. The changeability of customers' preferences and of resource availabilities are persistent problems confronting the producer. The uncertainty primarily is due to the unpredictability of the actions of other people with whom there is interaction under a system of social cooperation. This is the central theme of the following remarks by Mises:

In the real world acting man is faced with the fact that there are fellow men acting on their own behalf as he himself acts. The necessity to adjust his actions to other people's actions makes him a speculator for whom success and failure depend on his greater or lesser ability to understand the future. Every action is speculation. There is in the course of human events no stability and consequently no safety.

This does not mean that the future is so uncertain that every business action involves a complete gamble or that each situation is so unique that there exists no basis for planned action. Experience provides an indispensable guide or aid to all action. Past prices are the starting point in predicting future prices. However, for the problems of the entrepreneur, experience is too diverse and complex to enable

\[\text{\textsuperscript{9}}\text{Mises, op. cit., p. 113.}\]
him to quantify the probability of the success of alternative actions. In the market economy, there are no fixed relations. His reliance upon past experience is necessarily of a judgmental and qualitative nature.

3. The Tenuousness of Economic Calculation

Since all anticipatory economic calculation deals with an uncertain future, all such calculations are tenuous and indefinite. As no entrepreneur can know the future, errors in anticipations are inevitable, and success or profit passes to those whose foresight is the least erroneous or most nearly correct. Even the capital arising from the results of past events and transactions and used in determining past profits is but an interim level of wealth since its permanence is not assured in the midst of an uncertain future. Mises describes the tenuousness of the figures reported in business financial statements as follows:

The main thing in balance sheets and in profit-and-loss statements is the evaluation of assets and liabilities not embodied in cash. All such balances and statements are virtually interim balances and interim statements. They describe as well as possible the state of affairs at an arbitrarily chosen instant while life and action go on and do not stop... . . . The numerical exactitude of business accounts and calculations must not prevent us from realizing the uncertainty and speculative character of their items and of all computations based on them. . . . The planning businessman cannot help employing data concerning the unknown future; he deals with future prices and future costs of production. Accounting and bookkeeping in their endeavors to establish the result of past action are in the same position as far as they rely upon the estimation of fixed equip-
ment, inventories, and receivables.\textsuperscript{10}

The fact that monetary calculation may lack preciseness and certainty does not mean it does not fulfil its tasks. The purpose of monetary calculation is not to reveal the future. Its task is to guide future actions according to the actor's opinion or view of what the future will hold concerning the want-satisfaction of other people. It is not the fault of the system of economic calculation that uncertain calculations exist. They arise necessarily because of the nature of acting always in the midst of an uncertain future. Under a social organization of extensive division of labor, producers require a means of calculation on the basis of a common denominator. Monetary calculation affords this means although it is not definite or certain. Resources are directed into those uses in which the owner deems are the most promising and remunerative applications available as indicated by the owner's money calculations. Monetary calculation is possible only in a market economy in which the factors of production can be related to money prices. There can be no monetary calculation in a barter economy or in the case of a Robinson Crusoe. Even the socialist theorists have admitted that the allocation of productive resources in a socialized economy would require the establishment of money prices by the central authorities in order to correct discrepancies between supply and demand.

\textsuperscript{10}\textit{Ibid.}, pp. 214, 224.
4. The Rationalizing Effect of Monetary Calculation

Max Weber attributed to the tool of monetary calculation or capital accounting the dominant rationalizing influence in the technological development of the capitalist, modern Western World. Note the following passages from his great works:

... it is one of the fundamental characteristics of an individualistic capitalistic economy that it is rationalized on the basis of rigorous calculation, directed with foresight and caution toward the economic success which is sought in sharp contrast to the hand-to-mouth existence of the peasant, and to the privileged traditionalism of the guild craftsman and of the adventurers' capitalism, oriented to the exploitation of political opportunities and irrational speculation.\(^\text{11}\)

The fact that what is called the technological development of modern times has been so largely oriented economically to profit making is one of the fundamental facts of the history of technology. ... Had not rational calculation formed the basis of economic activity, had there not been certain very particular conditions in its economic background, rational technology could never have come in existence.\(^\text{12}\)

It is only in the modern Western World that rational capitalistic enterprises with fixed capital, free labour, the rational specialization and combination of functions, and the allocation of productive functions on the basis of capitalistic enterprises, bound together in a market economy, are to be found.\(^\text{13}\)

Mises has recognized the significance of economic calculation in these remarks:

No other distinction is of greater significance, both


\(^{13}\)Ibid., p. 297.
for human life and for the study of human action, than that between calculable action and noncalculable action. Modern civilization is above all characterized by the fact that it has elaborated a method which makes the use of arithmetic possible in a broad field of activities. This is what people have in mind when attributing to it the—not very expedient and often misleading—epithet of rationality. . . . Economic calculation is the fundamental issue in the comprehension of all problems commonly called economic.14

The instruments of money and monetary calculation are the means by which versatile and diversified resources can be rationally allocated to the satisfaction of the more urgent wants. The advances of technology are dependent upon the guidance that is offered by such means. The great advantages of division of labor could not have been realized without the calculations made possible in common terms by a common medium of exchange and its correlative, money prices.

And yet, economic calculation is not without its limitations. Those things which cannot be bought and sold are outside the realm of monetary calculation. A man's devotion to good character or to another person may not be subject to compromise at any price. In a society which forbids slavery, human life has no money price. A person may possess a physical item of property which he so cherishes for its beauty or for sentimental reasons that he would not exchange it for any amount of money. Such matters cannot be related to money prices. But the existence of these exceptions to the province of monetary calculation does not hinder the effectiveness of

14Mises, op. cit., p. 199.
the usage of money prices in guiding the utilization of the vast amount of goods and services which can be bought and sold.

5. Coordinative Communication Through Market Prices

In addition to the need for a common denominator for calculation purposes, another implication of social cooperation based upon specialization and division of labor and knowledge has been observed: the requirement of a means by which the multitude of individual plans and actions can be coordinated into a consistent pattern. The interrelationship of specialized activities demands a system of apprising decision-makers of remote changes relevant to their sphere of activity. Each decentralized planner cannot decide strictly on the basis of his awareness of his immediate surroundings. His decisions need to be harmonized with those of other planners so that the larger economic system operates as smoothly and effectively as possible.

The establishment of money prices constitutes the medium through which the communication of necessary information is made to coordinate effectively the actions of individual planners. As Hayek has pointed out, each particular decision-maker does not need to know all the facts pertaining to the changes in resource usage. What is relevant to each is "how much more or less urgently wanted are the alternative
things he produces or uses." The economic question is always a question of the relative importance of specific things available for the satisfaction of human wants. Each planner does not usually need to know why the relative importance of the things which he uses or produces has changed. What he does need is some indication of the extent to which its relative importance has altered. The crucial objective of such information is to see that each individual planner acts in light of the changes in the relative importance of the things with which he is concerned. Market prices at any moment reflect the relative importance most recently ascribed to goods and services exchanged on the market. Thus, changes in the relative importance of goods and services are reflected in changes in their money prices.

The coordinating function performed by the price system can be illustrated by assuming a sudden shortage of some resource. Those people who will eventually solve this problem do not need to understand the cause of the shortage. The price of a unit of the resource will be driven upwards as those who employ it in the most important usages, i.e., use it for the generation of products promising the highest return, outbid those producers who plan to use it in less remunerative products. The shortage has meant that the marginal uses of the resources which could be supplied before

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15 Hayek, "The Use of Knowledge in Society," op. cit., p. 87.
the advent of the shortage cannot be provided for so long as the shortage persists. The higher price successfully causes the curtailment of the employment of the resource in its marginal uses.

People far removed from the scene from which the shortage originated are thereby led to plan and to act with due regard accorded the fact that the supply of a particular factor of production has diminished. The higher price not only signals for adjustments in the quantities demanded; it also induces the search on the part of suppliers to increase the available supply of the resource. And to the extent this search is successful, the price of the good will fall accordingly, thereby indicating that the good is now available for employment in less remunerative lines. The price system operates in the same way to guide the actions of consumers in their acquisition of consumers' goods and services. Hayek has described the effectiveness of the price system as a means of communicating information to dispersed decision-makers as follows:

... The most significant fact about this system is the economy of knowledge with which it operates, or how little the individual participants need to know in order to be able to take the right action. In abbreviated form, by a kind of symbol, only the most essential information is passed on and passed on only to those concerned. ... a system of telecommunications which enables individual producers to watch merely the movement of a few pointers ... in order to adjust their activities to changes of which they may never know more than is reflected in the price movement.

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16Ibid.
And relating to the example which was used above and which was drawn from Hayek's discussion, his further remarks about the guiding accomplishments of the price system appear warranted:

... the marvel is that in a case like that of a scarcity of one raw material, without an order being issued, without more than perhaps a handful of people knowing the cause, tens of thousands of people whose identity could not be ascertained by months of investigation, are made to use the material or its products more sparingly; that is, they move in the right direction. ... I am convinced that if it were the result of deliberate human design, and if the people guided by the price changes understood that their decisions have significance far beyond their immediate aim, this mechanism would have been acclaimed as one of the greatest triumphs of the human mind. Its misfortune is the double one that it is not the product of human design and that the people guided by it usually do not know why they are made to do what they do.

Money prices simultaneously fulfill the needs for a common denominator for calculation purposes and a process by which the individual decisions of dispersed people can be coordinated. Prices established on the market are coordinative precisely because they are a major factor taken into consideration in the economic calculations underlying the actions taken by various decision-makers. Past prices are useful guides to the anticipation of prices expected to exist in the immediate future. The tendency for separate decisions to be consistent with one another was the natural outcome of establishing a medium of exchange which furnished to everyone a common denominator to be used for their economic calcula-

17Ibid., p. 87.
tions. Without a common denominator, the problem of coordinating the plans of various people would not be so serious since the reliance upon calculations in kind significantly restricts the development of specialization and division of labor. Exchanges would be limited to pure barter relations. The rational allocation of scarce resources in a system of fruitful and extensive social cooperation is the great advantage emanating from a market economy and its counterpart, monetary calculation.
III. THE SUBJECTIVE THEORY OF VALUE

1. Satisfaction and Valuation

The explanation of all economic activity which takes place in the market economy ultimately rests upon the subjective theory of value. The value of various consumers' goods and services does not reside objectively and intrinsically in the things themselves apart from the individual who is making an evaluation. His valuation is a subjective matter which even he cannot reduce to objective terms or measurement. Valuation consists in preferring a particular increment of a thing over increments of alternative things available; the outcome of valuation is the ranking of definite quantities of various goods and services with which the individual is concerned for purposes of decision and action. Theory resorts to the hypothetical concept of the scale of values in seeking to explain and understand the nature of human valuations. The ranking of alternative ends is determined by the person's expectations of satisfaction to be obtained from each specific choice faced by him at any moment of decision. He will invariably select the alternative which he deems will yield him the greatest satisfaction.

The subjectiveness of valuation rests in the nature of satisfaction—satisfaction is subjective and not open to
numerical measurement. The extent to which a thing gives satisfaction is always strictly personal and seen from the viewpoint of the particular person concerned. Experience reveals that people derive satisfaction from different goods and services; that is, people are not exactly alike in terms of the types of things which please them. Experience also demonstrates that a person's preferences are subject to vary from time to time. His ranking of alternative choices is apt to undergo a reshuffling at any given moment. His scale of values may be altered also in the form of particular deletions or additions.

To relate the matter of valuation to the individual person is not to suggest that each individual is only concerned with the satisfaction of his own "selfish" appetites and needs. That which brings him satisfaction or relief might well be the rendition of benefits to another person. Satisfaction can be and often is realized from the attainment of altruistic as well as "selfish" motives. But the point remains that regardless of the form in which the satisfaction is to take, each choice arises from a subjective valuation on the part of the particular person who is doing the choosing. The uneasiness which he seeks to remove rests in his own mind whether such uneasiness pertains to an immediate problem of his own or to a problem faced by someone else. His choice stems from the preference that he holds for the removal of the particular related uneasiness as compared with the other problems to which he could alternatively devote
his attention.

2. The Principle of Marginal Utility

Valuation is always directed towards a definite quantity of a particular good or service. Choices and decisions are not concerned with the whole supply of a certain good or service as may prevail throughout the economy. This marginal orientation is what was lacking in the classical economists' groping with the so-called paradox of value. They were unable to resolve the intriguing question why diamonds had a higher price per unit than water when everyone knew that water was more useful and valuable than diamonds. Only through the principle of diminishing marginal utility could this conceptual dilemma be eliminated. Each additional unit of a particular good is devoted to a use which is less important and urgent than the use to which the preceding unit is applied.

To establish this principle one does not have to resort, as is sometimes inappropriately done, to explanations of psychological or physiological satiety. The principle that a person will always apply a given unit of a good or service to the most pressing desire or need to which it relates at that time is inherent in the concept of purposive action. Since each person prefers more satisfaction to less satisfaction, each succeeding unit obtained will be devoted to less and less important aims given his scale of values at that time.

Out of the principle of diminishing marginal utility
is derived an important law relating to the value of a unit of any good possessed in any particular quantity. The value of a unit of a given quantity of a particular good is determined by its usefulness in its least important use. To put the rule another way, the value of any unit of several units held of a given good is equal to the satisfaction which would be sacrificed if one unit were lost. Bohm-Bawerk illustrated the law by assuming a pioneer farmer who has reaped five sacks of grain from his harvest.¹ In planning carefully the use of this food supply, he first recognizes the essential need for a minimum amount of food to keep him alive until the following harvest. To this purpose he allots one sack of grain. A second sack will contribute towards his enjoying full strength and complete health. A third sack will enable him to add some variety to his diet by using it for raising poultry. He decides to assign a fourth sack to the distillation of brandy; and finally, a fifth sack is to be devoted to the feeding of a group of parrots "whose antics give him pleasure."

The example so far has depicted the operation of the principle of diminishing marginal utility. His plan for utilization of the sacks of grain proceeds from the more important to the less important usages. Now the value of each sack of grain equals the satisfaction which the farmer ex-

pects to derive from being able to feed and enjoy his parrot friends. This is the satisfaction that he would surrender if he suffered the misfortune of losing one sack of grain. Since his sacks of grain pertain to a homogeneous commodity, he does not have to go without any of the four more important uses because of his loss. He will simply select the least important application in determining the part of his original plan which cannot be effected. The value of a unit is determined by its marginal utility or satisfaction.

The principle of diminishing marginal utility and its complementary law of value resolve the paradox of value as exemplified by the discrepancy between the price of diamonds and the price of water. The element of scarcity in controlling the extent to which a particular commodity can be used holds the key. The relative abundance of water as compared to the availability of diamonds means that increments of water can be devoted to less and less important uses than those to which the limited amount of diamonds can be put. No one is ever in the predicament of having to choose between all water and all diamonds; thus, there is no meaningful paradox. Prices arise in connection with definite amounts of goods and not in connection with the whole categories of various goods.

If the amount of a good with which one is concerned is enlarged to encompass several of the smaller "units," the value theory is no less applicable. In this case, the larger amount becomes the marginal unit, and its valuation equals
the sum of the various satisfactions which the larger amount
would yield if broken down into incremental usages. For
example, if our farmer is faced with giving up in one stroke
three sacks of grain, his valuation of this package is not
equal to three times the valuation or satisfaction attaching
to the maintenance of his parrot pets. He is not in the
situation of valuing just one sack of grain. He will sacri­
fice the three least important uses of his sacks of grain,
thereby devoting his remaining two sacks to meeting his es­
sential food needs. The value of a "unit" of three sacks of
grain equals the total satisfaction expected to be obtained
from raising poultry, distilling brandy, and feeding parrots.
This is the marginal satisfaction pertaining to the marginal
unit of three sacks.

The size of the unit used is not important for the
operation of value theory. Therefore, it can be seen that if
one were in the impossible position of ranking all water and
all diamonds, he would rate the former first and the latter
second, disproving the existence of any paradox of value.
It also follows that if the supply of a particular good is so
large that some units go unused, the marginal utility of the
good is zero; in such case, no value would be attached to any
particular unit. The good would not belong to the realm of
economics and could be expediently termed a "free" good.
This is the case with the ordinary air that we breathe.
3. Value and Exchange

In a modern economy the purpose of production is to yield goods and services to be used predominantly by people other than the producers themselves. This is the essence of specialization and division of labor. Production for exchange overshadows production for immediate use in a developed society. As a result, units of goods and services take on exchange value in addition to the use value which they may hold for the producer. And with the overwhelming emphasis upon production for exchange, exchange value of produced goods looms as the value which is of real significance and relevance for most producers while so-called use value of goods is the meaningful value for consumers.

It might appear that the concept of exchange value introduces a departure from the subjective theory of value. Yet this is not the case. A unit of a given good derives its exchange value from the subjective value which is identified with the amount of some other good that can be obtained in exchange for it. This is true whether the good is to be exchanged directly for some other consumable good or for a certain amount of money. People wish to obtain other goods, including money, because they place a subjective valuation upon such acquisitions. The value of a good as a means of exchange is based upon the greatest satisfaction that the owner expects can be derived by giving up the good in exchange for some other good. The subjective value of the most
desirable good or service that can be obtained in exchange is the basis of the value imputed to the possessed good.

Thus, any particular good takes on both a use value and an exchange value. Each of these values reflects the satisfaction which can be expected to come by way of employing the good; the good can be employed for either direct usage or as a means of obtaining some other good through outright exchange with another person. The controlling valuation for decision and action is always the greater of the two alternative satisfactions. If the good's use value exceeds its exchange value, the good will be put to direct use or held for eventual direct use, and its exchange value purposefully will be foregone. On the other hand, if its exchange value exceeds its use value, the good will be utilized for exchange purposes or held for possible exchange at some time in the future in spite of the foregone use value.

It should be understood that exchange value here refers to the subjective valuation placed on the good as a means of exchange by the owner. The expression "exchange value" is used frequently in the sense of the money price which can be obtained for a given good through its sale. However, in the context of the subjectivity of value, this objective money value would be evaluated subjectively in the same way that a non-cash good obtainable through exchange would be evaluated.
4. Uses of Money

In most modern economies, money is primarily composed of fiat money; hence, its use value in the sense of being employed for consumption purposes is virtually zero. However, in those cases in which real specie is used, money can have a considerable use value. For example, gold and silver can be melted down for other purposes such as jewelry, decoration, and dental applications. Incidents of converting money into other useful products are not common in modern economies; money is valued almost invariably for its exchangeability. Its great service is that, as the medium of exchange, it obviates the requirement of a coincidence of product wants on the part of parties to exchange as is required in cases of direct barter.

There are three alternative ways in which a specific quantity of money can be put to immediate use. It can be used for the expenditure necessary to acquire another good or service to be used for consumption purposes. It can be spent for another good or service which is to be used in the productive process of effecting or fabricating a new good. In such case, an investment expenditure is made which is designed to yield future consumption benefits through subsequent disposal or consumption of the produced good. Even wholesalers and retailers who bring about no change to the physical good itself effect a new good by placing it at a more accessible and convenient location. They are thereby
engaged in the productive process, and the money spent to acquire the goods stocked is expended for production as opposed to consumption purposes.

The third use is to add to one's cash balance in providing for future exchange transactions. The fact that a person holds a certain amount of money at a given moment indicates that he values that money more than those things that he could obtain in exchange for it at that time. Yet this act of holding an amount of money at a given moment does not alter the fact that money is valued for its exchangeability. It merely shows that being prepared for later exchanges has been valued more highly than making exchanges now. The satisfaction arising from an increased cash position often is manifested in a feeling of greater "security," but this valuation springs from the belief that in the future one will be better able to meet his needs through the expenditure of his accumulated cash balance. That a money asset yields a service or satisfaction and, thus, is not sterile and unproductive as has been widely held in the study of economics since the days of Aristotle has been elucidated by Professor W. H. Hutt.²

or needs are tended to first. And due to its particularly easy divisibility, such allocations are made in more incremental steps than in the case of any other commodity. The marginal utility of money, then, equals the least highly valued use which the given unit serves. Just as in the case of the farmer's five sacks of grain, the satisfaction derived from a unit of money is the satisfaction which would be sacrificed if a unit were lost. The incidence of the loss will always be upon the least important use which a unit was intended to serve. Yet this sacrifice is the most important use to which the marginal unit could be put. Thus, a person will allocate his money among consumption expenditures, production expenditures, and increases in his cash balance in terms of his scale of values or preferences.

5. Use and Exchange Value in the Market Economy

The important difference in the usage of commodities, including money, in the productive process under a system of social cooperation is that the user is not only concerned with the question of his own satisfactions or preferences. Since he is engaged in the generation of goods and services which are to be used by other people, the exchange value of the employed commodities depends upon the relative preferences of these other people after the completion of the production process. The number of dollars which the producer anticipates will be the result of his productive efforts hinges ultimately on the scale of values of other persons.
In a world of certainty, there would be no difficulty in arriving at a money appraisal, for the group of employed goods and services.

However, in the modern market economy, only in the few cases of guaranteed and contracted sales is the money outcome of certain productive efforts of relative certainty. And even in those few cases, the invested resources are usually of a scope which exceeds that which would be required to meet the contracted sales, indicating that the producer is banking on the occurrence of considerable sales not yet contracted. The whole task of having to produce to suit the wants of other persons in the midst of an uncertain future is the essence of entrepreneurship.

It can be seen that in the market economy, characterized by the production of goods and services for subsequent exchange and by a common medium of exchange, both use and exchange values are vitally a part of the economic process. For the ultimate users of goods and services, the consumers, the subjective satisfaction arising from actual consumption is the source of value or utility. For producers, the goods and services devoted to production are meaningful only in terms of the money and its associated exchange value which are expected to arise upon the sale of their product. But the crucial point to realize in distinguishing between these two values is that the exchange value of any productive good tends to be interconnected with the use value which the consumers attach to its end product. For the money which con-
sumers can be expected to allocate to various consumers' goods and services is a result of their subjective preferences. It is this anticipated money inflow that provides the basis for arriving at an exchange value for goods and services devoted to production. An explanation of how, in the market economy, the prices of productive resources tend to be derived from the prices of consumers' goods will be offered in a later section of this study.

6. The Pervasiveness of Subjective Valuation

Subjective valuation underlies all economic activity. Money is not a measure of value; quite the contrary, money is imputed a subjective value itself as a means of possessing other things. Any subjective valuation is immeasurable and is manifested only through specific choices and actions taken by individual persons. Any particular choice is indicative of the decision-maker's preference over all alternative courses of action considered during the time of decision. That this preference can be inferred from his actions does not mean that anything more than a preference is implied. As Rothbard has stated, "we deduce the existence of a specific value scale on the basis of the real act; we have no knowledge of that part of a value scale that is not revealed in real action."³

There is no way to measure quantitatively the satisfaction which the actor associates with his choice. Every choice involves the rejection of the expected satisfaction of other possible choices; the highest ranked alternative foregone is the cost of any given decision. Benefits and costs are ultimately subjective. Every decision is predicated upon the assumption that its benefits will exceed the advantage of the next best course of action. This is the background of every exchange. There is no such thing as an equal exchange. At the point of exchange, both buyer and seller consider themselves to be better off as a result of the exchange. In a system of extensive specialization and division of labor, most goods are produced for exchange. Specialized producers have little, if any, direct use for the goods they have produced; under the principle of diminishing marginal utility, the marginal utility of a unit of production is virtually zero. They place a higher valuation upon the money which they can receive in return for their goods. On the other hand, consumers or buyers value the goods obtained more highly than the money spent to acquire them. Exchanges can occur only when there are differences between the subjective valuations expressed by the parties of the exchanges.

The lack of this subjective orientation is what led to the unfortunate notion of the "economic man" which depicted every participant in the market economy as relentlessly seeking at every turn to maximize his monetary posi-
tion. But this idea is unrealistic. What people seek in every action is a maximum psychic or subjective profit.

There are numerous examples of situations in which people forego additional monetary or "economic" wealth because they deem the "cost" of such to be greater than its worth. There are investors who resist monetarily rewarding investments in those industries whose products they find objectionable. Marketers have recognized that consumers sometimes consider other factors besides the purchasable good and its related price. Parking facilities, clerks, and "store personality" are examples of other factors which now receive attention in discussions and practices of merchandising. Wealthy entrepreneurs who continue to involve themselves in profit-making even in their old-age undoubtedly are motivated in many cases for reasons other than monetary goals. People consider factors in addition to monetary compensation in deciding upon a career or particular position of employment.

The point of these examples is to demonstrate that people are not "economic men" in the classical sense and that money is not the ultimate basis of valuation. Even when dealing with money matters, people do not calculate monetarily in utmost detail every step and decision. They maximize subjectively but not monetarily, for monetary calculation has its sacrifices when its requirements upon time and energy are recognized. Bohm-Bawerk dealt with this point as follows:

If anyone insisted on deliberating with maximum
scrupulousness every one of the economic acts he undertakes every day, if he insisted on rendering a judgment of value throughout to the last detail concerning the most trifling good that he has to deal with by way of receipt or expenditure, by utilization or consumption, such a person would be too much occupied with reckoning and deliberating to call his life his own. The correct maxim and the one which would be observed in economic life is "Be no more accurate than it pays to be." In really important things, be really exact; in moderately important things be moderately exact; in the myriad trifles of everyday economic life, just make the roughest sort of valuation.

However, it can be stated that, other things equal, people do strive to maximize their monetary position in choosing among alternative courses of action. A person will choose that alternative which promises to maximize his monetary position so long as he is indifferent to the various non-monetary factors that pertain to the alternatives. The explanation for this lies in the fact that, in a money economy, it is through the common medium of exchange that people are able to acquire most of those goods which yield them satisfaction. By maximizing their monetary position, they are able to command more goods and services from the market than they could with a less than maximum position.

A person will accept a less than maximum position only when the satisfaction obtained from non-monetary factors relating to another choice more than offsets the satisfaction associated with the monetary excess. The role of non-monetary factors is likely to be greater with regard to the decisions

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4 Bohm-Bawerk, op. cit., p. 202
of employment than those relating to investment and consumption expenditures. Investors generally desire to maximize the financial return on their investment; consumers generally desire to acquire goods at the lowest possible prices.

Thus, despite the subjectivity of benefits and costs, the terms money revenues and money costs are meaningful references to the monetary inflows and outflows which arise in connection with productive activities. Regardless of the non-monetary factors which loom important to a given producer, his monetary position or outcome is also important to him so far as he desires to continue to purchase certain goods and services. This means he must give more than cursory attention to the matters of money costs and money revenues.

However, it must be stressed that these money calculations are not in any way measurements of value in the subjective sense. Regarding the term value, Rothbard has stressed the need to use it with care: "It is important to keep distinct the subjective use of the term in the sense of valuation and preference, as against the 'objective' use in the sense of purchasing power or price on the market." Yet this should not preclude the expedient usage of the terms money revenues, money costs, and money values or money valu-

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5Rothbard, op. cit., p. 271. Mises has chosen to make the distinction by using the term valuation with the subjective meaning and the term appraisement in the "objective," monetary sense. Cf. Human Action, pp. 331-3. The terms value and valuation have been employed in the subjective sense throughout this chapter.
ations as they refer only to monetary calculations. They relate to the realm of economic calculation which is vital to the direction of productive efforts towards the generation of the most desired goods and services.
IV. THE MARKET AND MARKET PRICES—CONSUMERS' GOODS

1. The Nature of the Market

The tendency to ascribe to the market or market economy the characteristic of being something apart from the events caused by the choices and actions of individuals is incorrect. The market is the concomitance of an arrangement of social cooperation operating on the basis of division of labor. Every development in the market is the outcome of purposive actions on the part of individuals who seek to improve the state of affairs from their own viewpoint. The market arises as a result of the willingness of individuals to interact with one another.

This process of economic interaction and cooperation is the essence of the market; the market is not something physical but rather a process. Through the consummation of market transactions, individuals seek to improve upon their situations, i.e., enhance their own subjective satisfactions. The prices that emerge in the market are not unexplainable; they always are the result of subjective valuations expressed by individuals who chose to buy or sell or to abstain from either action. In the following statements, Mises emphasizes the human quality of market activities:

It is customary to speak metaphorically of the auto-
matic and anonymous forces actuating the "mechanism" of the market. In employing such metaphors people are ready to disregard the fact that the only factors directing the market and the determination of prices are purposive acts of men. There is no automatism; there are only men consciously and deliberately aiming at ends chosen. There are no mysterious mechanical forces; there is only the human will to remove uneasiness. There is no anonymity; there is I and you and Bill and Joe and all the rest. And each of us is both a producer and a consumer. . . . There is nothing inhuman or mystical with regard to the market. The market process is entirely a resultant of human actions. Every market phenomenon can be traced back to definite choices of the members of the market society.1

2. Price Determination—Consumers' Goods

The Demand Side

The underlying purpose of all productive effort in the market economy is the eventual generation of goods and services to be consumed. As discussed at earlier points in this study, the essential economic problem is the allocation of scarce resources to the production of the most desirable goods and services in terms of the wants of the members of society. Money prices for consumers' goods and services occur continuously as these goods and services move from the possession of producers to that of consumers. A market price is the exchange ratio or relationship between a particular good and the medium of exchange. Although the conventional supply and demand explanation of how equilibrium prices tend to be set in order to clear the market of par-

1Mises, op. cit., pp. 258, 315.
ticular goods is legitimate, it is necessary to examine the real meaning behind the diagram of intersecting curves.

Each potential consumer allocates his money so that his most urgent wants are satisfied first. This means that for any particular good purchasable by him, there is a ranking within his scale of values. It must be remembered that his scale of values reflects the relative subjective importance that he attaches to each alternative use of his money. Each potential purchase has to compete with alternative purchases and with the possibility of his retaining his money. Thus, an additional unit of a given good will rank higher or lower than a given amount of money. If it is preferred over, say six units of money, he is willing to purchase one unit of the good in exchange for six units of money. Conversely, if he prefers six units of his money for some other use rather than acquire a unit of the good, he will not be willing to purchase it at a price of six money units.

Assume that he will pay six units of money for one unit of a given good. Assume also that his rankings entail his preference for a second unit of the good at any price between, say four and one money unit, and that a price of one unit of money, he is willing to buy a third unit. This means that at a price of four, five, or six money units, he will buy one unit; at a price of two or three units of money, he is willing to buy two units of the good; and if the price reaches one, he wishes to acquire three units.

It is in this way that a hypothetical individual's
so-called demand curve can be drawn illustratively for each particular good that he might consider buying at a given moment. For each possible price, he is either willing to purchase a certain quantity of the good or he prefers to purchase none of it. Due to the diminishing marginal utility of the good, he will be willing to increase the quantity purchased only at lower and lower prices. This is the reason for drawing his demand curve downward-sloping to the right. The total demand for a particular good then becomes the summation of each prospective consumer's individual demand. And though each individual demand may differ from the others, each curve depicting an individual's demand will be downward-sloping to the right. Thus, the curve depicting total demand for a particular good will have the same slope.

What is crucial to the understanding of demand is the realization that the principle of diminishing marginal utility is constantly operating in the consumer's purchasing decisions. Each additional unit of a given good is applied to a less important use than the former unit acquired. And while the marginal utility of the good continuously falls with each added unit, the marginal utility relating to the remaining money rises. Increases in quantity demanded must be accompanied by decreases in price.

The Supply Side

Though the usual discussion of demand recognizes the subjective nature of consumers' buying decisions, the supply
side of price analysis invariably fails to be related to subjective value. But subjective valuations are no less applicable to the selling decisions of producers.

Each individual producer who possesses a certain stock of some consumers' good ranks the units of the good in the same manner that a prospective consumer ranks his stock of money. There are three possible uses to which he can allocate his stock of a good. He can use the good directly; he can sell it now for money; and he can retain the good for future sale. He will, thus, place subjective valuations upon these different possibilities, devoting the various units to the most important usages. Based upon this allocation, he ranks each unit (remember the term "unit" can embrace any number of smaller increments) to be sold and the amount of money to be received in return on his value scale. For each possible unit price, he will be willing to sell a certain quantity of the good or none of it. He will have to decide whether what he gives up is less or more valuable to him than the price he receives.

It is likely that in most cases of specialized producers, the value of the good in direct use is virtually nil. And if his valuation of the good for purposes of future sale is also slight, he will be willing to sell practically all of his stock at even a meager price per unit, provided, also, that the marginal utility of money to him falls slowly as he obtains more money. To the extent that he values using some units for purposes other than immediate sale, there will be
some prices which are too low for him willingly to sell all of his units of the good at any of those prices. In no case would he be willing to sell more units for lower prices per unit than for higher prices per unit.

If there is little value in not selling his entire stock of goods, his supply curve will have more or less a vertical slope, meaning that at any possible price throughout the relevant range of his supply curve he is willing to sell all units of the good. Otherwise the curve will be upward-sloping to the right, indicating that as some units are sold, the marginal utility of the good increases in terms of the value of alternative uses, thereby requiring more money in exchange for additional units. The seller's supply curve will never be upward-sloping to the left.

To illustrate, assume a seller who has a stock of eight units of a particular good. If six units of money is more valuable to him than each of the units of the good, considering their alternative uses, then he will desire to sell his entire stock at the unit price of six units of money. But suppose that at a price of five units of money, he is willing to sell only six units of the good. Each of the two remaining units has a greater value to him than five units of money. At a price of four money units, he will sell only four units; at a price of three units of money, he is willing to sell but one unit of his good. And, at a price of one or two money units, he will not sell any of his stock of goods.

The law of marginal utility explains the behavior of
this producer. The utility of a unit of his good in uses other than current sale rises as he decreases his stock. He insists upon a greater amount of money in exchange for additional units. His selling decisions rest upon his subjective valuations in the same way that the buying decisions of a given consumer depend upon his scale of values.

A total supply curve for the good would entail the summation of all of the individual supply curves and, thus, its various segments would be either vertical or upward-sloping to the right.

**Tendency Towards Equilibrium Prices**

The day-to-day tendency in the market is towards the establishment of an equilibrium price for each particular consumers' good. Prevailing prices tend toward that price at which quantity supplied and quantity demanded are equal. This development attests to the price system's capacity to coordinate the actions of persons engaged in different activities. The typical graphical depiction of this tendency is to show the equilibrium price at the point of intersection of the market supply and demand curves. Any price above or below the equilibrium price cannot persist because, with such a price, there will be respectively either frustrated sellers or frustrated buyers. Prices are reduced by sellers if the market price is too high to clear the quantity offered; prices are bid upward by buyers if the price is too low to induce sellers to offer a supply ample enough to satisfy the
buyers' demand.

Establishing market rents for leased durable consumers' goods occurs through the same pricing process. Rents are prices paid for the service units obtained through the right to use someone else's property over a period of time. Thus, there is a demand for and supply of services obtainable through leased goods. Rothbard has explained this market development in the following way:

Since any good is bought only for the services that it can bestow, there is no reason why a certain period of service of a good may not be purchased. This can be done, of course, only where it is technically possible. Thus, the owner of a plot of land or of a sewing machine or of a house may "rent it out" for a certain period of time in exchange for money. While such hire may leave legal ownership of the good in the hands of the "landlord," the actual owner of the good's service for that period is the renter, or tenant.  

It should be mentioned at this point that there is a connection between the expected rental prices in the future and the purchase price of the good as a whole. The market price of the good tends to equal the present value of the expected future rentals. If the present value of expected future rentals is greater than the price of the good as a whole, more people will desire to own the good as opposed to renting it. Meanwhile present owners will be more reluctant to sell. This excess demand for the good will cause the price of the good to be bid upward towards the present value of future rentals. On the other hand, if the present value

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Rothbard, op. cit., p. 170.
of expected rentals is less than the price of the good, fewer will desire to buy the good while owners will desire to sell rather than rent the good. This oversupply of the good causes its price to be lowered to come more in line with the present value of expected rentals. This demonstrates how price relations are established in the market through the same forces of supply and demand. Since prices are subject to change, the estimated future rentals are not simply a multiple of present rental prices. The relationship between the market price of the good and actual future rents is only a long run tendency.

The essential explanation of what is going on in the pricing process is not served merely by diagrams. One has to think through the problem in terms of acting individuals' following their own particular subjective valuations. If the price is too high or too low relative to the equilibrating price, individuals behave purposefully to correct the situation. Every exchange requires two mutually benefited parties. As Mises has stated, the process is not mechanical or inhuman.

When it is said that the market process tends to yield an equilibrium price for each good, no reference is being made to the pricing of all physically identical goods. If consumers view the offerings of a certain supplier as being different in some way from those of other sellers, the good is a different good for the purposes of economic analysis even if its physical attributes are the same as those of other sellers' goods. What really counts is how consumers
perceive the various supplies of goods brought before them. Similarly, goods located a longer distance away are not the same as goods located a shorter distance from use. The "same good" means the units of the good are equally serviceable to the buyer. Goods which have to be transported from further away are less complete and, hence, less serviceable since transportation to point of acquisition is part of the production process.

Thus, different market prices can prevail for goods which, to a hypothetically neutral observer focusing on solely physical qualities, are deemed identical. This is what Mises means when he says: "The market does not generate prices of land or motorcars in general nor wage rates in general, but prices for a certain piece of land and for a certain car and wage rates for a performance of a certain kind. It does not make any difference for the pricing process to what class the things exchanged are to be assigned from any point of view. However they may differ in other regards, in the very act of exchange they are nothing but commodities, i.e., things valued on account of their power to remove felt uneasiness."³

³Mises, op. cit., p. 393.
and in the supply of each good. To assume that established prices will perpetuate themselves is to conceive value as being something objective and unchanging. But individuals, both buyers and sellers, experience constant change in their valuations, purposes, and acts. The very essence of action is change. The ceaseless changeability in the realm of human choices and actions upsets the tendency in the market for the establishment of equilibrating prices. Yet, with the advent of every change in market data, the process sets out in a new direction towards a different equilibrium price. Price analysis has to resort to the mental tool of equilibrium prices in order to explain the continuous tendency of the market process. It is crucial that this point be realized for a proper understanding of the formulation of market prices of consumers' goods. Market prices are the result of the particular circumstances which existed at that certain point in time of their occurrence.

The changeability of prices precludes the appropriateness of referring in the strict sense to prices as present or current prices. As Mises says, "prices are either prices of the past or expected prices of the future." To refer to prices as "current" prices is to really say that immediate future prices will be the same as the historical prices of the most recent past, say a half hour ago. Since prices generally are not violently restructured from moment to mo-

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4Ibid., p. 217.
ment in the market, recent past prices are useful starting points in the projection of future prices. But it is future prices which is of primary significance to each actor. Past prices convey directly no knowledge about future prices.

The Irrelevance of Past Costs

It should be stressed that this analysis applies to goods already produced; these are the goods which enter into the day-to-day pricing of consumers' goods. This is the reason the analysis needs to make no reference to the sellers' money costs of production. The individual seller's costs were shown to relate to his subjective scale of values—that is, to his own valuation of the good in its next best alternative use of either direct usage or future sale. Once the goods have been produced, his past money costs are irrelevant to deciding how to use these goods. As Thirlby has said: "Cost is ephemeral. The cost involved in a particular decision loses its significance with the making of a decision because the decision displaces the alternative course of action."\(^5\) Jevons stressed the same truth when he stated: "In commerce bygones are forever bygones and we are always starting clear at each moment, judging the value of things with a view to future utility. Industry is essentially prospective

not retrospective."

Thus, it is not correct to say that prices are determined by demand and by money costs. Money costs enter into the seller's decisions relating to the undertaking of production. This matter of planning production is treated in the next section of this study. Once the goods are produced, only subjective valuations expressed by individual buyers and sellers relating to these goods and to their exchange ratios in money terms are effective in the establishment of market prices.

The Pre-eminence of Consumer Valuations

In the final analysis, the subjective valuations of the consumers are the principal factor in the determination of market prices of consumers' goods in the advanced market economy. For it can be seen that the subjective valuations of any given seller in possession of a stock of goods ultimately are concerned with generating the greatest amount of money revenues through the sale of the goods. This is not to say that money measures his satisfaction in any way; it simply recognizes the fact that more money means more to him than does less money in a situation in which non-monetary factors have already been considered. His preference concern-

ing non-monetary factors would have been weighed in his de-
cision to undertake the production of the given goods. With
more money he is able to acquire more of those things which
yield him satisfaction.

Now to reduce the object of his valuations to the
money obtainable from consumers is to render insignificant
in his scale of values one possible usage of the goods:
direct usage of the goods by the seller himself as opposed
to their sale. To justify the subservience of use value to
exchange value, one needs only to regard the predicament of
a specialized producer in the advanced market economy. He
simply will have little direct use for the stock of a partic-
ular good. The seller of shoes is not likely to desire to
retain a large quantity of shoes for consumption purposes.
His only recourse is to eventually exchange them for the
best possible price. He will consider the price for which
he can currently exchange the shoes as well as the price he
expects to be realizable at future points in time.

These are the concerns of his subjective valuations,
and his own time preference will enter into the valuation of
future prices. If he places virtually no value upon use
value or future exchange value, as reflected by a vertical
supply curve, the market price will equal that price neces-
sary to clear the market. On the other hand, if expected
prices of the future are high enough to deter current sale
of all the goods at any price, as evidenced by a supply curve
with upward-sloping segments, his valuation of his goods for
future sales purposes is no less dependent upon consumer evaluations as he anticipates them to be reflected in future money prices. And eventually, when these goods currently being held back at lower prices are offered for sale, the price willingly paid by consumers to take them will be the determining factor. Exchange value by definition is derived from the valuations of those who are to receive the good in exchange and who willingly pay money for it.
V. PRODUCTION IN THE EVENLY ROTATING ECONOMY

It now remains to explain the manner in which scarce resources are allocated to the production of various consumers' goods in the market economy. The ultimate generation of consumers' goods, as will be shown, is an intricate process in which the production of numerous productive goods, often called capital goods, plays an essential role in the advanced economy. Thus, production encompasses the yielding of goods to be used in further production activities as well as the generation of the final goods destined to yield consumer satisfaction. Production is inescapable for the simple reason that nature does not abundantly bestow goods upon man in a form in which he can consume them to his satisfaction. With the exception of the air that surrounds us, there is hardly any other good which nature supplies that cannot be made far more useful by applying some productive effort to its original form and location. The question is not whether there should be production, but to what ends should production be directed so that the most desirable goods and services in terms of the wants of the members of society are produced.
1. Resource Pricing in the Evenly Rotating Economy (ERE)

In order for the owners of productive factors to be willing to contribute resources to the productive process of the market, there must be some means by which they can participate or share in the output arising from production. This is achieved through the price system. Particular units of productive factors are exchanged for specific quantities of money through supply and demand forces in the same manner in which consumers' goods are bought and sold. However, there is one crucial difference between the pricing of consumers' goods and that of productive resources. Consumers' goods are evaluated directly by consumers as ends or ultimate sources of satisfaction while consumers place no direct evaluation upon the resources utilized in the generation of the final goods. Yet, it should be clear that effective allocation of scarce resources requires a system in which specific employments are considered in terms of the relative importance of alternative results. If certain ends or consumers' goods are more important than others, then resources non-specific enough to serve a variety of ends should be directed into the creation of the most important ones. An explanation of the pricing of units of resources will show how this goal is accomplished.

Reference to the concept of an imaginary economy devoid of change in technology, resources, and tastes, an economy in which the same steps of production and consumption
are repeated over and over, is useful in understanding the nature of the pricing of resource units in the real world of continuous change. Rothbard has expediently referred to such an economy as an evenly rotating economy or "ERE." In the ERE, each producer, given his predicament of owning some resources and bidding for units of particular resources, would be able to impute to a given resource unit the money value of its contribution to the final product because he would know in advance the monetary result of particular production decisions. He would not encounter the uncertainty arising from changing economic conditions. Past results would constitute an exact preview of future results.

The unit price of each particular type of resource would equal the discounted value of its marginal contribution to product value. (The discount relates to a margin reflecting time preference or interest, a matter to be discussed at a later point). This price would apply to the resource in all of its various lines of employment to the extent the resource owners were indifferent to the non-monetary factors relating to the different lines of usage. The resource could not earn more in one line than in another since resource owners would have shifted their factor to the once more remunerative lines. This shifting would have driven the factor price down in the attractive employments and caused the price to rise in those lines abandoned. Prices of homogeneous factors would become equal in all various employments.

And this uniform price would be equated to the re-
source's marginal value product which would thus be the same in all lines of employment. Producers would not tolerate any discrepancy between a factor's price and its contribution to product value. If a resource had been receiving a price lower than its marginal value product, producers would have increased the usage of the resource in these outputs so that its unit price would be bid upwards but not in excess of its contribution to productive value. Conversely, if a resource unit had been paid a price higher than its marginal value product, employment of the resource would have fallen off in those lines at least until the price ceased to exceed the factor's contribution to product revenues. The price of a durable factor would be derived from and equal to the summation of the marginal value products of its specific service units to be used over time. Durable resources, then, could be purchased or rented in the ERE based upon the value imputed to the service units to be derived.

Thus, in the evenly rotating economy, the price of each product would (except for the interest factor) equal the summation of the marginal value products of its complementary factors of production. For each producer, total money revenues (excluding interest) would equal total money costs. Adjustments leading up to the ERE would have eliminated all instances of profit and loss. The continuous stability and certainty of an evenly rotating economy would preclude the need of further adjustments or changes in resource allocation. Each factor would be allocated to various
uses so that its marginal product contribution would be the same in each use. With perfect knowledge about the future, producers would make no mistakes about imputing product values to resource values. What is of extreme importance here is that the influence is from product price back to factor price and not the other way around. Means derive their importance from the ends or results which they effect. Here lies the key to effective resource utilization.

Only those factor units whose marginal effect upon product value could be isolable and, hence, determinable would be subject to the competitive forces which would set resource prices equal to discounted marginal value product. This means that determinate pricing would require the existence of versatile, relatively non-specific factors whose multiple uses set the competitive process in motion as producers bid for the factors' employment in various lines of production. A price emerges on the market for a particular resource because producers compete for its employment in alternative uses. If products were produced by strictly specific resources, then the market could establish only cumulative prices for each combinational group of resource factors, and each price would equal the value of the common product. Prices are determinate for absolutely specific resources in those situations in which the production process involves the use of no more than one specific resource. As a result of the bidding of competitive producers, such prices of specific resources equal the residual difference between
the final product price and the sum of the prices of the non-specific factors.

Cumulative residual prices will prevail on the market in connection with those processes in which more than one specific resource is required. In such cases, the amount singly paid to each specific factor is established only through the process of bargaining among the separate owners of the specific factors. Prices of particular factors emerge only when producers compete for their usage in alternative lines of production or when there is only one specific resource in each productive process, thereby imputing marginal value to the particular factor's units.

It is important to realize that the imputation of value to factors of production on the part of producers is done only on an incremental or marginal basis. The producer in hiring or purchasing productive services always makes his decision in terms of the added advantage of the additional factor. This does not mean that he deals with infinitesimal increments. For example, his marginal unit may be fifty additional employees or four new machines. But he thinks in terms of his given situation and bids for services in light of their expected marginal contribution. Rothbard has effectively dealt with this point:

It is, then, clearly impossible to impute absolute "productivity" to any productive factor or class of factors. In the absolute sense, it is meaningless to try to impute productivity to any factor, since all the factors are necessary to the product. We can discuss productivity only in marginal terms, in terms of the productive contribution of a single unit of a factor, given the existence of other factors. This
is precisely what entrepreneurs do on the market, adding and subtracting units of factors in an attempt to achieve the most profitable course of action.¹

Just as the farmer's five sacks of grain were allocated to the most urgent uses first, so are the units of a productive factor. This means that as additional units of any factor are employed in a given process or throughout the economy, the marginal value product declines. The decline in the marginal value product is enhanced as a result of the law of diminishing returns which holds that in the employment of any variable factor to a fixed factor, marginal physical productivity begins to fall at a certain point. Thus, given the supply of a particular factor, the price per unit of that factor will be set equal to the marginal value product related to the last unit of supply. As each of the farmer's sacks of grain carried the same value equal to the value of the marginal use--feeding pet parrots--each unit of a particular factor is priced in the ERE equal to the marginal value product. This is the money value that would be sacrificed if one unit of the factor were lost.

This process of resource pricing would apply to factor service units, whether purchased on a limited scale through renting or on a greater scale through the purchase of whole factors. Thus, in the evenly rotating economy, all factor service units would receive their marginal value product, and there would exist no reason for their shifting

¹Rothbard, op. cit., II, 520.
to other lines of employment once this condition was reached. Each particular factor would have one unit price throughout the market. In each specific use the resource would be employed to the extent that its marginal value product was equal to its price, competitively established throughout its market. The demand curve for each factor in each particular use depicts its declining marginal value product; thus, like the demand curve for consumers' goods, it would be downward-sloping to the right.

The supply curve for each productive resource in each line of use would be upward-sloping to the right reflecting the fact that resource units, possessing a versatility of productiveness in alternative uses, would be shifted away from the given use to other usages at lower prices and would be attracted to the given use from alternative lines of employment at higher prices. The curve would likely be flatter for factors of labor than for land and capital goods factors due to the relatively greater degree of non-specificity and flexibility in the nature of the labor resources as compared to land resources and capital items.

2. Resource Supply and Subjective Valuation

The theory of subjective value must not be overlooked in the discussion of factor supply curves. The owners of the units of factor service will subjectively determine the various quantities of service units which they are willing to offer to producers for each possible price per service unit
in each particular use of the factor. They will weigh sub-
jectively the monetary and non-monetary results of commit-
ting the various possible quantities of service units to
production. For example, the laborer will consider the value
of leisure as well as other non-monetary factors like working
conditions in reaching his decision about employment. Those
lines of work associated with significantly favorable non-
monetary characteristics would attract a greater number of
workers than those characterized by noticeable unfavorable
aspects. This means that higher wage rates or prices than
otherwise necessary would be paid those working in the gen-
erally disliked jobs; conversely, lower wages than otherwise
required would be paid to those employed in the generally
favored jobs.

These results are consistent with the principle of
declining marginal value product for each particular use.
Greater quantities of factors employed would tap decreasing
marginal value products; lesser quantities would relate to
higher marginal value products. Market supply curves for
each factor in each particular use would, thus, depict the
summation of individual supply curves. And the intersection
of the market demand and supply curves would depict the es-
tablishment of the equilibrium price for each factor in each
particular line of employment, and this price would represent
the marginal value product of a factor unit in that particular
use. Such would be the endlessly prevailing price structure
for units of productive resources in the evenly rotating
3. The Efficiency of Resource Allocation in the ERE

The essential point for the purposes of this study is that the monetary valuation of scarce economic resources would be equal to the value of their respective products so that an efficient allocation of resources would thereby be effected. Resource prices, or money costs, would be derived from product prices. Economic calculation, afforded the producers through the structure of market prices, would provide the means through which resources could be employed consistent with the wishes and preferences of the consumers. Ex post and ex ante calculations would agree. In a world in which tastes, resources, and technology are constant, there would be no problem or difficulty in coordinating the different plans and actions of the various members of the society. Everyone would know in advance the needs of tomorrow. For the purposes of economics, there would be perfect knowledge.

4. Production and Time

Production is not timeless, and in the advanced economy the duration between the inception of the generation of virtually every consumers' good and its fruition is exceedingly long. In order to obtain goods which he desires and can consume, man is able to resort ultimately to just two types of productive resources, himself and nature external
to him. Since either the goods which come naturally from nature are not completely accessible to man or the resources of nature are not always in a usable form as they appear in their natural state, man chooses to inject his own deliberate efforts into the natural process and to make himself a part of it. His productive effort is a matter of transforming and combining the gifts of nature into more satisfactory goods. All such production must take place through time; thus, the fundamental and ultimate factors of production are nature, man, and time.

Basically, man can exercise two approaches to the combination of his own efforts with the gifts of nature to produce consumable goods, a direct and an indirect approach. Under the direct approach, he applies his energies directly to the natural resources for immediate satisfaction as in the case of obtaining, with cupped hands, a drink of water from a stream. It was the great contribution of Bohm-Bawerk that economic analysis did not fail to recognize that production cannot occur without the passing of time, and this recognition was especially pertinent in connection with the indirect approach to production. For under this second method, production first yields intermediate goods which are not consumable but rather are purposed to assist in further production efforts. These intermediate goods can be referred to as producers' goods or capital goods and encompass the

\[^2\text{Bohm-Bawerk, op. cit.}\]
myriad of tools, equipment items, buildings, and all other produced means of production. This indirect method, which Bohm-Bawerk called "roundabout production," is illustrated in the case of obtaining water to drink from the stream if first a section of a log is hollowed out in order to convert it into a bucket. The bucket could then be used to facilitate the acquisition of water by reducing the number of trips to the stream.

The advantages of utilizing the roundabout or indirect process of production are not confined to facilitating the acquisition of goods which exist already in consumable form as exemplified by the stream of water. A far greater advantage lies in its capacity to produce consumers' goods which otherwise could never be made available. Most all of the modern conveniences such as motor cars, communications devices, refrigerators, eye glasses, and the countless others would be non-existent were their production not preceded by the generation of marvelous tools and equipments. As Bohm-Bawerk expressed it, capital goods constitute way stations along the road to consumers' goods into which they are converted. In the advanced economy, units of these capital goods are a significant part of the factors being purchased for production purposes as discussed in the prior section of this study. In the ERE, each particular type would be priced per service unit at an amount equal to its discounted marginal value product. The price of the whole capital good would equal the capitalization of its future marginal value
products.

5. Time Preference and Interest

It is the time-consuming element of production that accounts for the fact that the price paid each factor unit in the ERE is its discounted marginal value product and not its full marginal value product. The principle of time preference, which holds that people prefer present goods to future goods, underlies the requirement that future marginal value products be discounted to their present values. Thus, people who save some of their purchasing power and invest in productive undertakings thereby forego the enjoyment of consumption goods which that purchasing power could otherwise have obtained. They exchange present goods for future goods. When they purchase units of productive factors, they provide the owners of these resources with a means to acquire present goods in the expectation of the generation of future purchasing power, i.e., future goods. However, since they prefer present goods over future goods, future goods are valued less in the present than are present goods, and it is this lesser value that is presently imputed to the marginal value product of each productive factor. This is why in the evenly rotating economy, producers would earn an interest income, the difference between the money value of consumers' goods and the money value of productive resources purchased at earlier points in time.

Thus, in the advanced economy in which extensive usage
of roundabout production processes is prominent, the interest factor is of utmost importance. Here rests the kernel of Bohm-Bawerk's devastating reply to Marx's exploitation theory which maintained that capitalist-producers exploited the working class by paying them less than the value of their products. Marx was right in citing the accrual of a surplus value, but he was wrong in overlooking that rather than being a matter of exploitation, this discrepancy was the result of a natural and unavoidable phenomenon, interest.

In the evenly rotating economy, the interest rate would be the same throughout the economy and in every productive stage. For if interest rates were higher in certain industries or stages than in others, producers would shift to the more remunerative lines so that the differences would disappear as the result of competitive forces. In those industries or stages which producers abandon, the demand for productive resources falls, thereby reducing the prices of units of factors. This raises the discrepancy between marginal value product and money costs, hence the interest rate in those lines is increased. On the other hand, in those industries which attract additional investment, interest rates fall as a result of higher resource prices and lower selling prices of finished goods.

This process of shifting investment would go on until the interest rate in every line of production became the same, at which time the evenly rotating economy would be reached. The higher the rate of interest the more production efforts
will be directed towards the production of consumers' goods and the less saving available for the production of future goods. A lower rate of interest indicates a lower discounting of future goods to present goods and is concomitant with greater savings and the opportunity to adopt more time-consuming processes of production.

Even Bohm-Bawerk, who played such a vital role in developing interest theory, committed the common error of attributing the interest factor to the productivity of capital goods. But interest can be explained completely by the principle of time preference, and interest does not arise only in connection with the employment of capital goods. The productivity of capital goods is already taken into consideration in determining their marginal value products to be discounted for the time period expected to elapse before the future goods become present goods. And this applies to all factors of production, not just capital goods. Mises has presented this point in the following manner:

The contribution of the complementary factors of production to the result of the process is the reason for their being considered as valuable; it explains the prices paid for them and is fully taken into account in the determination of these prices. No residuum is left that is not accounted for and could explain interest.

Interest is not a return peculiarly characteristic of the usage of capital goods as has often been contended. The classical association of interest only with capital goods is

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3Mises, op. cit., p. 530.
not tenable because interest permeates all economic activity where present goods are furnished in exchange for future goods. Thus interest arises in consumers' loans as well as producers' loans. The phenomenon of interest operates as well in the price paid for land and labor whose benefits or proceeds are to be received in the future. In fact, if it were not for the element of time preference, the prices of parcels of land would be infinite.
VI. FROM THE EVENLY ROTATING ECONOMY TO THE REAL WORLD

In the evenly rotating economy, the problem of resource allocation would be easily solved. Knowledge of future preferences, available resources, and techniques of production would be the result of a world without change. And equipped with this knowledge, market participants would be able to devote resources to their most satisfying lines of use without friction and inconsistent planning. Units of factors of production would be priced equal to their discounted marginal value product, thereby permitting investor-producers to earn only an interest return. Units of factors would be repeatedly employed in the same fashion as in the past since to change particular usages would involve the creation of a lower marginal value product, an inferior result which could be anticipated in advance and obviated. The known values of future products would indicate the values of resources to be used in their creation.

But everyone knows that the real world is not a world of constants and perfect predictability. Man's knowledge about tomorrow is highly imperfect. The tastes and value scales of individuals do not stay constant through time. Neither can anyone assume that the nature and amount of available resources will remain the same as in the past. And with
time comes continuous revision in the recipes and techniques of production. All of this means that in the real world there is no simple and automatic solution to the task of resource allocation. With the ever-present factor of uncertainty no actor "knows" the future; each can only attempt to forecast it in terms of his own understanding of the potentiality of the present.

Yet the mental construct of the evenly rotating economy is very useful in the explanation and understanding of the real world of change. For in the midst of continuous change, the market is relentlessly in pursuit of a general equilibrium in which all productive factors are being applied to their most desired uses and all profits and losses have disappeared. In other words, the tendency of the real market always is to be moving toward the state of the evenly rotating economy. It is the factor of change which prevents the arrival of such a state from ever taking place. With the conditions and data of the market being subject to constant change, revisions and adjustments in plans and actions are continually necessitated in the real world.

Yet, the concept of the ERE instructively pictures the ultimate outcome of a world in which changes in tastes, resources, and technology were to cease. And more importantly, it yields an understanding of the direction which the market is continually taking as errors emanating from the imperfect knowledge of the future give rise to revised plans and actions on the part of market participants. For example, when
producers underestimate the demand for a particular good, the resulting higher price of the good attracts more resources into that line of usage and away from less important lines. As more attention is given to the production of this good, its unit price falls and the unit price of its resources rises, gradually eliminating the profit opportunity in that line of production.

This is a process of adjusting to facts of the market that were not knowable in advance. Through this adjusting process, the market continually strives to reach the state of the ERE; the problem is that this quest is constantly interrupted and sidetracked as a result of subsequent change and its complement, the need for additional adjustment. It should be clear that the imaginary ERE is not being held up as some kind of ideal economy; its purpose is only to help explain the workings of the real market economy. The contrast between the real world and the ERE is described by Rothbard in the following manner:

The difference in the dynamic, real world is this. None of these future values or events is known; all must be estimated, guessed at, by the capitalists. They must advance present money in a speculation upon the unknown future in the expectation that the future product will be sold at a remunerative price. In the real world, then, quality of judgment and accuracy of forecast play an enormous role in the incomes acquired by capitalists. As a result of the arbitrage of the entrepreneurs, the tendency is always toward the ERE; in consequence of ever-changing reality, changes in value scales and resources, the ERE never arrives.  

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1Rothbard, op. cit., p. 464.
This whole matter relating to the constant changeability of market conditions is the essence of the concept of uncertainty as distinguished earlier from the concept of quantifiable risk. The key to this distinction is that the interrelationship of events and factors in the competitive market is so complex that it precludes the precise calculation of probability of the success or failure of any given entrepreneurial decision. Conditions at any instant are comparatively unique; the situation does not lend itself to the gathering of extensive empirical data which can be said to relate to homogeneous circumstances and events. Anticipations concerning consumer preferences, competitor actions, technological change, and resource availabilities are far more difficult than those relating to the problem of typical actuarial predictions.

In the latter area, the predictions deal with matters which have extensive history, are subject to detailed classification, and which occurred under conditions that can be expected to remain for the most part unchanged for the time being. Businessmen, however, do not have the fortune of operating under many of these repetitive sequences of highly categorized events. As Knight has said, the problem stems from the inability to accumulate sufficient empirical data relating to particular classes of subjects and events.

All of this is not to say that businessmen have absolutely no feel or indication about likely future developments. They do make judgments and estimates about the future; but
the point is that these anticipations are judgmental and are not subject to mathematical preciseness. It is not that there are no indications concerning the future; rather it is that there is grossly incomplete knowledge about future developments. The following statements by Knight are pertinent:

> It is a world of change in which we live, and a world of uncertainty. We live only by knowing something about the future; while the problems of life, or of conduct at least, arise from the fact that we know so little. This is as true of business as of other spheres of activity. The essence of the situation is action according to opinion, of greater or less foundation and value, neither entire ignorance nor complete and perfect information, but partial knowledge.

1. Entrepreneurial Profits and Losses

Profit theory has often explained the emergence of money profits in the market economy either as a reward for taking risks or as the natural income earned by capital (as opposed to the rents of land and wages of labor) in the classical sense. Both of these analyses are incorrect. In the competitive market, all business activity is risky in the sense of being uncertain; yet, not every business venture is monetarily profitable. A businessman who makes too many mistakes is not automatically rewarded with profits simply because he undertook ventures of a risky nature. Profits, thus, cannot be called simply a reward for risk-taking. The classical thesis that profits are the return peculiar to the

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2Knight, op. cit., p. 199.
category of capital or capital goods is an empty explanation because it fails to show just why something extra should arise in the usage of capital and not from the usage of the other factors of land and labor. At times this theory borders on a sort of normal interest theory, but it lacks the principle of time preference and is mistaken in tying interest only to the category of capital goods. As has been shown, the phenomenon of interest is present in all matters involving the exchange of present goods for future goods.

Profits, which are non-existent in the evenly rotating economy, are received by those entrepreneurs who more correctly anticipate the wishes of the consumers. Profits arise when productive factors are bought for prices lower than the prices for which their products are sold. In a world of uncertainty, the producers have to judge what the marginal value product will be for units of productive factors. Those who are able to discern discrepancies between current resource prices and the future prices of their products generate money revenues in excess of money costs by capitalizing upon such opportunities. In such cases the resources can be said to have been underpriced. The ultimate prices of consumers' goods are determined by the subjective valuations placed by consumers upon the goods offered for sale. Thus, the crucial task of the investor-producer in purchasing various units of resources is to anticipate as correctly as possible the future preferences of consumers. Based upon such anticipations, he is able to impute an antic-
ipated marginal value product to the available factors of production.

Profits result if others have failed to value the particular factor units as highly and if it turns out that the entrepreneur was reasonably correct in his anticipations. On the other hand, losses result whenever the entrepreneur acquires resources at amounts greater than the money value of the products generated from such resources. In these cases the resources can be said to be overpriced for the purposes to which they were put. Since there is no certainty about the future, there is room in the market economy for entrepreneurial losses as well as profits. Profits, thus, do arise in connection with risk-taking but only when the anticipations turn out to be correct; erroneous risk-taking is penalized by financial loss. A theory of profits should also include a corollary explanation of losses. The principal determinant of business success or failure is the foresight of those in charge of directing the business' activities. Mises has explained the source of money profits in the following way:

The ultimate source from which entrepreneurial profit and loss are derived is the uncertainty of the future constellation of demand and supply. If all entrepreneurs were to anticipate correctly the future state of the market, there would be neither profits nor losses. The prices of all the factors of production would already today be fully adjusted to tomorrow's prices of products. In buying the factors of production the entrepreneur would have to expend (with due allowance for the difference between the prices of present goods and future goods) no less an amount than the buyers will pay him later for the product. An entrepreneur can make
a profit only if he anticipates future conditions more correctly than other entrepreneurs. Then he buys the complementary factors of production at prices the sum of which, including allowance for the time difference, is smaller than the price at which he sells the product. 

It should be realized that the phenomenon of entrepreneurial profits continues to occur only because there are persistent changes in market conditions. This is what was meant when it was earlier stated that the concept of the evenly rotating economy provides an understanding of the direction in which the market continuously moves but never reaches. If new changes in market data were not to constantly occur, the prices of all complementary resources would be finally set so that total money costs would equal total money revenues and there would be nothing left for profits and losses. There is an inherent tendency for profits and losses to disappear as entrepreneurs make adjustments in their plans, moving into profitable lines and away from unprofitable ones. It is the recurrence of change in market conditions that precludes the permanent elimination of profits and losses.

2. Consumer Valuations and Productive Resources

It has already been shown that the subjective valuations of consumers are the principal determinant in establishing prices of consumers' goods. And the vital connection

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3 Mises, op. cit., pp. 293, 294.
between the prices of consumers' goods and the prices of factors of production was demonstrated in describing the conditions of the evenly rotating economy. In the ERE the prices of resources are derived from the money value of the product created. This essential relationship between the prices of final and intermediate goods and services is no less applicable in the dynamic market economy. Just as in the evenly rotating economy, entrepreneurs bid for units of resources in the real market in light of their expected marginal value product. Prices of consumers' goods are not set by simply adding up the costs of production. The value scales of consumers determine the prices that arise for produced consumers' goods. And it is these expected prices of consumers' goods that provide the basis for entrepreneurial bidding for units of scarce resources which are utilized in the generation of consumers' goods. The process is the same as it would be in the ERE, except that in the real world of uncertainty the imputation of product value to the means of production is one of uncertainty and not certainty.

The failure to view the prices of productive resources as arising from the expected prices of their products is often due to looking at the matter from the viewpoint of the individual businessman. He sees his costs as being externally determined and simply given; his task, as he sees it, is to place available resources in productive uses which will yield revenues sufficiently in excess of these costs. But if the broader view which the economist takes is considered,
one realizes that the prices of resources, or costs, stem from widespread bidding by countless firms since most factors can be employed in a wide variety of productive processes. And underlying all of this bidding are the anticipated marginal value products as envisioned by the various producers. For a highly non-specific factor of production, the unit price that any given producer pays reflects the expected marginal value product of that factor in alternative uses, the culmination of bidding on the part of innumerable and diverse firms.

The derivation of prices of highly specialized factors from the expected value of their product is even more obvious. The price of this type of resource is actually far more sensitive to changes in the price of its product than is the price of a highly versatile resource to changes in the price of any particular product in which it is being used. This is because the economic fate of the versatile factor is not so dependent upon how well any particular product fares economically. The gradations of its value in alternative uses entail much narrower gaps than is the case of a specific resource whose value in some other use by definition approaches zero. One only needs to consider the predicament of the owner of cigarette machines if the demand for cigarettes were to significantly diminish or increase to grasp the relationship between product prices and the prices of specific resources.

The producer who sells his product to other producers
rather than the ultimate consumer does not escape the influence of consumer valuations upon the price of his product. For the producers who purchase his product to be used further in the production process or to be sold to other producers or ultimate consumers will view the product in terms of what he in turn can sell the good or its product for; the influence of consumer valuations is pervasive regardless of the number of stages through which the resources pass before their culmination in the final consumers' good. At some final level, producers who sell directly to consumers must directly impute dollar values expressive of consumer preferences to the resources and services purchased. It is this front line of producers who set the imputation of consumer prices to resource prices in motion and this imputative relationship permeates every prior stage of the production process. No seller of producers' goods and services can long stay in a particular line of business if the ultimate consumers' good into whose production his product or service enters has grown unpopular, regardless of how many stages or levels removed from the final product his contribution originates.

Sellers of producers' goods and services may well be able to concern themselves only with the expected prices of their own customers, hence not problem themselves with the prices that will eventually be paid by consumers. Yet the point is, these immediate prices mirror over time the anticipated final prices and this fact becomes more apparent the further one moves along the production process toward product
completion. The closer to completion the intermediate goods become, the more specific they are and the closer the tie between them and the ultimate consumers' good. Thus, iron is more convertible than iron tubes and iron tubes are more convertible than iron machine parts. This is why in the modern economy the advent of intricate capital goods creates a serious issue of convertibility in a market environment of changing conditions. Less advanced times were characterized by far more flexible, though less productive, means of production. Mises has described the dominant role of the consumers in the economic process of the market economy as follows:

The consumers determine ultimately not only the prices of the consumers' goods, but no less the prices of all factors of production. They determine the income of every member of the market economy. . . . The competition between the entrepreneurs reflects the prices of consumers' goods in the formation of the factors of production. . . . It makes effective the subsumed decisions of the consumers as to what purpose the non-specific factors should be used for and to what extent the specific factors of production should be used.  

Of course, in the midst of uncertainty and extremely long channels of production as characterize the modern market economy, there is plenty of room for error in the pricing of factors based upon expected consumer preferences and product prices. As explained before, those who make too many mistakes are penalized with financial loss while those who are more correct in their anticipations reap financial profits. Changes in market conditions are particularly harsh to the

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4Mises, op. cit., pp. 271, 238.
owners of capital goods which are specific in nature and not easily convertible to other uses. This would be the misfortune of the owner of cigarette machines upon the advent of a widespread fall in the demand for cigarettes.

At any given moment, capital goods are appraised exclusively from the point of view of their future usefulness. And this potential usefulness is not merely a matter of technological usefulness but embraces the monetary significance of the item's anticipated productiveness. Thus, a relatively new machine can be rendered obsolete and virtually worthless as a result of changes in market data. The entrepreneur does not appraise his complex of productive factors from the standpoint of how much he expended for them in the past. As Jevons said, "in commerce bygones are forever bygones. . . . Industry is essentially prospective, not retrospective."

This is the essential meaning of the concept of "sunk costs."

Mises cogently made the same point when he stated:

Errors committed in the past in the production of capital goods available today do not burden the buyer; their incidence falls entirely on the seller. In this sense the entrepreneur who proceeds to buy against money capital goods for future production crosses out the past.5

It can then be seen that non-specific resources like raw iron and labor can be used to produce a specialized machine whose product is no longer important to the consuming public; this means that the money value of the machine

5Ibid., p. 505.
would bear no relationship to the money costs of the versatile inputs whose usefulness has been dissipated in the conversion process. In retrospect, it would have been better had the versatile resource units been devoted to more desirable conversions. But such mistakes are likely to occur without perfect knowledge of the future.

3. The Consequences of the Past

Although all action is oriented to the future, one must not overlook the influence of the past upon production. The fact that changes in market conditions render an irreversible capital good technically inferior to a more modern type does not mean that it is necessarily economically feasible to abandon the inferior good and shift to the usage of the superior one. One is certainly justified in saying that in retrospect the commitment of resources to a form eventually rendered inferior is economically wasteful. The writedown of the asset on the owner's books would manifest this economic loss. However, it may be that the inferior machine can still be used in competition with the more superior one. Whether the inferior machine should remain in use or be abandoned for the more modern one depends upon the degree of superiority in the performance of the latter.

The decision hinges upon the net revenues that can be expected from each alternative from the present moment on. The additional cost of implementing the technologically superior machine may be too great to warrant the shift. The in-
inferior machine is already in existence and its original cost is, thus, no longer relevant. On the other hand, the cost of the superior machine is still relevant since no decision on it has been made and no money has been committed for its acquisition. If the net revenues expected from continued use of the inferior machine are greater than that expected from alternative uses (including scrapping), then this continued utilization is economical.

The complaint that things would be better if the inferior machine had never been provided serves no purpose now. The task is to make the best of things as they now exist. This is what Mises meant when he said "history and the past have their say."\(^6\)

The influence of the past has the same application to the question of advantageous and disadvantageous locations of inconvertible capital goods. Changes in market conditions can result in a plant's location becoming less desirable than some other place of operation. But costs of relocating can prohibit a shift in spite of the desirability of the new location.

4. Unrestricted and Restricted Markets

The economic analysis in this study deals primarily with a market economy in which there exist few artificial

restrictions upon the economic activities of its members. It is this relatively unhampered market which tends to direct resources so that, as Mises says, "no want more urgently felt should remain unsatisfied because the means suitable for its attainment were employed--wasted--for the attainment of a want less urgently felt." The importance of the subjective valuations of producers and consumers has been emphasized already. The unhampered market recognizes the wants of every individual regardless of his function as a buyer or seller. Actually each able person performs in both roles in the market economy.

The significant point here is that although the wants of the consumers are pre-eminent regarding the goods and services offered for sale in the market, the ultimate decision to choose between the monetary reward of the market and the advantages of other pursuits is left up to each individual. Thus, employees and investors act on the basis of non-monetary as well as monetary factors. The sovereignty of the consumers is not unlimited.

However, it should be clear that artificial restrictions which are granted to some producers and denied to others can be and are usually superimposed upon the otherwise unhampered market. As a result, restrictions like monopoly rights, patents, and copyrights emerge on the market as economic factors in the same way that other resources are imputed economic significance. The process of monetary calculation results in the association of economic value
with each factor to the extent of its expected contribution to money revenues. This means that market prices can exist on the market for such restrictive factors as transferable franchises, patents, and copyrights. The pricing of such restrictive factors is, thus, no different from the pricing of resource factors which are not artificially created.

5. The Social Role of Profits

The objective of entrepreneurial activity in the market economy is to capitalize upon opportunities to invest in factors of production at costs which are adequately lower than the revenues subsequently generated by productive activities. Those who are able to carry out successfully this objective receive money profits for their correct foresight. The important result of profitable business operations is that resources are thereby diverted away from less desirable uses into uses which better suit the wishes of consumers. Profits, then, serve a vital social purpose. In a changing world there is always open the invitation for improvements in the way things are done. Improvements may be manifested in the form of more satisfying products and services and in the form of more efficient ways of generating presently preferred products and services.

So long as all ways of doing things are not frozen constant and people are not barred from pursuing ideas about how to improve upon matters, profits will always occur and be a necessary part of the market economy. Only in the
imaginary economy of the ERE are all opportunities for improvement in resource utilization exhausted. It is clear that changes in either preferences, resources, or technology call for rearrangements in the employment of available resources. In the real world all of these are continuously undergoing change.

The emergence of discrepancies between product prices and the prices of the complementary factors of production signals to market participants that adjustments are in order. Profitable discrepancies attract increased assignment of resources to those particular lines of application; this extension is accompanied by higher unit prices of resources used and lower unit prices of those particular products. Over time the price discrepancies are thus eliminated in those particular lines; profits for those businesses disappear, at least until new discrepancies are discovered or created.

The superior foresight of the successful entrepreneur does not benefit him permanently as others follow his example and partake of the dwindling profits. If the difference between total money costs and total money revenues goes the opposite way so that financial losses instead of profits are the result, adjustments are effected in the other direction. Relevant factors of production are reshuffled into other employments until losses in the original lines of business are terminated and profit prospects restored. The occurrence of financial losses is indicative of the fact that resources would be better used elsewhere, that they have been put to
uses which are inferior to alternative lines of employment as represented by their prevailing market prices.

It is the ceaseless search on the part of entrepreneurs for profitable opportunities that leads to the allocation of scarce resources to their most desirable productive usages. Along the way, they wipe out the discrepancies between resource values and product values and thereby remove market inconsistencies. Discrepancies between factor and product money values simultaneously expose existing misallocations of resources and promote corrective action in providing profit opportunities. It is thus important to realize, as Kirzner has pointed out, that "the entrepreneurial search for profits implies a search for situations where resources are misallocated." The crucial role of the entrepreneur, hence of profits, in the market economy has been described in the following way:

For it is impossible to eliminate the entrepreneur from the picture of the market economy. The various complementary factors of production cannot come together spontaneously. They need to be combined by the purposive efforts of men aiming at certain ends and motivated by the urge to improve their state of satisfaction. In eliminating the entrepreneur one eliminates the driving force of the whole market system.

Although there would be neither entrepreneurs nor entrepreneurial profits in the evenly rotating economy, it has

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8 Mises, op. cit., pp. 248, 249.
been shown that there would exist an interest income for the producers who invest present money for future money. In the real world of change and, thus, profits, the time preference principle would also be operative. This means that conceptually there can be recognized the phenomenon of interest in the market economy. However, because of the factor of uncertainty, each investment of present money is faced with the possibility of failure and loss. Consequently, the so-called rate of interest actually constitutes a combination of time and uncertainty factors which are intertwined to give a single rate. The distinction can be made only conceptually as the factor of uncertainty surrounds every instance of investment. The perception of varying degrees of uncertainty accounts for the structure of varying so-called rates of interest.

At the outset of this overview of the Austrian analysis of the market economy, it was stressed that in an economy of exchange, advanced and developed through specialization and the division of labor, two absolutely essential requirements must be satisfied. One was the need for a common basis for calculating the relative merits of alternative resource employments. Calculations in kind were seen to be insufficient for the rational allocation of scarce resources in an advanced economy. This requirement calls for some medium through which the preferences of the members of the society, its consumers, could be expressed and discerned by the owners of the productive resources. The other was the need for a
means by which the decisions and actions of scattered and separate actors can be coordinated. It was concluded that both of these requirements are met by the use of a common means of exchange and its counterpart, money prices. Economic calculations, predicated upon a system of market prices, emerges as the indispensable means of effective resource employment.

It can now be seen that through the economic calculations of profit-seeking investor-producers, the entrepreneurs, there is a rational process of factor utilization. And these calculations are developed through the guidance of past market prices and money results and through projected market prices and monetary results relating to various resources and final products. The advent of change in market conditions is reflected in certain price changes which signal for different courses of action to be taken to enhance the effectiveness of resource employment. Without the system of money prices and the ability to calculate expected results of various actions in terms which afford comparisons, there would be no way rationally to plan production activities on a scale characteristic of an advanced economy.

Efficient resource utilization necessitates some means by which prospective alternative lines of use can be related as well as possible to each prospective result or product. Although it is tenuous and imprecise in the face of uncertainty, monetary calculation provides this means. And although it can involve erroneous calculations arising from
poor judgment, hence resulting in the misallocation of resources, the situation is quickly rectified by the financial loss revealed in retrospective calculation.

It bears repeating that monetary calculation is not concerned with the measurement of value. The task of resource allocation can be accomplished if calculations afford guidance regarding the relative importance of various uses and products. Monetary profits and losses indicate the more desirable and the less desirable applications of units of scarce resources. Although it is prospective monetary calculation that is primary, retrospective calculations of profit and loss are important both instructionally and in guiding decisions concerning capital maintenance and consumption.

It must not be forgotten that the essential justification for monetary calculation arises from the ever-present problem of scarcity. With limited resources, some basis for comparing input with output is vital to the effective utilization of those factors. The concepts of capital and income, profit and loss, revenues and costs, provide this rational basis for resource allocations in the market economy. The allocation process is thereby purposive and not haphazard and spontaneous.
1. Methodology in Accounting Thought

Methodology in accounting thought does not refer to the various methods and techniques that are used in accounting practice. It refers to the approach to the development of accounting ideas and theory. The question of how should accounting theory be formulated yields one of the great issues yet to be resolved in accounting thought. The literature over the past decade is replete with treatment of this crucial question.

A careful study of accounting literature dealing with the question of methodology in accounting thought suggests that the effort to develop further the theory of accounting ostensibly is tangled in a modern-day Methodenstreit. It appears accurate to say that the issue essentially revolves around a choice between the inductive or empirical method and the deductive or postulational method.

Those theorists who hold that experience and experiment are the only or principal means by which accounting theory can be developed include those who explicitly endorse
the inductive approach\(^1\) as well as those who advocate a behavioral method\(^2\) and those who support the pragmatic approach.\(^3\) The strict empiricists emphasize the predictive ability of accounting data as the primary criterion in the development of accounting theory. The behaviorists would rely upon empirical indications of the influence of various accounting principles upon user behavior in the formulation of accounting theory. The pragmatists likewise would look to practical experience in order to demonstrate the validity of accounting knowledge. For them ideas and principles are sound solely because they work.

Division seems to exist within the inductive school over the question whether accounting knowledge can take the form of fundamental generalizations or whether it must be confined to a set of ideas and rules that relate only to specific problems. The pragmatists generally take the latter


view and hold little hope that general propositions will be achieved. They propose that the bulk of research effort deal with real practical problems the solution of which presumably does not require any general theoretical propositions.

It should be pointed out that the terms "empirical" and "inductive" are sometimes used in connection with accounting thought in a sense entirely different from that of epistemology. For example, one writer views the contention that the purpose of accounting is "to present the facts of enterprise financial experience" as an empirical approach.4 In this case, there is no issue about how accounting knowledge or theory should be developed; there is no explanation of how the understanding of this purpose of accounting was obtained. The adjective "empirical" here refers to the subject matter of accounting and not to the manner in which accounting knowledge is acquired. The same can be said about the use of the term "inductive" by Mattessich in describing accounting as inductive since it is related to history.5 Data about financial occurrences are not knowledge of accounting; they provide knowledge about past business transactions.

Theory developed by means of the deductive approach

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4 Floyd A. Beams, "Indications of Pragmatism and Empiricism in Accounting Thought," The Accounting Review, XLIV, No. 2 (April, 1969), 382-88.

is not derived through empirical testing and observation. It proceeds from the establishment of certain fundamental postulates, i.e., premises or ultimata accepted as given or deemed self-evident. The general theory is built upon this base by applying deductive logic in deriving more detailed principles or propositions. A theory which is deductively structured does not result from empirical observation except in those cases in which its initial postulate(s) or premise(s) is drawn from experience. Give the postulates, principles or more specific propositions are logically deduced without reference to experience or empirical testing. Thus, the deductive method is quite different from inductive analysis which does not start with any explicit premises nor does it depend upon deductive reasoning but instead relies upon the observation of a mass of instances of real events in an effort to arrive at discoverable laws. The inductive and deductive methods are often contrasted by describing the former as involving movement from the specific to the general while the latter is said to move from the general to the specific. The literature is not without those who advocate a more extensive use of the deductive method in the formulation of accounting theory.6

The verifiability of theory differs depending upon which approach is used in its formulation. Theory obtained by means of induction is verified by empirical tests. So long as the particular events studied occur in the fashion predicted by the theory, the theory is considered true and reliable. In contrast, the validity of theory reached by the deductive method requires that, given its underlying postulates or presupposed conditions, the principles and conclusions are logically and consistently formulated. And for the theory to be of any use in the solution of practical problems, one additional requirement must be met: the postulates or presupposed conditions must be realistic, i.e., they cannot conflict with the conditions of the real world. This reference to experience is necessary so that theorizing is devoted to matters which are relevant to real as opposed to hypothetical situations. It does not make the approach an inductive one. Experience does not reveal the principles to be derived or direct the structure of the theory; this is a matter of deductive logic.

2. Accounting Thought and the Science of Human Action

The early parts of this work are devoted to an expla-
nation of the Austrian analysis of the market economy in order to provide a background for building a theory of accounting. Use of the Austrian theory to provide this background means that their methodological approach underlies the theoretical development of this study. Thus, it appears warranted to provide some explanation of the methodology used by the Austrians in developing their analysis.

The economists of the Austrian School are distinctive for having enclosed their analysis of market phenomena within a science of human action. Science involves the attempt to gain a mental grasp and apprehension of the phenomena of the universe. It invariably is characterized by a reliance upon the concept of causality. The scientist, in his effort to acquire an understanding of certain phenomena, traces observed changes back through a chain of cause and effect. He eventually must always reach a point beyond which further explanation is unattainable. At this point, he strikes an ultimate given.

Since human action is a factor in changes that take place in the real world, the Austrian view holds that it is justifiably an object of scientific study. For this analysis

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it is also an ultimate given. Science has not yet discovered any connection between the phenomena of the physical world and the realm of human action. Changes which occur in the physical world are explained without imputing any will or purpose to the behavior of the observed phenomena. That is not the case with the domain of human activity. It cannot be denied that human beings purposefully bring about change. The essence of human action is that it is purposeful—it aims at the achievement of definite ends through the rational selection of definite means. By rational selection it is meant that a process of reasoning a cause and effect relationship, whether correct or erroneous, between particular means and particular ends is effected prior to any specific action. This distinction between the external world of "physical, chemical, and physiological phenomena" and the phenomena of man's internal world of "thought, feeling, valuation, and purposeful action" imposes upon scientific thought, at least in its present state, what Mises terms a "methodological dualism." In other words, science pertaining to the realm of human action is unable at the present to fall back upon laws such as those explaining the changes in physical phenomena in explaining why human beings manifest thoughts, goals, and purposeful actions. That they act, i.e., manifest a will, is the starting point in the undertaking of all that is referred to as human.

There are other methodological implications of the science of human action. One is that the cognition of human
thought, valuations, and action does not arise from experience with external phenomena. Sensory experience does not teach that people act willfully and have aims and values. Such knowledge is obtained only by the introspective analysis of one's own purposeful behavior. Empirical observation would be totally incapable of explaining the concrete events in the domain of human activity without this introspective knowledge. All that would be observed under such circumstances would be a chaotic picture of meaningless motions. Sensory experience is meaningful to man only because he views it through knowledge acquired introspectively. Even the empiricist who expands his knowledge by means of the inductive method depends upon the reflective cognition of causality. Thus, for the study of human action, it is necessary to adopt also what Mises terms a "methodological apriorism." This does not mean that there is any way of proving that the logic and approach to life on the part of other people is exactly the same in nature as one's own. One has no means of invading the minds of others. However, the logical structure of one's own mind precludes the conception of any other type

\[\text{The Austrians are not in full agreement over the question whether knowledge gained by introspection is a priori to all experience. While Mises holds that it is, Rothbard interprets the nature of introspectively obtained knowledge as being "empirical" on the grounds that introspection itself is a type of real experience. However, they are in agreement in emphasizing that such knowledge is not obtained through sensory experience, i.e., the perception of external phenomena. This emphasis is the relevant point for the purpose of this study.}\]
of logic. And daily experience clearly demonstrates that this assumption that the logic and the purposeful approach to life of other persons is the same as one's own works.

And finally, the study of human action necessitates what the Austrians call a "methodological individualism." This refers to the recognition that every instance of a specific action is identified with some individual person. In other words, only individuals act. Collectives such as communities, nations, clubs, groups, corporations, societies, and families do not act. A collective operates only through the definite actions of those people who are related and devoted to it. As Mises states, "Some of the individuals' actions are directed by the intention to cooperate with others. Cooperation of individuals brings about a state of affairs which the concept of society describes. Society does not exist apart from the thoughts and actions of people. It does not have 'interests' and does not aim at anything. The same is valid for all other collectives. . . . For the collective has no existence and reality but in the actions of individuals. . . . The only way to a cognition of collectives is the analysis of the conduct of its members."⁹ Attention has been given already to this point when the market process was described as being the "outcome of purposive actions on the part of individuals who seek to improve the state of affairs from their own viewpoint and not some kind of mechani-

cal and inhuman set of events.

The failure to see collectives as mere labels for the interrelations of individuals has often led to the untenable use of biological analogies. This use is exemplified by the following statement made by Mattessich: "One must realize that we have actually in accounting an outstanding method for collecting data about the cells of the economic body." Another example consists in the idea that a firm has a life-cycle. One writer has commented on this particular fallacy:

... where explicit biological analogies crop up in economics they are drawn exclusively from that aspect of biology which deals with the nonmotivated behavior of organisms ... so it is with the life-cycle analogy. We have no reason whatever for thinking that the growth pattern of a biological organism is willed by the organism itself. On the other hand, we have every reason for thinking that the growth of a firm is willed by those who make the decisions of the firm ... and the proof of this lies in the fact that no one can describe the development of any given firm ... except in terms of decisions taken by individual men.

It is not within the scope of this study to delve completely into the general theory of human action as developed within the Austrian School. A very important and large part of it has been expounded in connection with the earlier presentation of their analysis of the workings of the market economy. Let it suffice to summarize the fundamental propo-

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sitions of their theory since it is the ultimate foundation of their market analysis and, thus, of the theory of accounting to be developed in this study.

There are three general conditions which must be present in order for any given action to take place: there must be some felt uneasiness about or dissatisfaction with the present situation as the actor views it; there must be an image on the part of the actor of an improved state of affairs; and he must expect that as a result of his deliberate action, he is capable of effecting an improvement in his situation. Action, then, presupposes means and ends; and since there are alternative means and ends, action always involves choice. And since action always aims at success, it always involves a choice which at that moment offers the greatest expected satisfaction from the viewpoint of the actor. Action also entails the passage of time; if change could be brought about without the consumption of time, then the effect would be already attained. Consequently, if a given goal can be achieved more quickly by taking one action as opposed to taking another, the quicker route will be chosen, other things equal.

Not only is human action an ultimate given but so are the ends or values which underlie each given action. Concrete value judgments are not open to further analysis. The theory of human action must accept them as given. Thus, the theory of human action is strictly a theory of means as opposed to ends. This point is directly related to the notion
of the subjectivity of value which has been shown to lie at
the heart of the Austrian analysis of the market economy.

The Austrian analysis of market phenomena forms a
part of their overall theory of human action. Their conclu-
sions stem logically and deductively from the basic postu-
lates of human action. Theirs is a deductive method of the-
ory development. The plan of this study is to continue this
deductive process by logically drawing from their market
analysis the implications it seems to hold for the formula-
tion of a theory of accounting. The decision to seek a the-
ory of accounting by means of this approach is based upon
the idea that since accounting both deals with human activi-
ties and is itself a human activity, its foundation neces-
sarily rests upon an understanding of the nature of human
action, especially in the sphere of market events. As Pat-
tillo has stated, "accounting is not an end in itself but
exists to serve definite purposes."\(^{12}\) As a means to the at-
tainment of human goals, its theoretical basis belongs within
a theory of human action. The practice of accounting exists
only because of purposive human behavior.

This means that accounting must seek its role and
functions from propositions that are logically antecedent to
it. As Chambers has said: "For basic general propositions
it is necessary to reach out, beyond the subject itself,

\(^{12}\)James W. Pattillo, The Foundation of Financial Ac-
counting (Baton Rouge: Louisiana State University Press,
1965), p. 47.
into adjacent or related fields of inquiry."\textsuperscript{13} To seek principles by confining oneself to prevailing practice has the result that "the whole inquiry will be unnecessarily circumscribed."\textsuperscript{14} Pattillo expressed the same thought when he stated that: "Developing a structure of accounting is not just a matter of deciding disputed issues as they arise. There is a need for a foundation of broad insight into the environment of accounting, as well as a need for the use of reason and logic in drawing from that environment the objectives of accounting and the means to obtain them. The overall objective of accounting is the starting point and supplies the basis for the accounting framework."\textsuperscript{15} At another point, referring to the purposeful nature of accounting, he

\textsuperscript{13} R. J. Chambers, "Some Observations on 'Structure of Accounting Theory,'" The Accounting Review, XXXI, No. 4 (October, 1956), 584.

\textsuperscript{14} R. J. Chambers, "Why Bother with Postulates?" Journal of Accounting Research, I, No. 1 (Spring, 1963), 7. It should be mentioned that to this writer's knowledge, Chambers is the only accounting theorist who has attempted to construct a basic theory and framework of financial accounting by tracing accounting back to the ultimate given of rational human action and its correlative, means and ends. See his Accounting, Evaluation and Economic Behavior (Englewood Cliffs; Prentice Hall, 1966), especially his chapters on "Individual Thought and Action" and on "Ends and Means." Prince, in developing a thesis based upon a motivational postulate of maximization of long-term income or satisfaction, also recognizes the purposefulness of human behavior. However, he does not use this premise to resolve any of the problems of financial accounting. Rather he relies upon it to develop his proposal that accounting be extended into the areas of psychology and sociology. Cf. Thomas R. Prince, Extension of the Boundaries of Accounting Theory (Cincinnati: South-Western Publishing Co., 1963).

\textsuperscript{15} James W. Pattillo, \textit{op. cit.}, p. 32.
states that: "Those purposes therefore lie outside of accounting and point to a unique concept existing outside of accounting." The whole utilitarian orientation of most accounting theorists is a tribute to the relationship of accounting to the realm of human action.

3. Delimiting the Purpose and Domain of Accounting

Any systematic theory of accounting must be based upon a presupposed purpose of accounting and a clear delimitation of the domain to which accounting relates. These factors are necessarily the starting point and inherent parts of the theory. Since accounting is not an end in itself, a theory of accounting is actually a theory of how accounting can contribute to the achievement of given ends. This means that the theory must be explicit regarding the aim of accounting if its deduced propositions are to have any real meaning. The widespread assertion that "accounting must be useful" is fundamentally valid; however, it is too general to alone provide an adequate basis for the formulation of a theory of accounting.

Traditional accounting theory relating to the private sector of society has viewed the role of accounting as relating to the financial or monetary sphere, and accounting output has been in the nature of financial reports designed to assist decision makers in their task of reaching decisions

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16Ibid., p. 47.
in the "economic" realm. There can be little denying that such is the objective, often explicitly stated by accounting theorists, that underlies conventional accounting practice. Whether they effectively direct or misdirect those decision makers who receive them, balance sheets, income statements, and cost or other managerial reports are financially oriented and intended to aid the decision process relating to economic activity. These reports are principally directed to investors, creditors, and business management.

The Austrian analysis suggests that the basic orientation of traditional accounting thought as just described is sound. Actors in a market economy who are interested in making investments in business enterprises and/or managing such concerns require financial information in order to ascertain the results of past business events and to facilitate the choice of future actions. It logically follows from the postulates of a theory of human action that means and ends can be distinguished. Those who have chosen to make monetary investments for the purpose of generating monetary profits and interest wish to know periodically how well they have achieved their goal.

Similarly, those who have been placed in charge of certain decisions in the management of these enterprises have an interest in the monetary results of the area of activity with which their responsibility concerns. Accounting accepts the monetary profit goal or end along with its many derived and related sub-goals (which are really means to the attain-
ment of the profit objective) as given and constituting some of the aims of many participants in the market process. And since monetary profits must be embodied in something, the periodic determination of profits necessitates the calculation of monetary positions at intermittent points in time. The latter calculation not only serves in the determination of profits, i.e., revealing the extent to which the end was attained; it also represents the monetary means which are available for future actions. Decisions about future courses of action even on the part of persons not connected previously in any way with the concern reported on are facilitated also through the determination of past profits.

These accounting objectives are not hypothetical or arbitrary. Daily experience clearly demonstrates that in the market economy there are countless individuals who, acting individually and in concert, make monetary investments in business undertakings. These investments are made with the explicit purpose of generating monetary profits and interest through successful business operations. And those entrusted with the responsibility of carrying out the steps necessary to achieve this goal through detailed planning and management depend heavily upon detailed financial information.

Up to this point the implications of the Austrian analysis for seeking to establish the basic objectives and sphere of accounting activity have not strayed too far from at least the essence of the fundamental postulates of traditional accounting thought. However, an orientation which
may be crucial to a theory of accounting is lacking in current accounting thought. And that orientation pertains to a grasp of the workings of the market process and an appreciation for the role that accounting can play in facilitating the operation of this economic system. This study has discussed already how the members of any given society must decide upon the various uses to which available scarce resources will be devoted. It was shown that some means of economic calculation is indispensable for this purpose and that, through market prices stated in terms of the common medium of exchange, this requirement is fulfilled in the market economy. It was also shown that the mainspring of this process of economic calculation and resource allocation consisted in entrepreneurial activity. Entrepreneurial profits and losses were traced to the factor of uncertainty.

Now, the point which is extremely significant regarding the theory of accounting based on the Austrian analysis is that accounting falls within the sphere of economic calculation and thereby takes on a role that is socially significant. This suggests that: the popular contention that although both tread upon common ground, economics and accounting spring from different viewpoints is untenable. This contention has been expressed as follows:

... while the phenomena being studied are largely the same in both economics and accounting, the approach is wholly different.

The economist has the social point of view. He analyzes the individual transactions of particular enterprises but does so principally in order to determine the fundamental principles of markets, prices,
production, consumption, and distribution, and their social consequences.

On the other hand, the accountant, employed by the management of a business or its creditors, analyzes business transactions with the express object of interpreting their effect on the particular business enterprise.

From the following remarks, Canning likewise appears to have subscribed to the notion that the two disciplines arise from different viewpoints:

A machine, to the economist, is a specimen capital instrument, an agent possessing certain attributes that confer upon it a capacity to serve society. To the accountant the machine is only a source of immediate technical services and only of technical services the results of which inure to the benefit of, and can be appropriated by, the persons beneficially interested in the enterprise. The economist looks upon social benefits, the accountant upon individual profit, upon that which can be acquired and appropriated by certain individuals.

It is certainly true that the economic theorist is concerned with the operations of the economy as an integrated system consisting of innumerable individual decisions and actions interrelated with one another. It is also correct to depict the individual accounting practitioner as performing his tasks with the limited perspective of his immediately


surrounding situation. Yet, here we have revealed the apparent inappropriateness of this comparison for the purposes of accounting thought. The theorist, who stands removed from the infinite number of concrete situations and offers explanatory generalizations about certain assumed conditions, is being compared with the practitioner, who at any given moment faces a particular task under a set of unique circumstances. The comparison is inappropriate because the inference from it is misleading. It suggests that accounting thought must necessarily be oriented towards the particular features of each actual case. It ignores completely the accounting theorist who, like the economic theorist, can and, perhaps, should stand back and view the accounting function as a part of the overall market and social process. The individual practitioner continuously faces problem situations only because of the existence of the larger market process; and his small sphere of influence is nevertheless a contributing factor in the functioning of that process.

This view of the accounting function, derived from the Austrian theory, as constituting a vital social role is clearly analogous to the observation that the legal structure of a society has a definite social role. If one states that the ultimate purpose of law is to induce order, predictability and justice in daily affairs, he is recognizing a fundamental effect which law has upon the interrelations of the members of society. His approach to thinking about law is not the least invalidated because individual practicing
lawyers focus their attention upon the particular circumstances of each concrete situation that arises.

The theory of accounting which is suggested by the Austrian view conceives the role of accounting as lying within the sphere of economic calculation, the vital means through which scarce economic resources are allocated within the market economy. Accounting, thus, is viewed as a means of alleviating the problem, as Hayek calls it, of the "division of knowledge" in society. With this orientation, it is clear that the viewpoints of the economic theorist and the accounting theorist are not different. This orientation also means that accounting thought must be predicated upon a thorough understanding of the workings of the market process. Bedford and Baladonni are on a similar ground as the Austrians in advocating a communication theory approach to accounting.\(^\text{19}\)

It has been shown already how, through the price system and economic calculation, a means of coordinative communication is provided. Regarding the requirements of Bedford and Baladonni that the information communicated possess the qualities of fidelity and significance, the determination of which information is significant necessarily requires a grasp of the interrelationship of market phenomena. The need to supply decision makers with financial information, thus, can be seen as an essential part of a complex economic process

through which interacting individuals seek subjective satisfaction. In this way, accounting thought logically traces the activity of accounting back to an ultimate given: people acting in a cooperative atmosphere to attain individually selected ends which are likewise an ultimate given for accounting theory. This clears the way for determining meaningfully the purpose and domain of accounting and how its purpose can be best achieved.

The specific implications of casting accounting within the sphere of economic calculation will be considered in detail in a later section. Let it suffice to reiterate at this point that the periodic determination of monetary profits and losses, including detailed determinations of various expenses and revenues, for demarcated areas of activity such as particular sections, departments, product lines, territories, customer types, and organized enterprises is of great importance in the decisions of entrepreneurs regarding subsequent resource allocations. The social role of entrepreneurial profits and losses, which we have discussed previously, is essentially the source of the social role of accounting which the previous economic analysis suggests. The periodic determination of monetary position is significant not only in connection with profit determination but also as an indication of monetary means or capital which is to be invested in the operations of the succeeding period, given the decision concerning the withdrawal of profits or income. By relating accounting to the economic process, and more
specifically, to the realm of economic calculation, the account­ing theorist is oriented towards developing his prin­ciples based strictly upon the premise that accounting prac­tice should contribute to the effectiveness of the market process.

It should be clear that the theoretical relegation of accounting to the sphere of economic or monetary calculation is a description of what the Austrian theory views as the general function and domain of accounting. This study is concerned with presenting and examining that view for the purpose of its consideration in the development of account­ing theory. Thus, this study should not be interpreted as representing an advocacy of the Austrian view. Remaining parts of this study are devoted to drawing further and more sharply, through deductive reasoning as well as additional Austrian theory, some of the implications of the Austrian analysis for a theory of accounting.

Relating accounting strictly to the realm of monetary calculation and to the market process of resource allocation seems to invite certain serious challenges. What about the likely argument that the Austrian verbal model of the un­hampered market process is irrelevant to accounting thought in the midst of a market economy operating under noticeable restrictions? What about the claim that the emergence of a professional management class has resulted in a multiplicity of corporation goals, including a "social responsibility," and in a greatly diminished profit motive and that this de-
velopment calls for an extension of accounting thought beyond the "economic" sphere into the areas of psychology and sociology? The following section deals with the first of these questions while the next chapter treats the second.

4. Relevance of the Economic Analysis

The beginning sections of this study have described how economic decisions on the part of producers, employees, and consumers are reached in the market economy. This background was presented based upon the proposition that accounting theory should stem from an understanding of the market process and of the vital role that accounting plays in that process. Yet, one may object to the use of a model of an unrestricted market process for the purposes of theory development when our market economy is not completely unfettered. As mentioned previously, restrictions of various kinds usually are superimposed upon the decisions of the members of the market society. There exists now no case of a market economy which is devoid of artificial restraints upon the voluntary interactions among its members. And so, one may maintain that accounting, in terms of the environment in which it finds itself today, has little, if any, theoretical grounds in the analysis of the unhampered market.

Despite the prevalence of numerous artificial restrictions, the United States economy is still predominantly a free market economy. This means that the basic characteristics of an unrestricted market are ascribable generally to
our present economy. To be more specific, it can be said that, for those market activities which are not restricted artificially, the explanation of the workings of the totally unrestricted market economy is quite useful and totally relevant. The existence of certain restrictions certainly reduces the province within which voluntary exchange transactions can take place. For example, the illegality of private and competitive operations in carrying the mails precludes the possibility that investors will establish business firms in this field. However, such a particular prohibition does not prevent the allocation of resources by their owners to those unrestricted employments which they deem to be the most promising and worthwhile. And the sphere of unrestricted employments remains dominant and comparatively broad. A theoretical model does not have to mirror exactly the conditions of the real world in order to be helpful in understanding reality. To the extent that there is a market arena in which alternative investment and allocation decisions are allowed, the model is entirely realistic.

And even those areas and activities which are highly restricted should not be viewed as being outside the pale of the market and money calculations. The government postal system still has to compete with other enterprises in the economy for the procurement of various resources and for the dollars of customers. Even if the inadequacy of customer revenues is covered by subsidies, the market is influential in determining the incidence and effect of the taxes raised
to finance the subsidies. Resources do flow into this restricted field to the extent to which they are permitted and to the degree that their owners consider such employment satisfactorily remunerative. The same can be said with respect to other activities which are not entirely unrestricted. For example, private capital has comprised the entire capital structure of many public utility companies over the years. In fact, as mentioned previously, in those cases in which the restriction is transferable and economically valuable, the emergence of a market price for it attests to the fact that restrictions can constitute economic resources. Thus, patents, copyrights, and monopoly rights can have market prices.

The Austrians would appear to hold that it is not the task or responsibility of accounting to judge the appropriateness of those restrictions which do and do not exist. Presumably, where there are restrictions, they are there for good reason. All that accounting can do and be expected to do is to accept as given the conditions of its setting and to seek to enhance the effectiveness of the market process of resource allocation through alleviating the problem of "the division of knowledge" with respect to areas of activity which are not restricted.
VIII. THE LARGE CORPORATION: EXTENSION OF ACCOUNTING THEORY

In recent years, some accounting theorists have contended that in connection with the development of the large corporation there has emerged a professional management class whose power to establish company goals suggests certain fundamental changes in accounting theory. As has been pointed out, heretofore accounting has been associated entirely with the so-called "economic" realm, with monetary determinations. And the analysis used in this study suggests that accounting should continue to be identified with the domain of economic calculation. However, the divorce of management from stockholders in the case of large corporations has led some thinkers to advocate the extension of accounting theory into areas beyond the monetary sphere.¹

There are several aspects to this line of thinking, each of which will be considered in relation to the depiction of the operation of the market economy and the idea that accounting stay within the realm of economic calculation.

The basic premise underlying the proposal that ac-

counting theory extend its boundaries is that the large corporation pursues multiple goals established or adopted by professional managers. It is argued that accounting can no longer assume that the single objective of a huge enterprise is to maximize money profits in the sole interest of its owners. The economic concept of the entrepreneur is deemed applicable only to those businesses small enough to permit an active ownership in contrast to the "passive" owners of corporate giants. Stockholders are seen to play virtually no role in the decisions leading to monetary profits. This view holds that the professional management class does not focus only upon the task of generating profits nor does it consider profit-making to be necessarily the primary aim of the enterprise. Not only, so the argument goes, has the old classical aim of maximum profits been supplanted by other economic objectives such as "satisfactory" or "reasonable" profits, liquidity, homeostatic balance sheets, and sufficient "market share," but managers of big corporations are selecting ends beyond the narrow bounds of "economics." At the psychological level, goals pertaining to the flow of psychic utility relating to the satisfaction of "human needs" such as status and authority are emphasized. A psychic income is placed along side the traditional money income. And at the sociological level, the company is seen to pursue certain social goals such as fighting inflation, contributing to high levels of employment, advancing the education of the nation's youth, and countless others usually categorized
under the label "social responsibility." Another income, sociological income, relating to the flow of utility in terms of human welfare or the "needs of society," is thereby posited along with economic and psychological income.

From these observations comes the challenge to accounting that its theory be extended to cope with the need to measure the extent to which the psychological and sociological goals of large corporations are being achieved, along with the traditional accounting measurement of "economic" results. In other words, the income statement is to report income on three levels: economic, psychological, and sociological. As Bedford and Dopuch have stated: "Perhaps each transaction should be analyzed at alternative levels involving economic, psychological, and sociological implications which are inherent in the exchanges which took place."²

Prince has expressed essentially the same suggestion: "Another arrangement of the data on the income statement would be to have three sections: economic, psychological, and sociological."³ The extension of accounting thought is seen to lie in the need for accounting to reinterpret continuously the concept of income "insofar as specific operational aspects of the concept of income are significantly challenged by the continuously changing environmental setting."⁴

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²Ibid., p. 67.
³Prince, op. cit., p. 181.
⁴Ibid., p. 71.
1. Management and Entrepreneurs

The immediate implication of this picture is that the Austrian model of the market economy is not applicable to the development of accounting theory regarding the large corporation. The decision of allocating scarce resources in search of money profits is not considered to be in the hands of the owner of investment funds but rather is thought to be left up to the salaried managers. And since managers are considered to have chosen to direct the enterprises towards multiple goals, the significance of the monetary profit objective has greatly diminished in this way of thinking. An economic theory stressing the social role of entrepreneurial profits seems unrealistic and unsuitable as a basis for accounting theory development when held up to this view of the large corporation.

The theoretical analysis employed by this study maintains that even in the case of large corporations, the investors fulfill the entrepreneurial role of directing the allocation of economic resources in the quest for monetary profits. This is not to say that members of management are devoid of any part in the allocation process. However, their

5 As pointed out by M. M. Bober in his Intermediate Price and Income Theory, Revised Edition (New York: W. W. Norton & Company, 1962), p. 430, it offers no difficulty with respect to accounting for individual proprietorships or partnerships as well as the majority of the approximately 500,000 corporations in the United States which have five or less stockholders.
role is a subordinate one based upon the general direction which is set for them by those key stockholders who own a considerable part of the outstanding stock and by the elected representatives of the stockholders, the directors of the corporation. And those stockholders who exert no direct influence upon the activities of the company are nonetheless entrepreneurs since they have made a decision as to which influential men will formulate the general plans to which their funds will be committed. Their investment decision is not an automatic one for they face many alternative corporations in which they may become part-owners. As Frank Knight has said, "in organized activity the crucial decision is the selection of men to make decisions. . . ."6 This is an entrepreneurial decision since it is surrounded by uncertainty and since the success or failure of the selection falls entirely upon the investor in the form of profits or losses.

No analyst is able to guarantee an investor profits from his investments. If this statement were not so, then people would soon find themselves working under conditions of the ERE. For in this case there would be no entrepreneurial profits since such an analyst's commission or contracted fee would be bid up eventually to absorb all of the predictable profits. The inability to find any way to assure himself profits is precisely the situation in which any given

investor finds himself. The ultimate responsibility for deciding into which lines of economic activity his funds will flow rests upon his shoulders. His decision is primary.

Getting back to the point that the general direction of the enterprise is determined directly by those stockholders who own a considerable part of the company's outstanding shares and by the elected board, the following statements posed and accepted by Bober are germane:

In nearly every large corporation there is an inside circle of stockholders, usually with relatively large holdings of shares, who exercise active leadership in the corporation. They have a voice in the framing of policy and in the election of the board of directors and top officers. Some of them are elected to serve on the board and on board committees. Frequently they occupy executive posts, or else are familiar with the personalities and the detailed business-conduct of the president and the vice-president.

An experienced corporation lawyer holds the same position:
"... upon close examination it will be found that even in the case of the great corporations whose securities are widely distributed and largely voted by management proxies, effective control over many basic policy decisions is lodged in some stockholder group—perhaps in a very small minority, but in an effective one; ..." Mises likewise rejects the notion that the stockholders of the large cor-

7M. M. Bober, op. cit., p. 433.

porations are not entrepreneurs. He says that this notion "disregards entirely the role that the capital and money market, the stock and bond exchange, which a pertinent idiom simply calls the 'market,' plays in the direction of corporate business . . . the changes in the prices of common and preferred stock and of corporate bonds are the means applied by the capitalists for the supreme control of the flow of capital. The price structure as determined by the speculations on the capital and money markets and on the big commodity exchanges not only decides how much capital is available for the conduct of each corporation's business; it creates a state of affairs to which the managers must adjust their operations in detail." 9 These remarks emphasize the crucial point that it is not managers who decide how much investment funds come their way for general lines of use.

The essential conceptual distinction between entrepreneurship and management must be recognized. This difference rests in the degree of discretion or judgment that characterizes each of the two functions. As both Mises and Knight have argued, the tasks of a manager are largely circumscribed for him so that he enjoys a comparatively limited amount of discretion. Meanwhile, the investor has absolutely no guidelines with respect to his decisions and actions; there is no one above him in responsibility and on whom he can depend to outline his basic tasks and areas of concern.

He is the ultimate source of decision activating the whole productive process. As Knight states, "whenever we find an apparent separation between control and uncertainty-bearing, examination will show that we are confusing essentially routine activities with real control."\(^{10}\) Mises ascribes to management the function of performing subordinate entrepreneurial tasks which are too detailed for the real entrepreneurs, the influential stockholders and board of directors who determine in general terms the steps which the enterprise is to take, to perform. And what is especially relevant to a study of accounting, he credits accounting for enabling the managerial system to function by reporting the monetary results and status of each area of activity within the overall enterprise:

Economic calculation as practiced in the market economy, and especially the system of double-entry bookkeeping, make it possible to relieve the entrepreneur of involvement in too much detail. He can devote himself to his great tasks without being entangled in a multitude of trifles beyond any mortal's range of sight. He can appoint assistants to whose solicitude he entrusts the care of subordinate entrepreneurial duties. And these assistants in their turn can be aided according to the same principles by assistants appointed for a smaller sphere of duties. In this way a whole managerial hierarchy can be built up.

A manager is a junior partner of the entrepreneur, as it were, no matter what the contractual and financial terms of his employment are. The only relevant thing is that his own financial interests force him to attend to the best of his abilities to the entrepreneurial functions which are assigned to him within a limited and precisely determined sphere of action. . . . His task is not like that of the tech-

\(^{10}\)Frank Knight, *op. cit.*, p. 298.
nician, to perform a definite piece of work according to a definite precept. It is to adjust—within the limited scope left to his discretion—the operation of his section to the state of the market. . . . The managerial function is always subservient to the entrepreneurial function. It can relieve the entrepreneur of a part of his minor duties; it can never evolve into a substitute for entrepreneurship.11

And so the distinction between management and entrepreneurs is made based upon the essential nature of their responsibilities. Thus, top executives are seen to exercise a comparatively limited sphere of discretion, so that their decisions are reached within generally prescribed assignments and courses of action. It is the stockholders who receive the profits for successful operations and, what is often overlooked when discussing the question of management and entrepreneurship, who must bear the brunt of losses resulting from unsuccessful operations. Managers qua managers do not risk their own funds in the acquisition of economic resources. In fact, managers are themselves resources and reliance upon them for certain decisions in return for a definite and fixed compensation is part of the entrepreneurial undertaking. This is why, based on this way of thinking, Bober is not quite conceptually accurate in his statement that "entrepreneurship is lodged in the group composed of such [the inside and directly influential circle of stockholders] shareholders and the executive officials."12 That investors look

12Bober, op. cit., p. 434.
at past profit figures and/or other information in attempting
to invest their funds in the most promising firms and lines
is indicative of the fact that the allocation of resources is
not fundamentally a managerial matter. The decision to di-
rect resources in a certain general direction is an investor
or entrepreneurial one, not a managerial choice, and its con-
sequences fall on the investor in the form of profit or loss.

Up to this point, support has been given for the idea
that there are entrepreneurs in connection with the large
corporations and that the social role of entrepreneurial prof-
its and losses is no less operative in this sphere of the
market economy. Thus, the function which accounting serves
is not any less significant in this area than it is in other
facets of the market process. As Johnson has stated: "So
long as men continue to ask the question, 'are we better or
worse off and by how much?' and continue to regard as useful
the struggle to provide them with an answer, however imper-
fest, we are stuck with the task."\(^\text{13}\)

Yet, the question can still be raised: how does one
reconcile all of this with the fact that experience shows
that many private enterprises obviously do not seek to maxi-
mize profits?

In summarizing the Austrian economic analysis it was
pointed out that people seek to maximize their subjective

\(^{13}\)Charles E. Johnson, "Management's Role in External
Accounting Measurements," Research in Accounting Measurement,
satisfactions. This does not mean that each investor seeks to maximize the monetary return from his business investments. Those investors, whether connected with small or large undertakings, who prefer to sacrifice a certain amount of potential profits in order to achieve other ends are not prevented from doing so in the market economy. A current example of this type of choice is provided by the so-called "peace stocks" which have attracted certain investors who oppose the American involvement in Viet Nam and who refuse to invest in firms whose output is in any way directly connected with that military conflict. The assumption of profit maximization is a carryover from classical economic thought which, as previously pointed out, suffered from the lack of the subjective theory of value. Accounting does not need to grapple with this question since its task, so long as profit determinations are significant, is to determine profits irrespective of the extent to which investors seek to earn them. The model of the market economy in no way depends upon the assumption of profit maximization. Neither does a theory of accounting require this assumption.

There may be cases in which managers are pursuing other-than-profit goals because the investors, not the managers, have established these other ends. However, experience certainly indicates clearly that most corporate investors prefer to earn as much return from their investment as they can in light of their inclination to undertake a certain subjective risk. The question whether the quest for profits is
oriented towards the short run or the long run is, like the question of maximization, a personal and individual matter which precludes generalization. Some investors are more concerned with the immediate future while others are concerned with the more long-run effects of their actions.

2. The Goal of Psychological Income

Prince, Bedford and Dopuch maintain that the managers of large corporations are adopting multiple goals for the corporate enterprise and that included in these aims is that of psychic income. Accounting is challenged to determine the extent to which the company periodically succeeds or fails in this endeavor; psychic income is to appear in the income statement.

From the viewpoint of the investors or entrepreneurs, managers are employees of the corporation. This means that managers are a form of productive resource hired by the producer. However, unlike non-human economic resources, employees have the distinctively human characteristics of feeling, values, ideas, personal goals, and the other qualities that comprise individual personalities. As a result, in seeking the services of people for the purpose of generating monetary profits, investors recognize that non-monetary inducements in many cases are as important as monetary ones.

Again, in prior analysis of the various decisions on the part of market participants, it was stressed that these choices are not necessarily a matter of considering only the
monetary aspect of the various alternatives. The whole meaning of the subjective theory of value is that what really counts in any given course of action is the satisfaction which the actor expects to result from his action. Satisfaction can be derived from all kinds of sources, not just from monetary rewards. The point here is that investors realize that non-monetary inducements often are necessary to obtain the effort contributing to more profitable results of the enterprise operations. Thus, symbols of authority and status, situations which create a feeling of worthwhileness or group identification, and other means of producing subjective satisfactions are perfectly in keeping with the profit motive of the entrepreneurs. However, it is important to emphasize that the distinction between financial and non-financial forms of compensation should not detract from the fact that subjective or psychic satisfaction applies to both categories. That no manager works for free is proof that every manager attaches subjective satisfaction to the receipt of a certain amount of monetary compensation.

The recognition by investors that managers prefer some forms of non-monetary compensation to additional amounts of monetary compensation in no way suggests that one goal of the enterprise is to generate a psychic income along with a monetary income or profit. Granting non-financial forms of compensation is essentially no different from paying money wages and salaries; both are carried out in order to obtain productive services in return for the subjective satisfaction
which they yield. The aim of business investors, in bringing together human and non-human resources, is to generate money profits. Keeping in mind that money profits require customer revenues which exceed money costs, it is clear that there is no direct correlation between the psychic income received by managers and the money profits obtained by investors. In other words, excessive money spent to please managers psychologically would reduce profits. One would be more correct to say that, in connection with the immediate goal of money profits and associated subjective satisfactions, the goal of business activities is to create economically and profitably subjective, psychic satisfactions for consumers. If the psychic satisfaction of managers is held up as a goal of business, then one obliterates the conceptual difference between production and consumption and the essence of an exchange process based upon the benefits of the division of labor.

As to the contention that managers are setting the various non-financial and psychological goals, two basic points are pertinent. One is that such decisions might fall legitimately within the scope of discretion which the owners have granted top officials in attending to detailed and subordinate plans and actions. In this case, the effect of these decisions is to further the profit aims of the investors in the same way that managerial discretion is permitted regarding other specified areas of activity. Investors hardly need to be concerned with decisions dealing with shrubbery
around factory and office buildings, company outings, the lavish furnishings of a limited number of executive offices, and who is allowed to enjoy the special privileges of convenient washrooms and parking spaces.

A second point is the possibility that managers are overstepping their bounds in the establishment of unauthorized non-financial ends for themselves. This does not make such aims the goals of the firm; it only means that they are choosing to pursue these aims irrespective of the profit goal of the investors. It serves to illustrate the fact that investors are not able always to obtain resources that are perfectly suitable for their objectives. Just as a producer may discover that a certain machine is less effective than he had expected and desired it to be, so might corporate investors have to live with the fact that many top executives choose to take advantage of their decision-making authority. The problem is far more complicated in the case of employees as compared with machines because human resources possess their own personal aims and desires. The divergence in the actions of employees from the investor goal of money profits is an inherent element in the employment of human resources. It does not make the goal of managerial satisfaction an objective of the business enterprise.

Since profits require customer revenues in excess of money costs, over time the market process is able to cope with this conflict. Those corporations which permit executives to incur expenses which are excessive in terms of
customer revenues cannot continue to attract funds from investors. Resources cannot command prices in excess of their expected marginal revenue product. Managers tend to receive income commensurate with the value of their ability to carry out the responsibilities and decisions assigned to them.

One of the vital benefits of accounting, as Mises has pointed out, is that it permits the reliance upon managers to perform certain decisions and tasks. Through relevant accounting data, their effectiveness is revealed. This exemplifies the contribution which accounting provides to the process of resource allocation.

The attitude on the part of managers as well as observers that one of the goals of the large corporation is to provide them with psychological satisfaction is due to the failure to follow a "methodological individualism" in their thinking about matters in the social realm. They erroneously conceive the corporation as a distinct entity existing apart from the actions and aims of individual people. The enterprise is perceived as having its own ends and values. This form of ascribing a separate and physical reality to a set of interrelationships is what McQuire refers to as the "holistic" view of business enterprises. As McQuire describes it: "The holistic approach attributes to the aggregate a type of Gestalt quality; it creates a group mind, a singleness of character, an additional entity."¹⁴

cited other examples of this conceptual realism in the use of certain biological analogies in the explanation of firm behavior. By conceiving the corporation as a real and whole entity, goals are identified with the entity and not with individual people. Thus, without ever really explaining why, it is held that the corporation has several express goals including yielding its profits to investors, providing psychic income for employees, and contributing to the alleviation of social problems. This rationale leads to a justification in the minds of managers of pursuing such other-than-profit goals.

This matter of conceptualizing the business organization as an integral whole has appeared in accounting thought in connection with the so-called "entity concept." Although this term has been used with two fundamentally different meanings or connotations, one meaning has clearly been that of ascribing a separate and real existence to the organization. Gynther supplies the following description of the accounting concept of the business entity:

The holders of this concept see the entity as something separate and distinct from those who contribute capital to it. They see the assets and liabilities as being those of the entity itself and not those of the stockholders or proprietors. As profits are earned by the entity, they become the property of the entity; they accrue to the shareholders only if and when a dividend is declared. It follows that any undistributed profits remain the property of the entity and constitute part of the entity's
"equity in itself." ... 15

Other manifestations of this view in accounting thought are illustrative. One theorist maintains that dividends are a cost of advertising or, perhaps, of insurance in augmenting the survival of the entity. 16 Another has stated that "the enterprise exists apart from any of the participants" and that "the stockholders in an enterprise and their rights are subsidiary to the organization and its survival." 17 Gynther, in endorsing the entity concept for accounting purposes, states: "In accounting we should be concerned with expressing the truth ... about the social unit to which accounts or reports are related. ..." Also, "members of the various subcoalitions interested in the firm depend on the results of the firm (entity) and its survival, and therefore the focus of attention is (should be) on the entity itself, and not on any particular member or subcoalition." 18 Paton has stated that "... the existence of a distinct business entity is something which the accountant almost universally assumes. The unit of organization with which he is chiefly


18 Gynther, op. cit., p. 289.
concerned . . . is the specific business enterprise . . . the assets are the properties of "the business," and the equities are its ownership and obligations."\(^1^9\)

Gynther thinks that most accountants do not subscribe to this view of the business organization but rather see the assets and liabilities as belonging to the owners. The latter view is referred to as the "proprietary concept." He hypothesizes that accountants generally follow the proprietary view because certain outside influences give them very little choice. He thinks the viewpoint taken with respect to the independent audit slants the education of accountants away from the entity concept. He also attributes their proprietary view to their adoption of parental values which allegedly reflected the fact that their parents were stockholders. And finally, the common view of accountants is also traced to the proprietary concept adopted by the accountants' clientele comprised of owners of small corporations, proprietorships, and partnerships. These individuals are believed to work so closely with their business affairs that "it is difficult for many to separate, in their subconscious, their business from their private interests."\(^2^0\) This orientation is said to represent another source of influence upon the position taken by most accountants. Needless to


\(^{2^0}\) Gynther, op. cit., p. 283.
say, the analysis of why people hold to a given concept has nothing to do with determining whether the concept is valid or not.

Gynther suggests that the trend towards more and more separation of management from "ownership" could be the cultural change advancing the entity concept, even for sole proprietors. Presumably, this trend would likewise shift the view of accountants. He holds that management of large corporations, especially top management, subscribes to the entity concept. The higher up the echelon, the stronger the acceptance of an entity view. This is precisely the basis established at a previous point to explain the adoption of multiple corporate goals on the part of managers.

In an effort to resolve this question concerning the view of the business organization, it is helpful to reiterate the remarks of Mises which manifest the "methodological individualism" underlying this study:

Some of the individuals' actions are directed by the intention to cooperate with others. Cooperation of individuals brings about a state of affairs which the concept of society describes. Society does not exist apart from the thoughts and actions of people. It does not have "interests" and does not aim at anything. The same is valid for all other collectives. . . . For the collective has no existence and reality but in the actions of individuals. . . . The only way to a cognition of collectives is the analysis of the conduct of its members.

Since the corporation does not act, the corporation has no goals. Since only individuals act, only individuals have goals. The terms corporation, business enterprise, and business organization can be used meaningfully only as references
to organized interrelationships of individuals' actions and goals. There is a collective only in the sense that persons have chosen to cooperate and interact with one another based upon an agreed arrangement of activities in the pursuit of their own goals. The attempts to determine the "behavior of the firm" are futile. The profit goal is the goal of investors and not of the firm; monetary and non-monetary forms of compensation are goals of employees and not of the corporation. Thus, instead of speaking in terms of "goals of the corporation," one should speak along the lines of "goals served through the corporation," i.e., goals attained through a cooperative relationship among people. In the words of Husband: "For purposes of economics and accounting, the corporation might well be viewed as a group of individuals associated for the purpose of business enterprise, so organized that its affairs are conducted through representatives." 21

The "entity concept" as previously described seems to be likewise unacceptable and untenable in accounting thought in the light of the Austrian approach. Accounting thought can be useful only if oriented towards the goals of acting people. However, another meaning or connotation is associated with the term "entity concept" in accounting thought and practice, and this meaning is actually not incompatible

with the "proprietary concept." This refers to the recognition of a distinct sphere of activities, or "entity," the results of which need to be reported to certain persons interested in the outcome of those particular activities. Thus, the expression "separate entity concept" is explained as the assumption which enables the accountant to report on the affairs of the business area separate from the private affairs of the people concerned. This meaning is indicated in the following explanation of the "proprietary concept": "The business is merely a segregated portion of their (the owners') financial interests, accounted for separately because it is convenient or necessary for various reasons to do so."  

Husband observes the use of a similar meaning in traditional accounting practice: "The accountant has eagerly accepted the entity theory, primarily, one suspects, because of its definiteness in circumscribing the business as an enterprise and thus separating business from personal transactions and the transactions of one business from those of another."  

Gynther prefers to call this position the "entity convention" in contrast to the "entity concept." This second connotation of the "entity concept" is valid and essential to useful accounting. It serves to delimit the area of cooperative activities which are to be described in

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23 Husband, op. cit., p. 177.
accounting reports. The term entity should not be used, thus, only in connection with the sphere of activities in which owners have an interest. The term is also meaningful and appropriate with reference to the particular area with which a given manager is concerned.

Even if goals reside only in the minds of individuals, the question still remains as to whether accounting theory should be extended to consider the need to report the extent to which the goal of obtaining psychic satisfaction or income on the part of employees has been achieved. That is, if it is proper for accounting to report financial position and profits to investors who pursue a profit goal and to report aspects of these to managers who perform subordinate entrepreneurial tasks, should not accounting report psychological income to those who pursue this goal?

As stressed throughout this study, psychic satisfaction is subjective and personal. The market process leaves it to each individual participant to take whatever possible actions he deems will yield him the greatest satisfaction. Unlike money profits, the psychological satisfaction that results from the activities of a business enterprise does not culminate in some aggregate of divisible and comparable units. Although the determination of total money profits which can be subjected to a prorata distribution is possible, there is no possibility of determining some total psychic income which is to then be assigned to particular people. Psychological satisfaction is experienced; it is not stored
up in some form for future enjoyment. And since it is subjectively experienced by each individual, there is no need to report it to those who seek it. Each person knows about his experience; he does not need some outsider to inform him of his achievement in this area, even if he could.

This is not the case with investors and their goal of money profits. The result of money profits is a result which occurs outside of them and which, as a result, they desire to be determined and reported to them. Since they can determine their individual share of the total, the determination of total money profits is useful. It is also useful to stockholders and to executives who have some discretion over actions taken to generate profits to be informed of specific aspects of the profit picture. However, because psychic income is entirely a personal matter, the summation of all employees' subjective income would be meaningless to any given individual. What counts for him is his own unique income, and he already is well-informed about this. It should be stressed that although accounting can determine the money profits earned by investors, this determination in no way indicates the psychic satisfaction which can be associated with such money income.

It is of no avail to base the determination of psychic income upon the premise that employee satisfaction is a means to money profits. Besides admitting that psychic income is not a goal of the business activity but instead is a means to another goal, this premise is not valid since empha-
sis upon employee satisfaction can lead to expenditures that impair rather than enhance money profits. The task in employing human resources in the search for profits is to ascertain the necessary money costs of whatever forms of compensation, monetary and/or non-monetary, that the employees consider sufficiently compensatory and satisfying to perform certain duties. The question as to what types of non-financial inducements are necessary to supplement salaries and wages in obtaining performance is a question of human motivation and is the concern of professional psychologists. Even for them, it is not a matter of determining or measuring psychic satisfaction.

The subjectivity of psychic satisfaction precludes any measurement of the success of this goal. The following statements serve to point out this ultimate obstacle to any accounting for psychic income:

It is certain that every act of preferring is characterized by a definite psychic intensity of the feeling it implies. There are grades in the intensity of the desire to attain a definite goal and this intensity determines the psychic profit which the successful action brings to the acting individual. But psychic quantities can only be felt. They are entirely personal, and there is no semantic means to express their intensity and to convey information about them to other people. There is no method available to construct a unit of value.

The frantic and vain attempts to measure intensive psychic magnitudes in psychology and in economics would disappear if it were realized that the very concept of measurement implies the necessity for an objective extensive unit to serve as a measure. But

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24Mises, op. cit., pp. 204, 205.
the magnitudes in consciousness are necessarily intensive and therefore not capable of measurement. Measurement, on any sensible definition, implies the possibility of a unique assignment of numbers which can be meaningfully subjected to all the operations of arithmetic. To accomplish this, it is necessary to define a fixed unit. In order to define such a unit, the property to be measured must be extensive in space, so that the unit can be objectively agreed upon by all. Therefore, subjective states, being intensive rather objectively extensive, cannot be measured and subjected to arithmetical operations. And utility refers to intensive states.

3. The Goal of Sociological Income

Some serious doubts have been raised about the proposition that corporation managers are departing from the investor profit goal in giving attention to so-called "social goals" and thereby adhering to the alleged "social responsibility" of large corporations. Katz points out that corporate gifts to charity, for example, can be made with the intention of enhancing consumer goodwill as well as achieving important tax effects for investors and hence, can involve no departure from the profit goal. In this case, there is no concern over a sociological income. He also shows that, with respect to output and prices, it is well-nigh impossible to ascertain


whether managers are adopting social goals because of the lack of even general standards for determining what is in the interest of the public in general. For example, the concept of "fair prices" is vague and empty and leads to a variety of possible prices depending upon whether one takes the viewpoint of investors, consumers, employees, or suppliers. Katz also suggests that the fact that managers do not ignore the reaction on the stock market to company earnings and dividends is another indication that there has been little departure from the profit goal.

However, without conclusive proof that corporate managers have not forsaken the profit goal for so-called "social goals" and in recognition of the fact that many observers insist that corporate officials do have a "social responsibility" beyond serving the interest of the investors, the proposition of accounting for sociological income warrants examination.

The contention that the corporation has a responsibility to pursue certain social goals is based upon viewing the business as a separate and distinct entity in the same way that the adoption of the goal of psychological income arises. Gynther has come to the same conclusion: "... it seems to this writer that the social responsibility ideas concerns the way the entity acts and the way it goes about carrying out its activities."\[^{28}\] Suojanen, who it was shown holds clearly

\[^{28}\]Gynther, op. cit., p. 278.
to the "entity concept" when he states that "the enterprise exists apart from any of the participants," exemplifies the connection between this position and the notion of "social responsibility" in the following statement: "If the income generated in the enterprise is to be analyzed on the basis of social considerations, then the traditional type of income statement is insufficient."\(^{29}\)

This concept of the "social responsibility" of business is incompatible with the workings of a market process. Actions are taken in the market economy based upon a system of market prices which guide the allocation of resources to those uses which are most desired. This process is driven by the search on the part of entrepreneurs for money profits. As explained in prior economic analysis, this search for money profits is necessarily a search for misallocated resources. Resources used in lines which can be expected to lead to entrepreneurial losses are diverted to other uses which are believed to promise profits. Misallocations of scarce resources are thereby corrected. Thus, reference was made to the "social role of profits." The profits of business arise through serving the wants of the consuming public. The market process provides the members of a society with a mechanism by which decisions about the use of scarce resources can be reached on a rational and coordinated basis. Each actor is left to decide for himself which goals and

\(^{29}\)Suojanen, op. cit., p. 395.
which courses of available action he will take in his capacity as a consumer, employee, resource-owner, and investor. Interactions occur in the market because people are able to attain their own ends through cooperating with others who also seek certain goals. Exchanges are mutually beneficial.

The problem with adopting "social goals" for private corporations is twofold. One difficulty lies in the vagueness and abstractness of the idea of "social responsibility." The idea is usually put forward in terms of the goals or interests of "society as a whole." Yet, it is never really clear just who comprises this whole. As mentioned above, people act in several different roles, and benefits to one group can cause detrimental effects upon others. What may benefit people as workers, such as the goal of "reasonable" or "fair" wages, may not be considered "fair" to consumers who are unable to pay the prices necessary to recoup artificially set wage rates. The decision not to relocate a plant and capitalize upon reduced production costs because of a sense of "social responsibility" to the company's workers is detrimental to the investors and consumers and to the interest of those living in the area of the proposed relocation. "Fair" prices to suppliers and "fair" prices to consumers call for prices on the high side on one hand and prices on the low side on the other.

Obviously, the idea that society has goals is another example of ascribing a distinct reality to a collective which consists in cooperative and interacting individuals.
The market process requires no assumptions about the goals of society as a separate entity. It presupposes a framework of law and custom within which individuals seek their own personal goals; price signals guide actions towards various preferences. Society is a social arrangement and not a separate entity; the presupposed framework of law and custom enables this arrangement of cooperation to operate. In only the sense that this framework does enable social cooperation to take place to the benefit of all participants is there any meaning to the expression "society as a whole." Thus, one can meaningfully say that the system of law is essential to society. In the same sense, one can say that the market process and its mainspring, entrepreneurial profits and losses, serve the interests of "society," i.e., the interests of all individuals choosing to engage in cooperative activities.

Thus, it is not at all clear what other goals besides the efficient allocation of resources are to be adopted. Neither are there any criteria for determining the priority of alternative objectives and for establishing the limit to which each alternative is to be sought. And it must be remembered that these guides are necessary not only in general terms, but to be effective, they must be furnished in terms of each specific business situation. Thinking back to earlier discussion of economic calculation, it was shown that its great advantage was that it alleviated the problem of division of labor and knowledge through providing a common
denominator and a system of coordinative communication. The idea that managers should achieve various social goals is devoid of any indicator of such needs or their fulfillment. Thus, there is no indication of what constitutes sociological income which accounting is supposed to determine.

The confusion as to what social goals the corporation officials should adopt would be avoided if the responsibility for carrying out actions designed to benefit the working of social cooperation, or society, were placed solely in the hands of government officials. In other words, incorporate such concerns within the legal framework. With such a clear demarcation of who is and who is not responsible for such aims, corporate managers could abandon the notion that they were hired to contribute to results other than money profits. In fact, it is only logical to expect and demand that "socially responsible" businessmen would come under the surveillance of public officials to assure us that they are adequately meeting their responsibilities. As Hayek has stated:

Yet not the least serious consequence of such a development would be that such powers would not long be left uncontrolled. So long as the management is supposed to serve the interest of the stockholders, it is reasonable to leave the control of its action to the stockholders. But if the management is supposed to serve wider public interests, it becomes merely a logical consequence of this conception that the appointed representatives of the public interest should control the management. The argument against specific interference of government in the conduct of business corporations rests on the assumption that they are constrained to use the resources under their control for a specific purpose. If this assumption becomes invalid, the argument for exemption from specific directions by the represent-
atives of the public interest also lapses.\textsuperscript{30} Friedman has expressed the same conclusion: "If businessmen are civil servants rather than the employees of their stockholders then in a democracy they will, soon or later, be chosen by the public techniques of election and appointment."\textsuperscript{31} This is why it was stated earlier that the idea of the "social responsibility" of business is incompatible with the workings of a market process. If the activities of business are to be directed by public officials, then there is no operation of a market process and competitive price system to determine the allocation of scarce resources. The authorities will have to come up with some other system by which such decisions are reached. Mason offers this challenge in the following remarks:

But, if profit maximization is not the directing agent, how are resources allocated to their most productive uses, what relation have prices to relative scarcities, and how do factors get remunerated in accordance with their contribution to output? Assume an economy composed of a few hundred large corporations, each enjoying substantial market power and all directed by managements with a "conscience." Each management wants to do the best it can for labor, consumers, suppliers, and owners. How do prices get determined in such an economy? How are factors remunerated, and what relation is there between remuneration and performance? What is the mechanism, if any, that assures effective resource use, and how can corporation managements "do right by"


labor, suppliers, customers, and owners simultaneously serving the public interests?  

One difficulty, then, is the inability on the part of managers to determine specific and clearly delimited social goals and the lack of indicators of their fulfillment. A second problem is closely related to that inability and yet is even more crucial: the fact that a given enterprise is the vital concern of a particular group of individuals whose motivation is not necessarily or usually related to the general welfare of countless other people in the society. Once other goals are superimposed upon the self-determined goals of market participants, the question arises as to how these actors can be relied upon to pursue these other goals. In other words, if investors supply funds to business organizations for the purpose of generating money profits, how can they be expected to continue to invest money in ventures which are not dedicated to their profit aim? It is not reasonable to assume arbitrarily that business enterprises will continue to be established by private investors in cases in which their goal of money profits is deleted from the picture or rendered much less important. Similarly, employees and other resource owners who seek a certain level of compensation cannot be expected arbitrarily to forego willingly this goal so that the prices of consumers' goods will be "more reasonable." Neither can lenders desiring a certain

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return in conjunction with their time value of money and a subjectively determined element of uncertainty be assumed voluntarily to sacrifice their aims for the attainment of other aims. Conflicting goals create a serious dilemma for corporate managers; their devotion to "social goals" requires that they depart from the goals of those who have hired them. Spacek, in referring to the case in which a former President had issued the plea to Business and Labor to help reduce inflation, provides an illustration of this inescapable predicament under the conviction of "social responsibility":

His pleas cannot be heeded because the responsibility for stopping inflation cannot be voluntarily assumed by the leaders of these individual segments of society without violating the specific responsibility inherent in their jobs—that of getting the best treatment and result possible for those they represent. ... Those who manage individual parts of the society cannot be expected to be judicial and paternalistic for the whole society and at the same time be advocates for one segment of it.

It should be realized that the conflict between "social responsibility" and the market process relates to their incongruity as overall pervasive systems. It has been shown that the market process is able to cope with specific instances of managers' acting in conflict with the investor profit goal. These managers as resources cannot command compensation in excess of the expected contribution towards customer revenues, regardless of whether their motivation is "psychological" or "social." It is a task of accounting to

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reveal the extent to which managers fulfill their particular responsibilities.

There is one further point regarding the proposal that accounting determine the psychological and sociological income generated by the corporation. The term income is a net concept implying a residual of benefits and costs, of inflow and outflow. As stressed previously, psychic flows of utility and disutility are personal and subjective; there is no way to determine the total satisfaction and dissatisfaction yielded to employees by the corporate undertaking.

As to sociological income, any specific "social" goal has its costs in the form of alternative "social" ends foregone. To derive a net of benefits over costs, some means must exist to compare the benefits or inflow of social utility against the cost or sacrifice of social utility for particular actions taken. Yet, there is no basis for comparison, no common denominator. The advantage emphasized in previous discussion of economic calculation was its providing a basis for comparison of diverse resources and resource uses.

34 The notion that a corporation has "social goals" is not to be confused with the complaint that private businesses disregard so-called "social costs" or external effects of their actions. Yet the two matters are somewhat related. The accounting records do not reflect external effects such as the costs of polluting air and streams since such costs do not fall upon the business activity but upon people outside of it. Consideration of "externalities," like that of "social responsibility," ultimately is a governmental problem which should be attended to by means of the legal framework within which the market process operates. Thus, if pollution were illegal, costs of actions to prevent such would show up on the books.
It was pointed out that even socialist theory has recognized the need for money prices in allocation decisions. Money revenues and money costs can be compared and money profit ascertained.

Actually, since society necessarily refers to people, sociological income or social utility and disutility must pertain ultimately to personal satisfaction and dissatisfaction. Thus, the analysis seems to have come full circle back to the problem of not being able to measure the psychological satisfaction and dissatisfaction experienced by individuals.

The analysis presented in this study then suggests that accounting has no role or function under the arrangement of a market economy beyond the domain of economic calculation. However, this area is vital to the operation of the market process and the rational allocation of scarce resources. Since this process is beneficial to all members of the market society, one can meaningfully say that accounting performs a social role. That economic calculation is of prime significance to investors does not mean that accounting is to be partial towards stockholders. One must remember that monetary profits entail the correction of resource misallocations; entrepreneurial profits perform a social role. And it must not be overlooked that in the market economy there is ample room for monetary losses; the sooner these are detected and reported, the sooner their underlying misallocations can be corrected. Chambers has stated succinctly
in a similar vein the fundamental concern of accounting:
"... wherever there is an economic problem, there is an
accounting problem. The problem of serving wants efficiently
is the basis for the demand for information of which account-
ing information is a significant class. . . ." \(^{35}\)

The fundamental concepts of economic calculation, the
concepts of capital and income, represent the essential tools
of accounting. For the purposes of this study, capital is
defined as the "sum of the money equivalent of all assets minus
the sum of the money equivalent of all liabilities as dedi-
cated at a definite date to the conduct of the operations of a
definite business unit." The difference between capital at
the beginning of the period and capital at the end of the
period is income. This change in capital between two points
in time excludes any withdrawals or additional investments
during the period in which the income is generated. Since
income refers to entrepreneurial profits and losses, it can
be positive or negative.

Accounting then is essentially concerned with the
monetary significance of the properties and progress of a
particular "entity" or sphere of enterprise activities about
which certain decision makers seek information. Investors\(^{36}\)

\(^{35}\)R. J. Chambers, "The Conditions of Research in Ac-
counting," \textit{op. cit.}, p. 39.

\(^{36}\)There is a conceptual difference between an invest-
or or entrepreneur and a creditor. The investor pursues
entrepreneurial profits in the face of business uncertainty;
the creditor seeks only an interest return reflecting the
and managers are the principal decision makers whom accounting seeks to serve in the market process. Investors determine the general direction in which the enterprise activities take while subordinate entrepreneurial decisions are entrusted to managers. It then follows that the financial information which accounting furnishes varies in detail and format according to who is being informed. The reporting of capital and income to investors is provided in comparatively general terms involving meaningful classifications of assets, liabilities and stockholders' equity in capital and the revenue and expense events determining income for the period concerned.

Financial information pertaining to these same matters is also provided selectively to managers but in greater de-

time value of his money. In the ERE, there would be creditors but no investors or entrepreneurs. In the real world of pervasive uncertainty, these two roles are always combined in varying degrees, depending upon different arrangements and subjective degrees of uncertainty, in every instance of supplying funds for business use. Stockholders earn an implicit interest return while "lenders" earn an implicit element of entrepreneurial profit as a result of an "interest" rate which exceeds the pure rate relating only to the time value of money. The term "investor" then is used in a functional sense and theoretically embraces both stockholders and creditors. However, it is expedient to think principally of stockholders in connection with the term "investors" since the uncertainty they face is much more predominant than that faced by lenders. It is the element of uncertainty which necessitates that financial information be reported to investors; decisions would be unnecessary in a world of certainty. This suggests that, due to the difficulty of imputing a pure market rate of interest for time preference, the return to stockholders be viewed as profits while the return to creditors be considered contractual interest.
tail in conjunction with the more detailed nature of their decisions. The term "selectively" means that the information given any particular manager is designed to facilitate the performance of his decision-making responsibilities by relating only to the sphere of activities or "entity" with which he is concerned. In this case, the properties reported on might involve certain particular machinery and equipment the value of which is significant to his tasks; events reported to him could involve specific expenses or revenues which pertain to his sphere of responsibility. Of course, the more limited is the manager's decision-making responsibility or discretion, the more specific and limited is the information furnished to him. This need for a variety of detailed data for particular decisions, however, does not mean there are alternative determinations of capital and income. It merely means that more detailed figures relating to capital and income can be furnished.

The remainder of this study will deal with certain implications of the Austrian concepts of capital and income for the preparation of financial statements issued to investors and creditors. Accounting thought now involves many views concerning the concept of income and its correlative, asset valuation. An effort will be made to explore the controversy over these questions in the light of preceding analysis. The search for a theory of capital or wealth and income determination will be predicated upon the essential proposition derived from the Austrian theory: accounting
performs a vital social role in the rational allocation of scarce resources in a market economy. The establishment of capital and income are thereby considered necessary aspects of economic calculation, the indispensable means by which resources are devoted to the most urgent wants of individuals in the market society.
Part Three

Capital and Income

IX. CAPITAL AND INCOME DETERMINATION:
ANTICIPATORY CALCULATION

Austrian theory views the determination of income as being derived from the determination of capital at two different points in time, excluding the effects of additional investments and of withdrawals. Thus, the concept of income is the correlative of the concept of capital, and income determination is unavoidably involved in the problem of asset valuation. This relationship between income and capital means that the manner in which income is disposed of or used is not relevant to its calculation. Income is not restricted to the amount of capital increase which is withdrawn and devoted to private consumption purposes. If some or all of the incremental increase in capital is plowed back into the business for productive use, the amount of income is still the same. However, at the same time, invested earnings become a part of the next period's beginning capital which will enter into the determination of next period's income. Before a decision is reached concerning the disposition of periodic income, income is embedded in the capital balance as it arises throughout the period.

It would seem that the magnitudes of capital and in-
come are not dependent upon whether their determinations are reached by taking an aggregative approach in which total capital is determined all at once or whether the calculations are based upon the recognition of incremental changes in capital as built up through the period. Double-entry record-keeping affords a means by which incremental effects upon capital can be accumulated throughout the operating period. The choice of approach has a definite effect upon the extent to which periodic reports can disclose details about the sources of change in capital culminating in the total income figure. For example, the aggregative method will not reveal the fact that an income of, say, $1000 resulted from a particular gain of $1500 and a particular loss of $500; the recognition of incremental changes can provide such disclosure if it is desired. Since one of the purposes of determining past profits is to serve instructively as a guide in formulating expectations and plans, the breakdown of the earnings figure into meaningful elements and component factors appears to be practically indispensable. Therefore, some form of recording specific effects upon capital throughout the period is more efficacious for entrepreneurial use than is single-step determination based upon the aggregative approach.

However, since the Austrian analysis does not delve into the question of how to classify the elements making up the income figure, the principal concern of this study is the question how capital and changes in capital are to be
determined, especially regarding the asset side of the capital determination, in view of the Austrian theory. This question is the central problem regardless of which method is employed to arrive at the magnitudes of total capital and total income, and the answer should apply with equal force to either approach. That is, the same rule of valuation must apply to an incremental approach and to the aggregative approach if the same capital and income magnitudes are to result. The definitions of capital and its correlative, income, as established for the purpose of this study, are not explicit about how the money equivalent of assets entering into the determination of capital is to be determined. It is assumed herein that the need for periodic determinations of capital and income on the part of entrepreneurs is met by the balance sheet and the income statement.

As mentioned at the outset of this work, emphasis upon the monetary magnitudes of capital and income means that the question of "real" income and the problem of changes in the general price level are not given major attention. This choice of emphasis is not meant to underrate the seriousness of the problem of reporting the effects of present-day inflation. It is due entirely to the need to limit the scope of this study.

1. The Relationship Between Accounting and Economic Calculation

Earlier analysis suggests that accounting falls within
the sphere of economic calculation and as a result performs an important part in the allocation of scarce resources. Yet, for reasons to be discussed below, accounting and economic calculation cannot be considered identical. Understanding the relationship between the two is necessary in developing further the role and limitations of accounting.

As previously explained, economic calculation encompasses two basic realms of monetary computation. First, there is the retrospective establishment of the results of past events and actions, including the determination of past profits or losses, i.e., income. The second realm is that of anticipatory calculation which refers to the projection of expected monetary effects of certain courses of action which are under consideration by those involved in the performance of entrepreneurial tasks. The essence of entrepreneurial activity is that it is forward-looking as resources are acquired in the aim of generating money revenues sufficiently in excess of money costs. The market prices of resources are derived from the contribution which the resources are expected to make to future revenues. As Jevons stated, "in commerce bygones are forever bygones and we are always starting clear at each moment, judging the value of things with a view to future utility. Industry is essentially prospective, not retrospective."\(^1\) Retrospective calculations

usually are useful in the formulation of anticipatory calculations in addition to facilitating decisions concerning the ordering of consumption and the maintenance of capital.

The so-called "economic" concept of income views the wealth of a firm at any given time to be the total discounted net cash receipts expected in the future. Income is determined by taking the difference between the capitalized value of expected future cash flows at the beginning and the end of the period concerned.\(^2\) Under this income concept, the retrospective determination of income is intertwined with anticipatory calculations; there is no clear line drawn between what can be considered history and what lies in the future. In fact, this concept of income yields a determination of past income which is dependent upon the outlook for future cash receipts.

Since the theory relied upon in this study submits that accounting falls within the sphere of economic calculation and since anticipatory calculations form a vital part of economic calculation, the question to which the present discussion is directed is whether or not the accountant should

\(^2\)The term "economic" income here is the label which is attached in the literature to this particular concept of wealth and income. The term should not be taken to relate in any way to the economic analysis employed in this study or to the Austrian School of Economics. See Sidney S. Alexander, "Income Measurement in a Dynamic Economy," in Five Monographs on Business Income, Study Group on Business Income of the American Institute of Accountants, New York, 1950, pp. 1-97; Emily C. Chang, "Business Income in Accounting and Economics," The Accounting Review, XXXVII, No. 4 (October, 1962), pp. 636-44.
look to anticipatory valuations for the determination of capital and income. What does the Austrian theory suggest as the answer to the question should the accountant's Statement of Financial Position or Balance Sheet and Income Statement incorporate projected cash flows as their basis?  

In preceding sections of this study, discussion of entrepreneurial activity and profits and losses has revolved around one crucial factor: uncertainty. Future market data are uncertain and anticipations are invariably personal and subjective. Entrepreneurial profits and losses arise only because of the lack of certainty. The imaginary ERE assumes away uncertainty and under this condition resource prices are equal to marginal revenue products. The driving force of the real market is the search on the part of entrepreneurs for resource misallocations. Misallocations persist because knowledge is imperfect, and the emergence of profits and losses acts as a signal to render knowledge about resource usage, at least temporarily, less imperfect. Adjustments to change are not coordinated and automatic:

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3 It is important to distinguish between the proposal that the determination of actual income and wealth be based upon expectations and the idea that expected income be reported as supplementary information to the statements of income and financial position which are to be predicated upon historical data. The latter view does not advocate the use of discounted future cash flows in the basic statements. See W. W. Cooper, N. Dopuch, and T. F. Keller, "Budgetary Disclosure and Other Suggestions for Improving Accounting Reports," The Accounting Review, XLIII, No. 4 (October, 1968), 640-48; and Rudy Schattke, "Expected Income--A Reporting Challenge," The Accounting Review, XXXVII, No. 4 (October, 1962), 670-676.
In an economic system in which every actor is in a position to recognize correctly the market situation with the same degree of insight, the adjustment of prices to every change in the data would be achieved at one stroke. It is impossible to imagine such uniformity in the correct cognition and appraisal of changes in data except by the intercession of superhuman agencies. We would have to assume that every man is approached by an angel informing him of the change in data which has occurred and advising him how to adjust his own conduct in the most adequate way to this change. Certainly the market... is filled with people who are to different degrees aware of the changes in data and who, even if they have the same information, appraise it differently. The operation of the market reflects the fact that changes in the data are first perceived only by a few people and that different men draw different conclusions in appraising their effects. The more enterprising and brighter individuals take the lead, other follow later. The shrewder individuals appraise conditions more correctly than the less intelligent and therefore succeed better in their actions. 4

Due to the emphasis given to factor of uncertainty, it appears untenable to base the accountant's determinations of capital and income upon expectations of the future. The Austrian view suggests that the concept of economic calculation is a broader concept than that of accounting. This point arises from the implication that the function of accounting conceptually must be restricted to and identified with the sphere of retrospective economic calculation, i.e., the retrospective establishment of the results of past events apart from future expectations. Economic calculation is thereby inclusive of accounting, but at the same time, with its realm of anticipatory calculation, extends beyond accounting. The "economic" concept of income is inappropriate

4Mises, Human Action, op. cit., p. 328.
for accounting because such a concept makes past income dependent upon anticipatory calculations.

It is emphasized that the anticipatory valuations which are to be eliminated from the accountant's reports are the subjective opinions or hunches regarding the future of the particular firm for which capital and income are being determined. The basis for excluding anticipatory calculations from the reports of the accountant rests upon several problems which arise from the analytical stress upon the factor of uncertainty.

Decision-making and Accounting Perform Different Tasks

The task of anticipating the results of alternative decisions is logically the responsibility of the decision-maker. The role of making decisions and thereby initiating necessary actions designed to achieve certain results is inherent in the decision-making function. In order to reach a particular decision, the decision-maker cannot avoid thinking about or projecting the results that he anticipates will emanate from his actions. It is not meaningful to picture a case of a person who, in deciding upon a specific course of action, makes no attempt to arrive at his own expectations concerning the impact of his actions. And in fixing his view of the future, it is also his task to take into consideration what he expects to be the ultimate effect of past actions whose impact he considers to be relevant but not yet final and complete. It makes no difference who effects a
given decision, the nature of this activity is always the same. The decision-maker ultimately must fall back upon his own discretion regarding the choice which is finally reached. This is true despite the fact that he may have received considerable advice and enlightenment from others.

A capacity which is opposite in nature from that of making decisions is one in which the activities carried out are directed completely by plans and rules already established by someone in a decision-making capacity. It is true that a person who chooses to place himself in the position of following the instructions of another person has made a decision. Having made that choice, he then engages in specific activities whose propriety is determined by someone else so long as he remains in such a capacity. In terms of his position he could not be legitimately referred to as a decision-maker. In practically every type of job, however, at least a slight amount of discretion may be exercised by the job-holder. Thus, conceptually almost everyone performs in the role of decision-maker to some extent. Yet it is expedient to characterize as decision-making in nature those positions in which the person is called upon to exercise a relatively wide range of discretion. The distinction is really a matter of degree only. It is important to realize that only the function of reaching decisions about courses of action to take necessitates judgments concerning future results. It is meaningless to speak of decisions not aimed at success.
The existence of decision situations is the result of uncertainty about the future. The difference between the imaginary ERE and the real world is the fact that in the latter there is no perfect knowledge about the future. The essential role of the entrepreneur and his managerial assistants is to strive to direct resources into the most desirable uses as indicated by their tenuous money calculations. Their anticipations are necessarily subjective and personal due to the comparative uniqueness of each problem and situation and the fact that individuals appraise future prospects differently. This subjectiveness and qualitativeness are the aspects which were seen to distinguish the factor of uncertainty from risk which lends itself to quantification in the form of numerical probability. In a world without uncertainty, there would be no need for deliberation or plans; all events would be automatic. As Mises states: "If man knew the future, he would not have to choose and would not act. He would be like an automaton, reacting to stimuli without any will of his own." Knight has, in effect, expressed the same idea as follows:

With uncertainty entirely absent, every individual being in possession of perfect knowledge of the situation, there would be no occasion for anything of the nature of responsible management or control of productive activity. Even marketing operations in any realistic sense would not be found. The flow of raw materials and productive services through productive processes to the consumer would be entirely automatic. . . . With the introduction of un-

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certainty—the fact of ignorance and necessity of acting upon opinion rather than knowledge—into this Eden-like situation, its character is completely changed. With uncertainty absent, man's energies are devoted altogether to doing things; it is doubtful whether intelligence itself would exist in such a situation; in a world so built that perfect knowledge was theoretically possible, it seems likely that all organic readjustments would become mechanical, all organisms automata. With uncertainty present, doing things, the actual executive of activity, becomes in a real sense a secondary part of life; the primary problem or function is deciding what to do and how to do it.6

Referring to the analysis of the market economy, the concept of decision-making and its correlative, anticipatory considerations, can be related to the realm of economic activity. It is clear that everyone in the market economy, regardless of his particular economic role, is touched by the uncertainty of the future. The laborer, landowner, capital-goods owner, and even the consumer are inescapably concerned with the changing conditions of the market. Each one acts on the basis of assumptions, and not knowledge, about future developments. It is, thus, correct to say that every planning actor in the market economy is an entrepreneur. However, the discipline of economics has always applied a functional definition to the term "entrepreneur," and it is with this meaning that the term is used throughout this study. In this sense, the role of the entrepreneur in striving after profits "consists in determining the employment of the factors of production. The entrepreneur is the man who dedi-

6 Frank Knight, op. cit., pp. 267, 268.
cates them to special purposes." In the sphere of economic activity, the entrepreneurial function is the role which is most characterized by decision-making and anticipatory considerations. His activity epitomizes the non-routine. The existence of the entrepreneurial function, hence of entrepreneurial profits and losses, is completely due to the factor of uncertainty. While there would be laborers, resource-owners, and consumers in the ERE, there would be no entrepreneurs.

The clear distinction between economic functions, as illustrated by the above concept of the entrepreneur, should not be misinterpreted or misunderstood as saying that each person appears only in one role in the market economy. The distinction is not meant to picture the society as being comprised of some people who do all the consuming, others who provide all the labor services, others who only engage in entrepreneurial activities, etc. It is certainly true that many individuals act in several roles. Virtually everyone performs in at least two roles— as a consumer and in some income-producing capacity. Even those who have retired from income-producing activities usually depend upon savings which were accumulated during times when they were earning income. Millions of employees in the United States, who earn wages and salaries, are also entrepreneurs as investors in common stocks. The self-employed businessman often performs in the

7Mises, op. cit., p. 291.
course of a single day the functions of an employee, landowner, entrepreneur, capitalist, and consumer. His total income for a given period of time could be analyzed, at least conceptually, as the sum of wages, rents, profits, and interest.

The fact that each individual acts in several roles does not diminish the usefulness of a functional analysis. In fact, there could be little understanding gained about the workings of the market economy or about the interrelationship of different types of action that occur within it without discerning the function of each kind of action. This point is especially important in the search to determine the role of accounting. The very essence of the idea of specialization and division of labor is that each area of activity has its particular nature and task.

It is not the purpose of accounting to make decisions about the course a business should take. This is the role of the entrepreneur, and his managerial assistants who perform subordinate entrepreneurial tasks, and it is fallacious to equate accountants to entrepreneurs. The entrepreneur can obtain some vitally useful information of a historical nature from the accountant. This information can help provide a starting point in the entrepreneur's anticipations. However, there are many other sources of historical data which serve to assist the entrepreneur in his decisions. Yet the entrepreneur exists precisely because all of these information sources are unable to say just what the future
holds. This is a crucial point. Traditional accounting theory has been on similar grounds with respect to the principle of objectivity which emphasizes that the accountant should not become involved in subjective matters. The ethical rule that the independent accountant should not perform in a manner suggestive that he "vouches for the accuracy" of forecast results is based upon the same idea.

One cannot lose sight of the fact that it is the problem of reaching decisions dealing with an uncertain future that necessitates projections into the future. The decision-maker either seeks to anticipate changes that will occur without his own influence and wishes to adjust his actions to this expected situation; or he plans projects that he expects will change things to his benefit whether or not other factors also produce a change. Accountants qua accountants are not in the position to direct resources into their most promising uses. This does not mean that persons who at certain times carry out accounting duties cannot at other times be involved in the process of drawing conclusions about the future and reaching decisions in light of those conclusions. It is not a question of who is performing but rather what is being performed. As mentioned above, people usually are found in several roles. Yet, the function in which a person is predominantly engaged should not be extended conceptually and arbitrarily to encompass an entirely different function which he may execute also. Some accountants undoubtedly also possess entrepreneurial ability; and of these, some
exemplify this fact in practice. By the same token, many artists, engineers, ministers, professors, and politicians also undoubtedly have and apply entrepreneurial ability. However, for the sake of understanding, one cannot obliterate the various types of endeavors taking place no matter how many people are involved in their fulfillment.

It is understandable why one would be especially inclined to lump together the role of the accountant and the role of the business decision-maker. As already shown, production decisions depend upon monetary calculations—that money provides, as a medium of exchange, the common denominator which enables a more rational allocation of diverse resources. Since accounting has always been concerned with money figures and financial data, the mental slip of ascribing to the accountant the ability and responsibility of anticipating future financial data is not a difficult one to commit. Actually, the inference that preoccupation with historical money calculations produces an insight of reasonable certainty concerning future monetary results would be correct if ignorance about the future were only in the nature of risk and not uncertainty. As has been discussed, risk is numerically and objectively quantifiable in the form of mathematical probabilities based upon extensive statistical data. On the other hand, uncertainty pertains to relatively unique situations which deny the determination of numerical probability. Since the preponderance of business decisions confronts the problem of uncertainty, it is a non
sequitur to view the accountant as having much to say directly about future financial data. His prognostications would necessarily be of a highly subjective nature just like that of everyone else. And due to this fact, decision-makers would still be faced with the task of arriving at their own subjective and qualitative probabilities about future monetary results.

Thus, the accountant cannot claim the matter of anticipating the future as being inherent in and distinctive to his area of service. Without any grounds for assuring the reliability of his particular projections, the accountant's expectations emerge as totally irrelevant for the purposes of solving real problems of uncertainty. If accountants or anyone else could issue correct, mathematically developed anticipations, there would hardly be any place for decision-making as well as entrepreneurial profits and losses. Under such circumstances, the economy would resemble the imaginary evenly rotating economy and all actions would be of an automatic nature.

The distinction between accounting as a process of informing and decision-making as a matter of choosing a course of action based upon future expectations reveals the contradiction of anticipatory accounting calculations. Since planned courses of action are expected to have a certain bearing upon the outcome of the future, reports which incorporate guesses about the future presuppose that the decision-maker has already made certain plans. Yet, reported information pre-
sumably is designed to assist in making plans about future action. Of what use is an earnings figure as a guide to action if it is derived based upon assumptions regarding what actions are to be taken? Edwards and Bell have dealt with this point as follows: "The subjective value attached to the firm's assets at the end of the period is based upon new expectations . . . i.e., it implies that the original plan of operation has already been revised. Clearly the difference between subjective value at the end of the period as expected in the old plan and a new subjective value based upon a revised plan cannot be used as an aid in formulating the revised plan itself."\(^8\) If decisions have already been made, accounting can make no contribution.

Economic analysis presented prior to this point has shown the significance of the determination of past profits or losses. This determination entails the calculation of capital both prior to and after the actions of the period under consideration. The calculation of profit or loss serves two fundamental purposes. It provides a starting point in the planning of future actions to the extent that the actor deems the past an indicator of future developments. And in addition to serving instructive aims, profit calculation resulting from past actions provides the only means by which the actor or actors can ascertain whether or not the capa-

city of the business unit to produce in the future has been impaired. Consumption plans and additional investment plans thereby arise in connection with the objective of capital maintenance. Since plans and notions regarding future actions are influenced by the determination of past profits, it is logically impossible to base the calculation of past profits upon events and activities which have not yet transpired and whose planning awaits such a calculation.

In addition, financial statements reflecting someone's opinion about the future obscure the data upon which such expectations are based.\(^9\) The decision-maker, who cannot escape injecting his own subjective guess concerning subsequent events, is forced to reach his own opinion partially on the basis of information which is already tempered with expectations. He is not allowed to consider the basic data underlying the accounting statements so that he can formulate his own expectations irrespective of some other person's opinions. In using the reported information as a factor in reaching his own predictions, he compounds the expectational element because he is unable to separate out of the information supplied him that part which is anticipatory and that which is not. In order to obtain basic factual data of a non-anticipatory nature, the decision-maker must look beyond the accountant if the latter's reports rest upon expectations.

Present Positions Are Not Future Positions

The use of anticipatory monetary calculations in financial statements means that financial position and income or earnings determinations must always be in terms of expectations. That is, financial position at any given point in time would always be based upon the present value of earnings or net receipts expected to be generated in the future. Earnings derived from changes in financial position would likewise be based upon expected monetary results. The logical conclusions drawn from this expectative orientation reveal the unavoidable dilemma of this approach. If wealth or financial position at each point in time is dependent upon and derived from expected events, then it follows that there is really no meaning to the term wealth or position. Both of these words normally connote an element of "presence," i.e., an existing state of affairs. If wealth depends upon the result of future events, then no particular position or state of wealth is meaningful or determinable. It is logically contradictory to define a position as being dependent upon a future position or upon the course of future events.

Similar contradictions and paradoxes are found when earnings are determined on the basis of anticipatory calculations. If earnings always depend upon expected earnings, then there is no such thing as earnings—there is only expected earnings. Yet, the term "expected earnings" implies the probable eventual occurrence of "earnings."

If a present determination is dependent upon subse-
quent events, the present determination actually can never be known since subsequent events always occur in the future and thus are never knowable.\(^{10}\) The inevitable emergence through time of different capitalized future values presents a question which the proponents of the "economic" concept of income recognize but are unable to resolve. That question is whether or not the unexpected gain or loss in the capitalized value of future net receipts is to be treated as income of the period in which it appears.\(^{11}\) Either the unexpected change is a correction of the capitalized value at the beginning of the period and thus a correction of the income of some earlier period or it is income to be credited to the current period as an increase in wealth. If subsequent values are re-imputed to prior estimates of wealth, corrections are bound to be continuous for only through perfect knowledge can past capitalizations prove correct.\(^{12}\) This process of continual revision of past valuations renders the past records false and erroneous.

Only in an evenly rotating economy, a world devoid of uncertainty, would the wealth of a given entity be derived from and equal to (except for the interest factor) the mone-


\(^{11}\) Sidney S. Alexander, \textit{op. cit.}, pp. 32-35. Also see "Business Income in Accounting and Economics," by Emily Chen Change, \textit{op. cit.}, p. 641.

tary result of future events. In such a world there would be no need for accounting or for decision-making. As Knight states, economic functions or activities would be "devoted altogether to doing things." No earnings (profits) would occur nor would there exist any inducement to seek profits in the ERE. Except for interest, wealth at any given point in time would equal wealth at any succeeding point in time. No problem with future expectations would exist since rather than "expecting," people would "know." Action based upon plan and decision would not occur in the ERE: "But in the evenly rotating economy there is no choosing and the future is not uncertain as it does not differ from the present known state."¹³ The driving force of the real market, the speculation of entrepreneurs, and their susceptibility to error would have no place in such a world. Yet the continuous occurrence of entrepreneurial losses is empirical proof that entrepreneurs are capable of erroneously envisioning the future.

People make decisions and act upon them in the real world of uncertainty because they seek to change and improve their state of affairs. It is manifested in their acting that they do not consider themselves to be in a position which cannot be changed to their advantage. Entrepreneurs embark upon projects designed to enhance their economic wealth. Yet, they do not view the anticipated and aimed for

¹³Mises, Human Action, op. cit., p. 248.
increase as having already taken place. They act deliberately in an effort to bring it about. Actual monetary positions and earnings do occur and can be approximated apart from visions of future positions and earnings. Since it is totally meaningless to speak of accounting for the future, all real meaning of the term "accounting" would be lost if accounting reports are based upon expectations. One cannot account for something that is yet to be except under the unrealistic conditions of perfect knowledge.

Management's Expectations Provide No Solution

To contend that, granted the accountant has no business introducing his own subjective anticipations, he should base his reports to stockholders and creditors upon the expectations of management appears unacceptable by a view based on the Austrian theory. Besides being subject to all of the criticisms which have been made above against the use of the accountant's expectations, the determination of capital and income based upon management's valuation of future net cash receipts has, in addition, two particular flaws. One is that such a stand overlooks the fact that management's expectations are based upon the general plans which influential stockholders already have superimposed upon managerial employees. Since these entrepreneurs have already determined the basic projects and ventures which the firm is to

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undertake, they have already established their own expectations about future events and results. What they need by the way of financial reports is basic data which will facilitate the formulation of their expectations and plans. The information need exists prior to, and not after, a given decision point.

A second problem is that using management expectations as the basis for monetary determinations reported by accountants would amount to the subjugation of so-called accounting to the dictates and subjective opinions of managers. This development actually would mean the disappearance of the function of accounting in every sense of the word. The "accountant" would be nothing more than a transcriber who simply copies down the figures envisioned by members of management. The accountant would contribute no independent service of his own. The fact that he had played a procedural part in the preparation of the statements or that he had approved of them would be rendered empty and meaningless. It goes without saying that there would no longer be a significant place for the function of the independent audit. The accountant would have no way available for attesting to the subjective expectations of management.

An interesting variation of the use of management expectations as the basis for accounting reports is the attempt to give some objectivity to such subjectiveness by applying statistical analysis to management's experience in
predicting. Under this approach, empirical data relating to the management team's previous net cash flow anticipations and actual net cash flow results are gathered and utilized to provide a mathematical basis for deriving a value of the firm at periodic points in time. The relationship between recent net cash flow projections and net cash flow results yields factors that convert present net cash flow expectations into "computed" expectations.

These "computed" expectations are viewed as an objective expectative income of management derived from the subjective expectative income of management. The underlying premise is that management's experience in formulating cash flow expectations provides a useful and objective indicator of future earnings when related to the present cash flow expectations of management. The present value of the "computed" earnings or expectations is to be used by the accountant in the determination of an additional asset in the balance sheet. Since this present value is considered to represent the value of the firm at that time, an asset, something like Goodwill, is to be included in the balance sheet to the extent that it exceeds the cost of the assets required to generate the expectations. The offsetting credit is to be made to expectative income as an unrealized element in owners' equity. Total asset value is equal to total capi-

talized cash flows.

This proposal appears to conflict with the Austrian theory not only by leaving out of the picture the decisions of key stockholders or entrepreneurs in establishing the general direction and projects of the firm as discussed above. It seems conflicting also because it assumes that the subjectivity of expectations can in some way be made objective. The relative uniqueness of the situations that management faces makes objectionable the assumption that management's past success (or failure) in anticipating future cash flows is a reliable indicator of the correctness of present predictions. Each set of management anticipations is entirely subjective. The relationship between past predictions and past results does not render present expectations any less subjective. As the proponent of this approach states, although there is objective treatment of subjective data, "... it is realized that the subjective data included make the overall result subjective."\(^{16}\) He also suggests that the investor may have to subjectively decide for himself the meaning attributable to reported expectations.\(^{17}\) The overall subjectivity of the result precludes the recognition of such future values in the statement of financial position issued by the accountant.

Additionally, it should be pointed out that, in light of our previous economic analysis, to the extent any factor

\(^{16}\text{Ibid., p. 99.} \quad ^{17}\text{Ibid., p. 110.}\)
can be objectively related to expected net revenues, market forces will tend to impute this value to the factor's market price. Thus, if future earnings can be attributed objectively to management's ability to plan and anticipate successfully, such earnings will tend to be absorbed in the form of increase in management compensation. This tendency precludes the existence and recognition of additional wealth based upon managerial expectations. As has been shown, entrepreneurial profits and losses arise because of the factor of uncertainty and the fact that enterprisers make mistakes. Knight has expressed this important point in the following way:

In this competitive process, all the product value which can be associated with any agency will accrue to that agency. ... As far and as fast as any portion of income can be known in advance to be connected with the exercise of superior judgment, it will be imputed to the persons possessing the unusual powers, and will become a wage (of management) no longer a profit. Profit arises out of the inherent, absolute unpredictability of things, out of the brute fact that the results of human activity cannot be anticipated and then only in so far as even a probability calculation in regard to them is impossible and meaningless. The receipt of profit in a particular case may be argued to be the result of superior judgment. But it is judgment of judgment, especially one's own judgment, and in an individual case there is no way of telling good judgment from good luck, and a succession of cases sufficient to evaluate the judgment or determine its probable value transforms the profit into a wage. ... If these capacities are known, the compensation for exercising them can be competitively imputed and is a wage; only, in so far as they are unknown or known only to the possessor himself, do they give rise to a profit. 

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18Knight, op. cit., pp. 309, 311.
The Futility of Certainty as a Theoretical Ideal

The idea has been espoused that although the future is admittedly uncertain, the valuation of assets based upon expected cash flows is the ideal approach and such valuations should be approximated to the extent practical.\(^\text{19}\) The expectational approach is thus accepted as a theoretical or conceptual criterion which practical approaches should seek to apply, though necessarily imperfectly.

The inherent deficiency in this argument is that an appeal is made to approximate a figure which is unknown and unknowable. Theory based upon assumptions of unrealistic conditions has nothing to offer with respect to the solution of real problems. To assume away the factor of uncertainty is to ignore the most significant factor surrounding activity in the market economy as viewed by the Austrian economists. To envision how asset valuations or wealth would be determined in a world of certainty yields no solution to the problem of wealth and income determination under the condition of uncertainty. Those who stress the need to employ methods which best approximate discounted future net receipts fail to show in what way this need is fulfilled or why a specific recommended method is the best approximation of the theoretical ideal. And so long as the future is not know-

able, it logically follows that there can be no way to know when future values are best approximated.

Accounting thought is properly challenged to arrive at an appropriate basis for capital and income determination under the real condition of imperfect knowledge. The difference between a world of certainty and a world of uncertainty is so great that the notion that under the conditions of one the quality of the other can be approximated is untenable. The very existence of the accounting function is due to the need to reach decisions about uncertain subsequent events. For the theory of accounting to establish as an ideal an approach that would be possible only under the conditions of perfect foreknowledge and of uselessness of accounting data is quite paradoxical. Theory must be realistic and must deal with things as they are and not as they might be under entirely different circumstances if it is to be useful in the solution of real problems.

This does not mean that theory should not appeal to unrealistic assumptions for analytical purposes. If such assumptions contribute to the understanding and explanation of reality, they play a useful role in the formulation of the theory. The introduction of the concept of an imaginary evenly rotating economy served to explain the tendency of market phenomena and the source and function of entrepreneurial profits and losses in the real world of uncertainty. The image of the ERE is "merely a tool for our thinking. It is not the description of a possible and realizable state of
affairs.\textsuperscript{20} In no way did the assumption of certainty become a part of the theory of the real world; it only provided a contrast by which the factor of uncertainty and its implications could be grasped more clearly. Neither was it held up as some kind of ideal state to be sought. Carried to its logical consequences, the advent of the evenly rotating economy would mean the termination of choice and decision in the absence of uncertainty. Yet the concept of such a fictitious state does not have to be carried to its logical consequences to aid in the explanation of the effects of pervasive uncertainty. The appeal to an imaginary concept to help explain reality does not mean that the mental departure from reality necessarily must be incorporated in the theory of the workings of real phenomena.

The establishment of the unrealistic assumptions of certainty and discounted future receipts as a theoretical ideal for accounting is unacceptable in the same way that another proposed ideal must be rejected. For it is untenable to hold up subjective or psychic income as the ideal for accounting determination and to suggest that, due to the impossibility of achieving this, recourse to the establishment of monetary income represents a "large sacrifice of reality"\textsuperscript{21} and the best approximation of "real" income.

\textsuperscript{20}Mises, \textit{Human Action}, op. cit., p. 248.

There is nothing unreal about monetary income (disregarding for the moment the question of changes in purchasing power) and its determination does not constitute any departure from reality—monetary and psychic income both occur in the real world. And as mentioned before, monetary income is not a measure or even an "approximation" of psychic income. It stands on its own. The subjective satisfaction yielded by a given amount of money income is personal and is not indicated by that amount of money income. Accounting determinations obtain no theoretical guidance from the concept of subjective or psychic income.

In closing this section on the question of anticipatory values, one argument which often appears in opposition to the use of projected values can be briefly mentioned. Since revenues are usually generated through the combination of several property items as well as labor resources, the use of discounted cash flows precludes the itemization of discounted present values in terms of individual assets. The mathematical basis for this argument has been demonstrated. But this argument alone is not sufficient to dispel the proposal for the use of expected values. For if the value of the firm as a whole were possible, investors would not need to know about the value of specific assets. The details of particular asset values would be irrelevant since total

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wealth and its changes are their principal interest. The essence of the "economic" concept of income is that firm wealth rests in the value of the firm as a whole.
X. CAPITAL AND INCOME: RETROSPECTIVE CALCULATION

The discussion presented in the preceding section points out the context in which the Austrian theory appears to consider the nature of accounting. Accounting is considered thereby to be neutral to and outside the realm of specific plans concerning future decisions and actions. The function of accounting generally is to determine the present monetary position of a given entity and to account for the extent and sources of change in this position relative to that of the beginning of the period. These accounting determinations are to be made, not from the personal and subjective viewpoint of those directly involved in economic decisions (since this is impossible for the accountant), but from an objective and independent viewpoint. Those responsible for making plans for future business actions are free to arrive subjectively at their own personal view of present position and past results in terms of their expectations. However, it is not for accountants to be concerned with evaluating the propriety of alternative courses of action regarding the future. This responsibility belongs to the entrepreneur and his assistants and distinguishes anticipatory calculation from retrospective calculation.

In relegating accounting to the sphere of retrospec-
tive economic calculation, the tasks which accounting is being asked to perform are essentially to account for the monetary effects of past decisions and events pertaining to a specific entity. Present position relates to the concept of retrospective calculation in that it is the culmination of the monetary effects of past events and decisions. The term entity refers to any sphere of activity which is deemed relevant by a given decision-maker, and the accounting for position and results can entail details and sub-classifications to the extent warranted. (The focus of this study is on determining financial position and results for the firm as a whole).

It seems necessary to stress that retrospective economic calculation is not to be denounced on the grounds that its context is sharply opposed to the idea that in business "bygones are bygones." While it is true that business is future-oriented, the fact remains that past results may serve as useful guides to the formulation of expectations and future plans. In addition, the determination of present position is essential to planning future actions in light of the present capacity to act. As will be discussed at a later point, the approximation of present financial position is a crucial factor from the Austrian viewpoint in the particular economic decisions reached concerning future actions.

1. Accounting and Specialization

The functional delimitation of accounting as pertains-
ing to the sphere of retrospective economic calculation is predicated upon an important and fundamental economic principle: the principle of specialization and the division of labor. While the responsibility of deciding upon the specific form and use of scarce resources is left up to profit-seeking entrepreneurs and their managerial assistants, the responsibility of recording and reporting meaningfully the economic effects of past events is left up to the accountant. Just as in the case of all types of productive endeavors in the market economy, when an individual concentrates upon the performance of a certain function, he thereby develops an expertise and proficiency which would be unattainable were he to attempt to carry out simultaneously several forms of performance. Of course, individuals can, and many do, perform in several capacities over the course of a day as in the case of the self-employed entrepreneur who uses his own land and savings. The approach of the Austrian analysis is to distinguish the various functions and roles which are operative in the market economy. This approach is necessary if the function of accounting is to be delineated with clarity and not confused with the responsibilities of another role.

Earlier discussion has emphasized the fruitfulness of specialization and the division of labor which are made effective in the market economy by the use of a common medium of exchange. At the same time, it was shown that the division of labor entails the concomitant of the division of
knowledge and the need for a means of coordinating the separate but related actions of innumerable individuals. Economic calculation based upon market prices was seen to be the indispensable means through which economic decisions can be reached and coordinated.

2. Market Data are Essential to the Determination of Capital and Income

Austrian economic theory holds that capital and income are the fundamental concepts of economic calculation which rationalizes decisions of entrepreneurs and the process of resource allocation. Through the mechanism of the market and the instrument of monetary calculation a systematic and rational approach to the task of deciding in what way diverse resources shall be used is provided. Production in the market economy is production for others, and monetary calculation is the means by which the preferences of market participants are expressed and translated. It is in this context of the system of resource allocation that this study seeks to examine the nature of the accounting calculations of capital and income. The present section is devoted to exploring the implication that these accounting calculations must be based upon certain market data if accounting is to serve effectively in the process of resource allocation.

Capital Depends Upon Market Prices

Since income is herein defined as the incremental
change in capital between two points in time, the primary object of determination is capital. A report on income would show the extent and nature of various changes in capital for a given period. This approach to the capital-income dichotomy characterizes both capital and income as results of the process of valuation as opposed to the common distinction of the two in terms of a stock and a flow respectively.¹

It appears useful to reiterate the definition of the term capital for the purposes of this study:

Capital is the sum of the money equivalent of all assets minus the sum of the money equivalent of all liabilities as dedicated at a definite date to the conduct of the operations of a definite business unit. It does not matter in what these assets may consist, whether they are pieces of land, buildings, equipment, tools, goods of any kind and order, claims, receivables, cash or whatever.²

Since the preponderant accounting difficulties seem to lie in the area of asset valuation, attention will be given largely to this issue as opposed to that of determining the money equivalent of liabilities.

The Austrian analysis suggests that there is no source other than the market system of money prices from which the money equivalent of assets and liabilities can be meaningfully obtained. That such items can be described in terms of their monetary significance is due entirely to the

²Mises, Human Action, op. cit., p. 262.
emergence of particular market prices. In addition to money itself and money claims, money wealth does not exist except through the ownership of goods which can be related to the monetary evaluations arising from the market exchange process. In the market economy, the monetary position of any given entity is dependent upon the market exchange value of the various items which it possesses, for only through the market can these assets be converted into the medium of exchange.

Although entrepreneurs look subjectively to the future in the anticipation of increased money wealth, the amount of capital which they devote to productive efforts of a particular period is the total money equivalent of the net assets. And though the Austrians do not elaborate on the basis for determining money equivalent except to refer to market prices, presumably they mean the market prices at that time since prices constitute the vital signals for resource employment. As discussed earlier, their analysis logically suggests that the success of entrepreneurial ventures and projects cannot be attested to objectively through anticipated increments in capital. The expected enhancement of money wealth is the motivating force behind entrepreneurial activity; however, only by reference to market prices can there be any evidence that undertakings for profit have succeeded or failed. The market and not the inherent optimism of the entrepreneur is the judge of the amount of capital at his command at any given moment. Those who have exhibited
the greatest foresight will command the largest amounts of capital assuming they have chosen not to consume significant portions of their increments of profit. The concept of a money equivalent cannot be separated from the idea of market transactions and market prices which express the relative importance of various goods and services.

The Changeability of Prices Calls for Current Market Data

The movement towards market equilibrium prices is a tendency which seldom reaches fruition due to the continuous changes that occur in people's subjective valuations and in the supply of various goods and services. The ceaseless change in the realm of human choices and actions upsets the tendency in the market for the establishment of equilibrating prices and causes the prices that appear in market transactions to be subject to perpetual change over time. This element of changeability is the essence of the factor of uncertainty which pervades the market process and which receives particular emphasis in Austrian economic thought.

Since the most recent prices on the market reflect the present monetary significance or money equivalent of various goods and services, the market data used to determine capital and income need to be current in order that accounting reports do not diverge from up-to-date market valuations. The changeability of subjective valuations and of available resources means that prices of the remote past may cease to have any significance for monetary valuations at later
points in time. In the eyes of the market, the monetary significance of a given item depends upon the conditions and circumstances regarding the preferences and anticipations of the market participants and the available resources prevailing at that particular time. Money wealth existent at some earlier time based upon market valuations then expressed in market transactions can be gradually or suddenly erased through subsequent changes in market prices. Certain industrial equipment can become obsolete as a result of demand changes or the emergence on the market of a better means of yielding productive services. On the other hand, there can be a considerable increase in the prices of certain goods and services upon a change in market data which reflects that these items are of more relative importance than at an earlier time.

The Makeshift Nature of Capital and Income

Due to the changeability of prices, there is no such thing as present or current market prices. The structure of market prices is not frozen into some kind of constant pattern as might apply to a fictitious stationary state in which the price of each specific factor would be unchanging and always assured. Market prices are either prices of the past or expected prices of the future. The expression "current prices" really refers to the most recent prices which have emerged in connection with market transactions. Thus, the idea that capital and income determinations need to be based
upon current market data means that the most recent market evaluations are to underlie such accounting figures.

The notion that non-cash resources can be ascribed monetary equivalence in the absence of price rigidity and constancy reveals that the calculations of capital and income are an unavoidable makeshift. Each non-cash asset is not accompanied by a set money equivalent representing a continuously available sum of money into which the item can be converted momentarily. That is, there is no "present" price which explicitly follows or attaches to each particular item like a shadow. Only in the case of prices set artificially and guaranteed by government edict such as the price of gold is the literal prevalence of "current" prices approached. However, such prices are not market-determined prices and thus are not significantly characteristic of the market economy. Otherwise, "present" prices are conceivable only in the ERE in which conditions from day to day are the same and prices never change.

Each market price is the result of the particular circumstances which existed at that certain point in time of its occurrence and relates specifically only to the particular item involved in the exchange transaction in which the price appeared:

A market price is a real historical phenomenon, the quantitative ratio at which at a definite place and at a definite date two individuals exchanged definite quantities of two definite goods. It refers to the special conditions of the concrete act of exchange. It is ultimately determined by the value judgments of the individuals involved. It is not derived from the general price structure or from the
structure of the prices of a special class of commodities or services. What is called the price structure is an abstract notion derived from a multiplicity of individual concrete prices. The market does not generate prices of land or motorcars in general nor wage rates in general, but prices for a certain piece of land and for a certain car and wage rates for a performance of a certain kind.

Therefore, capital and income determinations which purport to reflect from the viewpoint of the market the monetary significance of certain assets and liabilities existent at a certain time can resort to no other source except recent market data which pertain to other specific assets and liabilities. There is no other way to establish the money equivalent of non-cash items under the condition in which prices are not constant and perfectly stable. Reference is made to recent past prices in order to impute a "present" money equivalent to a particular set of asset and liability items. Historical monetary data are thereby applied to physical data which relate precisely to items that exist in the present. This is a makeshift operation which, due to the nature of the market process, seems totally unavoidable in the determinations of capital and income involving the treatment of non-cash properties. A monetary description is applied as if the prices of the immediate past prevailed or carried over into the immediate future. As Mises has written: "In speaking of present prices we imply that the prices of the immediate future will not differ from

\(^3\) Mises, Human Action, op. cit., p. 393.
those of the immediate past."

Present Prices Distinguished from Anticipatory Calculations

The previous statement requires justification in light of the contention that accounting should not base capital and income figures upon anticipated net cash flows. One draws from the Austrian theory that anticipatory calculations fall outside the domain of accounting. However, it was emphasized that the anticipatory valuations which are to be eliminated from the accountant's reports are the subjective opinions or hunches regarding the future of the particular firms to which the reports pertain. Anticipatory economic calculation refers to the monetary effects which the entrepreneurs and their assistants expect certain courses of action to have. Anticipatory calculations are used in a planning context. The restriction of accounting to the sphere of retrospective calculations means that capital and income determinations are not to be based upon the anticipated effects of the planned courses of action which the entrepreneurs have chosen to undertake. The fundamental concept of income rejected on these grounds was shown to be "economic" income which is the difference between the capitalized value of future net cash receipts determined at two different points in time. The capitalization of expected net cash receipts depends totally upon anticipatory calcula-

\[4\] Ibid., p. 330.
Now it is true that regardless of the market data upon which the money equivalent of net assets is based, this data necessarily manifested at the time of emerging in the market process the anticipations of those participating in specific exchange transactions. Market data are always an expression of anticipations. They are the culmination of the bargaining between demanders and suppliers of particular goods and the services and tend to indicate the monetary significance that particular market participants attach to each factor in its marginal use in the generation of future revenues.

Previous economic analysis presented a discussion of how there is a tendency towards the establishment of equilibrium market prices. The price paid for a given productive factor reflects the marginal value product which other producers envision concerning the employment of a unit of that factor in alternative uses. The principle of marginal utility explained how market prices of productive factors tend to reflect the anticipated marginal revenue product of each factor in its least important use from among all the uses to which prospects warrant that it be devoted. Lower prices emerge as the supply of a given factor or service increases because bidders for the resources are forced to employ the additional quantity in less and less promising uses; reduced supply is accompanied by increased prices reflecting the fact that only the more important uses of the factor can be
supplied from the available quantity. The important point is that the prices that emerge in the market process tend to indicate the expected value of the factor in alternative uses.

In relying upon market valuations, the accountant is referring to objective expressions of subjective anticipations. Market prices are objective historical facts which can be observed and validated numerically in dollars and cents. They are not expressive of expectations which pertain to the particular firm in whose financial statements they appear. Neither are they herein proposed on the premise that such data represent the best indicators of the firm's future net cash receipts. Market prices reflect only what participants in certain transactions anticipate regarding future events. Entrepreneurial profits and losses occur precisely because market prices of particular factors at a certain time failed to equal the ultimate revenues generated by the productive use of such factors. The assumption of those who acquire productive factors is that the other market participants have erroneously underpriced the resources acquired in terms of the contribution the resources are expected to make to future revenues. Conversely, those who sell or refuse to buy consider the factors to be erroneously overpriced in light of their expected revenue contributions. The changeability of prices lies in the fact that errors are made and adjustments are required as a result.

The presumptuousness of conceiving "present" prices
based upon recent real market prices for the purpose of establishing the money equivalent of items presently held has nothing to do with the expected results of the particular firm's planned ventures and projects. The expectational element in the idea of "present" prices relates to the expected state of market prices in the immediate future. Current market prices are proposed as the basis of accounting statements on the premise that they reflect the present money equivalent of the various resources held at that time. There is no pretense to the effect that these valuations are indicators of the future cash flows expected to arise as a result of the projects planned by the firm.

The very fact that a money equivalent is required for capital determination under the Austrian definition of capital makes an assumption regarding the state of the market in the immediate future absolutely necessary. The essence of the idea of a current money equivalent is the amount of money which the item could be converted into by means of a market exchange transaction. Obviously, it is impossible to conceive of a way in which an asset not embodied in cash could be exchanged for cash without such a conversion taking place in the future. As stressed at an earlier point, there are no "present" prices or money sums into which a non-cash asset can be transformed instantaneously and magically at any given moment. Any sale takes time if only a few minutes; there is no way in which the concept of money equivalent can be separated from at least a small slice of the future. In
overlooking this fact, Chambers has left himself open to the criticism of being inconsistent in ruling out of accounting statements all forms of anticipation and at the same time proposing that assets be shown at their "current cash equivalent."\(^5\)

The appeal to recent past market data for the purpose of obtaining present valuations appears indispensable so long as the criterion of market significance is the controlling rule. And yet the changeability of prices makes determinations based upon "current" prices necessarily tenuous, for the establishment of capital at any moment is but an interim view of things which are never in a permanent state of rest. The financial statements of the accountant, as Mises has stated, "describe as well as possible the state of affairs at an arbitrarily chosen instant while life and action go on and do not stop. . . ." The market process is continuously tending, though unsuccessfully due to changing conditions, towards the establishment of equilibrium prices, and obscured in the historical data of the market may be factors which will soon alter the market significance of the particular items held as market adjustments continuously unfold. For example, the change in the demand for a specific consumers' good does not have its complete effect all at once upon the prices of the various resources used in its

production or upon the prices of substitute and complementary goods and their related factors of production. The lack of rigid and constant prices makes the money equivalent of all non-cash items an unavoidably tenuous determination. This fact is not attributable to any fault of the accounting activity; rather it is due to the inherent nature of the market process.

However, since prices generally are not radically restructured from day to day, these calculations are deemed effective guides to economic decision which rely upon capital and income determinations. The whole idea of the price system as a means of coordinative communication rests upon the assumption that prices of the immediate past are useful signals for decisions concerning subsequent resource allocations. Mises has written that: "In drafting their plans the entrepreneurs look first at the prices of the immediate past which are mistakenly called present prices. . . . The prices of the immediate past are for them only the starting point of deliberations leading to forecasts of future prices."  

Some Notes on the Capital-Income Relation

It warrants reiteration that, in defining income as the incremental change in capital between two points in time, there is no exclusion from the determination of income of any change in capital except for those changes arising

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6 Mises, op. cit., p. 336.
from withdrawals and additional investments on the part of investors. Changes in net assets which result from events that may be described as "unusual" or "extraordinary" are nonetheless changes which affect the capital position of the enterprise. Though Austrian theory does not treat this matter, it appears to be the task of report format and classification to indicate the nature and impact of the various events contributing towards the total income reported for the purpose of guiding the formulation of future expectations. Past events considered to be unusual and extraneous are no less real and perhaps portentous than those events classified as ordinary.

The above concept of income also means that the determination of income does not embrace the notions of "realized" and "unrealized" income in the sense of mere cash transactions. The fact that income is recognized based upon changes in market valuations by definition precludes any distinction in connection with such a realization criterion. By ascribing a monetary significance to diversified assets a common basis is provided which yields a total capital amount. This determination of capital, encompassing the income for the period, yields the same magnitudes of determinable wealth and income regardless of the physical nature of the assets in which these magnitudes are embodied. Any change in the money equivalent of net assets has an effect upon capital and income regardless of whether the particular change pertains to the market value of a non-cash asset or
to the cash balance. The fact that entrepreneurs plow back large portions of net cash receipts into the business in the form of additional acquisitions of productive resources and services renders misleading the notion of "realized income," i.e., realized in cash form; such a concept logically should be accompanied by a concept of "disrealized income" reflecting the reinvestment of cash in non-cash assets if a complete picture of period results relevant to the impact of operations upon the cash balance is to be given. However, there is nothing to prevent focusing upon the effects of specific transactions which involve the direct increase or decrease of cash or near-cash elements of the business entity. Thus, sales revenues received in and expenses paid out of cash or incurred through commitments to eventually pay out cash could be classified meaningfully as aspects of the total income picture. However, the point is that income is not to be confined to such "realized" effects of the period's transactions and events.

And finally, because income can be embodied in productive assets, the idea that income must be restricted to that amount of wealth that is distributable without disrupting productive operations is inconsistent with the definition of income herein examined. No matter what basis is followed for the purpose of determining capital and income,

so long as earnings are reinvested in additional productive assets, income must include increments of wealth which relate to operations and which are distributable only through the termination of certain operational activities. Only through the accumulation of idle cash balances can distributions of earnings be made without ceasing certain productive activities. And of course, any firm is free to do just this with the intention of making an eventual distribution of earnings. Income occurs despite the fact that this increment of capital is plowed back into productive use within the enterprise. In determining income, it makes no difference in what form the enhancement of capital takes. The market renders monetary valuations for producers' goods and consumers' goods alike.
XI. A LOOK AT THE AUSTRIAN THEORY OF CAPITAL AND CAPITAL ACCOUNTING

At this point it is necessary to consider further the Austrian theory of capital in order to develop the rationale for proposing the use of current market prices in the statements of accounting. Although this aspect of the Austrian economic analysis occupies a dominant place in their overall explanation of the market process and thus has been touched earlier in this study, a more concentrated treatment of it is required here because of its particular pertinence to the accounting function. The reader no doubt will find parts of this exposition to be a matter of reiteration of previous explanations; however, it is believed that a more thorough and explicit study of capital theory is appropriate at this particular stage of the study and would have served little purpose if presented at any preceding point.

1. Saving and the Advent of Indirect Production

The adoption of a production process designed to generate consumers' goods indirectly through the production and employment of intermediate goods such as tools, buildings, and machinery must be preceded by the act of saving on the part of some individuals. People who save some of their
purchasing power and invest in time-consuming productive undertakings thereby forego the enjoyment of consumption goods which that purchasing power could have obtained otherwise. There is no way in which resources could be devoted to the roundabout and indirect production of consumers' goods if the income of every person were always spent for immediate consumption purposes. This is due to the fact that indirect processes of production require more time than do processes which produce consumable goods directly. The more intermediate goods are used in the overall process the more stages must the embodied effect of productive efforts and resources pass through before goods for ultimate consumption become available. And during all of this prolonged period of production, the owners of productive factors which are sold to producers require goods presently available for consumption. The savers who devote some of their income to more lengthy processes of production exchange present goods for future goods. When they purchase units of productive factors, they provide the owners of these resources with a means to acquire present goods in the expectation of generating future purchasing power in return, i.e., future goods.

The choice to save portions of one's income is based upon a subjective valuation that considers the expected future purchasing power which is anticipated to result from the investment to be of greater value than the value of immediately spending such income for consumption purposes.
The expected difference in value can arise as the result of an arrangement in which an interest return is contracted in connection with a loan agreement. The time-preference principle underlies this action on the part of the saver. On the other hand, the incentive to save and to invest such savings into the production process can stem from the expectation of generating a net return which exceeds the going rate of interest. The aim of this decision is to earn an entrepreneurial profit. It is the expectation of entrepreneurial profits which also motivates the borrowing of the savings of others who agree to a contractual interest return. The time-preference principle is operative even in the quest on the part of the saver for entrepreneurial profits since investments for this purpose would not be made if the expected return is lower than the interest return that could be obtained.

The important point is that the acquisition of productive resources and services for the purpose of business undertakings and the indirect production of consumers' goods arises only as a result of the decision on the part of some individuals to save part of their income. This decision must precede the entrepreneurial activity of determining the particular resources which will be devoted to the productive process and the manner in which they are to be used. The

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dedication of certain resources to the production process and, thus, the basis for the concept of capital are the result of the decision to postpone some consumption until sometime in the future. As Mises states: "At the outset of every step forward on the road to a more plentiful existence is saving—the provisionment of products that makes it possible to prolong the average period of time elapsing between the beginning of the production process and its turning out of a product ready for use and consumption."^{2}

As a result of saving, longer and longer processes of production can be adopted. Through the continuous occurrence of saving, there gradually arises a structure of intermediate products which are not consumable but rather are designed to assist in further production efforts on the road to generating the goods which consumers prefer. These intermediate goods can be referred to as producers' goods or capital goods and include all the produced means of production such as tools, machinery, equipment items, and buildings. In our advanced market economy, the widespread use of complicated processes of production is the result of the immense saving which has gone on in the past.

Experience demonstrates the overwhelming benefits of developing and employing intermediate products. Not only do indirect production processes result in greater quantities of goods than could be realized through direct methods, but

more often their benefits are in the form of goods and services which it would be impossible for consumers to obtain in any other way. One only needs to contemplate the way in which petroleum fuels, eye glasses, television sets, and automobiles come into existence in order to appreciate the latter point. And it should be stressed that the use of the expression indirect or roundabout production does not mean that the process of creating these goods is longer than is necessary. The automobile plants employ the shortest route to the generation of automobiles that is presently economically feasible. Hayek gives the following explanation of the increased productivity which emanates from the application of indirect production techniques:

There is, however, one general fact which makes it appear probable that it will always be possible to increase the amount of final services which can be obtained from given resources if more time is allowed to elapse between the time when their final product emerges. . . .

This general fact is, briefly, that there will almost always exist potential but unused resources which could be made to yield a useful return, but only after some time and not immediately; and that the exploitation of such resources will usually require that other resources, which could yield a return immediately or in the near future, have to be used in order to make these other resources yield any return at all. This fact fully suffices to explain why there will nearly always be possibilities of increasing the output obtained from the available resources by investing some of them for longer periods.

The above explanation also accounts for the necessity of

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saving in the use of indirect production processes as some resources which are able to produce services in the very near future are directed to the production of services which will be available only later in the future.

2. Capital Goods and the Concept of Capital

The notion of capital goods or produced factors of production which so characterize the system of roundabout production must be carefully distinguished from the concept of capital. While capital goods possess physical properties and exist in some "real" form, capital is a concept which pertains to the monetary evaluation of all of the means which are dedicated to the production process at a given point in time. Capital is a concept of the wealth which is dedicated to the purpose of generating future satisfaction as opposed to the immediate consumption of available purchasing power for present enjoyments:

The calculating mind of the actor draws a boundary line between the consumer's goods which he plans to employ for the immediate satisfaction of his wants and the goods of all orders—including those of the first order—which he plans to employ for providing by further acting, for the satisfaction of future acting, for the satisfaction of future wants. The differentiation of means and ends thus becomes a differentiation of acquisition and consumption, of business and household, of trading funds and of household goods. The whole complex of goods destined for acquisition is evaluated in money terms, and this sum—the capital—is the starting point of economic calculation.  

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Thus, capital can be embodied in cash, receivables, land, stocks of finished goods, goods in the process of completion, investment holdings, as well as capital goods. However, it is certainly true that in the advanced market economy in which extensive use of intermediate products is prevalent, a significant amount of capital is embodied in the form of capital goods. And as will be shown subsequently, this fact is a crucial factor in the need for monetary calculation and the rational allocation of scarce resources among alternative uses.

The concept of capital cannot be separated from the context of economic calculation. The estimated market value of each of the means available for future productive use is established at a given point in time and the summation of these money equivalents less the money equivalent of outstanding liabilities constitutes the capital of the entity at that particular date. Thus, there is a distinct difference between the concept of capital and the notion of the "real" things in which capital is embodied.

However, in making this distinction it is important to realize that capital does not exist apart from the things in which it is embodied. The danger of recognizing as capital a monetary total, i.e., the description of various items in common terms or on the basis of a common denominator, is that of giving the impression that those items of which capital is comprised are homogeneous and somehow constitute a totality which has its own independent ability to remain
permanent through time. The particular items held at any
given time reflect plans concerning their intended use and
these plans are dependent upon the special qualities of the
items themselves and how they can be combined into future
productive use.

Capital is not something of an abstract or "ideal"
nature; all that can be said to really exist are concrete
items which can be ascribed an ability to contribute to fu­
ture production. The value of an amount of capital is de­
vided from the value of the items in which it is embodied.
Therefore, it is corre to view capital items as having a
common quality only in the sense that they reflect resources
deemed productive of future services and in that way present
a condition of making investment possible. This common at­
tribute of capital items does not make the capital value an
"abstract fund" that automatically and separately generates
future returns and possesses an inherent "productivity" of
its own. Although the capital items which underlie the
capital valuation are indeed the source of expected future
returns, future returns will be produced only if these spe­
cific items are put to use in appropriately planned ways.
The concept of capital cannot be disassociated from the pur­
posiveness of those who took actions in the past to bring
about a certain arrangement of concrete capital items and
who now envision particular plans for the future in view
of the present arrangement of these heterogeneous capital
items.
3. Capital Maintenance, Capital Consumption, and Capital Accumulation Through Saving

In view of the fact that capital refers to the monetary valuation of the various means dedicated at a given moment to the productive process, the idea of capital maintenance means that this money value is kept intact at succeeding points in time although the nature of the items in which capital is subsequently embodied may undergo considerable change during this time. Maintaining capital means that the monetary contribution expected from future enterprise activities as reflected in the current market values of presently held capital items has been maintained relevant to that expected at the start of the preceding period and reflected in the money value of the capital items held at that particular time. Since capital does not refer directly to the concrete items in which it is embodied but rather to the monetary significance of these items from the viewpoint of the market, the idea of capital maintenance has nothing to do with maintaining in physical terms the level of operations underway at the beginning of the recent period. Over a given period, a firm could double the physical activity of its net assets held at the start of the period and still fail to maintain its capital if the total market value of these items on hand at the end of the period does not equal the capital value at the beginning of the period. Conversely, the physical level of net assets could fall during the period and at the same
time capital could be maintained provided the total monetary valuation of items held at the end of the period remains the same as that applicable to items held at the start of the period.

Capital maintenance does not require the assumption that items previously used in the production process have been replaced by identical resources. This point serves to reveal the fallacy in any argument that capital has not been maintained and, hence, income has not been earned until costs sufficient to replace the particular items used have been recovered. Capital maintenance does not pertain to a notion of "real" or "physical" capital but only to the concept of maintaining the monetary equivalent (disregarding the problem of the changing value of the monetary unit) of whatever net assets are employed in the productive process. If the money value of certain items has increased, then it takes fewer such items to maintain an equivalent monetary valuation. The same physical quantity would reflect a growth in capital in the case where the market value of the net assets had increased. And the possibility always exists that the decision will be made not to replace certain items used up in the production process with identical types of resources.

Capital consumption occurs when the capital dedicated to subsequent enterprise undertakings is less than the capital which existed at the beginning of the prior period. Capital accumulation is the result of additional invested
saving which causes the amount of capital to exceed the amount existent at the beginning of the previous period and may stem from current earnings plowed back into the business. There is no basis for assuming that every business enterprise is operated with the intention of maintaining or accumulating capital as opposed to the consumption of capital. It is conceivable that some owners of capital may wish to consume portions or even all of the value of the means earlier dedicated to a particular business activity; on the other hand, they may wish to allow certain capital value to diminish for the purpose of investing in some other enterprise.

It is not profits and losses per se which determine whether capital is maintained, consumed, or accumulated. If all current profit or income is withdrawn and no additional investments are made into the firm, capital is maintained; if an amount greater than current income is withdrawn in the absence of additional investments sufficient to offset the excess of withdrawal over income, capital is consumed; if any part of current income is left in the firm for future productive use, additional saving has taken place and there is an accumulation of capital to this extent. Operating losses effect a consumption of capital to the extent that additional saving and investment of income (or capital withdrawn) from other sources is not made to offset such negative income.

Thus, the question of whether capital is to be main-
tained or not is left up to those who must choose between present and future consumption of available purchasing power and cannot be assumed to be answered always in the affirmative. Each new point offers a chance to save part or all of any current income. If capital is maintained, there is no new saving, only the holding intact of capital which originated with saving that went on in the past. If more than the current income is consumed, it means that part of prior saving is cancelled out to that extent, i.e., dissaving occurs and capital is not maintained. In such case, not only does additional saving fail to occur, but also prior saving is reversed.

The issue of capital maintenance is a matter of preference and, to reiterate, is not an entrepreneurial question. However, given the decision concerning the present level of capital to be devoted to subsequent productive plans and actions, the entrepreneurial activity becomes crucial in determining which and how factors of production will be used in the effort to generate entrepreneurial profits which can subsequently be used to increase capital and/or consumption.

4. Indirect Production and Interacting Plans

The heavy reliance upon indirect processes of production serves as a great impetus to extensive specialization and division of labor. The greater the accumulation of savings the longer the chains of production that can be employed in the generation of goods for ultimate consumption. It is
virtually impossible for anyone to fully grasp the countless steps of production which takes place in our advanced market economy from the inception to the completion of producing even the "simple" wooden pencil. Practically every product and service that consumers are able to acquire in the market are the culmination of complicated and intricate stages of production.⁵

This means that the system of indirect production entails the interaction of many separate and diffused plans and actions on the part of scattered specialists, each of whom makes a small contribution to the production of the ultimate product. The specialization and division of labor which prior sections of this study showed to be such a vital part of the market economy become especially significant as analysis is focused upon the implications of indirect production on an advanced basis. Indirect production involves the use of so many intermediate products in the form of various tools, machines, equipment items, buildings, fixtures, raw materials, power and transportation sources, major and minor sub-parts, and many others, all of which appear at numerous points along the way towards the production of products ready for consumer use:

Production is distributed among numerous individual plants, farms, workshops, and enterprises each of

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⁵The term production is used throughout this study to include all activities necessary to reach the ultimate consumer, including the marketing activity which is sometimes misleadingly distinguished from production.
which serves only limited purposes. The intermediary products or capital goods, the produced factors of further production, change hands in the course of events; they pass from one plant to another until finally the consumers' goods reach those who use and enjoy them. The social process of production never stops. At each instant numberless processes are in progress some of which are nearer to, some remoter from, the achievement of their special tasks."

What is of utmost significance about this situation is that these long chains of productive activity consist of links which obviously must be consistent with one another and yet they are planned and carried out on the basis of a multitude of separate individual plans and actions. Together these innumerable steps must fit into an integrated pattern and do so in the absence of some explicit overall plan engineered by a single mind.

To use an extremely oversimplified illustration, consider the long process of producing bread in terms of the efforts of wheat growers, the iron manufacturers, the oven manufacturers, and the bakers. The effectiveness of each segment of the process is dependent upon obtaining the necessary means from those performing the previous step as well as upon finding an adequate demand for its particular output at the succeeding step. The bakers count upon being able to acquire ovens and flour while those engaged in producing ovens rely upon others to make the necessary iron to be used in such manufacturing. The flour producers depend upon the wheat growers for a sufficient supply of wheat; iron manufac-

\footnote{Mises, op. cit., p. 492.}
turers must be supplied with iron ore from those who extract the mineral from the earth's crust.

This intricate interrelationship between the plans of many different enterprises is the natural outcome of a structure of indirect or roundabout production processes. The insight which this analysis affords is that at every step along the way, there exist intermediate products each of which is a way station towards not only the immediately following good but also the ultimate product which is to be obtained and used by the consumers, i.e., bread in the example above. From the analysis the perception is gained that the myriad of independent plans interact in a manner tending to bring about a system of interlocking plans.

This view does not detract from the fact that each individual plan or step hardly needs to be concerned with reflecting an awareness of the overall process of which it is but a part. The oven-maker does not need to know the specific plans which his customers have for putting his output to use. From his perspective, what really matters is that bakers can be expected to offer adequate prices for his products and that there are producers willing to sell him iron. Each producer is only concerned with the success of his particular process or activity. However, the preceding analysis points up the inescapable fact that the success of each step in the overall process depends upon the consistency with which it blends with and fits the independent plans and steps of others. This important point is articulated in the
following remarks which express the need for coordination:

His [the entrepreneur's] plans at any moment will be based on the expectations of a certain future state of the market which will allow him to dispose of his products at a certain price; and beyond this his interest will not extend. But this objective "state of the market" on which he counts is largely the result of the present decisions of other people. In order that he may succeed in disposing of his products as he expected, it will be necessary for others to have made preparations which will enable them to use just those products at the prices at which he expected to sell them. In other words, the state of the market at the time for which he plans will largely depend on what others have decided at the same time as he made his plans. This is so not only, or even mainly, because the incomes which these other people will have to spend will depend on what they have produced, but also because what instruments and materials they will need will depend on what plans for production they have embarked upon. This means that although every individual will be guided only by (more or less well-founded) expectations of particular prices, he will actually be performing part of a larger process of the rest of which he knows little; and his success or failure will depend on whether what he does fits in with the other parts of that larger process which are undertaken or contemplated at the same time by other people. What he performs will in the majority of cases be no more than a single step in a long chain of successive operations. His action may be removed from ultimate consumption by many stages, and its success will be dependent at each stage, not so much on the final demand as on the presence or absence of complementary instruments in proportionate quantities, and on there being people willing to use them in subsequent stages of production. All these successive operations have to be viewed as parts of one integral process, each of them having chances of success only by reason of its position in the whole.7

To complete this look at capital theory, it now remains to consider the means by which the many stages and plans which characterize the system of indirect production in the advanced market economy tend to interlock into an in-

tegrated pattern. This means is seen to lie in the instru-
ment of capital accounting.

5. The Indispensable Role of Capital Accounting

When efforts to employ scarce resources in such a way
that wants more urgently felt do not remain unsatisfied be-
cause resources are misdirected into less desirable uses are
based upon extensive specialization and numerous individual
plans, it is inevitable that these separate plans will not
be faultlessly consistent and coordinated. Perfect cohesion
of plans and actions could occur only under the imaginary
conditions of certainty about the future and a state of equi-
librium. Yet, in order to work effectively, the market
process must see that there is a tendency for the many inter-
mediate steps taken in the production process to be coordi-
nated. From the analysis presented above, one acquires the
insight that long chains of production processes involve the
production of intermediate products along the way to produc-
ing goods and services for consumers. The task of the mar-
et process is to enforce whatever changes in individual
plans are necessary to bring the different plans into closer
mutual adjustment. Those intermediate products which have
already been produced must be directed into their most de-
sirable uses, and due to unforeseen changes, these uses may
be entirely different from those for which the products were
originally planned. And plans concerning the generation of
future intermediate products must not disregard any relevant
changes which have occurred in the plans of others.

In other words, looking again at the example of bread production, for the bakers to be able to carry out their plans, not only must their expected demand for bread on the part of the consumers be correct, but their expected ability to supply that demand must also be correct. The latter requirement means that they must be able to depend upon others, such as the oven-manufacturers, furnishing the necessary intermediate products and services for bread production. And moving further back to earlier steps in the production process, it can be seen that each producer is in the same predicament in that he must correctly anticipate the demand for his product and the availability of his required resources. Thus, the manufacturer of ovens must have reason to assume that bakers will want to obtain his ovens and that he will be able to acquire the resources, such as iron, necessary to produce ovens. The iron producer faces similar problems as do all others who perform a step in the overall process.

Now, the question must be raised as to how these different plans can be brought into line. By what means can individual planners be induced to revise their plans so that the actions of all are made to be effectively consistent? What is to keep the bakers from continuously planning on acquiring more or less ovens than the oven manufacturers are willing to produce? What is to prevent the producers of iron from continually manufacturing too much or inadequate amounts of iron in light of the requirements at the succes-
sive stages of oven and bread production? These are legitimate questions, for as brought out before, there is no a priori reason why the contributions of various specialists should tend to mesh. And to the extent that specific links in the production chain are either over-sized or under-sized relative to their specific adjoining links, economic inefficiency is the result since only certain quantitative relations among factors of production can apply to the production of certain products.

The problem of economical use of scarce resources is especially serious under long chains of production because resources lose their versatility to some degree with every step forward in the production process. The closer to completion the intermediate goods become, the more specific they are and the closer the tie between them and the ultimate consumers' goods. Raw iron is more convertible than iron tubes and iron tubes are more convertible than iron ovens. In the modern economy the advent of intricate capital goods creates a serious issue of convertibility in a market environment of changing conditions. The question also can be posed as to what, if anything, is to happen to those intermediate products that have already been produced though such production was based upon erroneous expectations concerning the plans of others. Without perfect knowledge about the plans of others or about the future, errors in production decisions are unavoidable and this fact calls for the capacity to revise plans in midstream if the costly ef-
fect of such errors is to be minimized.

The economic analysis presented in the early parts of this study emphasized the significance of monetary calculation as the principal vehicle of planning and acting in the setting of the market process and its system of market prices. Calculations based upon money prices were seen to provide both a necessary common denominator for the comparison of the relative importance of diverse resources and a means of coordinative communication under a system of extensive division of labor and knowledge. Now, in the light of the nature of a highly developed system of roundabout production, monetary calculation takes on an especially critical role in the economic process. In establishing capital at a given time, the test of the market is applied to determine the monetary outcome of past decisions and events at every stage throughout the entire production process. Mises states the accomplishment of capital accounting in the following manner:

Monetary calculation reaches its full perfection in capital accounting. It establishes the money prices of the available means and confronts this total with the changes brought about by action and by the operation of other factors. This confrontation shows what changes occurred in the state of the acting men's affairs and the magnitude of those changes; it makes success and failure, profit and loss ascertainable. . . . Capital accounting starts with the market prices of the capital goods available for further production, the sum of which it calls capital. It records every expenditure from this fund and the price of all incoming items induced by such expenditures. It establishes finally the outcome of all these transformations in the composition of the capital and thereby the success or the failure of the whole process. It shows not only the final re-
sult, it mirrors also every one of its intermediary stages. It produces interim balances for every day such a balance may be required and statements of profit and loss for every part or stage of the process. It is the indispensable compass of production in the market economy.

Rothbard has dealt with this same matter as follows:

Capital is an intricate, delicate, interweaving structure of capital goods. All of the delicate strands of this structure have to fit, and fit precisely, or else malinvestment occurs. . . . The free market, with its price system and profit-and-loss criteria, adjusts the output and variety of the different strands of production, preventing any one from getting long out of alignment.

The idea that each step of the production process can be subjected to the scrutiny of capital accounting applies not only in the context of the different firms which generate intermediate products but also in the context of a given firm undertaking the performance of several steps in the production chain. Implicit market prices or opportunity costs are depended upon to indicate the success or failure of individual segments and parts of the total operation. Rothbard makes this clear in the following statements concerning the impossibility for economic calculation, hence, for a rational allocation of resources in cases where a single firm monopolizes several stages of the production process:

It would therefore have no way of knowing how to allocate factors to the various stages. There would be no way for it to estimate any implicit price or opportunity cost for the capital good at that par-

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8Mises, op. cit., pp. 230, 491.

ticular stage. Any estimate would be completely arbitrary and have no meaningful relation to economic conditions.

In short, if there were no market for a product, and all of its exchanges were internal, there would be no way for a firm or for anyone else to determine a price for the good. A firm can estimate an implicit price when an external market exists; but when a market is absent, the good can have no price, whether implicit or explicit. Any figure could be only an arbitrary symbol. Not being able to calculate a price, the firm could not rationally allocate factors and resources from one stage to another.

... For every capital good, there must be a definite market in which firms buy and sell that good.

Those steps of the production sequence which are resulting in monetary losses can be recognized as warranting improvement either through changed operations or through, perhaps, the shifting of the performance of this particular activity to some outside producer. At the same time, greater emphasis can be directed towards those steps which are proving to be financially rewarding. When a given firm produces multiple products, an approach which is quite widespread today, capital accounting can be applied in order to "distinguish the remunerative lines of production from the unprofitable ones, those of which the sovereign consumers are likely to approve from those of which they are likely to disapprove."

Specifically, then, capital accounting entails the establishment of the money equivalent of all capital items held at a certain moment, which is called capital, and the accounting for the changes which have occurred in that capi-

\[\text{Ibid., pp. 547, 548.}\]

\[\text{Mises, op. cit., p. 229.}\]
tal value since its determination at a previous time as a result of various decisions and events. As discussed at previous points, the concept of income is the correlative of the concept of capital and is synonymous with the notion of profit and loss or the increment of change in the capital value which has occurred over the period.

It should be pointed out that although the capital items in which capital is embodied can include all kinds of items such as cash, receivables, land, merchandise inventories, buildings, and equipment properties, the really critical capital items in so far as the problem of resource allocation is concerned are the tangible intermediate products which are so preponderant under the system of indirect production. Since these are the items that can be reallocated, they are the ones to focus special attention upon in light of the stress upon the allocation problem. This is especially due to the problem of convertibility which arises as a result of the reduced versatility accompanying the generation of intermediate products at successive stages of the production process. Once highly versatile inputs such as raw materials and labor are embodied in other forms, their retrieval is often rendered impossible or exceedingly impractical economically.

However, the task of efficient allocation of factors of production and tangible resources such as capital goods does not take away from the importance of other capital items such as cash and near-cash items. Actions of exchange cannot
be taken in the market economy without the use of cash, and the holding of a certain amount of wealth in this form is as much predicated upon plan and purpose as is the possession of certain capital goods. One can "invest" in the commodity of cash or receivables just as he can in a given equipment item. And such an "investment" is equally subject to success or failure in that the cash holding may result in overlooking what turn out to be sound purchase prices of productive factors or in obtaining better purchase prices in the future and in that receivables can prove beneficial or detrimental in the quest for money profits through credit exchanges.

In addition, the money wealth embodied in cash and near-cash form reflects to some extent the results of past decisions and events pertaining to the employment of certain capital goods and factor services in the production process. Thus, liquid forms of capital value also must be accounted for in order to present a complete picture of the culmination of past actions and decisions. The complete outcome of past effects is necessary as a guide to future decisions and actions.

Since capital and income determinations are based upon market valuations, entrepreneurs can be relied upon to direct resources over time to the most desired uses as indicated by various market prices. If money wealth could be determined irrespective of market prices, then entrepreneurs could afford to ignore the test of the market and could em-
ploy resources in lines which the price signals did not suggest as being in the best interest of the consumers. Yet the whole key to leaving the task of directing the employment of economic resources in the hands of profit-seeking entrepreneurs is that since their prosperity depends upon the test of the market, they are compelled to guide resources into the most desirable uses as indicated by market prices. Basing capital upon market prices makes the determination of the results of past actions and events realistic in the sense that it is related to the market process which gives meaning to the notion of money equivalent or monetary results.

However, it must be stressed that the instructive role that retrospective calculations play is strictly dependent upon the interpretations of such figures by those in charge of formulating anticipatory calculations. Retrospective calculations are only one type of information which may enter into the deliberations over the expected effects of future actions. The retrospective calculations of capital accounting are a necessary but insufficient instrument in the efficient allocation of scarce resources.

It may be that the operations which are considered necessary to generate profits in the coming periods are significantly different from those which were conducted in the generation of profits in the previous period. On the other hand, in most cases the results of the recent past are likely to be considered to be a useful indication of results of certain courses of action in the immediate future from the
viewpoint of those responsible for carrying out entrepreneurial tasks. It is their problem and responsibility to temper the results reported by capital accounting to allow for whatever future changes and their monetary effects they expect with respect to the future state of the market. Calculations regarding the past actually give no knowledge about the future but only serve to provide guidance in arriving at entrepreneurial expectations. And as already emphasized, even the establishment of the outcome of the past as manifested in the present capital value and the statement of income is highly tenuous as virtually interim balances of a continuous process are disclosed. Past prices, rather than providing knowledge about future prices, are "only the starting point of deliberations leading to forecasts of future prices."\(^{12}\)

Capital accounting, then, is carried out through the use of market prices which become "the ultimate fact for economic calculation."\(^{13}\) Based upon market prices, capital accounting helps steer producers in their decisions about what to produce, how to produce, and in what quantity. Resources consequently are directed into the most profitable and desirable uses and away from lines which appear to promise financial losses and thus to involve probable misallocations of scarce resources. As pointed out in the analysis presented in the initial parts of this study, the influence

\(^{12}\)Mises, *op. cit.*, p. 336. \(^{13}\)Ibid., p. 216.
of consumer valuations is pervasive regardless of the number of stages through which the resources pass before their culmination in the final consumers' good. The market value of ovens would be tied to their expected monetary contribution arising from the production of bread. In this way, the plans of the oven manufacturers would tend to be consistent with the plans of the bread producers. To the extent that bakers imputed a monetary value to such necessary resources as ovens, oven manufacturers would be guided into the production of ovens by bidding for resources such as iron whose prices would reflect the expected revenue contribution of incremental units of such resources. The producers of raw iron would likewise be led to direct certain quantities of iron into the oven industry in light of the market prices being offered for iron on the part of the makers of ovens. Capital accounting, by revealing the results of the past as manifested in the capital value and the nature and magnitude of changes in that value, serves to guide all of these individual plans so that they tend towards a consistent pattern. Capital goods producers are led to adjust their decisions towards a more complete complementarity between heterogeneous types of capital goods.

As mentioned before, the various separate production plans cannot be perfectly consistent due to the uncertainty of the future and the fact that a state of market equilibrium is never reached. To the extent that the plans and actions of the different specialized producers and the consum-
ers do not fit precisely, malinvestment is the necessary result. For example, assume that there occurs a significant decrease in the demand for bread and that the various producers in the production chain failed to anticipate this change in formulating their plans for the coming period. Such a development involves an inconsistency between the plans and wishes of the consumers on one hand and the plans of the various producers on the other. This would result in a fall in the price of such resources as ovens which were designed primarily for the production of bread. Those holding ovens, including both the bakers and the oven manufacturers, would thereby suffer a loss of capital value and consequently the demand for and the supply of ovens would be reduced accordingly. This would mean that less amounts of such versatile resources as iron would be directed into the production of ovens and greater quantities would flow into alternative uses. Producers in other industries would be able to bid more iron away from the oven manufacturers due to the fall in the demand for bread. This is an important point in that excessive amounts of iron do not continue to be invested in the production of less versatile resources such as ovens. While raw iron can be converted into a wide range of uses, this is not true for highly specialized resources like ovens.

This is why monetary calculation looms so important under the conditions of extensive indirect production. It is important to bring individual plans in line as soon as pos-
sible in order to head off the tendency to generate too many resources which are difficult to convert to other uses and whose significance on the market has been reduced. The overproduction of unversatile resources is costly since the versatile inputs are no longer available for alternative uses. As the price of raw iron reflects its expected value in alternative lines of employment, the oven manufacturers find this price too high for the profitable production of ovens at previous levels and as a result less iron is put to use by them. This means that the resource iron is being diverted to more important uses. Such is the vital role played by the calculations provided by capital accounting and the determination of profit and loss. The social significance of entrepreneurial profits and losses is that they induce activity to discover and correct resource misallocations.

Those highly specialized resources which have already come into existence before the change in market data as a result of erroneous expectations will nevertheless be employed if producers attribute a marginal revenue product to them. Their market prices will reflect this view of the producers. If the change in market data is detrimental to their market values, as in the oven example, this simply means that a loss in capital has occurred because inputs were used whose money value in alternative uses exceeded the ultimate value of the intermediate product so produced. This loss must fall on the owner of the item at the time of the market change. This points up the fact that the money value of a
given item does not depend upon the amount of invested money costs which can be related to it. As Kirzner states, "current market prices reflect the present anticipations of the productive usefulness of the capital goods, and thus, may be quite different from the corresponding expectations held at the time when the capital goods were produced."\textsuperscript{14} The following reiterated remarks also bring out this point concisely:

Errors committed in the past in the production of capital goods available today do not burden the buyer; their incidence falls entirely on the seller. In this sense the entrepreneur who proceeds to buy against money capital goods for future production crosses out the past.\textsuperscript{15}

The loss that falls on the buyer in effect is a penalty for misallocating scarce resources. The potentiality of this penalty surrounds all activity in the production process as does the possibility of entrepreneurial profits, and through capital accounting the reality of these results is made known.

It should be clear that the inconsistency among the plans of market participants does not have to lie with a miscalculation of a specific consumer demand as discussed above. It may happen that the demand for bread remains fairly constant and at the same time, the plans of individual producers get out of line with each other. Suppose the price of raw iron suddenly increases sharply because of its increased importance in the production of products other


\textsuperscript{15} Mises, op. cit., p. 505.
than ovens. The oven manufacturers will have to revise their own production plans in light of the increased costs of producing ovens. These higher costs will be reflected in the results of the past period to the extent that they have had to pay them. All monetary sacrifices have a bearing upon the capital value at a given time. These producers will be forced to reduce the amount of products which they had planned to provide as well as reduce accordingly the planned amount of resource acquisitions. These changes would have their repercussions on the plans of bread producers.

It may even happen that the present market price of iron causes the market price of ovens to rise because of their greater usefulness as a source of scrap iron than as a means of producing bread. This would mean a complete change in the customer to whom the manufacturer had planned to sell his now existing products and also necessitate revised plans on the part of bread producers. Through monetary calculation, the plans of the different producers would be brought into closer mutual adjustment regardless of the source of maladjustment.

Emphasis must be given to the meaning of a particular result in the way of a money profit or money loss as revealed by capital accounting. The relationship between changing capital values, reflecting the relationship between the money equivalent of capital items obtained and that of items sacrificed, involves a comparison between the monetary sig-
nificance of the results of productive efforts during the period and the monetary significance of the means used to bring about such results. If an increase in capital value, or profit, has occurred, this means that resources have been put to uses which are more important than the alternative uses to which they could have been put. The key to this idea lies in the following statement about the real implication of costs: "Costs are the value attached to the most valuable want-satisfaction which remains unsatisfied because the means required for its satisfaction are employed for that want-satisfaction the cost of which we are dealing with."\(^{16}\)

A decrease in capital means that the monetary significance of the results of productive efforts have fallen short of the monetary significance of the means used in the generation of these results. Resources would have been used more fruitfully in alternative employments. The great achievement of capital accounting is that it reveals the extent to which resources have been directed into their most valuable lines of use and thereby serves to guide decisions concerning future resource allocations.

In addition to the vital function of guiding resources into their most desirable uses, capital accounting performs another important task. This task pertains to the problem of capital maintenance, capital consumption, and capital accumulation which have been considered in a previous section.

\(^{16}\)Ibid., p. 396.
The question concerning how much of the present capital should be dedicated to the succeeding period for production purposes hinges upon a subjective choice between present and future consumption. Economic analysis can say nothing about the propriety of the decisions to either maintain, consume, or accumulate capital; these alternatives are all a matter of preference on the part of those who are faced with the decision. The entrepreneurial activity becomes operative only after this decision has been made. Entrepreneurial decisions dealing with the form in which the means devoted to the production process take must follow the decision regarding the amount of capital invested into the process from period to period.

What capital accounting can show relative to these issues is the extent to which the future capacity to produce has been maintained, given the choices to consume portions of the capital value available. Those who are interested in preserving a certain amount of capital can determine the amount available for consumption with the restraint of their goal of capital maintenance. Others who wish to see their capital grow or diminish can likewise order their consumption accordingly.

These objectives can have their effect in terms of the nature of the capital items in which the capital is embodied. Thus, plans for consumption or investments elsewhere can result in reduced holdings of capital goods and in the accumulation of sizeable cash holdings for the purpose
of eventual withdrawal of capital value from the given firm. This, again, attests to the purposiveness of the particular structure of the capital items which are held at a certain time and whose market values provide the basis from which the capital value is derived.

The important point here is that through capital accounting these decisions are facilitated by providing a calculation of the monetary significance of the means available for present consumption or future production purposes. Capital accounting does not say whether or not the capital value should be maintained, but it does reveal whether or not it has been maintained and to what extent. Of course, the fruitful experience of the system of roundabout production reveals the tremendous physical productivity which has resulted from decisions to maintain and accumulate capital. The establishment of capital at a given time not only serves to help determine past profits but also provides the necessary basis, as a point of comparison, for determining profits in the following period, given the decision regarding the amount of capital to be invested in the production process for the next period.

In summary, this section has developed a theoretical rationale based upon the Austrian theory for the proposal that the statements of the accountant be based upon current market prices. This proposal suggests that the guiding criterion for capital and income determinations should be the monetary significance of the various asset and liability
items from the viewpoint of the market. Only in this way can accounting determinations be related to the structure of market prices which serve as signals regarding the allocation of scarce resources. Accounting is thereby conceived as a means by which entrepreneurs can be led to direct resources into those lines and uses which promise the greatest satisfaction to the members of the market economy. In this way accounting is able to function with maximum effectiveness in alleviating the problem of the "division of knowledge" in the overall productive process. In this light, accounting is viewed as not only serving the interests of each individual enterprise but also contributing to the functioning of the highly complicated social and economic process. Such a view of accounting thereby rests upon an appreciation of the importance of social cooperation as the fundamental element of the market system. In the following section, attention will be focused upon some of the implications and problems which this approach to accounting seems to present.
XII. FURTHER IMPLICATIONS FOR ACCOUNTING

Up to this point, a general rationale has been developed to support the proposal that current market values be used as the basis for the accountant's determinations of capital and income. Attention is now turned to some of the more specific implications which the economic analysis of the Austrian School appears to hold for the valuations which are to be used in the accounting statements. The rationale heretofore presented seems to call for certain definite approaches which warrant elaboration. Further examination of the theory will reveal that there are some important difficulties which cannot be overlooked. Also it will be shown that the argument here for the adoption of current market values in the accountant's statements can differ significantly from other proposals likewise advocating the use of some version of current values in accounting reports.

1. Estimated Resale Prices and Estimated Replacement Costs

Money Equivalent Means Opportunity Costs

The valuation of capital items in terms of their current money equivalent means that the current market values herein suggested for accounting statements are the estimated
prices at which the items could be resold in the immediate future. These estimated prices are based upon actual market prices of the recent past and are meant to reflect the present monetary significance of the given items from the viewpoint of the market at that particular time. There appears to be no meaningful interpretation that can be given to the concept of money equivalent and the objective of ascribing to certain assets and liabilities a current market significance other than that of the opportunity costs of such items as indicated by recent market prices for items like them. As shown earlier, Rothbard uses the notion of an "implicit price or opportunity cost" in discussing the need for a monetary valuation of capital goods at the various stages of the productive process.

However, it cannot be overemphasized that this approach to accounting valuations does not rest upon any assumption as to whether any of the items are to be immediately sold in exchange for those amounts of money. To argue that carrying assets at money values equal to present market prices assumes that the enterprise is on the verge of undergoing liquidation and dissolution misses the point: that what is sought in determining capital is to reveal the monetary significance of the items held then in terms of market valuations existing at that time and the monetary results of actions and events leading up to that particular state of affairs.

The decision regarding the ultimate disposition or
use of the various resources held, given the decision concerning the question of consumption and capital maintenance, is an entrepreneurial decision and accounting should not attempt to anticipate these plans. Whether or not a given property is to be sold immediately is beside the point of calculating the present money equivalent of the item as it now stands. The basic premise underlying the approach developed herein is that, since economic activities take place through the market process, the only meaningful test of monetary position and progress is provided by current market data. Reference to current market prices is the logical basis for associating a money equivalent with a given item.

Valuations based upon current market prices are, in effect, progress reports showing the extent to which productive efforts have generated or yielded values recognized by the market. Entrepreneurial plans may well include intentions to retain any given asset in productive employment with visions of enhancing the money equivalent of properties held at future points in time. This situation does not eliminate the proposition that at the present time a capital determination can be established in terms of current market data; neither does this situation destroy the significance of a capital calculation as a meaningful indicator of present monetary wealth and the culmination of past decisions and events. If entrepreneurial activity is undertaken to generate increases in monetary wealth, the question of how successful has this activity been requires an answer periodi-
cally. The Austrian economic analysis presented in this study suggests that the answer lies in current market prices that can be related to the items presently held by the firm.

**Chambers and Adaptive Capacity**

It appears justified to digress for a moment in order to consider the fact that this approach is generally in agreement with the approach expounded by Professor Chambers, the leading exponent of current resale prices as the basis for accounting valuations. What is important here is that although general agreement is reached concerning the basis for valuation, the supporting rationales are not quite the same. Professor Chambers grounds his case for valuing assets at their "current cash equivalent" in the concept of "adaptive capacity," a notion which refers to the ability of the firm to make adjustments in the types of means employed to achieve its goals. The changing conditions of the market are seen to require an ability to respond to such changes through altering the types of property items used, and since these adjustments must be effected through exchange transactions, the capacity to adapt is traced to the firm's command over the medium of exchange. The following statements serve to point out this orientation towards adaptive capacity:

But we have shown that an individual in a market society adapts himself to prevailing circumstances through indirect exchanges. He will, therefore, require to know his stock of severable means expressed in terms of the unit medium of exchange.

As the possession of money and of other things convertible to money is a relationship with the environment, there is one position, in terms of money,
in which an entity stands in relation to the environment at a point of time. We will call this its financial position. Financial position may be defined as the capacity of an entity at a point of time for engaging in exchanges.¹

At another point, while arguing against a replacement cost basis of asset valuation, he again explains what he considers to be the basic function of determining the money equivalent of items held at a given moment:

But the buying price, or replacement price, does not indicate capacity, on the basis of present holdings to go into a market with cash for the purpose of adapting oneself to contemporary conditions, whereas the selling price does. We propose, therefore, that the single financial property which is uniformly relevant at a point of time for all possible future actions in markets is the market selling price or realizable price of any or all goods held. Realizable price may be described as current cash equivalent. What men wish to know, for the purpose of adaptation, is the numerosity of the money tokens which could be substituted for particular objects and for collections of objects if money is required beyond the amount which one already holds.²

There is no denying that the "current cash equivalent" of severable assets held at a certain time is indicative of an entity's ability to generate cash proceeds through asset dispositions for the purpose of acquiring through market transactions other property items considered to be more suitable for use under changed circumstances. And this indication is necessary in view of the fact that decisions concerning the sale of certain items may arise at any time. Yet it


²Ibid., p. 92.
seems unreasonable to contend that a firm's command over the medium of exchange is represented only by the money equivalent of assets held by the firm. The ability of many firms to obtain additional amounts of money through the issuance of additional shares of stock or through borrowing more money from creditors certainly seems to be recognizable in arriving at a realistic determination of "adaptive capacity."

And there may exist objective evidence as to the amount of money available from sources other than disposable assets, such as an established line of credit with a bank. If the primary purpose of the statement of financial position is to indicate the amount of money obtainable for adaptation, there seems to be a case for including in this report those sums of money which are obtainable from all sources.

It is Chambers' preoccupation with the notion of adaptive capacity that distinguishes his rationale from that presented in this study with respect to the argument that assets should be valued at current resale prices. By resting his case upon the concept of adaptive capacity, he fails to show clearly and explicitly the important role which accounting plays in the functioning of the overall economic process and the problem of resource allocation under a system of extensive division of labor and knowledge. While in the early parts of his book Chambers does give some brief attention to the function of market prices and the factor of specialization, a thorough economic analysis is lacking in developing his supporting rationale. In failing to focus upon the crit-
ical problem of allocating scarce resources under the conditions of division of labor and knowledge, he tends to de-emphasize the root cause of the need for monetary calculation. And his stress upon adaptive capacity in connection with capital determination overshadows the instructive role that this determination and that of its correlative, income, perform in guiding the employment of resources into the most desirable uses.

In this study, the task of capital accounting is considered to be not so much that of indicating the amount of money which could be required for the purpose of shifting asset holdings but primarily that of guiding decisions concerning the uses to which available resources should be put. This orientation places primary emphasis upon explaining the social role of accounting in coordinating the innumerable individual plans pertaining to resource use throughout the economic process. However, because both studies are predicated emphatically upon the recognition that business activities must take place through the market process, they arrive at the same place generally with respect to the valuation problem.

The Replacement Cost Argument

Most arguments in the accounting literature which call for the adoption of current values in the accounting statements, in contrast to the approach of the Austrians and that advanced by Chambers, recommend the use of some
version of current replacement costs. As will be shown, not only can the objective of this proposal differ from one argument to another, but even the meaning of the expression replacement cost can vary. Careful analysis is necessary to unravel these differences and to show in what ways this approach seems to be both consistent and inconsistent with the basic orientation of this study.

One argument stems from the assumption that maintaining the future capacity to produce is a basic business objective and that this objective can be achieved only by being sure that profit determinations allow for the recovery of the current costs of services used in the current period's operations. In other words, the concept of capital becomes a concept of "real capital" and capital maintenance takes on the meaning of maintaining intact the physical means invested in the productive process. Adjustments to asset valuations to equate them with current replacement costs are considered merely capital maintenance adjustments, and the recovery of the "current costs" of services used during the period is required before any income is recognized. Income is conceived as that increment of wealth which could be distributed without reducing the physical level of operations below those of the past period.

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The Austrian theory rejects the notion of "real capita-" and views the capital concept as referring to the money equivalent of whatever "real" items are held in the form of assets and liabilities. As discussed at a previous point, income is the change in capital value and is determined without any regard for whether or not the real services sacrificed through operations can be replaced if such income is consumed. The point has been made effectively in other places\(^4\) that the question concerning the disposition of money wealth is an entirely separate matter from recognizing the existence of such wealth and the extent to which it has changed from the capital value held at an earlier point in time. There is no reason to assume that entrepreneurial expectations will warrant the acquisition of services identical to those obtained and used in the past. If replacement is contemplated and the costs to replace have increased significantly over past costs, the replacement will be made only because the revenue benefits expected to emanate from these acquisitions are deemed adequate to justify the replacement expenditures required. In other words, the cost to replace stands on its own with reference to its expected future contribution and is in no way the cost of past events.

Prior analysis has shown that an entity can come to

the end of a period holding fewer physical items than it held at the start of the period and still recognize income for the period if the capital value is greater at the end than at the beginning of the period. The concepts of capital and income cannot be separated from the context of monetary calculation. Thus, the rationale that replacement costs belong in the statements of accounting in order to assure the maintenance of productive means in physical, as opposed to monetary, terms is inconsistent with the Austrian concept of capital.

There is an entirely different rationale that others use to advocate the introduction of current replacement costs, often termed "current costs," into the accounting statements. This rationale simply views current replacement costs as the appropriate basis for ascribing a monetary valuation to the particular assets held. There is no concern here for maintaining the productive instrumentalities in physical terms as in the version above. Some would restrict the use of this approach to asset valuation to those situations in which replacements are planned or contemplated: "Present costs of replacement have nothing to do with present valuations unless present replacements are contemplated." Another has stated that where certain items are to be replaced when sold or used they should be valued at replacement

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cost because "this is their value to the new period." The underlying premise here evidently is that the intention to replace a given item indicates that the item has a value to the firm equal at least to the present costs to obtain another item identical to it.

On the other hand, some theorists advocate the use of current costs as the basis for asset valuation irrespective of any intentions to replace or not to replace in kind the valued item. The obvious thinking here is the acceptance of a cost basis of valuation and the desire to reflect in asset valuations the most current costs which can be related to the particular assets held. Johnson argues that current costs are the most relevant cost figures which can be attached to any collection of goods in the statement of financial position up to the point of sale. Edward and Bell, in developing their theory, assume that costs to replace have risen and recognize such cost increases as cost savings which they treat as a plus factor in the determination of that period's overall profit.

At this point it is necessary to explain what is meant by the term replacement cost or current cost as used

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in the various proposals that advocate the adoption of this basis of asset valuation. Although the term replacement cost has been given many different meanings, the present analysis focuses upon two specific meanings which appear to dominate the use of the term. Some refer to replacement cost as the estimated current costs of duplicating the asset in form through the productive efforts of the related firm. The current cost of a given item would then equal the total current costs of the various inputs necessary to reproduce the item. This meaning is usually applied when the asset being valued was and is normally produced by the related firm. Thus, Edwards and Bell recommend the current costs of inputs in the valuation of the inventory produced for subsequent sale by a manufacturing business.

On the other hand, current cost or replacement cost is also used to refer to the present cost of acquiring another asset like the asset being valued by means of a market transaction.\(^8\) This meaning may be used in connection with valuing either an asset which the firm usually produces itself or an asset which the firm usually obtains from another producer. Some revert to the former as opposed to the latter meaning of the term for situations in which the product's market replacement price is unavailable.\(^9\) As will be shown


below, these definitions appear to have significantly different implications in light of the economic analysis developed in this study.

The argument that the intention to replace is indicative of a minimum value of the asset to the firm equal to the estimated current cost to replace appears to be unacceptable for the analysis employed in this work. Preceding analysis suggests that the appropriate basis for valuation is the market value of the item as it now stands. Plans to replace are entirely irrelevant to the task of determining the present market value of a particular asset now held. The replacement decision is an entrepreneurial question and rests upon anticipatory calculations concerning the expected contribution of the replacement item.

The question which is of fundamental interest here is whether the current cost to replace the asset being valued is indicative of the current market value of the asset as it is now held. In light of the economic analysis employed in this study, there appears to be two theoretical explanations why the current cost to replace may not yield a money equivalent equal to the current market value or sales price of a given property item.

First, taking the term current cost or replacement cost to mean the current cost of the various inputs necessary to produce the replacement, one needs to remember that the prices of resources reflect the value imputed to them in alternative uses. The earlier the stage of production to which
the inputs refer, the more versatile are the inputs and, thus, the more alternative uses are able to compete for such resources.

Now, once inputs have been converted through the productive process into another form, i.e., an intermediate product further along the way towards a good ready for ultimate consumption, the market significance of that product can differ considerably from the market significance of the separate resources which entered into its production. The conversion process does not automatically yield a value of the produced result equal to the value of the means used in its generation. Faulty production plans can lead to the production of a product which the market values less than the total inputs used in its production. This result is the nature of entrepreneurial losses; the economy would have been better off if the inputs had been directed to other more valuable uses. One of the tasks of capital accounting is to reveal such errors in order that these resource misallocations will not continue in the future. So long as accounting values the product equal to the total cost of input resources, these errors will not be revealed. In fact, if the overall current cost has increased over the actual past cost, current cost valuations will yield the misleading signal that the productive process has been profitable and thereby will encourage the continued direction of versatile resources into this line of use.

On the other hand, the market value of the product
may exceed the total current cost of the necessary input factors of production. This result is the nature of entrepreneurial profits and indicates that the resources used in this line of production were put to a more important productive use than the alternative employments to which they could have been put. Another task of capital accounting is to reveal this type of result so as to encourage the flow of versatile factors of production into their most desirable uses. This signal will be lacking to the extent that the output value is not fully indicated. One cannot overlook the difference between the market value of input resources and the market value of the product into which the factors of production have been converted. It is this difference which precludes the assumption that the current market value of a given item equals the current market value of the resources necessary for the production of that item. The element of changing market conditions precludes the establishment of a state of equilibrium in which the total value of the productive resources is equal to the total value of their product.

Turning to the meaning which views replacement cost as the current cost to obtain a replacement through a market exchange transaction, it is important to remember that the economic analysis used herein has shown that the tendency towards a uniform market price applies to goods considered homogeneous by the participants in the market process. It was pointed out that things which might appear alike to a
neutral observer may nevertheless be viewed as being different from the standpoint of the market. Uniform prices do not tend to emerge for goods which are not considered to be identical regardless of the fact that they may possess the same physical substance. The criterion which determines whether separate items can be classified as being the same type of good is their homogeneity in use-value. Thus, the current replacement price of a replacement which for some reason is not considered to have the same use-value as the item being valued will not serve as a perfectly realistic market evaluation of the particular item held.

There may exist various reasons for the fact that a certain asset does not have a market value which is the same as the market price of other items which outwardly appear to be identical to it. The factor of location and the related problem of transportation costs can cause different market prices to prevail for items which are alike in physical substance. If the item being valued is closer to the point at which participants in the market wish to employ it than are other items physically similar to it, the market value of the item will be higher than that of the other items, other things equal. And the converse is true if the asset being valued is further away from the desired point of use than are other assets of a similar physical nature. In other words, an item in one location is not the same good as another item in another location, and the price discrepancy will reflect this lack of homogeneity between the two items and
the discrepancy between related transportation costs.

Assuming there is no significant difference regarding the locational effects upon transportation costs, there may still be different market prices for items which are of a similar physical substance. It may be that due to institutionalized marketing arrangements, the item in the hands of a certain holder is not perceived as the same good as it would be if it were owned by some other owner. Thus, a particular product held by an established and reputable dealer in that product may be valued differently from the same type of asset in the hands of an entity which is not well-recognized in the selling of such an asset. The factor of goodwill can affect the way in which a product is perceived by prospective buyers. The existence of wholesale and retail prices for physically similar items indicates that the use-value of the item is not the same at such different stages and that even the various facets of the distribution activity produce intermediate products along the way towards the ultimate consumers' good. Thus, the market value of a given asset held by a retailer may be greater than the current replacement cost stemming from the price at the manufacturer or wholesaler level since the product is at the final stage of the overall production process, and this difference can exist even when transportation cost is not a significant factor. Therefore, only to the extent that the asset being valued is perceived as the same good, i.e., having the same use-value, as the replacement items will current replacement
cost serve as an indication of the given asset's current market value. It seems likely that what might be termed superficial differences will be much less significant in the pricing of producers' goods than in the pricing of goods ready for consumption. Producers' goods are judged more on the basis of their productive capacity and less on the basis of tastes which so often characterizes the judgment of goods by consumers.

2. Determining Current Price Valuations

The Lack of Precision

As discussed in a prior section, there are actually no present or current prices; there are only factual prices of the past and expected prices of the future. The concept of current prices refers to recent market prices. The principal task in seeking to ascribe a present money equivalent to a given asset is that of obtaining as a basis recent past price data which pertain to the same type of asset. To the extent that the items are not comparable from the viewpoint of the market, the valuation will not be realistic if the past market price is used.

Where there is a complete lack of past market data which can yield a reasonable current market valuation of a given asset, the accountant has no way to ascribe a meaningful money equivalent to the item. As far as the property of money equivalent is concerned, the accountant is unable to recognize the asset except arbitrarily. As Rothbard states:
"A firm can estimate an implicit price when an external market exists; but when a market is absent, the good can have no price, whether implicit or explicit. Any figure could be only an arbitrary symbol."10 His only recourse would seem to be to mention the item in some way so that the statement user would be aware of its physical (or non-physical) existence and could draw his own conclusions regarding its significance for future monetary results. However, based on analysis which places accounting in the context of monetary calculation, it seems questionable as to whether the door should be opened for the accountant to report information which has monetary implications only in the realm of anticipation. This step could lead to expecting the accountant to disclose such physical facts as information about the health of the firm's key executives, their education, etc. Emphasis upon retrospective monetary calculation, at any rate, suggests that such matters fall beyond the responsibility of the accountant.

Since the works of the Austrians constitute studies of economics and not of accounting, they do not examine in detail the difficulties which might arise in the accountant's attempt to ascribe a money equivalent to the various assets. However, their writings suggest a general recognition on their part of the approximating and inexact character of the accountant's asset valuations. Rothbard speaks of "estimat-

10Rothbard, op. cit., II, 547.
Mises has written the following about the lack of precision in economic calculation:

Precision is unattainable in economic calculation quite apart from the shortcomings emanating from not paying due consideration to monetary changes. No practical calculation can ever be precise. The formula underlying the process of calculation may be exact; the calculation itself depends on the approximate establishment of quantities and is therefore necessarily inaccurate. Economics is ... an exact science of real things. But as soon as price data are introduced into the chain of thought, exactitude is abandoned and economic history is substituted for economic theory. The planning businessman cannot help employing data concerning the unknown future; he deals with future prices and future costs of production. Accounting and bookkeeping in their endeavors to establish the result of past action are in the same position as far as they rely upon the estimation of fixed equipment, inventories, and receivables. In spite of all these uncertainties economic calculation can achieve its tasks. For these uncertainties do not stem from deficiencies of the system of calculation. They are inherent in the essence of acting that always deals with the uncertain future.

Earlier discussion has been given to the fact that the changeability of prices is the factor which prevents the actual existence of present or current prices. If the future were certain, there would always be available accurate and relevant prices for the purpose of asset valuation. It is the factor of uncertainty that ultimately forces the accountant to resort to recent past prices pertaining to other particular goods with the assumption that these prices of the immediate past will remain the same in the immediate future.

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11 Mises, op. cit., p. 224.
Dependence upon past market prices, then, becomes the source of the lack of precision which inevitably accompanies the quest for the present market significance or money equivalent of given assets. Two significant and interrelated attributes of accounting valuation are concomitant with the objective of determining current market value: tenuousness and the lack of precision. Yet the Austrian theory holds that accounting can perform its tasks despite these inescapable difficulties.

The Austrian theory of economic calculation suggests that the accountant arrive at current market valuations of the items in which capital is presently embodied although these valuations may have to be in the nature of approximations. Their emphasis upon the role of monetary calculation and money prices in the process of resource allocation is the source of this orientation. The implication is that this is understandably all that accounting can be asked to do and that such approximations will serve effectively in the process of resource allocation. Capital accounting based upon the use of estimated market valuations is a matter of orienting the determinations of the accountant towards the function of market prices in the economic process.

In seeking to determine the current market significance of the various capital items, there appears to be inherent in the concept of an asset under this approach the quality that it is a good which is exchanged in the market process as a separately recognizable bundle of economic services. That is, there will be available market data for the
purposes of asset valuation only for service potentials which are embodied in things which are severable and exchangeable through market transactions.

**The Additivity Problem**

The market process often entails the valuation of assets in the form of integrated wholes as well as valuations of separate asset parts which might comprise such wholes. Thus, an entire plant or even firm might be sold for a single exchange price. Similarly, machinery and equipment items are valued as integral wholes even though their removal parts might also be ascribed individual market valuations. The existence of such recognizable groupings of separable resource items is the direct result of the "planned" context in which earlier discussion viewed the employment of physical capital items. The entrepreneur is not haphazard in the organization of the productive means which he dedicates to the production process. The market value of an established plant with an already systematized arrangement of interacting machines and other interrelated facilities may be greater than the total market value of its separately valued constituent parts simply due to the "thereness" or "factness" of the organized adaptation of the various resources. The fact that market valuations may apply as well to certain integral wholes as to component parts suggests that the determination of capital depends upon the approach used in ascribing the money equivalent to the assets presently
This line of thinking naturally leads into the question whether accounting should seek to determine capital based upon the current value of the firm as a whole. Such a valuation would certainly eliminate the problem of ascertaining current values for the various individual assets comprising the overall firm. For if it is the integral whole which is being valued, there is no sense in attempting to explain this overall value in terms of various values imputed to its component parts. The valuation would be focused upon the combination as a single resource in the same way that single prices emerge for complicated pieces of machinery encompassing many interacting parts.

The apparent problem with obtaining a current market value of the firm as a whole is that firms are exceedingly diverse and unique and, due to this fact, the accountant would be without any past market prices which would be indicative of the given firm's market value. Each firm is unlike any other firm. Market data would be lacking to afford an approximation which could be considered even reasonably realistic and representative of the given firm's market value. The problem is compounded by the fact that firms are not bought and sold with the frequency and regularity that individual capital items are and this means that market data

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pertaining to firm prices is quite sparse. A realistic market value of the firm would be available only by offering the firm for sale. From the viewpoint of the economic analysis used in this study, the market is not viewed so much as a process by which whole firms are evaluated for exchange purposes and allocated but rather as a process through which firms employ particular resources and factors of production in the generation of consumer satisfaction.

From the Austrian viewpoint, it is of no avail to turn to the stock market to obtain market data which can be used to ascribe a money equivalent to the firm as a whole. To base capital and income determinations upon the market value of the firm's stock would be confusing the nature of such determinations. Capital is defined as the sum of the money equivalent of the net assets "as dedicated at a definite date to the conduct of the operations of a definite business unit." Income is the incremental change in capital as a result of actions and events occurring over a given period. The capital or money wealth of the firm rests in the net assets held by the firm and not in the market value of the shares held by the firm's stockholders. One of the crucial factors affecting the value per share of a given firm's stock is the income reported in the statements of the accountant. The following remarks serve to make clear the distinction between the source of profit and loss, hence capital determination, and the function of the stock market:

Entrepreneurial profit and loss emanate from the
dedication of factors of production to definite projects. Stock exchange speculation and analogous transactions outside the securities market determine on whom the incidence of these profits and losses shall fall. . . . Even financial writers fail to realize that stock exchange transactions produce neither profits nor losses, but are only the consummation of profits and losses arising in trading and manufacturing. These profits and losses, the outgrowth of the buying public's approval or disapproval of the investments effected in the past, are made visible by the stock market. The turnover on the stock market does not affect the public. It is, on the contrary, the public's reaction to the mode in which investors arranged production activities that determines the price structure of the securities market. It is ultimately the consumers' attitude that makes some stocks rise, others drop. Those not saving and investing neither profit nor lose on account of fluctuations in stock exchange quotations. The trade on the securities market merely decides which investors shall earn profits and which shall suffer losses.

The lack of recent market prices necessary to ascribe a current money equivalent to the firm as a whole does not mean that smaller combinations of certain asset items may not be related to current market values. For example, a given building facility together with certain installed equipment could have a single market value which differs from the value pertaining to the individual items. It appears that the only thing that a theoretical analysis can say about the possibility of alternative groupings of asset items for the purpose of determining the money equivalent of capital items is that the accountant should be aware of this possibility in the process of valuation. And it follows that his capital determination should be based upon those

\[\text{[Mises, op. cit., pp. 517, 520.]}\]
market valuations which yield the highest capital value. The recognition of integral wholes whose market value exceeds that obtained by summing the separate market values of the component items reflects the appropriateness of the entrepreneurial plans underlying the use of such complementary factors and thereby yields a more realistic signal as to the effectiveness of resource employment.
CONCLUSIONS

This study has first considered the economic theory of the Austrian School in order to obtain a basic understanding of the workings of a market economy. This analysis explained how the market process tends to allocate scarce resources into uses which yield the satisfaction of the more urgently felt wants of consumers through the system of market prices. The problem of resource allocation under a system of social cooperation and the conditions of extensive specialization and division of labor and knowledge was shown to necessitate a means of calculation and coordination. Monetary or economic calculation based upon market prices was described as the indispensable instrument for the purpose of coping with the economic problem.

Austrian theory places heavy emphasis upon the subjectivity of value; thus, the explanation considers prices as being expressions of the relative importance of various goods and services and not as being any form of value measurement in the sense of ultimate satisfaction. For the Austrians, the driving force of the market and allocation process is the entrepreneur who seeks money profits through the discovery and correction of resource misallocations. The role of the entrepreneur exists entirely because of the fac-
tor of uncertainty; in the evenly rotating economy resources would be perfectly allocated because there would be no uncertainty about the future. Entrepreneurial profits are obtained by those whose subjective foresight is the most nearly correct concerning the employment of the factors of production. Thus, profits are viewed as performing a beneficial social function by steering resources into more important uses. Entrepreneurial losses reveal that certain factors of production have been misdirected, and since losses constitute penalties for such misjudgment, they also serve as signals to rectify the misallocation of scarce resources.

The essential tools of economic calculation are the concepts of capital and income. Capital is conceived as the money equivalent of the net assets dedicated to the operation of a particular business unit at a given point in time, and income is the change in capital as a result of actions and events which occur during a given period. The retrospective determination of income or profit and loss serves as an important guide to future actions on the part of entrepreneurs and in this way emerges as the key to coordinating the various decisions of the many interacting producers which contribute to the overall process of indirect or roundabout production.

Two dominant aspects of the Austrian analysis lead to certain implications for the accounting task of asset valuation. The heavy emphasis upon the subjectivity and uncertainty of future events suggests that the accountant not
base his asset valuations upon expected cash flows. The responsibility for anticipatory calculations is seen to attach to the entrepreneurial activity, and this view serves to delimit sharply the domain of accounting as relating to the realm of retrospective calculation and the determination of past profit and loss. And the stress placed upon the function of the system of market prices as the crucial means by which resources are directed rationally into various uses suggests that capital and income determinations be based upon current market prices. The continuous changeability of market prices as a result of the variability of preferences, technology, and available resources is the basis for the proposal that the market data underlying accounting figures be current.

In evaluating the implications of the Austrian analysis for accounting thought, conclusions can be drawn first in the form of certain general observations and comments dealing with the more general implications. Then attention can be focused upon the more specific implications.

Much accounting thought is given to the search for a distinct and meaningful conceptualization of the purpose of accounting. Those who seek to determine conceptually the role of accounting on the basis that proper solutions which will stand up for any reasonable period of time cannot be determined for current problems unless there is a foundation upon which to build appear to be correct. Accounting is not an end in itself and, therefore, accounting theory must be
advanced in terms of a clear notion of what is the function which accounting should be asked to perform. Austrian theory places accounting in the sphere of economic calculation and thereby views the purpose of accounting to be that of facilitating the process of rational resource allocation in a highly advanced and industrialized market economy. This approach seems to provide a meaningful and clear concept of the fundamental role of accounting in a market economy. In this way, the purpose of accounting is traced back to the root cause of the need for monetary calculations. Accounting is thereby ascribed an overriding social function which is indispensable to achieving the goal of making the best out of limited resources. The challenge that accounting should enhance the effectiveness of resource use in terms of the preferences of the members of the market society is meaningful and, it is hereby submitted, the proper context in which the development of accounting theory should proceed. Admittedly, this view of the function of accounting is a broad view; however it does appear to offer a fundamental and ultimate basis upon which to build accounting theory. This view suggests that a basic understanding of the workings of the market process is necessary to the development of accounting theory.

In connection with this idea of the basic role of the accounting activity, the implication of the domain of accounting seems useful and reasonable. The strong emphasis upon the pervasive uncertainty of the future serves to warn
the accountant that any recourse to the use of subjective anticipatory calculations in his statements precludes any claim of objectivity and confirmation, in addition to confusing conceptually the functional responsibility of supplying information which will be helpful in formulating expectations with the task of actually formulating those expectations. The analysis, thus, appears tenable in providing a clear theoretical distinction between the sphere of anticipatory calculations which are entrusted to those in charge of performing entrepreneurial tasks and the sphere of retrospective calculations which are related to the accountant.

In addition, circumscribing accounting to the "economic" realm places no demands on accounting to seek "socio-logical and psychological income" determinations. The "methodological individualism" employed in the Austrian theory seems quite logical and dispels the notion that some entity like "society" or the "corporation" is in quest of its own ends and values. Their emphasis upon the subjectivity of value serves to point out the futility of seeking to measure the intensive quality of satisfaction which is entirely personal. Accounting is thus placed in a value-free context in the sense that it is not required to make any judgments about ultimate values or ends. It appears that since values or ends are matters of preference and are not subject to discursive reasoning, this context is a proper one for a theory of accounting to take. Such a value-free orientation certainly would involve no change in traditional accounting
thought which has been devoid of value judgments on the part of the accountant; however, this orientation is not as some accounting theorists would have it.

More specifically, certain implications of the Austrian analysis appear to pose questions and difficulties which need to be examined in order to ascertain the practicality of these implications for accounting. Accountants obviously require theoretical benchmarks which can be followed in practice and which are consistent with the underlying objective of accounting. This point was the whole key to rejecting subjective expectations of cash flows as the basis for preparing accounting statements.

Austrian capital and income theory is presented in general terms, and this approach no doubt is sufficient for works devoted to economic as opposed to accounting theory. However, one problem seems to rest with the fact that, in connection with the function of determining income, there is no explicit suggestion in the Austrian analysis that a breakdown of the total income figure to distinguish between the results of a firm's production process and the results of other events may enable a more effective allocation of resources than focusing simply upon the total income for a given period. The tendency for the Austrian explanations to allude to accounting only in general terms does not mean that the Austrians are not aware of the need for breaking down the total income figure. Perhaps, to them this is a matter to be left to the accountant and not to be explored
by economic theory. Nevertheless, the implication that the determination of income or profit and loss as a single figure will provide an adequate guide to the rational allocation of resources is not clearly precluded from Austrian economic theory. And yet, there appears to be a conflict between the determination of total income based upon the change in capital value and the goal of directing resources into their more desirable uses. This apparent inconsistency arises from the view that the market value of factors of production reflects their significance in other lines of use in those cases in which the factors possess some versatility of usefulness.

For example, assume that the market value of ovens has increased sharply because of an increase in the value of scrap iron. Bakers who are employing ovens for the purpose of producing bread would thereby experience a capital gain in the book value of the ovens they hold and this capital increase would be reflected in their total income figure. It is thus conceivable that bakers could be losing money on their bread sales and at the same time show a total income provided the capital gain from the increased market value of ovens exceeds the losses from the production and sale of bread. If the total income figure is to be the signal for directing future resource allocations, such a situation would call for the further employment of resources in the bakery business. Such a result would be diametrically opposed to the proper allocation of resources which would
really call for the contraction of oven and bread production and the direction of increased amounts of iron into other uses. The faulty signal suggests that the increase in the total capital of bakers is directly the result of the value added through bread production when the truth of the matter is that their production operations caused a reduction in value in terms of the value of output relative to the value of employed resources. Also the capital gain which is reflected in the reported incomes of bakeries is precisely the result of the entrepreneurial decisions of other producers who detected the increased importance of iron in other lines of use.

The above line of reasoning would seem to point out the essentiality of breaking down the total income figure into meaningful parts in order to clarify the nature of the events and actions which have contributed to the advent of income for the period. Only in this way would more accurate signals for future resource allocations be provided. This approach is essentially that which characterizes the distinction between holding gains and operating profit which Edwards and Bell have made in the development of their system of accounting. From this discussion one can also see what is perhaps the basic problem involved in the "current operating performance--all-inclusive" issue of income determination which has been introduced in conventional accounting thought. By carefully pointing out the unremunerativeness of current bakery operations, future entrepreneurial decisions would be
guided away from this line of investment so long as expecta-
tions are based upon recent past results. And this is the 
proper and desired result if resources can serve better in 
alternative employments; in light of Austrian economic the-
ory, the indication is that they can if the value of output 
falls short of the costs of inputs.

The need for a breakdown of the total income figure 
seems to be equally necessary in those cases in which the 
increase in the market value of certain factors of produc-
tion, such as ovens, is a direct result of the profitable 
results which have been obtained from operations in the par-
ticular line of business in which the valued factors are be-
ing used. The Austrian analysis has shown that resources 
are valued based upon the expected value of the product 
which they are used to produce. Thus, profitable bakery 
operations would tend to induce increased bread production 
on the part of both present producers and new entrants into 
the field, and this development would mean an increase in 
the price of ovens (along with a tendency towards decreased 
bread prices as the supply of bread is increased) as a means 
of reallocating resources. This change in the market value 
of ovens, unlike the case above in which the value change 
was assumed to be tied into the increase in the market value 
of scrap iron, is attributable to the profitable results of 
bread production. However, as in the case above, the capi-
tal gain may not have anything to do with the operations of 
a given bakery; the gain may reflect the profitable results
of other firms and/or the anticipations of new entrants into the field.

A total income figure which encompasses both the gain from the appreciated value of the capital item, ovens, and the profit specifically related to the production of bread would still be deceiving. This is because the gain in the value of ovens arose entirely from the fact that a durable capital item was obtained at a relatively low price. Its durability means that those services which it can still offer are now more costly and higher prices for such services are now being avoided simply because the asset was acquired at an earlier time. Since the capital gain would pertain to the increased market value of both services used during the period and those services available for future periods of production, failure to separate the gain carefully in the disclosure of total income would mean that the total income figure would be interpreted as an indication of the profitability of the period's productive efforts alone. The misleading nature of this indication would be mitigated somewhat by the decrease in the value of the ovens as a result of depreciation arising from its use during the period. However, this effect would not offset the overall gain in value unless the ovens were entirely consumed in the period's production activity. By showing the results of operations separately from the gain emanating from the increased market value of ovens and reflecting in this determination of operating profit the increased cost of oven service used during
the period, future decisions concerning investments in the bakery business would be more consistent with the goal of rational resource allocation. It is possible that a given bakery would suffer losses from the production of bread and at the same time experience an externally caused increase in the value of its equipment due to other successful bakery operations. This would be even more reason to separate the sources of the firm's total income.

One would be quite correct in viewing the discussion up to this point as presupposing that the current market value of capital items, such as ovens, is the price that the bakery could obtain for ovens held if it chose to get out of the bread business and to sell its equipment items outright. In fact the discussion has assumed that there is a market for capital items which enables the continuous buying and selling of such by anyone regardless of their normal business line so that current replacement prices and current sales prices are the same in all cases. The Austrian analysis holds that there is a tendency for uniform prices to be set for homogeneous goods and services. This argument was the basis for drawing the implication earlier in the study that the money equivalent of capital items should be based upon current resale prices. As will be shown subsequently, there are serious questions which must be raised about the significance of resale prices for the purpose of determining a money equivalent of various capital items. However, what needs to be pointed out here is that the above discussion of
the need for a breakdown of the total income figure would be
pertinent to an evaluation of the implications of the Aus­
trian analysis even if the problem of obtaining meaningful
resale prices did not exist.

The proposition that the determination of income
should entail the valuation of capital items based upon cur­
rent resale prices appears to present certain very serious
problems, both conceptual and practical, for accounting and
its objective of facilitating the rational allocation of
scarce resources.

One problem arises from the fact that the price at
which most firms could sell certain exchangeable factors of
production is not even close to the price at which the same
item would be sold by those who normally deal in the sale of
particular types of capital items. Thus, the liquidation
value of ovens in the hands of bakeries would likely be much
lower than the price which oven manufacturers are currently
obtaining in the sale of this product. The market is char­
acterized by institutionalized channels of product distribu­
tion since factors of production are generally bought for
the purpose of entering into the productive process as op­
posed to being sold outright by the buyer. The bakery is
not engaged normally in the purchase and direct sale of
ovens, and the market price which it could realize upon the
disposal of these items would demonstrate that the market
process reflects this fact. The idea that its ovens are
viewed by the market as a different good from the ovens pro­
duced and sold by oven manufacturers does not appear to be a legitimate explanation for this price difference.

The explanation would seem better to lie in an imperfection in the market process, and more specifically, in the problem of the "division of knowledge" which has been alluded to in earlier parts of this study. The bakery simply has not been established as an enterprise engaged in the sale of ovens, hence, its contact and rapport with prospective buyers is not well developed as in the case of the firms which are known to have been continuously involved in the manufacture and sale of ovens. It is not that prospective buyers have considered the acquisition of the bakery's ovens and deemed them of a much inferior quality than those obtainable from oven manufacturers; rather it is that most prospective buyers are simply not aware of the bakery as an established supplier of the product. The idea that the market for capital items, like ovens, is so active and pervasive that there tends to emerge a uniform price for each type irrespective of who holds a given good may not be realistic.

This matter is problematic not only because of the difference between market prices depending upon the potential seller but also because the infrequency with which capital items purchased usually for productive use as opposed to sale are sold means that there is little, if any, current market data relevant to the situation. Thus, in most cases, the accountant will be hard put to arrive at any money equivalent in terms of present resale price, except perhaps a scrap
value for such items. When Rothbard states that, "for every capital good, there must be a definite market in which firms buy and sell that good," he seems to be incorrect if he means that all holders of particular capital items, including those who normally hold them for productive use and not for direct sale, are a part of that definite market.

Now the questions which are posed in the light of this discussion concern the predicament of the practicing accountant. Is it reasonable to suggest that he value assets held for production purposes at ridiculously low prices representing their estimated resale prices when the same good is currently being sold by others at a much higher market price? And what is the accountant to do when he is unable to find current market data which is indicative of a resale price at all and applicable to the particular holder of the items to be valued?

The Austrian theory, not devoted to the involved and special problems of the accountant, neither raises these questions nor provides any explicit explanations which can be resorted to in order to resolve them. However, there seems to be one insight into the Austrians' analysis which may elucidate why this problem did not receive any attention on their part. A close look at the focus which they place upon the role of monetary calculation and capital accounting suggests that their principal concern is not so much with the valuation of the factors of production once they are acquired for productive use. Rather it appears that their em-
phasis is on the monetary valuation of the output which is generated by the productive efforts of each firm and the relationship of this valuation to the monetary valuation of the resources used to produce that output. Thus, the current market value of ovens is more important for determining the income of an oven manufacturer than for determining the income of a bakery. Consider once again the following statements of Mises:

Capital accounting starts with the market prices of the capital goods available for further production, the sum of which it calls capital. It records every expenditure from this fund and the price of all incoming items induced by such expenditures. It establishes finally the outcome of all these transformations in the composition of the capital and thereby the success or the failure of the whole process. It shows not only the final result, it mirrors also every one of its intermediary stages. It produces interim balances for every day such a balance may be required and statements of profit and loss for every part of the process. It is the indispensable compass of production in the market economy. (Italics added.)

The above excerpt serves to demonstrate the dominant concern of the Austrian economists for the effective employment of resources in the production process. Their attention, it seems, was drawn towards the problem of resource use and how resources are employed to yield particular outputs.

This orientation actually takes on a "matching" context if pursued to its logical end, for how else could one determine the success or failure of a particular productive effort without comparing the value created with the value

\footnote{Mises, Human Action, op. cit., p. 491.}
used? Perhaps it is fair to say that the Austrian theory of income based upon the change in capital is theoretically consistent with a "matching principle" given their total emphasis and reliance upon the idea that uniform market prices tend to emerge for the same goods and services. If there were a tendency for uniform market prices to emerge for homogeneous goods, meaning that the bakery could sell its ovens at the same price that the oven producers obtain for the same goods, the cost of using ovens in the manufacture of bread in a given period could be determined by referring to the change in the market value of the ovens attributable to depreciation resulting from their use in the production process. This cost along with the other costs of resources used could then be "matched" against the market value of the output created during the period in determining operating profits. Access to an active and definite second-hand market for used capital items would be necessary to permit this approach to determining operating profit. Changes in the market value of ovens which are not due to productive use could be separated as capital gains or losses as discussed earlier. Overall, a "matching" approach and a "change in capital" approach to income determination thereby would be reconcilable. The emphasis upon the effectiveness of resource use in the production of certain products would require the valuation of remaining capital items primarily to ascertain the cost of using them in production. The stress upon the success or failure of the production effort suggests that the capital
gain or loss element of the total income figure may be secondary to the operating profit element for the Austrians. These conclusions, however, are all a matter of surmise on the part of the writer in view of the fact that the Austrian analysis does not deal with the special accounting problems of capital valuation and income determination.

Yet the fact remains that the assumption of uniform selling prices for homogeneous goods is not realistic due to the institutionalized channels of product distribution. And the questions earlier raised in connection with this fact and concerning the predicament of the accountant remain unanswered. The implications of valuing the productive assets of a firm at liquidatable values in those cases in which such values are determinable and at zero or near-zero values in those cases in which there is no indication of the price at which such items could be sold (which may mean that they cannot be sold except for scrap) require examination before any answers can be offered.

Since most of the productive assets acquired by firms for use in their operations would likely be sold outright by them at substantial losses if sold at all, the valuation of such items at their current resale prices would mean that the total income figure for periods of acquisition of such factors would reflect significant losses in the value of these particular capital items. One might argue that this effect would not be misleading so long as it is set out as a capital loss by reporting the income total in breakdown form.
as recommended at an earlier point. However, one must re-
member that the previous discussion regarding the need to re-
port the separate sources of the total income unrealistically
assumed that the market values of comparable factors of pro-
duction are uniform throughout the market regardless of the
nature of the owning firm. The fact that this assumption is
not true makes a significant difference in the effect this
approach to asset valuation would have upon the signal
thereby emitted concerning future resource allocations.

Once the assets are written down to reflect current
resale value, the costs attributable to the productive use
of such items would be unrealistically low so as to indicate
misleadingly a more successful result of operations than is
actually the case in the period of acquisition and in every
succeeding period in which those items are employed for the
production of particular goods and services. There would be
no accurate indication of the actual results of the produc-
tion effort being carried on by the firm. Also, there is no
real significance to the loss arising from the asset write-
down. It does not result from the misallocation of resources
on anyone's part; the resources are heading precisely for
the use to which they were intended and in terms of which
they were valued when sold by their producers. Obviously
this result is not consistent with the goal of facilitating
an effective allocation of scarce resources. If the crucial
problem of rationally allocating resources lies in the pro-
duction process, as suggested by the emphasis given to the
area of production by Austrian economic analysis, then valuing factors held for use and not for direct sale at current resale value is untenable.

It does not seem reasonable to contend that the market significance of an oven is equal to the current market price that an oven manufacturer can obtain for it up until he sells it and whereupon he sells the oven to a bakery the market significance of the item suddenly is transformed into the value which the bakery could obtain through its direct sale. The market value of the oven in the hands of the oven manufacturer reflects certain anticipations on the part of bakeries regarding the value of the oven in productive use. And the bakery acquires the oven precisely for the purpose of employing it in the firm's productive activities. What the bakery could obtain through selling the oven is simply not significant nor relevant, given the decision to engage in bread production. The current price of productive factors at the point of acquisition by their intended users, or, to put it in other terms, the current price of productive factors at the point of sale by those engaged usually in the production of such goods for sale seems to furnish a meaningful and the only reasonable basis for arriving at a valuation which is indicative of the current market significance of factors held by firms for the purpose of productive use.

Yet, arguing for the current replacement price as the basis for valuing assets intended for productive use does
not solve exactly the problems of the accountant. One rea-
son for this gets back to the matter of unavailable market
prices. A firm is likely to possess many productive assets
for which there are not market prices. Consider the situa-
tion in which a manufacturing firm has an organized and
proven process of production or assembly line. This factor
of production is of more significance than that perceived by
simply viewing the situation as a group of machines set out
in some orderly fashion. Prior analysis pointed out the
purposiveness which attaches to the arrangement of capital
items on the part of the entrepreneur; attention was also
given to the problem of additivity. The problem here lies
in the fact that there is unlikely to be an available market
price which will indicate the significance of the fact that
the equipment items have been arranged and systematized in a
manner effecting an efficacious process of production.
There may be current market values which indicate the costs
of inputs necessary to establish the production arrangement
now, but these are not current prices of the overall asset
viewed in its entirety as an integral whole nor are they ap-
propriate in themselves for valuing the asset once it has
become a used factor.

There are other examples which illustrate the lack of
market values for all of the assets which a given firm may
depend upon in carrying out its operations. There is the
vital resource which every business must rely upon, the hu-
man resource manifested in the skills and attitudes of the
people employed by the business. The fact that there are current prices available in the form of salary and wage rates does not resolve this matter, for these rates of compensation are related to individuals and not to the value of their being organized into a productive team entailing the coordination of diverse abilities so that an overall productive effort is obtainable. The asset thereby provided is something greater than the sum of the individual parts. Yet, since this resource is not continuously bought and sold as a whole, though occasionally it is obtained in the acquisition of an entire firm, the accountant clearly has no current market value to turn to for the purpose of placing a value on it. Attention has been given already to the problem of valuing the firm as a whole; that problem obviously is related to the impossibility of placing a market value on the interrelated services provided by a firm's work force. Even in the case involving the sale of an entire firm, the price would reflect the value of the firm as a whole unit, from the viewpoint of the buyer, and not a sum of values individually determined for its various parts.

Another asset which is not subject to a market valuation is an established line of credit which the firm can depend upon for future financing needs. There is no denying that the ability to generate external funds on demand is an important asset or means for conducting a business enterprise. And what about the asset which is so often important to sustaining continuously successful business operations,
customer goodwill? A firm which has this asset is better off than another firm which is identical to this firm in every other respect except for owning customer goodwill. Yet the accountant does not have any current market data to which he can refer in order to place a money value on these assets.

The important point of the present discussion is to demonstrate the fact that a given firm usually possesses certain very crucial assets for which there are no market values which will enable their valuation by the accountant. This fact appears to show that a concept of capital defined as the money equivalent of net assets is actually unworkable as the basis for income determination. For some major assets there exist no meaningful money equivalent. The concept of assets as the means towards future production success is a broader concept that the concept of assets which can be ascribed a meaningful money equivalent.

There is another important problem besides the lack of market prices for certain key assets which is connected to the idea of using current replacement prices for determining a valuation of productive factors held at a given time. Current replacement prices are likely to refer usually to the asset in a condition of newness. For most types of productive assets, there is no active and well-organized second-hand market since most assets bought for use are not frequently sold outright by the buyer who originally intended to employ them in the production of some other good or service.
Oven manufacturers are not engaged in the sale of used ovens usually, and bakeries do not frequently negotiate the direct sale of their ovens. Therefore, the only current market prices to which the accountant can refer in seeking a money valuation of ovens are the prices of ovens new and sold by oven manufacturers.

Since the current prices of new productive factors are not appropriate for the valuation of used items, the accountant is still in a dilemma in trying to ascribe a meaningful money equivalent to productive assets held in used condition. The crux of the problem rests in the durable nature of many assets which are used by most firms. The fact that services from a given item are derived over extended periods of time means that certain services which enter into the production of a product for sale are not bought from day to day on an incremental basis. This seems to lead to the unavoidable conclusion that income determination is not achievable on the basis of calculating the difference between some kind of capital determination at two different points in time. The conventional accounting approach of determining operating income through the matching of revenues and related costs of generating those revenues seems to be the only reasonable approach to the problem of determining operating income. Under this approach, the productive assets which appear in the balance sheet at a given date emerge as by-products of the determination of periodic operating income.
In determining the related costs of generating the revenues of a given period's productive efforts, it does not appear that the accountant can escape from having to allocate portions of durable asset values as costs incurred and resulting from the operations of a given period. The cost allocation process of depreciation and amortization which characterizes conventional accounting practice is necessary in determining operating income despite the element of subjectivity which enters into such periodic allocations. One can see that the task of cost allocation would not exist if either of two conditions prevailed: ready and current market prices for all types of productive factors, both old and used; or the acquisition of all factor inputs on an incremental and day-to-day basis as opposed to the purchase of bundles of potential economic services which are intended to be realized over extended periods of time.

Since depreciation cost cannot be determined by simply relying upon the change in the market value of a given depreciable asset in most cases, the question can be asked as to whether the Austrian analysis is suggestive of any other approach to the problem which may be practical and consistent with the aim of contributing towards an effective allocation of resources. It appears that the current replacement price, in those cases in which it is determinable or can be approximated, is consistent with the goal of rational resource allocation and is the proper basis for valuing certain productive assets and for determining the peri-
odic cost of their use in productive operations. By matching the current costs of the production activity against current revenues, a more accurate picture of the success or failure of the firm's productive efforts would be provided.

This method is essentially the same approach as that recommended by Edwards and Bell and encompasses the recognition of holding gains and losses on those productive assets, such as depreciable property items and raw materials, which yield their economic services over extended periods of time so as to render their acquisition price an unrealistic indication of current price. Asset valuation would be based upon current replacement prices of similar assets, allowance being made for depreciation on the basis of estimated useful life and other necessary and reasonable assumptions. A holding gain or loss equal to the change in the asset valuation from that at the start of the period would be reported separately from the results of production operations. The revenues generated by operations would be related to the current costs of producing such, and these costs would include allocations of those particular asset values which attach to assets providing extended periods of economic benefits. Those production costs which arise generally from out-of-pocket expenditures, such as wages, would involve no adjustment in order to reflect the current prices of their related services.

Separating holding gains and losses from operating income provides a more accurate signal of the results of the firm's productive efforts and thereby is consistent with the
orientation towards the resource allocation problem. Holding gains and losses reflect the changes in asset valuations emanating from changes in the current replacement prices of similar assets. Valuing assets on the basis of current replacement prices does not show the value which could likely be realized if the productive factors were sold outright. Nor does this approach to asset valuation make any assumption that the given assets will be replaced. It does reveal the approximate amount of money which would have to be paid at the present time if the asset were to be replaced now. More importantly, valuing assets at current replacement prices furnishes a realistic basis for allocating the cost of their use in the current period's production process. This point indicates how a meaningful income determination requires a "matching" approach rather than that of merely seeking the change in capital; it also shows how the asset valuations which appear on the balance sheet are largely by-products of the income determination problem.

It should be clear that valuing certain assets of the firm on the basis of individual current prices only reflects the value of those particular assets in alternative uses. Summing these individual values does not yield a total market value which is indicative of anyone's valuation of the assets as they are being arranged and employed by the firm. In other words, the valuation of input factors of production on the basis of their acquisition cost provides no market check upon how they are being brought together and organized
into a certain production approach. Based on the Austrian analysis, this is not the important check even if it could be made. The important aspect to be evaluated by monetary calculation is the result of the productive efforts in the use of these factors to generate products and services. Operating income determination, then, emerges as the critical accounting calculation, and current cost allocations appear to be an essential part of this calculation. Therefore, determining income cannot be simply a matter of calculating the change in the wealth or capital of the firm between two points in time.

It is not within the scope of this study to delve into the problems of determining the current costs of various productive assets. Such an approach to the valuation problem seems far more feasible as well as conceptually meaningful than does the use of current resale prices. In those cases in which approximations are recommended, such as the use of specific price indexes to be applied to historical cost, the approach at least has in its favor the fact that what is being approximated is current replacement cost. This is in contrast to the questionable use of this method in the attempt to approximate the current resale value of the related items.

As can be seen, attention has been focused primarily upon some of the matters relating to determining operating profit and loss. This emphasis appears justified in light of the Austrian theory and the underlying goal of efficient
resource allocation. However, the total income figure must also incorporate any other significant monetary changes which were not effected by the productive efforts of the period. These changes should be shown separately as discussed at an earlier point; such would be the manner in which so-called holding gains and losses would be disclosed. Also, in connection with these monetary changes, there may be a coincidence between current resale and replacement prices, such as in the case of the current prices of investment securities which are regularly traded on organized security exchanges. These aspects of the income figure manifest the change in capital or wealth approach to determining income.

Discussion up to now has revolved around the problem of valuing the productive assets of the firm for the purpose of balance sheet presentation. Attention has been given to the fact that there is no basis for arriving at a monetary valuation of many significant assets such as goodwill, the human resource team, established sources of credit, and systematized production processes. A rationale has been developed to support the recommendation that current replacement prices, in those cases in which they are available or can be meaningfully approximated, provide the basis for valuing the related assets and costs incurred periodically in the production process. However, this treatment has not examined one final implication of the Austrian analysis for accounting calculations: the current monetary significance of the
unsold output of the period's production process.

Austrian theory seems to be clear about this aspect of the accounting problem. The implication drawn from the Austrian theory of capital and capital accounting that capital items should be valued at their current resale price seems to apply particularly in this area. Effective signals for a rational allocation of scarce resources necessitate a comparison of the market value of output produced with the market value of inputs used to produce that output. In those cases in which the value of output or production exceeds the value of the required resources, resources were allocated into desirable uses; conversely, results which show that the value of resources used exceeded the value of the goods and services produced, a misallocation of resources is indicated.

In contrast to the idea that assets intended for use in the production of other goods and services intended for sale should be valued at their current resale prices, the proposition that products held for sale be valued at current resale prices appears to be meaningful and consistent with the resource allocation problem. The market value of products ready and intended for sale supplies a means of indicating the effectiveness with which resources devoted to productive operations have been put by the firm. Valuing products on a basis of the costs of necessary inputs does not provide an indication of whether such input resources were properly allocated or whether they were misallocated.
This point was discussed earlier in the study regarding the transforming effect of converting certain versatile resources into other forms through the productive process. The failure of cost-based valuations of assets held for the purpose of direct sale to provide a means of evaluating the monetary effect of related productive efforts suggests that this valuation approach is not compatible with the aim of facilitating the effective direction of resource use. This implication of the Austrian analysis appears to be useful and theoretically tenable. Valuing these assets at current resale value would mean that the revenue element of the operating profit section of the income statement would include both the proceeds realized through actual sale of products during the period and the current resale value of assets now ready and intended for disposal through sale. Due to the principle of time preference, it follows that the valuation of ending inventory would encompass a discounting factor in order to reflect the time horizon over which such assets likely will be sold. Perhaps this interest allowance could be based upon the objective analysis of past inventory turnover data.

From a practical viewpoint, it appears that in most cases the accountant has current market data indicating the resale price of products which the firm normally produces and sells. This approach to valuing products intended for sale involves the shifting backward to an earlier point the timing of revenue recognition as compared with conventional accounting practice and theory which usually retains a cost
valuation up to the point of sale. Thus, it is a critical event approach to revenue recognition in which the confirmation of productive output based on market prices and not on actual sale is deemed the critical event. However, it does not follow that revenues will be recognized immediately upon the completion of any given unit of inventory. Valuations at current resale prices would apply only at the end of the accounting period and only to those finished items held at that time. Remaining revenue determinations would arise from actual sales data which pertain to the operations of the related period. The total current costs attributable to the production of completed inventory during the period would then be deducted from total revenue in arriving at a calculation of operating profit or loss.

One problem with the recommendation that goods intended for resale be valued at their current resale value relates to the fact that parts of a firm's ending inventory may include incomplete products. In some cases, these intermediate stages of product completion may be evaluated by referring to current market prices of similar intermediate products. The allocation of resources is better facilitated by relying upon as many intermediate points of evaluation as are available. Thus, the Austrians emphasize the usefulness of monetary calculations throughout the long process of indirect or roundabout production, not only in the context of separate firms but also in the context of one firm's carrying out several steps in the overall process. A textile
mill engaged in the manufacture of cloth, for example, could use an implicit market resale price of the yarn which it produces in order to evaluate the effectiveness of that stage of its overall process apart from the results of other stages.

However, it is quite likely that for many incomplete products, the accountant will be unable to find current market prices to which he can refer for the purpose of valuing goods in the process of completion. He probably will be unable to determine meaningfully the current resale price of a half-finished oven. If one recommends that such an item be valued equal to the current price of a completed one less the current costs to complete, he suggests that the entire current profit margin being realized on completed ovens can be identified with the slightest beginnings in the generation of a finished oven. This does not appear to be a reasonable suggestion. However, in those cases in which the product is very near completion, this approach does appear to have some validity. Obviously, the question what constitutes being "near completion" is a qualitative and judgmental one which a general theory cannot resolve with objective criterions for every possible case. Relying upon professional judgment would seem to be the only way in which this approach could be recommended.

In those situations in which the accountant has no data indicating the current market price of incomplete products, in so far as one desires to evaluate the performance
of the productive process relating to the effectiveness with which scarce resources have been used up to that point or stage, the accountant clearly is unable to make a contribution. As Rothbard has stated regarding the unavailability of implicit market prices for capital accounting purposes, "but when a market is absent, the good can have no price, whether implicit or explicit. Any figure could be only an arbitrary symbol." Thus, it appears that the only thing the accountant can do in such cases is to accumulate the costs invested in these products for the purpose of matching them against the value of the completed product in some future period. Again, this shows the impossibility of meaningfully showing all assets at their current resale price and of basing the determination of income merely upon the change in the value of net assets. Since the valuation of goods in process at the end of the period would not enter into the determination of operating profit or loss, the question whether the accumulated costs underlying the valuation should be at current costs or actual costs is probably not a crucial one; however, consistency would seem to call for basing the valuation upon current costs and reporting a holding gain or loss in connection with the related price changes. To the extent that the firm has completed products during the period, useful signals for future resource allocations would be available despite the inadequacy of any valuations of goods in process.
Valuing long-lived factors of production on the basis of current replacement prices enables the revenues of the current period to be compared with the current costs of those resources employed to generate such revenues. This approach results in a current operating profit figure which is useful to those who may be considering entering, continuing, or expanding this particular industry or line of production. The theoretical context in which this approach to profit determination is proposed is that of the possible continued flow of resources into a given line of production. In this context, accounting determinations may be useful indicators of whether sufficient output value is to result from the necessary resource input values.

Yet there appears to be an important place for accounting valuations based upon opportunity costs. For the firm which holds factors of production previously acquired, future production decisions concerning the use of these factors do not need to consider their past costs, either in actual or current terms. The costs paid in the past for these factors are "sunk costs" and, hence, of no significance to decisions relating to the future use of these assets. With a time horizon that does not go beyond the life of such factors of production, only the additional costs expected to be incurred in their use is relevant to the decision maker. If expected marginal revenues are sufficiently in excess of expected marginal costs, employment of the assets presently held should continue. Errors of the past in the production
and acquisition of these resources are irrevocable. What counts now is their effective use from the present on.

Valuations based on current resale value would be useful for deciding on the appropriate use of presently held resources. In those cases in which current value is in excess of expected short-run net cash flows, the appropriate decision would be to sell the asset; conversely, if the present value of the excess of expected revenues over expected additional costs is greater than current resale value, the asset should continue to be used by the firm. By reducing the valuation of the resource to opportunity cost, operating profit determinations would tend to be based on the period's marginal costs rather than average costs, and this result would be more consistent with the nature of the related anticipatory calculations. The real advantage (or disadvantage) of continued use of the factors in that line would be clouded if allocations of "sunk costs" were made against current revenues. Such allocations could cause an operating loss to be shown for the past period and thereby suggest that such operations should be discontinued when, given the irrevocable loss arising from past acquisitions, the continued use of the factors may be desirable and economical.

Since the use of opportunity cost valuations is oriented to decisions concerning the use of presently held resources, it seems reasonable that statements based on such valuations would be useful principally on an internal basis
by those decision makers responsible for decisions dealing with the use and disposal of certain assets. It should be clear that the presently held asset to be valued can range from a single equipment item to a plant to a whole firm. Given the theoretical usefulness of current resale values of factors of production, the practical difficulties of arriving at these values, as discussed at earlier points, still remain.
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VITA

Thomas Cullom Taylor, Jr., the son of Marie Rose and the late Thomas C. Taylor, was born in Henderson, North Carolina, on August 2, 1936. He received his elementary and secondary education in the public schools of Henderson, graduating from Henderson High School in June, 1954.

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Major Field: Accounting

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