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THE CITY UNIVERSITY BUSINESS SCHOOL

LONDON

AN INVE[illegible]N INTO THE USES OF THE VALUE ADDED CONCEPT AS A BASIS FOR IMPROVING T[illegible]OMIC PERFORMANCE OF BRITISH INDUSTRY

"De - restriction may be allowed for under new Senate regulations."

by

ALY EL-SAID A. [illegible]

A THESIS SUBMITTED FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

NOVEMBER, 1981

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ALY EL-SAID A. SENOUN

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No access should be allowed to this thesis until the 1st January 1996 without the permission of Mr. J.E.Lewis or Mr. A.E.Senoun.

ABSTRACT

There is probably no single economic topic of greater public concern in Britain at the present time than the efficiency of industry. As a high rate of inflation, low rates of productivity, investment, and growth, increasing unemployment, and the conflict between capital and labour continue to be major characteristics of the British economy, improving the economic performance of British industry is a matter of concern.

Several theoretical arguments have been recently advanced in the literature which suggest that the Value Added Concept may well make a significant contribution to the cure of British industrial disease suffered over the past three decades. One of the *a priori* arguments supporting these suggestions is that income reporting on a value added basis, coupled with a related organisational rewards system, would encourage the wealth creation, ensure its equitable distribution, create a better climate of co-operation and conditions which might facilitate effective participation and employee involvement, and motivate all levels of management to make decisions congruent with the long-term economic interests of the company and, eventually, of the economy.

To the best of the researcher's knowledge, however, no empirical studies aimed at testing these arguments have been reported. The major purpose of the present study is to fill this gap by providing empirical evidence on this paramount issue.

The methodology used mainly included extensive library research, a specially designed questionnaire which was mailed to randomly selected samples of 194 British industrial

companies, and published data. Chi-square using contingency tables, the Mann-Whitney U test, and the t test were all employed in the statistical analysis. Multivariate techniques of partial correlations and multiple regression were also used to test some of the study's hypotheses.

The main findings of the study indicated that a statistically significant degree of differences exist among companies reporting value added and those which do not in terms of the wealth created, both labour productivity and capital productivity, and the funds retained for use in business. Furthermore, these findings demonstrated that operating value added productivity bonus schemes has generally resulted in greater involvement and cooperation, better communications, and higher levels of morale and productivity.

In general, the results of the study seem to support the alleged utility of the Value Added Concept, both in financial reporting and in incentive schemes.

CHAPTER I

INTRODUCTION

1.1 Statement of the Problem

The true aim of all economic activities must surely be to enhance the well-being of individuals and society. Prosperity of any nation and the well-being of its population, however, is determined by productivity growth measured in terms of the wealth created (value added) per unit of resources used in creating it. Indeed, the most fundamental economic problem which we all now face is not how to share out the wealth we create, but how to create more wealth and how to enlarge the economic pie by avoiding conflict and mobilising our effort to maximise joint wealth rather than one party's share.

Without growth in productivity, struggles over income shares lead directly to inflation and unenmployment.[1] Yet economists generally agree that the rate and adequacy of productivity growth depends on three factors: capital investment, improvements in labour productivity, and advances in technology.

While research and development expenditures as a percentage of gross national product have steadily declined in the U.K. during the past decade, just the reverse has taken place in other economically advanced countries like West Germany and Japan.

---

1 Burton G. Malkiel, "Productivity - the problem behind the headlines", Harvard Business Review (May-June, 1979), pp. 81-91.

The situation with respect to capital spending is not much more encouraging. The U.K. has the lowest ratio of capital investment to GNP and the highest percentage of obsolete production capacity among the major industrialised countries. To illustrate, between 15 and 20 per cent of Japan's GNP has been poured into the expansion or replacement of industrial facilities over the past three decades compared with slightly more than 8 per cent in Britain.[1] Furthermore, the Organisation for Economic Cooperation and Development (OECD) national accounts show that between 1964 and 1973, the percentage of manufacturing industries' value added that was reinvested averaged out at 23.9% in Japan compared with 12.7% for the same period in the U.K.

As a result, while the average growth rate of productivity of both Japanese and German industries for the period from 1973 to 1977 was 18.8%, productivity of British industry grew only by 2.5% during the same period, which is the lowest rate of productivity growth amongst almost all advanced industrial nations.[2]

Declining rate of productivity growth has led to a situation in which overall unemployment in the U.K. has

---

1 F.E. Jones, "The Economic Ingredients of Industrial Success", Proceedings of the Institution of Mechanical Engineers, (Vol. 190 - 16/17), p. 120 (A).

2 For international comparisons of industrial productivity and other major statistics, see Appendix E.

risen to 2.94m in July 1981 (nearly one in eight of the workforce) which is the highest for more than 50 years and the percentage rate is well above the international average. Inflation rate has also been higher in the U.K. for the past two decades than the average rate of the 6 major industrial countries, i.e. Japan, West Germany, France, U.S.A., Italy, and Canada. While the average rate of inflation of the 6 countries for the period from 1963 to 1969 was 3.6%, the U.K. average rate of inflation was 4.3% during the same period. From 1970 to 1978, the average rate of inflation of the same six countries was 7.7%, whereas the U.K. average rate was 12.0% during the same period. The most recent statistics also show that inflation in the U.K. is still in double figures and it is unlikely that it will come down to single figures as long as productivity growth is declining.

Given Britain's economic problems discussed above, one must wonder whether accountants can make a significant contribution to overcome such problems. Regrettably, accountants have not concerned themselves with the impact of accounting reports on the economy, considering this outside the scope of accounting. Similarly, economists have not concerned themselves with the economic consequences of accounting policy, considering it the domain of accountants.

Very recently, however, the impact of accounting reports on the decision making behaviour of the reporting firm as well as on the economy as a whole has been the subject of increasing attention in the accounting literature.[1] Indeed, the economic consequences of accounting reports may be the most challenging accounting issue of the 1980s. The major argument here is that the behaviour of individuals and organisations is influenced not only by the information they receive and actually use in their planning and decision making, but also by the information they are required to communicate. Individuals and organisations strive to achieve those objects by which they consider their performance is judged. Thus, by changing the scoring rules on which financial reports are based it is possible to affect management attitudes and policies, and hence economic performance.

To illustrate, one of the main criticisms most often made of U.K. management is that it goes for short-term profits rather than long-term growth. The authors of a

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1 See, for example, Institute of Professional Accounting, Studies on Economic Consequences of Financial and Managerial Accounting: Effects on Corporate Incentives and Decisions, Journal of Accounting Research (Vol. 18 Supplement 1980); Victor H. Brown, "The Economic Impact of Financial Accounting Standards ", Financial Executive (September,1979), pp. 32-39, and Alfred Rappaport,"The Economic Impact of Financial Accounting Standards - Implications for the FASB", in Gary J. Previts (ed.), Papers presented at the Accounting Research Convocation on the subject of Emerging Issues (Graduate School of Business Administration, The University of Alabama, November, 1976), pp. 113-128.

recent report commissioned by the U.K. government analysing the decline of the motor cycle industry, for example, concluded: "The loss of market share by the British motor cycle industry over the last fifteen years resulted from a concern for short-term profitability".[1] This may be true, for the focus only on earnings per share often influences management to forgo investment in capital equipment, R & D, and other discretionary items such as maintenance expenses and spending on employee development programmes. Indeed, the desire to achieve higher profits may also lead management to view labour redundancy as the sole or primary solution to the enterprise's profitability problem.

The central premise of this study is that by shifting the emphasis from profit to value added, a stronger awareness of the long-term interests of the company and, eventually, of the economy may be induced. In sum, our theoretcial expectations are as follows. Productivity is expected to increase with value added reporting, holding other factors constant. We also expect that income reporting on a value added basis would facilitate the introduction and the operation of value added productivity bonus schemes. Such schemes may also help to improve productivity and interact with the external reporting of value added by having a stronger effect on productivity.

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1 The Boston Consulting Group Limited, Strategy Alternatives For the British Motorcycle Industry: A Report Prepared for the Secretary of State for Industry (Cmnd.532;H.M.S.O., 1975), p. x.

The problem has been summarised and a similar solution has been suggested by Professor Morley. He says:

> "The British economy since 1945 has been declining relative to that of its competitors. Much of our national effort is directed to squabbling over relative shares in a static economy. If we are to break out of this dreary decline, we must, as accountants, do two things: we must present readable reports on wealth creation to decision makers and we must develop and install schemes which give each individual an incentive to create more wealth. Value added enables us to do both."[1]

Without wishing to suggest that value added is the wonder remedy for most of Britain's economic ills, we do believe that income reporting on a value added basis, coupled with a related organisational rewards system, would encourage the creation of wealth, provide a framework for cooperation and participation, and motivate all levels of management to make decisions congruent with the long-term economic interests of the company and, eventually, of the economy.

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1 Michael F. Morley, "Value added: the fashionable choice for annual reports and incentive schemes", The Accountant's Magazine (June, 1979), p. 236 (emphasis added).

1.2 Purpose of the Study

As indicated by the title, this study is concerned with examining, theoretically and empirically, the uses of the value added concept at the micro-level with a view to improve economic performance of British industry. More specifically, the principal purposes of this study can be summarised as follows:

(1) To develop a coherent framework for the value added concept.

(2) To empirically identify management motivations for value added external reporting or discover reasons for not reporting it.

(3) To statistically analyse the economic impact of value added external reporting on the reporting firms' behaviour.

(4) To empirically evaluate the main benefits of value added based productivity bonus schemes.

1.3 Need for the Study

Accounting is a responsive subject and research into accounting, when seen in this context, is an essential means of ensuring its adaptiveness to developing needs. Current economic and social developments are focusing increasing attention on improving productivity of industry. The last few years have seen a sudden upsurge of interest by accountants in the value added concept as a basis for such improvements. Indeed the concept of value added has been proved to be much the most popular of the remedies prescribed by accounants. It has been advocated for a variety of uses, including not only as a means of financial reporting but also, *inter alia*, as a basis for productivity bonus schemes.

While a myriad of articles have been written on the subject arguing that the value added approach draws attention to the ways in which the country's wealth and productivity growth can be improved, most of these writings were just piecemeal consideration of individual points with no overall coherence or underlying conceptual framework. Furthermore, there is no empirical evidence, one way or the other, to disprove or to support these *a priori* arguments.

The present research study, therefore, would seem to be necessary for two main reasons. First, it develops a

coherent theoretical basis that provides a firm foundation for needed empirical research in this area. Secondly, it provides empirical evidence on the relationship between the uses of the concept of value added as a means of financial reporting and as a basis for productivity bonus schemes on one hand and the economic behaviour of firms on the other.

Findings of this research (both theoretical and empirical) should be of significant interest to both the financial accounting policy-making bodies, such as the Accounting Standards Committee in the U.K., and the financial accounting legislative authorities. Such findings may be considered as a necessary precedent before taking any major accounting policy decisions for establishing a formal requirement for value added information to be given in general purpose external financial reports of companies.

Findings regarding the uses of the value added concept as a means of financial reporting and as a basis for productivity bonus schemes are also of interest to individual company managers whose major concern should be the improvements in communication, cooperation, and productivity levels in their companies.

1.4 Limitations

As with most empirical studies, the design and implementation of the research are subject to certain constraints which impose limitations on the interpretation and applicability of the findings. Specifically, while every effort has been made in this study - from the selection of the sample to be examined through adopting an eclectic multimethod approach which includes survey research, interviews, and micro-level historical analysis - to improve the vailidity of the research findings, the present study still has obvious limitations. In particular, four limitations are worth stressing:

(1) Data obtained from published sources and used for our analysis was related to only a one year period. Ideally, data for a longer period would have been collected and analysed, but this was precluded, as the use of value added in external financial reporting is a very recent phenomenon and hence collecting data for a longer period was not possible.

(2) Similarly, the same reason behind the limitation above has led to a second important limitation of the study. That is, our analyses were carried out according to whether companies externally report value added and whether they operate value added productivity bonus schemes or not. Of course, it would have been preferable if companies were further classified, for the purpose of our

analysis, according to both size and industrial category. Unfortunately, the number of companies that externally report value added and/or operate value added productivity bonus schemes in each industrial category, even regardless of their size, was not adequate for purposes of statistical inferences.

(3) For the purpose of evaluating levels of labour morale, cooperation, and involvement, this study did not employ extensive interviewing in case studies due to time and cost constraints, nor did it use any objective behavioural data such as labour turnover and absenteeism as was initially intended. Such data proved to be very difficult to obtain. Instead, the study used subjective perceptions of questionnaire respondents concerning this issue.

(4) Finally, as is true of virtually all accounting surveys, the response rate was less than 100%. Although a direct test failed to suggest the presence of a material non-response bias, the reader is cautioned that extrapolation of the survey results to the total population surveyed cannot be done with complete assurance.

Notwithstanding the care taken, however, and because there is little or no corroborative research on the sub-

ject, these limitations accentuate the importance of viewing the results accumulated in this study as merely the initial instalment in what is hoped will become a growing body of empirical literature bearing on this paramount subject.

1.5 Hypotheses

The following null hypothese, derived primarily from a theoretical model which was developed in Chapter II, were subject to statistical testing. The associated null hypothese in each case is a hypothesis of no difference.

Hypothesis 1

There is a significant difference between companies which externally report value added and those which do not regarding their perceived objectives.

Hypothesis 2

There is a significant relationship between the external reporting of value added and type of control.

Hypothesis 3.1

There is a significant difference between perceptions of managements of the two groups of companies (companies externally reporting value added and companies which do not) regarding the types of users of financial reports.

Hypothesis 3.2

There is a significant difference between perceptions of management of the two groups of companies with respect to objectives of financial reporting.

Hypothesis 4.1

Managements which are using value added as a means of external financial reporting are more likely to use it in internal decision-making.

Hypothesis 4.2

There is a significant difference between perceptions of managements of the two groups of companies with respect to how their firms' economic performance is evaluated.

Hypothesis 5

Managements of companies that externally report value added would be more concerned with long-term planning of gaols and strategy.

Hypothesis 6

Companies which externally report value added are likely to:

(a) create more wealth,

(b) spend more on R & D,

(c) internally generate more funds for reinvestment,

(d) achieve higher rates of return on capital,

(e) pay higher wages.

Hypothesis 7

Companies which externally report value added are more

likely to be:

(a) larger in terms of both labour size and capital employed,

(b) more capital intensive than those which do not.

Hypothesis 8

There is a significant relationship between the use of value added as a means of financial reporting and its use as a basis for productivity bonus schemes.

Hypothesis 9

Managements of companies that are operating value added productivity bonus schemes (VAPBS) would be:

(a) more in favour of a participatory and cooperative approach,

(b) more concerned with improving productivity by

(i) installing new equipment, and

(ii) increasing expenditures on employee development programmes.

Hypothesis 10

Companies which are operating VAPBS have more channels through which shop floor employees can influence policy, strategies and plans.

Hypothesis 11

There is a significant relationship between the use of VAPBS and levels of :

(a) morale,

(b) cooperation,

(c) communication,

(d) participation and involvement, and

(e) productivity.

1.6 Methodology

The research methodology used in this study took the following form:

(1) An extensive review of the relevant literature was made with the purpose of developing a coherent theoretical model for the value added concept and formulating research hypotheses.

(2) An empirical data base was generated, containing indicators of the conceptual variables in which we are interested. Combination of data collection methods was used which included structured questionnaires supplemented by interviews, and published sources, i.e. annual and employees reports, Business Monitors, Extel Statistical Services Ltd., Companies House, Moodies Services Ltd., and Census of Production.

(3) The data were then statistically analysed using one or more of a variety of standard statistical techniques. These techniques included both descriptive and inferential statistics. The descriptive statistics included measures of central tendency and dispersion, with the aim of describing the salient characteristics of the samples data and providing a basis for estimating the parameters or characteristics of the population. Inferential statistics were used to Provide an objective basis for making decisions about the research hypotheses.[1]

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1 Detailed description of research design and methodology is presented in Chapter III.

1.7 Outline of the Thesis

This introductory chapter is followed by seven chapters with appropriate appendices. Chapter II presents a historical survey of the value added concept and reviews the main uses of the concept, especially its relevance to the national economy, as a means of financial reporting and as a basis for productivity bonus schemes. A conceptual franework was developed together with the hypotheses formulated as the basis for the research activities.

Chapter III gives a detailed description of research design and methodology, followed by Chapter IV which explains the rationale for using the concept of value added at the micro-level in the context of available organisational research evidence.

Chapter V appraises the merits and uses of value added as a means of financial reporting. In particular the chapter focuses attention on the relevance and usefulness of value added reports. Related empirical evidence is also provided.

Chapter VI, in the light of the previous chapter, elaborates on the relationship between value added external reporting and management economic behaviour and policies.

Specifically, the chapter reports on the principal empirical part of the study related to income reporting on a value added basis. Both management motivations for value added external reporting and recent developments in value added reporting are also examined.

Chapter VII is concerned with the empirical evaluation of value added productivity bonus schemes. Future developments and the accountant's role in developing, installing, and operating such schemes are also discussed.

Finally, Chapter VIII presents a summary of the key findings of the study, conclusions and implications drawn from the results presented previously, and recommendations of areas for further research.

CHAPTER II

THE CONCEPT OF VALUE ADDED: THEORY AND HYPOTHESES

2.1 Introduction

While much has been written on value added (VA), as indicated by the extensive bibliography included in this study, the present Researcher believes that this does not amount to a coherent set of principles of a theory. Thus, there is still an urgent need for bringing together a body of sound knowledge on value added to provide a firm foundation for a theoretical framework. The focus of this chapter is the development and analysis of such a framework leading to the formulation of the hypotheses. The rationale for the hypotheses is explained in the context of available research evidence. The hypotheses derived from the model are presented.

In particular, a historical survey of the value added concept is carried out, definition and measurement problems are discussed and some recommendations are made, and the main uses of the concept are reviewed, especially its relevance to the national economy, as a means of financial reporting, and as a basis for productivity bonus schemes.

2.2 The Historical Background

The concept of Value Added is by no means new or original. Among the early Greek scholars, Plato, Aristotle, and Xenophon were the first to recognise specific elements of the VA concept. Plato recognised that the middleman's functions are necessarily evolved through the principle of the division of labour, and that there was a need for middlemen. In essence, he saw the need for time and place utilities.[1] Aristotle saw the need for the creation of possession utility through the function of exchange although he did not cherish the existence of the middleman.[2] He also distinguised between "value in exchange and value in use".[3]

Xenophon viewed the merchant middleman as a valuable citizen because he brought wealth to the city.[4] Thus, the functions of exchange were all-important to Xenophon. Of all the early Greek scholars, Aristotle was the influential in the development of economic thought since his disciples were the outstanding men of the early Middle Ages.

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1 E. Whittaker, Schools and Streams of Economic Thought (Chicago: Rand McNally & Company, 1960), pp.3-6.

2 A.E. Monroe, Early Economic Thought (Cambridge: Harvard University Press, 1930), p. 20.

3 "A shoe is used for wear and is used for exchange: both are uses of the shoe". Aristotle, Politics, translated by B. Jowett, Modern Library, 1942, p.67

4 R. Leckachman, A History of Economic Ideas (New York: Harper & Brothers, Publishers, 1959), p.14.

The essence of the teachings in the Middle Ages was that the trader was not held in favour. This was the result of the teachings of Aristotle and the Catholic Church. However, St. Thomas Acquinas did not concur with his religious predecessor, Cassidorus, that trading for a profit was sinful, and the middleman added no value to the merchandise he handled.[1] The ideas of St. Thomas Acquinas are as follows:

> "He admitted that a good might be sold at a higher price than its cost, when its owner had changed it so as to make it worth more or when he had transported it from one place to another, and also when the value of the good had been altered with time. Here are the 'form utility', the 'place utility' and the 'time utility'.[2]

Even though the above quote indicates that St. Thomas Acquinas did not consider the creation of possession utility as productive, another distinguished churchman of the Middle Ages, Nicole Oresme, emphasised the creation of possession utility. The general trend toward the end of the Middle Ages was a greater recognition of the four utilities, namely, form, time, place and possession.

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1 Cassidorus's statement: "But he who is trading sells a thing for more than he paid for it must have paid less than it was worth or be selling for more." Monroe, op.cit., p. 62

2 E. Whittaker, op.cit., p. 18.

As far as the Mercantilists are concerned, their prevailing philosophy was that a country could become opulent if it sold more merchandise and services to foreigners than it bought from them. This concept was prevalent in their writings. Antonio Serra, for example, extolled the virtues of foreign trade to the economy.[1] Sir William Petty made no claim that the trader added income to the economy. He recognised the creation of value through place utility.[2] David Hume pointed out that the merchant is necessary and useful.

> "If we consult history, we shall find that, in most nations, foreign Trade has preceded any refinement in home manufactures, and given brith to domestic luxury."[3]

Sir James Stewart also aligned himself with mercantilism in thinking of a nation in which people were guided or controlled rather than left free to do as they liked. He recognised the exchange of commodities, creating place utility.[4]

The Physiocrats, looking for an underlying order in economic affairs, declared that there was a "natural order" which was not man-made, but was laid down by the creator of mand and nature. One of the leaders of the Physiocrats,

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1 A.E. Monroe, op.cit., p. 150.
2 E. Whittaker, op.cit., p. 61.
3 Ibid., p. 75
4 Ibid., p. 79

Richard Cantillon, reasoned that the value added by the merchant was mainly one of place utility.[1]

Robert J. Turgot, most influential in the Phyisiocratic theory, declared that the middleman, even though necessary, did not create value. In accordance with the Physiocrat theory, he explained that the merchant does not add value to the merchandise he handled because the entire wealth of the nation is derived from the soil. However, he reasoned that the merchant is entitled to his mark-up in order to cover any earnings had he put his capital and physical labour elsewhere to use.[2] In essence, this school of thought made little contribution to the concept of value added as was the case with mercantilists.

Then came the Classicists. Their philosophy, spearheaded by Adam Smith, talked of "the invisible hand" causing individual action to promote the general good, closely akin to the "natural order" of the Physiocrats. Nevertheless, Adam Smith took issue in his Wealth of Nations of 1776 on the Physiocratic system:

> "The capital error of this system, however, seems to lie in its representing the class of artificers, manufactures, and merchants, as altogether barren and unproductive."[3]

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1 A. Monroe, Op.cit., pp. 258-259.
2 Ibid,, p. 363-364.
3 Adam Smith, Wealth of Nations (New York: Ward, Lock, and Bowden and Company,J.R. McCulloch Edition), p.534.

Smith recognised productivity, being determined by income produced. Income is derived, in turn, by additions in quantity of useful labour, which depends on the increase of capital which employs it, and thus, an increase in capital can only come about through saving from revenue.

The first writer, known to have spelled out the utility creation concept, is David Ricardo. He stated that it was more important to say that the merchant added "utility" to the product than to note merely that greater value was absorbed into the product which was obvious since the merchant had expended labour in performing the job.[1] For him, labour costs of the marketing institution to perform its functions was value added. This is a narrow concept since labour is only one of the many factors to consider in determining value added.

T.R. Malthus not only agreed with Smith and Ricardo, he also recognised a more comprehensive scope of the VA concept through production (from utility) and distribution (time, place, and possession utilities).

> "production and distribution are the two ground elements of wealth, which, combined in their due proportions, are capable of carrying the riches and population of the earth in no great length of time to the utmost limits of its possible resources; but which taken separately, or combined

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1 S. Piero, The Work and Correspondence of David Ricardo, (Cambridge: The University Press for the Royal Economic Society, Volume I, 1951), p. 264n.

"in undue proportions, produce only scanty rishes and scanty population which are at present scattered over the face of the globe."[1]

Some years later (1859), Richard Jones elaborated further on the meaning of the term production. His concept considered that an article is not completely produced until it was in the hand of the user.[2]

The Neoclassicists followed. They combined the findings of the Classical school and the Austrian school, led by Carl Menger, whose basic premise was that if any institution contributed to the satisfaction of human needs, it was productive. Neoclassical writers, such as Jevons and Marshall, up to the time of John Maynard Keynes, considered the farmer, manufacturer, and middleman equally productive. For them, production includes the activities of any individual or institution who add utilities - form, time, place, and possession to satisfy human wants, which, in turn, can be translated into economic values and measured in monetary units. Such is the view held today.

Nevertheless, the refinement and mathematical translation of the value added concept did not occur until 1790 when Tenche Cox, an American treasury official who was in charge of the Census of Manufacturers, realised that adding up all the sales receipts of all the manufacturers would

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1 T.R. Malthus, Principles of Political Economy (London: John Murray, Albermorle St., 1820), p. 426.

2 R. Jones, Political Economy (London: John Murray, Albermorle St., 1859), p. 197.

result in a tremendous duplication, so he requested each firm to report the value of what they have sold less the value of what they had bought. Then, when he added the residual values together by industry, by State and so forth, he had a true measure of manufacturing volume and the basis for growth measurement.[1] This same technique forms the basis for collecting data in the United States Census of Production since 1870[2] and in the British Census of Production since 1907.[3]

In 1932, the concept was further developed by A.W. Rucker whose research established that wages are directly proportional to value added and rise and fall as value added increases or decreases on simple percentage basis.[4] As a result of linking pay to performance Rucker developed a bonus incentive scheme which became a model for others such as Bentley and which is being widely used at present in the UK.[5]

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1 See, for example, D.F. Bentley, "Value Added Incentive Plans", in (University of Bradford Management Centre Reading Manual, 1977), Chapter 4, p. 1.

2 D.D. Monieson, Value Added as a Measure of Economic Contribution by Marketing Institutions,. unpublished Doctoral Dissertation, The Ohio State University, Columbus, Ohio, 1957, p.27.

3 See, B. Mitchell, "Measuring Value Added from the Census of Production", Statistics News, May 1978, No.41.

4 A.W. Rucker, Gearing Wages to Productivity from Economic Theory to Practical Business Use (Cambridge, Mass, 1962).

5 See, for example, M.Woodmansey, Added Value: An Introduction to Productivity Schemes, Management Survey Report No.40 (British Institute of Management 1978). According to Woodmansey there are approximately 200-300 British companies operating value added incentive schemes (at the time his survey was undertaken). In the present study, 32 companies (41.6% of companies in the samples) were found to be operating value added incentive schemes.

Two writers on VA by manufacture were C.A. Bliss in 1939 and S. Fabricant in 1940. Bliss observed that as the product moved from the raw material stage to the finished stage, the wage bill became smaller relatively, the salary bill larger, and the overhead cost loomed larger. If one were to project the finished good stage into the marketing stream, the salary and overhead elements of VA account for an even larger percentage of the VA figures. Fabricant devised an index of manufacturing production which did not subscribe to the Census's concept of VA by manufacture. His analysis indicated that net VA fell more rapidly during business depression than did the Census VA, and rose more rapidly during business advances.[1]

While the first half of the Twentieth Century saw the emergence of the concept, VA by manufacturing, extended in use to various types of VA tax, the decade prior to World War II witnessed the advancement of this important concept to "value added by marketing". Attempts were made to compare VA by marketing, defined as total marketing costs, with adjusted Census value added by manufactures for the purpose of showing the relative contribution of marketing and manufacturing.[2]

The decade, following World WarII, saw the conept of VA by marketing reach maturity. Beckman, while performing research for a business client in 1951, conceived the idea

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1 D.D. Monieson, op. cit., pp.33-35.
2 Ibid., pp. 50-51.

of applying the VA concept to the field of marketing. The essence of his research findings were that an industry has a high ratio of VA to value of shipments creates more value in the process of manufacture than one with a lower ratio of VA, and that the return on assets employed increases progressively percentage wise. He felt that it was feasible to compute VA by marketing in a manner similar to that followed by manufacturing.[1]

Although most of the present schools confirm the belief that marketing institutions add value to the economy, the Marxists, however, state the merchant adds no value and makes an unjustifiable profit. The Maxian theory of the Middleman's unproductiveness is obviously incorrect if the labour theory of value is used. This theory states that if all value stems from the labourfactor, then, the very labour of the middleman must be added to the value of the product.[2]

One of the best known critics on value added by marketing is Peter Drucker. He states:

> "Value added in manufacturing is the commonly used term. It would be much better to speak of cost added, whether in manufacturing or in distribution. In the first place, only the customer adds value. All manufacturers and distributors can do is to add costs. Secondly, what one wants to

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1 T.N. Beckman, "The VA Concept as Applied to Marketing and Its Implications", in Stewart H. Rewoldt (ed.) Frontiers in Marketing Thought (Bloomington, Indiana: Bureau of Business Research, Indiana University, 1955), p. 87.

2 David Monieson, op.cit., p.52

find out is what part of this added cost is being turned into value and how much is friction and waste."[1]

When Drucker states that only the customer adds value and manufacturers or distributors add costs, he fails to apply the traditional discipline of economics. Economists generally define production as the creation of economic values. While manufacturing adds value by conversion or transformation of scarce resources to increasingly satisfying states,[2] marketing adds value to products by providing them at the proper time and place, by putting them in the possession of those who need and want them, and by rendering services and functions which facilitate the performance of these activities. Viewed in this light, distribution is merely a type of production, just as are physical transformations effected in manufacturing.[3] Thus, the various productive processes of manufacturing and distribution add value to a product.

In the 1960s the concept came to be increasingly explored and developed by statisticians, management scientists, engineers and personnel and productivity experts as a means of measuring productivity. However, it has been largely ignored by accountants, with some notable excep-

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1 Peter F. Drucker, Managing for Results (New York: Harper & Row, Publishers, 1964), p. 30.
2 T.N. Beckman and W.R. Davidson, Marketing (New York: T.L. Ronald Press Company, 1962), p.7.
3 R.D. Buzzel, Value Added by Industrial Distributors and Their Productivity (Columbus, Ohio: Bureau of Business Research, College of Commerce and Administration, The Ohio State University, 1959), p. 57

tions.[1] Its practical applications were mainly in the fields of macro-economics, management information, and productivity analysis. The concept was production-oriented rather than finance-oriented, and it was rarely, if ever, used as a means of external financial reporting.[2]

In the mid-1970s, however, several forces joined in giving a great stimulation to the use of the value added concept as a basis for improving the economic performance of British industry.[3] In the field of industrial relations, both the Industry Act and the Employment Protection Act of 1975 stated what kind of information companies should be prepared to disclose to employees and their trade Unions. This was followed in 1976 by the setting up of the Advisory Conciliation and Arbitration Service (ACAS) to which industrial disputes were to be referred. The Code of Practice on Disclosure of Information to Trade Unions for Collective Bargaining Purposes was issued by ACAS which became effect-

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1 See,for example,W.W.Suojanen,"Accounting Theory and the Large Corporation", The Accounting Review(July 1954),pp. 391-398;and Measurement of Productivity -applications and limitations, by a joint Committee of the Institute of Cost and Workers Accountants and the Institute of Production Engineers(London: Gee & Co., 1951).

2 M.Renshall,R.Allen and K.Nicholson,Added Value in External Financial Reporting:A Study of Its Aims and Uses in the Context of General Purpose Financial Reports. A research study undertaken on behalf od the Research Committee of the Institute of Chartered Accountants in England and Wales at the request of the Accounting Standards Committee(London: Peat,Marwick,Mitchell & Co., 1979), p.1.

3 During 1977 value Added has also been one of the main subjects promoted by British Institute of Management in its recent campaign -named SPUR- (Strategy,Performance, and Utilisation of Resources) to improve overall UK industrial performance.

ive in August 1977.[1]

It would seem, however, that the origins of recent concern in the U.K. over The value added concept might be found in The Corporate Report published by the Accounting Standards Committee in 1975.[2] There is empirical evidence based on the findings of the present research study which supports this a priori suggestion.[3] The Corporate Report recommends that business enterprises should include a statement of value added in their annual reports. The statement would show "how the benefits of the efforts of an enterprise are shared between employees, providers of capital, the state and reinvestment".[4] The statement would also "assist users to evaluate the economic performance of the entity".[5]

In 1977, in its green paper "The Future of Company Reports", the government proposed that companies should publish statements of value added. It was in this document that the prospect of mandatory disclosure was suggested.

> "The Government has concluded that there should be a legislative requirement that companies should publish

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1 Advisory, Conciliation and Arbitration Service, Code of Practice 2 (London: HMSO, 1977).
2 Accounting Standards Committee, The Corporate Report, A Discussion Paper (London: ASC, 1975),
3 91.7% of companies which are the subject of this study started to externally report VA in 1975 and after. Details will be discussed in the succeeding chapters.
4 Accounting Standards Committee, The Corporate Report, op.cit.,p. 48.
5 Ibid., p.48.

such statements. The Government envisages a requirement framed in general terms, with the detailed rules on the method of preparation and form being suitable matters for prescription by Accounting Standards; this would provide flexibility for companies such as banks or insurance companies where at present there are special disclosure requirements, and where there may be a case for different forms of added value statements. However, in order to provide a measure of consistency in preparation, the Government believes that added value statements should be subject to audit."[1]

In conclusion, the value added concept has recently re-emerged and is recognised as having a useful part to play in focusing attention on productivity and the wealth creation process.

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1 Department of Trade, The Future of Company Reports, A Consultative Document, Cmnd. 6888, (H.M.S.O., July 1977), para 16.

2.3 Definition of Value Added

Although there is as yet no universally accepted definition of VA, there is general agreement about the concept of VA, namely, it measures (in monetary terms and for a particular period of time) the wealth created by a business firm, an industry, or a nation. But there are some differences of opinion about the precise definition. Indeed, there are good arguments for having slight differences in definition for different purposes.

The concept is being used by many different groups for many different objectives. Examples of such groups include accountants, economists, production engineers, productivity experts, and managers, and they use the concept for such purposes as financial reporting, management control, and national income statistics. Each group of users, therefore, has developed its own definition of VA to suit its objectives. Thus, the definition of value added mainly depends on the purpose in which the concept is to be used.

In accounting literature, however, usefulness, or utility, has been suggested as the overriding criterion against which accounting information should be assessed.[1]

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1 For a duscussion of usefulness criterion see, for instance, M.Moonitz, The Basic Postulates of Accounting ing, Accounting Research Study No.1 (AICPA, New York, 1961), p.4.

Adherence to such criterion requires a series of steps including specification of user decision models and through them an identification of the most relevant information for each user group.[1] Since users of accounting information are a heterogenous group, having potentially diverse decision models, the definition relevant to one hroup may be irrelevant to another.[2] Subsequently, what is meant by VA could vary in different circumstances.

In this thesis, however, we shall argue for a single, precise, and universal definition of VA that may be of significance to as many users as possible.[3] Nevertheless, an overview of VA definition in the literature, and then offering a "working" definition for the purpose of the present study would seem to be appropriate at this stage.

As was shown in detail in the preceding section, value added is a concept which can trace its origin in the idea that wealth is created by three main factors of production, or inputs in modern economic terms, i.e. land, labour and capital. These are the things that are required for making a commodity.[4] As a modern economist has put

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1 For a fuller list of the necessary normative steps see B.V. Carsberg, J.Arnold, and A.Hope, "Predictive Value: A Criterion for Choice of Accounting Methods", in W.T. Baxter and S. Davidson, Studies in Accounting, 3rd ed. Institute of Chartered Accountants in England and Wales, London, 1977), pp.403-422.

2 The decision relevance of value added information will be discussed in Chapter V.

3 Justification for such choice will be outlined in Chapter V.

4 A.Marshal, Principles of economics (London:Eigth edition, 1961), p. 25.

it:

> ".... labour, capital and land .... are the three 'factors of production'. Their contributions are called 'primary inputs' and it is the rewards they receive for these inputs that constitute the value of what they produce."[1]

In its emphasis on production output net of related input cost, this statement accurately shows the essential meaning of VA. It is the basic concept which underlies the construction and analysis of national income statistics.

A more elaborate definition of the concept in economic terms is given by Ruggles and Ruggles:

> "The VA by a firm, i.e. the value created by the activities of the firm and its employees alone, can be measured by the differences between the market value of the goods that have been turned out by the firm and the cost of those goods and materials purchased from other producers. This measure will exclude the contributions made by other producers to the total value of this firm's production, so that it is essentially equal to the market value created by this firm. The VA measure assesses the net contribution made by each firm

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1 J.R. Stone, "National Income", in Chambers Encyclopaedia (London: ILSC, 1970, Vol. 9), pp.679-690

to the total value of production; by adding up all of these contributions, therefore, it is possible to arrive at a total for the whole economy that will represent the market value of production."[1]

This definition clearly indicates that VA, in the economists' sense, constitutes net output at selling price after eliminating the intermediate goods and services purchased from other producers and consumed or processed in the course of production. This is because in the context of national income accounts net output should be counted and attributed to only one producer or factor of production, since intermediate products - those traded between different firms for processing - are eliminated to avoid double counting.

At the level of individual firms, however, VA is an important reporting measure because it represents that firm's contribution to the wealth generated within the economy during any particular period. This is what the authors of The Corporate Report seem to have in mind, although it is nowehere explicitly stated. That work defines VA as: " The wealth the reporting entity has been able to create by its own and its employees' efforts."[2] The Corporate Report goes on seeking to per-

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1 R.Ruggles and N.D.Ruggles, National Income Accounts and Income Analysis (New York: McGraw-Hill, 2nd ed. 1965), p.50

2 The Accounting Standards Committee, The Corporate Report, op. cit., p. 49.

form an allocation between the various economic flows to which value added gives rise, and makes an attempt to attach those flows to main groups of recipients, namely, employees, providers of capital and government.

As can be seen from Figure 2.1, the model of the economy on which the notion of VA described in The Corporate Report is based is a highly simplistic one. As illustrated in Figure 2.2,[1] a firm's only source of income is its sales revenue, which can be derived from either the production or the consumption sector. From this revenue the firm pays other members of the production sector for its inputs; the surplus is VA which is distributed to the consumption sector by different routes including wages and dividends. Nevertheless, The Corporate Report's definition of VA accords closely enough with the concept of VA long established and used by economists. By contrast, in The Institute of Cost and Management Accountants (ICMA) Terminology, VA is defined as:

> "The increase in market value resulting from an alteration in the form, location or availability of a product or service, excluding the cost of bought-out materials or services."[2]

This definition is more informative and accurate than that

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1 Adapted from B. Rutherford,"Value Added as a Focus of Attention for Financial Reporting: Some Conceptual Problems", Accounting and Business Research,Summer 1977, p. 217.

2 The Institute of Cost and Management Accountants, Terminology of Management and Financial Accountancy (ICMA London, 1974), p.24 (emphasis added).

FIGURE 2.1

THE CORPORATE REPORT ILLUSTRATION

OF VALUE ADDED STATEMENT

A manufacturing company

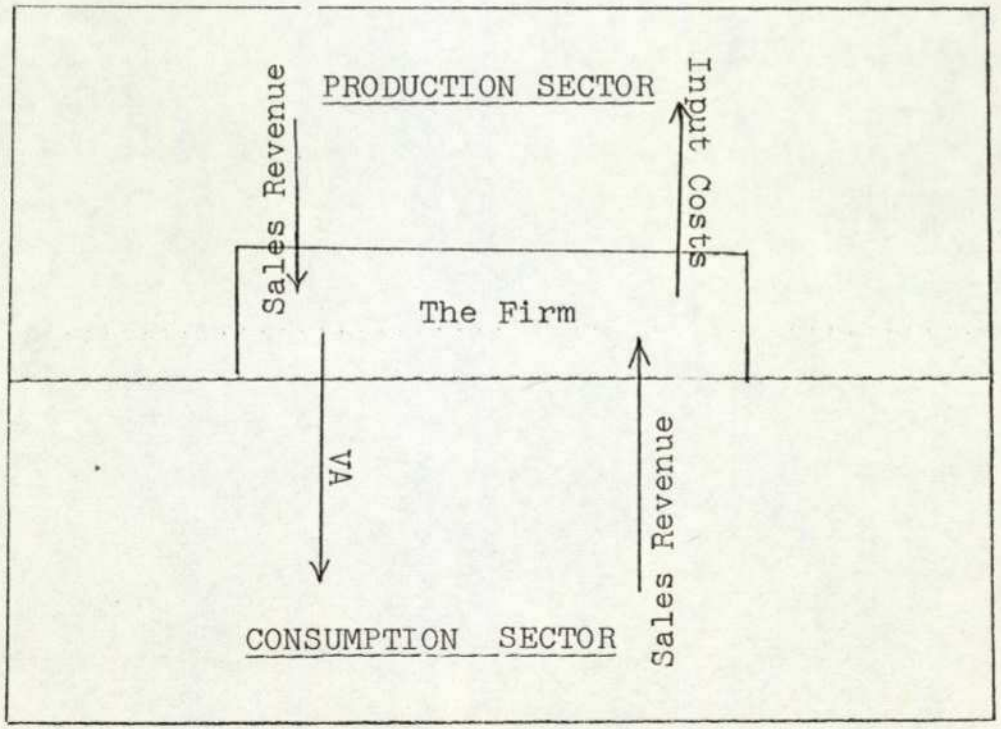
Statement of Value Added

		Year to 31 Dec 1974		Preceding Year
		£M		£M
Turnover		103.9		102.3
Bought-in materials and services		67.6		72.9
VALUE ADDED		£ 36.3		30.2
Applied the following way				
TO PAY EMPLOYEES				
wages, pensions and fringe benefits		25.9		17.3
TO PAY PROVIDERS OF CAPITAL				
interest on loans ...	0.8		0.6	
dividends to shareholders ...	0.9		0.9	
		1.7		1.5
TO PAY GOVERNMENT				
Corporate tax payable ...		3.9		3.1
TO PROVIDE FOR MAINTENANCE AND EXPANSION OF ASSETS				
depreciation ...	2.0		1.8	
retained profits ...	2.8		6.5	
		4.8		8.3
VALUE ADDED		£ 36.3		30.2

Source: ASC, The Corporate Report, p. 50.

FIGURE 2.2

The Accounting Standards Committee's Model of the Economy for Value Added Definition



in The Corporate Report, but it is still based on the same idea that if there was something to be manufactured, the effort applied to purchases can be equated with the generation of wealth. However, the problem with this definition is that it seems more appropriate to manufacturing industries than service industries since the phrase "market value" appears to be more relevant to a product rather than a service. Otherwise, both definitions are almost similar. They derive VA by deducting bought-in materials and services from either sales revenue or value of production as will be discussed in Section 2.4.3.

Morley defines the VA as:

> "VA is a performance measure and it reports the wealth created by a business entity over a period of time."[1]

He goes on to be more specific by saying:

> "The wealth creation which is reported on is the outcome of trading and operating, and value added is not affected by capital gains."[2]

One can see that Morley's definition of VA is typical accounting definition. Its concern is only the business entity and it measures trading flows if revenue and expenses whilst it ignores capital flows. It measures

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1 Michael F. Morley, The Value Added Statement:A Review of Its Use in Corporate Reports. Published for the Institute of Chartered Accountants of Scotland (London:Gee & Co. Limited, 1978), p.2.

2 Ibid., p.2 (emphasis added).

performance and relates to a period of time as profit does. But perhaps the most informative and relevant definition of VA so far (from an accounting point of view), though not very precise, was given by Gray and Maunders in a very recent study. In that study they define VA as:

> "VA may be taken to represent, in monetary terms and for a particular period, the 'net output' of an enterprise', i.e. the difference between the total value of its output (including but not necessarily limited to sales revenue) and the value of the corresponding inputs (material and services) obtained from other enterprises."[1]

Gary and Maunders' definition takes into consideration the decision relevance of VA; i.e. different user groups of accounting information may need different definition of VA according to their decision models. This seems, the researcher believes, to be the main reason behind the inclusion of the phrase "but not necessarily limited to sales revenue" in the definition. This was made clear later in their study when discussing uses of

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1 Sidney Gray and Keith Maunders, Value Added Reporting: Uses and Measurement. A Research Study (London: The Association of Certified Accountants, June, 1980), p. 1.

VA statements.[1] This phrase, on the other hand, makes the definition imprecise and less useful when used for comparison purposes as will be discussed in Chapter V.

The above discussion suggests that there are two main definitions of VA; i.e. the economists' definition and the accountants' definition. A clear distinction between these two definitions should be made and this is the task of the following section.

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1 Gray and Maunders, op.cit., pp. 5-17.

2.3.1 The Economic Definition of VA Distinguished from The Accounting Definition

Generally speaking, the difference between the economists' definition of VA and the accountants' definition is due to their different viewpoints and objectives. The economists are mainly interested in industries, regions and nations and so broad aggregates, with some fairly rough approximation seem to suffice for their purpose. Accountants on the other hand, are interested in individual firms. They, therefore, will be defining VA so that it accurately not only reflects the economic performance of the firm concerned as a whole but also reflects the economic performance of the workers so that they can be renumerated on a basis which gives them an incentive to improve productivity. Thus, the question as to whether some marginal category of expense be classified as a bought-in item or whether it be shown as a distribution of VA might be decided according to whether the workers could affect the expense.

The accountants cannot make the generalisations which are permissable and useful to the economists since the value added figures which accountants report would arbitrate between competing groups of participants in the company (such as shareholders, employees, creditors and the government). Thus, they are very concerned about objectivity, fairness, freedom from bias and verifiability.

Accordingly, the economic concept of value added emphasises production (rather than sales) as being the measure of wealth creation. Also, economists do not bother about depreciation since they consider it as a distribution of VA rather than as an intermediate input because it is not, in their view, a "true" cost. One might conclude, therefore, that the economists' concept of VA generally indicates VA on production and Gross VA (rather than Net).[1]

For the purpose of the present study, however, VA may be defined as follows:

> "It is the wealth created by a business firm measured in monetary terms and for a particular period of time; that is, the difference between sales revenue and the cost of the relating bought-in materials and services".

Some important implications of This definition must be amphasised. First, what is meant by VA in this study is VA on sales rather than on production. The rationale behind this approach is that VA is determined by the satisfaction of customers and not by the effort that goes into the production process. Moreover, this is consistent with the fundamental accounting practices in common use at present since value added on production might be considered by many accounting theorists and practitioners as

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1 Value added on production and on sales as well as gross and net VA are discussed in Sections 2.4.3 and 2.4.4 respectively.

unacceptable radical, though it could be more relevant to the information needs of users as will be discussed in Chapter V.

Second, it is Gross Value Added rather than Net, i.e. depreciation is not to be regarded as a bought-in expense, rather it is to be considered as a distribition of VA. This is so because of the arbitrary nature of depreciation and also focusing on the gross VA might encourage management to internally generate more funds for reinvestment in order to maintain and expand the business as will be argued below. Third, it responds to the urgent need for a precise and single definition of VA as far as the individual firm is concerned.

Summing up so far, two concepts of VA have been discussed in the literature, i.e. the economic concept of VA and the accounting concept. The economic concept of VA is the wealth created by the firm as measured by the increase in market prices of the goods and services it produces. The accounting concept is similar except that The measurements are obtained using the same procedures currently used by accountants for the profit income. VA is the excess of sales revenue over bought-in items (purchases of goods and services). VA is then shown as distributed to employees, providers of capital,government and the amount used to maintain and expand assets (depreciation plus retained profit).

2.3.2 Value Added or Added Value?

Finally, a short note on the terminology being used appears to be appropriate at this point. While I was studying the English language, I learned that the adjective is normally placed before the noun. Thus we say 'Financial Reporting" or "Economic Performance". It is difficult, therefore, to see why we should refer to Added Value as Value Added. Almost all the published works about the subject (though there are a few exceptions) whether it was articles or books, used the term Value Added.[1]

Also, the majority of British companies publishing such statements have adopted the same designation. However, Renshall et al, argue that adopting such terms, i.e. VA, appears to have been influenced by the introduction of value added tax and they suggest that historically and grammatically the usage of AV is preferable.[2]

Some other expressions are employed to describe the concept. Apart from VA and AV, they include wealth created, value added income, net output, contributed value,

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1 See, for example, The Corporate Report, op.cit., Gray and Maunders, op.cit.; Morley, op.cit.; B. Cox, Value Added - an appreciation for the accountant concerned with industry (Institute of Cost and Management Accountants, and Heineman, 1979); and R.J. Ball, "The Use of Value Added in Measuring Managerial Efficiency", Business Ratios (Summer 1968), pp. 5 - 11.

2 M. Renshall et al, op.cit., p. 6.

and production value. The usage of such different terminologies might be a result of that the notion of VA is used for a variety of purposes, and by different user groups as was indicated in the preceding section.

In the present study, however, the term "Value Added" has been adopted since it is more common than any other term and is already in wide and growing circulation.

2.4 The Measurement of Value Added

The preceding discussion establishes the basis for the measurement of VA since both definition and measurement of VA are largely interdependent. In order to measure value added, it is necessary to ask what its meaning is; that is, what its definition is.

While it is desirable that it should as far as possible be a reconciliation between the economist's macr-economic interest and the accountant's close focus on the individual business firm, it is the latter which is the major concern of this study as was mentioned in Chapter I. Therefore, it would seem appropriate at this point to discuss both the significance of the measurement problems and the measurement process in accounting in the following two sections respectively.

2.4.1 The Significance of the Measurement Problems

Throughout its history the field of accounting has been concerned with what measures business corporations must use to describe their economic operations. But surprisingly little attention was given to the questions of what corporate attributes to measure, how to measure them and measurement for whom? Clearly, the measurement problems cannot sensibly be discussed without attempting to answer these questions.

The first question, i.e. what corporate attributes to measure was answered by Edwards and Bell.[1] They point out that the primary corporate attribute we try to measure in the accounting framework is net income.[2] Position statements, they argue, are an integral part of income measurement and represent a moving benchmark against which the next income reading is taken.

It was unfortunate, however, that the question of whose income should be measured has been ignored not only by Edwards and Bell but also by almost all accounting theorists, though Hendriksen and Morley are an exception.[3]

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1 Edgar O. Edwards and Philip W. Bell, The Theory and Measurement of Business Income (University Of California Press, 1961), pp. 271-273.

2 Ibid., p. 271

3 E.S. Hendriksen, Accounting Theory (Richard D. Irwin, 1977), and Michael F.Morley, "The Value Added Statement in Britain", The Accounting Review (July 1979), pp. 618-629

Morley justifies why this question has been ignored by saying:

> "We accountants ignore the question because we are aware of only one answer. When asked, (whose income?) many accountants reply that net income or profit is the reward of the proprietors; i.e. the shareholders in the case of a company."[1]

In fact, the question of whose income we accountants should measure cannot be answered without answering the third question we have raised above; i.e. measurement for whom?.

Traditionally company accounts and reports have been intended primarily for the benefit of shareholders and creditors and as a result have concentrated primarily on profit over time and financial position at a moment of time. In recent years, however, attitudes have changed and few if any would now dispute the view that companies have responsibilities to their employees, customers and the community generally as well as to their shareholders and creditors.[2]

As a consequence, the answer of measurement for whom question should apply to all parties to whom the company is accountable, i.e. shareholders, employees, creditors,

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1 Ibid., p. 618

2 This issue is a subject of empirical investigation in the present study (See Appendix A, Section 5), findings will be discussed in Chapter IV.

customers, community, and the nation as a whole. The measured income must, therefore, be defined in such a way as to include the rewards of all these groups. The "income" of this whole team is called "value added".

In order to measure corporate performance, accountants have devised a system of concepts and working rules (often described as principles) for measuring benefits (revenues) and sacrifices (costs), for determining when and on what evidence value changes will be recognised,[1] and for combining these into a measurement called income (whether it is profit or value added)[2] which purports to be an index of how much better or worse off a firm has become in a given time period.[3]

In addition to these questions, i.e. what to measure, how, and measurement for whom, there is perhaps the more significant issue of whether the measured attributes have any effect on managers' and employees' behaviour and as a result on performance of individual business enterprises and on the national economy as a whole. To put it another way, does the measurement system matter? With many outstanding discussions already available, this is certainly not the place to review the many developments in

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1 Value changes are discussed in Section 2.4.8.
2 The relative usefulness of profit and value added will be discussed in Chapter V.
3 For an outstanding discussion of how to measure process, see Edgar O. Edwards and Philip W. Bell, The Theory of Measurement of Business Income, op.cit., pp. 70-130

the measurement problems.[1] It is sufficient for our purposes, however, to mention a few leading studies in this regard. Ridgway,[2] for example, in a pioneering article, examined the construction and use of performance measures at all levels of the organisation and concluded that if a certain type of information[3] is collected and disseminated to organisational members it would tend to influence their behaviour, although not necessarily as intended.

Hopwood, also, has elaborated on this problem with the conclusion that the performance measurement process has great motivational and behaviour consequences. So, he argues, using biased performance measurements can result in a transfer of interest from the wider organisational purposes onto the specific behaviours which are necessary to improve the indices of performance.[4]

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1 See, for example, G.J. Benston,"The Role of the Firm's Accounting System for Motivation", The Accounting Review,(April 1963), pp. 347-54; A. Hopwood, An Accounting System and Managerial Behaviour (Saxon House, D.C. Heath Ltd.,1973); V.F. Ridgeway,"Dysfunctional Consequences of Performance Measurements", in A Rappaport (ed.), Information for Decision Making:Quantitative and Behavioural Dimensions (Prentice-Hall,Inc.,Englewood Cliffs, N.J., 2nd.ed., 1975), pp. 346-51; and R.J. Ball "The Use of Value Added in Measuring Managerail Efficiency", op.cit., pp. 5-11.

2 V.F. Ridgway, op.cit.,

3 In this study, we use the terms "information" and "data" interchangeably. However, some writers distinguish between the two terms. See, for example, A. Rappaport Information for Decision Making:Quantitative and Behavioural Dimensions, op.cit., p. 54

4 A. Hopwood, op.cit., p..16

Focusing on the short-term earnings per share (EPS) as the measure of business performance, for example, could lead management to cut costs, though many so-called "costs" are in fact "investment" and the cuts can damage an organisation's capacity to function effectively in the future.[1]

The possibility is illustrated by Likert's discussion of the more problematic long-term impact of cost control programmes despite their apparent short-term success. He found that they could eventually result in absenteeism and higher labour turnover.[2]

At the national level? however, the problem is perhaps of more concern. While managers and employees are not concerned directly with national aggregate, business behaviour is a major determinant to any nation's prosperity. As an example, decisions made on the level of the firms are an important contributor to the decline of research and development and capital spending in the British economy as a whole over the past three decades.[3]

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1 Depreciation and Research and Development expenditures are typical examples in this situation. To make profit statement look favourable, management is encouraged to cut these expenditures. Depreciation policies and Research and Development expenditures are dealt with in Sections 2.4.4 and 2.4.7 respectively.

2 R. Likert, The Human Organisation: Its Management and Value (New York: McGraw-Hill, 1967), pp. 78-100

3 This issue is the subject of detailed investigation in Chapter VI.

Of course, government action could improve the climate for investment, but it alone cannot do the job. Selecting which characteristics of a business (or "attributes" as some have called them) that accounting should seek to measure and which measurement rules to use would induce a manager to focus on the dimensions of behaviour which are in agreement with those measured attributes and measurement rules.[1]

So, the argument, goes, if these measured attributes and measurement rules are consistent with the national economic objectives, all levels of management would be induced to make decisions congruent with the interests of the economy. Without such consistency, it will be impossible to translate national objectives into specific objectives for individual industrial firms, or to formulate policies that will ensure that the national objectives are realised.[2]

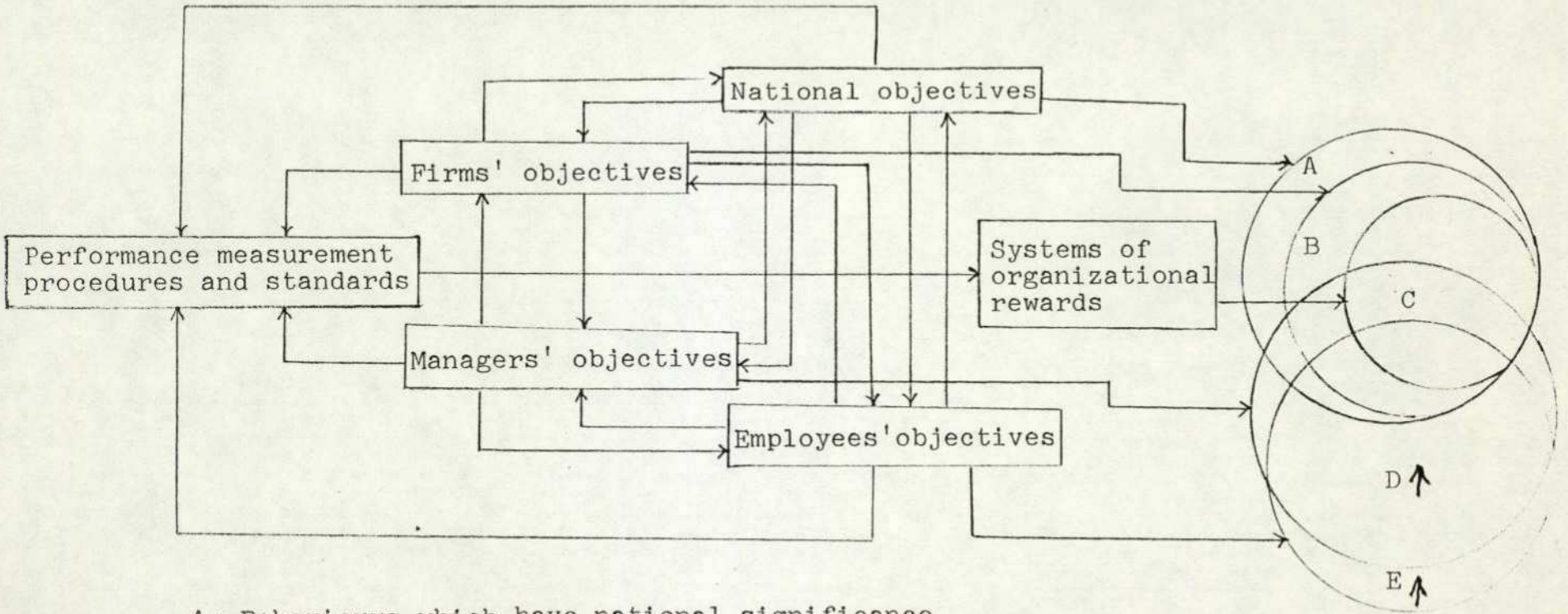
A simple representation of the problem is shown in Figure 2.3[3]. As can be seen, there should be no contradiction between the national and the organisational objectives[4] and, therefore, behaviours which have organisational significance (B) are included in behaviours which

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1 C.T. Devine, "Some Conceptual Problems in Accounting Measurement", in Research in Accounting Measurement, ed., by R.Jaedicke, Y. Ijiri and O. Nielson (Evanston, Illinois: American Accounting Association, 1966), pp. 13-27.
2 R.J. Ball, op.cit., p.5
3 Adapted from A. Hopwood, op.cit., p. 16
4 Firms' objectives are discussed in Chapter IV.

FIGURE 2.3

The Significance of the Measurement Problem
with Particular Reference to the Measurement of VA.



A: Behaviours which have national significance
B: Behaviours which have organizational significance
C: Measured attributes (the Value Added)
D: Behaviours which have managerial significance
E: Behaviours which are of interest to employees.

have national significance (A). On the other hand , however, managers and employees are likely to have different goals. Clearly, every participant in the organisation, whether manager or employee, to achieve his goals, will be mainly concerned with those behaviours which are relevant to him, i.e. as shown in Figure 2.3 (D) in case of the manager and (E) in case of the employee. Yet, the measurement system, by focusing on the company's attributes which have organisational and national significance and which are directly relevant to all participants (the value added, shown as "C" in Figure 2.3), would encourage all levels of management, superior and subordinate alike to be concerned with those behaviours reflected in the measurement system and which are essential for achieving the wider organisational and national purposes.

Furthermore, by creating a direct financial link between the mesured attributes and pay, the joint effect of the process of performance measurement and the related system of organisational rewards is presumed to induce managers and employees to concentrate on the dimensions of behaviour which are in agreement with those necessary for achieving the wider purposes. As is shown by the arrows, actual behaviour of management and employees is then presumed to change so as to include behaviours in (C) which formally existed only in (A) and (B).

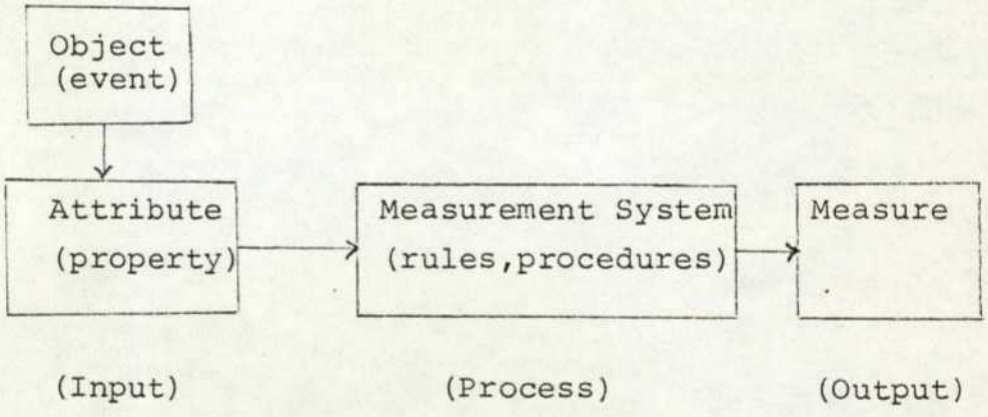
In this complex process, the accountant plays a particularly important role in deciding which organisational behaviours are relevant for furthering the long-term economic interests of the company and of the economy by selecting which aspects of these behaviours to measure and which measurement rules to use.

2.4.2 The Measurement Process in Accounting

Measurement is the process of assignment of numbers to events or objects according to rules. Ijiri defines measurement as " a special language which represents real world phenomena by means of numbers and relations among numbers that are predetermined within the number system."[1] A model of the measurement process in accounting may be diagrammed as follows:[2]

FIGURE 2.4

An Accounting Measurement Process



The elements involved in the above model of the measurement process are:

(1) An Object (event) whose attribute is to be measured. It can be defined as the idenification or activities which may be related to the entity of interest.

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1 Yuji Ijiri, The Foundation of Accounting Measurement,A Mathematical,Economic and Behavioural Inquiry (Prentice-Hall,Inc.,Englewood Cliffs, N.J., 1967), p. 19

2 Adapted from Yuji Ijiri and Robert K.Jaedicke, "Reliability and Objectivity of Accounting Measurements", The Accounting Review (July, 1966), p. 476

(2) An attribute, defined as a static or dynamic property or characteristic of an object that is quantified. It is the attribute not the object which can be measured.

(3) A measurement rule or procedure which specifies the set of operations to be carried out in attaching numbers to an attribute of an object.

(4) A measure: the resultant number or the output of applying the measurement process.

In such a measurement process, the accountant, in addition to deciding on the objects, has to chose among various attributes of the chosen object(s) which will be the subject of the measurement process. Also as there may be different measurement rules or methods to be applied to a given attribute, the accountant has to decide on which method(s) he is going to adopt. The problem which the accountant faces in provision of an accounting measure might be best illustrated by the following example.

A measurement rule may be ragrded as a process which assigns a number to represent some attribute to a given object. In a functional relation, it may be expressed as:

$$Y_i = x_j(K_m , A)$$

where Y_i represents an accounting number; K_m is an attribute from among m attributes; A is an object or event from among the economic activities of a given entity; and x_j is

an accounting procedure or rule where j rules exist for measuring the attributes m of the chosen object.

In general, to report on the firm's activities to the users of accounting information (whether external or internal users) , the accountant has to select those objects which are expected to have attributes that are potentially of some use to the users. Since VA is the main conern of this study, it is assumed in this example that the wealth created by a given company (value added) has been chosen as a desired object for reporting to the user groups.

The attributes of this object, i.e. the wealth created by a firm, could be, for instance, Gross Value Added or Net Value Added, Value Added on Sales or Value Added on Production.[1]

There could be different measurement methods to measure the same attributes. For example, one could measure Gross Value Added or Net, on Sale or on Production on historical cost basis or current purchasing power basis, or current cost accounting basis.[2]

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1 As discussed in Sections 2.4.3 and 2.4.4.
2 Accounting measurement methods will be briefly discussed in Section 2.4.8.

The result of applying different measurement procedures may lead to different measures of an object to be reported to accounting information users. It is up to the accountant to choose any attribute of the object and then apply any one of the measurement methods designed for quantifying the chosen attribute. To do so, he may follow one of two lines of thought: the first is to advocate transmission of all different measures to the users, a course of action which is probably impracticable whether from the view-point of the accountant or the user because of the too many number of combinations between alternative objects, attributes, and measurement methods which can exist in a normative sense. The second, and probably the only feasible course of action, is to make a choice between alternative measures either by chosing the "best" single measure to be reported to all users or to each specific user group. In either case, the choice of the "best" single measure is basically dependent on the objective(s) of accounting. In accounting literature, however, usefulness has been proposed as the overriding objective of accounting; that is, providing information useful to interested parties (as will be discussed in Chapter V).

Having briefly outlined the measurement process in accounting in general terms, we shall now turn to the measurement of VA in particular and this is the subject of the following six sections.

2.4.3 Value Added: on Production or on Sales?

It should be realised that the whole idea of value added is based upon an economic concept of income[1] and therefore the measurement of value added should, ideally, be production oriented. If measurement is to be production oriented then the emphasis must be on the value of output for the period regardless of whether it is sold or not. Thus, and according to this model, value added is to be measured as the sales value of production less production costs. This will, of course, require the valuation of stocks or finished goods and work-in-progress at market selling prices in order to arrive at the sales value of total output. Then the costs of corresponding bought-in goods and services will be deducted to end up with value added.

This approach clearly implies that the sales value of production should be matched with only the costs of bought-in materials and services of producing it irrespective of whether they were bought during the period

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1 One of the most influential definitions of economic concept of income is given by Professor Sir J.R.Hicks. He defines it as the maximum value which an entity can dispose of during a particular period of time and still expect to be as well off at the end of the period as it was at the beginning. See J.R. Hicks, Value and Capital (Oxford: Clarendon Press, 2nd edition 1946), pp. 171-81. For an outstanding collection from the variety of economic writings on income see R.H. Parker and G.C. Harcourt (eds.), Readings in the Concept and Measurement of Income (Cambridge University Press, 1969), Part I, II and III.

concerned or not. Thus, for example, if a business firm started a particular accounting period with a large stock of materials, then during that period the firm used it without replacement. This cannot be allowed to mean that we should not deduct the costs of these materials. It does not matter, therefore, if the firm does not buy or buys less materials during a specific period but uses its stocks instead, because this latter use will be deducted as a purchase of materials when measuring value added.

The concept of value added on production has been defined by Trade Union Research Unit as: "the money value which is added by the production process to raw materials and production purchase (fuel, consumable stores, etc.)"[1] The concept was also well described by Ruggles and Ruggles as was quoted in Section 2.3[2]. It is mainly used in a macroeconomic context, e.g. in the Census of Production.[3]

Value Added on sales, on the other hand, relates value added to sales and the cost of sales. This approach is adopted by The Corporate Report and has been defined in that work as "sales income less materials and services

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1 Trade Union Research Unit, Value Added and Payment Systems Technical Note No.42 (TURU, Ruskin College, Oxford 1978).

2 R. Ruggles and N.D. Ruggles, op.cit., p.50.

3 The Census of Production should measure production value added by including stocks at selling price, but since this data is not generally available under the present financial reporting the Census uses stocks stated at cost.

purchased".[1] Clearly, what is meant by materials and services purchased in this definition are those relating to sales as was indicated above. This measurement is consistent with the fundamental accounting concepts, particularly the "prudence" and "realisation" concepts, under which revenues and profits are not anticipated, but recognised only when substantially realised.[2] Accordingly, stocks are valuated at the lower cost and net realisable value. However, both approaches result in the reporting of the same value added over time assuming there was no price changes. This point can perhaps be illustrated by the following example.

A manufacturing firm commenced operations at the beginning of period 1. It manufactures a product which sells for £100 a unit. Production and sales data was as follows:

	Production Units	Sales Units
Period 1	1000	800
Period 2	1000	1200
Period 3	1000	1000

External costs (costs of bought-in materials and services) were £50 per unit produced. Assuming that there were no changes in factors employed, value added on production and on sales are shown in Figure 2.5 and Figure 2.6 respectively.

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1 ASC, The Corporate Report, op.cit., p. 49
2 The Institute of Chartered Accountants in England and Wales, Disclosure of Accounting Policies, Accounting Standards 1978, SSAP 2 (ICAEW, London, 1978), p. 199

FIGURE 2.5

Production Value Added

	Period 1	Period 2	Period 3
Goods produced (at selling price)	£100,000	£100,000	£100,000
Less: External costs of goods produced)	£ 50,000	£ 50,000	£ 50,000
Value Added by Production	£ 50,000	£ 50,000	£ 50,000

FIGURE 2.6

Sales Value Added

	Period 1	Period 2	Period 3
Sales	£ 80,000	£120,000	£100,000
Less: External costs of sales	£ 40,000	£ 60,000	£ 50,000
Value Added by Sales	£ 40,000	£ 60,000	£ 50,000

As can be seen from Figure 2.5 and Figure 2.6, both production value added and sales value added are the same over the three accounting periods (£150,000). Also, they are the same in Period 3 where goods produced were equal to goods sold (100 units were produced and sold which resulted in £50,000 value added under both methods). However, value added in Period 1 and Period 2 were different due to changes in the quantities of units produced and

sold, i.e. changes in inventories. This is contrary to the argument that value added on production is always higher than value added on sales because the former relates to output at selling prices, while the latter relates to cost of sales. This is only true over one accounting period where there is an increase in finished stocks.

In practice, however, a number of academic writers, including Renshall et al,[1] Wood,[2] Morley,[3] are in favour of the sales value added method of measurement rather than the production value added.[4] Companies, on the other hand, have adopted an inconsistent approach, although it is consistent with The Corporate Report. They measure value added on sales bases, whilst they treat employees costs and interest charges as a distribution of value added on a production basis, i.e. the total amounts payable are reported. To be consistent, companies should recognise value added either at the point of production or on sale. If value added is to be measured on a sales basis, then employment costs and interest charges should be apportioned between sales and closing inventory.

As regards the choice of approach, it is unnecessary

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1 M. Renshall et al, op.cit.
2 E.G. Wood, Added Value. The key to prosperity (Business Books, 1978).
3 M. Morley, The Value Added Statement: A Review of its use in corporate reports, op.cit.
4 Gray and Maunder, however, argue for different value added measurements for different purposes. See S. Gray and K. Maunders, op.cit., pp. 27-28

at the purchase time to argue the merits of the case for using one of both approaches since the differences between them may not be very significant. What is really needed is a consistent approach be adopted one way or the other also systematic application is necessary.

2.4.4 Value Added: Gross or Net?

In addition to the question of temporal recognition of value added, there is perhaps the more significant and controversial issue of whether value added should be measured on a gross or net basis, i.e. should depreciation be treated as a distribution of value added or as a bought-in cost? Unfortunately, there is no clear answer regarding this question. A number of academic writers have suggested that depreciation should be treated as a bought-in expense and thereby report net value added. In support of this contention Brooman, for example, writes:

> "But plant and machinery, though not wholly used up, will be partly worn out in production, and its wear-and-tear should therefore be treated as an input on exactly the same footings as the input of materials and deducted accordingly from the value of output."[1]

An elaboration on this problem has also been made by Morley.[2] He suggests three theoretical possibilities for the treatment of depreciation in measuring value added. The first possibility would be for all depreciable fixed assets to be included in bought-in items. This method, he argues, would be crude, irrelevant, inconsistent with present principles and should not be used.[3]

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1 F.S. Brooman, Macroeconomics (London:Allen and Unwin, 4th ed., 1970), p. 23.
2 M.F. Morley, op.cit., pp. 53-60.
3 This method is not used in practice.

The second possibility is to treat depreciation as an application of value added rather than an external cost and to report it, together with retained profit "to maintain and expand the business". This method reports a gross value added, analogous to the economist's Gross National Product (G.N.P.).[1]

The third, and the last, possibility is to deduct depreciation as a bought-in expense and thereby report net value added.[2]

Professor Morley goes on stating the arguments for and against gross and net value added then clearly indicates his support for the net value added measurement. He says:

> "It is the author's opinion that the advantages of Net Value Added are overwhelming and Gross Value Added is positively dangerous. Depreciation therefore should be deducted as a bought-in cost."[3]

Also, Renshall et al[4] are in favour of net value added for the external reporting purposes on the ground that it accords with the view of depreciation taken in conventional profit measurement. In support of their argument, however, they call on the classical contention of whether the

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1 Most companies adopt this method of reporting value added.
2 A few companies follow this method in practice.
3 M.F. Morley, op.cit., p. 59.
4 M. Renshal, et al, op,cit., pp. 53-54.

same capital asset had been leased, under normal accounting practice the hire charge would be treated as an input cost, and thus excluded from value added. Nevertheless, they admit that gross value added is useful under particular circumstances (for example, when producing management information on a marginal costing or contribution basis).[1]

The counter-argument, on the other hand, has been advocated by numerous writers on the subject, including Wood,[2] Worth,[3] Turquands,[4] and Hendrikeson.[5] They suggest that depreciation should be treated as a distribution of value added to be reinvested and should not be regarded as an external cost. This approach is consistent with the entity theory where the enterprise is defined as "an institution in its own right".[6] Therefore, and according to this theory, the firm is regarded as being separate and distinct from its owners. Accordingly, the funds available for reinvestment (retained profits plus depreciation) are identified separately under a distinct category which is labelled by The Corporate Report, for instance, "TO PROVIDE FOR MAINTENANCE AND EXPANSION OF ASSETS."[7]

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1 M. Renshall et al, op.cit., p. 54
2 E.G. Wood, British Industries: a Comparison of Performance (London: McGraw-Hill, 1976), p.3.
3 B. Worth, "Reporting of Value Added", The Accountant (December 23rd/30th, 1976), pp. 72830.
4 Turquands Barton Mayhew & Co., Value Added Statement (July 1977), p. 1-13.
5 E.L. Hendriksen, "Comments on Morley's Book", The Accounting Review (January 1979), pp. 258-259.
6 Theories of the firm will be discussed in detail in Chapter IV.
7 ASC, The Corporate Report, op.cit., p. 50.

This is in dramatic contrast with the conventional profit and loss account treatment of depreciation and would seem to emphasise the functions of management in ensuring the survival and growth of the firm, and playing a mediative role rather than looking only after the single interests of shareholders.

It seems, however, that the major argument of gross value added advocates is that whilst the bought-in figure is usually a matter of fact, depreciation is largely one of opinion (as to useful life to be expected from assets, the scrap values, the preferability of the straight-line method or accelerated method, etc.). Hendriksen,for example, says:

> "the suggestion that depreciation be substracted to arrive at Net Value Added would not seem to be an improvement because of the arbitrary nature of depreciation."[1]

Wood also justifies the gross value added approach in the same way by saying; "One merit of value added is that, unlike profit, it is not affected by differences of depreciation policy."[2]

This argument suggests that the arbitrary nature of depreciation makes the argument in favour of net value added on the ground that the "matching" concept demands

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1 Eldon S. Hendriksen, op.cit., p. 259
2 E.G. Wood, British Industries: a comparison of performance, op.cit., p. 3.

that depreciation should be treated as a bought-in cost invalid. Indeed, as Thomas put it:

> "Since all depreciation calculations are arbitrary, so are the related depreciation expense and accumulated depreciation figures in financial statements. Therefore, customary goals of "matching" revenues and expenses cannot be made, except arbitrarily."[1]

Hence the inclusion of depreciation as a bought-in cost would inject a highly subjective and biased element into the measurement of value added. Moreover, suspicions that the depreciation figure may be manipulated for the interests of shareholders at the expense of employees could be encouraged.

Whether we use one approach or another, or indeed whether we use the concept of value added at all, clearly should, as was pointed out in Chapter I, depend on the purpose we want to serve and the measurement model which will best serve it. Our major concern in this study is the productivity of British industry and how we could improve it. For this purpose, gross value added would seem to be more useful. In support of this contention I shall concentrate my attention on three points.

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1 Arthur L. Thomas, The Allocation Problem in Financial Accounting Theory: The Nature of the Problem (American Accounting Association Studies in Accounting Research No.3, 1969), pp. 1-14 and 104-05, in E. Hendriksen and B. Budge (ed.), Contemporary Accounting Theory (Dickinson Publishing Co. Inc., 1974), p.183. For a more detailed discussion of the allocation problem, see also Arthur L. Thomas, The Allocation Problem: Part Two (AAA, Studies in Accounting Research No.9, 1974).

The first is that the measurement model should encourage all levels of management to be concerned with the long-term interests of companies, namely, to internally generate more funds for reinvestment (given the lack of investment problem). It has been suggested by the authors of The Corporate Report that managements naturally respond to those indicators by which they consider their performance is judged, and strive to achieve and present results accordingly.[1] Net value added approach could encourage managements to follow depreciation policies which result in reporting higher value added figures. Under the gross value added approach, on the other hand, value added figures are not affected by depreciation policies and therefore generating more cash inflow for reinvestment could be the main concern of management rather than manipulating value added figures.

In addition to that, the gross value added model keeps the useful link between depreciation and the accounting period's retained profit. If depreciation were to be charged under the bought-in items this link would be broken. The link is useful because it might direct the attention of all participants in the firm to the maintenance and growth of the business. It must be emphasised, however, that the internally generated funds are to be considered undistributable on the basis that the company is a "going concern", that is, it will continue in business for an in-

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1 ASC, The Corporate Report, op.cit., p. 38

definite period of time and hence the capital maintenance concept will be intact.

The second point is about employees. Their role is vital for the success of any organisation. Given the poor and deteriorating industrial relations in British industry the measurement model must help to reduce the conflict and the mistrust between labour and management by being relevant and objective as far as possibl. As was argued above, depreciation is a highly subjective and biased element in the measurement of value added. Therefore, and to avoid any suspicions by employees that value added figures are manipulated to preserve the interest of shareholders at their expense, gross value added would seem more relevant for pay negotiation.[1]

Furthermore, depreciation is also usually a non-controllable factor in relation to the productive efforts of employees. Consequently, the usefulness of net value added as a basis for productivity bonus schemes is questionable.

From the capital maintenance rationale standpoint[2], however, it must be said that the long-term continuity of the company should be the over-riding objective relevant

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1 The relevance of value added information will be discussed in Chapter V.
2 More about the capital maintenance concept will be said in Section 2.4.8.

and acceptable to all stakeholders including employees. It follows that the extent to which current revenues should be used to replace assets, and the form that this might take (including depreciation policy) are policy matters which should involve all stakeholders.[1]

The third and the last point is that the accounting information system should be capable of use for internal management decisions. Improved productivity is brought about by more effective use of scarce economic resources and unless a satisfactory measure exists for the evaluation of the effectiveness of utilising the resources at the firms' disposal, managements will be unable to make efficient decisions in allocating these economic resources. In this context, it is unnecessary to argue the merits of the case for using gross value added model. It is sufficient to consider a situation where management has to make a decision about the optimal mix of products. It is necessary to ration the use of scarce economic resources. Production possibilities must be measured against each other to find which is best since the supply of all resources is subject to some upper limit. Under such circumstances, the optimal production plan could be estimated by measuring for each product the contribution to cash earnings per unit of the resource which limits ouput.

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1 See, for example, Trade Union Research Unit, Value Added and Payment Systems Technical Note No. 42, op.cit.

The best plan can then be built up by ranking products in the order of the size of their contribution per unit of the resource, and selecting for manufacture firstly as much as can be sold of the product with the highest ranking; other products are then added in the order of their ranking until the supply of the resource is exhausted. It should be noted, however, that fixed costs (including depreciation) have no effect on the selection of the best products.[1] Information required for making such decisions will be readily available when adopting gross value added model of measurement.

This arguement also suggests that the gross value added model of measurement completely accords with the well-known economic concept of opportunity cost, i.e. the gross amount that can be earned from a resource in the best alternative use or alternatively it is the amount by which the value of the provisional plan could be increased if one extra unit of a resource could be used.[2]

In practice however, most companies have quite rightly adopted gross value added approach whereby depreciation is

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1 For a discussion of optimal use of scarce economic resources see, for example, Bryan Carsberg, Economics of Business Decisions (Penguin Books Ltd.,Harmondsworth, Middlesex, England, 1975), pp. 155-202.

2 Since we are concerned with the efficient allocation of resources, costs must reflect alternative apportunities foregone. For a discussion of this concept see L.R.Amey The Efficiency of Business Enterprises (London:George Allen and Unwin Ltd., 1969), pp. 5-12.

treated as a distribution of value added rather than a bought-in costs.[1] This practice is consistent with the fromat set out in The Corporate Report.[2] Also, it is worth mentioning that value added measurement on this basis is recommended by the European Economic Community (EEC) Fourth Directive.[3] Article 23 of this Directive (as shown in Figure 2.7) is in effect a value added format consistent with the gross value added concept. The British Census of Production also regards depreciation as a constituent of value added.[4]

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1 According to the latest survey of the Institute of Chartered Accountants in England and Wales, there are 69 companies adopting this basis (82% of companies reporting value added information in their survey). See Institute of Chartered Accountants in England and Wales, Survey of Published Accounts 1979 (ICAEW, 1980), p. 222. Gray and Maunders have also reported 77 companies (92%) adopted the same approach. See Gray and Maunders, op.cit., p.59. Whilst Renshall et al have reported 55 companies (96%) using the same basis. See Renshall et al, op.cit.,p.98. According to the present study there are 47 companies (98%) reporting value added on a gross basis.

2 The Corporate Report op.cit., p. 50

3 The intention of this Directive is to harmonise standards of accounts presentation and disclosure in the EEC. The Directive was adopted on 25 July 1978 and it is expected that the majority of British companies will be producing their accounts in conformity with the Directive by 1982.

4 Department of Industry Business Statistics Office, Census of Production (London: H.M.S.O., 1978)

FIGURE 2.7

Value Added Format in The EEC Fourth Company Law Directive

Article 23

		£000
1. Net turnover		XX
2. ± Variation in stocks of finished goods and in work-in-progress		XX
3. + work performed by the undertaking for its own purposes and capitalised		XX
4. + Other operating income	X	
5. - (a) raw materials and consumables	(X)	
- (b) other external charges	(X)	
		(XX)
Gross Value Added		£XXX
6. Staff costs		
(a) wages and salaries	(X)	
(b) social security costs	(X)	
		(XX)
7. (a) value adjustments in respect of formation expenses and of tangible and intangible fixed assets	(X)	
(b) value adjustments in respect of current assets to the extent that they exceed the amount of value adjustments which are normal in the undertaking concerned	(X)	(XX)
8. other operating charges	(XX)	
		(XX)
Operating Profit		£XXX

Source: EEC Fourth Directive on Company Law: Presentation and Content of the annual accounts of companies, cited by Renshall et al, op.cit., p. 42

2.4.5 Substractive or Additive Measurements?

From the accounting point of view, the structure of double entry suggests that there are two ways of measuring value added, namely, the substractive measurement and the additive measurement. Both ways should give the same figures for value added. It does not matter whether the gross or net value model is adopted since this is a different direction of measurement.

In practice, both measurements tend to be most frequently adopted at the same time because they are not mutually exclusive. Nevertheless, the substractive method could be used alone but not the other way around since the main function of the substractive method is to identify the value added whilst the additive method shows how it has been allocated. As The Future of Company Reports put it:

> "having identified the value added, it is then of interest to show how it has been distributed by way of payment to employees, to those who have provided the capital by way of dividends on share capital and possible interest on loan capital and to Government through taxation; and indicating the balance retained in the business."[1]

Thus, it should be clear from the discussion above that the additive method cannot be used alone.

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1 Department of Trade, The Future of Company Reports: A Consultative Document, op.cit., p. 8.

This sort of presentation, i.e. using both methods simultaneously is also suggested in The Corporate Report[1] and various adaptations of this format are used by the companies which are the subject of the present study. Figure 2.8 and Figure 2.9 show the substractive and additive measurement respectively. As can be seen from both Figures, the substractive measurement of value added on sales is equal to the additive measurement, i.e. both are £XX. Also, the substractive measurement of value added on production is equal to the additive measurement, i.e. both are £XXX.

The relationship between both measurements, however, could perhaps be best illustrated algebraically as follows:

$$VA = S - B \qquad (1)$$

where

VA is value added

S is Sales revenue

B is Bought-in materials and services,

alternatively,

$$VA = W + I + Div + T + R + Dep \qquad (2)$$

where

W is the accounting period's wage cost

I is the interest payable for the period

Div is the total of dividends payable for the period

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1 ASC, The Corporate Report, op.cit., p. 50

FIGURE 2.8

SUBSTRACTIVE MEASUREMENT (GROSS)

Sales Value Added		Production Value Added	
Sales	£XX	Sales Value of Goods Produced	£XX
Less: External Costs of Sales	£(X)	Less: External Costs (of Goods Produced)	£(X)
Sales Value Added	£XX	Production Value Added	£XXX

FIGURE 2.9

ADDITIVE MEASUREMENT (GROSS)

Sales Value Added		Production Value Added	
To Pay Employees (wages + pensions + fringe benefits)	£X	To Pay Employees	£X
To Pay Providers of Capital (interest on loans + dividends)	£X	To Pay Providers of Capital	£X
To Pay Government	£X	To Pay Government	£X
To Provide for Maintenance and Expansion of Assets (Depreciation + Retained Profit)	£X	To Provide for Maintenance and Expansion of Assets	£X
		Unrealised Profit in Stocks Movement	£X
Sales Value Added	£XX		£XXX

T is the corporate taxes

R is retained profit

Dep is thedep reciation charge for the period

From Equations (1) and (2) we have:

$$S - B = W + I + Div + T + R + Dep \qquad (3)$$

Equation (1) illustrates the substractive method of measuring value added, whilst Equation (2) shows the additive method.[1] It is also clear, from Equation (3), that both methods of measurement must give the same figure for value added. This latests Equation, i.e. Equation (3), represents the format of value added statement most often used in practice. The left-hand side of the Equation relates to the upper part of the statement, where bought-in costs are deducted from sales revenue. Having identified the value added figure for the accounting period, the lower part of the statement shows its allocation amongst group of beneficiaries, which is symbolically represented in the right-hand sides of Equations (2) and (3).

Finally, the question as to whether the substractive method or the additive method is preferable in practice. As noted above, both methods are not mutually exclusive. On the contrary, they are complementary and should be used simultaneously.

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1 It should be realised however, that both Equations, i.e. Equation (1) and Equation (2) are based on gross value added on sales. Similarly, one could algebraically illustrate the relationship between the substractive method and additive method on the basis of net value added and/or production value added.

2.4.6 Extraordinary Items: Are They Value Added?

Extraordinary items are defined in SSAP6 as those items which derive from events or transactions outside the ordinary activities of the business and which are both material and expected not to recur frequently or regularly.[1]

Examples of extraordinary items include:

(i) losses associated with the termination of a significant part of the business; and

(ii) gains and losses on the sale of fixed assets or investments.

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1 Institute of Chartered Accountants in England and Wales, Extraordinary Items and Prior Year Adjustments (SSAP6) in Accounting Standards 1978 (ICAEW), p. 221. It should be noted, however, that these Statements of Standard Accounting Practice (SSAP) are developed and prepared by the Accounting Standards Committee (originally known as the Accounting Standards Steering Committee) which was set up in January 1970 by the Council of the Institute of Chartered Accountants in England and Wales with the object of developing definitive standards on financial reporting. The Institute of Chartered Accountants of Scotland and the Institute of Chartered Accountants in Ireland became members of the Committee in 1970, the Association of Certified Accountants and the Institute of Cost and Management Accountants joined in 1971 and the Chartered Institute of Public Finance and Accountancy in 1976. From 1 February 1976 the Accounting Standards Committee was reconstituted as a joint committee of the six member bodies. The Committee's procedure is to publish its suggestions for the standardisation of practice as Exposure Drafts (ED), to test informed opinion on their acceptability. If the proposals appear to be acceptable, they may be endorsed by the sponsoring bodies and be given the status of Standard Accounting Practices.

As this definition indicates, a multitude of different items may arise here and, hence, it is impossible to prescribe a satisfactory treatment for extraordinary items as a class. Different items may have different consequences for value added measurement and therefore the best treatment depends on the nature of the item. The consequence is that considerable managerial judgement is required and with it some potential for manipulation in respect to classification.

However, the main principle in determining the treatment of extraordinary items is that the value added exists to measure the amount of productive effort contributed by a business firm from its own resources towards its sales output, and gains and losses which are unrelated to these efforts and quite outside the normal operations should be omitted. As an example, and according to this principle, unrealised capital profits arising on revaluation should be excluded when measuring value added. If the extraordinary item was, however, a realised capital profit then the best treatment of this would seem that to be included in the measurement of value added since it is an integral part of the firm's trading activities though separate disclosure, in order to accurately reflect who has added the value, is preferable.

But items of an "extraordinary" nature should be distinguished from those which are "exceptional" but consid-

ered to arise from normal operations. SSAP6 defines exceptional items as "items of abnormal size and incidence which derive from the ordinary activities of the business".[1] Such items might include, for example, abnormal redundancy costs. For the purposes of measuring value added, it appears to classify exceptional items on the same basis as similar items of normal size and incidence. Thus in the case of the example above, i.e. redundancy costs should be treated as part of the employment costs.

In practice, however, extraordinary items are treated, for the purposes of measuring value added, in a variety of ways. These include:

(i) showing the item separately categorised as an addition to value added;

(ii) Including the item with gross output, or deducting it from bought-ins;

(iii) Disclosing it as a distribution of value added.

(iv) Excluding the item entirely from the value added measurement.[2]

As indicated earlier, it is impossible to say which treatment is best since this depends on the nature of each item. But as a general rule, items which are not related to prod-

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1 Institute if Chartered Accountants in England and Wales, Extraordinary Items and Prior Year Adjustments (SSAP6), op.cit., p. 221.

2 See, for example, B.A. Rutherford, "Examining some value added statements", Accountancy (July 1978), p. 51; and S. Gray and K. Maunders, Value Added Reporting: Uses and Measurement, op.cit., p. 60.

uctive activity should be omitted. On the other hand, items which cannot be directly related to these activities but represent an integral part of the firm's trading activities should be separately categorised below the value added by the company to arrive at the total value added as shown in Figure 2.10.

FIGURE 2.10

THE VALUE ADDED STATEMENT

(RECOMMENDED TREATEMENT OF EXTRAORDINARY ITEMS)

	£
Sales	X
Less:	
Bought-in materials and services	(X)
GROSS VALUE ADDED BY THE COMPANY	£XX
Add:	
Extraordinary profit	X
Interest receivable	X
The company's share of the profit of associated companies	X
TOTAL GROSS VALUE ADDED (AVAILABLE FOR SHARING AND/OR RETENTION)	£XXX

2.4.7 Research and Development Expenditures: A Special Treatment

As was indicated in the intorduction (Chapter I), the rate and adequacy of the economy's growth depends mainly on three factors: capital investment, improvement in labour productivity, and advances in technology.

The main function of Research and Development (R & D) is to ensure that new ideas and developments are brought forward at the right time so that technology can continue to advance rather than to decline. At the national level, decline in technology lowers productivity, slows growth in employment, and increases inflation. At the company level, the future of many companies depends to a significant extent on the success of their research and development programmes, since in many sectors of industry failure to keep pace with the rate of innovation of competitors is likely to lead to steady if not sharp decline. While R & D expenditures (as a percentage of GNP) have steadily declined in the U.K. during the past three decades, just the reverse has taken place in other economically advanced countries like West Germany and Japan and this may be an important reason why the U.K. lags behind many industrial countries in industrial economic performance (see Chapter VI, Section 6.2).

Yet there is a substantial evidence in the accounting literature (both theoretical and empirical) that external financial reporting, and the measurement issue in partic-

ular, has a great influence on internal decision-making.[1] Our argument here is the same as it was in the case of depreciation expense; that is, management should be encouraged to allocate resources in a manner more consistent with the long-term economic efficiency. Consistent with this approach, R & D expenditures should be excluded from bought-in costs when measuring value added and shown separately as an allocation of value added rather than as an external cost.[2] If it was to be treated as a bought-in cost, management would be encouraged to spend less rather than more regarding this item since it would have a reverse effect on value added figures.[3] A similar approach has been suggested by Rappaport to encourage corporate executives to make decisions congruent with the long-term economic interests of the company,[4] and few British companies have already adopted this approach.[5]

However, this recommended treatment of R & D expenditures would seem to be contrary to the recommendations of

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1 See, for example, S.F. Jablonsky and Mark W. Dirmith, "Is Financial Reporting Influencing Internal Decision-Making?", Management Accounting (July 1979), pp. 40-44.

2 This is also the same treatment recommended for depreciation expense. It was argued that treating depreciation as a bought-in cost would leadmanagement to adopt depreciation policies which could be inconsistent with the long-term economic efficiency of the firm. Supra, p.71.

3 Since managers have a considerable personal and financial stake in the scoring process by which their performannce is judged, for a comprehensive description of this process see, for example, Prem Prakash and Alfred Rappaport, "Information Inductance and Its Significance for Accounting", Accounting, Organisations and Society, Vol.2, No.1, (1977), pp. 29-38.

4 Alfred Rappaport, "Executive incentives vs.corporate growth", Harvard Business Review (July/August 1978), pp.81-88

5 For example British Steel reports R & D as a distribution of value added rather than a cost.

professional accounting bodies in both the U.K. and the U.S.A. with regard to this matter. SSAP 13, for example, recognises three broad categories of R & D activities.[1]

(i) Pure (or basic) research: work directed primarily towards the advancement of knowledge.

(ii) Applied research: work directed primarily towards exploiting pure research other than work defined as development expenditure.

(iii) Development: work directed towards the introductionor improvement of specific products or processes.

The same statement also provides for all R & D expenditures to be written off as they are incurred, except for development expenditures allowed to be carried forward in strictly defined circumstances.[2] The same treatment was also recommended by the Financial Accounting Standards Board (FASB).[3] However, a number of issued and proposed FASB statements and especially Statement No. 2 (regarding the treatment of R & D expenditures) have come under sharp criticism for their dysfunctional effects on managerial resource allocation.[4] Critics of Statement No. 2, for example, contend that mandatory expensing of R & D costs creates a

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1 Institute of Chartered Accountants in England and Wales, Accounting for Research and Development (SSAP 13), Accounting Standards (ICEAW,1978), p.279.

2 Ibid.

3 Financial Accounting Standards Board, Statement of Financial Accounting Standards No.2, Accounting for Research and Development Costs (Oct., 1974), pp.1-25.

4 Alfred Rappaport,"Executive incentive vs. corporate growth", op.cit., p. 87.

disincentive toward R & D investment among those companies that formerly capitalised a portion of such investment.[1]

At present however, there is no requirement for companies to disclose information relating to their R & D expenditures, although some companies do so voluntarily. In a recent exposure draft (ED9), the International Accounting Standards Committee proposed that companies should disclose the amount of R & D expenditures incurred during the period covered by the accounts.[2] Also, the Government, in its Green Paper The Future of Company Reports, has recommended the implementation of the IASC proposal.

> "The Government considers in principles that there are sound reasons for implementing this recommendation. Where it is significant in relation to the scale of a company's activities, R & D expenditure constitutes an important investment for the future, generally out of revenue which would otherwise be available to increase a company's immediate profit. Shareholders, employees and others concerned with the company therefore have an interest in knowing what the company is spending on R & D."[3]

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1 Ibid.
2 The International Accounting Standards Committee, Proposed Statement, Accounting for Research and Development Costs (ED9, February 1977).
3 Department of Trade, The Future of Company Reports, op. cit., p. 13

Nevertheless, the researcher's view is that accounting must break free from the shackles imposed by adherence to the so-called "accounting conventions". Accounting, financial reporting, and financial statements are not ends in themselves but are intended to produce useful information about specified entities.[1] Thus, usefulness for specified purposes should be the criterion by which the merits of accounting practice must be judged. Any accounting standard that causes undesirable economic consequences represents bad accounting. It is hoped, therefore, that the Accounting Standards Committee will include economic impact analyses in future exposure drafts of accounting standards, require companies to separately disclose information on their R & D expenditures, and also recommend that R & D expenditures be treated as an allocation of value added and not as a bought-in cost so that managers would be motivated to make decisions congruent with the long-term economic interests of the company and of the economy.

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1 Financial Accounting Standards Board, Proposed Statement of Financial Accounting Concepts: Objective of Financial Reporting and Elements of Financial Statements of Business Enterprises (F.A.S.B., 1977), p. 1.

2.4.8 Historical Cost or Current Value?

Whilst it is beyond the scope of the present study to evaluate the various alternative accounting methods, it would seem necessary for our purposes to consider the question of whether value added should be measured on historical cost basis or current value basis.

Broadly speaking accounting methods can be divided into two main methods: historical cost method (H.C.)[1] and current value methods. Under the historical cost methods assets are valued on the basis of actual or allocated sacrifices incurred at their date of acquisition. No recognition is given to post acquisition changes in asset values unless there is a permanent diminution in their value or until they are realised. Value added equals the excess of sales revenue over the historical cost of the corresponding inputs (material and services) obtained from other enterprises valued at acquisition prices.

Current value accounting methods can be broadly subdivided into a) replacement cost (R.C.), and b) net realisable value (N.R.V.).

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1 Since the present researcher does not consider the current purchasing power method (C.P.P.) different from (H.C.) except it is adjusted by the Retail Price Index, no attempt is made in this section to study the impact of C.P.P. on the preparation of value added information.

Under the replacement cost method assets are valued on the basis of the current sacrifice which would be incurred in replacing the future service potential or capacity represented by the asset.[1] Value added is the excess of sales revenue over the current cost of the corresponding bought-in materials and services.[2]

In contrast, under the N.R.V. method assets are valued at their opportunity cost in terms of the current cash equivalent of the benefits obtainable in an orderly programme of asset disposal in current market conditions.[3] Value added, in this system, is equivalent to the excess of sales revenue over the exist prices of related bought-in material and services.

Although the literature indicates a substantial acceptance of R.C. in accounting theory, few accounting theor-

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1 It should be noted that R.C. accounting is not a means of adjusting for economy-wide price level changes. Instead, it is a method that incorporates only those individual price changes that affect a specific firm. Individual price changes and economy-wide price level movements may be very different. For more details about this point, see L. Revsine, op.cit., pp.57-85.

2 This is value added on sales. If value added on production approach was adopted,however, value added would equal the excess of the sales value of production over the external costs of producing it valued at acquisition prices.

3 R.J. Chambers,"Evidence for a Market-Selling Price-Accounting System" in R.R. Sterling (ed.), Asset Valuation and Income Determination: a Consideration of Alternatives (Scholars Book Co., 1972),pp.74-96.

ists support N.R.V.[1] In fact, the real choice between alternative accounting methods is a matter for empirical research. Nevertheless, on the evidence of the many normative studies (see footnote 1) there is strong reason for suggesting that R.C. should be the basis for value added measurement. The main argument in support of this suggestion is that the measurement of R.C. income involves the isolation of two components that are not separated in the H.C. income measure. Edwards and Bell identify these two components as the results of

(a) operating activities, and

(b) holding activities.[2]

The distinction between the two arises from a distinction between

(i) those periods in which production actually takes place, and

(ii) those periods in which assets are merely held awaiting future transformation.

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1 For advocates of R.C. see, for example, Edwards and Bell, The Theory and Measurement of Business Income, op.cit.;L. Revsine, Replacement Cost Accounting (Prentice-Hall, 1973); and R.S. Gynther, Accounting for Price Level Changes: Theory and Procedures (Pergamen Press, 1966). For advocates of N.R.V. see, for example, R.R.Sterling Theory of the Measurement of Enterprise Income(University of Kansas Press, 1970);and R.J. Chambers, Accounting, Evaluation, and Economic Behaviour (Prentice-Hall, 1966).

2 Edwards and Bell, Measurement of Business Income, op.cit., p. 70-109. Although their book presented the most complete analayis of R.C. income, Edwards and Bell were not the first to recommend separate disclosure of operating and holding activities. For example, this dichotomisation of income was specifically suggested much earlier by C. Rufus Rorem, "Replacement Cost in Accounting Valuation", The Accounting Review (September, 1929), p. 171.

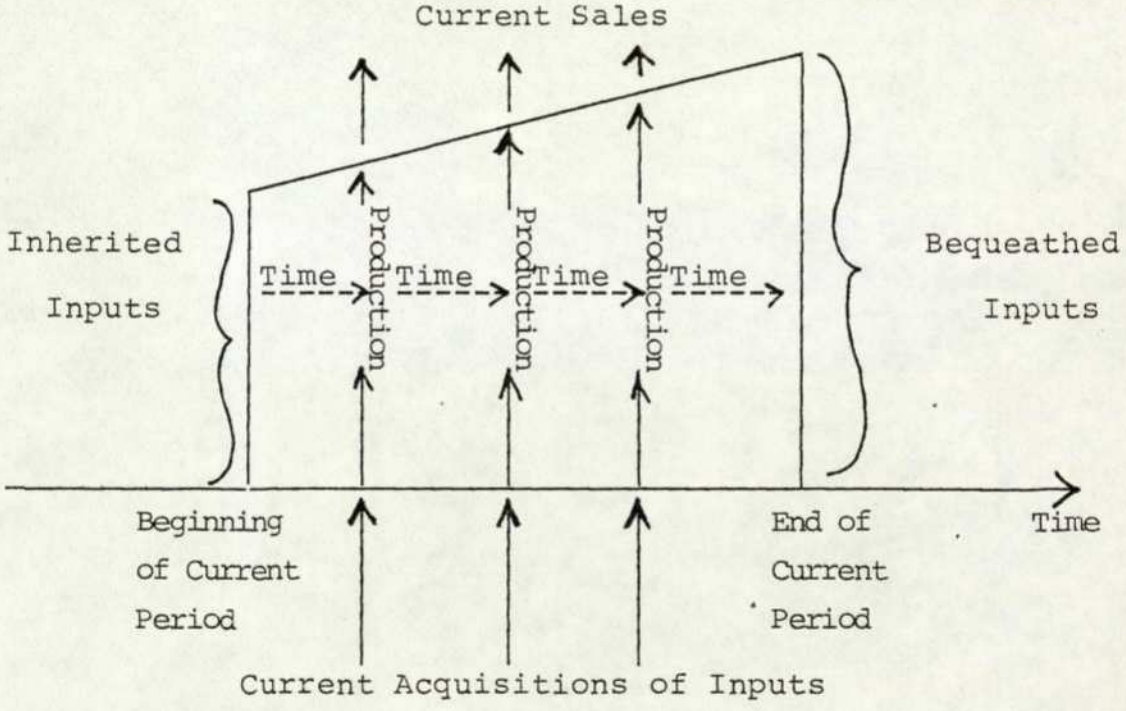
Figure 2.11 illustrates that increase in asset value over time can result from:

(1) value added by production of goods that are eventually sold (vertical movements), and

(2) price changes during non-productive intervals (horizontal movements).

FIGURE 2.11

The Two-way Flow of Inputs



Source: Edwards and Bell, Measurement of Business Income, p. 72

Edwards and Bell argue for the separation of these componenents of income as follows:

" The activities of the business firm in a particular time period resemble an escalator which has the ability to move to one side as well as upward. Any gains which accrue to the firm as a result of horizontal movements, or holding activities, are capital gains. Any gains made by the firm as a result of vertical movements, or operating activities, are operating income.

These two kinds of gains are often the result of quite different sets of decisions. The business firm usually has considerable freedom in deciding what quantity of assets to hold over time at any or all stages of the production process and what quantity of assets to commit to the production process itself. The opportunity to make profit through holding activities, that is, by holding assets while their prices rise, is probably not such an important alternative for most business firms as is the oportunity to make profits through operating activities, that is, by using asset services and other inputs in the production and sale of a product or service. The difference between the forces motivating the business firm to make profit by one means rather than by another and the difference between the events on which the two methods of making profit depend require that the two kinds of gain be carefully separated if the two types of decision(s) involved are to be meaningfully evaluated."[1]

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1 Edwards and Bell, Measurement of Business Income, op,cit.,p.73

Thus R.C. income is fragmented into two components, operating income and holding gains.[1] For the purposes of value added measurement, it should be emphasised at this point that holding gains are not part of value added.[2] No wealth is created by price changes, though wealth is re-distributed by price changes.[3] Therefore the holding gains should be excluded from value added. The main reasons for this contention are:

i) value added as between different companies, and different periods of time of a company, will be more closely comparable,

ii) the recognition of the importance of the capital maintenance concept in income determination by treating the holding gains as an adjustment to owners' equity,

iii) the separate treatment of "Operating" and "Holding" gains will reflect the results of different management activities;

iv) the timing of income recognition would be more realistic (that is, whilst under the R.C. measurement system value added would reflect only operating income which had been realised during the period under consideration, value added under the

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1 Holding gains are sometimes referred to as cost savings.

2 Whether they were realised holding gains (that relate to assets which were sold or used during the period) or unrealised holding gains (that relate to assets still on hand at the end of the period.

3 M.F. Morley, The Value Added Statement: A Review...., op.cit., p. 94.

H.C. would reflect both operating income and holding gains even though the latter might have been realised in preceding periods).[1]

Yet, recent developments in the U.K. relating to the voluntary provision of a supplementary profit and loss statement on a current cost accounting basis outline a method of R.C. measurement.[2] In a value added context the same approach will be similarly applied whereby current replacement costs of materials and plant are used in the measurement process. It should be noted, however, that since the gross value added model is being adopted in this study, the valuations of plant on the basis of R.C. method would not affect the value added, though it would affect its application. At this point a simple example will probably be helpful to illustrate the measurement of value added on replacement costs basis and to contrast the results with historic cost measurement.

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1 For a fuller discussion of this point, see A. Senoun, The usefulness of Replacement Costs in Managerial Decisions, Unpublished MA (Econ.) Dissertation (The Victoria University of Manchester, 1977), pp.37-38.

2 See,The Sandilands Report, Inflation Accounting: Report of the Inflation Accounting Committee (H.M.S.O. Cmnd.6225, 1975), pp. 159-166; and Accounting Standards Committee, Inflation Accounting - An Interim Recommendation "Hyde Guidelines" (Accounting Standards, November 1977), pp. 177-184 and Current Cost Accounting "ED18" (Accounting Standards, 1978), pp. 32-138.

It is assumed in this example that the replacement cost of the materials and services at the time of their use was £250m. A replacement for the plant which had cost £200m. when new would now cost £255m. The period's depreciation therefore is £51m. (20 per cent strait line).

As can be seen from Figure 2.12, the only item which changes as a result of adopting R.C. method for value added measurement purposes is the figure for the cost of bought-in materials and service. This item changes because materials and services used in the period concerned will be charged at their replacement cost at the time of use rather than at their historic cost. This gives rise to a holding gain on materials and services. In the example given the holding gain which is realised on materials and services is £50m., because the company experienced a £50m. benefit from having bought for £200m. some materials and services whose value had risen to £250m. by the time they were used. There is also a resultant change in value added which has dropped to £550m. instead of £600m. under the historical cost system.

It should be noted, however, that there is also a holding gain on the plant. This realised holding gain of £11m. is the difference between historically-based depreciation of £40m. and replacement cost-based depreciation of £51m. The company has benefited by having bought some years ago this item of plant which embodied

FIGURE 2.12

R.C. Measurement of Value Added Compared with H.C. Measurement

(for the period ended ....,19..)

	H.C.	R.C.
	£'000s	£'000s
Sales to customers	800,000	800,000
Less: Bought-in materials and services	(200,000)	(250,000)
GROSS VALUE ADDED	£600,000	£550,000
Applied as follows:		
To employees		
Wages, salaries and pensions	300,000	300,000
To providers of capital		
Dividends and interest	100,000	100,000
To Government		
Central Government and local authorities	50,000	50,000
Reinvestment in Business		
Depreciation	40,000	51,000
Retained profit	110,000	49,000
GROSS VALUE ADDED	£600,000	£550,000

years of future service. One period's worth of these services cost £40m. at the time of purchase. Now, however, one epriod's worth of plant services costs £51m. at current prices. So the firm benefits by this gain of £11m. which becomes realised as the plant gives up the embodied services of the period. This holding gain has no effect on value added measurement, though it effects its allocation. That is, it has been excluded from reported R.C. retained profit (which we might call "retained operating profit").[1] Moreover, holding gains on bought-in materials and services have been also excluded from retained profit under the R.C. system. Therefore, and as shown in Figure 2.12, R.C. retained profit is only £49m.,(i.e. H.C. retained profit of £110 less £50m. (realiesed holding gains on bought-in materials and services) and £11m. (realised holding gains on plant)). This way of treatment implies that holding gains are not available for distributuon, rather they will be placed to the credit of a non-distributable reserve so that operating capacity of the business will be maintained and finance will be available for the replacement of assets at their current prices. This would seem to be an acceptable objective, particularly in a period of price changes and inflation combined with rapid technological change.

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1 L. Revsine, op.cit., p. 63

On balance, replacement cost measurement system seems to be more useful for the purpose of value added measurement. The publication of ED 24 in April 1979 and its adoption as SSAP 16 in March 1980 makes it more likely that R.C. system will come to be used as basis for value added measurement, though not as an alternative to the H.C. system but rather as a supplement to it.[1]

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1 Accounting Standards Committee Proposed Statement of Standard Accounting Practice Current Cost Accounting (ED24) (April 1979). Adopted with minor modification, as SSAP16 (March 1980). However, few writers on the subject argue for adopting a cash flow alternative so that the subjectivity of accounting measurement methods can be avoided. For this view, see, for example Paul Burns, "Do weneed a new statement - Cash Value Added?", Accountancy (July 1978), pp. 93-96.

2.5 The Main Uses of the Value Added Concept

The concept of value added has enjoyed a wide popularity in the last few years - so much so that some of its proselytes are now clearly regarding it as a panacea for most of Britain's economic ills. It is not a panacea - in the realm of national economics; such things do not exist. Nevertheless, a growing body of evidence suggests that the value added concept can be used to considerable effect both nationally and by individual companies. It has been advocated for a variety of uses, including not only financial reporting and the design of reward systems but also, inter alia, measuring the Nation's income, measuring business performance and the productivity of labour and capital, as a basis for employee participation and involvement, and in internal decision-making; e.g. capital investment decisions, marketing strategy, etc.

Though this thesis is concerned with the uses of the value added concept at the micro-level with a view to improve the economic performance of British industry (as its title indicates), a short note on the relevance of the concept to the national economy would seem appropriate.

The national wealth, the Gross Domestic Product (G.D.P.), is the sum total of the value added by the manufacturing and service industries. By adding on net prop-

erty income from abroad, which includes rent, interest, and dividends received from overseas, plus taxes paid on income sent abroad, minus proprty income paid abroad and foreign taxes paid by the nation residents. When added to the G.D.P. at factor cost, this gives the Gross National Product (G.N.P.) upon which the prosperity of any nation is entirely dependent since it represents the value of goods and services available to the nation from economic activities over a period of time.

Figure 2.13 shows the value added method of measuring the G.D.P.[1] as reported in the National Accounts of the U.K. for 1970 and 1977. For convenience in comparison all the figures are expressed at 1975 prices. These figures are derived by adding together wages, salaries and employers' contributions in each sector and thus they represent the value added generated by each sector. The rise in the G.D.P. over this period (as shown in Figure 2.13) is only a result of genuine growth in the economy since the effect of inflation has been eliminated. To make this data more useful, however, it has been expressed as a percentage of the total G.D.P. for each industry. As can be seen from

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1 The G.D.P. can also be derived in another two ways, i.e. (i) by adding together all incomes from economic activity, and (ii) by adding together all the expenditures of the community. The three methods should of course produce the same results. For more details about these methods, see "National Income and Expenditure", (Blue Book) (London:H.M.S.O., 1970-1977).

FIGURE 2.13

The Value Added Method of Measuring the Gross Domestic Product by Industry or Activity

Industry or Activity	£ million at 1975 prices	
	1970	1977
Agriculture, forestry and fishing	2,016	3,106
Mining and quarrying	1,119	2,877
Manufacturing	22,250	30,098
Construction	4,333	6,406
Gas, electricity & water	2,110	3,535
Transport	4,062	5,240
Communications	1,567	2,839
Distributive trades	7,020	10,824
Insurance, banking & finance	5,070	7,220
Rent	3,617	6,131
Miscellaneous services	8,433	11,803
Public health	1,385	2,807
Local authority education	2,000	3,838
Public administration	2,488	5,213
Defence	1,653	1,525
TOTAL	£69,123	£103,462

Source: Blue Books, Tables 3.1 and 2.1 adjusted

Figure 2.14, the manufacturing industry accounted for a smaller proportion of the G.D.P. in 1977 than in 1970; i.e. 29.1% compared with 32.2% respectively, though it still remained the largest single sector. However, the major drawback of the data provided by the Blue Book, including the G.D.P. figures, is that it is highly aggregated. A more useful source of information on British economy is the Census of Production.[1] It provides the most detailed disaggregated value added data collection for the U.K.

As mentioned earlier (in Section 2.2), the first British Census of Production was held in 1907 (but wages and salaries have only been recorded since 1924). The Business Statistics Office, which was set up in 1969, collects data from companies in all industries. The 150 industries covered by the Census are grouped together into 20 orders as defined in the Standard Industrial Classification. Census value added is calculated by deducting from sales the cost of materials used, fuel, energy and transport payments to outside contractors used in the process of production. Thus it is measured on gross basis rather than net as was discussed in Section 2.4.4.

Detailed analysis of the Census data would clearly show the significance of the value added concept in the field

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1 Census of Production Reports (London: H.M.S.O.).

FIGURE 2.14

Gross Domestic Product :
Percentages by Industry

Industry	Percentage of Total	
	1970	1977
Agriculture, forestry and fishing	2.9	3.0
Mining and quarrying	1.6	2.8
Manufacturing	32.2	29.1
Construction	6.3	6.2
Gas, electricity and water	3.0	3.4
Transport	5.9	5.1
Communications	2.3	2.7
Distributive trades	10.2	10.5
Insurance, banking & finance	7.3	7.0
Rent	5.2	5.9
Miscellaneous services	12.2	11.4
Public health	2.0	2.7
Local authority education	2.9	3.7
Public administration	3.6	5.0
Defence	2.4	1.5
TOTAL	100.0	100.0

of macro-economics. Apart from providing an important measure of productivity across industries, the value added concept can be used to find out where to invest to create more wealth; i.e. more efficient allocation of economic resources by transferring these resources from industries offering low value added per head to those offering higher rates. Also, the concpet would help to identify industries which are paying so much of the value added in wages and salaries that they have insufficient left to finance their investment programmes.

A comparison between British and Japanese industries would perhaps make this point clear. As shown in Figure 2.15, the Japanese paid 40.4% out of the wealth created by their industry during the year 1973 as wages and salaries, the British paid 52.9% in the same period.[1] This is not to say that the British employee gets more than his Japanese counterpart. On the contrary, since the Japanese employee creates more wealth than the British employee does (value added per Japanese industrial worker was £7386 in 1973 while value added per British industrial worker was only £3275 during the same period)[2] the former gets more.

By paying out a smaller proportion of the value added to the employees, the Japanese are able therefore to leave

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1 F.E. Jones, "The Economic Ingredients of Industrial Success", Proceedings of the Institution of Mechanical Engineers, op.cit., p. 116.

2 F.E. Jones, op.cit., p. 118 (Exchange rate is £1= 700yen).

FIGURE 2.15

The Wealth Created by The Average Industrial Employee and its Distribution in the U.K. and Japan in 1973

	The U.K.		JAPAN	
	£	% of Total	£	% of Total
Value added per worker	3275		7386	
Wages and salaries	1931	52.9	2984	40.4
Welfare and pensions	197	6.0	487	6.6
Rent	30	0.9	140	1.9
Financial costs (interest on borrowed money)	114	3.5	1123	15.2
Taxes	446	13.6	842	11.4
Net profit	454	13.9	709	9.6
Depreciation	303	9.2	1101	14.9
TOTAL	£3275	100.0	£7386	100.0

Source: Dr. F.E. Jones, op.cit., pp. 118-119

more for reinvestment. In the same period, i.e. 1973, the total reinvestment per the Japanese employee was £444 retained profit plus £1101 of depreciation, making a total of £1545 per employee. For British industry, however, the total reinvestment per employee per year amounted to £303 plus depreciation of £303, giving a total of £606 per employee.

The general impression is that the situation is now even much worse. Unfortunately, data is not available for such international comparison with regard to the last few years. Nonetheless, focusing on the performance of British industry, as reported in the Census of Production, may prove the point. That is, the value added concept is very useful in the context of the macro-economic. Figure 2.16 shows the gross value added per head, i.e. labour productivity, the annual capital expenditure per head, i.e. the capital intensity, and wages and salaries per head for each industry. Figures for each industry are expressed as a percentage of the average for the whole of manufacturing industry. Also, wages and salaries as a percentage of the gross value added for each industry is shown. All figures are averaged over the period 1963-1976.

From Figure 2.16 it can be seen that industries which are generating the highest value added per head are those that are more capital intensive. Furthermore, it is evident from the same Figure that the higher the gross value

FIGURE 2.16

Census of Production : Manufacturing Industries

Operating Ratios

(1963-1976)

Order	Industry	% of all manufacturing industries GVA per Head	AVE per Head	W/S per Head	Wages & salaries as of GVA
III	Food, drink & tobacco	118	130	91	44
IV	Petroleum Products	434	733	132	17
V	Chemicals	175	272	118	39
VI	Metal manufacture	112	199	116	60
VII	Mechanical Engineering	99	63	106	61
VIII	Instrument Engineering	81	57	95	67
IX	Electrical Engineering	94	65	96	58
X	Shipbuilding	76	71	112	84
XI	Vehicles and aerospace	90	82	119	76
XII	Metal goods	88	74	93	61
XIII	Textiles	76	83	83	63
XIV	Leather & fur	74	45	78	61
XV	Clothing and footwear	54	19	61	65
XVI	Ceramics	110	131	105	55
XVII	Timber and furniture	96	65	98	58
XVIII	Paper and printing	104	80	109	60
XIX	Other manufacturing	91	97	92	58
III - XIX	all mfg industries	100.0	100.0	100.0	57

Source: Business Monitor PA1000: 1976
Where GVA is the Gross Value Added
ACE is the Annual Capital Expenditure
W/S is the Wage/Salary

added per head, the lower the proportion of value added paid out as wages and salaries and consequently the more is left for reinvestment. As an example, the petroleum products industry generated 434% (of all manufacturing industries) gross value added per head, spent 733% annual capital expenditure, paid out only 17% of its gross value added as wages and salaries, though this still remained the highest wage and salary per head with 132%. In contrast, the clothing industry generated only 54% gross value added per head, spent 19% capital expenditure, paid its emp employees 65% of its gross value added as wages and salaries and in spite of that wage and salary per head was the lowest compared with all other industries (61% wages and salaries per head).[1]

These findings are consistent with more than one major hypotheses in the present study. That is, the wealth created is the key factor in overcoming British industrial difficulties. By creating more wealth, industries can afford to keep more funds for reinvestment, pay higher wages, higher rates of return on capital, and generate more and more wealth. There is no fundamental reason for conflict between labour and capital. With rising productivity, both can be satisfied and conflict reduced or elinimated.

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1 In Figure 2.15, figures related to both industries are underlined for convenience in comparison.

The above discussion intends to do no more than draw attention to the significance of value added concept in the field of macro-economics. The concept is now used by every major country as a basis for measuring national output. It gives an important measure of productivity across industries and across countries. It clearly shows which industries offer the best opportunities for higher labour productivity, wages and salaries, and retrun on capital. It can be used as a benchmark against which economic performance of individual companies may be evaluated. It offers accurate answers to the following questions:

(a) how does each company compare with the national average in its sector?

(b) are wages and salaries levels above or below the average of the company's industry?

(c) is the company investing too little compared with its sector?[1]

(d) how does the national economy compare with its major foreign competition?

In the present researcher's point of view, this area deserves a detailed study on its own. Hopefully it will be possible in the future to carry out such a study since this is beyond the resources available to us at present.

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1 E.G. Wood, Added Value: the key to prosperity, (Business Books, London, 1978), p. 32.

Moving on to inquire into the uses of the value concept at the micro-level, which is the main focus of this study, we should reiterate again that the concept was first employed by economists in the Eighteenth Century as a means of measuring national output. Yet it is only in the last forty years that other groups have started to pay attention to its various uses at companies level, particularly as a basis for productivity bonus schemes and as a means of financial reporting, though the latter is a more recent phenomenon.[1]

In a recent article, Morley has pointed Out that the British economy has been declining since 1945 relative to that of its competitors.[2] He suggests that the value added concept may well make some contribution to halt Britain's relative industrial decline. To do so, he recommends the value added concept to be used in two ways. Namely, informing users of financial reports both of the wealth created by a company and how it has been shared, and also creating a direct financial link between economic performance and pay by adopting a value added-based productivity bonus schemes for employees. He says:

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1 As was discussed in Section 2.2.

2 M.F. Morley, "Value Added:the fashionable choice for annual reports and incentive schemes", The Accountant's Magazine (June, 1979), pp. 234-236.

> "If we are to break out of this dreary decline, we must, as accountants, do two things: we must present readable reports on wealth creation to decision makers and we must develop and install schemes which give each individual an incentive to create more wealth. Value added enables us to do both."[1]

Following Professor Morley's suggestion, the question to face now is this: how could the uses of the value added concept, especially for the purpose of financial reporting and as a basis for productivity bonus schemes influence the economic performance of individual companies and, eventually, of industries? In the remainder of this section we will attempt to briefly answer this question, though the issue will be the subject of detailed investigation in the succeeding chapters.

In this study, however, financial reporting refers to accounting for the economic performance of organisations and its communication to parties interested in evaluating that performance. Whilst the same accounting system normally accumulates, processes, and provides the information whether it is called internal or external, the focus here is only on the external aspect of financial reporting.

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1 M.F. Morley, op.cit., p. 236. (emphasis added).

There is a total agreement in the accounting literature that information is rarely neutral. New approaches to accounting are quite capable of influencing attitudes and behaviour.[1] The Corporate Report, for example, draws attention to the "demonstration effect" of financial reports and the scoring rules on which they are based. The Report's authors recognise that by changing the scoring rules it is possible to affect management attitudes and behaviour, and thus the economic performance of the reporting entity.[2]

The main thrust of the argument here is that by making the profit figure the keynote figure of financial reports, users are encouraged to appraise the performance of companies on the basis of short-term results. Management, consequently, may tend to substitute short-term profit for the long-term survival and growth of the firm by deciding to forgo investment in capital equipment and R & D that would benefit the firm for several years.

The inference is that by shifting the emphasis from profit to value added figure a stronger awareness of the

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1 See, for example, Accounting Standards Committee, The Corporate Report, op.cit.; Yuji Ijiri, The Foundation of Accounting Measurement, A Mathematical, Economic, and Behavioural Inquiry, op,cit.; P. Prakash and A. Rappaport, "Information Inductance and Its Significance for Accounting", Accounting Organisations and Society (1977), pp. 29-38, and S.A. Zeff, "The Rise of Economic Consequences", Journal of Accountancy (December, 1978), pp. 56-63.

2 Accounting Standards Committee, The Corporate Report,op.cit.,p.38

long-term strategy may be induced. Moreover, as pointed out earlier (in Section 2.4.1), a corporate management's attention, decisions and actions are focused more on those components of the firm's performance which are included in the firm's formal measurement system. Thus by reporting value added information, it is expected that managers are more likely to use it as an essential criteria for internal decision-making.[1] Additionally, value added reporting will facilitate the introduction of value added productivity schemes, for this will enhance the awareness and acceptance of value added by both managers and employees.

Finally, the external reporting of value added implies that managers of publicly-held companies are no longer represent the single interests of ownership. Instead they function as trustees of resources accountable to shareholders, employees, customers, government, and the public at large. It is expected therefore that companies which externally report value added are more likely to be management controlled, rather than owner-controlled, firms.[2]

So far, the discussion focused on manager's attitudes and behaviour. For employees, however, there are several reasons for expecting positive association between the ex-

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1 It has been argued that external financial reporting has a great impact on internal decision-making; Supra, p.91.
2 See Section 3.4 for distinction between management-controlled and owner-controlled firms.

ternal reporting of value added and the firm's economic performance. First, the profit approach tends to treat labour as a cost which always needs to be minimised, and this is contrary to the wish of employees who want to be treated as a part of the organisation. In contrast, value added represents the wealth created which is available for the company team, in which employees are seen as responsible participants. It treats labour as a distribution of surplus. Indeed, as an interviewed Finance Director has put it:

> "men and women do not sell their mental and physical energies as if they were materials. They join the firm to earn an income and to find satisfying work. They help to create the wealth of the company and it is therefore offensive to treat wages and salaries as if they were just one more industrial cost."

Furthermore, there is evidence that the meaning and significance of profits are widely misunderstood. For example, a recent survey commissioned by the CBI shows a relatively low level of understanding of the term "profit" even by managers, let alone manual workers.[1] The conclusion which one might draw from this finding is that there is a need for an alternative method of communication which may enable a wider and better understanding of company in-

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1 M. Branden and M. Arnott, "Priorities for In-Company Communications", Confederation of British Industry (CBI) (London; 1976).

formation to recipients, particularly employees. Value added holds out such a prospect as a way of improving communications. When employees are fully informed about value added, they should be better motivated to work, more cooperative and more identified with their company. This may create conditions that might facilitate effective employee participation and involvement which is claimed to be the main characteristic of the Japanese style of management and the major factor behind their industrial success, for this will increase worker satisfaction and productivity.[1]

The above arguments can be summarised in terms of the following hypotheses:

Hypothesis 1

There is a significant difference between companies which externally report value added and those which do not regarding their perceived objectives.

Hypothesis 2

There is a significant relationship between the external reporting of value added and type of control.

Hypothesis 3.1

There is a significant difference between perceptions of managements of the two groups of companies (companies which externally report value added and companies which do not) regarding the types of users of financial reports.

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1 Ray J. Groves, "Corporate Disclosure in the 1980s", Financial Executive (June, 1980), pp.14-19

Hypothesis 3.2

There is a significant difference between perceptions of managements of the two groups of companies with respect to objectives of financial reporting.

Hypothesis 4.1

Managements which are using value added as a means of external financial reporting are more likely to use it in internal decision-making.

Hypothesis 4.2

There is a significant difference between perceptions of managements of the two groups of companies with respect to how their firms' economic performance is evaluated.

Hypothesis 5

Managements of companies that externally report value added would be more concerned with long-term planning of goals and strategy.

Hypothesis 6

Companies which externally report value added are likely to:

(a) create more wealth,

(b) spend more on R & D,

(c) internally generate more funds for reinvestment,

(d) achieve higher rates of return on capital,

(e) pay higher wages.

Hypothesis 7

Companies which externally report value added are more likely to be:

(a) larger in terms of both labour size and capital employed,

(b) more capital intensive,

than those which do not.

Hypothesis 8

There is a significant relationship between the use of value added as a means of financial reporting and its use as a basis for productivity bonus schemes.

Having argued that reporting value added would facilitate the introduction of value added incentive schemes, we must next examine the claimed advantages which may be derived by adopting such schemes.

Several economic and social developments in the U.K. highlight the necessity for taking a fresh look at productivity incentive schemes at this time. In particular, declining rates of productivity, rising unemployment, and the disastrous climate of complete distrust between employers and employees have directed the attention of management, unions and employees to such schemes to tackle these problems.

Generally speaking, productivity incentive schemes take on two different forms, namely, individual incentives and group incentives.[1] But no matter what form they take, they always include the basic element of awarding monetary compensation as an icnentive for improved economic performance. It is beyond the scope of the present study, however, to examine the advantages and disadvantages of all productivity bonus schemes or conduct any comparison among them. Nevertheless, it should be emphasised that attention has diverted from individual to group incentives for two main reasons. First, the need for a more cooperative and participatory approach has led to move away from individual toward group incentives. Secondly, the relationship between effort and production is no longer a direct one and thus individual incentives would seem less relevant under such circumstances.

For value added incentive schemes, however, this is not the end of the matter. Quite apart from providing a motive to increase output and to minimise the costs of bought-in goods and services, they also tend to involve employees in the total operation of the company and provide a framework for employee participation in the manage-

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1 For adetailed discussion of productivity incentive schemes, see, for example, P. Shwinger, Wage Incentive Systems (John Wiley & Sons, Inc., New York, 1975); and R.B. McKenzie, "Wage Payment Methods of the Future", British Journal of Industrial Relations (June,1963), pp. 191-212.

ment process.[1] Moreover, an important feature of value added incentive schemes is the committee of management and employee that monitors and supervises the scheme, and acts as a valuable channel of communication.

In a recent paper by Marchington he states that:

> "the underlying assumption of all systems of employee participation - and particularly these introduced primarily by management - is an anticipated increase in organisational efficiency produced by an increased flow of ideas, more comprehensive discussion of alternatives and a greater degree of acceptance of final decision ..... By integrating the opportunity to participate so explicitly with the rewards for participating, a greater degree of congruency can be achieved than with other, and more traditional forms of payments."[2]

Value added incentive schemes can directly link reward to improved performance and consequently help to foster

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1 There are many definitions of employee participation in managerial decisions and thus it is difficult to offer a single and simple definition. In general terms, however, participation essentially involves some form of employee involvement, embracing at least access to information which is normally confined to management and, in some cases, some involvement in the decision-making which traditionally defines the managerial function. For an outstanding discussion of this issue, see R.Loveridge "What is 'participation'? - A Review of the Literature and some Methodological Problems", The University of Aston Management Centre, (October , 1979).

2 M.P. Marhcington, "Worker Participation and Plant-Wide Incentive Systems", Personnel Review Vol. 6 No. 3 (Summer 1977), pp. 35-38.

participation. Without participation, however, the high-trust relations necessary for the success of such schemes are less likely to be achieved, and rewards are more likely to be regarded as random, unfair, and unrelated to economic performance. This might partially explain the preferance for wage increases rather than bonuses related to value added productivity schemes in the typical low-trust companies under collective bargaining. So, this argument suggests that both value added incentive schemes and particpcation are interdependent, the former fosters the latter and the latter is a prerequisite to the success of the former.

Furthermore, the schemes may also improve the quality of the final goods since poor quality products may affect sales and, therefore, value added.[1]

Finally, the significance of value added incentive schemes as a means of building an overall corporate image among its workforce should be made absolutely clear, for this is its main asset. In the words of an interviewed Finance Director:

> "It (the value added incentive scheme) is regarded by all of us as a means of indicating a company wide

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1 As pointed out in Section 2.4.3, value added on sales approach, rather than on production, is recommended in this study.

identity and concern linking both workers and shareholders quite separately from workers' more basic shopfloor-oriented interests in negotiated pay and conditions of employment."

The hypotheses discussed above can be explicitly stated in the following forms:

Hypothesis 9

Managements of companies that are operating value added productivity bonus schemes (VAPBS) would be:

(a) more in favour of a participatory and cooperative approach,

(b) more concerned with improving productivity by

(i) installing new equipment, and

(ii) increasing expenditures on employee development programmes.

Hypothesis 10

Companies which are operating VAPBS have more channels through which shop floor employees can influence policy, strategies, and plans.

Hypothesis 11

There is a significant relationship between the use of VAPBS and levels of:

(a) morale,

(b) cooperation,

(c) communication,

(d) participation and involvement, and

(e) productivity.

2.6 Summary and Conclusions

1. The main concern in this study is with the uses of the value added conept at the micro-level with a view to improve the economic performance of British industry. Particular attention has been given to its uses as a means of financial reporting and as a basis for productivity bonus schemes.

2. Value added needs to be well defined and its measurement must be standardised if it is to be effectively used as a basis for improving British industrial performance. This is needed as current practice in measuring value added is inconsistent and this could result in misleading comparisons and wrong decisions.

3. Gross value added on sales model was adopted in the present study. The rationale for this approach was discussed. A special accounting treatment of R & D was also recommended. Additionally, it has been argued that R.C. measurement system could be more useful for the purpose of value added measurement rather than H.C. system.

4. The najor benefits claimed for using the value added concept at comapnies level were improvement in attitude, motivation, behaviour, morale, cooperation, and communications within companies. Furthermore, by shifting the emphasis from profit to value added figure, it has

been argued, a stronger awareness of the long-term strategy may be induced. As a consequence, the economic performance of indovidual companies and, eventually, of industries would be improved.

5. The analysis presented in this chapter sets forth the theoretical foundation for the rest of the study. Chpater III will be concerned with the methodological considerations and then we shall proceed to further elaborate on some points made in this chapter and provide related empirical evidence.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

3.1 Selection of a Suitable Method for Data Collection

As was mentioned in the introduction (Chapter I), the overall objective of this research study is to investigate the usefulness of the Value Added Concept for British Industry.

The empirical content of the study required the collection of empirical evidence from senior managers in randomly selected British industrial companies[1] regarding the following fourteen areas of investigation:-

1. Objectives of business organisations.
2. Management's responsibilities toward the groups which contribute to the firm's economic performance, namely, employees, shareholders, customers, suppliers, government, community, and the nation.
3. Objectives of financial reporting.
4. The intended recipients of financial reports.
5. What counts and should count the most in how a company's economic performance is evaluated.
6. Reasons and motivations behind voluntarily disclosing value added information or not disclosing it.
7. Whether there is any value added-based incentive scheme and if there is any, whom it includes.
8. Whether the value added concept is being used in internal decision-making and if so, which decisions?

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1 Samples selection and contents are discussed in Section 5.

9. Status of industrial relations and involvement.
10. Their attitudes towards participation in decision-making.
11. Their views and perceptions on productivity and how it could be improved.
12. Relationships of the company with its environment.
13. How much importance they attach to long-term planning of goal and strategy; immediate future, and growth through internal and external financing.
14. Some accounting or other "objective" data, subject, of course, to the usual variations in accounting definition and practice, e.g. ratio of capital/labour, percentage of sales which was spent on research and/or development (R & D) within the past year, etc.

In order to collect the data required for such empirical evidence a review was made of the many different approaches to data collection. Fortunately, there is a wealth of experience and a formidable literature describing them.[1] It must be admitted, however, that few could claim that this amounts to a coherent set of principles of a theoretical framework. Every writer on the subject has his own ideas which are based on past experience but have neither the certainty nor the objectivity of analytical techniques.

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1 See, for example, C.A. Moser and G. Kalton, Survey Methods in Social Investigation (Heinemanns Educational Books Ltd.,London,2nd edition 1971),pp.238-302;and Selltiz,M., M.Jahado, M.Deutsch and S.W.Cook, Research Methods in Social Relations (Holt,Rinehart and Winston, 1964),pp.236-243.

Nevertheless, during the process, it was found that the most commonly used techniques in such cases were:-

a) Observation method,

b) Questionnaire method,

c) The interview method.[1]

Each of these metnods has certain inherent advantages and disadvantages.

While the observation method is considered quite suitable under many circumstances, it was found to be not satisfactory where measurement of persons' perceptions are involved. As Selltiz, et al, say:

> "The observation methods are less effective in giving information about a person's perceptions, beliefs, feelings, motivations, anticipations, or future plans".[2]

Since the primary purpose of this study was to obtain management's views on such issues as were stated above, which involve person's perceptions, the observation method could not be used.

In making a selection between the other two methods - the questionnaire method and the interview method - the main considerations were cost, time and coverage. On the basis of these counts, the questionnaire method was found to be the most suitable one for our study. However, questionnaires were also supplemented by interviews,though

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1 C.A. Moser and G. Kalton, op.cit, p. 238.
2 Selltiz, et al, op.cit., p. 236.

on a limited basis. The responses to interviews mainly served as a basis for pilot testing as will be discussed in Section 3.3.

Also, some objective data was obtained from published sources, namely, annual and employees reports, Business Monitors, Extel Statistical Services Ltd., Companies House, Moodies Services Ltd., and Census of Production. This was done basically to find out whether results from questionnaires' data, in particular cases, were consistent with results from published sources' data and to collect some other information which was difficult to collect by questionnaires. Furthermore, information collected from published sources allowed for measuring some variables on the "highest" scales of measurement typology, i.e.interval and ratio scales.[1] This was necessary if sophisticated statistical multivariate methods were properly to be used in our analysis. More about this point will be said in succeeding sections.

Summing up, this combination of data collection methods, which were used in the present study, was deliberate. In adopting this approach, we sought to overcome the shortcomings of each method as far as possible. Indeed as Moser and Kalton put it:

> "combination of data collection methods is often appropriate to make use of their different strengths."[2]

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1 C.H. Coombs,"Theory and Methods of Social Measurement",in L.Festinger and D.Katz (eds),Research Methods in the Behavioural Science (New York:Holt,Rinehart and Winston, 1953) pp.471-535

2. C.A. Moser and G.Kalton, op.cit., p.239

3.2 Development of Questionnaire

The questionnaire used in the present study was developed largely through:-

a) An extensive examination of the relevant literature,i.e. accounting, economics, finance, management, and industrial relations literature.

b) A review of annual reports and employees reports (when available) of about 600 business firms mainly British and a few German.

c) Discussions with various academics and practitioners were also performed mainly to refine the questionnaire.

For sections 7 and 8 of the questionnaire which were designed to measure the status of industrial relations, involvement and management attitudes toward participation, respectively, were adapted from a format that was originally developed by Vroom[1] and modified by Likert[2] to assess human resources management style.

The questionnaire was divided into eleven sections each addressing a different but interrealted area of investigation. It had provision - an open item - for the respondent to include any other item or items of his choice, which

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1 V. Vroom, Some Personality Determinants of the Effects of Participation (Englewood Cliffs, N.J. : Prentice-Hall, 1960), pp. 21-31.

2 R. Likert, The Human Organisation, Its Management and Value (McGraw-Hill Book Co.1967), pp.3-46.

he thought ought to be covered. Also, it had an area left for the respondent to include modifying comments, if any. These provisions were intended to reduce possible bias in the questionnaire arising from omission of certain information of interest to the respondent.

Since most of the questions included in the questionnaire could be answered by checking one of the answers listed under the question, subjects of the study were asked to check the appropriate answer on each line using mainly a five-point scale. The decision to replace the seven-point scale was based on two considerations:-

a) The 5-1 scale represents one version of the widely used Likert scale.[1]

b) A reduction of the scale should simplify the complexity of the task.

Respondents were also asked, if they did not find the answer that fitted their case, to check the one that came closest to it or indicate that the question was irrelevant, if they considered it to be so, by marking NR (Not Relevant). A copy of the questionnaire, the related instructions used, and both covering and follow-up letters appear in Appendix A.

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1 A.N. Oppenheim, Questionnaire Design and Attitude Measurements (London: Heinemann Basic Books, 1966), p. 133.

3.3 Pilot Testing

Before the final form of the questionnaire was constructed and sent to companies included in our samples, pilot testing in seven companies in the London area was carried out. Four of these companies are using the Value Added Concept for external financial reporting and as a basis for productivity schemes and are very well known for their support for introducing the concept to be used, as an interviewed Finance Director put it, "as a philosophy of management at the enterprise level". One example of such companies is the Imperial Chemical Industries Ltd. (ICI). The remaining three companies do not use the concept in any way and they are not in favour of using it.

Interviewees (6 Finance Directors and one Group Controller) were asked to make comments on the structure of the questionnaire, its contents, the clarity of questions, the amount of detail and any other point they considered important. In the light of their comments some items in the questionnaire were modified, some were deleted and some new items were added. In particular, a more detailed measure of the use of the value added concept, Section 6, was developed. Some questions on employee morale (i.e. labour turnover, strikes, and absenteeism) were deleted. The question of R & D percentage was modified to include only the past year instead of the past five years as was initially intended.

The modified version of the questionnaire was used in both groups of companies in our samples (94 companies disclose value added and 100 companies do not disclose it).

Companies located in the London area were chosen as a subject of the pilot testing not only for their accessibility to the researcher but also because many economically significant firms within our samples are located in the London area. For full names of companies which were the subject of the pilot testing, see Appendix B.

3.4 Variables Measured

The questionnaire contains 126 variables. Two variables are accounting 'objective' data, and the remaining are non-accounting data. Data for twelve other variables was obtained from published sources as was mentioned in Section 3.1. Three of these twelve variables were about some British industries, and the remaining nine variables were about companies included in our samples. This made the number of variables for the purpose of our analysis 138 variables in total.

The type of measurement scale varied depending on the particular variable involved. Most of the variables were measured on ordinal scales. For instance, firms' objectives, objectives of financial reporting, and reasons for externally reporting or not reporting value added information were measured on a five-point ordinal scale. Ordinal Likert type scales were also used to measure the perceptions of top management on the status of industrial relations, participation and productivity in their companies. Other variables such as ratio of capital/labour, R & D expenditures, value added/employee, and value added/capital employed were measured on interval or ratio scales.

Details of definitions of measures and the scaling procedures were as follows:-

a) For the questionnaire's non-accounting variables, variable 1.1 to variable 1.17; variable 3.1 to variable 3.8; variable 6.2.1 to variable 6.2.21; variable 6.3.1 to variable 6.3.5; variable 9.1 and variable 9.2, a five-point scale was used. Assigning the score of 5 meant the respondent strongly agreed on the statement concerned; the score of 4 meant agreed; the score of 3 meant undecided; the score of two meant disagreed, and the score of 1 meant strongly disagreed. For variables 6.6; 7.1; variable 7.3.1 to variable 7.9.2; variable 8.2 to variable 8.5; variable 8.7 to variable 10.1; variable 10.3; variable 11.3.1 to variable 11.3.4, a five-point scale was used again. Assigning the score of 5 to variables 6.6 and 8.7 meant the respondent was strongly in favour of the issue concerned; the score of 4 meant he was just in favour; the score of 3 meant undecided; the score of 2 meant he was against, and the score of 1 meant he was strongly against. For variable 7.1, the score of 5 was assigned to "Very High"; the score of 4 to "High"; the score of 3 to "Fair"; the score of 2 to "Poor" and the score of 1 to "Very Poor". For variable 7.3.1 to variable 7.4.2 the score of 5 meant "High"; the score of 4 meant "between High and Average"; the score of 3 meant "Average"; the score of 2 meant "between Average and Low" and the score of 1 meant "Low". Variable 7.5.1 to variable 7.9.2 and variable 9.3.1 to variable 9.4.2, the score

was ranging from 5 which meant "Maximum" to 1 which meant "Minimum", the scores of 4, 3 and 2 were assigned to the scale between "Maximum" and "Minimum". For variable 8.2, the score of 5 meant "Very High"; the score of 4 meant "High"; the score of 3 meant "Medium"; the score of 2 meant "Low" and the score of 1 meant "Very Low". Variable 8.3 to variable 8.5, the score of 5 was assigned to "To a very great extent"; the score of 4 to "A great extent"; the score of 3 to "To some extent"; the score of 2 to "To a little extent" and the score of 1 was assigned to "To a very little extent". The score of 5 was given to variable 10.1 when it meant "Very Fast"; 4 when it meant "Fast"; 3 when it meant "Moderate"; 2 when it meant "Slow" and 1 when it meant "Very Slow". The score of 5 was given to variable 10.3 when it meant "Very Great"; 4 when it meant "Great"; 3 when it meant "Moderate"; 2 when it meant "Little" and 1 when it meant "Very Little". For variable 11.3.1 to variable 11.3.4 assigning the score of 5 meant the item was "Very Important"; the score of 4 meant it was "Quite Important"; the score of 3 related to "Somewhat Important"; the score of 2 meant it was "Of Little Importance" and the score of 1 meant it was "Of no Importance".

For the remaining few questionnaire's variables, different scales were used. A three-point scale was used for variables 7.2, 7.10 and 7.11. In the case of

variable 7.2, the score of 3 was given to "in another mode"; the score of 2 to "mainly in a spirit of joint problem solving", and the score of 1 to "mainly in a conflict mode". In the case of variable 7.10, the score of 3 was assigned when it meant "Willingly"; 2 when it meant "Reluctantly" and 1 when it meant "Only after explanation". In the case of variable 7.11, assigning the score of 3 meant the item was "unchanging in importance"; the score of 2 meant it was "declining in importance", and the score of 1 meant it was "increasing in importance".

A four-point scale was used to measure variable 8.1 and 10.2. The score of 1 was given to variable 8.1 when it meant "employee influence over shop floor resources"; the score of 2 when it meant "employee influence over policies and plans"; the score of 3 when it meant ""both 1 & 2", and the score of 0 when it meant "neither 1 nor 2". For variable 10.2 the score of 4 was assigned to "With Great Difficulty"; the score of 3 to "With Difficulty"; the score of 2 to "Easily", and the score of 1 to "Very Easily".

For variable 2, 5.1 and 5.2, ranking scale was used. The score of 1 was assigned to the itam or the group which the respondent thought it counted or should have counted the most; the score of 2 when it counted

or should have counted, in the respondent's views, second most, etc. A two-point scale was used for all other remaining non-accounting variables in the questionnaire. The score of 1 was assigned to the variable when it meant "Yes", and the score of 0 when it meant "No".

b) For the accounting variables, the ratio of capital/labour was measured by the respondent as total assets divided by the number of employees. R & D expenditures were measured as a percentage of sales within the past year. Variables obtained from published sources were measured as follows:-

At Companies Level:

1) Value added[1]: pretax profit plus interest paid, depreciation and employees' and directors' remuneration minus non-trading income.
2) Capital employed: Equity capital plus loan capital.
3) Funds retained for use in business: Retained profit plus depreciation.

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1 To overcome the problem of variation in accounting definition and practice among companies, value added was calculated even for companies who disclose value added information in order to foster a certain degree of consistency in measuring the variables and when comparing economic performances of companies subject of our study with each other and with industry average.

4) Labour productivity: Value added/labour cost (employees' remuneration).

5) Capital productivity: Value added/capital employed.

6) Overall productivity: Value added/capital employed + labour cost.

7) Productivity margin: Value added/turnover.

8) Type of control: Firms were classified as manager-controlled if no single block of ordinary shares greater than 20% is controlled by any party, otherwise they were considered owner-controlled.

9) Company size: Number of employees and capital employed.[1]

At Industries Level:

1) Manpower productivity: Value added (gross)/number of employees in industry.

2) Capital productivity: Value added (gross)/capital employed.

3) Capital intensity: Capital employed/number of employees.

For purposes of machine computation, however, variables were given different numbers, code and order. Also, in some cases, some variables were grouped together to form new scales. Details of descriptions, coding and numbers of variables are presented in Appendix C.

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1 It should be noted however, that in the case of multinational companies, variables were measured on the basis of the UK activities only, i.e. activities of all subsidiaries in the UK.

3.5 Sampling Frame and the Selected Companies

The sample frame used for the purpose of the present study consisted of 500 British listed companies which are included in the "FT-Actuaries 500 Share Index"[1] published by the Financial Times.[2]

The choice of such companies as the subject of the empirical investigation was guided by the following considerations:-

(a) The Index provides a representative cross-section of all companies listed on The Stock Exchange. Yet, each company listed represents a significant sample unit in its own sector - an indication of a well-balanced sampling frame for drawing a good representative sample.

(b) The Index presents an accepted way of classifying companies from different fields of industry and, thus, provides a guide to the spotting of general trends of economic performance on sound basis.

(c) Companies in the Index are homogenous as far as listing status and ownership form are concerned (i.e. all companies in the Index are listed on The Stock Exchange and belong to the private sector).

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1 This Index is the joint compilation of the Financial Times, the Institute of Actuaries and the Faculty of Actuaries.

2 Financial Group was not included in our survey.

This homogeneity is essential for the purposes of our investigation since the form of ownership and listing status might influence the extent of disclosure and accounting policy decisions in general at companies' level;[1] hence, it overcomes the problem of non-comparability of the information needed.

(d) Available information and comparable data were believed to be easier to collect and also a higher rate of response was expected than in the case of any other sampling frame that might have been chosen.

(e) The use of the Index in this study, though a sound sampling frame for the immediate purposes of our investigation, would represent an ideal sampling frame for any further research in the future regarding the effect of external disclosure of value added upon cost of capital and value of the firm.

The selection of samples to form the basis of the empirical study was made in line with the following procedures:-

(a) Basically, it was decided that two equal independent random samples that best represent the population under study were the target to be aimed at. One

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1 See, for example, S.L. Buzby, "CompanySize, Listed versus Unlisted Stocks, and the Extent of Financial Disclosure", Journal of Accounting Research (Spring 1975), pp.16-37 and "Selected Items of Information and Their Disclosure in Annual Reports", Accounting Review (July 1974), pp.423-435 and S.A. Singhvi and H.B. Desai, "An Empirical Analysis of the Quality of Corporate Finance Disclosure", Accounting Review (January 1971), pp.129-138.

sample would be comprised of 100 companies externally reporting value added information. The other sample would consist of 100 companies among those which do not disclose such information.

(b) To achieve this objective, an examination of both the annual and employees' reports of every company within the sampling frame was conducted to distinguish between the companies that externally disclosed value added information and those which did not.

(c) The result which emerged from this examination showed that only 94 companies were reporting value added information. This number was seen as highly adequate for the purposes of the empirical study.

(d) Nevertheless, for the purposes of comparison and also to facilitate the gathering of evidence of management reaction and attitude regarding the concept of value added, it was also considered useful to draw a random sample of 100 companies that do not disclose value added data to cover the above mentioned data required for our study. It is of interest to note that the procedures employed in the selection of this sample were based upon random number tables.[1]

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1 Random numbers used in the selection of the sample were taken from D.B. Owen, Handbook of Statistical Tables (Addison-Wesley Publishing Company, Inc., 1962), pp. 519-38.

Table 3.1 shows the number of companies in each industrial category in the population classified in terms of whether they externally reported value added data or not. Also shown is the number of the randomly selected sample of companies which do not disclose value added.

These two independent samples represent reporting value added information companies versus companies not reporting it dichotomy. It was decided that such a research design would provide for the necessary separation between companies on the basis of the above mentioned dichotomy. This design would facilitate matching the two samples on whatever dimensions required to test research's hypotheses. Examples of such dimensions were management attitudes toward participation; status of industrial relations and involvement, R & D expenditure; economic performance and how it could be improved, etc.

This matching process might be bypassed, however, whenever needed and dealing with the two groups of companies included in both samples as if they were only one group for testing some of our hypotheses on the two groups-wide basis, e.g. firms' objectives; objectives of financial reporting; economic performance evaluation criteria, etc. This was possible because there was only one questionnaire comprising the same questions for both samples, though very few questions were relevant to one group of respondents and irrelevant to the other one.

TABLE 3.1

Frequency distribution of companies in the population and in the samples classified according to whether they externelly report VA.

Industrial Categories	Number of co's in each category in the population.	Number of co's externally report VA in each category in the population	Number of companies do not report VA in each category in the population.	Number of companies do not report VA in each category in the sample.
CAPITAL GOODS				
Building Materials	28	4(14.3)*	24(85.7)	5
Contracting & Construction	28	-	28(100)	6
Electricals	16	6(38.0)	10(62.0)	6
Engineering Contractors	11	1(9.1)	10(90.9)	4
Mecanical Engineering	74	11(14.9)	63(85.1)	12
Metals & Metals Forming	16	5(31.0)	11(69.0)	4
CONSUMER GOODS (DURABLE)				
Light Electronic, Radio, TV	14	4(29.0)	10(71.0)	4
Houshold Goods	14	3(21.0)	11(79.0)	5
Motors & Distributors	21	4(19.0)	17(81.0)	7
CONSUMER GOODS (NON-DURABLE)				
Breweries	14	5(36.0)	9(64.0)	3
Wines & Spirits	5	-	5(100)	1
Entertainment & Catering	17	1(5.9)	16(94.1)	4
Food Manufacturing	21	8(38.1)	13(61.9)	4
Food Retailing	13	5(38.0)	8(62.0)	3
Newspapers & Publishing	13	2(15.4)	11(84.6)	2

Continued .....

* Figures in parentheses show %'age of companies in each group within each category in the population.

TABLE 3.1 (Continued).

Packaging and Paper	15	4(26.7)	11(73.3)	3
Stores	43	2(4.7)	41(95.3)	6
Textiles	24	4(16.7)	20(83.3)	3
Tobaccos	3	-	3(100.)	0
Toys and Games	5	3(60.0)	2(40.0)	1
OTHER GROUPS				
Chemicals & Pharmaceutical Products	23	10(43.5)	13(56.5)	4
Office Equipment	6	1(16.7)	5(83.3)	1
Shipping	11	1(9.1)	10(90.9)	2
Miscellaneous	57	10(17.6)	47(82.4)	10
Oils	8	-	8(100.)	-
TOTAL	500	94(18.8)	406(81.2)	100

All 194 questionnaires were sent on 18th January, 1980 together with a covering letter with each to Finance Directors of companies in the samples.[1] A week later, a total of 22 replies were recived, and follow-up letters were sent to the remaining 172 unresponded companies (see Appendix A). Seventy-nine questionnaires were completed and returned.[2] A list of companies accepted to participate in the present study appears in Appendix B. Table 3.2 shows those companies stratified by size and industrial category. Details of replies received are discussed in the next section.

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1 Recognising that Finance Directors were the best source of information on almost all issues under investigation in the present study, they were chosen as the respondents of the questionnaires.

2 This represents a response rate of 41.00 per cent.

TABLE 3.2

The 79 Companies participated in our Study stratified by Size and Industrial Category.

Company Size (Number of Employees)			Industrial Categories									
Range	Mean	SD	Building Materials	Electricals	Engineering Contractors	Mechanical Engineering	Metals & Metals Forming	Light Electronics, Radio, TV.	Houshold Goods	Motors & Distributors	Breweries	Food Manufacturing
100-500	270	64	1(1)*	1(1)	-	-	1(1)	1(1)	1(1)	-	2(1)	-
501-1000	705	93	-	4(2)	-	2(1)	1(1)	-	2(1)	2(1)	3(1)	2(1)
1001-5000	2960	5992	2	2	1(1)	4(2)	2	2	2	-	-	3(1)
5001-20000	9885	6215	-	-	1	3(1)	-	-	-	-	-	-
TOTAL			3(1)	7(3)	2(1)	9(4)	4(2)	3(1)	5(2)	2(1)	5(2)	5(2)

Continued ....

* Figures in parentheses show number of companies do not disclose value added.

TABLE 3.2 (Continued).

Packaging & Paper	Textiles	Toys & Games	Chemicals	Miscellaneous	TOTAL
-	-	3(1)	1(1)	3(1)	14(9)
3(1)	-	-	2(1)	3(1)	24(11)
-	1(1)	-	4(1)	6(3)	29(9)
-	3(1)	-	3	2	12(2)
3(1)	4(2)	3(1)	10(3)	14(5)	79(31)

3.6 Replies Received from the Sample

Out of the 194 Finance Directors chosen for the study, a total of seventy-nine usable responses were received.[1] Analysis of responses is given in Table 3.3.

TABLE 3.3

Questionnaire Rate of Response

Companies	Number Mailed	Usable Responses Received	Percentage of Usable Responses
Disclose value added information	94	48	51.00%
Do not disclose value added information	100	31	31.00%
TOTAL	194	79	41.00%

As may be seen from Table 3.3, the overall rate of response was 41%. As was expected, the rate of response from companies that disclose value added information was higher than the response rate of companies which do not disclose it (51.00% compared with 31.00% respectively).

1 Unusable responses were those received too late to be included in our statistical analysis or those that were incomplete in some respects.

It is difficult to account for the difference between samples rates of responses in spite of homogeneity between companies included in both samples. One possible explanation, however, might be found in the fact that companies which disclose value added information were more interested in the usefulness of the value added concept, and were eager to contribute to its development by co-operating with academic institutions. Another possible explanation might be that such companies were more keen on maintaining good public relations with society at large including academics.

This result might reflect attitudes of management in both samples and indicate how co-operative they were. This is perfectly consistent with the main hypotheses of the present study. We have elaborated on this issue in preceding chapters.

Apart from the 79 usable responses received as mentioned above, two responses were also received but were too late to be included in our analysis.[1] Both responses were from companies which do not disclose value added information.

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1 The total elapsed time between the receipts of the first and last questionnaire to be used in the study was 35 days.

The researcher considers the overall response rate of 41.00 per cent to be quite good for studies of this type and to be fully adequate to support statistical inferences we draw from the data. Also, as described more fully in Section 3.7, we satisfied ourselves that our findings are not significantly biased because of the "non-response problem" to which we now turn.

3.7 Consideration of Non-Response Bias

Although the overall response rate of 41.00 per cent compares favourably with many studies using similar methodology, the possibility of some non-response bias exists. This means, in simplified terms, that the results from those responding might not be truly representative of the whole population. Indeed this might be true particularly in the case of our sample's companies which do not report value added information with the rate of response of only 3.0 per cent. This non-response bias represents the most serious problem in the use of mailed questionnaires.

Because of the potential seriousness of the problem, an effort was made to test for the possible presence of a significant non-response bias. The test method employed was based on a suggestion by Oppenheim. He stated:-

> "To study response bias, we must make sure that we know the return date of every questionnaire, for it has been found that respondents who send in their questionnaires very late are roughly similar to non-respondents."[1]

The nature of the test performed and procedures used were as follows:-

a) Results - in terms of mean scores for each of the eleven sections of the questionnaire - from the last 10 questionnaires we received were compared with results from the first 21 (in the case of companies which do not disclose value added information).

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1 A.N. Oppenheim, op.cit., p. 34.

b) Results from the last 15 questionnaires were compared with the results from the first 33 (in the case of the other sample, i.e. companies which disclose value added information).

This was possible because the date of receipt of each returned questionnaire had been carefully noted.

As Table 3.4 indicates, for companies which do not disclose value added information, the last 10 respondents did score somewhat higher than did the first 21. However, the differences were very small. The major area of response differences was in Section 4 "The Recipients of Financial Reports". Scores for the other ten sections were almost identical. In the case of the other sample, however, i.e. companies which disclose value added information, the mean scores of the last 15 questionnaires were a little bit higher than the mean score of the first 33 but the differences were again negligible. Only a very slight deviation can be noted for Section 8 "Management Attitudes toward Participation".

These differences, while worthy of mention, are trivial to suggest that the survey data was subject to non-response bias. Nonetheless, we still wanted to examine whether there was any statistically significant differences between the mean scores of every variable in each sample for two reasons. First, similarity between mean scores of respondents in each section in the questionnaire did not necessarily mean that our data was not subject to

T A B L E 3.4

Non-Response Bias: Mean Scores of Usable Responses

Respondents	Questionnaire Section											
	1	2	3	4	5	6	7	8	9	10	11*	Total
a) Companies do not disclose value added												
First 21 Respondents	3.92	4.06	4.32	39.60	2.45	3.92	3.38	3.36	3.40	3.57	4.11	76.36
Last 10 Respondents	3.97	4.10	4.30	40.62	2.58	3.89	3.30	3.61	3.30	3.59	4.12	77.38
b) Companies that disclose value added												
First 33 Respondents	3.88	4.14	4.20	37.00	2.30	4.05	4.00	4.10	4.08	4.02	4.07	75.84
Last 15 Respondents	3.90	4.06	4.16	37.10	2.26	4.09	4.10	4.45	4.12	3.98	4.05	76.27

* Variables 1 and 2 in Section 11 were not included in the analysis since they were accounting data and were considered therefore to be non subject of any non-response bias.

non-response bias, since this similarity could be a result of differences of mean scores between variables within each section having offset each other. Second, comparison only between mean scores was not enough for our purpose since we still needed an appropriate critical value to compare with and to be used as a decision rule to more accurately decide whether the survey data was subject to non-response bias.[1] Hence, a t test was applied to every variable in our samples.[2]

Table 3.5 summarises the results of the tests. As can be seen, there were only five significant differences (at a significant level of 5%) in the sample of companies which do not disclose value added information, and four significant differences in the other sample. Furthermore, an examination of the t value signs did not indicate the presence of a subtle bias. Fifty-one of the signs were positive, forty-five were negative, and two were neutral ($t = 0.0$) in the case of the first sample. Fifty-nine of the signs were positive, fifty-two were negative, and only one was neutral in the second sample.

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1 See, for example, T. Yamane, Statistics: An Introductory Analysis (New York: Harper and Row Inc., 3rd edition, 1973), pp. 647-675, and Jon Stewart, Understanding Econometrics (Hutchinson and Co. Ltd., London, 1976), pp. 42-46.

2 The version of the test used was for non-correlated samples with pooled variance. A description of the test is presented in W. Hays, Statistics (New York: Holt, Rinehart and Winston, 1963), pp.319-321.

TABLE 3.5

Non-Response Bias: Results of t Test.

	Companies do not disclose value added data.	Companies disclose value added data.
Number of variables tested.	98	112
Positive t statistics.	51	59
Negative t statistics.	45	52
Zero t statistics.	2	1
Number of significant differences in mean scores.*	5	4

* Where the t statistic was significant at the 0.05 level.

To the extent that late respondents can serve as a useful surrogate for non-response, the foregoing tests do not seem to indicate that our results are significantly biased; thus, the results of the study can be generalised. However, the reader is cautioned against accepting the results as conclusive evidence. Rather, it should be interpreted as simply an indication that the survey measures are, in general, not subject to a material amount of non-response bias.

3.8 Statistical Procedures and Methods Used in the Analysis

In order to conduct what is usually referred to as "analytical study" of the data collected for our research, some attention has to be paid to the possible effect of non-normality in the data. Indeed, survey data is usually non-normally distributed particularly when analysing rating or preference scores. However, as far as the present study was concerned, the sample sizes were of a magnitude which allowed us to appeal to the so-called "Central Limit Theorem" for approximate normality of the data analysed.[1]

Normally, the first task of data analysis is to determine the basic distributional characteristics of each of the variables to be used in the subsequent statistical analysis. Information on the distribution, variability, and central tendencies of the variables, therefore, were calculated.

Z-score standardised transformed values for the study's variables were also produced. The Z-score transformation generated a new variable with a mean of 0 and a

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1 See, for example, T. Yamane, op.cit., pp.139-140, and Ben W. Bolch and C.J. Huang, Multivariate Statistical Methods for Business and Economics (Prentice-Hall, Inc., Englewood Cliffs, N.J., 1974), pp. 41-71.

standard deviation of 1. Z-scores were computed by substracting from the value of each case the original mean of the variable and then dividing the remainder by the standard deviation.

The formula for the Z-score transformation is:-

$$\frac{X_j - \bar{X}}{\sigma_x}$$

Where X_j is the original value of the jth case for the variable being transformed, $\bar{X}$ is the mean of the variable X, and σ_x is the standard deviation of the variable X.

Variables in the standardised Z-score form were useful in a variety of types of analysis. Given their properties of zero mean and standard deviation of unity, it was easier to compare the magnitude of differences in the means and standard deviations across our two samples on some variables.

After examining the distribution of each of the variables, we began to investigate some sets of relationships among these variables for the purpose of testing the study's hypotheses. We started with those simple appropriate procedures and methods that any researcher in social sciences most often begins with and then proceeded through the various types of procedures and methods according to increasing level of complexity. This process helped to

find out whether there were congruence between results using different techniques, and besides, it served to identify the significant variables which were used in the later more sophisticated analysis.

Obviously, selecting appropriate statistical procedures and methods depends in part upon the levels at which the variables are measured, as well as upon the general research design.

Statisticians have argued forcefully that non-parametric statistics should be used in analysis of data with nominal or ordinal levels of measurement.[1] According to Siegel, a non-parametric statistical test is

> "a test whose model does not specify conditions about the parameters of the population from which the sample was drawn. Certain assumptions are associated with most non-parametric statistical tests, i.e. that the observations are independent and that the variable under study has underlying continuity, but these assumptions are fewer and much weaker than those associated with parametric tests. Moreover, non-parametric tests do not require measurement as strong as that required for parametric tests, most non-parametric tests apply to data in an ordinal scale, and some apply also to data in a nominal scale."[2]

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1 See, for example, S. Siegel, Non-parametric Statistics (McGraw-Hill Book Co., Inc., 1956), pp. 18-34.

2 Ibid., p. 31.

Since the majority of variables under investigation in this research study were measured on nominal and ordinal levels, contingency table analysis was used extensively because it is considered by many statisticians as the most appropriate and commonly used analytical method in the social sciences.[1] These joint frequency distributions were statistically analysed by the chi-square statistic (χ^2) to determine whether or not the variables were statistically independent; and were summarised by two measures of association, i.e. phi statistic (Ø) and Kendall's tau (τ).

When ordinal measurement has been achieved, the Maun-Whitney U test was used to test whether the two independent samples have been drawn from the same population.[2] This test is considered to be one of the most powerful of the non-parametric tests, and the most useful alternative to the parametric t test when the measurement in the research is weaker than internal scaling.[3]

Labovitz argues, however, that, except for extreme situations, intervals statistics can be applied to any

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1 Ibid., pp. 104-111, and Nie et al, op.cit., pp.218-240
2 S. Siegel, op.cit.,p. 116
3 Ibid., p. 116

ordinal-level variable. He stated:

> "Although some small error may accompany the treatment of ordinal variable as interval, this is offset by the use of more powerful, more sensitive, better developed, and more clearly interpretable statistics with known sampling error."[1]

Clearly the general design of this research, the complex interrelationship among variables to be analysed, and the characteristics of these variables call for the more powerful parametric statistics such as multivariate techniques of partical correlations and multiple regression analysis. Although assumptions implicit in the use of such techniques were not fully satisfied by data with nominal or ordinal data (only in the case of questionnaires' data), their use may enhance the understanding of the complex interrelationships among the study's variables. In such circumstances, these techniques may therefore be used as aids to interpretation of the data.

The 0.05 level of confidence has been accepted in this study as the basis for accepting (or rejecting) the nul hypothesis; results at the 0.10 level of confidence will be indicated to suggest trends.

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1 S. Labovitz, "The assignment of Numbers to Rank Order Categories", American Sociological Review, 35: p. 515, 1970.

Data collected in this research study was statistically analysed using the "Statistical Package for Social Sciences" (SPSS)[1], on the University of London CDC 6600 machine and the City University Honeywell Series 6000 and Series 60 Level 66-GCOS System.

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1 Nie et al, op.cit.

3.9 Summary

An account of the research design and methodology is presented in this Chapter. A random sample of 194 companies was selected from the "FT-Actuaries 500 Share Index" published by the Financial Times. Data was obtained by means of questionnaire and from published sources and reasons were advanced for the choice of these methods.

The questionnaire was developed through a search of the relevant literature, a review of available annual reports and employees' reports, and discussions with various academics and practitioners. The questionnaire was also tested in a pilot study of 7 companies.

Finance Directors were chosen to be the respondents of the questionnaires. 79 usable responses were received which represents a response rate of 41.00% (48 from companies externally reporting value added and the remaining 31 from companies which do not). Responses were also shown to be representative of the whole population, for they were not subject to a material amount of non-response bias.

Standard statistical methods were chosen to be used in the analysis of the quantitative data in this research. These methods include both descriptive and inferential statistics.

CHAPTER IV

A RATIONALE FOR USING THE CONCEPT OF VALUE ADDED AT COMPANY LEVEL: EVIDENCE FROM THEORIES OF THE FIRM RESEARCH.

4.1 Introduction

As the real world changes, so does its definition of values and its prevailing ideologies. Today, business firms are no longer seen by society as the instruments of their shareholders alone. Rather, they are composed of a coalition of participants, each of whom have their own interest and motives. Under such circumstances, it is commonly recognised that the enterprise is an organisation with continuing responsibilities to all the participants. As a consequence, firms' objectives should be unifying, for the whole team of co-operating groups which contribute to the firm's performance, and not divisive - that is, to create more wealth by avoiding conflict and mobilizing the firm's resources to enlarge the joint wealth rather than maximising one party's share.

The main purpose of this chapter is to elaborate on this issue. In particular, organisational behaviour under both traditional economic and modern behavioural theories of the business firm will be discussed. Special attention will be given to organisational goals and organisational control and the relevance of the value added concept of income in this context. Related empirical evidence is also provided.

4.2 The Economic Theory of the Firm

Theories of the business firm can be classified into two main theories: the economic theory (or the traditional theory) and the behavioural theory. Economic theory is still mainly concerned with the one plant firm that produces only one product. Questions regarding the relationships among different parts of the firm simply do not arise. Instead, economists generally assume that the firm can be treated as a single person, with a unified and integrated set of motives and the ability to carry out its goals without any wasted effort except that imposed by the technical limitations of production and distribution.

The basic assumption of this theory is that the people who operate business firms are primarily motivated by their own self-interest. But pursuit of self-interest is a characteristic of human persons, not organisations. A firm is not a real person, even when uncorporated; hence it really cannot have motives or maximise any thing. When economic theorists stated that firms maximise profits, they really meant that the people who run firms make decisions so as to maximise the profits of the firms. As long as firms were operated by their owners, this assumption was consistent with the self-interest axiom, because the profits of the firms were the main incomes of their owners.[1]

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1 See, Louis R. Pondy, "Toward a Theory of Internal Resource Allocation", in J. Livingstone and S. Gunn (ed.), Accounting and Social Goals (Harber and Row, 1974), pp. 49-68.

Furthermore, this theory postulates a relationship between "input factors" - labour and capital on the one hand, and physical output on the other, through the medium of a "production function". The theory also postulates that owners, who are assumed to be managers at the same time,manipulate input factors under their control in a way which maximises the profits of the firm. For our purposes, we can restate the basic concepts of the theory in the following objective function:

$$\max \pi = PQ - wL - rK, \qquad (1)$$

where

π = profits per unit of time

Q = output per unit of time and Q = Q(K,L) in the production function

L = labour input

K = capital input

w = market wage rate

r = user cost of capital

p = market price of output.

Assuming product price to be a parameter, the first-order conditions for optimality yield $PQ_L = w$ and $PQ_K = r$; i.e. to maximise profits the business firm, according to this theory, should hire factors and expand production until the marginal value product of each factor is equal to its market price.

This formulation has been the only theoretical description of the behaviour of business firms for a very long time. It should be pointed out, however, that the assumptions of the economic theory have been subjected to increasing criticism by a few eminent economic theorists, but they have not succeeded in shaking the dominance of the traditional theory of the firm. For example, Alfred Marshall, in the opening words of his Principles, proclaimed economics to be a psychological science which, by implications, describes people and their attitude, behaviour, and their relationships within the firm. He states:

> "Economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of well-being. Thus it is on the one side a study of wealth; and on the other, and more important side, a part of the study of man."[1]

Also, Berle and Means long ago pointed out that the emergence of large, publicly owned corporations in which there is a separation between ownership and management created situations which traditional (economic) theory was not adequate to deal with.[2]

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1 Alfred Marshall, Principles of Economics, 8th ed. (New York, 1920) (emphasis added).

2 A.Berle and Gardiner Means, The Modern Corporation and Property (New York:Macmillan Co., 1932).

More recently, numerous behavioural scientists have questioned both the traditional theory of the firm and whether it is applicable to large corporate firms, and its basic axiom that firms maximise profits.[1] Out of the body of criticism, two are relevant to our interest. The first is that the micro-economic analysis is limited to economic variables which measure resources inputs. It fails to include behavioural variables which describe people and their relationships within the firms. Secondly, as Ansoff[2] has pointed out, the concept of profit maximisation is incorrect both descriptively and normatively. Descriptively, because, he argues, the empirical studies of business firms show that while firms do seek profit, they also appear to seek other objectives. Normatively because of a growing opinion that the firm should accept other goals for its behaviour in additiona to profit.

Yet, the behaviour of the business firm needs to be explained in a way that fits the human and organisational problems of the present-day firm, for the business problems are hardly ever purely economic, purely human, or

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1 See, for example, R.M.Cyret and J.G.March, A Behavioural Theory of the Firm, (Englewood Cliffs,N.J.: Prentice-Hall,Inc., 1963); and J.D.Thomson, Organisation in Action (New York: McGraw-Hill, 1967).

2 H.I. Ansoff, "Toward a strategic theory of the firm", in H.I. Ansoff, (ed.), Business Strategy (Penguin Books Inc. 1973), pp.11-40.

purely technical, but a mixture of the three.[1] The traditional theory of the firm is probably applicable to only one type of firm: the small, owner-controlled firm. But since the inception of this theory, several other types of firms have come into being that differ from the traditional type in both owner-control relationships and size. Furthermore, these other types of firms are now economically more significant than the traditional type in terms of the magnitude of both the resources which they employ and the wealth they create. It is evident, therefore, that there should be a more realistic alternative applicable to large management-controlled firms.

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1 D.C. Hague, Managerial Economics: Analysis for Business Decisions (Longman, 1971), Chapter I.

4.3 The Behavioural Theory of the Firm

The debates summarised above seem to suggest that there has been for a long time dissatisfaction with the economic theory of the firm and its assumptions. In particular, two assumptions have been under heavy attack. The first is that every business firm is a one-man firm, run by its owner, who is described in economic theory as "the entrepreneur". The second is that firms seek only profit maximisation.[1] The individual, his perceptions, aspirations, attitudes, goals and motivations are ignored, and the human being is perceived as an adjunct to a machine.

In contrast to the micro-economic theory of the firm, the behavioural theory is concerned with describing the behaviour of the firm as an entity on the basis of understanding the actions and motives of its participants. This theory simply recognises the business firm for what it is: an organisation composed of people.

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1 Perhaps we should emphasise here that the attack on the assumptions of profit maximisation does not deny the importance of profits. Rather it questions the assumption of maximisation. This is evident since the opponents of this theory argue that profit maximising should be replaced with a goal of making satisfactory profits. Details of this argument will be discussed in the following section (Section 4.4).

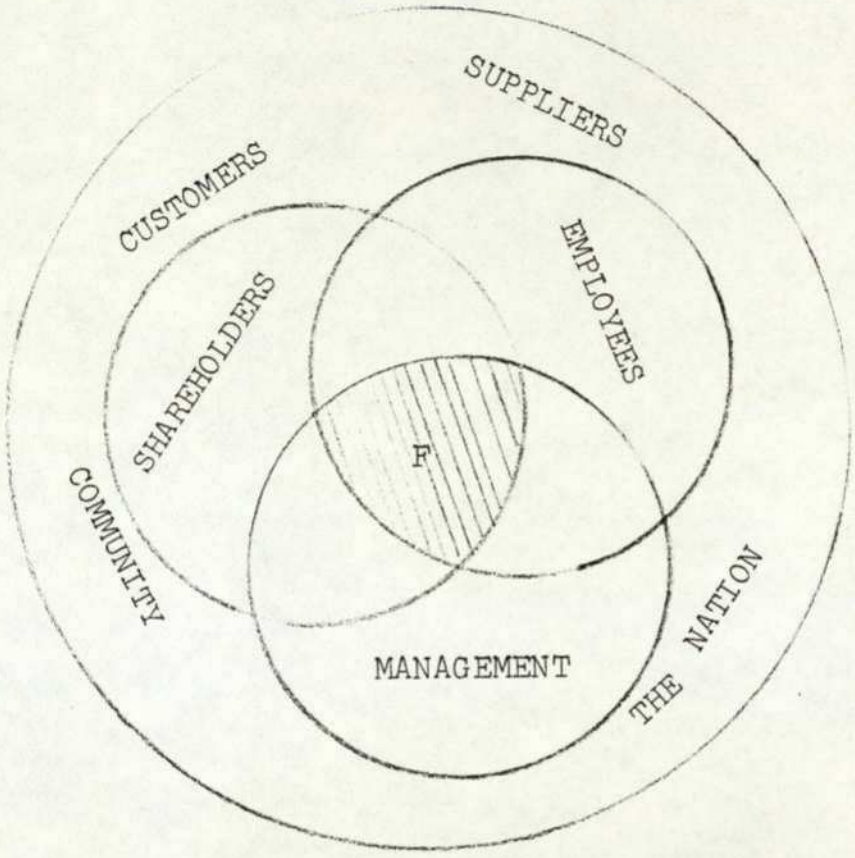
Several models have been developed in organisational literature which describe the behaviour of modern, large, publicly owned corporations in which there is a separation between ownership and management. But the best attempt so far is perhaps that made by Cyret and March[1] who view the firm as co-operative efforts, or coalitions, entered into by individuals in order to achieve personal objectives which cannot be realised without such co-operation. According to them, these individuals are motivated to join the organisation and contribute to the accomplishment of its objectives because they believe that in this way they can satisfy their personal goals.[2] It is important to note, however, that these personal goals include social and psychological, as well as economic, considerations. Thus, the survival and success of the organisation depends on the maintenance of a favourable balance between the contributions required of each participant and the opportunities to satisfy personal goals which must be offered as inducements to secure effective participation. This situation is depicted in Figure 4.1. The firm's coalition would include shareholders, employees, and management as the "dominant coalition."[3] Some other groups are also included in the firm's coalition, but their contribution is perhaps indirect and through different means of participation, i.e.

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1 R.M. Cyret and J.G. March, A Behavioural Theory of The Firm, op.cit.
2 Ibid., pp. 114 - 127.
3 J.D. Thomson, Organisation in Action, (New York: McGraw-Hill, 1967), p. 128.

FIGURE 4.1

The Firm's Coalition



The " F-set " represents the only firm's behaviour which is acceptable to all participants.

legislative and/or regulatory powers. Examples of such groups are customers, suppliers, community, ...etc.

It is not difficult to identify the conflicting resource allocation demands made by the various members of the coalition. Shareholders have profits, dividend, and capital appreciation aspirations. Workers demands include increased wages, fringe benefits, and improved working conditions. Management groups' goals include maximising their income (salary plus bonuses), status, job security, and so on[1]; and customers have expectations with regard to price, quality and services. Following this perspective, in which shareholders are considered to be only one group of the coalition members who provide resources or contribute towards the continued existence of the firm, it seems clear that satisfying shareholders' needs and aspirations is not enough. The other participants' demands should also be met to ensure the continued existence of the organisation. This goal could possibly be achieved by maintaining the firm within the "F-set" as shown in Figure 4.1, by offering all participants the inducements necessary to obtain their contribution. This argument may well explain why management attitudes and behaviour have recently changed especially in large corporations. Managers come

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1 O.E. Williamson, "A Model of Rational Managerial Behaviour", in R. Cyret and J. March, A Behavioural Theory of The Firm, op.cit., pp. 237-252.

to regard themselves as playing a mediative role between employees on one side and shareholders and creditors on the other side rather than acting in the interests of the owners alone. After all, this approach is also consistent with the assumption of self-interest seeking - in managers' own best interests.[1]

This view of managements of large, publicly owned corporations as being mediators is further reinforced by empirical evidence. For example, the authors of The Corporate Report have undertaken a survey amongst the largest 300 of the "Time 1000" companies asking for a brief statement of company responsibilities. Out of 166 replies received, 119 companies stated that they recognised a responsibility to employees (71%), 114 companies to shareholders (69%), 88 companies to customers (53%) and 47 companies to community (28%).[2] Furthermore, the empirical evidence provided in the present study fully supports this contention. As Table 4.1 shows, management responsibilities were recognised towards all the coalition members of the firm and not towards shareholders alone. It should be noted, however, that whilst this evidence is consistent with that provided by the Accounting Standards Committee in its study cited above, groups' ranking was slightly different in both studies. For our study, shareholders were

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1 O.E. Williamson, "A Model of Rational Managerial Behaviour", op.cit., p. 241.
2 Accounting Standards Committee, The Corporate Report, op.cit., Appendix 4, p. 92.

TABLE 4.1

Management Responsibilities in Terms of Groups' Significance

Groups towards which responsibilities were recognised.	Firms Reporting VA (N = 48)					Not Reporting (N = 31					Both Samples (N = 79)				
	The most	2nd most	3rd most	$\bar{X}$	SD	The most	2nd most	3rd most	$\bar{X}$	SD	The most	2nd most	3rd most	$\bar{X}$	SD
Employees	13(28.3)	25(54.3)	7(15.2)	1.91	0.73	6(21.4)	16(57.1)	5(17.9)	2.04	0.74	19(25.7)	41(55.4)	12(16.2)	1.96	0.73
Shareholders	30(65.2)	12(26.1)	3(6.5)	1.46	0.72	19(61.3)	4(12.9)	6(19.4)	1.71	1.00	49(63.6)	16(20.8)	9(11.7)	1.56	0.85
Customers	9(20.0)	5(11.1)	26(57.8)	2.67	1.09	5(17.9)	8(28.6)	12(42.9)	2.54	1.07	14(19.0)	13(17.8)	38(52.1)	2.62	1.08
Suppliers	--	--	3(6.3)	4.44	0.96	--	1(3.8)	2(7.7)	4.07	0.80	--	1(1.6)	5(7.2)	4.30	0.91
Government	--	--	--	6.18	1.07	--	--	--	6.21	0.93	--	--	--	6.19	1.01
Community	1(2.6)	2(5.1)	3(7.7)	4.70	1.26	--	1(4.5)	1(4.5)	5.00	0.93	1(1.6)	3(4.9)	4(6.6)	4.80	1.15
The Nation	--	--	2(5.4)	5.70	1.13	1(4.3)	--	--	5.83	1.40	1(1.6)	--	2(3.3)	5.75	1.23

Figures in parenthesis show %-age of firms.

$\bar{X}$ = Mean

SD = Standard Deviation.

stated to be the most significant group, in as far as management responsibility was concerned, (49 companies, 63.6%), employees the second most (41 companies, 55.4%), and customers the third most significant group (38 companies, 52.1%). Responsibilities were also recognised towards suppliers, community, and the Nation. One possible explanation of groups' ranking order difference in both studies might be found, however, in the fact that the respondents were different, though both studies were concerned with large British listed companies. That is, while Finance Directors were chosen as the respondents in the present study, Chairmen were the subject of the Accounting Standards Committee's study.[1]

It is also interesting to note that the rank order based on the mean scale position of each group, as shown in Table 4.1, is exactly the same no matter whether companies report value added or do not. Of course, the smaller the mean, the more significant the group. The rank of the groups was in the following order, with figures in parenthises showing the mean score for companies which report value added and companies which do not respectively:

1. shareholders (1.46, 1.71),
2. employees (1.91, 2.04),
3. customers (2.67, 2.54),

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1 Accounting Standards Committee, The Corporate Report, op.cit., p.37.

4. suppliers (4.44, 4.07),
5. community (4.70, 5.00),
6. the Nation (5.40, 5.83),
7. government (6.18, 6.21).

No significant difference between both samples of companies was found and this was not surprising since mean scores were very close. Moreover, it is worth mentioning that although the employees' group is seen as being the second most significant group with respect to management responsibilities, with a mean score of 1.96 (see Table 4.2), it comes very close to the shareholders group position as the most significant group with a mean score of 1.56.

Nevertheless, on the evidence of the present study there is strong reason for suggesting that managers of large publicly held companies no longer represent the single interests of ownership. Instead they function as trustees of resources, accountable to shareholders, creditors, employees, customers and the public. This was not unexpected, but on the contrary, such findings could be interpreted as enlightened self-interest of management, for this would ensure the maintenance of production flow and survival of the firm as this is the primary concern of managers.

If this analysis of the enterprise is valid, namely, that the enterprise is an organisation with continuing responsibilities to all participants and not to the shareholders alone, then it is evident that the present concept of income as it appears on the traditional profit and loss statement is deficient because it assumes that the sole purpose of the enterprise is to maximise shareholders' profit. As the authors of The Corporate Report have observed:

> "The format implies that proporietors are the dominant interest and masks acknowledged responsibilities to other user groups."[1]

If, however, the emphasis is shifted from the traditional economic theory of the business firm to the modern behavioural theory, which views the firm as a coalition of participants, each of whom have their own interest and motives, then economic activities of the firm should be assessed in terms of its contribution to all participants' welfare. Using this approach, it is obvious that the wages paid by the company to its employees are of equal significance to dividends that are distributed to the shareholders. The same reasoning applies to income shares received by all other participants in the company, including the portion of the earnings retained by the company itself for reinvestment.

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1 Accounting Standards Committee, The Corporate Report, op,cit., p. 47.

The value added concept of company income seems to be much more relevant for all firms' coalition groups than the profit concept. Income reporting on a value added basis recognises that the responsibility of the management is primarily that of preserving the company by mediating the claims of the organisation participants which seems to square with the behavioural theory of the firm. Furthermore, by focusing on the conflict over the distribution of the wealth created by the company, the value added approach would help combat the belief of many employees that they are exploited and their efforts unduly benefit the shareholders. This approach helps to improve the attitudes of employees toward their employing companies. As a result, each group, instead of attempting to increase its share of the "pie", would co-operate to enlarge it, as this is the only way of making each group of the firm's participants better off but not at the expense of the others.

Assuming that all who contribute to the creation of wealth in the firm agree to co-operate in enlarging their joint wealth, managers and employees will also require a bonus on any increase in that wealth, for this should motivate efficient behaviour and this is yet again another justification for using the concept of value added at the micro-level.

In summary, the available evidence (both theoretical and empirical) from theories of the business firm research strongly suggests that the profit concept is no longer as relevant as it was, for the word "profit" means the return earned for shareholders. Current corporate behaviour, however, places more emphasis on the welfare of the entire team of capital, labour, and management. Shareholders are but one group of the firm's coalition, no more and no less. The new concept of value added refers to the joint wealth created by the whole team of employees, shareholders, and managers. Therefore, the value added concept of income seems to be more relevant for financial reporting and the design of organisational rewards system. Perhaps of even more interest is the issue of firms' objectives, as it may further reinforce the views expressed above and this is the subject of the following section.

4.4 Firms' Objectives

It has been argued that the concept of value added has re-emerged after many years of neglect mainly because it is relevant in today's economic and social climate.[1] In particular, the need for the concept arises from a change in general business objectives.[2] The major purpose of this section is to examine these arguments and provide the related empirical evidence.

Generally speaking, objectives are needed in every area where performance and results directly affect the survival and effectiveness of the firm. They indicate the proper course of action and the reason for that action. Objectives provide a basis for the planning function, which charts the course of the firm toward some future time horizon. At the same time, they permit the setablishment of meaningful standards for effective control.[3] In fact, the practical and operational framework for control is formed by breaking objectives down into measurable standards, targets, and deadline.[4] If the

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1 British Institute of Management, Value Added, Management Information Sheet No. 57, op.cit., p. 1.
2 See, for example, M.F.Morley, The Value Added Statement: An Innovation in Corporate Reports, op.cit.,p.165.
3 Control function will be discussed in Section 4.5.
4 E.F. Harrison, The Managerial Decision-Making Process (Houghton Mifflin Company, 1975), p. 26.

objectives are hazy, control will be loose and erratic. If, however, objectives are well defined and thought out, control of operations will be greatly facilitated.[1] In brief, objectives form the basis of all managerial activities and the decision-making process. They should enable managers to do at least five things:

1. to group and explain the whole range of organisational phenomena in a small number of general statements;
2. to test these statements in actual experience;
3. to predict behaviour;
4. to appraise the soundness of decisions when they are still being made;
5. to analyse their own experience and, as a result, improve their performance.[2]

In the present study, however, the firms' objectives issue is particularly important for two main reasons. First, firms' objectives are fundamental to the question of the functions of financial reporting.[3] As Tom Watts,

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1 Edwin B.Flippo, Management: A Behavioural Approach (Boston:Allyn and Bacon, 1970), p. 22.

2 Peter F.Drucker, "The Objective of a Business", in Harold Koontz and Cyril O'Donnell (ed.), Management: A Book of Readings, 3rd ed. (New York: McGraw-Hill, 1972), p.118.

3 Financial reporting will be the subject of detailed investigation in the following two chapters (Chapter V and Chapter VI).

Chairman of the Accounting Standards Committee wrote recently,

> "we cannot really determine what financial statements are for until we know what the company is for. We once knew the answer: it was to maximise the cash return to the shareholders...., that seems an antique idea in our present society."[1]

Secondly, since this study is mainly concerned with the economic efficiency of business firms, it follows that one should first specify the set of objectives that firms are seeking to attain, as this is essential as a starting point in any discussion of economic efficiency. In the words of Ball:

> "It is necessary to measure efficiency in relation to objectives, otherwise it has no meaning."[2]

However, a distinction could be made between qualitative and quantitative objectives. Some objectives relate to measurable entities such as value added per worker, earnings per share, total sales ... and so forth. Other objectives represent business aspirations which are more difficult to measure: for example. a desire to be the most advanced electronic firm in the U.K., a desire to be ecologically responsible and so forth. Because such qualitative objectives are vague, a number of courses of action

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1 T. Watts, "Chairman Watts' Account", Accountants Weekly 21 September 1979, p.28.
2 R.J. Ball, op.cit., p. 5.

will often be perfectly compatible with each qualitative objective.[1]

Thomson has also introduced a useful distinction between objectives held *for* an organisation and objectives *of* an organisation.[2] The former represent intended future domains for the organisation and may be held, according to Thomson, by persons who are not necessarily members of the organisation. For example, customers may seek a different sort of service with good quality at reasonable prices. On the other hand, objectives of the organisation are the domain intended by those persons who represent the "dominant coalition". Thomson defines his "dominant coalition" as "interdependent individuals who collectively have sufficient control of organisational resources to commit them in certain directions and to withhold them from others".[3]

Perrow also distinguishes between "official objectives" and "operative objectives". The former are defined by Perrow as the purposes set forth in charter, reports, public statements and authoritative pronouncements. According to Perrow, official objectives do not adequately account for the host of decisions that must be made among alternatives and priorities. Nor do they account for the many

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1 K.J.Cohen and R.M.Cyret, "Strategy:Formulation,Implementation and Monitoring",*Journal of Business*, 1973,pp.349-367.
2 J.D.Thomson, *Organisation in Action*, *op.cit.*, p. 128.
3 *Ibid*. p. 128.

unofficial goals pursued by groups within the organisation. To account for these, Perrow has introduced the term operative goals.

> "operative goals designate the ends sought in the actual operating policies of the organisation. They tell us what the organisation is trying to do, regardless of what the official goals say are the aims." [1]

Hall defines such goals as "the desired ends or states of affairs for whose achievement system policies are comitted and resources allocated".[2] According to Hall a desired end becomes a real goal only when a committment or effort is made to achieve that end. It is on the basis of resource allocations, in fact, that Buck operationally defines organisational goals.

> "It is the decision to commit resources for certain activities and to withhold them from certain others that operationally defines the organisation's goals. Verbal pronouncements are insufficient for defining goals, the speaker must put his resources where his mouth is if something is to be considered a goal." [3]

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1 C. Perrow, "The Analysis of Goals in Complex Organisations", American Sociological Review, 1961,26, p.855.

2 F.S. Hall, "Organisational Goals: The Status of Theory and Research", in J.L. Livingston (ed.), Managerial Accounting: The Behavioural Foundations:A Book of Readings (Grid Inc., 1975), p.13

3 V. Buck,"The Organisation as a System of Constraints", in J.D. Thompson (ed.), Approaches to Organisation Design (Pittsburgh: The University of Pittsburgh Press, 1966), p. 109 (emphasis added).

In all of these definitions one finds two critical elements. Objectives describe (1) future attainments to which (2) present effort or commitments are made. To have an objective, then one must have more than good intentions for future achievements; there must be some effort, attempt or commitment to fulfilling the intent. The need for some effort or commitment, however, raises the most fundamental issue that has come to be associated with the concept of organisation objectives. Commitment and will are attributes of persons. How, then, can an organisation have a purpose or a set of objectives? As pointed out earlier, while organisations per se cannot have intentions or make commitments, persons who act "in the name of" an organisation can. Thus, we cannot approach an organisation but we can approach the individuals and groups who are responsible for committing organisational policies and allocating organisational resources for the attainment of some end or future state of affairs.

The discussion above indicates that we need to examine the process through which policies are committed and re-are allocated in order to understand how goals are established in organisations.

Cyret and March, for example, argue that the goals of a business firm are a series of more or less independent constraints imposed on the organisation through a process of bargaining among coalition members. Goals

arise, they argue, in such a form because the firm is, in fact, a coalition of participants with disparate demands and limited ability to attend to all organisational problems simultaneously.[1] Because of the form of the gaols and the way in which they are established, conflict is never fully resolved within an organisation. Rather, the decentralisation of decision making and the sequential attention to goals permit the business firm to make decisions with inconsistent goals under many conditions.[2] Simon also argues that for every decision there is not a single goal, but a complex set of constraints.[3]

In any event, and whatever the goal setting processes, there are, in the literature, several assumptions about the objectives the firm could pursue. For convenience, however, a distinction could be made between economists' and behavioural scientists' assumptions about business firms' objectives.

All developments examined in the preceding two sections indicate that the classical economic theory of the firm suggests that the objective of business activity is the maximisation of the profits of the enterprise. The

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1 R.M. Cyret and J.G. March, op.cit., pp.26 - 42.
2 Ibid.
3 H. Simon, "On the Concept of Organisational Goals", Administrative Science Quarterly, 1964, 9, pp.1-22.

total responsibility for the accomplishment of that objective can be divided into smaller portions and distributed to subunits throughout the firm; the maximisation by each subunit of its particular portion of the profit responsibility will result in maximisation of the total profits of the enterprise. This classical economic view of profits as the universal motivating force of business enterprises has come under substantial attacks in recent years. Simon,[1] for example, classifies the most important of these as follows:

> "(1) The theory leaves ambiguous whether it is short-run or long-run profit that is to be maximised.
>
> (2) The entrepreneur may not care to maximise, but may simply want to earn a return that he regards as satisfactory.
>
> (3) It is often observed that under modern conditions the equity owners and the active managers of an enterprise are separate and distinct groups of people, so that the latter may not be motivated to maximise profits."

Also, Williamson[2] has offered yet another persuasive hypothesis about the objective of business firms. He argues that the logic of self-interest suggests that man-

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1 H.A. Simon, "Theories of Decision-Making in Economics and Behavioural Science", in M. Schiff and A.Y. Lewin (ed.), Behavioural Aspects of Accounting, op.cit., pp. 42-66.

2 O.E. Williamson, op.cit., pp. 237-252.

agers (as they are the group that effectively controls the activities of the firm) will operate the firm in their own interest. In Williamson's model, managers are held to operate the firm so as to maximise their personal utility functions, subject to the condition that reported profits should be greater than or equal to some minimum level.

In view of the complex nature of business firms' objectives, behavioural scientists do not agree on a single universal objective. Rather, they argue that the firm's objective should have to be stated in very broad and general terms so that it could secure and coordinate effectively the contributions of the dominant members of the organisation.[1] But it should be particularly emphasised once again that the recognition of a more complex goal structure does not mean that profit can be ignored. Obviously, business firms cannot survive for any extended period of time without some minimum level of profits. In short, profits may represent a necessary but not a sufficient definition of the goal structure of business firms.

One could argue, however, that unless we can attribute a single, consistent set of objectives to the firm, it will be difficult, if not impossible, to say what would

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1 E.H. Caplan, "Behavioural Assumptions of Management Accounting", in a Rappaport (ed.), Informationa for Decision-Making:Quantitative and Behavioural Dimensions, op.cit., pp. 352-366.

be an optimal decision in any given situation. This is perhaps what has Led Gilchrist to suggest that instead of seeking maximum profits, managers should maximise their company's value added.[1] Morley, on the other hand, expresses the opinion that the objective of management should not be to maximise value added, as this might come only at the expense of the providers of capital. As he puts it "That could be entirely wrong and could lead to great inefficiency."[2] Ironically, Morley hopes for a change in the attitudes of management to that of playing a mediative role between labour and capital and for improvement in morale that should follow, and then argues that a de-emphasis on profits would have sinister implications and management should not maximise value added.[3]

If, however, the business firm is to be viewed as co-operative efforts or coalition with continuing responsibilities to all the coalition members, if more emphasis is to be placed on the welfare of the entire team and less on the welfare of the shareholders, and if management should act as mediator, the business firm's objective should not, we would suggest, be the maximisation of profit.

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1 R.R. Gilchrist, Management for Profit: The Added Value Concept (George Allen and Unwin Ltd., London, 1971).
2 M.F. Morley, The Value Added Statement: A review of its use in corporate reports, op.cit., p. 30.
3 Ibid.

Rather the objective should be to maximise value added without decreasing shareholders' profits, or what Hendriksen calls "Pareto optimality of value added".[1] Such objective seems to be consistent with the behavioural theory of the firm, unifying for the whole company's team, relevant and motivating to them all, as value added refers to the joint wealth created by the firm's coalition. Hence, this objective should be acceptable to all coalition members.

Business firms' objectives, as suggested in the present study, may be shown symbolically as follows:

$$\text{Maximise } VA = W + I + X + D + \pi_T \qquad (1)$$

$$\text{subject to (i)} \quad \pi_{T+1} \geq \pi_T \qquad (2)$$

where

VA = value added

W = the accounting period's wage cost

I = the interest payable for the period

X = the corporate taxes

D = the depreciation charge for the period

π_T = total profits for the period T

However, whether a business firm pursues one or more of the above mentioned objectives, or some other objectives is an empirical question which we shall attempt to answer in the remainder of this section.

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1 E.S. Hendriksen, op.cit., p. 259

There is a considerable body of empirical evidence which suggests that companies do not maximise shareholders' profit. Rather, the primary objective of companies seems to be creating wealth for the benefit of all participants. The authors of The Corporate Report, for example, point out that

> "The majority of those replying to our survey seems to be that their primary objective is to make a profit for the benefit of a number of groups and that this can only be achieved if due attention is paid to particular interests of each of these groups. It is not the majority view that the maximisation of shareholders' profit is the primary objective."[1]

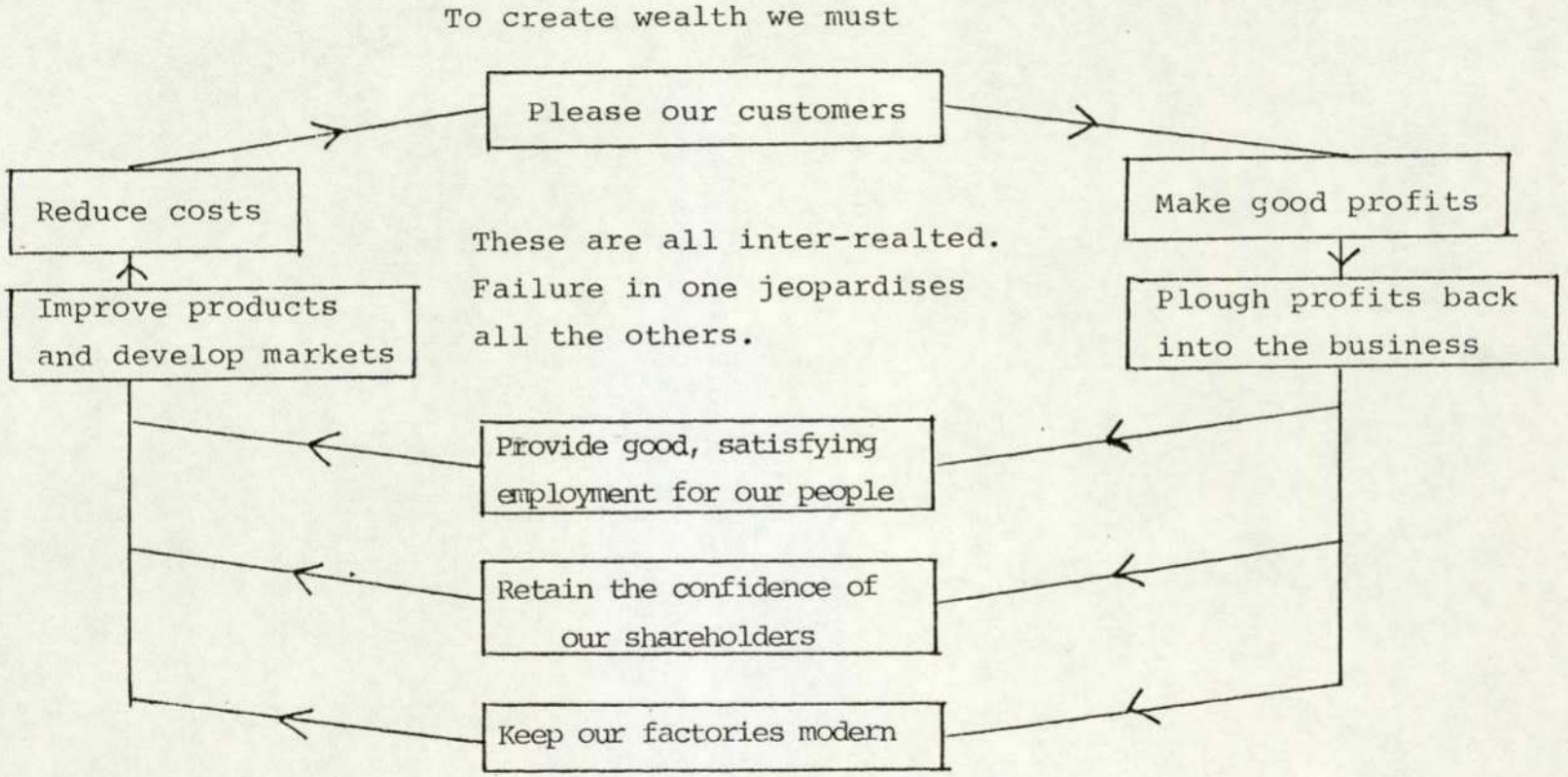
In fact only 23% of respondents linked primary objectives to profits (measured in terms of shareholders return).[2] However, not every company relating primary objectives to profits sets out to "maximise" profits or shareholders returns, 23 replies qualified the amount of profit sought by such words as "proper" and "fair","reasonable","sufficient" and "adequate".[3] The main finding of the A.S.C.'s study with regard to business firms' objectives was that waelth creation is the primary objective of the majority of companies. As shown in Figure 4.2, creating wealth

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1 Accounting Standards Committee, The Corporate Report, op.cit., p. 96 (emphasis added).
2 Ibid, p. 92.
3 Ibid, p. 94

FIGURE 4.2

THE WEALTH CREATION PROCESS



Source:- The Corporate Report, p.96

requires the satisfaction of all needs and aspirations of those directly and indirectly participating in the company and recognising their interests. To put it another way, I would suggest that the wealth created (value added) is probably the only objective that enables the business firm to fulfill its responsibilities towards all those participating in its affirs: namely, fair wages, security, good and safe working conditions, and a sense of belonging to the employee; a fair and reasonable return on invested capital to the shareholder; fair salaries and bonuses, status, and job security to the manager; good quality at a fair price to the consumer; proper and efficient use and development of resources, both human and material, and contributing to a higher standard of living to the nation.

To summarise, the A.S.C.'s study cited above concludes that:[1]

> "A statement of company purpose published by one company comes close to encapsulating the majority view. That is, our purpose in business is to create wealth, to make money. For this to be possible we must please our customers and enjoy the confidence of our shareholders and employees. We must make good profits, so that after providing for taxes and dividends (and in present conditions financing inflation) there is available enough money

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1 Ibid., p.96

to keep our factories and equipment modern and to enable us to grow in strength and maintain or improve our market position. We endeavour to provide good, satisfying employment for our people. Creating wealth and building a better company is our contribution to better standards of living."

Also, in the present study companies were asked to rate their objectives on a five-point scale rnaging from 1 (strongly disagree) to 5 (strongly agree). Creating wealth was indicated as the prime objective more often than was any alternative measure,[1] though some differences still existed between the two groups of companies (companies which report value added vs companies which do not). Descriptive analysis of the results is presented in the following section.

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1 See Appendix A, Section I, for the full text of statements of objectives and scales.

4.4.1 Firms' Objectives: Descriptive Analysis

It is surprising how close the views are of Finance Directors of both groups of companies on the importance of business firms' objectives. For companies that externally report value added, as shown in Table 4.2, "to create wealth" objective was seen as being the most important as indicated by the mean score ($\bar{X}$ = 4.77 out of 5); 76.9% of respondents assigned "Strongly agree", and 23.1% assigned "Agree" to it. For companies that do not report value added, however, this objective was ranked in the second place ($\bar{X}$ = 4.59); 60.7% of companies indicated "Strongly Agree", 37.0% indicated "Agree", and 2.3% were "Undecided". This is not a surprising difference between the two groups since it occurs as a result of only 0.18 difference in the mean scale position, i.e. $\bar{X}$ of 4.77 compared with 4.59 respectively.

Perhaps of more interest is that objective 2, as shown in Table 4.2, i.e. to establish and maintain a growth company for the benefits of shareholders, employees, customers and the community, was ranked as the most important objective by companies which do not report value added, whereas it was equal second place for the other group of companies with a mean score of 4.76 compared with 4.73 respectively. Although there is a difference, it is very

TABLE 4.2

Management's Perceptions of Firms' Objectives

Decriptive Results

Statement	Firms Report VA (N = 48)								Firms Do Not (N = 31)								Both SAmples (N = 79)							
	% on five-point scale					statistics		Rank	% on five-point scale					statistics		Rank	% on five-point scale					statistics		Rank
	SA	A	UN	DA	SDA	$\bar{X}$	SD		SA	A	UN	DA	SDA	$\bar{X}$	SD		SA	A	UN	DA	SDA	$\bar{X}$	SD	
1.to maximise the price of the company's share.	21.3	53.2	4.3	21.3	-	3.75	1.03	6	17.9	57.1	10.7	14.3		3.79	0.92	6	20.0	54.7	6.7	18.7	-	3.76	0.98	6
2.to establish and maintain a growth company for the benefits of shareholders,employees, customers and the community.	75.0	22.9	2.1	-	-	4.73	0.49	2	75.9	24.1	-	-	-	4.76	0.44	1	75.3	23.4	1.3	-	-	4.74	0.47	1
3.to maintain a satisfactory level of dividends in the interest of shareholders	19.1	57.4	14.9	8.5	-	3.87	0.80	4	37.9	55.2	6.9	-	-	4.24	0.79	4	26.3	56.6	9.2	7.9	-	4.01	0.83	5
4.to maximise cash flows.	20.5	52.3	15.9	11.4	-	3.82	0.90	5	53.6	32.1	3.6	10.7	-	4.29	0.98	5	33.3	44.4	11.1	11.1	-	4.00	0.95	4

Continued.....

TABLE 4.2 (continued)

Statement	Firms Report VA (N = 48)								Firms Do Not (N = 31)								Both Samples (N = 79)							
	% on a five-point scale					stats.		Rank	% on a five-point scale					stats.		Rank	% on a five-point scale					stats.		Rank
	SA	A	UN	DA	SDA	$\bar{X}$	SD		SA	A	UN	DA	SDA	$\bar{X}$	SD		SA	A	UN	DA	SDA	$\bar{X}$	SD	
5.to maximise E.P.S.	23.9	58.7	8.7	8.7	-	3.98	0.83	3	55.2	37.9	6.9	-	-	4.41	0.38	3	36.0	50.7	5.3	8.0	-	4.15	0.85	3
6.to create wealth.	76.9	23.1	-	-	-	4.77	0.54	1	60.7	37.0	2.3	-	-	4.59	0.43	2	67.1	31.6	1.3	-	-	4.66	0.51	2
7.to maximise sales.	27.3	34.1	29.5	9.1	-	2.80	0.95	7	14.3	32.1	21.4	25.0	7.1	3.21	1.19	7	5.6	29.2	29.2	27.8	8.3	2.96	1.07	7

Notes: 1. SA = Strongly Agree, A = Agree, UN = Undecided, DA = Disagree, and SDA = Strongly Disagree

2. Technically, the median is a more appropriate statistic to use in non-parametric statistical analyses; however, due to the small number of rating points in this case, i.e. a five-point scale, and the highly skewed distribution of questionnaire responses to the high end of the scale, the median is unlikely to provide adequate discrimination between the different groups of companies which are under study. As a result, the mean rating is used as an acceptable alternative.

small. Looked at from another point of view, objective 2 and objective 6 are almost the same. To say that a firm's objective is to establish and maintain a growth company for the benefits of shareholders, employees, customers, and the community means in effect that the firm's objective is to create wealth, as pointed out earlier in this chapter, though both objectives were expressed in different words. One possible explanation for this difference, however, might be found in the fact that managements of companies which report value added are aware of the wealth creation process and its significance as a prime objective for the business firms activities, whilst managements of the other group of companies are not.

The conclusion which one might draw from the discussion above is that the wealth creation is seen by Finance Directors, either explicitly in the case of companies which report value added or implicitly in the case of the other group, to be the most important business firms' objective.

Whilst the remaining objectives, namely, objectives 1, 3, 4, 5, and 7 were ranked in the same position by both groups of companies, as shown in Table 4.2, some difference still existed between the mean scores of each

objective in both groups. Whether these differences are statistically significant or not requires, however, a sort of relevant statistical test to be applied to each variable in both samples which is the main task of the following section.

4.4.2 Firms' Objectives: Inferential Findings

With such a basis, presented in the previous section, we can now proceed to review the evidence on the following hypothesis:

H1: There is a significant difference between companies which externally report value added and those which do not regarding their perceived objectives.

In order to test this hypothesis, the nonparametric Maun-Whitney U Test would seem to be appropriate given

(i) the measurements (rating scale) constitute an ordinal level, and

(ii) the two samples constitute two independent groups.

The test determines whether two independent samples are drawn from the same population.[1]

Table 4.3 shows the observed U (the statistic used in this test)[2] and the associated level of significance for a two-tailed test for each objective. As can be seen

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1 A description of the test is presented in S.Siegel Non-parametric Statistics for the Behavioural Sciences, op. cit., pp. 116-127

2 The value of U is determined by the following formula:

$$U = n_1 n_2 + \frac{n_1(n_1+1)}{2} - R_1$$

or, equivalently,

$$U = n_1 n_2 + \frac{n_2(n_2+1)}{2} - R_2$$

where R_1 = sum of the ranks assigned to group whose sample size is n_1

R_2 = sum of the ranks assigned to group whose sample size is n_2

TABLE 4.3

FIRM'S OBJECTIVES:

MANN-WHITNEY U TEST

Objective	Observed U	Associated Level of Significance for a Two-Tailed Test
1. to maximise the price of the company's share.	655.0	0.9711 N.S.
2. to establish and maintain a growth company for the benefits of shareholders, employees, customers and the community.	686.5	0.8938 N.S.
3. to maintain a satisfactory level of dividends in the interest of shareholders.	499.5	0.0295*
4. to maximise cash flows.	412.0	0.0116*
5. to maximise E.P.S.	445.5	0.0079**
6. to create wealth	577.5	0.1431 N.S.
7. to maximise sales	489.5	0.1294 N.S.

Notes:

** Significant at $p<0.01$

* Significant at $p<0.05$

N.S. denotes not statistically significant.

from the same table, two tailed probabilities for objectives 3, and 4 were 0.0295 and 0.0116 respectively. For objective 5, however, probability was 0.0079. For all remaining objectives, two-tailed probabilities were > 0.05. Bearing in mind that the 0.05 level of confidence has been accepted as the basis for rejecting or accepting the null hypotheses of the present study, as noted in Chapter III, these results indicate that the difference between business firms' objectives, perceived by Finance Directors of companies who were the subject of this study, are significant only with regard to objectives 3, 4, and 5 (as shown in Table 4.3). However, it is worth mentioning that the difference in the case of objective 5 is significant at the 1% level, whereas differences in the case of objectives 3 and 4 are significant at the 5% level. All remaining differences were not significant.

One more interesting point is that all differences, whether they are significant or not, are in the predicted direction. Let us consider, by way of example objective 5; i.e. to maximise earnings per share; although it was ranked in the third place by both groups of companies, mean scores were 3.98 and 4.41 for companies which report value added and companies which do not respectively. An examination of Table 4.2 also reveals that, on balance, companies which do not report value added place more em-

phasis on the welfare of the shareholders than companies which do report it. Conversely, companies which report value added place more emphasis on the welfare of the entire team participating in the firm than the other group of companies. But this is not to say that companies which do not report value added place more emphasis on the welfare of the shareholders than the welfare of all company's coalition members. On the contrary, the interests of all company's participants are more cared about than the interests of the shareholders alone by both groups of companies who were the subject of this study, whether they report value added or not.

In an event, and on the basis of the evidence presented in Table 4.3, Hypothesis 1 can be accepted only with respect to objectives 3, 4, and 5.

Yet, the findings discussed above (theoretical and empirical) have a clear implication. That is, business firms are no longer seen by managements as the instrument of their shareholders alone. Rather they are composed of a coalition of participants to whom all companies are responsible. And if the prime objective of the business firm is to create wealth for the benefits of shareholders, employees, customers, and the community as a whole, it necessarily follows that:-

(a) information on progress towards fulfilling these multiple responsibilities and achieving such objectives should be reported so that user groups of accounting statements would be able to evaluate the performance and the effectiveness of the entity according to its own objective. This might well explain why many companies have extended their annual reports, which were in the main reports intended for the shareholders, to include value added which is relevant to all parties with an interest in the company.

(b) organisational rewards system should also be linked to the level of performance in achieving the company's objective, nameley, how much wealth has been created. Not surprisingly many British companies are already operating such systems as noted earlier.

Summing up, both theoretical and empirical evidence from organisational research strongly suggests that the value added concept of income is more relevant and complete than the profit concept. Hence, it should be used for financial reporting purposes and as a basis for productivity bonus schemes.

One final point is still left to be examined in the remainder of this chapter. As pointed out earlier, and according to the modern behavioural theory of the business firm, corporate objective or corporate behaviour in general is a function of whether the firm is owner-controlled

or management-controlled. In particular, it was suggested that companies which report value added are more likely to be management-controlled, rather than owner-controlled. This issue is taken further in the following section.

4.5 Value Added Reporting and Types of Control

As noted in Section 4.3., the theories of business firms found in the behavioural science literature are mainly concerned with the behaviour of management in large, publicaly owned corporations, where management has secured for itself a considerable degree of latitude in directing the affairs of the corporation. These theories recognise that the resposnibility of the management is primarily that of preserving the enterprise by mediating the claims of the organisation participants. Furthermore, in their discussion of large enterprise, the behavioural scientists have carefully maintained the distinction between firms which are controlled by their owners and firms which are controlled by managers.

An extensive body of literature has discussed and tested different types of corporate behaviour according to whether firms were owner-controlled (O-C) or manager-controlled (M-C). Examples of such types of corporate behaviour discussed and tested were the smoothing of income numbers,[1] accounting policy decisions,[2] and merger

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1 See, for example, J.Y. Kamin and J. Ronen, "The Smoothing of Income Numbers: Some Empirical Evidence on Systematic Differences among Management-Controlled and Owner-Controlled Firms", Accounting, Organisation and Society (Vol. 3, No. 2, 1978), pp. 141-157.

2 See, E.D. Smith, "The effect of the Seperation of Ownership from Control on Accounting Policy Decisions", The Accounting Review (October 1976), pp. 707-723.

pricing policies.[1] The main conclusion of these studies was that the type of control has a significant effect upon the corporate behaviour. Indeed, as Mansen et al have shown:

> "Management-controlled firms experience less variability in profits, have larger expense accounts, evidence more conciliation in dealing with government, unions and the public."[2]

In the present study, however, we shall examine a specific type of corporate behaviour - the external reporting of value added in companies classified as O-C or M-C.

Income reporting on a value added basis places no primacy on accounting profit as it is defined in the traditional economic theory of the firm, but lists it, along with all the income shares generated by the enterprise, as a constituent of total value added in the firm. This treatment, in effect, and as pointed out earlier in the chapter, underscores the equal responsibilities of the enterprise to all the participants. Thus, this approach seems to be consistent with the behavioural model

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1 See, R.L. Conn, "Merger Pricing Policies by Owner-controlled versus Manager-Controlled Firms", The Journal of Industrial Economics (June 1980), pp.427-441

2 R. Mansen, J.S. Chiu, and D.E. Cooley, "The Effect of Separation of Ownership and Control on the Performance of the Large Firm", Quarterly Journal of Economics (August, 1968), p.436.

of the firm discussed in Section 4.3. Additionally, firms which are the subject of this study, whether they report value added or not, are large and publicly owned. It would be interesting, therefore, to find out whether there is any significant relationship between type of control and value added reporting. But before doing so we should first define control.

4.5.1 The Definition of Control

There is some confusion in the literature about the meaning of control. Sometimes it is used to mean to direct, to influence, or to determine the behaviour of someone else. This rather general way of defining control has its roots in the study of influence and power and has led to some interesting research.[1] Control was also more precisely defined by Woodward as the task of ensuring that planned activities are producing the desired results.[2]

For the purpose of the present study, however, control refers to the power to direct the affairs of the corporation or to determine the broad policies guiding the corporation. Control, used in this sense, does not necessarily imply active involvement in routine decision making of the firm, but it does imply involvement in the making of more fundamental decisions, such as the selection of management. Though the individual possessing sufficient power to control the corporation may not actively exercise control for periods of time, the existence of strong minority holding keeps management mindful of the owners' welfare and exercises at least a passive form

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1 See, for example, A. Tannenbaum, Control in Organisations (New York: McGraw-Hill, 1968).

2 J. Woodward, "Technology, Management Control and Organisational Behaviour", in J. Woodward, (ed.) Industrial Organisation: Behaviour and Control (London: Oxford University Press, 1970, pp. 234-243.

of control.[1] The control of the firm, therefore is mainly determined by the distribution of the firm's voting securities. That is, the ability of the shareholders group to force its goals upon management is dependent upon how closley the shares of the corporation are held.

In the modern behavioural model of the M-C firms, the shareholders very often lack sufficient information, organised power or the determination to compel management to maximise profit. These shareholders may only intervene actively in the affairs of the corporation when an acceptable level of profits is violated. Employees, on the other hand, with their direct involvement in the organisation, may be able to exert implicit or explicit bargaining power over management to inforce their goal of maximising income per worker. Indeed, other groups, such as customers and government, are also in a position to indirectly exert some pressure on management for their sake. Accordingly, management ought to behave somewhere between these extremes and to conciliate between these conflicting interests of all groups of participants so that the possibility of any group unrest or intervention is minimised. This might well explain why large M-C

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1 R.J. Monsen, J.S. Chiu and D.E. Cooley, "The Effect of Separation of Ownership and Control on the Performance of the Large Firm", op.cit., p. 437.

firms are reporting value added and how it is shared between all stakeholders in the firm.[1] This sort of management behaviour is perhaps an attempt to keep all parties with an interest in the company happy which is necessary for the very continued existence of the organisation, as this is or ought to be the primary objective of any management.

The discussion so far clearly suggests that income reporting on a value added basis is consistent with the behavioural model of the business firm. Thus, it is expected that firms which externally report value added would be M-C rather than O-C. But to find out whether this is so, we need first to establish some criteria as to how much stock is required to control a corporation.

The control-type criteria used in this study are very similar to those previously employed by many researchers in this field.[2] That is, companies are classified as O-C if one party owns 20 per cent or more of the ordinary stock. Similarly, a company is classified as M-C

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1 The question of why companies externally report value added is discussed in Chapter VI.

2 See, for example, R.J. Monsen and A. Downs, "A Theory of Large Managerial Firms", The Journal of Political Economy (June 1965), pp. 231-236; and E.D. Smith, op.cit., p. 712

if no single block of ordinary shares greater than 20% is controlled by any party. Stock ownership data were obtained on each firm from its register of stockholders at the end of 1978. In some cases, however, these data were not available at this particular date and subsequently they were obtained at the nearest possible data to the end of 1978.

Although every possible effort has been made to classify companies in an accurate way, the data available for classifying are such that an error can be made. "Party" as mentioned in the preceding paragraph refers to the individual and his or her associates including family, business partners and corporations or trusts of which the individual is a large shareholder. Such data were not always available and as a result some firms would have been incorrectly classified as a M-C firm when, in fact, the firm should have been classified as an O-C firm. Thus, the reader is cautioned against accepting the results of the following two sections as conclusive evidence.

4.5.2 Value Added Reporting and Types of Control-Descriptive Analysis.

The major purpose of this section is to determine whether the type of control has any effect upon managerial behaviour regarding value added external reporting. Accoriding to the control-type criteria established in the preceding section, companies were classified as O-C or M-C. Table 4.4 compares the two categories of companies on the basis of one-way frequency distribution and descriptive statistics, namely, $\bar{X}$, and SD. As it was expected, more M-C firms externally report value added than O-C firms. As can be seen from Table 4.4, 40 companies out of 48 that externally report value added are M-C (83.3%). Only 8 companies are O-C (16.7%). For companies which do not report value added, however, there are 21 M-C companies (67.7%) and only 10 companies are O-C (32.3%). Since the score of 1 was assigned to a firm when it meant M-C, and the score of 0 when it meant O-C, comparing the means of both groups of companies (companies which report value added versus companies which do not) also reveals that the type of control influences the behaviour of the firm regarding value added external reporting. The larger the mean the more companies are M-C rather than O-C. Companies reporting value added have a mean score of 0.83 whereas the other group of companies has a mean score of only

TABLE 4.4

Value Added Reporting and Types of Control:

Descriptive Statistics and One-Way Frequency Distribution

Firms	Report VA				Do Not			
	Freq.	%	$\bar{X}$	SD	Freq.	%	$\bar{X}$	SD
Owner-controlled	8	16.7	-	—	10	32.3	-	--
Manager-controlled	40	83.3	-	—	21	67.7	-	--
TOTAL	48	100	0.83	0.42	31	100	0.68	0.48

0.68. Whether this difference between the two groups of companies is significant, however, is still to be seen, as this is the main focus of the following section.

4.5.3 Relationship between Value Added Reporting and Types of Control-Test of Hypotheses.

It has been argued earlier in this chapter (Section 4.2 and Section 4.3) that in the traditional neo-classical approach, business firms are nothing more than technological black boxes through which inputs of marketed productive factors are transformed into marketable output with the view of maximising owners' earnings, as firms are considered to be O-C. In contrast, the contemporary behavioural theory views the business firm as an entity composed of people. According to this theory, managers are not acting in the interests of the owners alone. Rather, they are mediating between all firm's participants. This change in corporate behaviour is expected merely by applying the self-interest axiom of the traditional theory of the firm to a new type of firm in which ownership is separate from management.[1] To such considerations we now turn, with the following hypothesis serving as the basis for the discussion:

H2: There is a significant relationship between the external reporting of value added and type of control.

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1 O.E. Williamson, The Economics of Discretionary Behaviour: Managerial Objectives in Theory of a Firm (Prenctice_Hall, Inc., 1964), pp.242-299.

As noted earlier, the value added approach provides a unifying objective for the whole team of cooperating groups which contribute to the firm's performance. Value added is directly relevant to all parties with an interest in the company.[1] They are all interested in the wealth the company creates and in how that wealth is shared. Thus, income reporting on a value added basis would seem to be an attempt by managers to maintain a favourable balance between the conflicting interests of the various numbers of the firm's coalition, for this seems to square with managers' own best interest. From this, it follows that companies which are externally reporting value added are more likely to be M-C rather than O-C. Similarly, companies which are not reporting value added would be O-C.

The findings of the preceding section support this prediction. That is, more M-C companies are externally reporting value added than O-C companies. However, to find out whether this relationship between value added reporting and type of control is significant or not, the non-parametric chi-square test using 2 x 2 contingency tables was employed to test Hypothesis 2. The test will assist us to determine whether or not the two variables

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1 The relevance of value added is discussed in Chapter V.

under study are statistically independent. This is done by computing the cell frequencies which would be expected if no relationship is present between the variables given the existing row and column totals (marginals). The expected cell frequencies are then compared to the actual values found in the table according to the following formula:

$$\chi^2 = \sum_i \frac{(f_o^i - f_e^i)^2}{f_e^i}$$

where

f_o^i = the observed frequency in each cell

f_e^i = the expected frequency calculated as

$$f_e^i = \left(\frac{c_i r_i}{N}\right)$$

where c_i is the frequency in a respective column marginal, r_i is the frequency in a respective row marginal, and N stands for the total number of valid cases.

As can be seen, the greater the discrepancies between the expected and actual frequencies, the larger chi-square becomes.

If no relationship exists between the two variables under study, then any deviations from the expected values which occur in a table based on randomly selected sample data are due to chance. While some small deviations can be reasonably expected due to chance, large deviations,i.e. large values of chi-square, are unlikely. Since we do not know what the actual relationship is in the universe, we interpret small values of chi-square to indicate the absence of a relationship, often referred to as statistical independence. Conversely, a large chi-square implies that a systematic relationship of some sort exists between the variables.

In order to determine whether a systematic relationship does exist, it is necessary to ascertain the probability of obtaining a value of chi-square as large or larger than the one caluclated from the sample, when in fact the variables are actually independent. This depends, in part, upon the degrees of freedom. The degrees of freedom vary with the number of rows and columns in the table, and they are important because the probability of obtaining a specific chi-square value depends on the number of cells in the table. Accordingly, CROSSTABS computer programme was used to compute the exact probability under each table.[1] Furthermore, 2 x 2 contingency tables have the

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1 SPSS, op.cit., p. 224

additional advantage of incorporating a correction for continuity which markedly improves the approximation of the distribution of the computed χ^2 by the chi-square distribution.[1]

Table 4.5 reports a chi-square of 1.79177. The probability of obtaining a value this large or larger with 1 degree of freedom is less than 0.1807, as shown in Table 4.5, so we would conclude that this chi-square is small. Since the cell frequencies do not deviate so much from what we would expect under the conditions of statistical independence, we could conclude that a systematic relationship between value added reporting and type of control does not exist. These findings did not support Hypothesis 2. Thus, the hypothesis is rejected, as the 0.05 level of confidence has been accepted as the basis for rejecting the null hypothesis.

It should be noted, however, that chi-square, by itself, helps us only to decide whether our variables are independent or related. It does not tell us how strongly they are independent or related. Part of the reason is that the sample size and table size have such an influence upon the chi-square. Several statistics which adjust for these factors are available.

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1 S. Siegel, Nonparametric Statistics for the Behavioural Sciences, op.cit., p. 107.

TABLE 4.5

Relationship between Value Added Reporting and Types of Control:

Chi-Square test

		VAR46		
	COUNT / ROW PCT / COL PCT / TOT PCT	NO(DR) 0.	YES(R) 1.000	ROW TOTAL
VAR123				
O-C	0.	10	8	18
		55.6	44.4	22.8
		32.3	16.7	
		12.7	10.1	
M-C	1.000	21	40	61
		34.4	65.6	77.2
		67.7	83.3	
		26.6	50.6	
	COLUMN TOTAL	31	48	79
		39.2	60.8	100.0

CORRECTED CHI SQUARE = 1.79177 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.1807

PHI = 0.18150

PEARSON'S R = 0.18150 SIGNIFICANCE = 0.0547

KENDALL'S TAU B = 0.18150 SIGNIFICANCE = 0.0545

For a 2 x 2 table, the phi (Ø) statistic is a suitable measure of association.[1] It makes a correction for the fact that the value of chi-square is directly proportional to the number of cases N by adjusting the value. Its formula is

$$\emptyset = \left(\frac{\chi^2}{N}\right)^{\frac{1}{2}}$$

Phi takes on the value of 0 when no relationship exists, and the value of +1 when the variables are perfectly related.

As can be seen from the evidence presented in Table 4.5, Ø = 0.1815 which indicates the existence of a positive relationship between the external reporting of value added and type of control. It is also interesting to note that both Kendall's tau B correlation coefficient (τ) and Pearson product-moment correlation (γ) are exactly identical to Ø (0.1815 at the same level of significance $p<0.10$, see Table 4.5) which indicates yet again the existence of a strong positive relationship between value added reporting and type of control in the predicted direction.[2] This relationship, however, does not

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1 SPSS, op.cit., p. 224

2 It should be noted that the Kendall's tau and the Pearson Υ assume ordinal and internal scales in the variables being related respectively. Since these requirements are not met in this particular case the reader is cautioned against too strict an interpretation of the magnitude of correlations and the obtained levels of confidence. More about this will be said in the succeeding chapters.

amount to a statistically significant relationship at the 0.05 level which has been accepted as a basis for accepting or rejecting the present study's hypotheses.

4.6 Summary and Conclusions

Accounting has been closely associated with the development of the modern business organisation. Thus, accountants need to show a strong interest in recent contributions to organisation theories which increase our undertsanding of the business firm and how it functions, for this is relevant to the development of accounting theory and practice. The main aim of this chapter was to evaluate the uses of value added concept of income at company level in terms of existing theories of the business firm and empirical evidence reported in this study and elsewhere in the literature.

The major findings of the chapter may be summarised as follows:

1. Management responsibilities were recognised towards all the coalition members of the firm, namely, employees, shareholders, customers, community and the Nation which seem to square with the modern behavioural theory of the firm.

2. Creating wealth was indicated, by Finance Directors respondents of this study, as the prime objective of business firms more often than was any alternative measure. It follows that the present concept of income as it appears on the traditional profit and loss statement is deficient because it assumes that the sole purpose of the enterprise is to maximise shareholders'

profit. Income reporting on a value added basis, however, seems to be more relevant since it refers to the joint wealth created by the whole company's team.

3. Assuming that all who contribute to the creation of wealth in the firm agree to co-operate in enlarging their joint wealth rather than maximising one party's share, managers and employees will also require a bonus on any increase in that wealth, for this should motivate efficient behaviour.

4. A positive relationship between the external reporting of value added and manager-type of control was found, though this relationship was not statistically significant at the 0.05 level.

5. In general, both theoretical and empirical evidence presented in this chapter strongly suggests that the value added concept of income is more relevant and complete than the profit concept. In particular, using the concept of value added as a means of financial reporting and as a basis for productivity bonus schemes was justified. The following three chapters will be focusing on these two issues respectively (Chapter V and Chapter VI will be concerned with the use of value added in external reporting and Chapter VII with value added as a basis for productivity bonus schemes).

CHAPTER V

THE USE OF VALUE ADDED IN FINANCIAL REPORTING: RELEVANCE AND USEFULNESS

5.1 Introduction

As noted in the preceding chapter, both theoretical and empirical evidence from organisational research suggests that the value added concept of income is more complete, relevant, and useful than the profit concept. Building on these findings, the purpose of this chapter is to appraise the merits and uses of value added as a means of external financial reporting. In parricular, the chapter focuses attention on the following issues:-

(a) Objectives of financial reporting,

(b) User groups and their information needs,

(c) The relevance of value added reports.

Related empirical evidence is also provided.

5.2 Objectives of Financial Reporting

Accounting, broadly conceived as the measurement and communication of economic information relevant to decision makers, has undergone dramatic changes during the past decade. Recent economic, social, environmental and political developments are influencing current thinking in financial as well as managerial accounting. Traditionally company reports have been intended primarily for the benefit of shareholders and as a result have concentrated on profit as the main indicator of corporate performance. In recent years, with the growing power of such groups as the employees and consumers, the rationality inherent in the traditional concept of income is no longer acceptable to an increasing number of social partners. In consequence, the management decision process is being increasingly constrained and as this happens the traditional income concept becomes an out-of-date indicator of enterprise performance.

It is becoming more and more widely recognised that accounting and reporting procedures should be designed to show the whole range of interested stakeholders in a firm and how the firm is performing across the whole range of activities which affect them. Already in Europe interest is expressed in the possibility of measuring the econonomic performance of business enterprises in terms of

value added and reporting on the distribution of the value added amongst all the stakeholders in the enterprise.[1] For instance, roughly one quarter of largest quoted British companies are voluntarily including a value added statement in their annual reports, and this proportion seems to be growing steadily. Before proceeding with the appraisal of the merits of value added for financial reporting purposes, it appears advisable, if not essential, to first briefly discuss objectives of financial reporting.[2]

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1 See, for example, S.J. Gray and K.T. Maunders, "Recent Development in Value Added Disclosures", op.cit., pp.232-236.

2 The Financial Accounting Standards Board defines an objective as: "something toward which effort is directed, an aim or end of action, a goal". See, Financial Accounting Standards Board Discussion Memorandum, Conceptual Framework for Accounting and Reporting: Consideration of the Report of the Study Group on the Objectives of Financial Statements (F.A.S.B., 1974), p. 13. Chambers argues, however, that financial reports have functions, only those who invent them and make use of them can have objectives. See R.J.Chambers, "Usefulness - The Vanishing Premise in Accounting Standard Setting", ABACUS - A Journal of Accounting and Business Studies, (Sydney University Press, December, 1979), p. 90. Nevertheless, the term "Objectives" is used throughout the present study.

5.2.1 The Need for Objectives of Financial Reporting

As noted earlier (Section 4.4), the establishment of objectives is an absolutely necessary first step in the reasoned development of any purposive human behaviour. For financial reporting in particular, objectives must be specified since the judgement about the relevance and usefulness of any accounting report should be made only in relation to some clear assumption about the purpose (objective) for which it is prepared.[1] For instance, Devine argues:

> "....that the first order of business in constructing a theoretical system for a service function to establish the purpose and objectives of the function. The objectives and purposes may shift through time, but for any period they must be specified or specifiable."[2]

Failure to specify the objectives of financial reporting will result in that there will be no benchmark against which to test the utility of financial reporting practices, and financial statements often seem to become an end in themselves rather than a means to an

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1 B. Carsberg, A. Hope and R.W. Scapens, "The Objectives of Published Accounting Reports", Accounting and Business Research (Summer 1974), p. 163.

2 Carl Devine, "Research Methodology and Accounting Theory Formulation", The Accounting Review, (July, 1960), p. 399.

end.[1] Accounting, financial reporting, and financial statements are not ends in themselves but presumably are intended to satisfy some useful objective(s). Thus, agreeing on these objectives and stating them explicitly is indispensible to the development of a theoretical framework for the judgement of accounting practices. As the Study Group on the Objectives of Financial Statements has put it: specification of the objectives of financial statements would "facilitate establishment of guidelines and criteria for improving accounting and financial reporting."[2]

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1 In the U.K., the financial statements now most frequently provided are: (a) balance sheet or statement of financial position, (b) earnings statement(income statement), and (c) statement of changes in financial position (statement of sources and applications of funds). More recently and less frequently, the value added statement is also provided by major British companies. It should be noted, however, that financial reporting is a more comprehensive tool of communication than financial statements for it provides information that is included in or reported outside financial statements. That distinction between financial reporting and financial statements is made, for example, by the Accounting Standards Committee, The Corporate Report, op.cit., p. 9, and by the Financial Accounting Standards Board, Proposed Statement of Financial Accounting Concpets: Objectives of Financial Reporting and Elements of Financial Statements of Business Enterprises (F.A.S.B., December, 1977), p. 8.

2 Study Group on the Objectives of Financial Statements, Objectives of Financial Statements (New York: American Institute of Certified Public Accountants, -973) p. 67.

Moreover, objectives of financial reporting should also facilitate the determination of implementation techniques and formats. These techniques and formats of implementing the objectives should be selected as financial principles or standards, which in return will be followed as guides in the preparation of financial reports. "Financial accounting and reporting .... must rest on ... standards designed to achieve what are perceived to be the desired objectives of financial accounting and reporting."[1] Specifying objectives is necessary to that process. This argument is, perhaps, best summarised by Sorter et al. They say:

> "Stating objectives facilitates the folllowing activities:
>
> 1. Evaluation of present financial accounting standards.
> 2. Adoption of proposed financial accounting standards.
> 3. Evolution of financial accounting standards to respond to change in objectives or in implementation technology."[2]

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1 Study on Establishment of Accounting Principles, Establishing Financial Accounting Standards (New York: American Institute of Certified Public Accountants, 1972), p. 19.

2 George H. Sorter, Martin S. Gaus, Paul Rosenfield, R.M. Shannon and Robert G. Streit, "Purpose and Need for Objectives", in Joe C. Cramer and George H. Sorter (ed.), Objectives of Financial Statements, Vol.2, Selected Papers (New York: American Institute of Certified Public Accountants, 1975), p.14.

5.2.2 Objectives in the Literature

Although there have been numerous studies by both professional accounting bodies and accounting theorists that dealt with the subject of financial reporting objectives,[1] the literature on accounting does not provide some measure of agreement that one might expect. This view is also supported by Stone, writing in 1967: "A search of the existing literature for a statement of objectives for published financial reports will inevitably lead to frustration." And "References to reporting objectives, when found, are either so vague as to give no direction to the development of theory or are specific but lacking a rationale for such objectives."[2]

It must be admitted, however, that the accounting literature does provide useful views of a complex subject.

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1 See, for example, Study Group on the Objectives of Financial Statements, Objectives of Financial Statements, op.cit.; the Financial Accounting Standards Board, Proposed Statement of Financial Accounting Concepts: Objectives of Financial Reporting....., op.cit.; the Institute of Professional Accounting, Studies on Financial Accounting Objectives (The Institute of Professional Accounting Graduate School of Business, University of Chicago, 1974); the Accounting Standards Committee, The Corporate Report, op.cit., and B. Carsberg et al, The Objectives of Published Accounting Reports, op.cit.

2 D.E. Stone, "The Objectiveof Financial Reporting in the Annual Report," The Accounting Review (April, 1967).

That is, the objectives of financial reporting are not and should not be static, just as the business and financial environment is not static. Changing objectives of accounting and financial reporting are related to changing corporate responsibilities, to changing systems of ownership, decision, control, and accountability of business; and to the changing institutional structure of modern industrial economies. One source has listed the following factors as those affecting the relative importance of the various financial reporting objectives:

1. The extent to which ownership and management are separated.
2. The extent to which credit is granted.
3. The extent to which privately owned economic units are subjected to governmental regulation.
4. The extent to which taxes are predicated upon economic data.
5. The level of such taxes.
6. The extent to which economic data of the employer enter into collective bargaining.[1]

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1 A Rappaport, A Proposal for Deriving Objectives for Published Corporate Accounting Reports from Relevant Social Values. Unpublished Ph.D. Dissertation, University of Illinois, 1963, pp.9-10.

An examination of the literature reveals that there appears to be a change in emphasis, regarding objectives of accounting and financial reporting, over time. For instance, the earliest objective of accounting seems to have been to meet the need of the owner-manager to keep track of his property. At some later time, the industrial revolution in England in the eighteenth century set in progress new influences on accounting and financial reporting.[1] Companies were developed, with capital contributed by large numbers of people, few of whom would take part in management. As a consequence, a new importance was given to stewardship objective where the managers had to account for the uses made of the funds put at their disposal.[2]

More recently, the increased complexity of business created demands for information to serve users' needs and, thus, the overriding objective of financial reporting seems to emphasise the output of useful information for making economic decisions.[3] This basic objective applies within a broad economic environment, however.

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1 This might explain the significant British contributions to early accounting thought.
2 B. Carsberg et al, "The Objectives of Published Accounting Reports," op.cit., p. 165.
3 Study Group on the Objectives of Financial Statements, op.cit., p. 13.

That is, an economy is organised to strive for efficient allocation of scarce resources to their most efficient uses to serve the public interest. Efficient use of scarce resources enhances the standard of living; inefficient use or waste decreases the output of goods and services from use of the same resources, increases the resources needed to produce the same output, or both, and diminishes the standard of living. Inefficiencies that occur in allocating scarce resources are detrimental to society as a whole. This allocation of resources is affected by government action and by private actions in the marketplace, or some combinations of the two. Both kinds of actions involve economic decisions and require accounting information.[1]

More specifically, in 1936 the American Accounting Association, for example, said:

> "The purpose of the statements is the expression, in financial terms, of the utilisation of the economic resources of the enterprise and resultant changes in the position of the interests of creditors and investors. Accounting is thus not essentially a process of valuation but the allocation of historical costs and revenues to the current and succeeding periods."[2]

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1 Ibid., p.14

2 American Accounting Association, "A Tentative Statement of Accounting Principles Affecting Corporate Reports," The Accounting Review (June, 1936), pp.187-191.

This conventional view of the aim of published financial reports was also expressed in Recommendation N15 issued by the Institute of Chartered Accountants in Emgland and Wales in 1952 (withdrawn in 1974). This stated:

> "The primary purpose of the annual accounts of a business is to present information to the proprietors, showing how their funds have been utilised and the profits derived from such use."[1]

However, no review of the classics of accounting theory would be complete without the inclusion of the American Institute of Certified Public Accountants' 1953 study entitled Restatement and Revision of Accounting Research Bulletins. This study is particularly significant for our purposes, for it represents a very noticeable shift in accounting and financial reporting objectives. The following passage from the introduction serves to demonstrate the point clearly:

> "Accounting is essential to the effective functioning of any business organisation, particularly the corporate form. The tests of the corporate system and of the special phase of it represented by corporate accounting ultimatley lies in the results which are produced. These results must be judged from the standpoint of

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1 Accounting Standards Committee, The Corporate Report, op.cit., p. 32

society as a whole ..... not merely from that of any one group of interested persons."[1]

The above statement certainly appears to be a sharp departure from the sole dedication to the shareholder which apparently was the attitude of both North American and British professional organisations during the 1930s, if not in the two decades following 1940 and 1950 as well. On the other hand, it is unfortunate that the social responsibility theme was not further developed so that it could have been used as a point of departure for the formulation of a useful set of propositions about corporate financial reporting objectives.

A greatly increased level of interest in the specification of financial reporting objectives has been shown in the literature in recent years. Particularly important perhaps, are the research studies undertaken for accounting professional organisations in the United States and the United Kingdom.

The first of these studies is the Study Group Report on the Objectives of Financial Statements which was pub-

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1 The American Institute of Certified Public Accountants Committee on Accounting Procedure, Restatement and Revision of Accounting Research Bulletins (New York, 1953), p. 7 (emphasis added).

lished by the American Institute of Certified Public Accountants (A.I.C.P.A.) in October, 1973.[1] This report asserts that "the basic objective of financial statements is to provide information useful for making economic decisions."[2] From this basic, and rather general, statement, the Study Group deduces several more operational objectives. Three of these objectives are of particular interest for the purpose of the present study. The first is objective two:

> "An objective of financial statements is to serve primarily those users who have limited authority, ability or resources to obtain information and who rely on financial statements as their principal source of information about an enterprise's economic activities."[3]

This objective clearly emphasises the significance of the specification of the audience for whom financial reports are intended and their information needs for financial reporting objectives. The Study explicitly states "the identification of the primary users and of the financial information they need is fundamental to the operation of the basic objective."[4]

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1 Study Group on the Objectives of Financial Statements, op.cit.
2 Ibid, p. 13
3 Study Group on the Objectives of Financial Statements, op.cit., p. 17
4 Ibid., p. 15. The issue of accounting information user groups is taken further later in the section.

The other two objectives presented in the Objective Study, and which are of particular interest to us, deal more specifically with the nature of information that is "useful for making economic decisions". Objective five, for example, focuses upon management's accountability and enterprise goals. It states:

> "An objective of financial statements is to supply information useful in judging management's ability to utilise enterprise resources effectively in achieiving the primary enterprise goal."[1]

Whatever is the principal goal of business, then performance ultimately must be measured and reported in terms which relate directly to the achievement of that goal. Without clear specification of enterprise goals, it would be impossible to evaluate the success of management or indeed to measure the economic performance of an entity.

Finally, objective twelve relates to a general area sometimes described as "social accounting".[2] Although

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1 Ibid, p. 26, (emphasis added).

2 Social accounting is defined by Ramanathan as:"the process of selecting firm - level social performance variables, measures, and measurement procedures; systematically developing information useful for evaluating the firm's social performance; and communicating such information to concerned social groups, both within and outside the firm." See, K.V. Ramanathan, "Towards a Theory of Corporate Social Accounting", The Accounting Review (July, 1976), p. 159.

this area is probably familiar to readers of the academic literature, the Study Group has for the first time placed it within the domain of consideration by practicing professionals. It noted that

> "An objective of financial statements is to report on those activities of the enterprise affecting society which can be determined and described or measured and which are important to the role of the enterprise in its social environment."[1]

It should be noted, however, that despite the invaluable contribution of the Study Group to the financial reporting objectives debate, the following deficiencies still remain:

(1) While the Report emphasises the usefulness as the basic criterion against which accounting practice should be judged, what is meant by usefulness is not explained.

(2) The Report focuses primarily upon issues from the point of view of an individual decision-maker, while inadequate attention was given to the aggregate level (the impact of financial reports on national economy).[2]

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1 Study Group on the Objectives of Financial Statements, op.cit., p. 55.

2 This issue will be the subject of detailed investigation in Chapter VI.

(3) Although the social welfare objective of financial statements was discussed, no attempt has been made to develop a measure of social performance. Without measurements, the social role of accounting systems argument cannot rationally be resolved.

The second study, and perhaps the most important one, is The Corporate Report.[1] The authors describe the purpose of their study with these openings words: "Our subject is, in essence, the fundamental aims of published reports and the means by which these aims can be achieved."[2] The main theme which runs through the Report is that responsibility is inevitably accompanied by accountability. As the Report notes the trend towards the acceptance by business enterprises of multiple responsibilities, the groups to whom the organisation is accountable are described as follows:

"The Groups we identify as having a reasonable right to information and whose information needs should be recognised by corporate reports are:-

(a) The equity investor group.

(b) The loan creditor group.

(c) The employee group.

(d) The analyst-advisor group.

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1 Accounting Standards Committee, The Corporate Report, op.cit.

2 Ibid., p.9

(e) The business contact group.

(f) The government.

(g) The public."[1]

It is, therefore, the authors' view that financial reports should be developed in accordance with the philosophy that an organisation is a group of people associating together in order to achieve objectives better than they could acting alone. Consequently, the Report states the objectives of financial reports as follows:-

> "The fundamental objectives of corporate reports is to communicate economic measurements of and information about the resources and performance of the reporting entity <u>useful to those having reasonable rights to such information</u>." [2]

Since the terms "useful" and "reasonable" are ambiguous, the fundamental objective may be questioned and debated for some time to come. Nevertheless, the Report, on the whole, is the most significant step the major accounting bodies have attempted to undertake in adapting to changing economic and social demands. For it admits that "Distributable profit is no longer the sole or premier indicator of performance in the corporate reports."[3] Rather, the authors argue that there is a growing need to find new ways of expressing the importance and communicat-

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1 <u>Ibid</u>., p. 17.
2 <u>Ibid</u>., p. 28, (emphasis added).
3 <u>Ibid</u>., p. 40.

ing the contribution of business operations to the economy.[1] In fulfilling such a general social objective, value added was recommended for the first time ever by a professional accounting body as a preferable way of describing performance. In the authors' words:

> "The simplest and most immediate way of putting profit into proper perspective vis-a-vis the whole enterprise as a collective effort by capital, management and employees is by presentation of statement of value added .... It usefully elaborates on the profit and loss account and in time may come to be regarded as a preferable way of describing performance."[2]

The third, and most recent, study was commissioned by The Financial Accounting Standards Board (F.A.S.B.).[3] The study is divided into two parts: Introduction and Background, followed by Objectives of Financial Reporting. The introductory section includes subsections on: (a) financial statements and financial reporting, (b) the environmental context of objectives, (c) the characteristics and limitations of information provided, (d) potential

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1 Ibid., p. 37.
2 Ibid., p. 49.
3 Financial Accounting Standards Board, Objectives of Financial Reporting by Business Enterprises, Statement of Financial Accounting Concepts No. 1 (F.A.S.B., 1978).

users and their interests, and (e) general-purpose external financial reporting. Financial statements are also defined to be a subset of financial reporting which is consistent with some other previous studies, as pointed out earlier.[1]

The main conclusions of the F.A.S.B. are in line with the general tenor which is emerging as a modern consensus. The study states that the specific objectives here refer to the general-purpose financial reports that serve the informational needs of external users who lack the authority to prescribe the financial information they want from an enterprise.[2]

The literature thus provides evidence of a growing consensus that the objectives of financial reporting should be set in accordance with the philosophy that a business organisation is accountable not only to its shareholders but also to employees, customers, financial analysts and advisers, taxing authorities, legislators, financial press and reporting agencies, labour unions, trade associations, and above all to the public at large. This is also consistent with the empirical findings of the present study where management responsibilities were recognised towards all the coalition members of the firm

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1 Supra, p. 240.
2 F.A.S.B., Objective of Financial Reporting by Business Enterprises, op.cit., para. 37.

and not towards shareholders alone.[1] The implication is that financial reports should be directed to all user groups mentioned above and not only to shareholders. To carry out such a task, two methods are suggested in the literature as shown in the following section.

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1 Supra, pp. 247-48.

5.2.3 General Purpose vs. Special Purpose Financial Reporting

Bearing In mind that financial reports are a principal means of communicating information to those interested in the economic activities of an enterprise,[1] interested individuals or groups of individuals should be specified so that financial reports could meet their informational requirements. Objectives may differ depending upon the user group(s) considered.

As noted in the preceding section, financial reports should be intended for those having a reasonable right to information identified by The Corporate Report as the equity investor group, the loan creditor group, the employee group, the analyst-adviser group, the business contact group, the government, and the public.[2] One method that has been widely used to communicate information about the economic activities of an undertaking to user groups is the general purpose financcial

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1 On the communications aspects of financial reports see, for example, Peter Bird, "Standard Accounting Practice," in H.C. Edey and B.S. Yamey (eds.), Debits, Credits, Finance and Profits (London: Sweet and Maxwell, 1974), pp.1-14; and N. Bedford and V. Baladonni, "A Communication Theory Approach to Accountancy", The Accounting Review, (Oct. 1962), pp. 650-659.

2 A.S.C., The Corporate Report, op.cit., p. 17

reporting whereby the information needs of the entire user group is simultaneously satisfied with a single set of general purpose reports. The focus is not only on any single user group; instead, the analysis centres on the utility of the information to a wide variety of users.

The popularity of this general purpose method is not difficult to explain. Traditional accounting theory suggests that a single set of financial reports is simultaneously relevant to the general information needs of many user groups.[1] Since financial reports are supposedly relevant to a wide audience, it is not surprising that methods of reporting business performance are often evaluated in terms of this same broad audience.

However, there are some reasons to question the validity of the general purpose reporting philosophy. While detailed examination of the strengths and weaknesses that are inherent in this approach is outside the coverage of the present study, it must be noted that some writers argue that a single, general purpose report is unlikely to satisfy the information needs of all user

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1 Accounting Principles Board Statement No. 4, Basic Concepts and Accounting Principles Underlying Financial Statements of Business Enterprises (New York: A.I.C.P.A., 1970), pp.19-20.

groups, given the diversity among these groups.[1] The existence of this possibility has caused those writers to suggest that the specific user approach is more appropriate. This approach rests on the belief that no one single set of information is necessarily relevant to a wide range of decision makers. Since financial decision makers are a heterogeneous group, possessing potentially diverse decision models, the information relevant to one group may be irrelevant to another. Accordingly, the usefulness of financial reports must be determined sequentially for each major category of reports users. No attempt is made to identify the universal relevance of these reports. Instead, their ability to satisfy the informational requirements of a single group is considered. This concentration on one user group is the essence of the special purpose reporting approach.

However, it is noteworthy to observe that both general purpose and special purpose reporting approaches mainly rely on a normative model of users' information requirements rather than on an empirical one. That is, the usefulness of financial reports is determined according to their ability to satisfy the presumed information

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1 For a full discussion of this argument, see, for example, L. Revsine, "General Purpose Reports and Users' Data Needs," Financial Analysts Journal, 25(September-October, 1969), pp.37-46.

needs of user group(s) and not the actual needs.[1] Besides, the potential usefulness of value added information in the context of either general purpose, or special purpose reporting approach (or Both) has not been explored, though Maunders is an exception.[2]

Nevertheless, the term "financial reporting" is used in the present study in place of general purpose external financial reporting by business enterprises. Granting this orientation, financial reports should be useful to all potential user groups. Having specified the audience for whom financial reports are primarily intended,[3] it would seem appropriate at this point to discuss what usefulness means.

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1 For a full discussion of this point see, for example, L. Revsine, Replacement Costing Accounting, (Prentice-Hall, Inc., Englewood Cliffs, N.J.), pp.1-4

2 Keith Maunders, The Decision Relevance of Value Added Reports, (Paper delivered at Seminar on Accounting in Europe, European Accounting Association-Amsterdam, 1980).

3 Supra, p. 251.

5.2.4 Usefulness: What Does It Mean?

Traditionally, accounting theory has tended to rely on developing the so-called "Generally Accepted Accounting Principles", derived from an examination of general practice, in order to provide a basis for financial reports evaluation in a consistent way.[1] Paul Grady described these principles as

> ".....conventions or rules developed by man from experience to fulfill the essential and useful needs and purposes in establishing reliable financial and operating information control for business entities."[2]

The main criticism against this approach is that it does not give sufficient attention to the normative aspects of accounting theory. Deriving a criterion, by which the merits of financial reports must be judged, from an examination of financial reporting practices may be no more than a description of what is followed by accountants in practice. Sterling in criticising such

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1 For example, W.A. Paton and A.C. Littleton, An Introduction to Corporate Accounting Standards, American Accounting Association Monograph No. 3, (A.A.A., 1940).

2 Paul Grady, An Inventory of Generally Accepted Accounting Principles, (New Yor: The American Institute of Certified Public Accountants, 1965), p. 23

an approach, says:

> "Except for some theologies, I know of no discipline other than accounting which induces what ought to be from what is."[1]

Recently, an increasing number of both accounting theorists and accounting professional bodies have come to believe that usefulness ought to be the criterion against which financial reports must be finally judged.[2] Yet, the use of usefulness as the primary criterion in accounting has raised two basic questions:

> "But anyone who stress "usefulness" as a criterion, in accounting or elsewhere, must answer the two pointed questions - useful to whom? and for what purpose?"[3]

These two questions can be answered. The first: accounting information should, ideally, be of significance to as many major groups of users as possible, particularly if we are prepared to accept the notion of "general purpose" reporting in stead of "Special purpose" reporting. As noted earlier, accounting information

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1 R.R. Sterling, "A Statement of Basic Accounting Theory: A Review of Article", Journal of Accounting Research, (Spring, 1967), p. 96.

2 See, for example,A.S.C., The Corporate Report,op.cit., A.I.C.P.A.,Report of the Study Group on the Objectives Of Financial Statements,op.cit.;B.Carsberg et al,"The Objectives of Published Accounting Reports",op.cit., and R.J. Chambers,"Usefulness - The Vanishing Premise in Accounting" ABACUS (Dec., 1979).

3 Maurice Moonitz,The Basic Postulate of Accounting, Accounting Research Study No.1(A.I.C.P.A.,New York,1961) p.4.

should be capable of use for the common needs of shareholders, creditors, employees, the government and the public. Of course, it could be argued that users are many, their specific interests and information requirements may be varied and consequently the information which is useful to One group could be useless to another. This might be true and may well explain why accountants have not been explicit about usefulness. The multiplicity of users of accounting reports, however, is not an obstacle in applying "usefulness criteria" if we think in terms of the usefulness of particular bits of information rather than the usefulness of the accounting system as a whole.

For the second question, namely, useful for what purpose? usefulness, in accounting literature, has often been related to the facilitation of rational economic decision-making;[1] a premise which has been accepted for the purpose of this study as the assumed purpose of financial reporting. But we must emphasise once again that this rather general purpose of the facilitation of making rational economic decisions applies within a broad economic environment - that is,

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1 See, for example, Report of the Study Group on Objectives of Financial Statements, op.cit.;and James Fremgen, "Utility and Accounting Principles", The Accounting Review (July, 1967), p. 458.

to facilitate the allocation of scarce resources to their most efficient use to serve the public interest and to enhance the standard of living. Thus, usefulness must be viewed from the standpoint of all potential user groups of accounting information including society as a whole and not merely from that of shareholders.

This argument is supported by the American Accounting Association, reporting in 1975: the overriding criterion for financial reports is

> "to provide information which is potentially useful for making economic decisions and which, if provided, will enhance the maximisation of social welfare."[1]

The problem with this approach, however, is that generally agreed measurement techniques of social performance must be found. Finding such techniques would place a very great burden on accountants. This burden would fall in three primary areas:

(a) specifying costs of providing information from accounting and other sources;

(b) identifying the effect on the allocation of resources from various accounting reporting alternatives; and

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1 American Accounting Association,"Report of the Committeee on Concepts and Standards for External Financial Reports", The Accounting Review (Supplement to Vol. XLX, 1975), p. 42

(c) identifying the impact on the wealth (and welfare) of all members of society from accounting policy decisions.[1]

Of course, assessing these three factors is not easy and requires further study so that objective and verifiable measurement techniques could be developed.

Nevertheless, the first thing to note about corporate social performance is that the most important component would perhaps seem to be the contribution of the company to the nation's welfare. That is, the production of goods and services that the company is in business to suplly. Solomons has already rightly suggested that "value added" would seem to be the best point of departure for developing a measure of social performance.[2]

However, this does not solve all the problems of the use of usefulness as the overriding criterion in financial reporting. There could be a disagreement between accountants as to the usefulness of accounting reports even after the user groups are specified and the purpose for which the information is to be used.

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1 Ibid, p. 43.
2 David Solomons, "Corporate Social Performance: A New Dimension in Accounting Reports", in H.C. Edey and B.S. Yamey (eds.), Debits, Credits, Finance and Profits, op.cit., pp. 131-141.

The main obstacle in accepting usefulness as the overriding criterion is to make it operational. Various authorities have sought to establish those elements essential to its implementation. This approach has been followed by the A.A.A.,

> "Fortunately it is possible to divide the criterion of usefulness into standards which are more susceptible to measurement and implementation."[1]

The Association suggests four standards to be used as different aspects of usefulness: relevance, verifiability, freedom from bias, and quantifiability. Similar suggestions for determining the criteria to be used for testing usefulness of accounting reports have been proposed by A.S.C.[2] and A.I.C.P.A.[3] The authors of the Corporate Report, for example, state that:

> "If corporate reports are to be useful we believe they must be:
>
> (a) Relevant
>
> (b) Understandable
>
> (c) Reliable

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1 American Accounting Association, Committee to Prepare a Statement of Basic Accounting Theory, A Statement of Basic Accounting Theory (E-ans, Ill.: AAA, 1966), p.3.
2 A.S.C., The Corporate Report, op.cit., p.28
3 A.I.C.P.A., Report of the Study Group on the Objectives of Financial Statements, op.cit., pp. 57-60.

(d) Complete

(e) Objective or unbiased

(f) Timely

(g) Comparable."[1]

Yet, it is not difficult to establish from the literature that the two most commonly identified fundamental characteristics of financial reports esential to their usefulness may be summarised as relevance and objectivity. Most of the other characteristics adduced can probably be related to one or other of these two. For instance, relevance may be said to subsume such characteristics as understandability, comparability and timeliness while objectivity subsumes reliability and completeness. Thus, one might conclude that a piece of information is useful if it can be shown to be relevant and objective or unbiased. Objectivity implies, however, that accounting information must not benefit the interests of one group at the expense of another. Rather, it should be directed toward the common neeeds of users. As the authors of the Corporate Report have observed:

> "The information presented should be objective or unbiased in that it should meet all proper user needs and neutral in that the preception of the measurer should not be biased towards the interest of any one user group."[2]

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1 A.S.C., The Corporate Report, op.cit., p.28.
2 Ibid., p.29.

Few studies have identified the sources of bias as being the result of:

(1) the use of inappropriate techniques;

(2) the method of presentation itself;

(3) it may be of a personal nature.[1]

For the other element of usefulness, namely, the relevance element, it must be recognised that accounting information is relevant if and only if it is related to a process of thought, a choice or an action. Because the issue will be taken up again later in the chapter (Section 5.3), it is sufficient at this stage to say that relevance must apply within a broad economic and social environment. For instance, in the U.K. concern is often expressed about levels of industrial output, productivity, national efficiency and the conflict between labour and capital over the distribution of the wealth created by a business entity. The present researcher believes that if financial reports are to be relevant they should be presented in such a way as to take cognisance of these factors and assist in making comparisons and judgements on such matters.

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1 See, for example, Denys Mcdonald and Anthony G.Puxty, "An Inducement - Contribution Approach to Corporate Financial Reporting", Accounting, Organisations and Society (Vol. 4, No.1/2, 1979), pp.53-65; and A.A.A., A Statement of Basic Accounting Theory, op.cit.

For the purpose of the present study, however, it is of interest to note that the authors of a very recent study have concluded that value added information is more relevant and objective than profit - that is to say it is more useful for the purpose of financial reporting.[1] This conclusion is not supported by empirical evidence, however.

Having specified the objectives of financial reporting, identified the audience for whom financial reports should be intended and discussed what we meant by usefulness, it would perhaps seem appropriate to examine the relationship between value added reporting and perceptions of managements regarding objectives of financial reports and this is the subject of the following section.

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1 M. Renshall, et al, Added Value in External Financial Reporting, op.cit., pp.22-38

5.2.5 Value Added, User Groups, and Objectives of Financial Reporting - Empirical Evidence

On the basis of the principles developed in the preceding sections, one might conclude that income reporting on a value added basis is more relevant and objective than that of the traditional concept of income, i.e. profit. More specifically, it was suggested that the objective of financial reporting should be set in accordance with the philosophy that a business organisation is accountable not only to its shareholders but also to employees, customers, the government, and society at large. Thus, it was argued, financial reports should be directed to all potential user groups. In this setting value added has a great potential as a means of embracing the needs of a wider group of users and a preferable way of describing performance.

If these principles are valid, we would expect some sort of relationship between value added reporting and both the intended user groups and the perceived objectives of financial reports. In the following two sections we shall statistically investigate such a relationship.

5.2.5.1 Relationship between Value Added Reporting and the Intended User Groups - Statistical Analysis

Responsibility is inevitably accompanied by accountability. As pointed out earlier (Section 4.2), corporate responsibilities were recognised towards shareholders, creditors, employees, customers, and society at large. The implication is that a business firm must be accountable to all these groups. The primary means of reporting on this accountability is through published financial reports. Thus, we would expect financial reports to be addressed to all groups towards which corporate responsibilities are recognised. The major purpose of this section is to determine whether this is true and compare the two groups of companies which are the subject of the present study (companies that externally report value added vs. companies that do not) regarding this issue.

Respondents were asked to specify the intended recipients of their financial reports. The results are presented in Table 5.1. A degree of agreement amongst the respondents was in evidence. As can be seen from Table 5.1, Finance Directors of both groups of companies have identified the audience to whom their financial reports are intended as being shareholders, creditors, employees, customers, government,and society at large.

TABLE 5.1

The Audience for Whom Financial Reports are Intended: Descriptive Analysis

The Recipients of Financial Reports	Companies Report VA(N=48)		Companies Do Not(N=31	
	No.	%	No.	%
SH.+CR.	2	4.2	10	32.4
SH.+CR.+E.	6	12.5	4	12.9
SH.+CR.+E.+C.	4	8.3	1	3.2
SH.+CR.+E.+G.	4	8.3	2	6.4
SH.+CR.+E.+C.+G.	7	14.6	3	9.7
SH.+CR.+SOC.	3	6.2	2	6.4
SH.+CR.+E.+SOC.	6	12.5	3	9.7
SH.+CR.+E.+C.+SOC,	7	14.6	2	6.4
SH.+CR.+E.+G.+SOC.	9	18.8	4	12.9

Notes: SH = Shareholders, CR = Creditors, E = Employees, C = Customers
G = Government, and SOC = Society at Large.

On the other hand, there was a marked difference between the number and percentage of companies in each group regarding each category of their financial reports recipients. For instance, shareholders and creditors were specified as being the intended recipient of financial reports by only 2 companies out of 48 that externally report value added (4.2%). By contrast, the same group of users, i.e. shareholders and creditors, was identified as being the intended recipient of financial reports by 10 companies out of 31 which do not externally report value added (32.4%). An examination of Table 5.1 also reveals that 7 companies (14.6%) that externally report value added indicated that shareholders, creditors, employees, customers, and society are the intended recipients of their financial reports, whilst only 2 companies (6.4%) agreed that these groups are the intended recipients of their financial reports.

For the purpose of the present study, however, these differences are perhaps of more concern, for they may well indicate a growing awareness by companies that externally report value added of social responsibilities, which has yet to be accepted by all public companies. This also implies that value added information is recognised to be an acceptable means of describing the firm's performance to the whole range of interested stakeholders.

Having said that, it would seem appropriate that we should further analyse these differences to see whether they are statistically significant.

The hypothesis to be considered is as follows:

H3.1: There is a significant difference between perceptions of managements of the two groups of companies (companies externally reporting value added and companies which do not) regarding the types of users of financial reports.

The findings on value added reporting and the intended recipients of financial reports are shown in Table 5.2. It can be seen that consistent with expectations, there is significant difference between the two groups of companies with respect to the users of financial reports. Two-tailed associated probabilities were 0.0082 (see Table 5.2). Since the 0.05 level of confidence has been accepted as the basis for accepting (or rejecting) the null hypotheses of this study, these findings confirm Hypothesis 3.1 at the 0.01 level. Hence, the hypothesis can be accepted.

Yet, the findings discussed above have a clear implication. That is, companies which do not externally report value added appear, on the whole, to accept the

TABLE 5.2

The Intended Recipients of Financial Reports:

Test of Hypothesis

Types of Users of Financial Reports	Observed U	Associated Level of Significance for a Two-Tailed Test
Shareholders, Creditors, Employees, Customers Government, and Society at large.	482.0	0.0082**

** Significant at $p<0.01$

Significance test is based on the Mann-Whitney U Test.

narrow, traditional view that financial reports should be intended mainly for the benefit of only shareholders and as a result are concentrating on profit as the major indocator of corporate performance. In contrast, the other group of companies, i.e. that externally report value added, seem to recognise the multiple obligations to all stakeholders including the general public and as a consequence their reports are intended for them all. Income reporting on a value added basis was, perhaps, considered to be an acceptable means of achieving such an objective.

Finally, for our analysis to be complete, one more related issue must be examined. That is, the relationship between value added reporting and the objectives of financial reports, for specification of users is critical in determining the objectives. Whether the findings on both issues, i.e. users and objectives, are consistent remains to be seen.

5.2.5.2 Relationship between Value Added Reporting and Perceived Objectives of Financial Reports - Statistical Analysis

The analysis was made on the basis of whether companies externally report value added or not. Respondents (Finance Directors) were asked to apply relative importance ratings to each objective listed on the questionnaire. Their opinions were recorded on a five-point scale rangin from "Strongly Agree" to "Strongly Disagree". The interpretation of the findings is based on the arithmetic mean response and its standard deviation, and the mean was calculated in order to give a single figure which summarises the responses and allows comparison of the degrees of importance attached to each statement (objective) by the various respondents. The coefficient of variation was also calculated in order to reflect the differences of opinion, with larger coefficients reflecting greater differences among both categories of respondents. Finally, the Maun-Whitney U Test has been carried out to test whether the two groups of companies have been drawn from the same population.

First, let us review the descriptive results summarised in Table 5.3. As can be seen, the most interesting thing to note is perhaps, for companies that do

TABLE 5.3

Objectives of Financial Reporting: Descriptive Results

Statement	Firms Report VA (N = 48)									Firms Do Not (N = 31)								
	% on a five-point scale					Statistics			Rank	% on a five-point scale					Statistics			Rank
	SA	A	UN	DA	SDA	$\bar{X}$	SD	CV		SA	A	UN	DA	SDA	$\bar{X}$	SD	CV	
1. The basic objective of financial reports is to provide information useful for making economic decisions.	52.2	34.8	6.5	4.3	2.2	4.3	0.94	0.22	1	45.2	45.2	3.2	6.5	-	4.2	0.82	0.19	4
2. An Objective of financial reports is to provide information to shareholders to guide their investment decisions.	38.3	51.1	6.4	4.3	-	4.2	0.76	0.18	2	45.2	48.4	3.2	3.2	-	4.3	0.70	0.16	3
3. An objective of financial statements is to supply information useful in measuring management's ability to utilise enterprise resources effectively in achieving the primary enterprise goal.	41.7	50.0	6.3	2.1	-	4.3	0.67	0.15	1	48.4	51.6	-	-	-	4.4	0.50	0.11	2

Continued.....

TABLE 5.3 (Continued)

	Firms Report VA (N = 48)									Firms Do Not (N = 31)								
	% on a five-point scale					Statistics			Rank	% on a five-point scale					Statistics			Rank
	SA	A	UN	DA	SDA	$\bar{X}$	SD	CV		SA	A	UN	DA	SDA	$\bar{X}$	SD	CV	
4. An objective of financial statements is to provide information to employees to guide their decisions on future relationships with the undertaking.	16.7	54.2	14.6	14.6	-	3.7	0.92	0.25	3	12.1	45.2	22.6	20.1	-	3.1	0.95	0.31	5
5. An objective of financial statements is to provide information to the representative of society to enable them to assess whether the activities of the firm are consistent with the national objectives.	4.3	28.5	20.4	29.8	17.0	2.8	1.16	0.41	5	-	19.4	38.7	29.0	12.9	2.6	0.95	0.36	6
6.An objective of financial statements is to provide government officials with information to guide their decisions.	4.2	30.1	13.7	35.4	16.7	2.7	1.17	0.43	6	-	22.6	29.0	35.5	12.9	2.5	0.99	0.39	7
7.The primary purpose of the annual accounts of a business is to present information to the proprietors, showing how their funds have been utilised and the profit derived from such use .	24.0	30.4	21.3	24.3	-	3.4	1.20	0.35	4	51.6	38.7	3.2	6.5	-	4.5	0.84	0.18	1

Note: SA = Strongly Agree, A = Agree, UN = Undecided, DA = Disagree, SDA = Strongly Disagree, and CV = Coefficient of

not report value added, the conventional objective of financial reports as expressed in Recommendation N15 issued by the ICAEW in 1952 (withdrawn in 1974), i.e. the primary purpose of the annual accounts of a business is to present information to the proprietors showing how their funds have been utilised and the profits derived from such use, received the highest ranking ($\bar{X}$=4.5 out of 5). 51.6 per cent of respondents ranked it at point 5, i.e. "Strongly Agree", and a further 38.7% at point 4. In contrast, the same objective, which we may call the "stewardship" objective, was ranked by the other group of companies, i.e. that externally report value added in the fourth place with the mean score of 3.4. Twenty-four per cent of respondents ranked it at point 5, and a further 30.4% at point 4. An examination of Table 5.3 also reveals that both objectives 1 and 3, i.e. to provide information useful for making economic decisions and to supply information useful in measuring management's ability to utilise enterprise resources effectively in achieving the primary enterprise goal respectively, were ranked in the first place by companies that externally report value added with a mean score of 4.3 for both objectives. 52.2% of respondents ranked the first objective at point 5 and a further 34.8 at point 4. For objective 3, however, 41.7% of respondents within the same group ranked it at point 5 and a further 50.0% at point 4. Both objectives 1 and 3 were

ranked by the other group of companies, i.e. that do not report value added, in the fourth and the second places respectively.

In summary, the evidence presented in Table 5.3 shows a marked lack of agreement between both groups of companies about the objectives of financial reports. The general trend is that, while companies which do not externally report value added favour the traditional view of the aim of financial reports which is unsympathetic to modern needs, the other group that reports value added is more in favour of the modern view of financial reporting objectives that attaches considerable importance to the supply of useful information for making rational economic decision thus assisting in a more efficient allocation of scarce resources rather than the "stewardship" objective.

However, to decide whther the differences of opinion between managements of both groups of companies about the importance of objectives of financial reports are statistically significant or not, the following general hypothesis is tested:

H3.2: There is a significant difference between perceptions of managements of the two groups of companies with respect to objectives of financial reporting.

In order to test the hypothesis, the non-parametric Mann-Whitney U Test was considered to be appropriate.[1] Table 5.4 shows the observed U and the associated level of significance for a 2-tailed test for each objective. As can be seen, two-tailed probabilities for objective 7 were 0.045. For each of all remaining objectives, two-tailed probabilities were > 0.05. Since the 0.05 level of confidence has been accepted as the criterion for accepting (or rejecting) the null hypotheses of the present study, the findings presented in Table 5.4 indicate that the differences between perceptions of Finance Directors of both groups of companies which were the subject of our empirical investigation, are significant only with regard to objective 7. This objective is, perhaps of particular importance, for it represents the conventional view of the objectives of financial reports - that is the "stewardship" objective. These findings are completely consistent with the findings of the previous section, where users of financial reports were specified by companies that do not report value added as neing mainly shareholders and creditors.

Yet, the findings of this section and the preceding one have a clear implication. That is, companies which externally report value added recognise the need to fulfil the information requirements of a wider group of financial reports users including the general public rather than shareholders alone. This, in turn, may

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1 A description of the test is presented in S.Siegel, op. cit., pp.116-127

TABLE 5.4

Objectives of Financial Reporting:

Mann-Whitney U Test

OBJECTIVE	Observed U	Associated 2-Tailed P.
1. To provide information useful for making economic decisions.	680.0	$0.704^{N.S}$
2. To provide information to shareholders to guide their investment decisions.	665.5	$0.474^{N.S}$
3. To supply information useful in measuring management's ability to utilise enterprise resources effectively in achieving the primary enterprise goal.	662.0	$0.352^{N.S}$
4. To provide information to employees to guide their decisions on future relationships with the undertaking.	689.0	$0.551^{N.S}$
5. To provide information to the representatives of society to enable them to assess whether the activities of the firm are consistent with the national objectives.	715.0	$0.887^{N.S}$
6. To provide government officials with information to guide their decisions.	735.0	$0.925^{N.S}$
7. To present information to the proprietors, showing how their funds have been utilised and the profit derived from such use.	5.55	0.045*

* Significant at $p<0.05$

N. S.denotes not statistically significant.

well indicate that value added information is seen by managements of such companies to be directly relevant to all parties with an interest in the company.

In the following section we shall examine the relevance of value added reports and then proceed later in the chapter to empirically investigate motives behind external reporting of value added.

5.3 The Relevance of Value Added Information

As pointed out in the preceding section, a piece of accounting information is useful if it can be shown to be relevant and objective. Thus, relevance and objectivity appear to be prime determinants of usefulness. Objectivity in the sense that the information reported should meet all users needs as far as possible and should not be biased towards the interest of any one user group. This implies that accounting information should be relevant to as many user groups as possible.

Unfortunately, some deifinitions of the relevance concept seem vague and difficult to operationalise whereas others tend to make it synonymous with usefulness itself.[1] However, to help to overcome these problems, a recent committee of the American Accounting Association described relevance in the following terms:

> "Information about an attribute of an object or event is relevant to a decision if knowledge of that attribute can help the decision maker determine alternative courses of action or to evaluate the outcome of an alternative course of action."[2]

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1 American Accounting Association, Committee on Concepts and Standards for External Financial Reports, Statement on Accounting Theory and THeory Acceptance (AAA, 1977), p.16

2 Ibid, p.13

For instance, it is commonly agreed that the current value of plant assets is a relevant piece of information to shareholders whereas the serial numbers associated with these plant assets is not.

It should be noted that, based on a priori analysis, many accountants have reasoned that relevance and objectivity may involve conflicts and trade offs.[1] That is, increases in the relevance of accounting information might possibly be attained at the cost of decreases in objectivity. Similarly, increases in objectivity may be associated with decreases in relevance. For example, depreciation expense based on the current replacement cost of plant and equipment, may be a highly relevant but relatively not objective figure to users of financial reports. In contrast, depreciation expense based on the historical cost of plant and equipment may not be relevant but may be highly objective. However, both relevance and objectivity are so fundamental that at least a minimal level of each is essential if information is to be useful. Thus, both concepts are of a complementary nature. In other words, usefulness of accounting information (U) is not possible unless both relevance (r) and objectivity (j) are accomplished simultaneously. Or

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1 See, for example, Financial Accounting Standards Board, Conceptual Framework for Financial Accounting and Reporting; Elements of Financial Statements and Their Measurement (FASB, 1976), pp.163-166

U = (r|j), though it is possible to achieve accounting relevance by itself and/or objectivity by itself.

To return to the central focus of this section, namely, the relevance of value added information. At the outset, it has to be noted that value added as defined in the present study is only our main concern.[1] Because relevance must be examined in relation to a well-specified piece of information, the relevance of gross value added (that is, before charging depreciation) on sales rather than on production with R & D expenditures treated as an allocation of value added rather than as an external cost is the subject of our inquiry in the present section. This distinction is necessary, for the relevance of gross value added might possibly be different from the relevance of net value added. Similarly, value added on sales may be relevant to some user group(s) whereas irrelevant to other.

Granting this orientation, an examination of the available literature on the relevance concept reveals that relevance is defined in terms of three main approaches to the identification of desirable financial reporting practices. These are:

(i) "Semantic relevance" approach

(ii) "Decision Relevance" approach

(iii) "Result relevance" approach

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1 For this study's definition of value added, see Chapter II, Section 2.3

Semantic relevance approach suggests that accounting information can only be relevant if its meaning is understood by the user, thereby allowing it to influence his decisions, and, therefore, to affect his goals.[1] Both decision and result relevance approaches concentrate on user groups of financial reports, their decisions, their goals and their information needs.[2] Yet, there is no conflict between the three approaches. Rather they form a hierarchy: information cannot affect decisions unless it is understood by the user and information cannot affect goal fulfillment without changing the user's decision.[3] This implies that if our analysis of the relevance of value added information is to be complete, the three approaches must be employed simultaneously.

To this end, we shall examine in turn not only the understandability of value added information, but also some other major characteristics essential to its relevance, i.e. comparability and timeliness (the semantic relavance approach). Then, we shall proceed to find out how far the value added information is likely to satisfy the decision needs of each of the major user groups of financial reports (the decision relevance

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1 Keith Shwayder, "Relevance", Journal of Accounting Research (Spring 1968), pp.86-97.
2 A Statement of Basic Accounting Theory, op.cit., p.9.
3 For a fuller discussion of this point, see Keith Shwayder, op.cit., p. 9.

approach). Both semantic and decision relevance approaches are to be adopted, bearing in mind that our main objective is to improve the economic performance of British industry (the result relevance approach).

5.3.1 The Major Qualitative Characteristics of Value Added Information Essential to Its Relevance

Several attempts have been made in both the United States and the United Kingdom to setablish desirable qualitative characteristics financial information must possess if it is to be relevant.[1] In general, these studies have resulted in similar listing of desirable criteria, namely, understandability, comparability and timliness. For our analysis to be more meaningful, however, those characteristics must be examined in relation to value added information compared with some other measures such as profit, and sales, when relevant.

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1 See, for example, The Corporate Report, op.cit.;The American Accounting Association, Statement on Accounting Theory and Theory Acceptance, op.cit.; and AICPA, Objectives of Financial Statements,op.cit.

5.3.1.1 Understandability

In information and communication theory, information is irrelevant unless it is understood by the user (i.e. it is correctly deciphered by the user).[1] Accounting information is no exception, for accounting systems are primarily communication systems. In accounting context, understandability requires that information be expressed as simply as permitted by the nature and circumstances of what is being communicated so that the reasonably well-informed, as well as sophisticated reader can make use of it. Accounting information should not be limited only to the interests of the average investor. Such Information would be biased. Instead, it should be presented to serve a broad range of users.

Traditionally, most companies' financial information has been presented in the form of profit and loss accounts. Recently, a number of surveys have demonstrated that major user groups of accounting information have a poor grasp of its meaning of profit, its calculation and significance. This problem is highlighted in a recent survey commissioned by the CBI.[2] A section of the report examines what informants understood by the term "profit"

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1 See, for example, David H. Li,"The Semantic Aspect of Communication Theory", Journal of Accounting Research (Spring 1963), pp. 102-107.

2 M. Brandon and M. Arnott, Priorities for In-Company Communications (CBI, London 1976).

and what factors were included in the cost side of profit. Responses (1038 manual workers and 231 managers) are summarised in Tables 5.5 and 5.6. Contrary to expectations, as can be seen from both Table 5.5 and Table 5.6, not only employees but also managers experience difficulties in understanding profit, though both tables indicate a higher level of understanding by managers than manual workers of profit and its calculation. While 53% of manual workers did not offer a viable definition of profit, only 39% of managers failed to do the same.[1]

Furthermore, managerial misunderstandings occur in the cost icnlusions, with 29% not including interest on bank loans and 36% including shareholders' dividends. As the report states:

> "If it is accepted that managers are a vital link in the employee communications chain.... the 39% of managers who did not give a valid answer would seem to be ill-equipped to form a link in this chain."[2]

This would tend to indicate considerable difficulties in the understanding as well as the possibility of misinterpretation of the term "profit" by both employees and

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1 viable was defined by the authors as being the "residual" concept and the "cash flow" concept.
2 M. Brandon and M. Arnott, op.cit., p. 43

TABLE 5.5

DEFINITION OF PROFIT

Definition	Manual Workers (%)	Managers (%)
Turnover concept	27	16
Residual concept	26	29
"Cash Flow" concept	21	32
General (favourable)	9	5
General (unfavourable)	4	1
Investment	8	17
Shareholders	3	8
Workers	4	3
Other	4	4
Don't Know	3	1

Source: M. Brandon and M. Arnott, Priorities for In-Company Communications (CBI, London, 1976), p. 43.

TABLE 5.6

ITEMS INCLUDED IN THE COST SIDE OF PROFIT

ITEM	Manual Workers (%)	Managers (%)
Material	80	97
Wages	72	97
Costs of buying machinery	71	83
Advertising	58	73
Administrative costs	54	88
Rent/rates	53	87
Directors' pay	42	70
Interests on bank loans	36	71
Fringe benefits	22	45
VAT	38	40
Shareholders' dividends	31	36
Corporation tax	27	40
Contributions to charity	10.	28
None of these	-	-
Don't know	3	-

Source: Ibid., pp. 24 and 43.

managers. It may be surmised that the same is likely to be true of other user groups including many individual shareholders.[1]

These difficulties of understanding the profit concept have contributed to the search for a relatively more understable concept for financial reporting purposes. Many authorities have come to regard the concept of value added as the most suitbale means for such purposes. For example, the authors of The Corporate Report have observed that:

> "The simplest and most Immediate way of putting profit into proper perspective ....is by presentation of a statement of value added .... . It usefully elaborates on the profit and loss account .... profit is a part only of value added. From value added must come wages, dividends and interest, taxes and funds for new investment. The independence of each is made more apparent by a statement of value added."[2]

The steady growing use of value added as a means of financial reporting, and favourable reports of its reception, tend to confirm the impression that value added is more readily grasped than the complexities of

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1 See, for example, T.A.Lee and D.P. Tweedie, "Accounting Information: An Investigation of Private Shareholder Understanding", Accounting and Business Research (Winter 1975), pp.3-17.

2 ASC, The Corporate Report, Op.cit., p.49 (emphasis added).

profit. As one industrialist has reported "we are finding that the common language of value added, once properly introduced, is readily accepted at shop floor, at supervisory and management level."[1] For reporting to employees in particular, it is more significant, perhaps, that a joint management-employee committee (including shop stewards and other worker repersentatives) established by ICI to review its value added productivity bonus scheme, has commented:

> "Both profit and profitability can be affected significantly by financial or accounting judgements as to what should be allowed for depreciation, stock value adjustments, tax provisions, and furthermore they can be stated at different levels - before or after tax, before special factor or after, and so on. As a result, employees may find profit and profitability unclear and remote criteria ... We believe that a performance measure based on Value Added is likely to be more attractive to employees than the somewhat ambiguous profit concept ..... . It is strongly preferred in the interest of clarity and understanding."[2]

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1 J. Grange Moore, "Added Value as an Index of Industrial Effectiveness", Work Study and Management Services (January 1973), pp. 23-37

2 ICI Employees Profit Sharing Scheme, Report of the Joint Working Party (ICI, London, Dec., 1976) pp.3-4

Taken together, the clear indications are that value added is a concept more readily understandable to major user groups than profit. However, it should be stressed that this is a tentative conclusion. Conclusive evidence needs a major study to investigate statistically the question whether the concept of value added is indeed more readily understandable than that of profit. Such investigation is outside the scope of the present study.

5.3.1.2 Comparability

A second major qualitative characteristic of relevant accounting information is comparability. As noted earlier in the chapter (Section 5.2), the base objective of financial reports is to provide information useful for making economic decisions. Because the essence of economic decisions is choice among possible courses of action, financial information should be presented in such a way as to facilitate the comparisons needed to take such decisions. Comparisons of the entity's performance over time, as well as comparisons with other similar entities (in the same nation and in other industrial nations) would most likely result in more effective use of scarce economic resources.

Evidence presented in the preceding section suggests that value added is a relativelysimple concept which is quickly grasped and appreciated by major user groups of accounting information. Understandability is viewed as a necessary condition for comparability, for the more understandable the financial information is, the more likely it would be used as a basis for comparisons.

Comparisons, however, must be treated with caution. It is vital to compare like with like. Traditionally, two measures of firms' economic performance have been

used as a basis for comparisons, namely, sales and profit. Because both measures have some serious defects, as discussed below, value added, particularly gross value added (that is, before charging depreciation) has been recently recommended as a preferable measure of business performance for purposes of comparison.

One of the major problems with prifit is the difficulty of definition. For example, it is possible to measure a given firm's profit for a certain period - as Chambers put it [1] - as any of 30 million figures all determined according to the "generally accepted accounting principles". Because profit is a residual item, calculated after deduction of all relevant outlays and events, two companies identical in terms of sales revenue, cost of materials used wages levels, capital employed, etc., could have different profit figures depending on accounting policies adopted.

For instance, the treatment of depreciation, R & D expenditures, government grants may vary from company to company. As a result, profit figures would vary and can be very misleading for comparison purposes. Simil-

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1 R.J. Chambers, "A metter of Principle", The Accounting Review (July 1966), pp. 443-57

arly, the levels of wages and sources of finance can greatly affect the profit figure. If, for example, one of two otherwise identical companies pays lower wages than the other it will show higher profits and might be, therefore, viewed as more efficient in the use of scarce resources. In fact, the two companies are equally efficient in the use of scarce resources, as the wealth they generate is identical. They differ only in the way that the wealth created is distributed among workers and providers of capital.

To illustrate, Figure 5.1 shows performance of five companies in a certain period. As can be seen, the five companies are identical in terms of sales, bought-in materials and services, value added, and capital employed. Company A has a policy of lower depreciation than Company B and thus it shows a higher return on capital. Company B is financed partly by loan at interest rate of 10 per cent. It therefore shows a higher return on equity capital than Company C. Company D adopts a practice of writing off the R & D in the current year so it shows a lower profit than Company C. Company E has a lower wage level than company D so it shows a higher profit.

This simple illustration could be extended to show the effect of many other factors on profit (e.g. income

FIGURE 5.1

Comparison of Five Companies' Performance

(Year to 31 Dec., 1980)

	Company (£000s)				
	A	B	C	D	E
Sales	5000	5000	5000	5000	5000
Bought-in materials and services	2000	2000	2000	2000	2000
Gross Value Added	3000	3000	3000	3000	3000
Wages, pensions, etc.,	2200	2200	2200	2200	2000
Depreciation	300	350	350	350	350
R & D expenditures	-	-	-	150	150
	100	100	-	-	-
Profit	400	350	450	300	500
Equity Capital	2000	2000	3000	3000	3000
Loans	1000	1000	-	-	-
Capital employed	3000	3000	3000	3000	3000
Return on equity capital	20.0%	17.5%	15.0%	10.0%	16.7%

from investment, government grant, etc.). All these factors make it difficult to compare one company with another in terms of profit. Even comparisons may be distorted by some of the factors outlined above.

Moreover, in consequence of being a residual figure, profit is more susceptible to fluctuation over the short term than value added. For example, in 1976 the ratio of profit to sales of a sample of over 500 British listed manufacturing companies was 9%.[1] The ratio of intermediate input costs to sales for manufacturing companies was over 60%.[2] A shift of 1% in the proportion of costs to turnover makes a significant impact on total profits of the sample - they will increase or decrease by 11%. In contrast, the same shift of 1% in the ratio of input costs to sales affects value added by 1.7%.

When it comes to using sales as a basis for comparisons, whether between companies or within one company, the deffects are even more apparent. First, sales include the cost of all the materials, bought-in parts, fuel, transport and other services purchased by the enterprise. They include the wealth created by other enterprises. It

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1 Department of Industry, Business Statistics Office, Company Finance: Business Monitor M5 (London:HMSO, 1978) Table 2.

2 Department of Industry, Business Statistics Office, Census of Production 1976 Provisional Results: Business Monitor PA100 (London:HMSO,1970), Table 1.

would be very misleading to compare two companies with different cost structure on sales basis. For example, one company may be vertically integrated, manufacturing everything it produces from beginning to end, while another in the same industry may hardly engage in the manufacturing process at all, but simply assemble parts purchased from other manufacturers. Neither sales nor profits will provide a true basis of comparison of the performance of the two companies but value added offers a reliable means of comparing the performance and production characteristics of the two companies. The contrast is illustrated in Figure 5.2. As can be seen, bothe companies have the same turnover and the same operating profit. But company A depends more on outside suppliers while company B adds much more value and is more labour intensive than company A. It is only value added that highlights these differences while both profit and sales fail to do so.

Secondly, value added tends to be less affected than sales figures by changing price levels. This is because the measurement of value added is dominated by material and labour costs which tend to respond most immediately and directly to price level changes. Figure 5.3 shows the effect of inflation on both sales and value added with data based on an actual company. The two columns compare two consecutive years. Sales rose by 15%. Judging the

FIGURE 5.2

Value Added, Profit, and Sales as a Basis for Comparisons between Two Companies with Different Cost Structure

	Company (£000s)	
	A	B
Sales	4000	4000
Bought-in materials and services	2400	1400
Gross Value Added	1600	2600
Labour cost of sales	1000	2000
Operating Profit	600	600

company's performance on the basis of this measure alone would indicate that the company was better off in 1979 than in 1978. Taken into consideration the value added figure, however, gives a different picture. The whole of the extra income was offset by higher costs of bought-in materials and services. Thus, the value added was unchanged and the company was no better off.

In sum, it can be said that value added offers special advantages when used for comparison purposes. It is, generally, a more stable indicator of companies' performance, less affected by accounting policies and changing price levels, highlights more clearly the differences in cost structure of companies than both profit and sales. Most of all, value added is the only way of expressing the importance of business operations' contribution to the economy. By using it as a basis for comparison, internal and external, more effective use of scarce economic resources could be achieved. It is not without significance, therefore, that The Department of Industry issues Business Monitors annually, based on the Census of Production, which provide for each sector by standard industrial classification (S.I.C.) information about value added per employee together with the annual capital expenditure. The monitors are a very useful guide to trends and efficiency across competitor companies that could be used for inter-firm compatison purposes in value added terms.

FIGURE 5.3

The Effect of Price Level Changes on Both Sales and Value Added

	1978 (£000s)	1979 (£000s)
Sales	6000	6900
Bought-in materials and services	3800	4700
Gross Value Added	2200	2200

5.3.1.3 Timeliness

A third main qualitative characteristic essential to the relevance of accounting information is timeliness. Unless the value added information, or indeed any other information, is timely, it would be irrelevant, for the value of information to users decays as it becomes out of date. This suggests that the date of information's disclosure should be reasonably soon after the end of the period to which it relates so that it offers meaningful up-to-date new information about the economic entity. It would seem appropriate to ask whether the additional computational procedures required by value added reporting would delay the distribution of financial reports enough to make them out-dated at the time of receipt. Two available studies, based on a priori analysis, indicate that for British companies no noticeable delay should be caused by the inclusion of value added statement in the annual report.[1] This is because the extra work and costs involved are expected to be negligible, since almost all the information required for the preparation of such statement should be readyily available at the companies' disposal. In the U.K., for inctance, current disclosure requirements cover U.K. wage costs, and,

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1 Michael F. Morley, "The Value Added Statement in Britain", op.cit., p. 625 and, The Value Added Statement: A review of its use in corporate reports, op. cit., p. 33.

therefore, the extra information needed is only:

(i) wage costs of employees outside the United Kingdom, and

(ii) costs associated with payroll, such as the employer's social security payments, pension costs and any other fringe benefits for both U.K. and overseas employees.

In practice, however, things are different. Empirical evidence provided by the present study does not significantly support what ought to be in theory. Finance Directors of companies that don't externally report value added - subject of this study - were asked to rate (on a five-point scale) reasons for not reporting value added.[1] There was a marked lack of agreement as whether reporting value added would involve extra work, costs and delay. Responses were as follows: 53.6% undecided, and the remaining were almost equally divided between agree and disagree.

Nevertheless, it is noteworthy to mention that extra work, costs and delay was seen (in terms of rank order based on the mean scale position) as being the least important reason for not reporting value added compared with some other reasons such as fears of confusion with earnings statements and damaging the company's competitiveness.[2]

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1 For full list of reasons, see Appendix A, Section 6.3
2 This issue will be discussed more fully in Chapter VI.

On balance, the concept of value added would seem to be more understandable than that of profit. It has some advantages over both profit and sales for purposes of comparison. Because the extra work and costs required for the preparation of value added information are expected to be negligible, no noticeable delay should be experienced in reporting such information. The implication of the above discussion is that value added information responds well to the "semantic relevance" tests. In the following section, we shall examine the relevance of value added information in terms of the "decisions relevance" approach.

5.3.2 The Decision Relevance of Value Added

The decision relevance approach to the identification of desirable accounting information for financial reporting is based mainly on users of financial reports and their information needs. At its most fundamental, the problem is how best to provide information to satisfy the needs of as many users as possible. Ideally, users information needs should be determined by empirical investigation, i.e. by asking users what information they require. However, there are serious theoretical and practical obstacles that make the implementation of such an empirical investigation far from easy.[1] Thus we are compelled to derive these needs normatively, i.e. by deducing them from normative decision theories. This requires, in principle, a series of steps including (1) identification of the group of users to whom the accounting report is directed, and (2) specification of user decision models and through them an identification of relevant information.[2]

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1 See, for example, John Arnold and Anthony Hope, "Reporting Business Performance", Accounting and Business Research (Spring 1975), pp. 96-105, and Lawrence Revsine, Replacement Cost Accounting, op.cit., pp. 28-30.

2 For a fuller list of the necessary theoretical steps, see Bryan Carsberg, John Arnold and Anthony Hope, "Predictive Value: A Criterion for Choice of Accounting Method", in W.T. Baxter and Sydney Davidson (eds.), Studies in Accounting , 3rd ed. (London, ICAEW, 1977), pp. 403-422.

Our normative analysis of the relevance of value added information would focus on the decision needs of each of the major user groups empirically specified in the present study, i.e. shareholders, employees, government and society at large.[1] Empirical findings of related studies would also be provided.

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1 Supra, pp. 270-73 . See also Sppendix A, Section 4.

5.3.2.1 Shareholders

It is generally agreed that shareholders are not interested in historical accounting data per se. No rational investor[1] would purchase shares in a company because of the firm's past economic performance. Rather it is the prospect for future performance that induces investment. Historical accounting data can be relevant to the external user if and only if they have some value in predicting future events.

The accounting literature is filled with statements which recognise that investors' information needs are oriented toward the future. For instance, the Committee to prepare a statement of Basic Accounting Theory de-

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1 We use the terms "shareholder" and "investor" interchangeably to mean "long-term" equity investor. The reason for that is best explained by quoting an American Accounting Association Committee Report: "..... short-term investors are generally more interested in changes in security prices than in cash distributions by the firm; and short-term fluctuations in security prices are frequently more closely related to external factors in the economy than to expectations regarding the individual firm. This condition makes accounting data of less assistance to short-term investors than to those interested in taking a long-term position in corporate securities."
See 1966-68 Committee on External Reporting, " An Evaluation of External Reporting Practices", Committee Reports, Supplement to Vol. 44, The Accounting Review (1969), p. 80.

clared:

> "Almost all external users of financial information reported by a profit-oriented firm are involved in efforts to predict the earnings of the firm for some future period. Such predictions are most crucial in the case of present and prospective equity investors and their representatives - considered by many to be the most important of the user group."[1]

Yet, the question to face now is this: what in particular about the future is of such interest to investors? To answer this question, we must first make some assumption about investors' objectives. The assumption usually made in modern financial theory is that an investor attenpts to maximise his utility - i.e. to maximise the present satisfaction he enjoys from the prospect of the future receipts from his whole portfolio of investments.[2] Having made this assumption, the information needs of equity investors will vary depending on whether or not the market in which their investments are

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1 Committee to Prepare a Statement of Basic Accounting Theory, A Statement of Basic Accounting Theory (Evanston, Ill.: American Accounting Association,1966),p.23

2 For an explanation of the portfolio theory see, for example, W.F. Sharpe, "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk", The Journal of Finance (September 1964), pp. 425-442; and M.C. Jensen, "The Foun-ations and Current State of Capital Market Theory," in M.C. Jensen (ed.) Studies in the Theory of Capital Markets (Praeger, 1972).

traded is "efficient".[1] There is already evidence that the London Stock Exchange may be efficient, at least in a "semi-strong" sense.[2] If capital markets are efficient, the return expected from any one investment in a particular period will depend on the return available on a riskless security, the co-variance of the expected return of the investment with that of an efficient market portfolio, the expected return on the market portfolio and the variance of the expected return on the market portfolio.[3] Applied to a particular investment, the model can be expressed symbolically in the following fashion:

$$E(R_{xt}) = R_{r,t} + \left(\frac{Cov(R_{x,t}, R_{m,t})}{Var(R_{m,t})}\right) X (E(R_{m,t}) - R_{r,t}) \quad \ldots(1)$$

where: $E(R_{x,t})$ is the expected return from investment X during period t.

$R_{r,t}$ is the return available on a riskless security during period t.

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1 A market is defined as efficient if:(i) the prices of securities traded in that market act as though they fully reflect all available information and (ii) the prices react instantaneously, or nearly so, in an unbiased fashion to new information. For a more detailed discussion of this point see, for example, E.F. Fama, "Efficient Capital Markets:A Review of Theory and Empirical Work", Journal of Finance (May, 1970), pp.383-414.

2 Semi-strong efficiency means that the current prices of securities on the stock exchange reflect all public information about companies, including the contents of corporate reports, immediately it is published. See A. Henry, B.Albrecht and P. Richards, "The UK Stockmarket and the Efficient Market Model", The Investment Analyst (September 1977), pp. 5-24.

3 W.F. Sharpe, op.cit.

$E(R_{m,t})$ is the expected return on a market portfolio m during period t.

$Cov(R_{x,t}, R_{m,t})$ is the covariance of returns on security x with returns on the market portfolio m during period t.

$Var(R_{m,t})$ is the variance of returns on the market portfolio m during period t.

Now the expected return on security x, over the period from time t to time t+1, is defined as

$$E(R_{x,t+1}) = \frac{V_{t+1} + D_{t+1} - V_t}{V_t} \quad \ldots (2)$$

where V_t is the expected market value at time t and D_t is the expected dividend at time t.

Rearrangement of expression (2) gives:

$$V_t = \frac{V_{t+1} + D_{t+1}}{1 + E(R_{x,t+1})} \quad \ldots (3)$$

Portfolio theory may now allow us to describe the sort of information that an investor is interested in. He is primarily interested in (1) estimating the future cash flows from his investment (primarily the dividends to be paid to him) and (2) estimates of its relative risk, i.e. of the covariance of those cash flows with the cash flows expected from a market portfolio of investments.[1] The shareholder may use these estimates, together with estimates of other market statistics (e.g. the return on

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1 See W.F. Sharpe, op.cit.

a riskless security) to calculate the minimum return he requires each year from the investment under consideration. The information will assist him in deciding whether his current portfolio is efficient, whether it is optimal with respect to his attitudes to risk, and whether it is likely to provide a satisfactory pattern of consumption over time.

Thus, to be relevant for the information needs of the portfolio model, accounting measurements ought to facilitate estimates of such flows and their associated risk. These constitute the criteria by which the relevance of value added information to equity investors is to be judged. Obviously, there are many factors that collectively determine a company's ability to pay dividends. such factors include, inter alia, company's earnings and management's dividend policy.[1] However, company's earnings are generally considered as the single most important long-run component of dividends flows. Therefore, although it may not be possible to predict future dividend flows directly, it does seem theoretically possible to use financial data to predict such flows.

The above discussion implies that if we can demonstrate that value added can be useful in estimating company earnings, we may deduce that it will also probably

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1 See, for example, 1966-1968 Committee on External Reporting, op.cit., pp.83-88.

be useful in estimating dividend flows and hence the (rate of) returns on the share concerned.[1] An extensive accounting literature already exists on the prediction of corporate earnings as a basis for estimating future dividend flows.[2] An examination of such literature reveals, however, that past profits are not a satisfactory base for future prediction as they vary quite erratically from year to year. Indeed, as a reviewer has observed:

> ".. earnings prediction is not a simple task; the findings concerning the random behaviour of most earnings series cast serious doubts on the usefulness of simple extrapolation models based on past earnings (profits). Improved earnings prediction can be probably achieved by the use of more involved models incorporating both accounting and non-accounting data, and reflecting the firm's specific characteristics as well as industry and economy-wide expected events."[3]

Therefore one could argue, on a priori basis, that value added information might be part of a useful package of predictive indicators od a company's future earnings and its external reporting would lead to better predic-

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1 See Sidney Gray and Keith Maunders, Value Added Reporting: Uses and Measurement, op.cit. , p.6.
2 See, for example, G. Foster, Financial Statement Analysis (Prentice-Hall: Englewood Cliffs, 1978).
3 See B.Lev, Financial Statement Analysis: A New Approach (Prentice-Hall: Englewood Cliffs, 1974), Chapter 12.

tions of those earnings (and through them the securities return) than if it were not externally reported. Two major reasons are behind such expectations: first, because of the long-term stability claimed for value added, as noted earlier in Section 5.3.1.2, value added is more predictable than any other measure of companies performance. Good predictions of value added should lead to better predictions of a company's profits as past ratios of profits to value added are expected to be useful in this regard. Furthermore, value added information will help the investor to find out whether the level and trend of profits have a genuine economic basis or they merely depend on the skilful manipulation of reported accounting results. Secondly, there may be expectations that value added reporting would influence collective bargaining behaviour (as shown in the following section) and hence the company's future labour costs. Given this assumption, we can deduce that value added is potentially useful to investors for forcasting a company's profits and the vulnerability of such profits to changing wage costs.

It is worth mentioning, however, that empirical tests strongly support our hypothesis regarding the decision relevance of value added information to investors.

Firth,[1] for example, in an empirical study, has asked 120 financial analysts working for stock-brokers and investment institutions in the U.K. to evaluate the importance of some individual items in corporate annual reports using a five-pint-scale. High score was recorded for value added information, i.e. 4.04 out of 5 where the score of 5 meant the item was very important, and the score of 4 meant the item was important.

Another interesting study on the quality of disclosure and the value of the firm has been carried out by Dhaliwal et al.[2] They have suggested that increased disclsoure would reduce analyst and investor uncertainty about the disclosing firm and, consequently, may produce higher stock prices and a lower cost of equity capital. This was confirmed by their empirical findings. Hence one could deduce that value added disclosure may lead to the same results, i.e. higher stock prices and lower cost of equity capital.

Finally, if we accept the notion of value added as a measure of companies social performance, two more studies provide relevant empirical evidence related to this issue.

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1 Michael Firth,"A Study of the Census of the Perceived Importance of Disclosure of the Individual Items in Corporate Annual Reports", The International Journal of Accounting (Fall 1978), pp. 57-70.

2 See Dan S. Dhaliwal, Barry H. Spicer and Don Vickrey, "The Quality of Disclosure and the Cost of Capital", Journal of Business Finance & Accounting 6,2 (1979), pp. 245-264.

Anderson and Frankle; and Vance[1] have compared the returns to portfolios composed of securities of socially disclosing firms to the returns to portfolios of equivalent risk composed of securities of non-disclosing firms. Their empirical findings indicate that social disclosure has information content and that the market values this disclosure positively. Nevertheless, the present researcher believes that the impact of value added disclosure on the value of the firm requires a separate study on its own and could be an interesting topic for further research in this area.

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1 See John C. Anderson and Alan W. Frankle, "Voluntary Social Reporting: An Iso-Beta Portfolio Analysis", The Accounting Review (July, 1980), pp. 467-479; and Stanley C. Vance, "Are Socially Responsible Corporations Good Investment Risks", Management Review (August 1975), pp. 18-24.

5.3.2.2 Employees

There is a growing recognition that employees have the right to information about their company. These rights, however, arise from the public accountability of entities rather than from legal enforceable powers. It is not surprising therefore to find companies providing employees with written information about the company. In fact, many companies in the U.K. currently report to their employees in one way or another. A recent survey of the Financial Times 30 Index, for example, found that 27 of the 30 companies prepared "Employee Reports", one company provided group financial affairs in its divisional newspapers and one of the remaining two companies was currently considering the matter.[1] Also, empirical evidence provided by the present study confirms such findings. 84.8% of our correspondents have admitted that employees are intended recipients of their financial reports.

Therefore it is no longer a question of whether companies should report to employees or not. Rather, it is how they could provide the relevant and useful information to them. Adopting the same type of normative decision analysis, referred to earlier in the chapter, we must first consider the decisions that employees (and their

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1 G. Holmes, "How UK companies report", Accountancy (November, 1977).

representatives) should make in order to satisfy their objectives. But what are the objectives of employees and their representatives that they strive to satisfy? Like shareholders, employees and their representatives are expected - at least in theory - to behave in such a manner as to maximise their utility. Utilities, in turn, are determined by expected returns from employment and the risk attached to these.[1,2] We must emphasise at this point, however, that these objectives cannot be pursued independently of other groups with an interest in the company such as investors, customers and society at large. Employees and their representatives should not pursue policies that might alienate investors or customers or any other group associated with an organisation, otherwise the organisation will cease to exist.[3]

Having made these assumptions about employees' objectives, employees and prospective employees need to make decisions continuously about their future relationship

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1 See S. Gray and K. Maunders, Value Added Reporting: Uses and Measurement, op.cit., pp. 8-15.

2 For the purpose of the present study, we assume that there is congruence between the objectives of employees and their representatives and hence the latter are likely to act in the interests of the former. In practice, however, many union officials may be concerned with their own interest such as maintaining and enhancing their careers within the labour movement.

3 See D.Cooper and S. Essex, "Accounting Information and Employee Decision Making", Accounting, Organisation and Society (Vol. 2,No.3,1977), pp. 201-217.

with the company in order to fulfil their objectives. That is, they should decide whether to take up, or remain in, its employ, and also how much, as well as what kind of work effort to input in exchange for returns from employment. Co-determination of the structure of the effort-return relationship, through individual or collective bargaining, is another decision situation which periodically confronts the employee.[1] It must be noted, however, that returns for employees do not necessarily mean returns only in monetary terms, as economic rewards as well as job security and job satisfaction[2] all represent important elements of employee utility. This happens because employees, unlike shareholders, have little opportunity to diversify the risks associated with their relationship with a company. Accordingly, many of them may spend their working life with one company and therefore they would normally be dependent entirely on that company's ability to survive, prosper and provide a framework in which they can satisfy their needs and aspirations.

Turning to the employees decision information needs, it is unfortunate that decision models specific to employees and their representatives do not seem to be well

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1 See S. Gray and Maunders, Value Added Reporting ..., op.cit., p. 8.

2 Job satisfaction may include satisfactory working conditions, relationships with peers and superiors as well as opportunities for achievement, recognition and self-fulfilment.

developed so that we may be able to normatively identify the type of Information inputs specified by the model(s), as we have already done in the shareholders' case in the preceding section. However, a survey of the literature of economics, accounting and industrial relations indicates, a priori, the items of information that are likely to be of importance to employees and their representatives.[1] Generally speaking, these items of information relate to two major areas - that is:

(i) the prediction of economic rewards from employment and the risk attached to these rewards (as reflected in stability of earnings and job security).

(ii) the prediction of non-pecuniary elements associated with job satisfaction (which may include, inter alia, conditions of work, worker participation and involvement, and recognition and self actualisation).[2]

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1 See, for example, B. Foley and K.Maunders, Accounting Information Disclosure and Collective Bargaining (London: Macmillan, 1977); D. Cooper, "Information for Trade Unions", in B.Carsberg and A.Hope (eds.), Current Issues in Accounting (Philip Allen, 1977); A.S.C. The Corporate Report, op.cit., A. Flanders,"Bargaining Theory: The Classical Model Reconsidered", in B.C.Roberts (ed.), Industrial Relations: Contemporary Issues (London: Macmillan, 1968); and A.M. Carter and R.F.Marshall, Labour Economics: Wages, Employment and Trade Unionism (Richard D. Irwin, Inc., 1967).

2 See, for example, Trade Union Congress, Trade Unionism: Evidence of the T.U.C. to the Royal Commission on Trade Unions and Employers' Associations (T.U.C., 1966), paragraphs 97-98.

For the first area, i.e. the economic rewards from employment, Gray and Maunders distinguish between two parts of these rewards:

> "(a) that part which is determined (directly or indirectly) by the outcome of negotiations between employees' representatives and management
>
> (b) that part which is determined by the employee's own work activities, partly in response to the benefit-cost set by negotiations."[1]

Having identified as far as possible the areas and the elements which the information needs of employees and their representative might be related to, it seems appropriate to consider briefly how value added information could match up to these needs. In particular, we shall be discussing the relevance of value added information to the determination of the following elements:

1. both parts of the economic rewards from employment, as indicated in (a) and (b) above
2. the risk attached to these rewards
3. the elements associated with job satisfaction.

It is generally agreed that company performance, usually referred to as ability to pay, is considered to

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1 S. Gray and K. Maunders, op.cit., p. 8.

be the most important factor in wage determination.[1,2] Zulauf, for example, found that the term "ability to pay" has been used in approximately 150 reported arbitration cases in the U.S.A. and to a lesser extent in cases appearing before the National Labour Relations Board, the Federal Courts, Railroad Emergency Board and Presidential Fact Finding Board.[3]

If we could discover that value added can be related to "ability to pay" we may deduce that it will also be relevant to the determination of economic rewards from employment. As noted earlier (in Chapter II), value added is the earnings of the entire company team and out of it come the rewards of all factors of production (including labour). This gross measure of company performance, therefore, indicates the amount available for all groups of "stakeholders" in the company. Such amount represents the cake that should be fairly distributed and hence it seems to be the most relevant figure for collective bargaining purposes, since the bargaining is

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1 See, for example, Omer Hassanein, "An Evaluation of Company Performance Criteria as an Indicator of Wage Rate Changes" unpublished Doctoral Dissertation, Indiana University, 1967, Chapter 1.

2 Of course, factors such as wage comparisons, cost of living, and economic environment have also some weights in wage determination.

3 D. Zulauf, "Accounting Analysis and the Ability to Pay Wages", unpublished Doctoral Dissertation, University of Minnessota, 1965, p.1.

about the share of the cake.[1] This argument is best summarised by Zulauf by concluding: "the meaning of ability to pay revolves around a firm's capability to generate wealth and distribute this wealth to various claimants."[2] It could be argued, however, that a firm's capability to generate wealth might be different from the wealth generated. Nevertheless, the wealth generated is considered to be the most important variable in determining a firm's capability to generate wealth.[3]

The above discussion implies that value added is a potential measure of "ability to pay" and hence one could argue, a priori, that value added information may be more relevant to the determination of wages than any other measure such as profits or sales. Figure 5.4 provides some evidence about the vailidity of this conclusion. As can be seen from the Figure, despite all the ups and downs of the British economy, the relationship btween wages and salaries and value added has been remarkably stable for more than a decade for all British manufacturing industries. The two exceptions are petroleum pro-

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1 For a comprehensive discussion of bargaining theory see B. Foley and K. Maunders, Accounting Information Disclosure and Collective Bargaining (London: Macmillan, 1977).

2 D. Zulauf, op.cit., p.4

3 Holding a firm's market environment constant, the capability of that firm to generate wealth depends on its productivity. Because the most widely used index of productivity is the one which computes the value added per employee, the value added (the wealth generated) is considered to be the major variable in determining a firm's capability to generate wealth. This point will be subject of a detailed discussion in Chapter VI.

FIGURE 5.4

Wages and Salaries as Percentages of Value Added

UK Manufacturing Industries

1963 - 1975

Order	Industry	1963	1968	1973	1975
III-XIX	All manufacturing industries	52.7	50.8	49.0	52.1
III	Food, drink and tobacco	38.8	38.7	35.2	37.6
IV	Petroleum products	36.1	27.8	27.5	15.5
V	Chemical and allied products	36.8	35.8	33.2	36.5
VI	Metal manifacture	56.9	56.3	54.3	59.6
VII	Mechanical engineering	57.2	53.9	54.5	53.6
VIII	Instrument engineering	58.5	55.7	59.8	59.9
IX	Electrical engineering	58.9	52.1	51.4	54.8
X	Shipbuilding	73.1	74.3	74.9	78.8
XI	Vehicles	59.9	59.1	65.8	74.8
XII	Other Metal goods	54.5	53.7	51.7	55.1
XIII	Textiles	53.3	50.9	48.8	61.4
XIV	Leather and fur	54.2	53.1	51.4	54.7
XV	Clothing and footwear	61.1	59.9	56.8	56.8
XVI	Bricks, pottery,glass,cement	54.0	51.8	43.4	45.9
XVII	Timber and furniture	59.2	54.4	45.5	53.5
XVIII	Paper and printing	53.9	53.1	50.0	54.2
XIX	Other manufacturing industries	52.3	50.3	48.1	51.7

Source: E.G. Wood, British Industries: A Comparison of Performance (McGraw-Hill Book Co., 1976) 1975 figures: The Times, 4 May 1977.

ducts (Order IV) and vehicles (Order XI), which were affected by the major increase in oil prices in 1973-1974. Furthermore, Cooper and Essex[1] also provide some empirical findings which seem to confirm that value added information is of great importance to employees and their representatives. In their study, 230 shop stewards who were members of the Amalgamated Union of Engineering Workers in the Greater Manchester area were asked to assess on a 4-point scale ranging from 4 (if the information was "very important") to 1 (if the information was "not important at all") the importance of information in terms of its relevance to their decisions. Value added per worker was seen as the most relevant and was ranked in the top by mean score of 3.51 out of 4.

Turning to the part of economic rewards from employment which is determined by the employee's own effort, it seems that the relevance of value added is dependent on the type of productivity bonus scheme in operation within the firm. In the U.K. there is a growing use of value added as a basis for such schemes, where employee rewards is geared to the company's performance measured in terms of value added or ratios based thereon.[2] In this context, value added reporting must gain relevance,

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1 David Cooper and Simon Essex, op.cit., pp.214-15
2 This issue is a major focus of Chapter VII.

for this will lend credibility to the bonus scheme computations and enhance the acceptance of value added by employees. It can be said in sum therefore that value added information is relevant to employees as a basis for checking any bonus payments made to them as well as for predicting the future level of such payment.

The third element, which the relevance of value added information is to be evaluated in relation to, is the risk attached to the economic rewards from employment whether they were determined by negotiations or by the workers' own effort and efficiency. That is, how value added information could be related to the prediction of (1) the stability (or variability) of employees income and (2) future continuity of employment. Obviously these two are related, insofar as the quantity of employment in a firm is a function of the price of labour.[1] As noted above, value added information was found to be relevant to the prediction of economic rewards from employment. Thus it would seem appropriate to suggest that value added information is also likely to be relevant in predicting the pattern of these rewards (i.e. the variability of these rewards). Furthermore, the distribution of value added, as suggested in Chapter II, may also be relevant as it will indicate the proportion

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1 See S. Gray and K. Maunders, Value Added Reporting: Uses and Measurements, op.cit., p. 14.

of wealth creation which has been retained for reinvestment to strengthen the company and enhance future job security. Another interesting argument in favour of the relevance of value added in the determination of future job security is that reporting value added and its distribution to employees may probably direct their attention to their share and to trends in that share over time.[1] This, the argument goes, would lead to more realistic (i.e. lower) wage demands and hence more money for reinvestment and more secure jobs.

One final issue remains to be dealth with - that is, the question of whether value added information may be relevant to the prediction of non-pecuniary elements associated with job satisfaction. As previously suggested, employee objectives cannot be "boild down" to a notion of maximisation of economic rewards from employment. The work situation cannot be isolated from the life of the employee and thus job satisfaction cannot be ignored as an important element of employee utility. Having said that, value added information could be linked to the non-pecuniary elements associated with job satisfaction, namely, recognition and self-fulfilment; industrial democracy and worker participation; and a notion of "fairness", as follows:

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1 See M.F. Morley, The Value Added Statement - A review of its use in corporate reports, op.cit., p.21

1 - measuring the economic performance of a firm in terms of value added and reporting on the distribution of value added amongst all stakeholders in the firm may help combat the inaccurate belief of many employees that they are exploited and that their efforts unduly benefit and enrich the shareholders. Trust in the fairness of the distribution of the joint wealth created by the firm may, therefore, influence employees' evaluation of employment choices.

2 - Value added represents the achievement of a company's team, in which employees are seen as responsible participants rather than as hired hands, their wages as a distribution of surplus rather than a cost that should be minimised. Reporting value added information, therefore, may create a condition which might facilitate effective employee participation and involvement and which could influence employees' attitude towards their employer - that is, they would be better motivated to work and more identified with their company.

These alleged links between value added information and factors associated with job satisfaction are admittedly based on a priori analysis and no empirical evidence is available to support them. This analysis, however, provides direction for needed empirical research in this area.

Taken together, the above discussion clearly indicates that value added is potentially relevant to the information needs of employees and their representatives. This potential relevance of value added information might be affected, however, by the way of presentation of this information to employees. Fir instance, if a company reports on value added in its employees special report but not in its published accounts, employees will probably have little faith in such reports. If, on the other hand, employees obtain the information they need (including value added information) by means of general purpose corporate reports,[1] such practice may add credibility to the value added relevance. This relevance could also be enhanced by supplementing the value added report with a pie diagram so that it becomes easier to grasp and more understandable and hence more relevant.

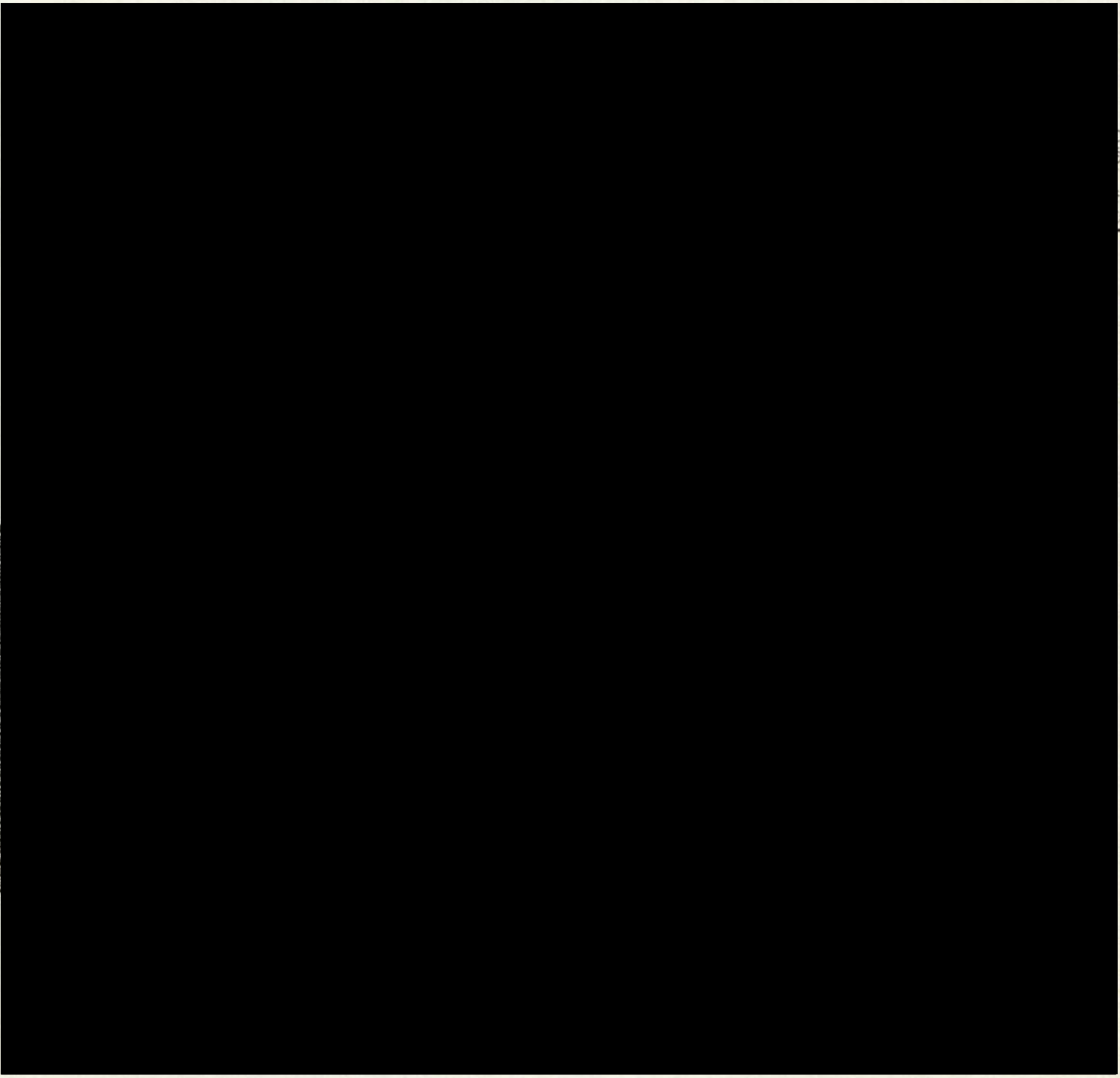
Figure 5.5 shows a recommended presentation of value added information to employees as was reported by a major British manufacturing company in its published accounts. As can be seen from the figure, both source and applic-

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1 For a discussion of General Purpose vs. Special Purpose Financial Reports, see Section 5.2.3, Supra, p.30; and for a specific discussion of Corporate Report (a single company report) vs. Employee Report, see Anthony Hitton Employee Reports: How to Communicate Financial Information to Employees (Woodhead-Faulkner Ltd., 1978), pp. 11-28.

FIGURE 5.5

An Example of Popular Presentation of Value Added Information to Employees



ation of value added are reported. The previous year's figures are included for the purpose of comparison with the current year's figures. A pie diagram is also provided which shows very clearly that the relative share of employees is very high at 69.29% of the current year's value added. However, the comparison with the previous year's figures indicates that this share is declining as it was 70.42% in 1978. Therefore, it is preferable to present percentage figures as well as ratios based on value added such as £ value added per employee and £ value added per £ of capital employed for both successive years.

5.3.2.3 Society-at-Large.[1]

Public companies do not exist by right but will continue to evolve and prosper only as long as society finds them useful. For example, the Committee for Economic Development's Report, Social Responsibilities of Business Corporations, taking a sufficiently broad and long-range view, concluded that "...it is in the 'enlightened self-interest' of corporation to promote the public welfare in a positive way...."[2] Thus, the company which is sensitive to the needs of society by contributing to the nation's welfare will in fact be promoting the long-run interests of its shareholders, because people who have a good environment, education, and opportunity make better employees, customers, and neighbours for business than those who are poor, ignorant, and oppressed. Empirical evidence presented in Section 5.3.2.1 seems to support this argument, as it was empirically found that social disclosure has information content and the market values this disclosure positively.[3]

Furthermore, and apart from enlightened self-interest, large publicly-held companies are offered special legal and operational privileges as they compete for re-

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1 In the present study, the phrase "society-at-large" is used to cover government (both central and local) and the community as its members are drawn into relationship with the company otherwise than as shareholders or employees.

2 Committee for Economic Development (New York, June 1971), p. 27, (emphasis added).

3 Supra, p. 319.

sources of manpower, materials and energy and they make use of society owned assets such as roads and harbours. These privileges are considered to be a major source of the broad social responsibilities charged to these companies.[1] In recent years the "social responsibilities" of companies have become of increasing concern as bears witness the following:

> "In a changing economy, accounting has been undergoing a change. From a convenient mechanical device, privately applied to the measurement of the status and results of a business enterprise, it has grown into an important medium for the public expression of the important facts about our vast and complex commercial and industrial society. Where the accountant once was concerned merely with assisting the owners of a business to evaluate its operation in money terms, he now must recognise a broad social responsibility. His findings, and the manner in which he sets them forth, have become the basis for significant decisions and policies, not only in business affairs, but in economic, social, and political matters as well."[2]

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1 It should be noted that corporate social responsibilities are rather difficult to define briefly. For the purpose of the present study, however, they are used to refer to the impact of all corporation's activities on the total welfare of society.

2 W.A. Patton and A.C. Littleton, An Introduction to Corporate Accounting Standards, Chicago: A.A.A., (Chicago, 1940), p.v.

More recently, and perhaps more importantly, accountants have been giving increasing attention to the question of reporting on such responsibilities in published annual reports, for these reports are the principle source of information which is available to the public. As a result of this growing awareness of corporate social responsibility and its disclosure, accountants, academics and professionals, have placed a great importance on the provision of information to society as a major function of financial reports. Carsberg, Hope and Scapens, for example, have specified nine objectives for financial reports; one of them is: " The provision of information to the representatives of society to enable them to judge whether the activities of the undertaking are consistent with national objectives."[1] A similar objective has been listed by the Study Group Report on the objectives of Financial Statements. It states that

> "An objective of financial statements is to report on those activities of the enterprise affecting society which can be determined and described or measured and which are important to the role of the enterprise in its social environment."[2]

Empirical evidence presented in Section 5.2.5.1 would seem also to confirm that society-at-large is a major user

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1 B.Carsberg, A.Hope and R.Scapens, "The Objectives of Published Accoutning Reports,"op.cit., p. 166.
2 Study Group on the Objectives of Financial Statements, op.cit., p. 55.

group of financial reports, as almost two-thirds (65.7%) of our respondents have mentioned that society-at-large (including government) is an intended recipient of their published reports.

The above discussion has a clear implication. That is, public companies should provide members of society with the information which they may need. But the question to face now is this: what are the information needs of members of society? This is a rather difficult question to answer as this group of users of accounting information is heterogeneous with potential diverse interests and, accordingly, potential diverse information needs.[1] Nevertheless, there is a general agreement in the accounting literature that members of society, whoever they are and whatever their interests, are mainly concerned with aspects of corporate social performance.[2] But "can social performance be measured?", asked Professor Solomons.[3] This is an exceedingly complex problem for several reasons. First, firms' activities may give rise to costs and benefits to others which are not reflected in its own transactions and, hence, very difficult to

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1 Such group may include government and its agencies, economists, consumers, taxpayers, advisors, etc.

2 See, for example, David Solomons,"Corporate Social Performance:A New Dimension in Accounting Reports",op.cit. pp. 131-141; Sidney Gray and Keith Maunders,Value Added Reporting: Uses and Measurement, op.cit., pp.16-17;and K.Ramanathan, "Toward a Theory of Corporate Social Accounting,"op.cit., pp. 516-526

3 Ibid., p. 135

measure.[1] Secondly, any measure of social performance should be chosen in such a way as to provide a high level of motivation for private enterprise while ensuring that its aggregate impact upon society is consistent with social goals and aspiration, and this is again not easy to find. That is to say that such potential measure must integrate social performance into business performance which the firm would want to optimise fo- its own purpose, and we could then and only then say "what is good for British Leyland is good for Britain".

Despite these serious difficulties of measuring social performance, it is already late to conclude that corporate reporting had better stay out of this area altogether. The recognition that companies have responsibilities beyond those to their shareholders is here, and it is here to stay.[2] Thus, accountants have to find a positive answer to the crucial question: can we measure corporate social performance?, difficult as that may be. Granting this orientation, any potential yardstick against which corporate social performance may be measured should have the following majore features:

1. It should be relevant to all parties with an interest

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1 Examples of these costs and benefits to others are pollution effects, provision of sporting facilities for local community use, etc.. Such effects are called, in the language of welfare economics, "externalities", and they may be positive or negative, i.e. rather than polluting the local environment the firm may make it more attractive a place to live (e.g. by providing roads, sporting facilities, etc.).

2 See David Solomons,"Corporate Social Performance", op. cit., p. 134

in the company (direct interest or indirect) and should not be biased towards the interest of any one party.

2. It should be capable of expressing the importance and communicating the contribution of the company to both private and social efficiency.[1]

3. It should be a criterion against which external costs and benefits could be evaluated.

4. It should be consistent with any measure taken at the national level to overcome national economic problems (e.g. inflation and unemployment).

Value added would seem to be a possible basis for measuring corporate social performance, as it seems to have almost all the above mentioned features. However, one could argue that it might be an approximate measure, since it is not capable of measuring external costs and benefits, though it may measure their effect on the company's performance. Because value added focuses attention on the need for a strategy for increasing the creation of wealth for the community, it helps combat the problem of inflation and unemployment. Generally speaking, inflation means that the value of money is declining in relation to the goods and services it buys. This is happening because the availability of money is rising faster than the

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1 For a discussion of private efficiency and social efficiency, see L.R.Amey, The Efficiency of Business Enterprises (London 1969).

availability of goods and services. Focusing on the production of goods and services, therefore, might help to beat inflation. In this perspective, labour redundancy is not seen, as it may sometimes have been, as the sole or primary solution to the company's problem, This also would help to overcome the unemployment problem.

Furthermore, the standard of living of any nation, which must be the major concern for all society's members, depends heavily on goods and services provided by companies. This implies that value added must be relevant to all members of society. Indeed, as Professor Ball has noted

> "value added is the very thing we in this island live by; whoever adds most value at the various stages of the production process, from the beginning to the end, is contributing most to the maintenance or increasing of our standard of living."[1]

So, the argument goes, value added may be relevant to society-at-large, as it explicitly concentrates attention on the conflict over the distribution of the wealth created by the company. This distribution may be

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1 R.J. Ball, "The Use of Value Added in Measuring Managerial Efficiency", op.cit.

relevant to those whose decisions may be influenced by notions of "justice",(e.g. government, customers, employees, etc.). It could be argued, also, that value added information may be more relevant than sales, for example, to the information needs of the government and individual economists because it avoids double counting in the aggregation process, since the cost of bought-in materials and services is deducted from a company's sales as it already has been included in the sales of that company's suppliers. Therefore, value added may be relevant to economists in constructing and testing explanatory models of the economy,[1] and for the government in measuring the national income.

Finally, it has to be noted that the argument of value added information relevance to society-at-large, particularly its relevance to the measurement of corporate social performance is perhaps best summarised by Professor Solomons as saying

> "Perhaps the first thing to note about corporate social performance is that the most important component would seem to be the production of goods and services that the company is in business to supply. 'Value added' would seem to be the best point of departure for developing a measure of social performance."[2]

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1 S. Gray and K.Maunders,"Value Added Reporting...", op. cit., p. 15.
2 David Solomons,"Corporate Social Performance..", op. cit., p. 137

5.3.2.4 Implications for Management - Some Empirical Results

At the outset, it must be noted that value added could be used, and is being used in practice, as a tool of management information and control. In this application value added is a variant of "contribution" or marginal costing. Application of this kind has been the subject of few studies.[1] and will not be our main focus here. Our principal concern will be with the effects of value added external reporting on management attitudes and behaviour and the possible economic benefits to the firm which may follow.

Granting this orientation, it is generally agreed that information plays an essential role in the functioning of purposeful decision-making entities, and it is quite capable of influencing attitudes and behaviour of people within such entities.[2] For business corporations in particular, what measures those corporations must use to describe their economic operations (that is, measurement issues) as we ll as what they must report (that is, disclosure issues) have a great impact on management attit-

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1 See, for example, Trevor Bentley, "Added Value and Contribution", Management Accounting (The Institute of Cost and Management Accountants,March 1981), pp.-7-21; and B.Cox, "Value Added as an aid to management control", in G.M. Dickinson and J.E. Lewis (eds.) Financial Management Handbook (Kluwer Publishing Ltd.,1979), pp. 6.6.1-01 - 6.6.1-19

2 See Section 2.4.1 and Section 2.5

udes. Hopwood, for example, argues that the performance measurement process has significant motivational and behavioural consequences, as management's attention, decisions and actions are focused more on those components of the firm's performance which are included in the firm's formal measurement system.[1] The authors of The Corporate Report have also observed that:

> "It is important to keep in mind that pervasive influence of reporting practices on management attitudes. Managements naturally respond to those indicators by which they consider their performance is judged, and strive to achieve and present results accordingly. Special attention is bound to be given to those areas where the spotlight falls. Our view is that management attitudes and objectives can be profoundly affected by changes in reporting practices."[2]

Moreover, based on a priori analysis, Prakash and Rappaport have reasoned that the behaviour of individuals and organisational units is influenced not only by the information they receive and actually use in their planning and decision making, but also by the information they are required to communicate and which they believe might be used by the recipients. According to them, the complex

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1 A. Hopwood, op.cit., p. 16
2 A.S.C., The Corporate Report, op.cit., p. 38

process through which the behaviour of an information sender is influenced by the information he is required to communicate is called "information inductance" or simply "inductance".[1]

Consistent with this a priori analysis, empirical evidence has confirmed that externally reported accounting information does influence decision making within the firm. Fremgen[2] and Gitman and Forrester[3], for example, found that, in making capital investment decisions, management were motivated to select those projects which would cause external earnings figures to grow at a steady rate rather than those Projects which would produce erractic earnings figures, even though they may have a more desirable cash flow associated with them.

Against this background, other things being equal, we would expect a positive relationship between the use of value added in external financial reporting on the one hand and its use in internal decision-making as well as management's perceptions of firms' economic performance evaluation criteria on the other hand. In particular, the

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1 Prem Prakash and Alfred Rappaport,"Information Inductance and Its Significane for Accounting", op.cit., pp. 29-38.

2 James N. Fremgen,"Capital Budgeting Practices: A Survey", Management Accounting, (May 1973).

3 Lawrence J. Gitman and John R. Forrester, "A Survey of Capital Budgeting Techniques Used by Major U.S.Firms", Financial Management, (Fall 1977).

the major purpose of this section is to provide empirical evidence related to this issue by testing the following two hypotheses:

H4.1 Managements which are using value added as a means of external financial reporting are more likely to use it in internal decision-making.

H4.2 There is a significant difference between perceptions of managements of the two groups of companies with respect to how their firms' economic performance is evaluated.

For empirical evidence related to Hypothesis 4.1, our respondents were asked whether they use the value added concept in internal decision-making. The question asked was in the following form:

> Apart from external reporting and incentive schemes, is the value added concept being used in internal decision-making? YES/NO.
> If 'YES', please specify briefly.[1]

An Overall analysis of the responses is given in Table 5.7. As can be seen from the table, 55.3% of companies which externally report value added do use the concept of value added in internal decision-making (26 companies out Of 47). By contrast, only 10% of companies

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1 See Appendix A, Section 6.5

TABLE 5.7

Relationship between the Use of Value Added in Financial Reporting and Its Use in Internal Decision Making: Test of Hypothesis

(VA in I.D-M)	COUNT / ROW PCT / COL PCT / TOT PCT	VAR46 (VA in F.R.) NO	YES	ROW TOTAL
		0.	1.000	
VAR77				
NO	0.	27	21	48
		56.3	43.8	62.3
		90.0	44.7	
		35.1	27.3	
YES	1.000	3	26	29
		10.3	89.7	37.7
		10.0	55.3	
		3.9	33.8	
	COLUMN TOTAL	30	47	77
		39.0	61.0	100.0

CORRECTED CHI SQUARE = 14.14681 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.0002

PHI = 0.45611

KENDALL'S TAU B = 0.45611 SIGNIFICANCE = 0.0000

PEARSON'S R = 0.45611 SIGNIFICANCE = 0.0000

which do not use value added as a means of financial reporting do use it in internal decision-making (3 companies out of 30).[1] This result was not unexpected and is consistent with earlier studies' results mentioned above. It suggests that there is a relationship between the use of value added in financial reporting and its use in internal decision-making in the predicted direction. However, to find out whether this relationship between value added reporting andthe use of value added in internal decision-making is statistically significant or not, the non-parametric chi-square test using 2 x 2 contingency tables was employed to test Hypothesis 4.1. The test was considered to be the most appropriate, given the nature of the variables and the measurement level involved. It will assist us to determine whether or not the two variables under study are statistically independent.[2]

Table 5.7 reports a corrected chi-square of 14.14681. The probability of obtaining a value this large or larger with 1 degree of freedom is less than 0.0002, as shown in the same table, so we would conclude that this chi-square is very large indeed. Since the cell frequencies deviate

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1 Although a total of 79 usable responses were received from both groups of companies(48 responses from companies which externally report value added and 31 from the other group), one respondent in each group did not answer this question in particular.

2 A description of the test is presented in Chapter IV, Section 4.5.3.

so much from what we would expect under the conditions of stistical indpendence, we could conclude that a systematic relationship between the use of value added in financial reporting and itsuse in internal decision-making does exist, although we would be taking the chance of being wrong 2 times out of verey 10,000. These findings strongly support Hypothesis 4.1, as the chi-square is statistically significant at the 0.0005 level and hence Hypothesis 4.1 can be convincingly accepted.

Yet, chi-square, by itself, does not tell how strongly variables are related. It helps only to decide whether these variables are independent or related. Part of the reason is that the sample size and table size have such an influence upon chi-square.[1] Several non-parametric correlataion measures which adjust for these factors are available. The two most appropriate and most widely-used are the phi (Ø) and Kendall's tau B correlation coefficient (τ). As can be seen from Table 5.7, the calculation of (Ø) at 0.45611 and (τ) at similar figure 0.45611 ($p<0.0001$) indicates a very strong relationship between value added reporting and the use of value added in internal decision-making in the predicted direction, as Kendall's tau B correlation coefficient is positive.

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1 D. Holt, A.J. Scott and P.D. Ewings,"Chi-square Tests with Survey Data", J.R. Statistic. Soc. A. (1980) 143, Part 3, pp. 303-320.

Perhaps it is also interesting to note that Pearson product-moment correlation (τ) is exactly identical to both ($\emptyset$) and (τ) (0.45611) at the same level of significance ($p<0.0001$) which confirms yet again the existence of a highly statistically significant association between the two variables involved.

Of course, the existence of a positive correlation between two variables does not always prove causation. Nevertheless, whenever a relationship between two variables is found, a tendency often exists to inquire concerning a possible cause and effect relation. For the highly statistically significant association between the use of value added in external financial reporting and its use in internal decision-making, one possible interpretation is that external reporting of value added causes the use of it as an essential criterion for internal decision-making. Under this interpretation because financial statements are to a large degree a report on managerial performance, the external reporting of value added would motivate managers to use it as a prime criterion for internal decision-making, as they have a considerable personal and financial stake in the scoring process by which their performance is judged. A second interpretation is that the use of value added as an important tool for management own control mechanism causes the use of it in external financial reporting. Under this view, since

the same accounting system normally accumulates, processes and provides the information whether it is called managerial or financial or internal or external, the accumulation of value added information for internal purposes will make it easier for managements to externally report it, as it will already be available for such use.

Yet, empirical evidence lends credence to the proposition that, in general, external financial reporting does influence internal decision-making.[1] No empirical evidence is available to suggest otherwise. Thus, it can be inferred that the external reporting of value added information may motivate managements to use the same information as a prime criterion for internal decision-making. Furthermore, the evidence accumulated in this study does indicate that a causal relationship exists between the use of value added in external financial reporting and its use in internal decision-making in the predicted direction.[2] That is, the external reporting

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1 A synthesis of this literature is contained in F. Jablonsky and Mark W. Dirsmith,"Is Financial Reporting Influencing Internal Decision-Making?",op.cit.

2 Finance Directors of companies subject of this investigation were asked when they started to externally report value added (see Appendix A, Section 6.1). 92.9% of respondents were found to be reporting value added since 1975 or after. In contrast, only 7.1% replied that they have been reporting value added before 1975. These results confirm the a priori argument that in the UK such a practice was stimulated by the publication of the discussion document "The Corporate Report" in July 1975. One can therefore deduce that the external reporting of value added was not caused by the use of it as a management tool. Consequently, the relationship between the two variables may be interpreted as the use of value added in external financial reporting causes the use of it as a management tool and not vice versa.

of value added causes the use of it in managerial decision-making. In any event, while speculation about the nature of a possible causal relationship might stimulate an interesting discussion, such speculation is not important for the purpose of the present study. The reason for this is that while accounting policy-making bodies can directly influence the external financial reporting practices and , hence, indirectly affect management attitudes and behaviour, it is quite impossible for them to directly interfere in internal decision-making processes within the individual companies. Moreover, Kerlinger has warned that

> "....the study of cause and causation is an endless maze. One of the difficulties is that the word 'cause' has surplus meaning and metaphysical overtones. Perhaps more important, it is not really needed."[1]

Now we turn to the question of whether value added external reporting is associated with managers' perceptions of their firms' economic performance evaluation criteria. As pointed out earlier, financial reporting usually cannot and does not separate management performance from enterprise performance. As a consequence , managers would not be human if they did not wish the report card to be favourable. More specifically, since the available evidence suggests that managements respond to

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1 F.N. Kerlinger, Foundations of Behavioural Research (Holt Rinhart and Winston, Second edition, 1973), p. 393.

those indicators by which they consider their performance is judged,[1] it is expected that the external reporting of value added would influence their perceptions of value added as an essential criterion for evaluation of companies economic performance.[2]

In order to empirically examine this potential influence, our respondents were asked to rate four criteria, namely, value added, earnings per shar (EPS), dividends, and sales in terms of how they perceived their importance for the evaluation of companies' economic performance.[3] An overall analaysis of the responses is given in Table 5.8 for both groups of companies (i.e. companies which externally report value added vs. companies that do not). Both respondent groups seem to fully agree that value added should count the most in how their companies' economic performance is judged, as indicated by the rank order which is based on the mean scale positions (see Table 5.8). EPS and dividends were also similarly ranked by both respondent groups as they came out at second and third places respectively. Perhaps of even more concern are managements' perceptions regarding what actually counts the most in how their economic performance is judged. As can be seen from Table 5.8, some disagreement amongst the two respondent groups is in evidence. The

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1 Supra, pp. 343-345.
2 The implications of this will be discussed later in the section.
3 See Appendix A, Section 5.

TABLE 5.8

Comparison of Companies Report VA with Those that Do Not with Respect to Perceived Economic Performance Evaluation Criteria

Criteria	Companies Report VA (N = 48)										Companies Do Not (N = 31)									
	What counts the most					What should count most					What counts the most					what should count most				
	No.	%	$\bar{X}$	SD	Rank	No.	%	$\bar{X}$	SD	Rank	No.	%	$\bar{X}$	SD	Rank	No.	%	$\bar{X}$	SD	Rank
VA	12	25.0	2.10	0.11	2	30	62.5	1.44	0.20	1	5	16.7	2.50	1.19	3	19	61.3	1.36	0.66	1
EPS	21	43.7	1.62	0.08	1	13	27.1	2.48	0.24	2	19	61.3	1.42	0.56	1	8	25.8	1.88	0.62	2
Dividends	7	14.6	3.16	0.71	3	3	6.3	3.23	0.56	3	7	22.0	2.48	0.85	2	4	12.9	2.71	0.92	3
Sales	6	12.5	3.51	0.65	4	2	4.1	3.70	0.72	4	-	-	-	-	-	-	-	-	-	-
Other	2	4.2	4.82	0.62	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	48	100				48	100				31	100				31	100			

value added is ranked second by the first group (companies externally reporting VA), whereas it is equal third place for the sceond group of respondents with mean scale positions of 2.10 and 2.50 respectively.

An examination of Table 5.8 also reveals, not surprisingly, that both groups seem to share the same degree of importance attached to EPS criterion, as it was ranked first by both groups. However, one should not be misled by such results. Another way of looking at these results is to compare the mean scale position between the two groups. Although EPS criterion was ranked at equal first place position by both groups, there is a significant difference of 0.20 in the mean scale position (i.e. $\bar{X}$ = 1.62 for the first group compared with $\bar{X}$ = 1.42 for the second group). This difference indicates that managers of the second group of companies rate EPS criterion as being more important for the purpose of economic performance evaluation than do the managers of the first group of companies.

These differences, while worthy of mention, do not tell whether they are statistically significant or not. Hence, the Mann-Whitney U Test was employed to test whether the two indpendent groups have been drawn from the same population. The findings are shown in Table 5.9. The most interesting feature of these findings is that

TABLE 5.9

Relationship between the External Reporting of VA and Perceived Economic Performance Evaluation Criteria: Mann-Whitney U Test

Criteria	What counts the most		What should count the most	
	Observed U	Associated Level of Significance for Two-Tailed Test	Observed U	Associated Level of Significance for Two-Tailed Test
VA	524.5	0.0446*	320.0	$0.0766^{N.S}$
EPS	387.0	$0.1917^{N.S}$	587.0	$0.1390^{N.S}$
Dividends	695.5	$0.8295^{N.S}$	650.0	$0.6840^{N.S}$
Sales	--	--	--	--

* Significant at $p<0.05$

N.S denotes Not Significant

the only statistical difference between the two respondent groups is their perception of the importance of value added as a prime criterion for the appraisal of their companies economic performance. As predicted, managers of companies that externally report value added do rate value added as being more important than do the managers of the other group of companies. Two-tailed probabilities related to this variable were 0.0446 (see Table 5.9). However, the remaining differences between other variables in both groups proved to be statistically insignificant, as two-tailed probabilities related to them all were greater than 0.05.

As noted earlier (Chapter 3, Section 3.8), the 0.05 level of confidence has been accepted as the basis for accepting (or rejecting) the null-hypothesis of the present study. Furthermore, our prediction in Hypothesis 4.2 was mainly that income reporting on a value added basis might influence managements' perception regarding the importance of value added as a bench mark against which business firms' economic performance can be evaluated. The empirical findings mentioned above would seem to support such a prediction. Hence, Hypothesis 4.2 can be accepted.

The implications of the findings discussed above for management are twofold. First, as value added external reporting was found to be positively associated with its

use as a management tool, such a use is in turn expected to influence management policies. In particular, management information based on value added is reported to have the merit of directing management attention to the need for a strategy for increasing the creation of wealth. Secondly, as previously suggested, managements attitudes and decisions are influenced not only by the information they recieve and use in their decision-making, but also by the information they are required to communicate and which they believe might be used by the recipients to judge their performance. As can be seen from the evidence presented above, management perceptions of value added as a criterion for evaluating their performance is affected by its external reporting. That is, managers of companies which report income on a value added basis rate value added as being more important for the purpose of their performance appraisal than do the managers of companies which do not. Because managements strive to achieve those objectives by which they believe they are judged, their aims and policies can in turn be affected by what they externally report. The inference is that by shifting the emphasis from profit to value added a stronger awareness of long-term interests of the company and, eventually, of the economy may be induced.

Taken together, the clear indication is that income reporting on a value added basis can motivate managements

to concentrate their attention on long-run results and adopt policies that may encourage growth. For instance, they may spend more on R & D, internally generate more funds for reinvestment, increase expenditures on employee development programmes, etc. These policies are absolutely essential if the British economy is to break out of the present dreary decline. In the following Chapter (Chapter VII), we shall empirically examine this issue under the title "the economic consequences of value added external reporting". If the results are found to be favourable, we may conclude that value added information is also relevant according to the "result relevance" approach referred to earlier in the chapter (see Section 5.3) as it is already found to be according to both "semantic relevance" and "decision relevance" approaches.

5.4 Summary and Conclusions

This is the first of two chapters that explore the use of value added concept as a means of external financial reporting. In this chapter, we examined the usefulness and the relevance of such use for the British economy.

In the first part of the chapter we discussed objectives of financial reporting and analysed three recent research studies undertaken for accounting professional organisations in the United States and the United Kingdom regarding these objectives. The major finding of these studies was that since responsibility is inevitably accompanies by accountability, the objectives of financial reporting should be set in accordance with the philosophy that a business firm is accountable not only to its shareholders but aslo to employees, customers, and to the public at large. This finding was found to be consistent with the empirical results of the present study where management responsibilities were recognised towards all the coalition members of the firm and not towards the shareholders alone.

Usefulness criterion was also discussed. It has been argued that if accounting information is to be useful, it should be capable of use for the common needs of as many

user groups as possible. Furthermore, it should also be related to the facilitation of rational economic decision-making. To make usefulness criterion operational, however, a few elements essential to its implementation have been identified, namely, relevance, objectivity, comparability, and understandability.

A priori arguments suggest that value added is a preferable way of describing performance, more relevant and objective than the traditional concept of income and has a great potential as a means of embracing the needs of a wider group of users. Hence, the relationship between income reporting on a value added basis, user groups, and objectives of financial reporting was empirically examined. They were found to be significantly associated. That is, managers of companies that externally report value added seem to be more in favour of the modern view of financial reporting objectives that attach considerable importance to the supply of useful information for making economic decisions by all stakeholders including the general public and as a consequence their reports are intended for them all.

Finally, three main approaches were employed to examine the relevance of value added information, i.e. semantic relevance approach, decision relevance approach and result relevance approach. Based on a priori analysis, according to both semantic and decision approaches

value added was reported to be more relevant than profit. Nevertheless, conclusive evidence requires a major separate study to investigate statistically the question of whether the concept of value added is indeed more relevant than that of profit, particularly to shareholders and employees. In the following chapter we shall employ the "result relevance" approach to determine the relevance of value added information to the British Industry. That is, we shall be concerned with the economic benefits to the firm and, eventually, to the economy which may follow the income reporting on a value added basis.

CHAPTER VI

VALUE ADDED IN FINANCIAL REPORTING: ECONOMIC CONSEQUENCES AND MOTIVATIONS

6.1 Introduction

While attention to date has focused primarily on the effect of corporate reporting on the securities markets, the impact of financial reporting on the behaviour of the reporting firm as well as on the economy as a whole has received very little attention in the literature.

As previously suggested, financial reporting practices are far from neutral in their effects on organisations and society. They may very well cause great attention to be given to relatively trivial accomplishments while, in effect, hiding by default the most significant performance aspects of a company. Income reporting on a value added basis, as pointed out earlier, may induce corporate managers to make decisions congruent with the long-term economic interests of the company and, eventually, of the economy.

Empirical evidence cited in the preceding chapter suggests that value added reporting has a significant impact on both internal decision-making and perceptions of managements regarding the importance of their firms' economic performance evaluation criteria. The main purpose of this chapter is to elaborate on the relationship between value added external reporting and management economic behaviour and policies. In particular, empirical evidence is to be

provided on the following two issues:

1 - Economic consequences of value added reporting.

2 - Management motivations behind such reporting.

Recent developments in value added disclosures in the U.K. are also examined.

6.2 Economic Consequences of Value Added External Reporting

When accounting first emerged as an independent profession more than a century ago, it acknowledged only one obligation: to tell the proprietors of an enterprise how it was performing. More recently, it enlarged its scope to provide information to investors to guide their decisions, i.e. decisions on whether to buy, hold, or sell securities, thus the only effect which financial reports were assumed to have was their effect upon resource allocation in a market economy. Today, this assumption is being severely questioned, and the subject of economic consequences has become the central contemporary issue in accounting.[1] That the Institute of Professional Accounting has very recently commissioned research papers on the economic consequences of financial and managerial accounting and that the FASB has held a conference devoted entirely to the subject[2,3] underlines the current importance of this issue.

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1 Report of the Committee on the Social Consequences of Accounting Information, (Sarasota, Fla.: American Accounting Association, 1978), p.4

2 Institute of Professional Accounting, Studies on Economic Consequences of Financial and Managerial Accounting: Effects on Corporate Incentives and Decisions, Journal of Accounting Research (Vol.18, Supplement 1980)

3 Conference on the Economic Consequences of Financial Accounting Standards (Stamford, Conn.: FASB, 1978)

The term "economic consequences" has been used in the accounting literature to describe the impact of accounting reports on the decision-making behaviour of business, investors, creditors, government agencies and unions,[1] and the potential economic benefits which may follow to the reporting company and, eventually, to the economy as a whole. In this context, it is noteworthy to observe that the terms of reference given by the British Government to the Inflation Accounting Committee (the Sandilands Committee) began with the following two matters to be considered:

> "(i) the effects upon investment and other management decisions, and upon the efficiency of companies generally, and
>
> (ii) the effect on the efficient allocation of resources through the capital market."[2]

Rappaport[3] has also pointed out that financial reporting can affect behaviour in the economy in essentially three different ways:

(1) by their effect on the behaviour of corporate management of the reporting firm who in anticipation of potentially adverse feedbacks arising from its report-

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1 See, for example, Stephen A. Zeff, "The Rise of Economic Consequences", The Journal of Accountancy (December, 1978),pp. 56-63

2 Report of the Inflation Accounting Committee, Inflation Accounting, (London: H.M.S.O.,Cmnd 6225, September 1975) p.2 (emphasis added)

3 See,Alfred Rappaport, "The Economic Impact of Financial Accounting Standards - Implications for the FASB", in Gary J. Previts (ed.), Papers presented at the Accounting Research Convocation on the Subject of Emerging Issues (Graduate School of Business Administration, The University of Alabama, November 1976,pp.113-128, (emphasis added)

ing according to required measurement and disclosure standards might choose to alter its economic behaviour;

(2) by their effect on the behaviour of intended recipients of corporate reports, e.g. shareholders, creditors, and employees;

(3) by their effect on the behaviour of those for whom corporate reports are not directly intended but who can gain access because the reports are publicly available, e.g. comptetitors and suppliers.

In the present study, however, our major focus will be the effect of value added external reporting on the economic behaviour of the reporting firms. We do not claim that this is the most important effect which value added reporting may have; merely that it is of sufficient importance to warrant investigation. Thus, there is also a need for additional research studies which might examine the effect of such reporting on the behaviour of the securities markets.

From our earlier arguments (in Chapter II) it is clear that the information content of financial reports is important. In particular, the chapter draws attention to the demonstration effect of financial reports and the scoring rules on which they are based. By changing the scoring rules, it was argued, it may be possible to affect

attitudes and policies, and thus economic performance of companies. For instance, one of the criticisms most often made of U.K. management is that it tends to take the short view to achieve ever higher earnings per share. The desire to produce short-term results, however, often influences management to forego investment in capital equipment and R & D that would benefit the company for the purpose of long-term growth. The inference is that by shifting the emphasis from E.P.S. to the wealth created, a stronger awareness of the long-term strategy may be induced.

In sum, out theoretical expectations are as follows: we expect productivity to increase with value added external reporting. There are several reasons for such expectations. As noted earlier (see Chapter II), the value added approach draws attention to the ways in which the country's wealth and economic growth can be improved. It focuses not only on the human contributions to productivity by viewing labour as a resource to be more effectively used to increase the wealth created rather than as a cost to be cut and searching for changes that more effectively use human talents and increase levels of human motivations. But it also focuses on the technical contributions to productivity by motivating management to make decisions congruent with the lon-term economic interests of the company such as investing more in R & D, new capital equipment, employee development programmes, and other discretionary developmental outlays.

Furthermore, we expect that the use of value added in external financial reporting would facilitate the introduction and the operation of productivity bonus schemes based on value added. Such schemes may also raise productivity and interact with the external reporting of value added by having a stronger effect on productivity.

Before proceeding with our investigation of the above mentioned expectations, it would seem advisable to first discuss briefly what is meant by productivity, its measurement and its significance.

6.2.1 Productivity: Measurement and Significance

The true aim of all economic activities must surely be to enhance the well-being of individuals and society. Britain's recent economic history has been marked by episodes of national concern over industrial efficiency. Moreover, there is no economic recovery on the horizon according to the latest Treasury forecast. Official forecasts do not expect any significant growth in the near future. The implication of this is that unemployment is unlikely to level off in the short-run and will probably top three million very soon. Also, without growth, struggles over income shares lead directly to inflation and inevitably to deterioration in standards of living.

Various prescriptions have been offered from time to time as a remedy for British economic ills. Indeed, it is not difficult to recall cries of "Let us expand the export of manufactured goods" or "The balance of payments situation must be improved". Now it seems to be "Let us improve productivity". Whether the plea comes from political leaders, economists, employers or academics, the productivity catch-phrase is rightly seen as the answer to the current economic problems faced by this country. A statement by Sir Geoffrey Howe, Chancellor, may illustrate the point. In his latest Budget Speech (March, 1981) he concluded:

"Only by improving productivity, by using our labour and capital and other resources to obtain the maximum output, can we hope to maintain an acceptable standard of living in our country."

In order to determine changes in productivity which can result from actions taken, or which point to actions to be taken, it is necessary to measure productivity. To put it another way, any organisation must first be able to measure productivity if it is to successfully influence it. But before we can begin to measure something or even talk about it, we must define it. At its most fundamental, productivity denotes the productiveness of the factors of production, labour and capital, in the creation of wealth. However, it is usual to define productivity as the ratio between output and input.[1]

$$\text{Productivity} = \frac{\text{Output}}{\text{Input}}$$

where output is the amount of the goods or services that the enterprise exists to produce and the input is the amount of resources used in producing the output.

The simple but surprisingly misunderstood point to be grasped here is that productivity is not just production (output only), but the relationship between production, or output, and the resources, or input, used in producing it.

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1 See, for example, British Institute of Management, What is Productivity?, Management Information Sheet No.54 (London: BIM, 1976)

This is not the end of the matter, however. Productivity is a highly complex notion open to a number of interpretations. Much depends on the context in which the term is used. To the individual shareholder, a firm's productivity is perhaps reflected in the rate of return earned on the capital he has invested and/or the appreciation of that capital; to the production engineer, productivity is the quantity of output produced in relation to a specific input or combination of inputs; to a management bent on growth, the cost per unit of increased sales.[1]

Broadly speaking, however, there is a growing consensus that productivity should be measured in terms of the economic use of resources. Hence, productivity of a firm is defined for the purpose of the present study as the value of output added by that firm (i.e. the wealth created by that firm), divided by the value of a specific resource or a combination of resources (e.g. labour, capital, labour + capital, etc.) used. More specifically, labour productivity is defined in this study as the ratio of value added to the labour input (i.e. employees' remuneration); capital productivity as the ratio of value added to the capital employed; and overall productivity as the ratio of value added to capital employed + labour cost.[2]

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1 For a more extensive discussion of a definition of productivity see Chapter 2 in William A.Ruch and James C. Hershauer, Factors Affecting Worker Productivity, Arizona State University,College of Business Administration, Bureau of Business and Economic Research, Tempe, 1974

2 See Chapter III, Section 3.4

Workers and union officials frequently are skeptical of emphasis on increased productivity. They fear that to increase productivity will mean that some workers will lose their jobs and/or will have to work harder. This is not necessarily true. As pointed out earlier, productivity measured in value added terms concentrates attention on the need for a strategy for increasing the creation of waelth. In this perspective, labour redundancy is not seen, as it may sometimes have been under the profit approach to productivity, as the primary solution to the enterprise's problem. If insufficient wealth is created, first the retained profit necessary for the development of the business and then the money set aside to cover depreciation of existing assets, is used to meet the other demands and the future of the business is increasingly put at risk.

Yet, with increased productivity, a much bigger economic pie is produced, which gives the opportunity not only to pay higher wages and salaries but also to increase the level of investment in new, more efficient equipment, R & D, and employee development programmes and thereby strengthen the company's competitive position and future business security. Clearly much remains to be seen to convince British workers and business executives that increased productivity, as defined in this study, can not only help both organisation and employees but is a vital necessity in the fight to control inflation and unemployment, and meet foreign competition.

Indeed, the reasons for seeking an improvement in productivity can be divided into two categories; firstly those which apply to individual firms, and secondly, those which apply to the nation as a whole. Both have been summarised by one writer as follows:

"Some of the reasons for improving productivity in the individual firm are:

* To increase profitability by achieving lower limit costs.
* To attain a better competitive position.
* To provide a means of justifying price structure through evidence of internal effort to hold unit costs.
* To reduce waste and conserve materials, energy or human resources.
* To improve the return on shareholders' funds.
* To generate more capital for involvement in modernisation and/or expansion.
* To create a consciousness of working smarter, not harder, amongst the staff.
* And, finally, if productivity is measured, to provide a means of equitably remunerating employees based on real productivity improvement.

On a national basis, reasons for Improving productivity are:

* To conserve increasingly expensive and diminishing non-replacable resources, e.g. fossil fuel and minerals.
* To improve export capability and hence overseas earnings.
* To reduce usage of imported materials and hence again, improve overseas balance of payments.
* To combat inflation by providing more real wealth per pound in circulation.

* To increase leisure time of workers without adversely affecting the amount of goods and services produced - one of the growing social considerations of business today."[1]

Having discussed the measurement and the importance of productivity, we shall now turn to the major focus of this chapter, namely, providing empirical evidence on the relationship between income reporting on a value added basis and the productivity of firms.

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1 W.A. Hunt, "Total Productivity", in Productivity - Measurement and Achievement, Proceedings of Accountancy Seminar, Victoria University of Wellington (November 1977), p.2.

6.2.2 The Statistical Analyses

Of course, productivity is not determined solely by how hard and how well both management and employees work. The technical factors play an overwhelmingly important role, particularly in manufacturing industry. Capital investment and advances in technology are often the most important technical factors influencing productivity.[1]

It is not surprising, therefore, that Japan has steadily progressed in improving its industrial productivity, while other advanced industrial nations have for the most part made painfully slow progress, particularly Britain. Indeed, as shown in Figure 6.1, while the average growth rate of productivity of Japanese industry for the period from 1973 to 1977 was 18.8 per cent, productivity of British industry grew only by 2.5 per cent during the same period, which is the lowest rate of productivity growth amongst almost all advanced industrial nations. Yet, more recent statistics do suggest that the gap in productivity growth of Japanese and western industries is getting even wider. The Japan Productivity Centre[2] recently

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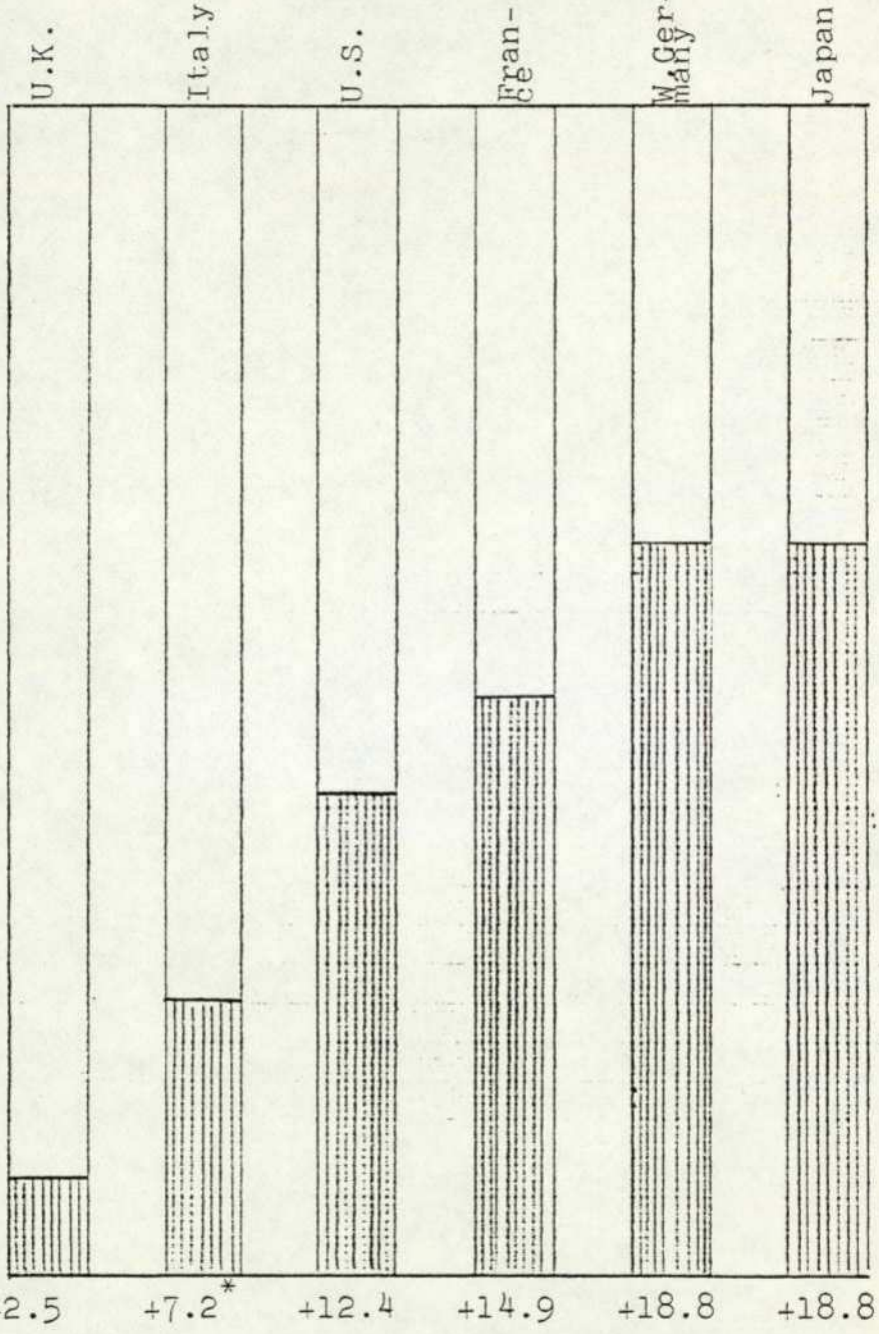
1 For a comprehensive discussion of this point, see, for example, Chapter 2, Technical Contributions to Productivity, in Robert A.Sutermeister, People and Productivity McGraw-Hill,Third edition, 1978), and Bradley T.Gale, "Can more capital buy higher productivity?", Harvard Business Review (July-August 1980), pp.78-86

2 Japan Productivity Centre, Index of Productivity Levels in Industry, November, 1979

FIGURE 6.1

International Comparisons of Industrial Productivity (1973-1977).

Percentage increase in Value Added per man hour in industry.



*1973-1976 only.

Source: Sunday Times September 17th, 1978.

did a number of calculations on "absolute" productivity levels which indicated that while the manufacturing sectors of Japan and West Germany were about equally productive in 1977, West Germany's productivity level had slipped to 89 only in 1978. On this scale the Japanese level stood at 100. The U.K.'s productivity level in the same year (1978) was estimated at 52.9.

Given Britain's lagging productivity growth which may ultimately have the greatest impact on the nation's well-being, one must wonder how to improve productivity. Again, the lack of clear consensus among economists reminds us of George Bernard Shaw's remark that if you laid all the economists in the world end to end, they still would not reach a conclusion. This might be true, particularly in our case, as productivity is a function of too many factors. Nevertheless, all available evidence indicated that the level of business investment and R & D expenditures have a positive and significant effect on productivity growth.

To illustrate, the first, and most fundamental factor behind Japan's industrial success has been the rate of investment in industry - as a ratio of G.N.P. Between 15 and 20 per cent of Japan's G.N.P. has been poured into the expansion or replacement of industrial facilities over the past three decades compared with slightly more than 8 per cent in Britain. Furthermore, the O.E.C.D. (the Organ-

isation for Economic Co-operation and Development) national accounts show that between 1964 and 1973, the percentage of manufacturing industries' value added that was reinvested averaged out at 23.9 per cent in Japan compared with 12.7 per cent for the same period in the U.K. (see Figure 6.2). As a result, the average increase of capital per Japanese worker per year for the period from 1972 to 1975 was £4580 compared with average increase of capital per British worker per year for the period 1973-74 of only £374.[1]

Heavy investment in production facilities not only means that production capacity tends to grow rapidly but also that the plant equipment in most Japanese factories is young and hence sophisticated compared with that in Britain. It also means that the ratio of capital equipment to workers has grown fast, with the result that today a Japanese motor car assembly line worker, for example, is likely to have much more of an impressive array of equipment at his disposal than a worker in a British factory.

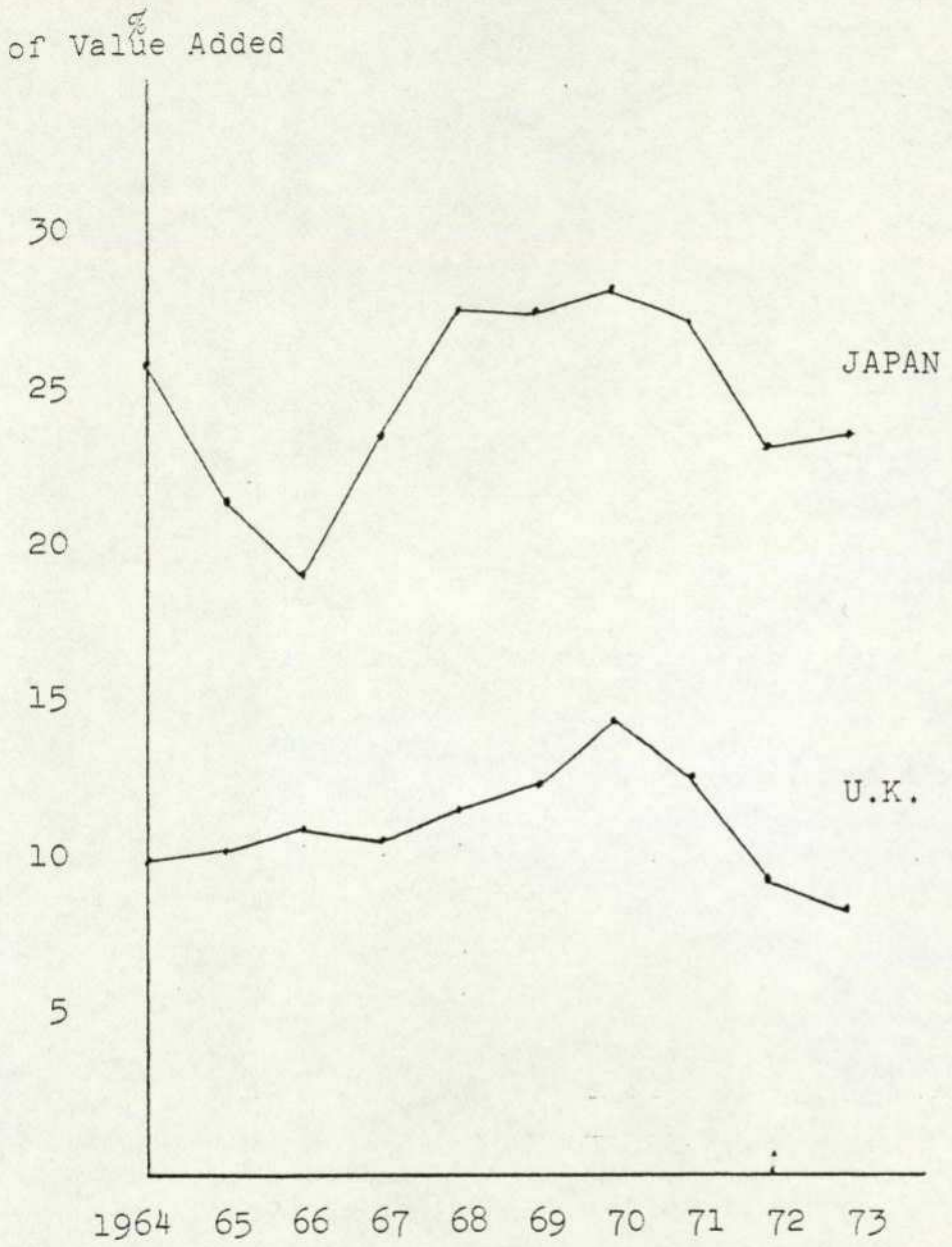
Almost equally important has been the state of R & D. Although it is hard to put a precise quantitative estimate on the relationship between a pound of R & D expenditures and innovations, available evidence suggests that R & D makes a significant contribution to technological progress

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1 F.E.Jones, "The Economic Ingredients of Industrial Success, op.cit., p. 120(A)

FIGURE 6.2

Comparison between Investment in Japanese and British Manufacturing Industries (1964-1973).



Source: Sunday Times 5 March, 1978.

which is a major cause as to why the Japanese have the highest productivity growth in the world. While total spending for R & D as a percentage of G.N.P. has steadily declined in the U.K. during the past decade, just the reverse has taken place in Japan and West Germany (see Figure 6.3). More importantly, perhaps, is that most of the money spent on R & D in Japan (roughly 65 per cent) comes out of the pocket of private industry. The Government in Japan provides just over a quarter of the funds, compared with half or more in the U.K.[1] This implies that Japanese expenditure on research and development is much more closely correlated with the size and importance of industrial production - which is essential for the competitiveness of a particular product, its design, quality and price - than it is in the U.K.

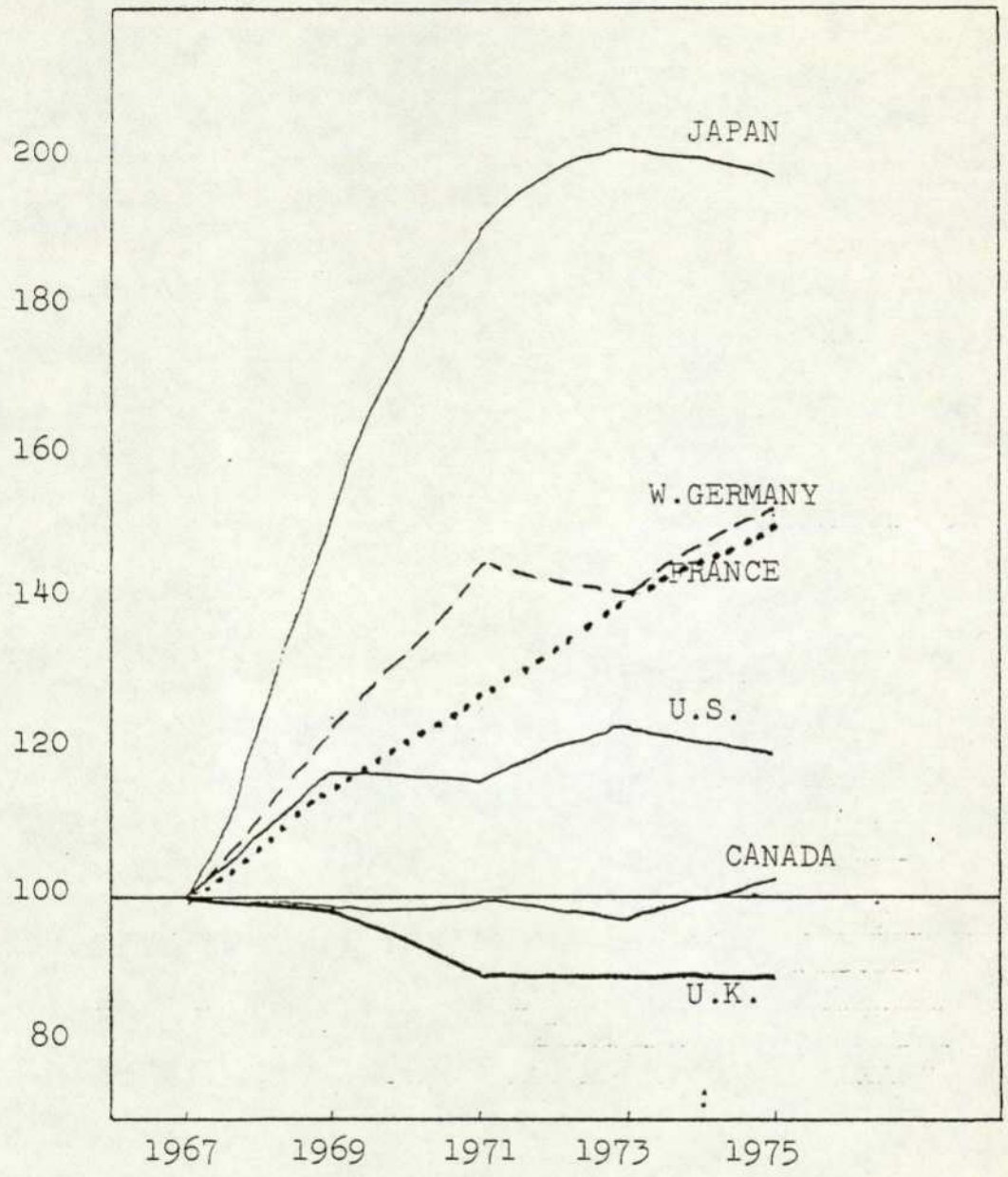
Now that we have reviewed the important role of new investment and R & D, let us go on to discuss briefly why such investments are so low in the U.K. industry. Table 6.1 sets out figures of rates of return on corporate capital for the period from 1962 to 1976 in the major industrial countries. As can be seen, the U.K. rate of return on capital is the lowest amongst all economically advanced countries. Moreover, it has steadily declined during this period from 10.1 per cent in 1969 to only 3.1 per cent in 1976. With such a rate of return on capital, it would be

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1 Financial Times, Monday July 6, 1981

FIGURE 6.3

How Britain Fell Behind in Industrial R & D



Source: OECD, Science & Technology in the New Socio-Economic Context, 1979.

Note: Figures have been adjusted for inflation, to show real increases (declines).

T A B L E 6.1

Rates of Return on Corporate Capital

1962 - 1976

Year or Period	Canada	France	Germany	Italy	Japan	U.K.	U.S.A.
1969	9.8	11.5	20.7	12.2	30.6	10.1	10.2
1970	6.6	11.5	18.2	11.5	28.1	8.7	8.1
1971	8.4	10.6	15.6	9.4	23.5	8.7	8.4
1972	9.4	12.3	13.4	9.9	20.2	8.6	9.2
1973	11.4	11.8	12.9	n.a.	15.7	7.2	8.6
1974	11.4	10.8	12.7	n.a.	13.1	4.0	6.4
1975	8.2	5.2	10.0	n.a.	13.9	3.4	6.9
1976	8.1	n.a.	11.4	n.a.	n.a.	3.6	7.9
Average							
1962-64	7.9	9.7	19.3	10.4	28.2	11.9	12.0
1965-69	9.6	10.0	19.5	11.4	27.9	10.6	12.2
1970-73	9.0	11.6	15.0	10.3	21.9	8.3	8.6
1974-76	9.2	8.0*	11.4	n.a,	13.5*	3.7	7.1

n.a. - Not available.

* Data are for the 1974-1975 period.

Source: Jeffrey D. Sachs, "Wages,Profits, and Macro-economic Adjustment: A Comparative Study", Harvard University and National Bureau of Economic Research, Brookings Papers on Economic Activity (2:1979), p.278

hardly possible for managements to attract external capital to invest in their companies.

For the internally generated funds for reinvestment as well as investment in R & D, the situation is not much better, as pointed out above. Our theoretical analysis, in Chapter II, suggests that accounting practices have a pervasive influence on management attitudes and policies. The emphasis on E.P.S., it was argued, may be an important reason why the U.K. lags behind many industrial countries in research and capital spending which in return has adversely affected productivity. Yet again the drop in productivity would almost certainly adversely affect levels of investment and R & D, as creating insufficient wealth would result in some companies paying out in wages and salaries almost all the wealth created - and the managements still would be wondering why they have no money available for reinvestment and why they fail to attract investment. One Possible form of remedy was suggested. That is, income reporting on a value added basis would encourage the creation of wealth and would direct attention of corporate managers to the long-term interests of companies and, eventually, of the economy.

Against this we can now proceed to review the evidence on the following hypotheses:

H5

Managements of companies that externally report value

added would be more concerned with long-term planning of goals and strategy.

H6

Companies which externally report value added are likely to:

(a) create more wealth,

(b) spend more on R & D,

(c) internally generate more funds for reinvestment

(d) achieve higher rates of return on capital,

(e) pay higher wages.

H7

Companies which externally report value added are more likely to be:

(a) larger in terms of both labour size and capital employed,

(b) more capital intensive, than those which do not.

For empirical evidence related to Hypothesis 5, our respondents were asked to rate the Importance of long-term (over 5 years) planning of goals and strategy on a five-point scale (ranging from "Very important" to "Of no importance).[1] For companies that ecternally report value added 56.3% of respondents assigned "Very important", and 29.2% assigned "Quite important". By contrast, only 30.0% of companies which do not externally report value added rated long-term planning of goals and strategy as "Very important", and 46.7% as "Quite important".

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1 See Appendix A, Section 11.3.3.

Perhaps the differences between views of managers of both groups of companies regarding this issue are best summarised in terms of both mean and standard deviation. Consistent with our expectations, for companies which externally report value added, both mean and standard deviation were 4.33 and 0.953 respectively, whereas they were 3.90 and 1.09 for the other group of companies. Of course, the higher the mean, the more important the issue was rated, as the mean is just an average score on a five-point scale in this case.

While this analysis suggests that managers of companies which externally report value added rate long-term planning of goals and strategy as being more important than do the managers of the other group of companies, it does not tell whether this difference is statistically significant or not. Hence, the Maun-Whitney U test was used to test whether the two independent samples have been drawn from the same population. The results of the test seem to support Hypothesis 5. As the observed U is 529.5 and the associated level of significance for two-tailed test is 0.0343, we could conclude that Hypothesis 5 is significant at the 0.05 level. Because the 0.05 level of confidence has been accepted as the basis for accepting (or rejecting) the null hypotheses of the present study, Hypothesis 5 can be accepted.

For both Hypothesis 6 and Hypothesis 7, however, the

findings on the variables subject of our prediction in both hypotheses are shown in Table 6.2. The table reports the group averages for certain descriptive and performance variables across both groups of firms, classified according to whether they externally report value added or not. It can be seen that consistent with expectations, there are very high differences between almost all of both samples' means in the hypothesised direction.

Statistical significance was determined by the use of t - tests. For each group of companies, fifteen variables' mean were computed for one year, i.e. 1978. The t - tests were used to test the hypothesis that the population means for both groups of companies are the same, and that the differences reported in Table 6.2 are solely the result of sampling error.

An examination of Table 6.2, however, reveals that companies that externally report value added significantly outperformed (at the 0.05 level) the other group of companies in terms of labour productivity, capital productivity and overall productivity. Furthermore, as can be seen from the evidence presented in Table 6.2, the level of wealth created, funds retained for use in business, rates of return on capital, labour cost, labour size, capital employed, and capital intensity were significantly higher (at the 0.01, 0.05, 0.01, 0.05, 0.05, 0.01 and 0.05 level respectively) in the first group of companies. The level

TABLE 6.2

Means (1978)[+] of Some Variables across Firms in Both Samples.

Variable	Firms externally report VA	Firms do not
Value added (£'000)	64,834	30,794***
Turnover (£'000)	176,532	94,230*
Capital employed(CE)(£'000)	126,568	61,634***
R&D (per cent of turnover)	1.8	1.2
Funds retained for use in business (£'000).	11,348	3,490**
Labour cost(LC)(£'000)	45,279	22,321**
Number of employees	7,956	5,287**
Labour cost per employee	5,691	4,220**
Labour productivity(VA/LC)	1.431	1.379**
(LC/VA)	0.698	0.725**
Capital productivity(VA/CE)	0.512	0.499**
Overall productivity (VA/CE + LC)	0.377	0.366**
Productivity margin (VA/Turnover)	0.367	0.326*
Capital intensity(£'000)	15.908	11.657**
Rates of return on capital (per cent).	14.820	12.542***

\+ Based on Historic Cost Figures.

*** Significant at the 0.01 level.

** Significant at the 0.05 level.

* Significant at the 0.10 level.

Significance tests were based on the t test.

of R & D was also higher in the same group, although the difference did not reach statistical significance.

On the basis of these results, Hypotheses 6(a), 6(c), 6(d), 6(e), 7(a), and 7(b) can be accepted. These results, however, did not support Hypothesis 6(b) and, thus, this hypothesis is rejected.

The noticeable conclusions one can draw from this analysis are that income reporting on a value added basis does encourage the creation of wealth and draw attention to the long-term interests of the company. No fundamental reason for conflict between wages and profits exists. By creating more wealth, both wages and profits can increase year by year. However, the reader is cautioned against accepting the results as conclusive evidence. Rather, they should be evaluated in the light of the limitations imposed by the research design and implementation. For example, data subject of our analysis was related to only a one year period. Ideally, data for a longer period would have been collected and analysed, but this was precluded, as the use of value added in external financial reporting is a very recent phenomenon and hence collecting data for a longer period was not possible. The same reason has also led to a second important limitation of the study. That is, the analysis in this section was carried out according to whether companies externally report value added or not. Of course, it would have been preferable if companies were

further classified, for the purpose of our analysis, according to both size and industrial category. Unfortunately, the number of companies that externally report value added in each industrial category, even regardless of their size, was not adequate for purposes of statistical inference.

These limitations accentuate the importance of viewing the results presented in Table 6.2 as merely an initial installment in what is hoped will become a growing body of empirical literature bearing on this paramount issue.

Finally, one issue still remains to be examined in this section. That is, the relationship between the use of value added in external financial reporting and its use as a basis for productivity bonus schemes.[1] As previously suggested, income reporting on a value added basis would make it easier for the company to introduce and operate a productivity bonus scheme based on value added. Such schemes, it has been argued, may enhance economic performance of companies and interact with the external reporting of value added by having a stronger effect on productivity.

If value added productivity bonus schemes are a good thing, as we shall find out in the succeeding chapter,

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1 The details of these schemse is thesubject of the following chapter (Chapter VII).

value added external reporting may help, for this will enhance the awareness, comprehension and acceptance of value added by both employees and managers. Thus, it would seem appropriate at this stage to see whether both uses of value added are associated or not. The following hypothesis is considered:

H8

There is a significant relationship between the use of value added as a means of financial reporting and its use as a basis for productivity bonus schemes.

The findings on Hypothesis 8 are presented in Table 6.3. As can be seen from the table, 30 companies out of 46 that externally report value added do use value added as a basis for productivity bonus schemes (65.2%). By contrast only 2 companies out of 31 which do not externally report value added do use it as a basis for productivity bonus schemes (6.5%). These results would seem to suggest that there is a positive relationship between the use of value added in external financial reporting and its use as a basis for productivity bonus schemes.

In order to find out whether this relationship is statistically significant, the non-parametric chi-square test was used to determine whether or not the two variables are statistically independent. Table 6.3 reports a corrected χ^2 of 23.96876. The probability of obtaining a value this large or larger with 1 degree of freedom is

TABLE 6.3

Relationship between the Use of Value Added in Financial Reporting and Its Use as a Basis for Productivity Bonus Schemes: (Test of Hypothesis).

VAR75 (VAPBS)	COUNT / ROW PCT / COL PCT / TOT PCT	VAR46 (VA in F.R.) NO	YES	ROW TOTAL
		0.	1.0001	
NO	0.	29	16	45
		64.4	35.6	58.4
		93.5	34.8	
		37.7	20.8	
YES	1.000	2	30	32
		6.3	93.8	41.6
		6.5	65.2	
		2.6	39.0	
	COLUMN TOTAL	31	46	77
		40.3	59.7	100.0

CORRECTED CHI SQUARE = 23.96876 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.0000

PHI = 0.58479

KENDALL'S TAU B = 0.58479 SIGNIFICANCE = 0.0000

PEARSON'S R = 0.58479 SIGNIFICANCE = 0.0000

nil, as shown in the same table, so we could conclude that a systematic relationship between the use of value added as a means of financial reporting and its use as a basis for productivity bonus schemes does exist. These findings strongly support Hypothesis 8, as this χ^2 is statistically significant at the 0.0001 level and hence the hypoyhesis can be convincingly accepted.

It is also of interest to note that the phi ($\emptyset$), Kendall's tau B correlation coefficient (τ), and Pearson product-moment correlation (γ) are all identical at score of 0.58479 with both latter measures significant at the 0.0001 level, which indicates a very strong relationship between the two variables involved in the hypothesised direction.

In the following section, we shall examine management motivations behind the value added reporting and find out whether their perceptions of such reporting are consistent with the findings of the present section.

6.3 Management Motivations for Value Added External Reporting

The external reporting of value added in the U.K. published accounts is entirely voluntary at present. Even so, the number of British companies that report value added is growing steadily. Whether such accounting practice, however, would be made mandatory in the future[1] or not, it would seem appropriate to explore management motivations involved.

Findings regarding management motiviations for value added reporting should be of significant interest to both the financial accounting policy-making bodies, such as the Accounting Standards Committee in the U.K., and the financial accounting legislative authorities. Such findings may be considered as a necessary precedent before taking any major accounting policy decisions for establishing a formal requirement for value added information to be given in general purpose external financial reports of companies. Management, the present researcher believes, plays a central role in the determination of accounting standards and practices. Understanding management's incentives and motivations, in particular, should be a precondition of positive accounting theory and accounting practice. Moonitz supports this view: "Manage-

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1 See, for example, Department of Trade, The Future of Company Reports, A Consultative Document, Op.cit., para. 13

ment is central to any discussion of financial reporting, whether at the statutory or regulatory level, or at the level of official pronouncements of accounting bodies."[1]

Furthermore, findings regarding management motivations behind value added reporting are of interest for the purpose of this research study. They will either reinforce our conclusion in the preceding section or weaken it depending on whether or not findings in this section are consistent with the findings of the preceding one. For instance, if the major management motivation behind value added reporting was found to be their concern about productivity in their firms and how to improve it, this will be consistent with our findings in Section 6.2 and hence will reinforce our conclusion referred to in that section. Conversely, if the major motivation was an ingenuine one such as "it is a response to growing union pressure for financial information" or "in order to keep in advance of anticipated future legislation", for example, this will be inconsistent with the preceding findings and hence will weaken the conclusion based thereon.

Not only managements motivations for and perceptions of value added reporting will be examined, but managements of companies that do not report value added were asked for

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1 Maurice Moonitz, Obtaining Agreement on Standards, Studies in Accounting Research No. 8 (Sarasota, Florida: AAA, 1974), p. 64

their perceptions of why they do not follow such practice. The issue is dealt with in two sections. First, a descriptive analysis will be presented and descriptive results derived, and then we shall proceed to discuss implications of these results.

6.3.1 Descriptive Analysis

Data for this section of the present research study were gathered by means of a questionnaire. For the sample of companies that externally report value added, each respondent was requested to give a view on 20 different statements that had been derived from an extensive search of relevant literature and previous interviews and discussions with a number of managers and academics (in terms of how strongly they agree or disagree with each statement). An overall analysis of the responses on 10 statements is given in Table 6.4, given also the mean scale position, the standard deviation, and coefficient of variance for each statement.[1]

The most interesting point, as can be seen from the evidence presented in Table 6.4, is perhaps that statement 3, i.e. it focuses the attention of management and emloyees on the need to generate waelth and provides common ground for co-operation to maximise prodcutivity, was viewed as being the most important motive for value added reporting, as it received the highest ranking according to the mean scale position ($\bar{X}$ = 4.13). 28.3 per cent of Respondents gave this motive the highest score (Strongly Agree), and a further 60.9 per cent

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1 For more details of descriptive statistics and one-way frequency distributions of all 20 statements, see Appendix D.

T A B L E 6.4

Management's Motivations for Value Added Reporting:

One-way Frequency Distributions and Descriptive Statistics

Statement*	% on a five-point scale					Statistics			Rank
	SA	A	UN	DA	SDA	$\bar{X}$	SD	CV	
1.To satisfy information needs of a wider group of accounting reports users.	13.0	71.7	10.9	4.3	--	3.94	0.62	0.16	2
2.It provides a unifying objective for the whole team of co-operating groups which contributes to the firm's perforamce.	17.4	41.3	19.6	21.7	--	3.54	1.03	0.29	6
3.It focuses the attention of management and employees on the need to generate wealth and provides common ground for co-operation to maximise productivity.	28.3	60.9	6.5	4.3	--	4.13	0.72	0.17	1
4.To develop a favourable impression of the management group by all parties concerned.	2.2	21.7	39.1	28.3	8.7	2.80	0.96	0.34	7
5.It shows how companies create wealth and how the community as a whole benefits from it.	10.6	66.0	14.9	6.4	2.1	3.77	0.81	0.21	3
6.It would facilitate the introduction of value added productivity schemes.	12.8	53.2	19.1	12.8	2.1	3.62	0.95	0.26	5
7.It helps to create better industrial relations and conditions which might facilitate effective employee participation.	19.1	44.7	19.1	12.8	4.3	3.62	1.07	0.29	5

Continued....

* For full details of statements, see Appendix A, Section 6.2

Notes: SA = Strongly Agree, A = Agree, UN = Undecided, DA = Disagree, SDA = Strongly Disagree, and CV = Coefficient of Variance.

T A B L E 6.4 (Continued)

Statement	% on a five-point scale					Statistics			Rank
	SA	A	UN	DA	SDA	$\bar{X}$	SD	CV	
8. It is a response to growing union pressure for financial information.	2.2	15.2	28.3	45.7	8.7	2.57	0.94	0.36	8
9. It focuses attention on the conflict over the distribution of the wealth created by the enterprise. This would help combat the inaccurate belief of many workers that they are exploited and accordingly improve the attitudes of employees toward their employing companies.	23.4	42.6	12.8	19.1	2.1	3.66	1.11	0.30	4
10. In order to keep in advance of legislation which we anticipate being passed on this subject.	—	13.6	25.0	50.0	11.4	2.41	0.87	0.36	9

assigned the score of 4 (Agree). It is also interesting to note that the very low (the second lowest at 0.17) coefficient of variance indicates very small differences of opinion among respondents about the significance of this motive.

Statement 1, i.e. to satisfy information needs of a wider group of accounting reports users, was ranked in the second place as indicated by the mean scale position ($\bar{X}$ = 3.94). This is perhaps not surprising, as the value added information was reported to be relevant to the decision needs of almost all the major user groups of accounting reports.[1] The coefficient of variance figure would also seem to suggest that the views of respondents regarding the importance of this statement are very close indeed (the lowest coefficient at 0.16). 71.7% of respondents gave this statement the score of 4 (Agree), and a further 13% gave it the score of 5 (Strongly Agree). One more point is worth noting in connection with the findings on statement 1 - that is, these findings strongly support the a priori arguments in the accounting literature that the major objective of accounting reports is to satisy the information requirements of as many user groups as possible.

For statement 5, i.e. it shows how companies create wealth and how the community as a whole benefits from it,

1 See Chapter IV, Section 5.3

respondents seem to agree that it is a quite important motive for their reporting of value added information. It was ranked in third place as indicated by the mean scale position ($\bar{X}$ = 3.77), with low coefficient of variance (CV = 0.21) reflecting once again little differences among respondents regarding the importance of this motive.

Almost equally important was statement 9, i.e. it focuses attention on the conflict over the distribution of the wealth created by the enterprise. This would help combat the inaccurate belief of many workers that they are exploited and their efforts unduly benefit the shareholders and accordingly improve the attitudes of employees toward their employing companies. Although this statement comes out at equal fourth place, the difference between its mean and the mean of statement 5 is not significant (3.66 compared with 3.77 respectively).

By contrast, however, statement 4, i.e. to develop a favourable impression of the management group ("image building") approach, statement 8, i.e. it is a response to growing union pressure for financial information, and statement 10, i.e. in order to keep in advance of legislation which we anticipate being passed on this subject, were ranked at the bottom of all statements shown in Table 6.4. They come out at equal seventh place ($\bar{X}$ = 2.80), eigth place ($\bar{X}$ = 2.57), and ninth place ($\bar{X}$ = 2.41)

respectively. An examination of Table 6.4 also reveals that the mean scale position of statement 4, statement 8, and statement 10 is significantly lower than any other mean of all the remaining statements.

Now we turn to the other side of the story. Having identified the major management motiviations for voluntary disclosure of value added information, it appears appropriate to discover reasons for not reporting it. In order to do so, Finance Directors of companies that do not report value added, subject of our study, were asked to apply relative importance rating to four reasons listed on the questionnaire.[1] Their views were recorded on a five-point scale ranging from "Strongly Agree" to "Strongly Disagree". Descriptive analysis of the responses is given in Table 6.5. As can be seen, reason 1, i.e. it may cause confusion with the earnings statements, comes out at equal first place as indicated by the mean scale position ($\bar{X}$ = 3.46).

Reason 4, i.e. it contains very little which is not already disclosed, was ranked in the second place as the second major reason for not reporting value added ($\bar{X}$ = 3.40). Both reason 2, i.e. it would involve extra work, costs and delay and lead to information overload, and reason 3, i.e. it could damage the company's competitiveness in view of the additional disclosure involved, come

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1 See Appendix A, Section 6.3

T A B L E 6.5

Why Do Companies Not Externally Report Value Added?

Descriptive Results

REASON	% on a five-point scale					Statistics			Rank
	SA	A	UN	DA	SDA	$\bar{X}$	SD	CV	
1. It may cause confusion with the earnings statements.	7.1	39.3	46.4	7.1	—	3.46	0.74	0.21	1
2. It would involve extra work, costs and delay and lead to information overload.	7.1	39.3	32.1	14.9	3.6	3.29	0.98	0.29	3
3. It could damage the company's competitiveness in view of the additional disclosure involved.	14.3	32.1	28.6	17.9	7.1	3.29	1.15	0.34	3
4. It contains very little which is not already disclosed.	7.1	50.0	17.9	25.0	—	3.40	0.96	0.28	2

out at equal third place, as they both have an equal mean scale position ($\overline{X}$ = 3.29 for each reason).

The most interesting feature of the results presented in Table 6.5, however, is that there is a marked lack of agreement amongst the respondents about the reason for not reporting value added. This is evident, as there are no significant differences between the means of the four reasons, e.g. the highest mean score was 3.46, whereas the lowest mean score was 3.29. These results may reflect the fact that respondents were uncertain about any one reason. Alternatively, they may reflect the view that managers of companies which do not report value added are not aware of the value added concept in general and, hence, their views in this regard may be random and not based on a sound knowledge of the subject.

6.3.2 Implications of the Results

The analysis presented in the preceding section suggests that voluntary disclsoure of value added information by corporate managers is not a window dressing exercise adopted to just keep in advance of any anticipated legislation on this subject. Nor are they a result of a growing union pressure for financial information. Rather, our analysis reveals that management motivations for such disclosures are genuine. They were intentionally designed by corporate managers mainly to create better industrial relations, improve attitudes of employees, and provide common ground for cooperation with the ultimate objective of achieving higher productivity.

These results, which are based on management perceptions of the motivations for value added reporting, seem to be consistent with the findings presented in Section 6.2 where companies that externally report value added were found to be more productive than companies which do not. Hence, the conclusion that companies which externally report value added are more productive than companies which do not is reinforced by the results based on management perceptions of motivation for value added reporting.

Additionally, our analysis in this section indicates that there is no serious objection to value added external

reporting by companies which at present do not follow such practice. This was evident from the marked lack of agreement about why these companies do not report value added.

Taken together, our preliminary view is that large companies should have to disclose, with statutory enforcement if necessary, value added and its distribution. But standardisation of practice is a necessary precondition to any statutory disclosure requirement as the main problem with value added reporting at present is divergent practice. The way in which value added may best be measured, in the researcher's opinion, was discussed in Chapter II. In the next section the manner in which value added information should be presented is examined.

6.4 Recent Developments in Value Added Reporting

Having examined the use of value added in financial reporting, particularly its reference and Its impact on the economic performance of companies, in two successive chapters, it would seem useful at this stage and before leaving This issue to investigate recent developments in value added reporting practices in the U.K., discussing different ways of presentation of value added information, and recommending a preferable way.

6.4.1 The Extent of Reporting

As pointed out earlier, the origins of recent concern in the U.K. over the external reporting of value addedd would seem to be found in The Corporate Report published by the Accoutning Standards Committee in 1975.[1] Since then, there have been few surveys of the extent to which value added is reported by the U.K. companies. The Institute of Chartered Accountants in England and Wales has reported on the situation in respect to company reports in 1975/76, 1976/77, 1977/78 and 1978/79.[2] Morley also reported briefly on the 1976/77 situation in his book The Value Added Statement and went on to provide a number of examples of current practice.[3] But both Gray and Maunder's research study of 1977/78 accounts[4] and Rutherford's very recent reported survey of the three year period ending in the three years from July 1975 to June 1978[5] are perhaps the best attempts so far to provide a detailed and qualitative analysis of value added reporting practices.

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1 Accounting Standards Committee, The.Corporate Report, op.cit.
2 Institute of Chartered Accountants in England and Wales, Survey of Published Accounts 1979 (ICAEW,1980) p.222
3 Michael F. Morley, The Value Added Statement - A Review of its Use in Corporate Reports, op.cit., p.6
4 Sidney Gray and Keith Maunders, Value Added Reporting: Uses and Measurement, Op.cit., p.22
5 B.A. Rutherford, "Published Statements of Value Added: A Survey of Three Years' Experience", Accounting and Business Research (Volume 11 No. 41 Winter 1980), pp. 15-28

A comparative summary of these surveys is given in Table 6.6. Whilst for the 1975/76 period the ICAEW and Rutherford reported disclosure of 5% and 12.6% respectively, it can be seen that for 1976/77 the extent of disclosure seems to have risen according to the ICAEW to 14%, Morley to 20%, Gray and Maunders to 18% and Rutherford to 26.8%. For 1977/78, the ICAEW reported an increase to 22% and Rutherford reported an Increase to 34.7%. Although all surveys were based on The Times 1000, there appear to be some discrepancies between the survey results. These discrepancies can probably be explained by the fact that some have concentrated on the largest companies (e.g. Morley and Rutherford) and including those which are not listed in Morley's survey. Overall, the evidence to date suggests that the extent of value added reporting in the U.K. is steadily increasing and that there may well be a tendency for more of the larger companies to report value added.

In the present research study, a survey of all listed companies included in the FT-Actuaries 500 Share Index (i.e. 492 industrial companies and 8 oil companies) has been made to provide evidence relating to both the incidence of reporting and whether or not such reporting was the result of The Corporate Report recommendation. The companies surveyed were categorised into two groups on the basis of whether they report value added or not. A company was considered as reporting value added if it gives

T A B L E 6.6

The Extent of Value Added Reporting:

A Comparative Summary of Previous Surveys' Results

Surevy / VA Reporting	ICAEW Survey (300 large listed industrial Co.s)				Morley (110 largest companies)	Gray & Maunders (all listed companies in The Times 1000)	Rutherford (the largest 250 Co.s in The Times 1000)		
	1975/76	76/77	77/78	78/79	1976/77	1977/78	1975/76	76/77	77/78
Yes	14(5%)	42(14%)	67(22%)	84(28%)	22(20%)	84(18%)	24(12.6%)	51(26.8%)	66(34.7
No	286	258	233	216	88	371	166	139	124
Total Companies	300	300	300	300	110	455	190	190	190

Notes: 1. Gray and Maunders' survey was based on a random sample of 455 companies.

2. Although Rutherford's survey was based on the largest 250 companies in The Times 1000, unquoted companies and companies which did not survive the 3-year period were eliminated.

information on value added (i.e. bought-in items are deducted from sales) and its distribution but not necessarily in the form of a separate statement. Indeed, in a few cases there was an explicit reconciliation with profits or integration with cash or funds flow statements. Conversely, companies were considered as being with no value added reporting if they give some information on value added but do not extend this to distributions or which show the distribution of sales revenue rather than value added.

Table 6.7 shows the extent of and trends in value added reporting among the companies surveyed. As can be seen 94 (1818%) companies were found to be reporting value added by the end of 1978. Only seven companies (7.4%) started to report value added before 1975 and the remaining 87 companies (92.6%) have followed such practice during the period 1975-1978. These results show that there has been a dramatic increase in the external reporting of value added since 1975 which seems to support the contention that value added reporting in the U.K. is a response to the recommendation of The Corporate Report in 1975 that companies should provide statements of value added as an addition to their annual reports.

Yet, evidence of a significant and steadily growing reporting of value added does not necessarily mean that the quality of that reporting is satisfactory in respect to measurement, classification, comparability of content

T A B L E 6.7

The Extent of and Trends in Value Added Reporting

Among FT-Actuaries 500 Share Index

Categories / Trends	Firms Reporting VA		Firms with no VA reporting in the population	Population Total
	in the sample	in the population		
Before 1975	4(8.3%)	7(7.4%)	493	500
1975-1978	44(91.7%)	87(92.6%)	413	500
Total	48	94(18.8%)	406(81.2%)	500

and presentation. On the contrary, all available evidence does suggest that current practice in reporting value added is haphazard and inconsistent. In what follows we shall examine the content and form of presentation of value added information and suggest some recommendations concerning this issue.

6.4.2 Presentation of Value Addded Information

As previously noted, there are, to date, no statutory or Stock Exchange requirements relating to value added reporting. Neither have any statements of standard accounting practice or exposure drafts been issued on the subject. The absence of a formal guidance has perhaps inevitably resulted in a good deal of misleading and confused reporting in respect to terminology, measurement, distribution and format of presentation of value added.[1]

For the measurement issue the major problem is whether companies should present value added gross or net of depreciation and whether presentation of value added should be based on sales or on production. The problem of value added measurement was dealt with in detail in Chapter II, Section 2.4. In particqlar, the arguments for and against the presentation of value added with depreciation treated as a bought-in cost or as an application of value added as well as whether presentation of value added should be based on sales or on production were stated. This research study concludes that in principle presentation of gross value added based on sales is preferable to net value added based on production.

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1 See, for example, Sidney Gray and Keith Maunders, Value Added Reporting and Measurement, op. cit., pp.39-63; and B.A. Rutherford, "Published Statements of Value Added: A Survey of Three Years' Experience", op.cit.

An examination of value added reporting practices also reveals that there are a number of unusual and innovative presentations where value added is combined with profit and loss account or incorporated into statement of source and application of funds.[1] As regards the former way of presentation, on the face of it this seems to be a sensible step, as such practice may make value added presentation more regulated and hence more reliable. Furthermore, by incorporating value added into the conventional profit statement the confidence and trust of employees in value added may be increased. They may have more faith in the fairness of the measure if they see that it is embodied in the shareholders' profit statement.[2] The authors of a recent study have supported such practice: "Value added should reconcile and be integrated with the conventional profit statement."[3]

For the latter way of presentation, i.e. incorporating value added into statement of source and application of funds, this could be possible only if value added was measured and reported on a gross basis, as suggested in this study. In this case the depreciation charge for the year and the retained profit for the year are added to-

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1 See, for example, S. Gray and K. Maunders, Value Added Reporting: Uses and Measurement, op.cit., p.22

2 M.F.Morley, The Value Added Statement:A review of its use in corporate reports, op.cit., p.108

3 M.Renshall, R.Allen and K.Nicolson, Added Value in External Financial Reporting....., op.cit., p.51

gether to measure the cash inflow generated by the operating activities of the company. Such practice may appear to be acceptable, one could argue, as it cuts down the number of separate statements and hence cuts down work and costs involved.

However, combining value added with profit and loss account or a funds statement format seems a serious mistake, for this could obscure and confuse the function of each statement. As a result, the combined statement is very likely to be less useful to all potential users of accounting reports than if each statement was reported separately.[1] More significantly perhaps is that combining value added with any other statement would almost certainly ruin one of the major advantages which is claimed for the use of value added for financial reporting - its understandability.[2]

Whilst profit statement reports on the return earned by the shareholders and statement of source and application of funds reports on liquidity and the capacity to stay solvent, value added statement reports on the wealth created by the whole co-operating team of workers and investors and its distribution among them all. State-

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1 For a full discussion of this point, see, for example, M.F.Morley, The Value Added Statement....,op.cit., pp. 106-114

2 See Chapter V, Section 5.3

ments with such different objectives should not be combined. It is the researcher's opinion therefore that if value added is to be useful, as suggested in this research study, it must be reported in an extra separate statement in its own right with a distinct title.

The above findings have a clear implication. There is an urgent need to introduce some standardisation into the diversity of value added reporting. On the evidence of the present research study, the following observations, which might be helpful to those responsible for drafting an accounting standard concerning this issue, are made:-

(1) The presentation of value added should be based on sales and not on production with depreciation treated as an allocation of value added rather than as a bought-in cost.

(2) Value added should be reported in a separate statement and should not be incorporated into the profit and loss account or into the statement of source and application of funds.

(3) Value added statement should be published in the main accounts. Its publication elsewhere, e.g. employee reports, should not be used in place of its publication in the main account but as a supplement to it.

(4) Both substractive and additive elements of value added should be reported.

(5) Both retained profit and depreciation should be reported together under one distinct heading which could clearly show that such funds are for reinvestment in the business for the interest of all parties concerned.

(6) Percentage figures should also be presented to show each group's relative share of the wealth created.

(7) Ratios relating to value added should be provided. In particular: value added/employee; value added/£ labour cost; value added/capital employed; and value added/labour cost + capital employed, could be useful.

(8) In order to make value added easier to understand by as many users as possible, particularly by the financially uninstructed users, it seems advisable to use some sort of communications techniques, such as pie charts and bar charts.

(9) Comparative statistics relating to previous year(s) should also be provided.

(10) Finally, value added statement should be subject to audit.

The present researcher believes that value added reporting along the line suggested above would encourage the creation of wealth, reduce the conflict between capital and labour which is damaging to both, and provide common ground for co-operation to improve productivity.

The evidence presented earlier in this section suggests that the proportion of large companies publishing value added statements has increased substantially; by June 1978 it had reached more than one-third.[1] This significant extent of value added reporting indicates the feasibility of that practice. The time has come therefore for the accounting policy bodies in the U.K. to introduce some standardisation into the diversity of reporting that has emerged. Such action can further the cause of efficient resource allocation.

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1 See B.A. Rutherford, "Published Statements of Value Added: A Survey of Three Years' Experience", op.cit., p. 16

6.5 Summary and Conclusions

Accoutnants have not concerned themselves greatly with the economic impact of financial reporting, considering this outside the scope of accounting; and economists have not concerned themselves with financial reporting, considering it the domain of accountants. In this chapter an attempt has been made to partially fill this gap. In particular, the economic consequences of value added reporting were examined and management motivations for such reporting have been identified.

The analysis presented in this chapter provides us with the following major conclusions and suggestions:

(a) The existence of a highly statistically significant positive relationship between value added reporting and
   (i) the wealth created,
   (ii) both labour productivity and capital productivity,
   (iii) funds retained for reinvestment.

(b) Both uses of value added as a means of financial reporting and as a basis for productivity bonus schemes were found to be statistically significantly associated.

(c) Focusing the attention on the need to generate wealth and satisfying the information needs of a wider group of accounting reports users were identified as the major management motivations for value added reporting.

(d) The proportion of U.K. listed companies publishing value added statement had increased substantially, by June 1978 it had reached more than one-third.

(e) The absence of a formal guidance has resulted in a good deal of divergent practice.

(f) Value added information is perhaps best reported as a separate statement in the main accounts including both substractive and additive elements.

(g) There is an urgent need for the accounting policy bodies in the U.K. to introduce some standardisation into the diversity of reporting and encourage companies to supplement financial statements with value added information.

CHAPTER VII

VALUE ADDED AS A BASIS FOR PRODUCTIVITY BONUS SCHEMES: AN EMPIRICAL EVALUATION

7.1 Introduction

As was mentioned in the introduction (Chapter I), the main concern in this research study is with the uses of the value added concept at the micro-level with a view to improve industrial productivity. In the preceding two chapters (Chapter V and Chapter VI), the use of value added in financial reporting was examined. One of our major findings was that both uses of value added as a means of financial reporting and as a basis for productivity bonus schemes are statistically significantly associated. Furthermore, our *a priori* analysis in Chapter II suggests that value added productivity bonus schemes (VAPBS) may have a profound effect on productivity, for they not only create a direct financial link between the organisational rewards system and productivity (in terms of value added per £1 of labour costs and/or value added per £1 of capital employed) but also provide a framework for cooperation and participation and promote good communications.

The major objective of this chapter is to provide empirical evidence on this alleged utility of such schemes.

7.2 A Note on VAPBS

Whilst it is beyond the scope of the present research study to review the many developments in productivity incentive schemes or make any contrast between them, it would seem appropriate to discuss briefly the nature of VAPBS and find out why they are increasingly recognised to be the most effective incentive scheme for improving productivity.

There are many varieties of large group or company wide incentive schemes operating under a variety of different names but all with a common goal - that is, to increase productivity. VAPBS are a form of such schemes intended to achieve the same goal. The origin of this kind of scheme seems to be the Scanlon plan, which was developed by Joseph Scanlon in the U.S.A. in the depression years of the early thirties. An accountant turned labour leader, Scanlon was asked to save a company from bankruptcy. The plan, which has received considerable attention in the literature, but not from an accounting point of view, is based on two principles. The first is that major participation and cooperation are essential at all organisational levels in order to solve production and other continuing decision-making problems of the entire organisation.[1] The second is that much of the product-

1 This may explain the behavioural scientists' interest in the plan.

ivity gains are to be paid to the participants on a regular basis, the amount determined by the overall success of the organisation.

A few years later, A.W. Rucker has rightly developed a similar kind of incentive plan, which was based on value added instead of sales and has become a model for others such as Bentley and which is being widely used at present in the U.K.[1] But the question to face now is this: what is special about VAPBS? In other words, why group or company-wide bonus schemes should be based on value added and not on sales or profits.

As pointed out in Chapter II, in order to motivate efficient behaviour within the firm, an effective reward system must obviously tie the attainment of rewards to high productivity. To do so, the firm must first be able to measure productivity if it is to successfully influence productivity. Clearly, the productivity of the firm is not measured by its profit or its sales. Neither of these figures can be brought directly into relation with the resources employed by the firm. Using sales as a measure of productivity will totally confuse the whole issue by relating not a firm's input to its own output, but its inputs to its own plus someone else's output.

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1 See, for example, M. Woodmansey, Added Value: An introduction to productivity schemes, op.cit.

For profits, however, the major problem is that they fail to distinguish between demand and supply factors that are controlled by the firm and those that are external to it. High profits do not necessarily indicate an efficient use of resources, as they reflect not only the use of resources but also elements of monopoly that exist in particular markets.[1] Additionaly, profits represent only the shareholders' reward and as such they have little interest or motivational value for employees as illustrated below.

The above discussion clearly implies that the only figure which must be used as a measure of productivity and which could provide a unifying objective for the whole team with an interest in the company, and in turn should be used as a basis for any company-wide incentive scheme, is the value added.

The evidence presented in Chapter V does also suggest that the concept of value added is more undertsandable than that of profit and more relevant to the information needs of employees than both sales and profits. This once again seems to indicate that value added is preferred to be used as a basis for incentive schemes in

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1 Government monetary policies and the power of Trade Union organisations were shown by Professor Ball as examples of factors that are beyond the control of the firm and which may influence profitability. For a full discussion of this point,see R.J. Ball,"The Use of Value Added in Measuring Managerial Efficiency", op.cit.

the interest of clarity, understanding, and relevance which are essential if the scheme is to be accepted by workers.

Finally, and perhaps most significantly, VAPBS is seen by corporate managers as being a philosophy, a theory of organisation, and a management style rather than an incentive scheme.[1] As a philosophy, the VAPBS rests on the assumptions that people prefer to express theselves fully in all situations including work situations and that, when they do express themselves, they can be constructive and supportive of other people and the groups to which they belong. The theory which follows from this position states that the basic philosophy is best served when all members of a firm particpate as fully as they can in the activities of the firm and when they are equitably rewarded for their participation.[2] If workers agree to cooperate to improve productivity, they will also require a share of such improvements. In the absence of participation, however, their shares are likely to be regarded as random and unrelated to productivity.

Behavioural scientists and knowledgeable personnel executives for years have been telling managements that

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1 See, M. Woodmansey, Added Value:An introduction to productivity schemes, op.cit.

2 For a definition of participation, see Chapter II, Section 2.5.

there is a better way, that the traditional authoritarian management style belongs to another era, indeed if ever there really was any place for it.

Chris Argyris,[1] for example, attributes the "illness" in most organisations to authoritarian methods, a denial of the workers' needs to use their own ideas and knowledge, and a lack of understanding of the compatibility of the goals of the organisation with the goals of the individual.

Douglas McGregor[2] and A. Maslow[3] argue that a satisfied need does not motivate. They suggest that workers in most of the economically advanced countries have essentially satisfied their physiological and safety needs and they are increasingly looking for opportunities to satisfy their higher orders needs, e.g. self-actualisation. They aim their attack at the traditional authoritarian and counterproductive management style.

Frederick Herzberg[4] emphasises the worker's need for acheivement, recognition, responsibility, accomplishment, and challenging work. In sum, one of the members of management of Sony has expressed it this way:

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1 Chris Argyris, Understanding Organisational Behaviour (Homwood,Illinois: The Dorsey Press, 1960).
2 Douglas McGregor,The Human Side of Enterprise,McGraw-Hill, 1960.
3 A.Maslow, "A Theory of Human Motivation", Psychological Review, 1943, 50, pp.370-396.
4 F.Herzberg,Work and the Nature of Man, (World Press,1966).

"...Despotic exercise of authority denies a worker an independent personality, turns him into a 'cog-wheel' or 'pebble', makes him actively unhappy as a human being. It inhibits productivity, results in the misuse of authority, and leads naturally to the self-destruction of the company itself."[1]

In support of the a priori analysis above which emphasises the significance of participation to the company's productivity, Vroom[2] found that participation is related to a large number of dependent variables, including productivity, motivation, morale, job satisfaction, grievances, absenteesim, and turnover.

VAPBS may have greater potential, than any other incentive scheme, for creating better industrial relations and conditions which could facilitate effective employee involvement and participation. This is because value added combines employee and employer interests and provides a unifying objective for them all. Furthermore, the "value added approach" tends to treat labour as a distribution of surplus rather than as a cost that always needs to be minimised and which is contrary to the wish of employees who prefer to see themselves as responsible participants in the value added-earning team and not hired hands who maximise their employer's profits.

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1 The Financial Times, 6 July, 1981.
2 Victor H.Vroom, Some Personality Determinants of the Effects of Participation, op.cit., p. 11.

For workers also to participate effectively they have to know the problems of their company. Management must communicate the concerns so workers can focus their attention on important problems. It has been already pointed out that the value added concept is more understandable than any other alternative concept and hence value added is perhaps a preferable way of communication which may enable a wider and better undertsanding of company information to employees.

Indeed, available empirical evidence does suggest that VAPBS were chosen by companies not simply because they acted as incentive schemes but mainly because they were judged to be effective in the wider context of employee involvement and participation.[1] In the same research study, companies were asked to state what they considered to be the main benefits of value added-based productivity schemes. The major benefit appears to be the increased degree of involvement and participation by employees in the day-to-day problems of running a company. In other words there have been changes in the relationships (i) between the company and employees for they now show concern for work flow, breakdown, material defects, and wastage, and (ii) amongst employees themselves in so far as the levels of cooperation and teamwork have in-

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1 M. Woodmansey, Added Value: An introduction to productivity schemes, op. cit.

creased. As a consequence, improvements in the productivity levels of most of the companies have also been reported.[1]

Consistent with these findings, a shopfloor survey at the factory also produced overwhelming support for the same system of rewards. On a five-point scale from 'very bad' to 'very good' in reply to the question, 'What do you think of this payment system?', 80% thought it was either good or very good. Furthermore, 83% chose this system as the one they would most favour from a list of schemes.[2]

In the remainder of this chapter, we will be concerned with providing empirical evidence related to the effect of VAPBS on levels of morale, cooperation, communication, involvement, and participation, and productivity of companies operating such schemes.

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1 Ibid.
2 M.P. Marchington, "Worker Participation and Plant-Wide Incentive Systems", op.cit.

7.3 Empirical Results: Overview of Questionnaire Responses

For the purpose of our analysis in this chapter, companies were classified according to whether they are operating VAPBS or not. Our respondents were asked whether they have any VAPBS.[1] Out of 79 responses we have received, 32 said yes they had, 45 said no, and 2 respondents did not answer the question.

As with any information obtained via questionnaires, the information on some variables under investigation in this chapter has obvious limitations. In particular, two limitations are worth stressing. First, its subjectivity and one-sidedness (coming only from management). Secondly, the most serious bias our information is likely to contain is a systematic tendency by managements to overstate the level of participation and involvement, cooperation, communication, morale, and productivity in their companies. However, both limitations cause comparatively few problems for our pusporse, which is to assess the effect of operating VAPBS on relative degrees of participation and involvement, cooperation, communication, morale, and productivity, rather than to measure the extent of these variables in absolute terms. Although, few interviews were carried out (see Chapter III), mainly to refine the questionnaire, the researcher believes that ex-

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1 See Appendix A, Section 6.4.

tensive interviewing and detailed case studies are needed for future work in this area if a conclusive evidence is to be reached. Meanwhile, the qualitative data provided through the questionnaire produced some interesting results in our preliminary analysis.

Respondents were asked to rate morale, cooperation, communication, and participation and involvement in their companies on a five-point scale with the score of 5 assigned to the top of the scale and the score of 1 assigned to the bottom of the scale.[1] Respondents were also aksed to state the current level of both labour productivity and overall productivity in their companies (measured or perceived) with maximum of 5 points and minimum of 1 point.[2] An Overall analysis of the responses is given in Table 7.1, given also both mean and SD for each variable in each category of companies.

As can be seen from the evidence presented in Table 7.1, and consistent with expectations, in companies that are operating VAPBS, degrees of involvement and participation, and levels of morale, cooperation, communication, and productivity are generally higher than in companies without VAPBS, as indicated by the mean scale position.

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1 For details of measurement indices and scaling procedures, see Chapter III, Section 3.4,and Appendix A, Sections 7 and 8.

2 See Appendix A, Section 9.3

TABLE 7.1

The Effects of VAPBS on Attitudes and Performance:

Preliminary Results

Levels of:	Companies with VAPBS (N = 32)							Companies without (N = 45)						
	% on a five point scale					Statistics		% on a five-point scale					Statistics	
	5	4	3	2	1	$\bar{X}$	SD	5	4	3	2	1	$\bar{X}$	SD
Participation & Involvement	12.9	54.8	32.3	--	--	3.81	0.65	2.2	42.2	40.0	15.6	--	3.31	0.76
Morale	6.3	65.6	28.1	--	--	3.78	0.55	6.8	38.6	50.0	2.3	2.3	3.45	0.76
Cooperation:														
between departments	15.6	68.8	15.6	--	--	4.00	0.57	7.0	30.2	58.1	4.7	--	3.39	0.69
between management and employees	6.3	75.0	18.7	--	--	3.88	0.59	2.2	45.5	43.2	9.1	--	3.41	0.69
Communication:														
between departments	12.5	50.0	34.4	3.1	--	3.72	0.73	4.6	32.6	55.8	7.0	--	3.45	0.69
between management and employees	9.4	62.5	25.0	3.1	--	3.78	0.66	6.8	45.5	34.1	13.6	--	3.45	0.82
Labour productivity*	3.3	41.9	54.8	--	--	3.48	0.57	--	29.2	48.8	22.0	--	3.07	0.72
Overall productivity*	6.5	38.7	41.9	12.9	--	3.39	0.80	4.9	17.1	58.5	19.5	--	3.07	0.76

* Measured or perceived by management.

12.9% of managers of companies that were operating VAPBS rated the level of participation and involvement in their companies as being very high, 54.8% as being high, and 32.3% thought it was average. None thought it was under average or low. By contrast, only 2.2% of managers of companies with no VAPBS described the level of participation and involvement as being very high, 42.2% as being high, 40.0% as being average, and 15.6% as being under average. The mean score positions summarise the differences between the two groups of companies on this issue and indicate that the degree of participation and involvement in companies with VAPBS is higher than in those without VAPBS ($\overline{X}$ = 3.81 for the first group of companies and $\overline{X}$ = 3.31 for the other group).

An Examination of Table 7.1 also reveals that the level of morale in the first group of companies, i.e. companies operating VAPBS, is higher than in the second group, for the mean score positions are $\overline{X}$ = 3.78 and $\overline{X}$ = 3.45 for both groups respoectively. 65.6% of the first group of respondents assigned 4 points "high" to the level of morale and 28.1% gave it 3 points "fair", whereas only 38.6% of managers of the second group of companies gave it 4 points, 50.0% gave it 3 points, and 2.3% gave it 2 points "poor".

For cooperation issue, results are not different whether they were related to cooperation between depart-

ments or between management and employees. As shown in Table 7.1, for the first group of companies mean scores are $\bar{X}$ = 4.00 and $\bar{X}$ = 3.88 for cooperation between departments and between management and employees respectively, compared with only $\bar{X}$ = 3.39 and $\bar{X}$ = 3.41 in the case of the other group of companies. This seems to suggest once again that the level of cooperation within companies that are operating VAPBS is higher than within companies without VAPBS.

Similarly, the evidence on the level of communication indicates that companies with VAPBS have better communication than companies without VAPBS. For the level of communication between departments in particular, 62.5% of the first group of respondents rated it as being "very high" or "high", compared with only 37.2% of the other group of respondents with mean scores of $\bar{X}$ = 3.72 and $\bar{X}$ = 3.45 for both groups respectively. On the issue of communication between management and employees, results are also consistent with expectations. 71.9% of respondents of companies that are operating VAPBS rated the level of communication as being "very high" or "high", whereas only 52.3% of respondents of the other group of companies rated it at the same level, i.e. "very high" or "high", with mean scores of $\bar{X}$ = 3.78 and $\bar{X}$ = 3.45 for both groups respectively.

Finally, findings related to productivity issue are particularly interesting. If companies that are operating VAPBS have better communications, higher levels of cooperation, morale, and participation and involvement than those without VAPBS, one would expect such companies to also perform better, for increased degree of participation and involvement, and improved levels of cooperation and communication would permit a more efficient use of all resources of the company and consequently this should result in improved levels of productivity.

Respondents were aksed to rate current level of both labour productivity and overall productivity (labour, capital, energy, etc.) - measured or perceived on a five-point scale ranging from 1 (minimum) to 5 (maximum). As can be seen from Table 7.1, both labour productivity and overall productivity levels were rated as being higher in companies with VAPBS than in those without. For labour productivity, 3.3% of respondents of the first group of companies gave it 5 points, 41.9% gave it 4 points, and 54.8% gave it 3 points (average). None rated it as being under average ($\overline{X}$ = 3.48). In contrast, none of the respondents of the other group of companies assigned the 5 points "maximum" to labour productivity, whereas only 29.2% gave it 4 points, 48.8% 3 points, and a further 22.0% rated it as being under average ($\overline{X}$ = 3.07).

Levels of overall productivity were also reported to be higher in companies that are operating VAPBS than in companies which are not. The mean scores show this clearly, for $\overline{X} = 3.39$ in the case of the first group and $\overline{X} = 3.07$ in the case of the other group.

However, whether differences between companies with regard to the variables examined above are statistically significant or not remain to be seen and this is the major objective of the following section.

7.4 Empirical Results: Test of Hypotheses

The findings of the preceding section suggest that VAPBS do motivate higher performance in companies which were the subject of the present research study. They also provide very important insights into the behaviour patterns which lead to this higher performance, e.g. levels of morale, cooperation, involvement, etc. As pointed out earlier, however, we are not interested in the sampled cases per se, but hope to infer that the relationship found in the sample actually exists in the universe that the sample represents.

On such a basis, we shall proceed to review the evidence on the following hypotheses:

H9 Managements of companies that are operating VAPBS would be:

(a) more in favour of a participating and cooperative approach,

(b) more concerned with improving productivity by (i) installing new equipment and (ii) increasing expenditures on employee development programmes.

H10 Companies which are operating VAPBS have more channels through which shop floor employees can influence policy, strategies and plans.

H11 There is a significant relationship between the use of VAPBS and levels of :

(a) morlae,

(b) cooperation,

(c) communication,

(d) participation and involvement, and

(e) productivity.

There have been many ways in which managers have sought to increase the productivity of their companies, including rewards systems, improvements in industrial relations, changes in management styles, participation and involvement, better job design and training, and the use of more efficient mechines and equipment. As already indicated, VAPBS have great potential for combining all these techniques and as a result for increasing levels of productivity. Indeed, the evidence presented in the previous section shows that VAPBS were chosen by managements not simply because they acted as incentive schemes but because they were seen to be effective in the wider context of motivating efficient behaviour for both management and employees' part. And this was the major reason behind our expectations in the hypotheses stated above.[1]

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1 For full details of the theoretical framework and formulation of hypotheses, see Chaper II.

In order to obtain empirical evidence on both Hypothesis 9(a) and Hypothesis 9(b), our respondents' attitudes were measured and expressed as values on a five-point scale ranging from 1 to 5.[1] Further, the Mann-Whitney U test was used to test whether the two independent groups of companies (companies operating VAPBS and companies which are not) have been drawn from the same Population.[2] In other words, to test whether differences in attitudes of managements of both groups of companies toward the issues involved are statistically significant or not. The evidence is presented in Table 7.2.

As can be seen in Table 7.2, consistent with our prediction in Hypothesis 9(a), managements of companies that are operating VAPBS are more in favour of a participatory and cooperative approach than managements of the other group of companies ($\overline{X}$ = 3.48 compared with $\overline{X}$ = 3.11 for both groups respectively). Furthermore, the table also shows that the observed value Of U (the statistic used in the Mann-Whitney U Test) is 474.0 which has an associated probability of 0.0422. Since this associated probability is below the 0.05 level (that has been accepted as a basis for accepting the hypotheses of this research study), we could conclude that the relationship

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1 For details of the measurement indices and scaling procedures, see Chapter III, Section 3.4 and Appendix A, Sections 7, 8, and 9.

2 See, S. Siegel, op.cit., p. 116.

TABLE 7.2

Relationship between the Use of VAPBS and Managements' Attitudes:

Inferential Findings

Attitudes toward:	Companies with VAPBS		Companies without		Observed U	Associated Level of Significance for a two-tailed test+.	Kendell's Tau (N=77)
	$\bar{X}$	SD	$\bar{X}$	SD			
(a) a particpatory and co-operative approach	3.48	0.63	3.11	0.78	474.0	0.0422	0.235**
(b) improving productivity by:							
(i) installing new equipment	4.09	0.89	3.84	1.06	617.5	0.3310	0.102*
(ii) increasing expenditures on employee development programmes	4.03	0.82	3.64	0.87	510.0	0.0200	0.310**

All indices have been coded on a scale of 1 to 5

\+ Significance tests are based on the Mann-Whitney U test

** Significant at the 0.05 Level

* Significant at the 0.10 Level.

between the use of VAPBS and management attitudes toward a participatory and cooperative approach is statistically significant at the 0.05 level in the hypothesised direction and hence Hypothesis 9(a) can be accepted.

However, for managements' attitudes toward improving productivity by installing new equipment and increasing expenditures on employee development programmes, results are not quite consistent with expectations. An examination of Table 7.2 reveals that while there was a tendency for managements of companies operating VAPBS to be more concerned with improving productivity by installing new equipment whenever possible, it was not sufficient however to reach statistical significance (the value of observed U is 617.5 with probability of 0.311 which is higher than the 0.05 level of significance.

But for increasing productivity via more spending on employee development programmes whenever possible, as predicted, managements of companies operating VAPBS responded more favourably than managements of companies that are not operating them ($\bar{X}$ = 4.03 and $\bar{X}$ = 3.64 for both groups respectively). The evidence presented in Table 7.2 also suggests that differences in attitudes of both groups of respondents towards the issue under investigation are statistically significant at the 0.05 level, for the observed value of U (as shown in the same table) is 510.0 with probability of only 0.020 which is lower than the 0.05 level of significance.

Furthermore, Kendell's correlation coefficients show positive and statistically significant relationships between operating VAPBS and all the three variables involved, though the relationship concerning managements' attitudes towards improving productivity by installing new equipment did not reach the 0.05 level of significance.

Whilst these findings do support Hypothesis 9(b)(ii), they do not support Hypothesis 9(b)(i) and hence Hypothesis (b)(i) is rejected and Hypothesis 9(b)(ii) can be accepted.

For empirical evidence related to Hypothesis 10, our respondents were asked whether there were any channels, apart from the processes of collective bargaining, through which shop floor employees can imfluence policy, strategies and plans. If the answer was "yes", they were further asked to specify briefly.[1]

An overall analysis of the responses is given in Table 7.3. As can be seen, 74.2% of managers of companies operating VAPBS said "yes" there were channels through which shop floor employees can influence policy and plans, whereas only 25.8% said "no" there were not. In contrast, 46.5% of managers of companies without VAPBS

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1 See Appendix A, Section 8.6.

TABLE 7.3

Relationship between Operating VAPBS and Channels of Communications and Participation: Chi-square Test

* *

VAR75 (VAPBS)

(CCP) VAR102	COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.	YES 1.000	ROW TOTAL
NO	0.	23	8	31
		74.2	25.8	41.9
		53.5	25.8	
		31.1	10.8	
YES	1.000	20	23	43
		46.5	53.5	58.1
		46.5	74.2	
		27.0	31.1	
	COLUMN TOTAL	43	31	74
		58.1	41.9	100.0

CORRECTED CHI SQUARE = 4.59037 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.0322
RAW CHI SQUARE = 5.67054 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.0173
PHI = 0.27682
CONTINGENCY COEFFICIENT = 0.26679
LAMBDA (ASYMMETRIC) = 0.09677 WITH VAR102 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.09677
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.05790 WITH VAR102
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.05790
KENDALL'S TAU B = 0.27682 SIGNIFICANCE = 0.0090

said "yes" there were and 53.5% said "no" there were not. This result was not unexpected and is in line with previous studies' results mentioned earlier in the chapter. It suggests that there is a relationship between operating VAPBS and channels through which employees can influence policies and plans in the hypothesised direction.

In order to find out whether this relationship between the two variables involved is statistically significant or not, the non-parametric chi-square test using 2 x 2 contingency tables was used to test Hypothesis 10. As pointed out earlier, the test will assist us to determine whether or not the two variables under study are statistically independent.

Table 7.3 reports a corrected chi-square of 4.59037. The probability of obtaining a value this large or larger with 1 degree of freedom is less than 0.0322, as shown in the same table, so we would conclude that this chi-square is quite large and hence we could also conclude that a systematic relationship between operating VAPBS and channels of communications and participation does exist. These findings support Hypothesis 10, for the chi-square is statistically significant at the 0.05 level and hence the hypothesis can be accepted.

It is also noteworthy to observe that both the phi (ϕ) and Kendall's tau B correlation coefficient (τ) are identical at 0.27682, with the latter measure significant at the 0.01 level, which indicates quite a strong association between the two variables involved in the predicted direction.

Concerning our prediction in Hypothesis 11, however, the analysis presented earlier in Section 7.3 has already demonstrated that operating VAPBS has a favourable impact on attitudes and behaviour within companies which in turn results in higher productivity. But that analysis was only descriptive in nature and restricted to the companies included in our samples, which is not sufficient for the purpose of statistical inferences. And it is here that tests of statistical significance come into play. Hence, the non-parametric Mann-Whitney U test was used to test Hypothesis 11 and to determine whether our two indpendent samples (operating VAPBS vs. not operating them) are drawn from the same population, for this test was considered to be the most appropriate given the nature of variables under investigation, and the independence of the samples.[1]

Table 7.4 reports the observed U and the associated level of significance for a two-tailed test for each variable. It can be seen that in line with expectations, the

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1 See, S. Siegel, op.cit., pp. 116-127

TABLE 7.4

The Effects of VAPBS on Attitudes and Performance:

Mann-Whitney U Test

Variables	Observed U	Associated Level of Significance for a Two-tailed Test
Morale	523.5	0.0345**
Cooperation between:		
departments	359.0	0.0001***
management & employees	448.0	0.0021***
Communication between:		
departments	497.0	0.0254**
management & employees	549.5	0.0736*
Participation and Involvement	527.5	0.0466**
Labour productivity	452.0	0.0212**
Overall productivity	489.0	0.0693*

*** Significant at the 0.01 level

** Significant at the 0.05 level

* Significant at the 0.10 level

effects of VAPBS on morale, cooperation, communication, participation and companies' performance are quite significant, though the level of statistical significance is different from variable to variable. The associated levels of significance were as follows: 0.0345 for level of morale, 0.0001 for level of cooperation between departments, 0.0021 for level of cooperation between management and employees, 0.0254 for level of communication between departments, 0.0736 for level of communication between management and employees, 0.0466 for participation and involvement, 0.0212 and 0.0693 for both degrees of labour productivity and overall productivity respectively.

These findings generally support Hypothesis 11, but bearing in mind that the 0.05 level of significance has been accepted as the basis for accepting (or rejecting) our hypotheses, Hypothesis 11 can be accepted only with regard to levels of morale, cooperation, communication between departments, participation and involvement, and labour productivity. For both levels of communication between management and employees and overall productivity, however, although there was a tendency for companies that are operating VAPBS to have higher levels concerning both issues, this tendency was not sufficient to reach the acceptable level of statistical significance. Hence, Hypothesis 11 is rejected as far as these two variables are concerned.

Taken together, the analysis presented in this chapter so far would seem to suggest that the use of value added as a basis for productivity bonus schemes is well justified, for it appears to create conditions which facilitate effective employee participation and involvement, promote good communications and achieve higher productivity. Nevertheless, the issue is not as simple as it may look. Productivity, as previously suggested,[1] is a function of too many interrelated variables. Such complex inter-relationships among variables influencing productivity call for more powerful parametric statistics to isolate and quantify the effects of VAPBS, value added external reporting, capital employed, number of employees, alongside other variables suggested by economic theory. The multivariate technique of multiple regression analysis would seem to be appropriate for this purpose and this is the focus of the follosing section.

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[1] See Chapter VI, Section 6.2.1

7.5 Further Analysis

As pointed out earlier, the major theoretical expectations of the present research study are that income reporting on a value added basis would encourage the wealth creation and facilitate introducing and operating company-wide productivity bonus schemes based on value added. Such schemes would also help to improve economic performance of companies via fostering the joint-wealth maximising coperative behaviour. Both value added external reporting and VAPBS are expected to interact by having a stronger effect on productivity.

THe empirical evidence presented in the preceding chapter has already demonstrated that, holding other factors constant, companies which externally report value added create more wealth than those which do not. Furthermore, it was found that both uses of value added (as a means of external financial reporting and as a basis for productivity bonus schemes) are significantly associated. Also, empirical results of the two preceding sections have shown that there have been improvements in the productivity levels of companies operating VAPBS. In order to isolate and quantify the effects of income reporting on a value added basis and VAPBS on firms performance, both variables together with capital employed, labour input, R & D expenditures, and funds retained for use in business, i.e. retained profits plus depreciation,

were incorporated in multiple regression equations explaining differences in value added across the firms in the sample.

Multiple regression is a general statistical technique through which one can analyse the relationship between a dependent variable and a set of independent variables.[1] In general, it requires that variables are measured on interval or ratio scale. This restriction is not absolute, however. Nominal variables can be incorporated into regression through the use of "dummies".[2] Hence, we have introduced two zero/one dummy variables dichotomising the sample into (i) companies externally reporting value added and companies that do not, and (ii) companies that operate VAPBS and companies that do not. In the former dichotomy, the dummy variable takes the value 1 if the company externally reports value added and 0 otherwise. In the case of the latter dichotomy, the dummy variable takes the value 1 if the company operates VAPBS and 0 otherwise.

In the regressions reported in Table 7.5, the model and its variables are specified as follows:[3]

$$V = \alpha + \beta_1 C + \beta_2 L + \beta_3 D + \beta_4 I + \beta_5 E + \beta_6 P \quad \ldots(1)$$

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1 See, for example, F.N. Kerlinger and E.Pedhazer, Multiple Regression in Behavioural Research (New York: Holt, Rimehart and Winston, 1973).

2 Ibid, p..155.

3 For details of the measurement of variables, see Chapter II,Section 3.4.

TABLE 7.5

Results of Cross-Sectional Multiple Regression (1978)

Equation	Constant	C	L	D	I	E	P	R^2	F	N
1	88.781	0.6264	0.0347	-0.0533	0.0125	0.2108	0.1625	0.8820	64.053	79
2	91.655	0.6021	0.0525	-0.0342	0.0131	0.2215	——	0.7615	57.446	79

where,

V = value added, (the dependent variable in thousands of pounds

α = Constant term

C = Capital employed in thousands of pounds

L = Labour input in thousands of employees

D = R & D expednitures as a percentage of sales

I = Funds retained for re-investment in thousands of pounds

E = External reporting of VA, (E = 1 = Reporting; E = 0 = No reporting), amd

P = Productivity bonus schemes based on VA, (P = 1 = VAPBS; P = 0 = No VAPBS).

As can be seen in Table 7.5, overall the model explains 88.2% of the observed differences in value added across the sample, as the coefficient of multiple determination, R^2 is 0.8820 in Equation 1. Of Most interest for our purpose are the statistically significant and positive standardised coefficients attracted by both E and P variables (significant at the 0.01 and the 0.05 level respectively) in Eq. 1. The regression coefficient (0.6264) for capital employed, C, is also significant at the 0.01 level. These results fit our a priori expectations and are in line with the empirical findings presented earlier in this chapter and in the preceding one.

The estimated values for the constant term (88.781) and the regression coefficient (0.0347) for labour input,

L, are statistically significant at the 0.05 level. But both regression coefficients, (0.0125) for funds retained for re-investment in business, I, and (-0.0533) for R & D expenditures, D, are statistically insignificant, their significance lies in the "gray area" of 0.05 and 0.10 level. Though the latter variable, D, attracts a coefficient of "negative" sign, which indicates that the more the companies spend on R & D, the less productive they are. This interpretation cannot be generalised to a population, however, for two reasons. First, as pointed out above, the related result is statistically insignificant. Secondly, our analysis was for a period of only one year (1978) and this may have resulted in a biased coefficient for the D-variable, for the effect of R & D on companies' economic performance should perhaps better be examined for a much longer period of time and as a long-term investment.

An examination of Table 7.5 also reveals that the F ratio in Equation 1 is 64.053.[1] The probability of obtaining a ratio this large or larger is less than 0.001,

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1 The F-scores were computed according to the following formula:

$$= \frac{SSreg/k}{SSres/(N-k-1)} = \frac{R^2/k}{(1-R^2)/(N-k-1)}$$

where SSreg is the sum of squares explained by the entire regression equation, SSres is the residual (unexplained) sum of squares, k is the number of independent variables in the equation, and N is the sample size.

which indicates that the sample was drawn from a population in which the multiple R^2 is not equal to zero, and the observed R^2 is not due to sampling fluctuation or measurement error.

Although the analysis above was carried out according to the most common appropriate procedures for such statistical technique, the possibility of biased results still exists. Indeed, in Chapter VI we found a statistically significant association between variables E and P and hence our analysis so far might have encountered a severe multicollinearity problem which may have resulted in biased coefficients.[1] To deal with this problem as well as to quantify the "incremental increase" in the exaplained variation in value added resulted from variable P (VAPBS), two multiple regression equations have been generated: the first including P along with the other 5 variables, the second excluding P but including all other variables.

Table 7.5 reports the results of both Equation 1 and Equation 2. The results of Equation 1 have been discussed above in detail. Comparing both equations, however, indicates that the association between P and E does not effect the results. The E-variable still has a positive and highly statistically significant (at the 0.01 level)

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1 Multicollinearity refers to the situation in which some or all of the independent variables are very highly intercorrelated. For details see, for example, J.Johnston, Econometric Methods, 2nd ed. (New York: McGraw-Hill, 1972), pp. 212-218.

coefficient (0.2215 as shown in Equation 2). Such a comparison seems also to confirm that the inclusion of the P-variable is justified. R^2 and the F-score both increase, while the results for the other individual variables are largely unaffected. THe squared part correlation between VAPBS and value added is simply the difference between the two R^2 values which is 0.1205, indicating that operating VAPBS adds an increment of 12.05% to variations already explained by the other 5 variables (C, L, D, I, and E).

Summing up the results provided in this section, both value added external reporting and VAPBS, consistent with our hypotheses, seem to have a positive and significant effect on economic performance of companies. When incorporated in multiple regression equations, whatever defects there may be in their construction in the form of zero/one dummy variables, they divide our sample into sub-groups that are both statistically distinct and economically meaningful.

7.6 Future Developments and the Accountant's Role

Contrary to allegations made by some writers on the subject that value added productivity bonus schemes are being used just as a back door to get round the government-imposed limit on pay increases and as a result of the introduction of self-financing productivity schemes permitted by the Department of Industry in 1977, the evidence presented in this chapter demonstrates that VAPBS have much more to offer to British industry. They are found to be very effective in promoting involvement and participation, and improving levels of communications, cooperation and productivity.

Companies should therefore, be encouraged to install schemes which give each individual an incentive to create more wealth. Such schemes, however, had better include not only direct and indirect workers but also supervisors, managers, and directors, if a substantial improvement in the "team spirit" within the company is to be achieved. Tying managers' and directors' bonuses to value added may also strongly motivate them to make decisions congruent with the long-term economic interest of the company, foster cooperation, and contribute to the success of the scheme.

Our empirical inquiry into this subject regrettably reveals that almost all VAPBS that are operated by com-

panies under study include only workers and supervisors. Only two companies (out of 32) stated that directors are included in their schemes.

Yet, the accountant's role in developing, installing, and operating VAPBS can be invaluable. At the minimum, he must include a value added statement in the corporate report according to a simple definition and standardised rules and procedures for the measurement of VA, for this will enhance employee awareness, comprehension and acceptance of value added. All companies we spoke to stated that a willingness to externally report value added information was a prerequisite to the establishment of a value added productivity bonus scheme. Withoutit , as an interviewed manager has put it, "The workers classify it as a management fiddle". The empirical results provided in the preceding chapter related to the existence of a highly statistically significant association between the external reporting of value added and using VAPBS would seem to support this contention.

Accountants should also help by developing schemes' formulas and identifying criteria that may be essential to their establishment, operation, and success. The size of the company and/or the size of the group, the make-up of the work-force, the sector of industry, the cost structure of companies, and the target for the ratio of wages

to VA are all examples of such criteria. The accountant, if he fulfills the demands of his role, also must explain the reasons for the fluctuations in bonus to the screening committee, that monitors and supervises the scheme, showing all variables affecting the bonus so that every one involved could be convinced that the data are reliable and accurate.

Whilst the feedback and educating aspects of the accountant's role are crucial to the successful operation of any scheme, perhaps of even greater significance are the ways that management accounting information systems are designed. Unless information concerning various costs is provided, concentrated effort toward improvement cannot be expected. If cost reduction goals are not established, neither VAPBS nor any other technique will work and any improvements will probably be limited.

7.7 Summary and Conclusions

Early in 1976, the CBI commissioned some major research into attitudes and understanding among managers and employees with a view to promote industrial relations in the U.K. and hence to improve industrial productivity. The major findings were summarised in a report published in June, 1977.[1] It was concluded that some form of financial participation, and more consultation and better communications are needed. And the value added concept was also recommended as a means of meeting these needs.[2]

The empirical evidence presented in this chapter would seem to support the CBI recommendation. Both descriptive and inferential findings relating to the effects of using VAPBS on attitudes, behaviour, and performance have demonstrated that such a use has generally resulted in greater involvement and cooperation, better communications, substantial improvements in management attitudes, and higher levels of morale and productivity.

Of even greater significance, perhaps, are the results of multiple regression analysis. They are consistent with our a priori expectations confirming that both income reporting on a value added basis and productivity bonus

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1 Confederation of British Industry, Communication with people at work (CBI, June 1977).
2 Ibid, p. 15.

schemes based on value added have statistically significant effects on firms' performance. When a two multiple regression equations model was applied, however, results indicate that our analysis was not subject to any multicollinearity problem. Further, they show that operating VAPBS adds an increment of 12.05% to variation in value added accross the firms in the sample already explained by the other variables incorporated in the model.

On the basis of these results, the researcher concludes that companies should be encouraged to install VAPBS. For promoting a spirit of cooperation among management and employees and inducing executives to make decisions congruent with the long-term economic interests of the company, the researcher believes that VAPBS must include not only direct and indirect workers but also managers at all levels and directors. The accountant's role in general and the ways that management accounting information systems are designed in particular were also shown to be essential to the successful operation of the schemes.

Of course, generalisation of results reported in this chapter requires confirmation by future research in this area which may employ extensive interviewing in case studies and collect some objective behavioural data such as labour turnover and absenteeism. Findings of future research of this kind would, hopefully, overcome some of the limitations imposed by this research implementation referred to earlier in the chapter.

CHAPTER VIII

SUMMARY, CONCLUSIONS, AND DIRECTIONS FOR FURTHER RESEARCH

8.1 Introduction

The main concern in this study is with the uses of the value added concept at the micro-level with a view to improve the economic performance of British industry. Specifically, the study focuses attention on the uses of value added in external financial reporting and as a basis for productivity bonus schemes. This last chapter of the thesis presents:

(a) a summary of the principal findings of the study,

(b) the implications and conclusions of the study, and

(c) directions and recommendations for future research in this area.

8.2 A Summary of the Principal Findings of the Study

The conceptual framework developed in this study suggests that the value added concept can be used to considerable effect both nationally and by individual companies. At companies level, the significance of the measurement problem in accounting in general and the measurement of value added in particular has been critically analysed (Section 2.4.1). Such a priori analysis reveals that business behaviour is a major determinant to the nation's prosperity, though managers and employees are probably not concerned directly with national objectives. Nevertheless, the measurement system, by focusing on the value added, may encourage all levels of management, superior and subordinate to be concerned with those behaviours reflected in the measurement system, i.e. value added, and which are essential for achieving the wider organisational and national pruposes. The emphasis on value added would also motivate executives to make decisions congruent with the long-term economic interests of company and, eventually, of the economy.

Furthermore, by creating a direct financial link between the wealth created and pay, the joint effect of the process of performance measurement in terms of value added and the related system of organisational rewards would also help to improve economic performance of comapnies via fostering the joint-wealth maximising cooperative behaviour.

Both value added reporting and value added productivity bonus schemes are considered to interact by having a stronger effect on productivity.

In the light of this a priori analysis, eleven specific hypotheses were formulated (Section 2.5) and statistically tested. The major related findings may be summarised as indicated in the next four sections (Section 8.2.1 to Section 8.2.4).

8.2.1 Findings Relating to the Relevance of the Value Added Concept of Income to Theories of the Business Firm

(i) Management responsibilities were recognised towards all the coalition members of the firm and not towards shareholders alone regardless of whether companies externally report value added or not. However, some degree of differencesin the mean score position among both groups of companies regarding the significance of the coalition members were reported (Table 4.1), though these differences were not statistically significant (Section 4.3).

(ii) Creating wealth was indicated as the prime objective of the business firm more often than was any alternative measure by both groups of companies (companies which report VA v. those which do not), which seems to square with the modern behavioural theory of the firm. Nevertheless, some differences between both groups of companies concerning their objectives were observed. Interestingly, all these differences were in the predicted direction (Table 4.2). That is, on balance, both companies which report VA placed more emphasis on the welfare of the entire team participating in the firm than the other group of companies (Section 4.4).

(iii) Consistent with our expectations, a positive relationship between the external report of value added

and manager-type of control was found. While 40 companies of 48 that externally report VA were M-C (83.3%), only 21 out of 31 that don't report VA were M-C (67.7%). This relationship, however, did not amount to a statistically significant relationship (Table 4.5).

8.2.2 Findings Relating to the Use of Value Added in Financial Reporting

(i) Respondents of both groups of companies have identified the audience to whom their financial reports are intended as being shareholders, creditors, employees, customers, government, and society at large (Table 5.1). There was, however, a marked difference between the number and percentage of companies in each group regarding each category of their financial reports recipients. For instance, shareholders and creditors were specified as being the only intended recipient of financial reports by 2 companies out of 48 that externally report value added (4.2%), whereas the same group of users, i.e. shareholders and creditors, was identified as being the intended recipient of financial reports by 10 companies out of 31 which do not report value added (32.4%). Inferential tests performed revealed that differences among both groups of companies regarding the intended recipients of financial reports are statistically significant at the 0.01 level (Table 5.2).

(ii) On the relationship between value added reporting and perceived objectives of financial reports, descriptive statistics showed that while companies which do not externally report value added favour the traditional view of the aim of financial reports which is unsympathetic to modern needs, the other group that externally report value added is more in favour of the modern view of financial

reporting objectives that attaches considerable importance to the supply of useful information for making rational economic decisions by all parties with an interest in the company (Table 5.3). To illustrate, the conventional objective of financial reports as expressed in Recommendation N15 issued by the ICAEW in 1952 (withdrawn in 1974), i.e. the primary purpose of the annual accounts of a business is to present information to the proprietors, showing how their funds have been utilised and the profits derived from such use, received the highest ranking $\bar{X} = 4.5$) by companies that do not report value added, whereas the same objective was ranked in the fourth place by the other group of companies with mean score of only 3.4. Furthermore, the Mann-Whitney U test, when performed, revealed that such a difference is statistically significant at the 0.05 level (Table 5.4).

(iii) Based on a priori analysis, value added information was shown to be more relevant than profit according to both "semantic relevance" and "decision relevance" approaches. Specifically, it is suggested in the literature that the concept of value added is more understandable than that of profit and has some advantages over any other alternative measure for purposes of comparison. No noticeable delay would be experienced in reporting such information, for the extra work and costs required for the preparation of value added information are expected to be negligible (Section 5.3.1). Furthermore, value added information was found to

be relevant to the decision needs of the major user groups of accounting reports (Section 5.3.2).

(iv) A highly statistically significant relationship between the use of value added in financial reporting and both its uses in internal decision-making and as a basis for productivity bonus schemes in the predicted direction was found (see Tables 5.7 and 6.3). Income reporting on a value added basis was also found to have a significant effect on managements' perceptions regarding their economic performance evaluation criteria. Specifically, managers of companies that report value added did rate value added as being more important for the purpose of their performance apparaisal than did the managers of the other group of companies (Tables 5.8 and 5.9).

(v) Inferential tests performed on the data collected via published sources revealed that companies with value added reporting significantly outperformed (at the 0.05 level) the other group of companies in terms of labour productivity, capital productivity, and overall productivity. Furthermore, levels of wealth created, funds retained for re-investment, and rates of return on capital were significantly higher (at the 0.01, 0.05 and 0.01 level respectively) in the first group of companies. The level of R & D was also higher in the same group, though the difference did not reach statistical significance (see Table 6.2).

(vi) Focusing the attention on the need to generate wealth and satisfying the information needs of a wider group of accounting reports users were specified as the major management motivations for value added reporting (Table 6.4).

8.2.3 Findings Relating to VAPBS

Statistical analyses of the data pertaining to this area revealed that:

(i) Managements of companies which are operating VAPBS are more in favour of a participatory and coperative approach than managements of companies without VAPBS (Table 7.2).

(ii) A highly statistically significant relationship between operating such schemes and levels of communications, participation and involvement, cooperation, morale and productivity in the predicted direction does exist (Tables 7.3 and 7.4).

8.2.4 Results of Cross-Sectional Multiple Regression

To isolate and quantify the effects of value added external reporting (E) and VAPBS (P) on firms performance, both variables E and P together with capital employed (C), labour input in terms of number of employees (L), R & D expenditures (D), and funds retained for re-investment (I), were incorporated in multiple regression equations explaining differences in value added (V) across the firms in the sample (N=79). In Equation 1 (Table 7.5), the coefficient of multiple determination, R^2, was 0.8820 which indicates that the model explains 88.2% of the observed differences in V across the sample. The analysis also revealed that both E and P have attracted positive and statistically significant regression coefficients in Eq.1. The regression coefficients for both C and L were also positive and significant. But both regression coefficients for I and D were statistically insignificant. In sum, results of multiple regression analysis seem to indicate that both income reporting on a value added basis and VAPBS have a positive and significant effect on the economic performance of companies. When they were simultaneously introduced, they interacted by having a stronger effect on productivity.

8.3 The Implications of the Study

The findings of the study summarised above clearly imply that the present concept of income as it appears on the traditional profit and loss statement is deficient because it assumes that the sole purpose of the enterprise is to maximise shareholders' profit. Income reporting on a value added basis, however, seems to be more relevant since it refers to the joint wealth created by the whole company's team that is critical for real growth in the nattional economy. If wealth creation is the prime objective of business firms and if business firms are no longer seen by managements as the instrument of their shareholders alone, instead they are composed of a coalition of participants, as indicated by the findings of the study, it necessarily follows that information towards achieving the objective and fulfilling such multiple responsibilities should be reported so that user groups of accounting reports would be able to evaluate the performance and the effectiveness of the entity according to its own objective.

The findings of the study have also demonstrated that value added is more understandable and more useful for the purpose of comparison, and more relevant to the information needs of a wider group of users of accounting reports than any other alternative measure. Further, the impact of value added reporting on management attitudes and policies

was emphasised. A positive and statistically significant association was discovered between value added reporting on the one hand and the use of value added in internal decision-making, operating VAPBS, the use of value added as a prime criterion for the purpose of the economic performance appraisal, and productivity on the other hand. Yet again, the implication is that income reporting on a value added basis can motivate efficient behaviour within the firm and direct attention to the long-term interests of the company and, eventually, of the economy.

If, however, all who contribute to the creation of wealth in the firm agree to coperate in enlarging their joint wealth rather than maximising one party's share, managers and employees will also require a bonus on any increase in that wealth. Indeed, any effective reward system must obviously tie the attainment of rewards to high productivity. Thus, VAPBS would seem to be the most appropriate rewards system for achieving higher productivity.

8.4 Conclusions and Recommendations of the Study

Generalising from the findings of any single study is always a hazardous task as most researchers, and especially those working on applied problems, are all too well aware of their conflicting desires for both intellectual caution and practical significance. However, both findings and implications of the study appear to be of especial importance at the present time when declining rates of productivity, investment and growth, and increasing unemployment call for an answer to these economic problems.

Taken together, the results obtained support a tentative conclusion that:-

(a) Large companies should have to externally report, with statutory enforcement if necessary, value added and its distribution, for this can offer considerable benefits to the company and, eventually, to the economy. Standardisation of practice is, however, a necessary precondition to any statutory disclosure requirement, for the main problem with value added reporting at present is inconsistent and divergent practice. On the evidence of the present study, the following observations, which may be helpful to those responsible for drafting an accounting standard concerning this issue, are made:-

(i) Value added should be based on sales and not on production (Section 2.4.3). Gross value added is preferable to net value added (Section 2.4.4) and replacement cost

measurement system would seem to be more useful for the purpose of value added measurement (Section 2.4.8).

(ii) Value added should be reported in a separate statement. But it should be complementary to, not a replacement for, the profit statement.

(iii) Value added statement should be published, at least, in the main accounts, comprising both substractive and additive elements.

(iv) Both retained profit and depreciation should be reported together under one distinct heading which could clearly show that such funds are for re-investment in the company.

(v) Percentage figures showing each group's relative share of the wealth created should be presented together with ratios relating to value added, e.g. value added/employee; value added/£ labour cost; value added/ capital employed.

(vi) In order to make value added easier to understand by as many users as possible, particularly by the financially uninstructed users, it seems advisable to use some sort of communication techniques, such as pie charts and bar charts.

(vii) Comparative statistics relating to previous year(s) should also be provided.

(viii) Finally, value added statement should be subject to audit.

(b) Companies should be encouraged to install VAPBS.

Such schemes can promote industrial relations via providing a framework for cooperation and involvement and hence improve industrial productivity. However, in order to get the maximum benefits from operating such schemes, the evidence presented in this study suggests that VAPBS must not only include direct and indirect workers but also supervisors and managers at all levels. The accountant's role in general and the ways that management accounting information systems are designed in particular are crucial to the successful operation of these schemes. Specifically, unless information concerning various costs is provided, concentrated effort toward improvement cannot be expected. If cost reduction goals are not established, neither VAPBS nor any other technique will work and any improvements will probably be limited (Section 7.6).

8.5 Directions for Further Research

The research process is always a cumulative endeavour. The usefulness of the value added concept for improving industrial performance, which was the fundamental challenge underlying the present investigation, is certainly a subject of sufficient breadth as to lie beyond the scope of any single investigation, and the present study was conceived as an initial probe into an area of great significance.

Specifically, this study was concerned mainly with both uses of the value added concept as a means of financial reporting and as a basis for incentive schemes. The study showed that both uses are well justified, for they have generally resulted in higher industrial productivity. Our conclusions have, however, been based on a limited sample of firms and for a one year period and hence a number of suggestions for further research have been made throughout the study to improve the validity of the research findings.

With the increasing trend towards value added reporting, a fruitful line of further research is the investigation of an enlarged sample of firms and for a longer period of time. Additionally, for a more rigorous and meaningful evaluation of the effect of VAPBS on levels

of labour morale, cooperation and involvement, extensive interviewing in case studies would seem to be a very appropriate approach.

At the same time, there is also a need to investigate statistically the effect of value added reporting on the value of the firm and indeed the question of whether the concept of value added is more readily understandable and generally more relevant than that of profit. The applications of the concept, and their implications for accountants, in the following areas also warrant further research:

(i) as a tool of management information and control.

(ii) as a basis for capital investment decisions.

(iii) as a practical measurement technique and a possible form of social accounting.

A P P E N D I C E S

APPENDIX A

THE QUESTIONNAIRE, THE RELATED INSTRUCTIONS, COVERING AND FOLLOW-UP LETTERS.

The City University Business School

LIONEL DENNY HOUSE, 23 GOSWELL ROAD, LONDON EC1M 7BB 01-253 4399

18th January , 1980

Dear Sir,

As a high rate of inflation, and declining rates of productivity, investment and growth continue to be the major economic news in the U.K. , improving the economic performance of British industry is a prime concern among academics and industrialists. With this in mind, we are conducting a research project at the City University Business School under the supervision of Mr J.E.Lewis. The research is designed to investigate the potential usefulness of the Value Added Concept for British industry.

It would be greatly appreciated if you assist this important project by taking a few minutes to complete the attached questionnaire. All your answers in this questionnaire will be kept strictly confidential and would be used only for the purpose of our research project.

If you consider any of the questions irrelevant in your case, please indicate by marking NR (Not Relevant).

Thank you very much for your help in what we believe to be a timely and important research effort.

Yours sincerely,

A.E.Senoun, B.Com., M.A.(Econ.), C.A.

P.S. Please use the attached envelope for mailing.

The City University Business School

LIONEL DENNY HOUSE, 23 GOSWELL ROAD, LONDON EC1M 7BB 01-253 4399

25th January, 1980.

Dear Finance Director,

Earlier this month we sent you a request for help with an enquiry, the aim of which was to investigate the potential usefulness of the Value Added Concept for British industry.

To date we have had many completed questionnaires returned and we are very grateful to those who have already replied.

However, in order to derive the maximum benefit from the study, I am writing to ask if you could complete the questionnaire and return it to us in the reply-paid envelope provided.

If you have already completed and returned the questionnaire, please disregard this letter.

With very many thanks for your help.

Yours sincerely,

A. E. Senoun.

The City University Business School

LIONEL DENNY HOUSE, 23 GOSWELL ROAD, LONDON EC1M 7BB 01-253 4399

FINANCE DIRECTORS' QUESTIONNAIRE

Any responses which you make will be kept in the strictest confidence and no individual or organization will be identifiable in the report on our research project.

Most of the questions can be answered by checking one of the answers (✓) listed under the question. If you do not find the answer that fits your case, check the one that comes closest to it.

Thank you very much for taking part in this research project.

Name of Organization :

1- Firm's Objectives:-

The following are brief statements of the main objectives of business organizations. Please indicate to what extent you agree with them by checking (✓) the appropriate answer on each line.

A company's primary task is :-

		Strongly agree (5)	Agree (4)	Un-decided (3)	Dis-agree (2)	Strongly disagree (1)
1.1	to maximise the price of the company's share.	-	-	-	-	-
1.2	to maintain the flow of production.	-	-	-	-	-
1.3	to establish and maintain a growth company for the benefits of our shareholders, employees, customers, and the community.	-	-	-	-	-
1.4	to contribute to the improvement of social welfare.	-	-	-	-	-
1.5	to maintain a satisfactory level of dividends in the interest of shareholders.	-	-	-	-	-
1.6	to maximise cash flows.	-	-	-	-	-
1.7	to maximise earnings per share.	-	-	-	-	-
1.8	to create wealth.	-	-	-	-	-

		(5)	(4)	(3)	(2)	(1)
1.9	to maximise sales.	-	-	-	-	-
1.10	to keep employees informed of policy, progress and problems, to invite their comments and criticisms and show everyone how their own efforts contribute to the company's success.	-	-	-	-	-
1.11	developing new applications of techniques and products.	-	-	-	-	-
1.12	to give the utmost consideration to the needs and interests of our customers.	-	-	-	-	-
1.13	to pay great attention to the long-term survival and growth of our company.	-	-	-	-	-
1.14	to avoid redundancy by careful forward planning.	-	-	-	-	-
1.15	to train and develop all employees and to promote from within whenever possible.	-	-	-	-	-
1.16	to benefit the local community whenever and wherever the company can afford to do so, and to preserve the quality of life and of the environment.	-	-	-	-	-

1.17 Other ? (please specify and check one). - - - - -

2- Management Responsibilities :-

In terms of your responsibilities, would you please rank the following groups in order of their significance.

Put the number 1 next to the group that counts the most. Then put the number 2 next to the group that counts second most, etc.

Employees. ___
Shareholders. ___
Customers. ___
Suppliers. ___
Government. ___
Community. ___
The Nation. ___
Other? (please specify and rank).

3 Objectives of Financial Reporting:-

To what extent do you agree with the following statements ? (check one answer on each line).

	Strongly agree	Agree	Un-decided	Dis-agree	Strongly disagree
3.1 The basic objective of financial reports is to provide information useful for making economic decisions.	-	-	-	-	-

		(5)	(4)	(3)	(2)	(1)
3.2	An objective of financial reports is to provide information to shareholders to guide their investment decisions.	-	-	-	-	-
3.3	An objective of financial statements is to supply information useful in measuring management's ability to utilize enterprise resources effectively in achieving the primary enterprise goal.	-	-	-	-	-
3.4	An objective of financial statements is to provide information to employees to guide their decisions on future relationships with the undertaking.	-	-	-	-	-
3.5	An objective of financial statements is to provide information to the representatives of society to enable them to assess whether the activities of the undertaking are consistent with the national objectives.	-	-	-	-	-
3.6	An objective of financial statements is to provide government officials with information to guide their decisions.	-	-	-	-	-
3.7	The primary purpose of the annual accounts of a business is to present information to the proprietors, showing how their funds have been utilised and the profit derived from such use.	-	-	-	-	-
3.8	Other ? (please specify and check one).					

4 The Recipients of Financial Reports:-

Who are the intended recipients of your financial reports? (check one or more).

Shareholders. ___
Creditors. ___
Employees. ___
Customers. ___
Suppliers. ___
Government. ___
Society at large. ___
Other? (please specify).

5 Performance Evaluation:-

5.1 What do you think counts the most in how your firm economic performance is evaluated? Put the number 1 next to the item you think counts the most. Then, the number 2 next to the item that counts second most, etc.

The wealth created (value added). ___
Earnings per share. ___
Dividends. ___
Sales. ___
Other ? (please specify and rank). ___ .

5.2 What do you think should count the most in how your firm economic performance is evaluated? Put the number 1 next to the item you think counts the most. Then, the number 2 next to the item that counts second most, etc.

The wealth created (value added). ___
Earnings per share. ___
Dividends. ___
Sales. ___
Other ? (please specify and rank). ___

6 The Use of Value Added Concept:-

6.1 Do you externally disclose value added data? YES/NO
If 'NO' go to no. 6.3 please.

If 'YES', since when ?
and where ? (check one or more).

- in the annual reports.
- in the employees reports.
- in special statistical reports.
- in company's news letter.
- Other ? (please specify).

6.2 Why do you externally report value added ? (check one answer on each line).

		Strongly agree (5)	Agree (4)	Un-decided (3)	Dis-agree (2)	Strongly disagree (1)
6.2.1	to satisfy information needs of a wider group -than shareholders -of accounting reports users since value added is directly relevant to all parties with an interest in the company. They are all interested in the wealth the company creates, in how that wealth is shared and in productivity.	-	-	-	-	-
6.2.2	it is a result of a change in general business objectives and corporate behaviour (ie. less emphasis on the welfare of shareholders and more on the welfare of the entire team of capital and labour providers).	-	-	-	-	-
6.2.3	it is a response to - changing social, political and economic environment.		-	-	-	-

		(5)	(4)	(3)	(2)	(1)
6.2.4	it provides a unifying objective for the whole team of co-operating groups which contribute to the firm's performance (ie. the employees together with management and the Nation).	-	-	-	-	-
6.2.5	it focuses the attention of management and employees on the need to generate wealth and provides common ground for cooperation to maximise productivity.	-	-	-	-	-
6.2.6	recognition that managers of publicly held corporation no longer represent the single interests of ownership. Instead they function as trustees of resources, accountable to shareholders, creditors, employees, customers, government, and the public.	-	-	-	-	-
6.2.7	to develop a favourable impression of the management group by all parties concerned (ie. "image-building" approach).	-	-	-	-	-
6.2.8	the need for the total picture of the firm's economic activities to be expressed in one single measure which has relevance for all participants and which expresses a real welfare to them all.	-	-	-	-	-
6.2.9	in order to keep in advance of legislation which we anticipate being passed on this subject.	-	-	-	-	-
6.2.10	it is the best available yardstick for measuring the economic performance	-	-	-	-	-

		(5)	(4)	(3)	(2)	(1)
	of a firm and interpreting the company's results. It is more relevant, understandable, reliable, complete, objective and comparable than any other performance indicator.	-	-	-	-	-
6.2.11	it shows how companies create wealth and how the community as a whole benefits from it.	-	-	-	-	-
6.2.12	it places more emphasis on the long-term interests of the company and, eventually, of the economy and induces executives to behave as economic-oriented decision makers, with a long-term view of economic efficiency and not as accounting-oriented decision makers with a short-term view.	-	-	-	-	-
6.2.13	it enables the financial press to move away from its concentration on earnings per share, which only reinforces the conviction of shareholders and board of directors that reported earnings represent the essential corporate performance evaluation criterion.	-	-	-	-	-
6.2.14	to influence share prices since the market not only looks at company's currently reported earnings in setting share price but also assesses all publicly available information relevant to company's activities and prospects.	-	-	-	-	-
6.2.15	it helps to create better industrial relations and conditions which might facilitate effective employee participation. A profit statement has little interest or motivational value for employees. However,	-	-	-	-	-

		(5)	(4)	(3)	(2)	(1)
	value added tends to treat employees as a part of the organization and wages as a distribution of surplus and not as a cost which always needs to be minimised.					
6.2.16	it would facilitate the introduction of productivity schemes based on value added since it would enhance workers awarness, comprehension and acceptance of value added.	-	-	-	-	-
6.2.17	it is a response to growing union pressure for financial information.	-	-	-	-	-
6.2.18	it focuses attention on the conflict over the distribution of the wealth created by the enterprise. This would help combat the inaccurate belief of many workers that they are exploited and their efforts unduly benefit the shareholders and accordingly improve the attitudes of employees toward their employing companies.	-	-	-	-	-
6.2.19	it directs attention to the government's share of value added. This would indicate whether British industry has been over-taxed.	-	-	-	-	-
6.2.20	because it is an important tool for management own control mechanism.	-	-	-	-	-
6.2.21	Other ? (please specify and check one).					

If 'NO'.

6.3 Why not ? (Check one answer on each line).

	Strongly agree	Agree	Un-decided	Dis-agree	Strongly disagree
6.3.1 it may cause confusion with the earnings statements.	-	-	-	-	-
6.3.2 it would involve extra work, costs and delay and lead to information overload.	-	-	-	-	-
6.3.3 it could damage the company's competitiveness in view of the additional disclosure involved.	-	-	-	-	-
6.3.4 it contains very little which is not already disclosed.	-	-	-	-	-

6.3.5 Other ? (please specify and check one).

6.4 Do you have any value added-based incentive schemes ?
YES/NO

If 'YES'

Does it include (check one or more)

- direct workers ? __
- indirect workers ? __.
- supervisors ? __
- lower middle management? __
- middle management ? __
- directors ? __
- Other ? (please specify).

6.5 Apart from external reporting and incentive schemes, is value added concept being used in internal decision-making ? YES/NO

If 'YES', please specify briefly :

6.6 Are you in favour of making the Value Added Statement compulsory for all large companies ? (circle one).

Strongly in favour				Srongly against
5	4	3	2	1

7 Status of Industrial Relations and Involvement :-

7.1 How would you rate morale in your organization ? (check one).

Very high	High	Fair	Poor	Very poor
—	—	—	—	—

7.2 Would you say that employee relations in your organization is conducted : (check one).

- mainly in a conflict mode ?
- mainly in a spirit of joint problem solving ?
- in another mode (please specify briefly) ?

7.3 How would you rate cooperation in your organization ? (circle one on each line).

		High		Average		Low
7.3.1	between departments.	5	4	3.	2	1
7.3.2	between management and employees.	5	4	3	2	1

7.4 How would you rate communication in your organization ? (circle one on each line).

		High		Average		Low
7.4.1	between departments.	5	4	3	2	1
7.4.2	between management and employees.	5	4	3	2	1

7.5 Employees at all levels know what is expected of them, and they generally accept the norms.(Circle one on each line).

	Min				Max
7.5.1 Current knowledge of what is expected.	1	2	3	4	5
7.5.2 Knowledge should be.	1	2	3	4	5

7.6 Employees are aware of (1) how successful the company has been and is currently and (2) problem areas (e.g., productivity, financing). (Circle one on each line).

	Min				Max
7.6.1 Current awareness.	1	2	3	4	5
7.6.2 Awareness should be.	1	2	3	4	5

7.7 Employees are kept informed of objectives and standards as they influence them. (Circle one on each line).

	Min				Max
7.7.1 Current informing status.	1	2	3	4	5
7.7.2 Informing should be.	1	2	3	4	5

7.8 Key employees other than managers are brought into the standard-setting procedure. (Circle one on each line).

	Min				Max
7.8.1 Involvement currently.	1	2	3	4	5
7.8.2 Involvement should be.	1	2	3	4	5

7.9 Managers and supervisors at all levels are involved in setting standards and budgets for their particular area of influence. (Circle one on each line).

	Min				Max
7.9.1 Current Involvement.	1	2	3	4	5
7.9.2 Involvement should be.	1	2	3	4	5

7.10 Do you consider that employees in your organization accept authority ? (Check one).

Willingly	Reluctantly	Only after explanation
—	—	—

7.11 Is the role of the supervisor in your organization (check one).

- increasing in importance ?
- declining in importance ?
- unchanging in importance ?

8 Management Attitudes toward Participation :-

8.1 Is "Industrial Democracy" interpreted in your organization as : (check one).

- employees influence over shop floor resources ?
- employees influence over policies and plans ?
- both 1 & 2 ?
- neither 1 nor 2 ?

8.2 How would you describe the level of interest in industrial democracy amongst your employees ? (check one).

Very high	High	Medium	Low	Very low
—	—	—	—	—

8.3 When decisions are being made, to what extent are the persons affected asked for their ideas ? (check one).

To a very little extent	To little extent	To some extent	To a great extent	To a very great extent
—	—	—	—	—

8.4 To what extent are the persons who make decisions aware of problems at lower levels in the company ? (check one).

To a very little extent	To little extent	To some extent	To a great extent	To a very great extent
—	—	—	—	—

8.5 Usually everyone in a company has a great deal of practical know-how. To what extent is this know-how widely shared in your company so that those who make decisions can use it ? (check one).

To a very little extent	To little extent	To some extent	To great extent	To a very great extent
___	___	___	___	___

8.6 Apart from the processes of collective bargaining, are there any channels through which shop floor employees can influence policy, strategies and plans ?

YES/NO

If 'YES', please specify briefly :

8.7 Are you in favour of worker directors ? (circle one).

Strongly in favour				Strongly against
5	4	3	2	1

9 Productivity :-

9.1 The company should install new equipment whenever possible in order to increase productivity. (check one).

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
___	___	___	___	___

9.2 The company should spend more on employee development programmes whenever possible to increase productivity ? (check one).

Strongly agree	Agree	Undecided	Disagree	Strongly disagree
___	___	___	___	___

9.3 What is current level of labour productivity - measured or perceived ? (check one on each line).

		Min				Max
9.3.1	Current level.	1	2	3	4	5
9.3.2	Potential level.	1	2	3	4	5

9.4 What is current level of overall productivity (labour, capital, energy, etc.)- measured or perceived ? (check one on each line).

		Min				Max
9.4.1	Current level.	1	2	3	4	5
9.4.2	Potential level.	1	2	3	4	5

10 The Environment :-

10.1 How do you regard the rate of change of the following conditions in your environment ? (check one on each line).

	Very slow	Slow	Moderate	Fast	Very fast
- Social.	-	-	-	-	-
- Political.	-	-	-	-	-
- Economic.	-	-	-	-	-
- Technological.	-	-	-	-	-

10.2 How easily can you predict the changes in the following conditions of your environment ? (check one on each line).

	Very easily	Easily	With difficulty	With great difficulty
- Social.	-	-	-	-
- Political.	-	-	-	-
- Economic.	-	-	-	-
- Technological.	-	-	-	-

10.3 To what extent do the following conditions of the environment threaten the survival of your organization ? (check one on each line).

	Very little	Little	Moderate	Great	Very great
- Social.	-	-	-	-	-
- Political.	-	-	-	-	-
- Economic.	-	-	-	-	-
- Technological.	-	-	-	-	-

11 Other :-

11.1 What is the ratio of capital/labour in your firm ? (total assets divided by number of employees).

11.2 What approximate percentage of your sales was spent on research and/or development within the past year ?

11.3 How much importance do you attach to each of the following? (check one on each line).

	Very important	Quite important	Some-what important	Of little importance	Of no import-ance
11.3.1 Growth through internally generated funds.	-	-	-	-	-
11.3.2 Growth through external financing.	-	-	-.	-	-
11.3.3 Long term (over 5 years) planning of goal and strategy.	-	-	-	-	-
11.3.4 Immediate future (a bird in the hand emphasis).	-	-	-	-	-

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That completes the questionnaire.

Thank you very much.

APPENDIX B

COMPANIES WHICH ACCEPTED TO PARTICIPATE IN THE STUDY AND THEIR MAIN CHARACTERISTICS.

Companies externally report value added

Imperial Chemical Industries Ltd*
BOC International Ltd*
Brent Chemicals International Ltd
British Vita Co. Ltd
Glaxo Holdings Ltd
Smith & Nephew Associated Companies Ltd
Fisons Ltd
The General Electric Co. Ltd*
The Plessey Co. Ltd
Dowding & Mills Ltd
Westinghouse Brake & Signal Co. Ltd
Davy International Ltd*
Blackwood Hodge Ltd
United Scientific Holdings Ltd
Edgar Allen, Balfour Ltd
Crown House Ltd
Molins Ltd
Richardsons Westgarth & Co. Ltd
The Delta Metal Co. Ltd
The Associated Portland Cement Manufacturers Ltd
Pilkington Brothers Ltd
Ever Ready Co. Ltd
Thorn Electrical Industries Ltd
Hoover Ltd
Christie-Tyler Ltd
Wedgwood Ltd
Dunlop Holdings Ltd
Allied Breweries Ltd
Arthur Guiness Son & Co. Ltd
Scottish & Newcastle Breweries Ltd

United Biscuit (Holdings) Ltd
The Associated Biscuit Manufacturers Ltd
Cadbury Schweppes Ltd
Associated Paper Industries Ltd
Inveresk Group Ltd
British Enkalon Ltd
Chamberlain Phipps Ltd
M.Y.Dart Ltd
Dunbee-Combex-Marx Ltd
Gestetner Holdings Ltd
W. Canning Ltd
Cope Allman International Ltd
Harris & Sheldon Group Ltd
Hestair Ltd
Powell Duffryn Ltd
Thomas Tilling Ltd
Transport Develpment Group Ltd
sears Holdings Ltd

Companies do not report value added

Laporte Industries Ltd
Alginate Industries Ltd*
Revertex Chemicals Ltd
Dale Electric International Ltd
Newman Industries Ltd
George H. Scholes & Co. Ltd
The Wellman Engineering Corporation Ltd
Amalgamated Power Engineering Ltd
Anderson Strathclyde Ltd
Simon Engineering Ltd
Wagon Industrial Holdings Ltd
Imperial Metal Industries Ltd
B. Elliott & Co. Ltd

William Mallinson & Denny Mott Ltd
Pye Holdings Ltd*
Burco Dean Ltd
Readicut International Ltd
Heron Corporation Ltd
Whitbread & Co. Ltd*
Davenports Brewery Ltd
Associated British Foods Ltd
Rowntree Mackington Ltd
Bemrose Corporation Ltd
Allied Textile Companies Ltd
The Nottingham Manufacturing C. Ltd
Airfix Industries Ltd
Letraset International Ltd
Office and Electronic Machines Ltd
Central & Sheerwood Ltd
Coalite & Chemical Products Ltd
English China Clays Ltd

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* Companies which were subject of the pilot study.

TABLE 3.2

The 79 Companies participated in our Study stratified by Size and Industrial Category.

Company Size (Number of Employees)			Industrial Categories									
Range	Mean	SD	Building Materials	Electricals	Engineering Contractors	Mechanical Engineering	Metals & Metals Forming	Light Electronics, Radio, TV.	Houshold Goods	Motors & Distributors	Breweries	Food Manufacturing
100-500	270	64	1(1)*	1(1)	-	-	1(1)	1(1)	1(1)	-	2(1)	-
501-1000	705	93	-	4(2)	-	2(1)	1(1)	-	2(1)	2(1)	3(1)	2(1)
1001-5000	2960	5992	2	2	1(1)	4(2)	2	2	2	-	-	3(1)
5001-20000	9885	6215	-	-	1	3(1)	-	-	-	-	-	-
TOTAL			3(1)	7(3)	2(1)	9(4)	4(2)	3(1)	5(2)	2(1)	5(2)	5(2)

Continued ....

* Figures in parentheses show number of companies do not disclose value added.

TABLE 3.2 (Continued).

Packaging & Paper	Textiles	Toys & Games	Chemicals	Miscellaneous	TOTAL
-	-	3(1)	1(1)	3(1)	14(9)
3(1)	-	-	2(1)	3(1)	24(11)
-	1(1)	-	4(1)	6(3)	29(9)
-	3(1)	-	3	2	12(2)
3(1)	4(2)	3(1)	10(3)	14(5)	79(31)

APPENDIX C

CODING, DESCRIPTIONS, AND NUMBERS OF VARIABLES.

Var. No.	SPSS Var. Name	Variable Description	Code	Card Column	Missing Values
1	CN	Case Number	1-200	1-3(1)*	-
		Firm's objectives			
2	FOPRICE	maximise share price	1-5	4(1)	9
3	FORPROD	maintain the flow of production	1-5	5(1)	9
4	FOGROW	establish and maintain a growth company	1-5	6(1)	9
5	FOSOC	contribute to the improvement of social welfare	1-5	7(1)	9
6	FORDIV	maintain a satisfactory level of dividends	1-5	8(1)	9
7	FOCASH	maximise cash flows	1-5	9(1)	9
8	FOEARN	maximise earnings per share	1-5	10(1)	9
9	FOWEALTH	create wealth	1-5	11(1)	9
10	FOSALES	maximise sales	1-5	12(1)	9
11	FOEMPL	keep employees informed	1-5	13(1)	9
12	FOTECHN	developing new application of techniques	1-5	14(1)	9
13	FOCUST	give the utmost consideration to the needs of customers	1-5	15(1)	9
14	FOSURVI	pay attention to the long-term survival	1-5	16(1)	9
15	FOREDU	avoid redundancy	1-5	17(1)	9
16	FORTRAIN	train and develop all employees	1-5	18(1)	9
17	FOCOMM	benefit the local community	1-5	19(1)	9
18	FOOTHER	other (Yes/No)	1/0	20(1)	9
		Management Responsibility towards:			
19	MGTEMP	employees	1-8	21(1)	9
20	MGTSHA	shareholders	1-8	22(1)	9
21	MGTCUS	customers	1-8	23(1)	9
22	MGTSUP	suppliers	1-8	24(1)	9
23	MGTGOV	government	1-8	25(1)	9
24	MGTCOM	community	1-8	26(1)	9

* Card number in parentheses.

Var. No.	SPSS Var. Name	Variable Description	Code	Card Column	Missing Values
25	MGTNAT	the Nation	1-8	27(1)	9
26	NGTOTH	other (Yes/No)	1/0	28(1)	9
		Objectives of Financial Reporting			
27	RECON	provide information for making economic decisions	1-5	29(1)	9
28	RSHARE	provide information to guide shareholders'decisions	1-5	30(1)	9
29	RMGTAB	provide information to measure management's ability to utilise enterprise resources	1-5	31(1)	9
30	REMPD	provide information to guide employees' decisions	1-5	32(1)	9
31	RSOCI	to provide information to the representatives of society	1-5	33(1)	9
32	RGOVER	to provide government officials with information to guide their decisions	1-5	34(1)	9
33	RPROPR	present information to the proprietors	1-5	35(1)	9
34	ROTHER	other (Yes/No)	1/0	36(1)	9
35		The Recipients of Financial Reports	1--28	37-39(1)	-1
	SH	shareholders			
	CR	creditors			
	E	employees			
	C	customers			
	G	government			
	SOC	society at large			
		Performance Evaluations (counts the most)			
36	PERWC	the wealth created	1-5	40(1)	9
37	PEREPS	earnings per share	1-5	41(1)	9
38	PERDIV	dividends	1-5	42(1)	9
39	PERSAL	sales	1-5	43(1)	9
40	PEROTH	other (Yes/No)	1/0	44(1)	9

Var. No.	SPSS Var. Name	Variable Description	Code	Card Column	Missing Values
		(should count the most)			
41	PERSWC	the wealth created	1-5	45(1)	9
42	PERSEP	earnings per share	1-5	46(1)	9
43	PERSDI	dividends	1-5	47(1)	9
44	PERSSA	sales	1-5	48(1)	9
45	PERSOT	other (Yes/No)	1/0	49(1)	9
		The Uses of the VA concept			
46	DISVA	disclose value added (yes/no)	1/0	50(1)	9
47	VAWHEN	before 1975 or 1975-1978	1-2	51(1)	9
48	VAWHERE	where?	1-16	52-53(1)	-1
49	VAWG	information needs of a wider group	1-5	54(1)	9
50	VACBO	a result of a change in busines objectives	1-5	55(1)	9
51	VACE	a response to changing environment	1-5	56(1)	9
52	VAU	it provides a unifying objective for the whole team	1-5	57(1)	9
53	VAGW	focuses the attention to generate wealth	1-5	58(1)	9
54	VATR	recognition that managers function as trustees of resources	1-5	59(1)	9
55	VAIMP	develop a favourable impression of managers	1-5	60(1)	9
56	VATP	express the total picture of the firm's economic activities	1-5	61(1)	9
57	VALEG	keep in advance of legislation	1-5	62(1)	9
58	VAY	the best available yardstick	1-5	63(1)	9
59	VAHC	shows how companies create wealth and how the community benefits from it,	1-5	64(1)	9
60	VALT	places more emphasis on the long-term		65(1)	9
61	VAFP	enables the financial press to move away from its concentration on EPS	1-5	66(1)	9

Var. No.	SPSS Var. Name	Variable Description	Code	Card Column	Missing Values
62	VASP	influence share prices	1-5	67(1)	9
63	VAIR	helps to create better industrial relations	1-5	68(1)	9
64	VAFIS	facilitates the introduction of VAPBS	1-5	69(1)	9
65	VAUP	a response to growing union pressure	1-5	70(1)	9
66	VAC	focuses attention on the conflict over the distribution of the wealth created	1-5	71(1)	9
67	VAGS	direct attention of the government's share	1-5	72(1)	9
68	VATM	an important tool for management control	1-5	1(2)	9
69	VAOTH	other (Yes/No)	1/0	2(2)	9
70	VACON	causes confusion	1-5	3(2)	9
71	VAEW	involves extra work, costs and delay	1-5	4(2)	9
72	VACOM	damages the company's competitiveness	1-5	5(2)	9
73	VACVL	contains very little which is not already disclosed	1-5	6(2)	9
74	VAOTH	other (Yes/No)	1/0	7(2)	9
75	VAPBS	value added productivity bonus scheme (Yes/No)	1/0	8(2)	9
76	VAIFW	VAPBS for whom?	1-63	9-10(2)	-1
77	VAID-M	is the VA concept being used in internal decision-making? (Yes/No)	1/0	11(2)	9
78	VAS	in favour of making the VA statement compulsory?	1-5	12(2)	9
		Status of Industrial Relations & Involvement			
79	MORALE	levels of morale	1-5	13(2)	9
80	E.REL.	employee relations	1-3	14(2)	9
81	C-OD	levels of cooperation betweeen departments	1-5	15(2)	9
82	C-OME	levels of cooperation between management and employees	1-5	16(2)	9

Var No.	SPSS Var. Name	Variable Description	Code	Card Column	Missing Values
83	COMD	levels of communication between departments	1-5	17(2)	9
84	COMME	between management and employees	1-5	18(2)	9
85	KIS	employees current knowledge	1-5	19(2)	9
86	KSH	knowledge should be	1-5	20(2)	9
87	AWIS	current awareness	1-5	21(2)	9
88	AWSH	awareness should be	1-5	22(2)	9
89	CIS	current informing status	1-5	23(2)	9
90	ISH	informing should be	1-5	24(2)	9
91	EIC	involvement currently(employees)	1-5	25(2)	9
92	EIS	involvement should be(employees)	1-5	26(2)	9
93	MCI	management current involvement	1-5	27(2)	9
94	MIS	management involvement should be	1-5	28(2)	9
95	DEAA	do employees accept authority?	1-3	29(2)	9
96	SR	role of supervisors	1-3	30(2)	9
		Managements Attitudes toward Participation			
97	I-DI	Industrial Democracy interpretation	1-4	31(2)	9
98	LEID	levels of interest in industrial democracy	1-5	32(2)	9
99	EI	the extent to which persons are asked for their ideas	1-5	33(2)	9
100	PE	to what extent are the persons who make decisions aware of problems at lower levels?	1-5	34(2)	9
101	K-H	the extent to which the know-how is shared	1-5	35(2)	9
102	CP	channels of participation(Yes/No)	1/0	36(2)	9
103	WD	worker directors	1-5	37(2)	9
		Productivity			
104	PNEQ	new equipment in order to increase productivity	1-5	38(2)	9
105	PEDP	employee development programmes to increase productivity	1-5	39(2)	9

Var. No.	SPSS Var. Name	Variable Description	Code	Card Column	Missing Values
106	CLLP	current level of labour productivity	1-5	40(2)	9
107	PLLP	potential level of labour productivity	1-5	41(2)	9
108	CLOP	current level of overall productivity	1-5	42(2)	9
109	PLOP	potential level of overall productivity	1-5	43(2)	9
		The Environment			
110	RCES	rate of change in social environment	1-5	44(2)	9
111	RCEP	rate of change in political environment	1-5	45(2)	9
112	RCEE	rate of change in economic environment	1-5	46(2)	9
113	RCET	rate of change in technological environment	1-5	47(2)	9
114	PSC	prediction of the social conditions	1-5	48(2)	9
115	PPC	prediction of the political conditions	1-5	49(2)	9
116	PEC	prediction of the economic conditions	1-5	50(2)	9
117	PTC	prediction of the technological conditions	1-5	51(2)	9
118	ESO	effects of the social conditions on the organisation	1-5	52(2)	9
119	EPO	effects of the political conditions on the organisation	1-5	53(2)	9
120	EEO	effects of the economic conditions on th- organisation	1-5	54(2)	9
121	ETO	effects of the technological conditions on the organisation	1-5	55(2)	9
122	C-L-R	capital/labour ratio	1-100	56-58(2)	-1
123	RD-SP	percentage of sales spent on R & D	0-9.9	59-61(2)	-1
124	IGIF	importance of growth through internally generated funds	1-5	62(2)	9
125	IGEF	importance of growth through external finance	1-5	63(2)	9

Var. No.	SPSS Var. Name	Variable Description	Code	Card Column	Missing Values
126	IL-T	importance of long-term planning	1-5	64(2)	9
127	IIF	importance of immediate future	1-5	65(2)	9
128	CON	management-controlled (1) owner (0)	1/0	1(3)	9
129	VA	value added (£'000)	1-9000,000	2-7(3)	-1
130	C.E.	capital employed (£'000)	1-1m	8-14(3)	-1
131	TURN	turnover (£'000)	1-1m	15-21(3)	-1
132	FR	funds retained for use in business (£'000)	1-900,000	22-27(3)	-1
133	L.C.	labour cost (£'000)	1-900,000	28-33(3)	-1
134	R.C.E.	return on capital employed (per cent)	1-100	34-37(3)	-1
135	N.E.	number of employees	1-99,000	38-42(3)	-1
136	LC/E	labour cost per employee	1-40,000	43-47(3)	-1
137	VA/LC	value added/labour cost	1-100	48-51(3)	-1
138	LC/VA	labour cost/value added	1-100	52-55(3)	-1
139	VA/T	value added/turnover	1-100	56-59(3)	-1
140	VA/C+L	value added/capital employed + labour cost	1-100	60-63(3)	-1
141	CE/N	capital employed/number of employees (£'000)	1-100	64-68(3)	-1

APPENDIX D

DESCRIPTIVE STATISTICS AND ONE-WAY FREQUENCY DISTRIBUTION OF MANAGEMENT MOTIVATIONS FOR VALUE ADDED REPORTING.

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR49 VANDERGROUP

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
DAGREE	2.000	2	4.2	4.3	4.3
UNDECIDED	3.000	5	10.4	10.9	15.2
AGREE	4.000	33	68.8	71.7	87.0
SAGREE	5.000	6	12.5	13.0	100.0
	9.000	2	4.2	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.935	STD ERR	0.095	MEDIAN	3.985
MODE	4.000	STD DEV	0.646	VARIANCE	0.418
KURTOSIS	2.543	SKEWNESS	-0.973	RANGE	3.000
MINIMUM	2.000	MAXIMUM	5.000		

VALID CASES 46 MISSING CASES 2

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR50 VA CHANGE 80S

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	2	4.2	4.5	4.5
DAGREE	2.000	8	16.7	18.2	22.7
UNDECIDED	3.000	5	10.4	11.4	34.1
AGREE	4.000	26	54.2	59.1	93.2
SAGREE	5.000	3	6.3	6.8	100.0
	9.000	4	8.3	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.455	STD ERR	0.154	MEDIAN	3.769
MODE	4.000	STD DEV	1.022	VARIANCE	1.044
KURTOSIS	-0.082	SKEWNESS	-0.899	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 44 MISSING CASES 4

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR51 VA CHANGING SOC

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	4	8.3	8.7	8.7
DAGREE	2.000	6	12.5	13.0	21.7
UNDECIDED	3.000	8	16.7	17.4	39.1
AGREE	4.000	26	54.2	56.5	95.7
SAGREE	5.000	2	4.2	4.3	100.0
	9.000	2	4.2	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.348	STD ERR	0.156	MEDIAN	3.692
MODE	4.000	STD DEV	1.059	VARIANCE	1.121
KURTOSIS	0.045	SKEWNESS	-0.990	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 46 MISSING CASES 2

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR52 VA JUSTIFYING

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
DAGREE	2.000	10	20.8	21.7	21.7
UNDECIDED	3.000	9	18.8	19.6	41.3
AGREE	4.000	19	39.6	41.3	82.6
SAGREE	5.000	8	16.7	17.4	100.0
	9.000	2	4.2	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.543	STD ERR	0.151	MEDIAN	3.711
MODE	4.000	STD DEV	1.026	VARIANCE	1.054
KURTOSIS	-1.052	SKEWNESS	-0.251	RANGE	3.000
MINIMUM	2.000	MAXIMUM	5.000		

VALID CASES 46 MISSING CASES 2

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR53 VA GEN ERATE WELATH

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
DAGREE	2.000	2	4.2	4.3	4.3
UNDECIDED	3.000	3	6.3	6.5	10.9
AGREE	4.000	28	58.3	60.9	71.7
SAGREE	5.000	13	27.1	28.3	100.0
	9.000	2	4.2	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	4.130	STD ERR	0.106	MEDIAN	4.143
MODE	4.000	STD DEV	0.718	VARIANCE	0.516
KURTOSIS	1.897	SKEWNESS	-0.952	RANGE	3.000
MINIMUM	2.000	MAXIMUM	5.000		

VALID CASES 46 MISSING CASES 2

VAR54 VA TRUSTEES

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	3	6.3	6.7	6.7
DAGREE	2.000	6	12.5	13.3	20.0
UNDECIDED	3.000	9	18.8	20.0	40.0
AGREE	4.000	23	47.9	51.1	91.1
SAGREE	5.000	4	8.3	8.9	100.0
	9.000	3	6.3	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.422	STD ERR	0.157	MEDIAN	3.696
MODE	4.000	STD DEV	1.055	VARIANCE	1.113
KURTOSIS	0.052	SKEWNESS	-0.819	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 45 MISSING CASES 3

VAR55 VA IMPRESSION

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	4	8.3	8.7	8.7
DAGREE	2.000	13	27.1	28.3	37.0
UNDECIDED	3.000	18	37.5	39.1	76.1
AGREE	4.000	10	20.8	21.7	97.8
SAGREE	5.000	1	2.1	2.2	100.0
	9.000	2	4.2	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	2.804	STD ERR	0.141	MEDIAN	2.833
MODE	3.000	STD DEV	0.957	VARIANCE	0.916
KURTOSIS	-0.443	SKEWNESS	-0.065	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 46 MISSING CASES 2

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VAR56 VA TOTAL PICTURE

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	4	8.3	8.5	8.5
DAGREE	2.000	12	25.0	25.5	34.0
UNDECIDED	3.000	6	12.5	12.8	46.8
AGREE	4.000	21	43.8	44.7	91.5
SAGREE	5.000	4	8.3	8.5	100.0
	9.000	1	2.1	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.191	STD ERR	0.171	MEDIAN	3.571
MODE	4.000	STD DEV	1.173	VARIANCE	1.376
KURTOSIS	-1.004	SKEWNESS	-0.390	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 47 MISSING CASES 1

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR57 VA LEGISLATION

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	5	10.4	11.4	11.4
DAGREE	2.000	22	45.8	50.0	61.4
UNDECIDED	3.000	11	22.9	25.0	86.4
AGREE	4.000	6	12.5	13.6	100.0
	9.000	4	8.3	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	2.409	STD ERR	0.131	MEDIAN	2.273
MODE	2.000	STD DEV	0.871	VARIANCE	0.759
KURTOSIS	-0.431	SKEWNESS	0.403	RANGE	3.000
MINIMUM	1.000	MAXIMUM	4.000		

VALID CASES 44 MISSING CASES 4

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR56 VA YARDSTICK

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	4	8.3	8.9	8.9
DAGREE	2.000	12	25.0	26.7	35.6
UNDECIDED	3.000	14	29.2	31.1	66.7
AGREE	4.000	14	29.2	31.1	97.8
SAGREE	5.000	1	2.1	2.2	100.0
	9.000	3	6.3	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	2.911	STD ERR	0.152	MEDIAN	2.964
MODE	3.000	STD DEV	1.019	VARIANCE	1.037
KURTOSIS	-0.787	SKEWNESS	-0.221	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 45 MISSING CASES 3

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VAR59 VA HOW CO.

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	1	2.1	2.1	2.1
DAGREE	2.000	3	6.3	6.4	8.5
UNDECIDED	3.000	7	14.6	14.9	23.4
AGREE	4.000	31	64.6	66.0	89.4
SAGREE	5.000	5	10.4	10.6	100.0
	9.000	1	2.1	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.766	STD ERR	0.119	MEDIAN	3.903
MODE	4.000	STD DEV	0.813	VARIANCE	0.661
KURTOSIS	2.558	SKEWNESS	-1.310	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 47 MISSING CASES 1

VAR60 VA LONG TERM

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	5	10.4	10.9	10.9
DAGREE	2.000	16	33.3	34.8	45.7
UNDECIDED	3.000	5	10.4	10.9	56.5
AGREE	4.000	16	33.3	34.8	91.3
SAGREE	5.000	4	8.3	8.7	100.0
	9.000	2	4.2	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	2.957	STD ERR	0.181	MEDIAN	2.900
MODE	2.000	STD DEV	1.228	VARIANCE	1.509
KURTOSIS	-1.256	SKEWNESS	0.011	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 46 MISSING CASES 2

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR61 VA FIN PRESS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	3	6.3	6.4	6.4
DAGREE	2.000	16	33.3	34.0	40.4
UNDECIDED	3.000	15	31.3	31.9	72.3
AGREE	4.000	12	25.0	25.5	97.9
SAGREE	5.000	1	2.1	2.1	100.0
	9.000	1	2.1	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	2.830	STD ERR	0.140	MEDIAN	2.800
MODE	2.000	STD DEV	0.963	VARIANCE	0.927
KURTOSIS	-0.729	SKEWNESS	0.051	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 47 MISSING CASES 1

VAR62 VA SHARE PRICE

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	8	16.7	17.4	17.4
DAGREE	2.000	16	33.3	34.8	52.2
UNDECIDED	3.000	12	25.0	26.1	78.3
AGREE	4.000	8	16.7	17.4	95.7
SAGREE	5.000	2	4.2	4.3	100.0
	9.000	2	4.2	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	2.565	STD ERR	0.163	MEDIAN	2.438
MODE	2.000	STD DEV	1.109	VARIANCE	1.229
KURTOSIS	-0.617	SKEWNESS	0.340	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 46 MISSING CASES 2

VAR63 VA INDU STRIAL REL

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	2	4.2	4.3	4.3
DAGREE	2.000	6	12.5	12.8	17.0
UNDECIDED	3.000	9	18.8	19.1	36.2
AGREE	4.000	21	43.8	44.7	80.9
SAGREE	5.000	9	18.8	19.1	100.0
	9.000	1	2.1	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.617	STD ERR	0.157	MEDIAN	3.810
MODE	4.000	STD DEV	1.074	VARIANCE	1.154
KURTOSIS	-0.056	SKEWNESS	-0.702	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 47 MISSING CASES 1

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR64 VA FACILITATE IS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	1	2.1	2.1	2.1
DAGREE	2.000	6	12.5	12.8	14.9
UNDECIDED	3.000	9	18.8	19.1	34.0
AGREE	4.000	25	52.1	53.2	87.2
SAGREE	5.000	6	12.5	12.8	100.0
	9.000	1	2.1	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.617	STD ERR	0.138	MEDIAN	3.800
MODE	4.000	STD DEV	0.945	VARIANCE	0.894
KURTOSIS	0.259	SKEWNESS	-0.756	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 47 MISSING CASES 1

10-29-80 FILE - VALUCARD - CREATED 10-29-80

VAR65 VA UNION

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	4	8.3	8.7	8.7
DAGREE	2.000	21	43.8	45.7	54.3
UNDECIDED	3.000	13	27.1	28.3	82.6
AGREE	4.000	7	14.6	15.2	97.8
SAGREE	5.000	1	2.1	2.2	100.0
	9.000	2	4.2	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	2.565	STD ERR	0.138	MEDIAN	2.405
MODE	2.000	STD DEV	0.935	VARIANCE	0.873
KURTOSIS	-0.168	SKEWNESS	0.485	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 46 MISSING CASES 2

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR66 VA CONFLICT

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	1	2.1	2.1	2.1
DAGREE	2.000	9	18.8	19.1	21.3
UNDECIDED	3.000	6	12.5	12.8	34.0
AGREE	4.000	20	41.7	42.6	76.6
SAGREE	5.000	11	22.9	23.4	100.0
	9.000	1	2.1	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.660	STD ERR	0.162	MEDIAN	3.875
MODE	4.000	STD DEV	1.109	VARIANCE	1.229
KURTOSIS	-0.662	SKEWNESS	-0.573	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 47 MISSING CASES 1

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR67 VA GOVERNMENT SHARE

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	1	2.1	2.2	2.2
DAGREE	2.000	6	12.5	13.3	15.6
UNDECIDED	3.000	10	20.8	22.2	37.8
AGREE	4.000	24	50.0	53.3	91.1
SAGREE	5.000	4	8.3	8.9	100.0
	9.000	3	6.3	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.533	STD ERR	0.137	MEDIAN	3.729
MODE	4.000	STD DEV	0.919	VARIANCE	0.845
KURTOSIS	0.239	SKEWNESS	-0.745	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 45 MISSING CASES 3

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR68 VA TOOL FOR MGT

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
SDAGREE	1.000	4	8.3	8.7	8.7
DAGREE	2.000	7	14.6	15.2	23.9
UNDECIDED	3.000	9	18.8	19.6	43.5
AGREE	4.000	22	45.8	47.8	91.3
SAGREE	5.000	4	8.3	8.7	100.0
	9.000	2	4.2	MISSING	100.0
	TOTAL	48	100.0	100.0	

MEAN	3.326	STD ERR	0.165	MEDIAN	3.636
MODE	4.000	STD DEV	1.117	VARIANCE	1.247
KURTOSIS	-0.356	SKEWNESS	-0.692	RANGE	4.000
MINIMUM	1.000	MAXIMUM	5.000		

VALID CASES 46 MISSING CASES 2

10-29-80 FILE - VALUEADD - CREATED 10-29-80

VAR69 VA OTHER

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NO	0.	45	93.8	93.8	93.8
YES	1.000	3	6.3	6.3	100.0
	TOTAL	48	100.0	100.0	

MEAN	0.063	STD ERR	0.035	MEDIAN	0.033
MODE	0.	STD DEV	0.245	VARIANCE	0.060
KURTOSIS	12.449	SKEWNESS	3.732	RANGE	1.000
MINIMUM	0.	MAXIMUM	1.000		

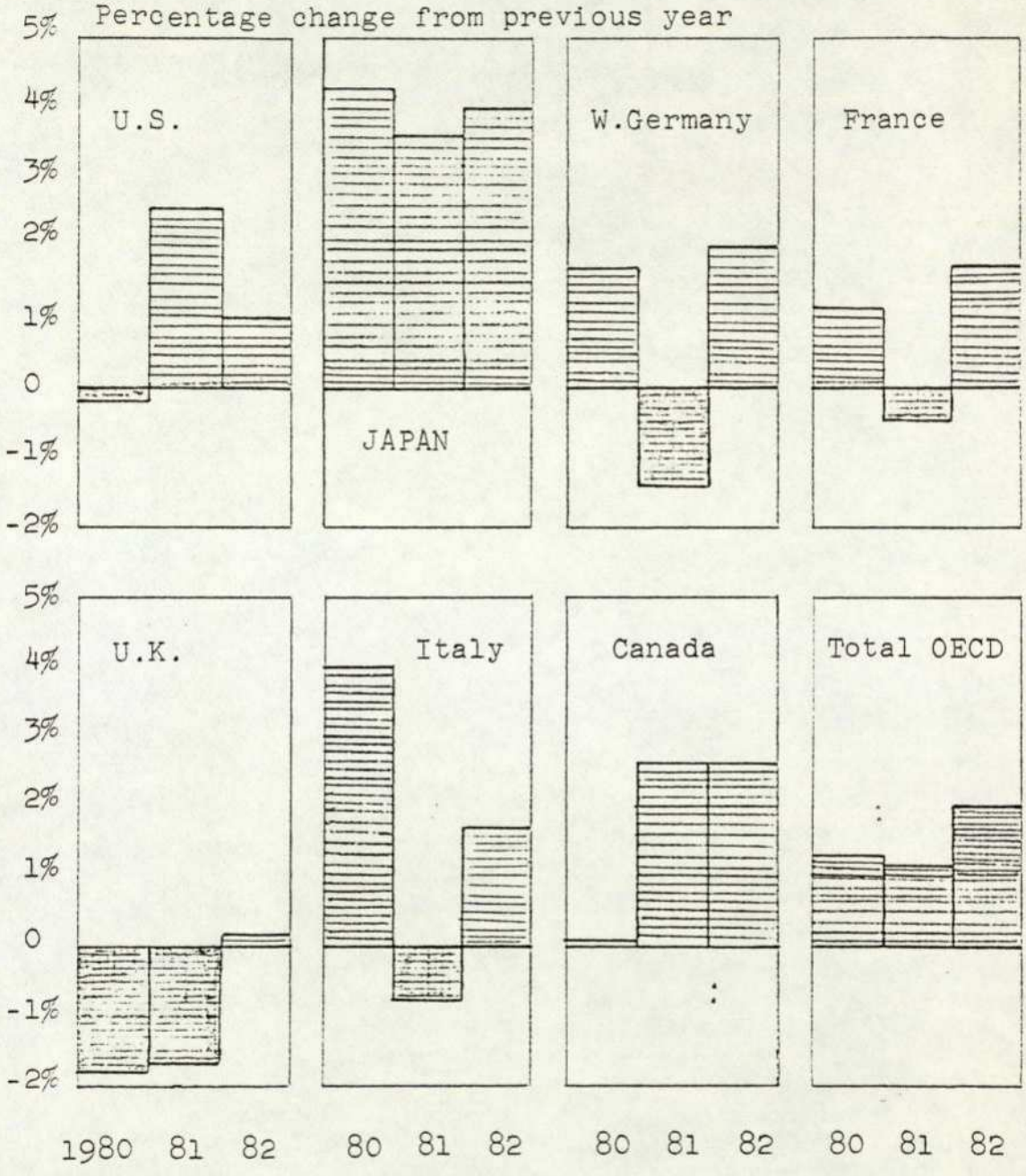
VALID CASES 48 MISSING CASES 0

APPENDIX E

THE STATE OF THE BRITISH ECONOMY: INTERNATIONAL COMPARISONS.

F I G U R E 9.1

Growth of Real GNP in the OECD Area



Source: Financial Times, 10 July, 1981.

Table 9.1

U.K. Unemployment Compared

with Major Industrial Countries

		July '81	June '81	May '81	July'80
U.K.	OOOs	2,851.6	2,680.5	2,558.4	1,896.6
	%	11.8	11.1	10.6	7.8
W. Germany	OOOs	1,246.2	1,125.7	1,109.7	853.0
	%	4.7	4.3	4.2	3.3
U.S.A	OOOs	7,502.0	7,784.0	8,170.0	8,207.0
	%	7.0	7.3	7.6	7.8
		June'81	May '81	April'81	June 80
France	OOOs	1,625.5	1,630.7	1,645.7	1,296.2
	%	7.2	7.2	7.3	5.7
Italy	OOOs	1,880.5	1,878.5	1,872.4	1,744.1
	%	8.4	8.4	8.4	7.8
Netherlands	OOOs	360.1	335.9	333.7	221.8
	%	6.9	6.5	6.4	4.3
Belgium	OOOs	432.9	428.6	426.8	335.7
	%	10.6	10.5	10.5	8.2
		May '81	April'81	March'81	May ' 80
Japan	OOOs	1,320.0	1,370.0	1,420.0	1,090.0
	%	2.3	2.4	2.5	1.9

Source: Financial Times, 17 August, 1981

TABLE 9.2

International Comparisons of Average Annual Rises in Consumer Prices

	1977	1978	1979	12 months to May,1980
U.K.	15.9	8.3	13.4	21.9
U.S.A	6.5	7.7	11.3	14.4
Japan	8.1	3.8	3.6	8.2
W. Germany	3.7	2.7	4.1	6.0
France	9.4	9.1	10.8	13.7
Italy	17.0	12.1	14.8	20.8
Canada	8.0	9.0	9.1	9.4
TOTAL (OECD)	8.7	7.7	9.9	13.8

Source: Organisation for Economic Cooperation and Development.

TABLE 9.3

INDUSTRIAL PRODUCTION:

AN INTERNATIONAL COMPARISON

	July'81	June'81	May '81	July'80	Change over previous year %	Index base year
U.S.A.	153.4 June'81	152.9 May '81	153.0 April'81	140.4 June'80	+9.3	1967 = 100
U.K.	99.5	98.2	99.1	106.7	-6.7	1975 = 100
W.Germany	116.4	118.7	116.6	120.8	-3.6	1975 = 100
France	110.1	108.6	109.0	116.8	-5.7	1975 = 100
Italy	125.0 May '81	124.0 April'81	126.8 Mar.'81	131.3 May '80	-4.8	1975 = 100
Japan	142.7	145.0	114.6	143.0	-0.2	1975 = 100
Netherlands	109.0	108.0	110.1	114.0	-4.4	1975 = 100
Belgium	113.8	110.2	112.5	118.6	-4.0	1975 = 100

Source: Financial Times, 1 September, 1981

T A B L E 6.1

Rates of Return on Corporate Capital

1962 - 1976

Year or Period	Canada	France	Germany	Italy	Japan	U.K.	U.S.A.
1969	9.8	11.5	20.7	12.2	30.6	10.1	10.2
1970	6.6	11.5	18.2	11.5	28.1	8.7	8.1
1971	8.4	10.6	15.6	9.4	23.5	8.7	8.4
1972	9.4	12.3	13.4	9.9	20.2	8.6	9.2
1973	11.4	11.8	12.9	n.a.	15.7	7.2	8.6
1974	11.4	10.8	12.7	n.a.	13.1	4.0	6.4
1975	8.2	5.2	10.0	n.a.	13.9	3.4	6.9
1976	8.1	n.a.	11.4	n.a.	n.a.	3.6	7.9
Average							
1962-64	7.9	9.7	19.3	10.4	28.2	11.9	12.0
1965-69	9.6	10.0	19.5	11.4	27.9	10.6	12.2
1970-73	9.0	11.6	15.0	10.3	21.9	8.3	8.6
1974-76	9.2	8.0*	11.4	n.a.	13.5*	3.7	7.1

n.a. - Not available.

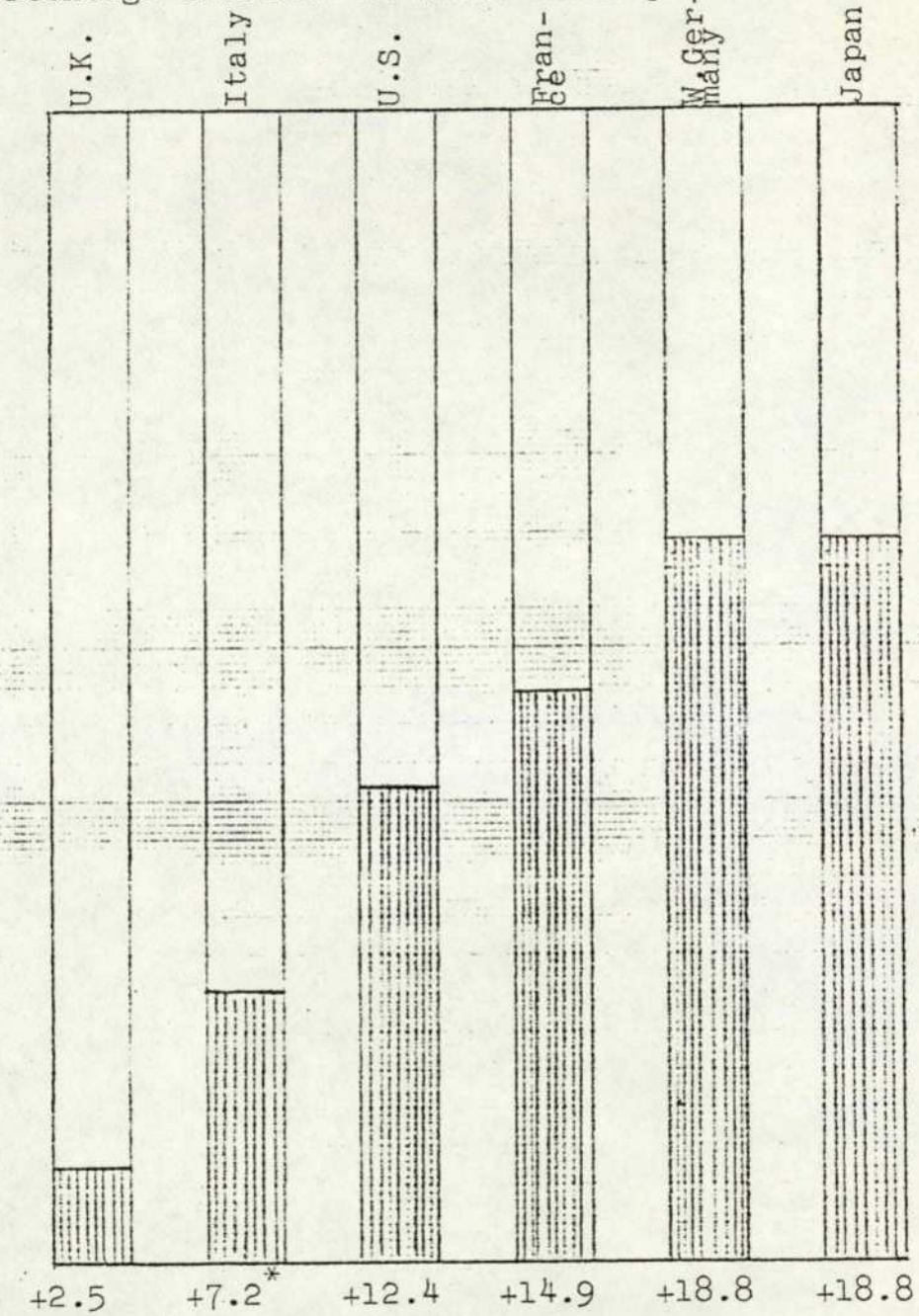
* Data are for the 1974-1975 period.

Source: Jeffrey D. Sachs, "Wages,Profits, and Macro-economic Adjustment: A Comparative Study", Harvard University and National Bureau of Economic Research, Brooking Papers on Economic Activity (2:1979), p.278

FIGURE 6.1

International Comparisons of Industrial Productivity (1973-1977).

Percentage increase in Value Added per man hour in industry.

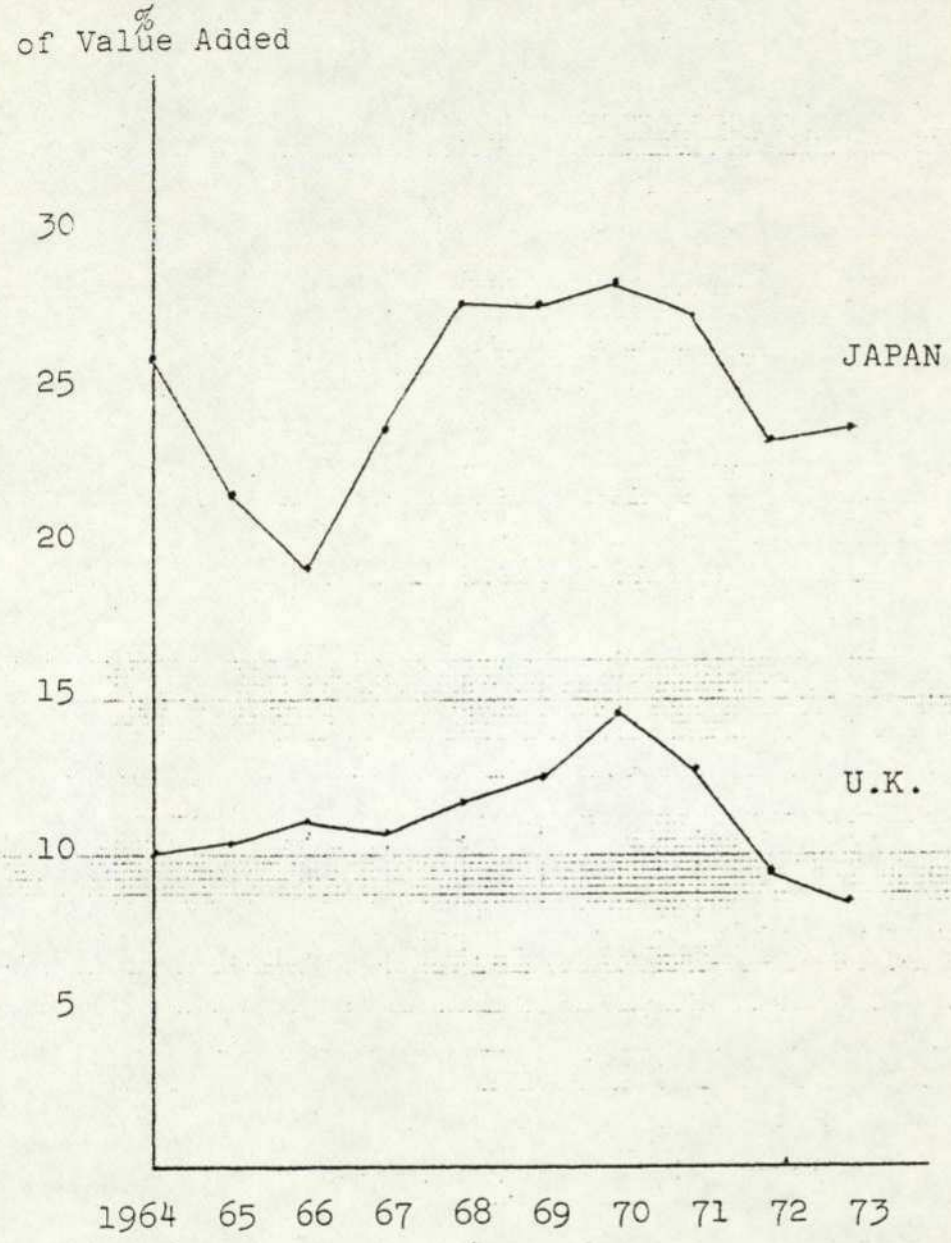


*1973-1976 only.

Source: Sunday Times September 17th, 1978.

FIGURE 6.2

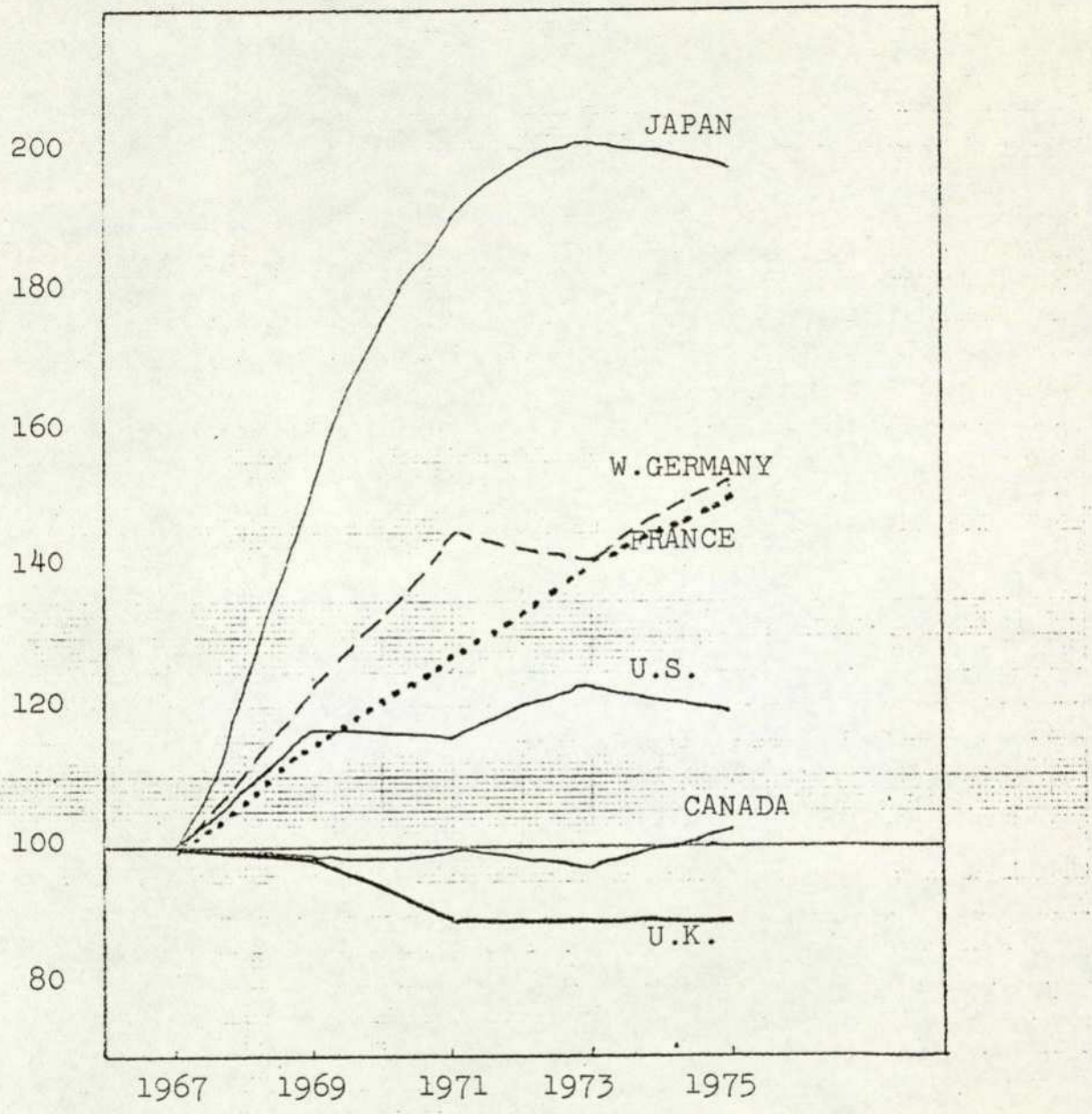
Comparison between Investment in Japanese and British Manufacturing Industries (1964-1973).



Source: Sunday Times 5 March, 1978.

FIGURE 6.3

How Britain Fell Behind in Industrial R & D



Source: OECD, Science & Technology in the New Socio-Economic Context, 1979.

Note: Figures have been adjusted for inflation, to show real increases (declines).

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