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BY

G. G. MEREDITH

DEPARTMENT OF ACCOUNTANCY

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ADMINISTRATIVE CONTROL OF CAPITAL EXPENDITURE: A SURVEY OF AUSTRALIAN PUBLIC COMPANIES

I

INTRODUCTION

Purpose of the survey and methods adopted

Research into specific aspects of the management of capital expenditures has received increasing attention during the last decade, particularly in the United States of America. Most academic periodicals produced from within the fields of accountancy, economics, engineering, and mathematics include comments on such problems as: conflicting methods of economic analysis; the determination of the cost of capital employed; the effects of capital rationing on the capital expenditure programme; and the application of linear programming techniques and probability theory to capital budgeting.

Similar trends appear in journals and books produced for the non-academic businessman. Relatively little has been written on either the role of administrative organization in the capital budget programme or the control procedures adopted by Australian companies. The purpose of this survey has been to fill a gap in current research in this field by making available data applicable to Australian public companies.

A survey was carried out in late 1962 and early 1963 of 1,286 Australian public companies listed in the 30 April 1962 issue of *Rydge's Journal*. The only companies excluded from the survey were those controlled by public companies already included in the sample.

A survey questionnaire (see p. 36) was posted to the secretary of each public company, and a follow-up letter was sent after a period of one month to all companies that had not replied at that time.

Replies were received from 940 companies, representing 73.09 per cent of the survey field, but of these 144 were excluded from the final analysis because either:

(a) questionnaire forms were incomplete;
(b) questionnaire answers were ambiguous;
(c) companies ceased to operate as public companies;
(d) companies were not at that time established so that control procedures were not developed; or
(e) companies asked to be excluded from the survey.

Data from the remaining 796 companies have been included in the analyzed results, and this sample represents 61.9 per cent of the original companies questioned.

The data from the survey have been applied to examine the control exercised over capital expenditures, this "control" being measured in terms of the following administrative procedures:

(a) capital budget preparation;
(b) economic analysis of investments;
(c) control over the release of cash for approved proposals;
(d) reports on the progress of current proposals;
(e) post-completion audits.

As well as measuring the extent to which the above procedures were adopted by Australian public companies, the survey aimed to measure any variations in practice noted with changes in:

(a) *company size*, as reflected by paid-up capital;
(b) *company industry*, classified as predominantly-manufacturing, wholesale-distribution, retail trading, finance, and one division for all other industries;
(c) *average annual expenditure of a capital nature.*

QUESTIONNAIRE

DEPARTMENT OF ACCOUNTANCY UNIVERSITY OF QUEENSLAND

RESEARCH PROJECT: CAPITAL EXPENDITURE CONTROL PROCEDURES: AUSTRALIAN PUBLIC COMPANIES

Company No..... Classification.....

Please complete this survey sheet by CIRCLING the *letter* or *letters* that apply to each question for your company.

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1. Is a budget for future capital expenditures prepared by your company?
   a. Yes.
   b. No. (If this answer applies, omit question 2.)

2. For what *future* period does the capital budget apply? (If a short-range *and* a long-range budget is prepared, circle both years that apply.)

a. One year.
b. Three years.
c. Five years.
d. Other period. (Specify.).....

3. When capital expenditure proposals are put forward to management for consideration:
   a. *No* financial analysis of the proposal is made. (If this answer applies, omit questions 4 and 8.)
   b. Estimated increased income or savings expected from the proposal are analyzed.
   c. The payback period for the proposal is calculated.
   d. The percentage rate of return on total (or average) investment $\left(\text{i.e. } \frac{\text{income}}{\text{investment}} \times \frac{100 \text{ per cent}}{1} \right)$ is calculated.
   e. The percentage rate of return is calculated using discounted cash flow methods.
   f. The present value method is used to analyze the proposal.
   g. Analysis takes the following form: (Specify.).....

.....

4. Is the analysis referred to in question 3 carried out:
   a. Before the proposal is included in the capital budget?
   b. After the proposal has been included in the budget but before approval is given for the expenditure of cash on the proposal?
   c. At some other time? (Specify.).....

5. Must a request for the release of funds be submitted for approval before any cash is subsequently made available to commence an approved proposal?
   a. Yes.
   b. No.

6. When cash has been released for an approved project to commence, are progress reports on actual expenditures on capital works prepared?
   a. Yes.
   b. No. (If this answer applies, omit question 7.)

7. At what intervals are these reports referred to in question 6 prepared?
   a. Monthly.
   b. Annually only.
   c. Other period. (Specify.).....

8. When expenditure on the establishing of a project is complete, and the project is in operation, is any analysis made to compare the *actual* profitability (i.e. actual savings, or payback, or percentage rate of return) with the profitability *estimated* before original approval was given?
   a. Yes.
   b. No. (If this answer applies, please indicate briefly why this post-completion analysis is *not* carried out.)

.....

.....

.....

9. Would the average annual expenditure on capital items by your company be:
   a. Under £50,000?
   b. Between £50,000 and £100,000?
   c. Between £100,000 and £500,000?
   d. Between £500,000 and £1 million?
   e. Between £1 million and £5 million?
   f. Over £5 million?

MANY THANKS FOR YOUR CO-OPERATION IN COMPLETING THIS SURVEY SHEET.
PLEASE RETURN IT TO:

Research Survey,
Department of Accountancy,
University of Queensland,
St. Lucia. BRISBANE.

Definition of capital expenditure

> "Capital expenditure should be defined in terms of economic behaviour, rather than in terms of accounting convention or tax law."[1]

Dean's quotation above highlights the fact that accounting data, as recorded within the traditional accounting system, quite often do not provide information relevant to the capital expenditure decision. Such conventional definitions of capital expenditure as "expenditures for the purchase of land, buildings and other semi-permanent properties . . . . recorded in asset accounts"[2] may lead to decision-making based on irrelevant data. A broader interpretation is required than the usually accounting "capitalized" outlay. Consider the definitions suggested by:

(a) Shillinglaw[3]: "a current outlay that is made in anticipation of future benefits";

(b) Bierman and Smidt[4]: "commitments of resources, made in the hope of realizing benefits expected to occur over a reasonably long future period of time";

(c) Kohler[5]: "an expenditure intended to benefit future periods, in contrast to a revenue expenditure, which benefits a current period. . . . The term is generally restricted to expenditures that add fixed-asset units or that have the effect of increasing the capacity, efficiency, span of life, or economy of operation of an existing fixed asset."

The three definitions above place the emphasis on the purpose of the expenditure under consideration and the time period to which the "value consideration"[6] extends. A value consideration not extending beyond a current period represents a revenue expenditure; while a value consideration extending beyond a current period is recognized as a capital expenditure.

Capital expenditures then refer to the profitable use of funds in the form of plant, machinery, buildings, land, etc. (the so-called capital assets) and any application of funds (even though written off as current expenditure in the accounting records) that is expected to return long-range benefits—such as outlays for research, advertising with cumulative effects, and staff training costs mentioned by Dean.[7]

In order to complete the above definition, it is considered that additional working capital permanently required during the life of any proposal should be regarded as a

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[1]Joel Dean, *Capital Budgeting* (New York: Columbia University Press, 1952), p. 4.
[2]W. B. Meigs and C. E. Johnson, *Accounting* (New York: McGraw-Hill, 1962), p. 398.
[3]G. Shillinglaw, *Cost Accounting: Analysis and Control* (Illinois: Richard D. Irwin, 1961), p. 529.
[4]H. Bierman and S. Smidt, *The Capital Budgeting Decision* (New York: Macmillan, 1960), p. 3.
[5]E. L. Kohler, *A Dictionary for Accountants* (3rd ed.; Englewood Cliffs, N. J.: Prentice-Hall, 1963), p. 83.
[6]A term referred to in *Accountants' Cost Handbook*, ed. Robert I. Dickey (New York: Ronald Press, 1960), Secs. 2-3.
[7]*op.cit.*, p. 4.

capital outlay necessary for the success of the proposal. On this point there would be conflict with Dean.[8] The criterion for Dean is the rate of turnover of cash, and this means that such items as additional stock and debtors involved in a proposal will be ignored as these items have a rate of turn-over into cash of perhaps several times each year: "although assets on the balance sheet, [they] turnover fast enough to make their level fairly adjustable to short-run changes of outlook."[9]

While it is agreed that working capital requirements for any additional proposal will turnover in cash at frequent intervals, this does not account for the necessity of a permanent allocation of additional funds for the life of the proposal to cover the working capital required. Management will therefore be forced to consider additional requirements of working capital in planning future capital expenditures.

Importance of capital expenditures

Quotations from Reynolds,[10] Ruffels,[11] and Dean[12] clearly indicate the importance of this area of control for the firm; hence the justification for the introduction of special control procedures. The implications of capital expenditure decisions are sufficient to demand that these be divorced from the day-to-day decisions of operating management and receive the closest attention of top management.

(a) Capital expenditure sets the pattern of future trading. Ill-judged capital purchases can be an immediate waste of money and a source of continuing losses. On the other hand failure to invest available funds in new and worthwhile projects will quickly lead to stagnation.[10]

(b) Decisions on capital expenditure are among the most important which it is the province of top management to make because:
   a. they [management] are the trustees for money entrusted to them by shareholders and others, and they are responsible for its application; and
   b. decisions made today on immediate or future capital expenditure will affect the level of costs and profits of the business for many years to come, and indeed may affect the whole of the future policy and success of the business.[11]

(c) Capital expenditure decisions form the framework for a company's future development and are a major determinant of efficiency and competitive power.[12]

To the above reasoning can be added the following arguments to justify the emphasis that should be concentrated on capital expenditure control, and the administrative procedures necessary to carry out that control:

(a) Capital expenditure decisions made now will affect the actions of competitors, the stock market, employees, management, and shareholders.

(b) Until certain major capital expenditure decisions are made and implemented, many other policies of management cannot be finalized. Until a decision is made concerning a major expansion project, related policies in connection with marketing, production, accounting, and administration cannot be even considered.

(c) Future planning and operating decisions are affected by past capital investments made.

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[8] *Ibid.*
[9] *Ibid.*
[10] P. D. Reynolds, "Control of Capital Expenditure", *Accountancy*, LXXII, No. 815 (July, 1961), p. 397.
[11] B. W. B. Ruffels, "Planning Capital Expenditure", a technical paper included in *Proceedings of the Convention 1958* (Melbourne: Australian Society of Accountants, 1958).
[12] Joel Dean, "Measuring the Productivity of Capital", *Harvard Business Review*, Vol. XXXI, No. 1 (January/February, 1954).

(d) Relatively high uncertainty and risk centres around investment decisions made, because of the necessity to forecast far into the future.

(e) Multiplicity and diversity of investment needs of many companies suggest capital expenditure decisions deserve special attention; investment opportunities are in theory limited only by the cost of additional funds.

(f) Relationships between physical facilities, employees, and customers add to the complexity of capital investment decisions.

(g) Responsibility for major capital investment decisions rests with top management, justifying special procedures.

(h) Capital investment decisions require managerial judgment, and control procedures should be geared to assist this judgment;

(i) While the overall return on total funds must be kept at a reasonable figure if the business is to prosper, investments on which there appears to be no apparent return must be balanced by others, more remunerative.

(j) Capital expenditures today determine costs of production and distribution in the future and the level of capacity.

(k) Accounting conventions and practices play a minor role in capital expenditure control. Accounting makes use of the accrual basis, capital budgeting utilizes the cash basis of analysis; accounting is designed to measure periodic income of an entity, and capital investment analysis attempts to predict income from a single project over many future accounting periods. The fact that the normal accounting processes are so foreign to the capital budget process suggests that special procedures, special controls, and special personnel appear appropriate.

The above list is not meant to be exhaustive, but is meant to indicate that it is necessary to isolate the capital investment processes and procedures from the normal accounting context, and apply principles of economics, mathematics, and engineering economy to formulate a plan suitable for the control of this area. The above factors presented are not meant to be mutually exclusive, but add weight to the contention that this area of accounting control deserves special and continuing research. Administrative procedures must form part of this research.

Characteristics of the companies included in the analysis

Table 1 gives some indication of the relative size of the companies included in the final analysis. It could be said that some 21 per cent of the field represents relatively small companies, 52 per cent represents medium-sized companies, and 27 per cent

TABLE 1

AUSTRALIAN PUBLIC COMPANIES INCLUDED IN SURVEY
RESULTS ANALYZED BY COMPANY SIZE (PAID-UP CAPITAL)

Paid-up Capital	Number of Companies	Percentage of Total
Under £100,000	44	5.53
£100,000–£200,000	128	16.08
£200,000–£500,000	247	31.03
£500,000–£1 million	164	20.60
£1 million–£5 million	164	20.60
Over £5 million	49	6.16
Total	796	100.00

represents larger public companies. The range within these classifications is probably large, with the smallest companies represented by assets totalling less than £50,000, and the largest companies with assets totalling over £300 million.

The analyzed companies are largely manufacturing companies (see Table 2) with a reasonable proportion classified as wholesale-distribution companies; while the rather large "other" group represents banking, insurance, investment, mining, building, and other "service" companies.

TABLE 2

AUSTRALIAN PUBLIC COMPANIES INCLUDED IN THE SURVEY
RESULTS ANALYZED BY COMPANY INDUSTRY

Classification	Number of Companies	Percentage of Total
Manufacturing	421	52.89
Wholesale-distribution	132	16.58
Retail trading	54	6.78
Finance	30	3.77
Other	159	19.98
Total	796	100.00

An assessment of the relative importance of capital investment decisions for the Australian public companies based on the average annual capital expenditure for each company is presented in Table 3. This Table may give the impression that for almost 60 per cent of Australian public companies annual capital expenditures are relatively unimportant, as the level of average annual expenditures of a capital nature for this group falls below £50,000. However, the absolute size of the capital expenditure in itself does not reflect the importance of the expenditure to the company. A more accurate guide to the relative importance of the capital expenditures is presented in Table 4 where average annual capital expenditures are analyzed for the companies by company size. Thus a capital investment of £50,000 for a small company is probably most significant and deserves special administrative procedures for control; while a capital investment of £50,000 for the largest Australian public companies would be probably almost insignificant. Table 4 would suggest that for all the companies included in the survey, with the exception of thirty-eight of the largest public companies (or 4.8 per cent of the total field), the annual capital expenditures incurred are sufficiently significant to warrant close attention to administrative control procedures.

TABLE 3

AVERAGE ANNUAL LEVEL OF CAPITAL EXPENDITURE FOR 796 AUSTRALIAN PUBLIC COMPANIES INCLUDED IN THE SURVEY ANALYSIS

Capital Expenditure per Annum	Number of Companies	Percentage of Total
Under £50,000	472	59.29
£50,000–£100,000	146	18.34
£100,000–£500,000	110	13.82
£500,000–£1 million	32	4.02
£1 million–£5 million	28	3.52
Over £5 million	8	1.01
Total	796	100.00

TABLE 4

AVERAGE ANNUAL LEVEL OF CAPITAL EXPENDITURE FOR 796 AUSTRALIAN PUBLIC COMPANIES INCLUDED IN THE SURVEY RESULTS ANALYSED BY COMPANY SIZE

AVERAGE ANNUAL CAPITAL EXPENDITURE	COMPANY SIZE (PAID-UP CAPITAL)											
	Under £100,000		£100,000 to £200,000		£200,000 to £500,000		£500,000 to £1 million		£1 million to £5 million		Over £5 million	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Under £50,000	41	93.2	118	92.2	198	80.2	77	47.0	37	22.6	1	2.0
£50,000–£100,000	2	4.5	9	7.0	36	14.6	51	31.1	43	26.2	5	10.2
£100,000–£500,000	1	2.3	1	.8	12	4.8	29	17.7	60	36.6	7	14.3
£500,000–£1 million	—	—	—	—	1	.4	4	2.4	16	9.7	11	22.5
£1 million–£5 million	—	—	—	—	—	—	3	1.8	7	4.3	18	36.7
Over £5 million	—	—	—	—	—	—	—	—	1	.6	7	14.3
Total	44	100.0	128	100.0	247	100.0	164	100.0	164	100.0	49	100.0

II

Analysis of results

Preparation of capital budgets

Five hundred and seventy-one companies (representing 71.7 per cent of the total analyzed) reported that an annual capital budget was prepared. Considering the large number of companies reporting relatively small annual capital expenditures, this percentage is higher than might have been expected. Because there has been shown to be a close connection between company size and level of annual capital expenditures, it would be expected that the proportion of smaller companies preparing capital budgets would be below this average figure of 71.7 per cent; and that larger companies would exceed this average. The analysis by company size, industry, and level of expenditure is given in Table 5.

The most significant figures from this Table refer to the analysis by industry and size of expenditure. Whether a company does or does not prepare a capital budget should depend on the relative size of the annual capital expenditures. It is therefore reasonable to find that only 60.6 per cent of the companies with annual capital expenditures of less than £50,000 prepare a capital budget. It can be assumed that for the remaining 39.4 per cent of these companies, the levels of expenditure make them insignificant. However, this could hardly be true for the thirty-nine companies (representing some 5 per cent of the total survey field) which did not prepare capital budgets but which have annual capital expenditures of between £50,000 and £5 million.

While a relatively large number of companies (28.3 per cent) reported that no capital budgets were prepared, it is evident that the majority of this group (82.7 per cent) incurred capital expenditure each year averaging less than £50,000. A further analysis of this latter classification by industry (Table 6) indicates that the non-manufacturing companies prepare relatively fewer capital budgets than the manufacturing group.

Length of the budget period

Each of the 571 companies preparing a capital budget was asked to indicate the period covered by the budget and if a long-range budget was prepared as well as a short-range budget.

Only 186 companies (representing 32.6 per cent of the total companies preparing capital budgets) reported the use of long-range capital budgets. As can be seen from

TABLE 5

ANALYSIS OF AUSTRALIAN PUBLIC COMPANIES PREPARING CAPITAL BUDGETS

	PREPARING A CAPITAL BUDGET		NOT PREPARING A CAPITAL BUDGET		TOTAL	
	Number	Percentage	Number	Percentage	Number	Percentage
All companies	571	71.7	225	28.3	796	100
By company size (Paid-up capital)						
Under £100,000	18	40.9	26	59.1	44	100
£100,000–£200,000	74	57.8	54	42.2	128	100
£200,000–£500,000	174	70.4	73	29.6	247	100
£500,000–£1 million	123	75.0	41	25.0	164	100
£1 million–£5 million	138	84.1	26	15.9	164	100
Over £5 million	44	89.8	5	10.2	49	100
By company industry						
Manufacturing	339	80.5	82	19.5	421	100
Wholesale-distribution	75	56.8	57	43.2	132	100
Retail trading	38	70.4	16	29.6	54	100
Finance	9	30.0	21	70.0	30	100
Other	110	69.2	49	30.8	159	100
By average annual capital expenditure						
Under £50,000	286	60.6	186	39.4	472	100
£50,000–£100,000	119	81.5	27	18.5	146	100
£100,000–£500,000	101	91.8	9	8.2	110	100
£500,000–£1 million	30	93.8	2	6.2	32	100
£1 million–£5 million	27	96.4	1	3.6	28	100
Over £5 million	8	100.0	—	—	8	100

TABLE 6

CAPITAL BUDGET PREPARATION BY COMPANY INDUSTRY FOR AUSTRALIAN PUBLIC COMPANIES WITH AVERAGE ANNUAL CAPITAL EXPENDITURE OF LESS THAN £50,000

	MANUFACTURING	WHOLESALE-DISTRIBUTION	RETAIL	FINANCE
	Percentage	Percentage	Percentage	Percentage
Preparing capital budgets	72.2	50.5	51.6	24
Not preparing capital budgets	27.8	49.5	48.4	76

the detailed analysis below (Table 7), only for the largest companies and for those companies with the largest annual commitments of capital expenditures is this percentage 60 per cent or more. For most groups, the percentage ranges from 30–40 per cent, while only for the very smallest of company groups does the percentage fall below 24 per cent.

As a generalization, it is probably true to say that it is an unexpected result to find that such a high proportion of the companies with small annual capital commitments does prepare long-range capital budgets; and it is surprising that more of the companies with large annual commitments do not prepare long-range plans for capital expenditures. It is most likely that plans of some kind are prepared, but apparently these plans are not formalized into a budget.

TABLE 7
PREPARATION OF LONG-RANGE CAPITAL BUDGETS BY 571 AUSTRALIAN PUBLIC COMPANIES

	Preparing Long-Range Budgets		Total in Group	
	Number	Percentage	Number	Percentage
All companies	186	32.6	571	100
By company size (Paid-up capital)				
Under £100,000	2	11.1	18	100
£100,000–£200,000	25	33.7	74	100
£200,000–£500,000	43	24.7	174	100
£500,000–£1 million	37	30.1	123	100
£1 million–£5 million	52	37.7	138	100
Over £5 million	27	61.4	44	100
By company industry				
Manufacturing	120	35.4	339	100
Wholesale-distribution	19	25.3	75	100
Retail trading	9	23.7	38	100
Finance	4	44.4	9	100
Other	34	30.9	110	100
By average annual capital expenditure				
Under £50,000	70	24.5	286	100
£50,000–£100,000	39	32.8	119	100
£100,000–£500,000	40	39.6	101	100
£500,000–£1 million	19	63.4	30	100
£1 million–£5 million	13	48.2	27	100
Over £5 million	5	62.5	8	100

It would appear to be surprising that so few manufacturing companies prepare long-range plans. However, further analysis of this group by company size (Table 8) and size of capital expenditure (Table 9) reveals that neither of these factors dramatically influences the proportion of manufacturers preparing long-range plans—with the exception that, for the largest classification of companies and capital expenditure size, the proportion increases significantly.

TABLE 8
PERCENTAGE OF MANUFACTURING COMPANIES PREPARING LONG-RANGE CAPITAL PLANS: BY COMPANY SIZE

Under £100,000	£100,000 to £200,000	£200,000 to £500,000	£500,000 to £1 million	£1 million to £5 million	Over £5 million
Percentage	Percentage	Percentage	Percentage	Percentage	Percentage
0	38.1	27.8	30.5	41.3	68.0

TABLE 9
PERCENTAGE OF MANUFACTURING COMPANIES PREPARING LONG-RANGE CAPITAL PLANS: BY SIZE OF CAPITAL EXPENDITURE PER ANNUM

Under £50,000	£50,000 to £100,000	£100,000 to £500,000	£500,000 to £1 million	£1 million to £5 million	Over £5 million
Percentage	Percentage	Percentage	Percentage	Percentage	Percentage
25.6	37.9	42.3	63.0	60.0	60.0

As can be seen from the above Tables, the influence of size of average annual capital expenditure is greater than that of company size, although it must be remembered that for manufacturing companies these two factors are likely to be closely related.

For companies preparing short and long-range capital budgets, the following "combinations" of periods were typical:

	Short-Range (Years)	Long-Range (Years)
Large —Cement industry	1	5 and 20
Medium—Chemical manufacturer	1	4
Medium—Building materials	1	3
Large —Transport	3	5
Large —Food products manufacturer	1	3
Large —Petroleum distributor	1	3 and 5
Large —Transport	1	5
Large —Manufacturing building materials	1	3
Medium—Food products	1	3
Large —Fertilizers manufacturer	1	3
Large —Paper manufacturer	1	5
Large —Woollen manufacturer	1	3
Large —Auto parts manufacturer	1	5
Large —Bank services	1	5
Medium—Retail trading	1	5
Large —Manufacturing engineer	1	5
Large —Clothing manufacturer	1	5
Large —Tobacco manufacturer	6 months	5
Large —Steel manufacturer	1	10
Large —Hotel proprietors	1	5
Small —Building materials manufacturer	1	5
Medium—Food products manufacturer	1	3 and 5
Medium—Building materials manufacturer	1	7
Large —Insurance	2	5
Large —Industrial suppliers manufacturer	1	3
Large —Building materials manufacturer	1	3
Small —Food products manufacturer	1	3
Large —Retail traders	1	5
Large —Pastoralist	1	3
Small —Broadcasters	1	3
Medium—Distributor	1	5
Small —Manufacturing rubber products	1	10
Large —Pastoralist	1	5
Large —Bank	1	4
Medium—Manufacturing engineer	1	5
Medium—Wholesale	1	5
Small —Wholesale	1	4
Medium—Pastoralist	1	7
Large —Retail	1	3
Small —Printing	1	5
Large —Wholesale	1	5
Medium—Building	1	5
Large —Manufacturing garments	1	5
Medium—Manufacturing engineers	1	5
Small —Manufacturing woollen goods	1	3
Large —Manufacturing food products	1	10

	Short-Range (Years)	Long-Range (Years)
Small —Wholesale	1	5
Medium—Property owners	1	3
Medium—Retailers	1	5
Medium—Manufacturer	1	2 and 4
Medium—Wholesale	1	5
Large —Bank	1	2
Large —Manufacturing food products	1	10
Medium—Wholesale	1	6
Medium—Wholesale	1	3 and 20 (buildings)
Large —Transport	1	5
Medium—Manufacturer	1	10
Large —Manufacturer	1	10
Small —Wholesale	1	5
Medium—Sport	1	5
Medium—Theatre proprietor	1	5
Medium—Property owner	1	3 and 10

The long-range period most commonly mentioned is five years; few companies plan beyond this to ten years, although if a comparison was possible with the situation some three years ago, it would probably be found that more companies are now planning farther ahead for capital expenditures.

Excluding those companies that prepared short and long-range budgets, 300 of the remaining companies preparing capital budgets, i.e. 52.5 per cent, covered a period of one year ahead only; 29 companies (5.1 per cent) prepared one budget to cover a future three-year period; 15 companies (2.6 per cent) covered a future five-year period and the remaining 41 companies (7.2 per cent) prepared a single budget for periods varying from six months to four years.

Methods of economic analysis

Much has been written on the advantages and deficiencies of the various methods of economic analysis, and it is not intended to comment here on the worth of the methods reported; the analytical table below reveals that the more sophisticated methods of analysis have not been applied by Australian public companies.

Three comments on the data analyzed appear relevant:

1. A very large number of companies are either failing to carry out any economic analysis or analyzing income benefits from proposals only. This applies to 45.6 per cent of manufacturing companies, 53.0 per cent of wholesale trading companies, 50.0 per cent of retail trading companies and 46.6 per cent of finance companies. To say the least, these results are disappointing.
2. As the annual level of capital expenditure increases, so does the use of return on investment analyses, but only companies with the largest of annual capital commitments are making reasonable use of the so-called discounted cash flow methods of analysis. It is noticeable that these methods are used by companies in each classification of annual capital commitments. That is, the methods are not exclusively used by the companies with large annual expenditures.
3. The payback calculation is used consistently by some 30 per cent of companies in each classification by size, industry, and level of annual capital expenditures. The one exception is retail trading companies which appear to prefer the simple or financial rate of return method of analysis.

TABLE 10

METHODS OF ECONOMIC ANALYSIS: AUSTRALIAN PUBLIC COMPANIES

	No Financial Analysis Applied		Analyzed Income Benefits ONLY		Analysis Includes the Pay-back Calculation		Analysis Includes R.O.R. Calculated as $\frac{\text{Income}}{\text{Investment}} \times \frac{100}{1}$		Analysis Includes R.O.R. Using Discounted Cash Flow Methods	
	No.	%	No.	%	No.	%	No.	%	No.	%
All companies	78	9.8	311	39.1	228	28.6	310	39.0	30	3.8
By company size (Paid-up capital)										
Under £100,000	11	25.0	18	40.9	9	20.5	11	25.0	—	—
£100,000–£200,000	22	17.2	51	39.8	34	26.6	41	32.0	1	.8
£200,000–£500,000	27	10.9	102	41.3	70	28.3	88	35.6	8	3.2
£500,000–£1 million	13	7.9	65	39.6	49	29.9	60	36.6	6	3.7
£1 million–£5 million	3	1.8	63	38.4	51	31.1	81	49.4	12	7.3
Over £5 million	2	4.1	12	24.5	15	30.6	29	59.2	3	6.1
By company industry										
Manufacturing	27	6.4	165	39.2	134	31.8	158	37.5	22	5.2
Wholesale-distribution	16	12.1	54	40.9	36	27.3	50	37.9	2	1.5
Retail trading	9	16.7	18	33.3	8	14.8	25	46.3	—	—
Finance	7	23.3	7	23.3	9	30.0	13	43.3	1	3.3
Other	19	12.0	67	42.1	41	25.8	64	40.3	5	3.2
By average annual capital expenditure										
Under £50,000	67	14.2	203	43.0	111	23.5	150	31.8	8	1.7
£50,000–£100,000	7	4.8	53	36.3	51	34.9	64	43.8	5	3.4
£100,000–£500,000	4	3.6	41	37.3	41	37.3	49	44.5	8	7.3
£500,000–£1 million	—	—	10	31.3	11	34.4	16	50.0	4	12.5
£1 million–£5 million	—	—	4	14.3	9	32.1	24	85.7	2	7.1
Over £5 million	—	—	—	—	5	62.5	7	87.5	3	37.5

Companies reported in Table 10 as using payback, simple rate of return, or discounted rate of return methods of analysis do not necessarily apply these methods exclusively. For example, while 228 companies reported the application of payback in the project analysis, only 87 (or 39.2 per cent) used the method exclusively. Similarly, 171 (that is, 55.2 per cent) of the 310 companies making use of simple rate of return calculations in the proposal analysis apply this method exclusively. Only 20 per cent of the companies using discount methods use these methods to the exclusion of all other techniques. It is common for companies to use one method (e.g. payback) for the analysis of a certain classification of proposals (e.g. replacement proposals) and a second method (e.g. discounted cash flow rate of return) for a second type of proposal (e.g. expansion proposals).

Control over the release of cash

The inclusion of a project in a capital budget does not imply (for most companies) an automatic authority to proceed with that scheme. Effective control is generally recognized as being necessary for the release of the cash required for each project approved. In this regard the capital expenditure control programme must include some means of controlling funds expended:

(a) to ascertain whether the actual funds to be spent are the same as those estimated and approved;

and (b) to measure and record actual expenditures against approved amounts (through progress reports).

Added to this is the fact that capital expenditures directly affect the cash requirements of a company, so that adequate control and reporting are necessary to ensure that cash required is available as and when desired.

Most companies will therefore include within their capital control programmes provision for:

(a) forms requesting the release of cash;

(b) forms for reporting progress expenditures and projected expenditures within the foreseeable future;

and (c) procedures to control possible overspending on capital acquisitions.

Company representatives replying to this survey were asked if a separate request for the release of funds was part of their capital control programme.

From the replies received it is probable that at least four control systems operate among Australian companies. Companies that prepare capital budgets may require a separate request for funds; or once the proposal has been approved and included in the budget, approval for the release of funds may be automatic. Companies that do not prepare capital budgets may require a separate request for funds as this represents one of the few points of control remaining open. However, if the capital expenditure items are relatively insignificant, a request for proposal approval and a request for funds may be combined into one request.

The detailed analysis of results in Table 11 suggests that the above description applies to Australian public companies.

TABLE 11

AUSTRALIAN PUBLIC COMPANIES REQUIRING SPECIFIC AUTHORITY FOR THE RELEASE OF FUNDS FOR CAPITAL PROPOSALS

	Separate Authority Required		Separate Authority Not Required		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
All companies	526	66.1	270	33.9	796	100
By company size (Paid-up capital) ..						
Under £100,000	34	77.3	10	22.7	44	100
£100,000–£200,000 ..	80	62.5	48	37.5	128	100
£200,000–£500,000 ..	159	64.4	88	35.6	247	100
£500,000–£1 million ..	112	68.3	52	31.7	164	100
£1 million–£5 million ..	110	67.1	54	32.9	164	100
Over £5 million	31	63.3	18	36.7	49	100
By company industry						
Manufacturing	299	71.0	122	29.0	421	100
Wholesale-distribution ..	81	61.4	51	38.6	132	100
Retail trading	32	59.3	22	40.7	54	100
Finance	15	50.0	15	50.0	30	100
Other	99	62.3	60	37.7	159	100
By average annual capital expenditure ..						
Under £50,000	304	64.4	168	36.6	472	100
£50,000–£100,000 ..	103	70.6	43	29.4	146	100
£100,000–£500,000 ..	70	63.6	40	36.4	110	100
£500,000–£1 million ..	19	59.4	13	40.6	32	100
£1 million–£5 million ..	22	78.6	6	21.4	28	100
Over £5 million	8	100.0	—	—	8	100

Reports on progress expenditure

While a company may be prepared to allow the release of funds for a proposal to become automatic once approval for the proposal has been given, the company may be less likely to allow the expenditure of funds to continue without regular progress reports comparing actual expenditure with estimated expenditure. It is difficult to envisage a situation where reports of some kind should *not* be prepared. Thus from the survey it has been found that whereas 66.1 per cent of all companies require a separate request for the release of funds, 77.1 per cent of all companies require progress reports. Again, 71.0 per cent of manufacturing companies required a separate release for funds, but 81.7 per cent required progress reports on expenditures. In every case, the percentage of companies demanding progress reports is equal to or greater than the percentage stipulating separate requests for the release of cash.

Companies were also asked to report on the frequency of these progress reports. Most companies (81.8 per cent) advised that monthly reports were prepared but it is noticeable that the smallest and largest companies require "some other period", mainly fortnightly or weekly reports; and this is also the case for companies with the largest annual commitments of capital expenditure. These facts are understandable as the smallest companies probably require more frequent reports because of the significance of the capital expenditures, while the largest companies are also those with the largest annual capital expenditures, and the very size of the expenditures demands that frequent progress reports be prepared.

TABLE 12

USE OF PROGRESS REPORTS FOR THE CONTROL OF CAPITAL EXPENDITURE BY AUSTRALIAN PUBLIC COMPANIES

	Total	Companies Using Reports		Frequency of Preparation					
				Monthly		Annually Only		Other Period	
		No.	%	No.	%	No.	%	No.	%
All companies	796	614	77.1	498	81.1	7	1.1	109	17.8
By company size (Paid-up capital)									
Under £100,000	44	27	61.4	19	70.4	1	3.7	7	25.9
£100,000–£200,000	128	83	64.8	69	83.1	4	4.8	10	12.1
£200,000–£500,000	247	188	76.1	148	78.7	1	.5	39	20.7
£500,000–£1 million ..	164	126	76.8	115	91.3	—	—	11	8.7
£1 million–£5 million ..	164	147	89.6	119	81.0	—	—	28	19.0
Over £5 million	49	43	87.8	28	65.1	1	2.3	14	32.6
By company industry									
Manufacturing	421	344	81.7	291	84.6	5	1.5	48	13.9
Wholesale-distribution ..	132	93	70.5	80	86.0	—	—	13	14.0
Retail trading	54	38	70.4	28	73.7	—	—	10	26.3
Finance	30	15	50.0	13	86.7	—	—	2	13.3
Other	159	124	78.0	86	69.4	2	1.6	36	29.0
By average annual capital expenditure									
Under £50,000	472	330	69.9	265	80.3	6	1.8	59	17.9
£50,000–£100,000	146	120	82.2	99	82.5	—	—	21	17.5
£100,000–£500,000	110	98	89.1	83	84.7	1	1.0	14	14.3
£500,000–£1 million ..	32	32	100.0	26	81.3	—	—	6	18.7
£1 million–£5 million ..	28	26	92.9	19	73.1	—	—	7	26.9
Over £5 million	8	8	100.0	6	75.0	—	—	2	25.0

Post-completion audit

The final aspect of administrative control is the post-completion performance review, aimed at determining the extent to which proposals have achieved the results projected for them.

Dean[13] presents two reasons for completing a follow-up audit to compare actual advantage from projects with the advantage forecasted in the pre-approval analysis:

(a) Pre-approval estimates of capital productivity are taken more seriously when executives are held responsible for them.

(b) The post-completion audit will reveal estimating errors and so improve the techniques of future estimates.

To these Matthews[14] adds:

(c) A follow-up on performance can spotlight existing weaknesses in order that current projects may be revised.

(d) Performance review can focus attention upon those individuals or organizations responsible for major or continuing errors.

(e) Performance review can become a useful area for training younger executives whose span of knowledge and contacts top management wishes to broaden.

Unfortunately many accountants in practice do not recognize these advantages. Company executives replying to this Australian survey were asked to comment if post-completion audits were *not* part of the administrative control programme. The following comments are typical of the many received:

Company		Average Annual Capital Expenditure	Reason for Not Carrying Out Post-Audits
Size	*Type*		
1. Small	Wholesale-distributor	Small	"Post-completion analysis serves little purpose in a fast moving world."
2. Medium	Manufacturer	Up to £100,000	"In most cases, capabilities of machines known at time of purchase."
3. Medium	Wholesale-distributor	Small	"Very full analysis made on large projects before commencement, and, if then satisfied to go ahead, no later check is made."
4. Medium	Manufacturer	Small	"The venture is either successful or otherwise, and no amount of analysis will return capital expenditure."
5. Small	Manufacturer	Small	"The comparison is of academic interest only, once the expenditure has been incurred."
6. Small	Trustees	Small	"In this type of business, only work of an essential nature can be considered."

[13] *Capital Budgeting*, p. 32.

[14] J. B. Matthews, "How to Administer Capital Spending", *Harvard Business Review*, Vol. XXXVII, No. 2 (March/April, 1959).

7.	Medium	Manufacturer	Up to £500,000	"Post-mortem not helpful."
8.	Medium	Manufacturer	Up to £500,000	"Necessity, rather than profitability, governs most capital expenditure."
9.	Medium	Manufacturer	Up to £500,000	"Capital expenditure requirements are exhaustively checked prior to approval."
10.	Large	Manufacturer	Up to £500,000	"1. The expenditure is then 'sunk' expenditure. 2. Saving in clerical time. 3. If the project is grossly at fault, it will be quickly apparent in monthly operating cost reports."

It would not be unreasonable to say that none of these comments offsets the important advantages to be gained from including post-audits in the administrative control system. It is most likely that accountants in practice have failed to grasp the advantages fully, because the difficulties associated with post-audit analysis loom as a deterrent.

When the percentages of Australian public companies reported as using post-audit are examined in Table 13, it would appear that a relatively large number are including this aspect of control in their administrative procedures. However, these results must be interpreted with caution, because interview studies that followed this survey failed to find a widespread acceptance of post-audits to any acceptable degree of sophistication.

TABLE 13

AUSTRALIAN PUBLIC COMPANIES USING POST-AUDIT PROCEDURES

	Companies Making a Post-Completion Audit as a Percentage of Companies Using Economic Analysis		Companies Making a Post-Audit as a Percentage of Total Companies
	Number	Percentage	Percentage
All companies	578	80.5	72.6
By company size (Paid-up capital)			
Under £100,000	26	78.8	59.1
£100,000–£200,000	86	81.1	67.2
£200,000–£500,000	183	83.2	74.1
£500,000–£1 million	126	83.4	76.8
£1 million–£5 million ..	122	75.8	74.4
Over £5 million	35	74.5	71.4
By company industry			
Manufacturing	309	78.4	73.4
Wholesale-distribution ..	99	85.3	75.0
Retail trading	38	84.4	70.4
Finance	16	69.6	53.3
Other	116	82.9	58.3
By average annual capital expenditure			
Under £50,000	332	82.0	70.3
£50,000–£100,000	115	82.8	78.8
£100,000–£500,000	80	75.5	72.7
£500,000–£1 million	26	81.3	81.3
£1 million–£5 million ..	19	67.9	67.9
Over £5 million	6	75.0	75.0

Post-auditing, for the majority of companies, represents the review of overall company profit, or company segment profit, in the light of new investments made. Even the larger companies, with specialist personnel to prepare analyses of proposals before acceptance, often reported that little, if any, time could be given to post-audits of major projects. When data were easily collected, and where projects were of great importance to the company, projects were investigated to a degree. No evidence of standard practice procedures for post-audits was found. For those companies examined which had prepared standard procedures for capital budgeting, only in one case did instructions appear indicating the method and extent of post-audit analysis to be adopted. Special forms for post-audits apparently are not common.

Conclusions

Control exercised by Australian public companies over funds available for capital projects appears to be generally unsatisfactory. Some 28.3 per cent of these companies fail to prepare capital budgets; 76.6 per cent ignore the use of formal long-range plans; 49.9 per cent are either ignoring the advantages of economic analysis or using unsatisfactory methods of analysis; 33.9 per cent do not exercise separate control over the release of funds; 22.9 per cent do not have progress reports to control expenditures; and 27.4 per cent make no attempt to carry out post-completion audits.

Manufacturing companies have revealed more satisfactory administrative control systems than wholesale trading, retail trading, or finance companies. Manufacturing companies apparently have a greater appreciation of capital budgets, project analyses, cash control and progress reports than companies in other industries. These conclusions are to be expected as manufacturing companies are usually associated with large annual capital expenditures, and it has been shown in this report that the influence of the size of annual capital expenditures on control procedures is quite significant.

It would appear that in the majority of cases, management has not recognized the importance of capital investments and the influence of these investments on future profitability. By definition, capital budgeting implies planning into the future, and the uncertainties and risks involved suggest that strict control—in terms of budget preparation, detailed economic analysis of each project, etc.—should be enforced. However, management has apparently taken the view that the presence of uncertainty and risk justifies the application of control techniques which concentrate on the short-run influences. Thus long-range plans for a period of more than fifteen years are comparatively unknown; methods of project analysis emphasize the importance of cash payback and first-year return percentages; and the important post-audit is not given due recognition.

While formal education will eventually overcome any technical objections to the application of mathematical techniques to assist long-range planning and project analysis, it may be more difficult to persuade management to accept an administrative control system which emphasizes the importance of long-term profitability. Traditional financial planning has tended to place unnecessary importance on current profits (for dividend purposes) and current liquidity (for day-to-day administration). Undoubtedly this attitude will change, and with it should come improved administrative control systems for capital expenditures.

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