

**BENCHMARKING HOTEL CAPITAL BUDGETING PRACTICES TO
PRACTICES APPLIED IN NON-HOTEL COMPANIES**

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ABSTRACT

A survey was conducted to compare hotel capital budgeting practices employed within and outside the hotel sector. It was found that the propensity to inflate investment cash inflow projections outweighs the propensity to deflate cash inflow estimates and the tendency to inflate projected cash inflows is less in the hotel industry. Hotels exhibit a lower level of development with respect to reviewing required rates of return and also applying post-completion audits. Also, NPV and IRR, which are based on discounting approaches, are used to a relatively low degree in the hotel industry and over half the hotels surveyed either exclusively use the payback method (36%) or use no financial investment appraisal method at all (17%). Consistent with prior findings in other industrial sectors, there appears to be a positive relationship between organizational size and use of financial investment appraisal techniques.

Keywords: Hotel Capital Budgeting, Investment Appraisal.

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INTRODUCTION

The largest investment made by most organizations is in fixed assets. This is particularly the case in the hotel industry where a significant proportion of fixed assets are not subject to obsolescence (Collier and Gregory, 1995a; Parkinson, 1995). Fixed asset investment can be seen as the output of the capital budgeting process that involves the long-term allocation of organizational funds across departments and projects in anticipation of future returns. The size of the investment in fixed assets combined with the long-term implications of the way in which capital is rationed across an organization highlight the significance of capital budgeting. It is the commercial significance of capital budgeting that has probably given rise to extensive capital budgeting research (e.g., Kester et al, 1999; Lamminmaki, Guilding, and Pike, 1996; Payne, Carrington-Heath, and Gale, 1999; Pike, 1996; Trahan and Gitman, 1995). It is also notable that there has been a growing number of surveys focusing on capital budgeting practices applied in hotel and related industries (eg., Ashley, Atkinson, and LeBruto, 2000; Atkinson and LeBruto, 1997; Damitio and Schmidgall, 2002; DeFranco and Schmidgall, 1999; Guilding and Hargreaves (2003); Schmidgall and Damitio, 1990).

This paper provides a further contribution to the hotel capital budgeting literature by describing a study that has pursued the following three objectives:

1. To investigate the directional nature of possible cash flow projection biasing in the preparation of hotel capital budgets.
2. To benchmark hotel capital budgeting practice with capital budgeting practice applied by large companies in other industrial sectors.
3. To investigate the role played by hotel size in the context of capital budgeting practice.

In pursuing these objectives, the study investigates three dimensions of capital budgeting practice. The first concerns the degree to which data biasing occurs when cash flow estimates are prepared for investment proposals. The second concerns the degree to which capital budgeting is based on formalized procedures. The third dimension concerns the degree to which financial investment appraisal techniques are employed in the capital budgeting process.

The remainder of the paper is structured as follows. The next section provides an overview of the most pertinent literature. This is followed by sections that describe the study's research design and findings. The concluding section discusses the study's most significant findings, its limitations as well as possible avenues for further research.

LITERARY CONTEXT OF STUDY

There is a large literature documenting the findings of many surveys of capital budgeting practice. Extensive reviews of U.S. firms' capital budgeting practices are provided by Scott and Bierman (1986), Gurnani (1984), and Petty (1984). Payne et al (1999) provide an overview of capital budgeting research in Canada and the U.S. An overview of the findings of capital budgeting research conducted in the UK is provided by Pike (1996) and Sangster (1993). Studies concerned with capital budgeting in New Zealand have been reviewed by Lamminmaki et al (1996). It appears that less interest has been shown in Australian capital budgeting practice, however. One of the last works concerned with Australian capital budgeting practice was prepared by McMahon (1981).

One major underlying finding that appears from this body of research concerns the growth in application of net present value (NPV), which is the theoretically preferred investment appraisal technique. Pike's (1996) longitudinal analysis of UK firms found that of four investment appraisal techniques investigated, application of NPV had experienced the greatest growth. In 1975, 32% of large UK firms applied the technique compared to 74% of firms in 1992. Consistent with Lamminmaki et al's (1996) study in New Zealand, Pike found that use of NPV had grown to the point where it ranks second only to the payback method in terms of popularity. Payne et al (1999) found NPV to be the most popular appraisal technique amongst large Canadian firms and that it ranked second to internal rate of return (IRR) amongst US firms surveyed. It appears that firms

in the North American continent attach greater importance to discounted cash flow techniques (e.g., NPV and IRR). Contrasting with Pike (1996) and Lamminmaki et al's (1996) findings concerning the popularity of the payback method in the UK and New Zealand, Payne et al report noted that the payback method ranked third behind IRR and NPV in both Canada and the US.¹

In one of the earliest studies of capital budgeting practice in the hospitality industry, Eyster and Geller (1981) reviewed the use of five financial investment appraisal techniques amongst US hotels and motels in 1975 and 1980. Over the five years in question, they noted an increased application of all five investment appraisal techniques. The two most popular techniques in 1980 were payback and return on investment which were used by 73% and 62%, respectively, of the surveyed samples. Eyster and Geller raised a concern over the lack of sophistication of capital budgeting practices used, as less than a third of the sample were using NPV or IRR in 1980. It is therefore pertinent to note that, consistent with general capital budgeting trends just noted, an increase in the application of NPV and IRR is apparent from Schmidgall and Damitio's (1990) survey of the US lodging industry. 74% of Schmidgall and Damitio's survey respondents indicated use of IRR and 55% indicated use of NPV. In a subsequent survey of large U.S. lodging firms, Damitio and Schmidgall (2002) noted little change in the use of capital budgeting techniques, with the exception of an apparent decline to 41% in the usage rate of NPV. It is noteworthy that Ashley et al (2000) observed higher levels of IRR and NPV usage

¹ These findings are consistent with Jog and Srivastava (1995) who found that the majority of managers in

(86% and 76% respectively) based on a sample of 21 companies in the restaurant industry. Also, Atkinson and LeBruto (1997) found an IRR usage rate of 74%, payback usage rate of 64% and an NPV usage rate of 62%, however these observations were drawn from a limited sample of seven hotel firms with a gaming focus.

In a further survey of the US lodging industry, DeFranco and Schmidgall (1999) found that 75% of their sample reported using formalized cost/benefit analyses prior to acquiring property and equipment. For those using formalized analyses, payback was the most popular (58% of sample), IRR ranked second (19% of sample) and NPV ranked third (17% of sample). DeFranco and Schmidgall also noted a positive association between the size of operations and formalization of capital budgeting approach. This relationship is supported by observations made by Guilding and Hargreaves (2003).

In terms of qualitative empirical capital budgeting research, Collier and Gregory observed hotels applying a broad range of investment appraisal techniques. Guilding (2003) also used field study methods in his agency theory motivated enquiry into capital budgeting implications arising from different owner / operator structures employed by hotels. This theme was extended in Guilding's (2006) examination of how investment decisions are initiated as well as the role of political factors and "ego-trip ownership" in hotels governed by a management contract.

their Canadian survey sample used discounted cash flow measures when appraising investment proposals.

The hotel capital budgeting literature has also been extended by more theoretically oriented non-empirical research. Studies conducted in this tradition include Atkinson, Kelliher, and LeBruto (1997) who explored the application of the Monte Carlo simulation model in the context of hotel capital budgeting and Madanoglu and Olsen (2005) who assessed cost of equity determination models, reviewed their potential lodging industry application and proposed new approaches to capital budgeting for lodging operations.

Following the lead of many of the empirical studies described above, the study reported herein appraises the use of financial investment appraisal techniques. Also, following the lead of Pike (1996) and Lamminmaki et al (1996), the degree of formalization in capital budgeting procedures is appraised. In contrast to these relatively established dimensions of enquiry, the study has also pursued a relatively novel dimension of capital budgeting research. This less conventional facet of the study concerns the degree to which data biasing may occur when operating managers prepare cash flow estimates in connection with investment proposals. Many hotels are subject to a management contract which constitutes a formal agreement between the owner and the hotel operator "... by which the owner employs the operator as an agent (employee) to assume full responsibility for operating and managing the property." (Eyster, 1988; p.4). It appears hotel management contracts may well give rise to contexts conducive to cash flow projection biasing. The potential for optimistic data biasing in capital budgeting has been noted in some academic commentaries that suggest it might result in senior managers exercising tight capital rationing regimes (Antle and Eppen, 1985; Hirshleifer, 1993; Holmstrom and

Ricart i Costa, 1986). Some empirical support for this view is provided by Mukherjee and Hingorani (1999). Guilding (2003) advances the proposition that as hotel management contracts tend to remunerate hotel operators according to absolute revenue and profit, there appears to be an incentive for the operator to attempt to stimulate investment by the owner, through inflating proposed investments' projected cash inflows and deflating their projected cash outflows. Such cash flow projection biasing in the capital budgeting process could result in increased levels of absolute profit and revenue being earned with the operator attaching limited importance to return as a function of investment.

While this rationale suggests a propensity for hotel operators to bias projected cash inflows in an optimistic manner, Guilding (2003) also notes the potential for a countervailing pessimistic cash flow biasing effect. This pessimistic effect might arise when the investment proposal cash flow estimates developed in connection with the capital budgeting process are used by a hotel owner as a basis for appraising a hotel operator's performance. The potential of investment proposal data being incorporated in hotel operational budgets was noted by Collier and Gregory (1995a) who commented: "All of the companies in our survey noted that any cash flow or profit projections used at the appraisal stage get incorporated into the budget for the next year." (p. 50). To avoid investment proposal cash flow estimates making the operator's operational budget too optimistic to achieve, the manager might be inclined to deflate cash inflow estimates provided in connection with the capital budgeting process.

The potential of a manager using participation in the budget setting process as an opportunity to set low performance targets (i.e., budget slack) has been covered extensively in management accounting research (e.g. Antle and Eppen, 1985; Dunk, 1993). No survey work investigating the creation of budgetary slack in the context of capital budgeting has been found in the literature, however.

RESEARCH DESIGN

As already noted, the study involved a comparison of capital budgeting practices applied in hotels² with capital budgeting practices employed by firms operating outside the hotel industry. Data for the study was collected in Australia. The hotel survey sample was drawn from the Australian RACQ Accommodation Guide. All 192 3-5 star hotels with more than 110 rooms identified in this listing were selected for the study. The two page survey instrument developed for the study was then mailed to the Financial Controller in these hotels. Following a second mailing and 112 follow-up phone calls, 92 completed

² The decision to collect data at the individual hotel level rather than at the hotel company level was taken for the following reasons:

- 1) Many or most capital budget expenditure proposals are initiated at the level of an individual hotel and not at the hotel company level. Financial Controllers and General Managers working at the individual hotel level within a large chain of hotels will have a significant range of backgrounds and degrees of formal financial training. This signifies considerable potential for a range of capital budgeting approaches being employed at different hotels operating within the same hotel company.
- 2) As many hotels are managed under a management contract where the owner is an agent separate from the operator, it is the owner, and not the hotel operating company, that is bound to exert the greatest influence on the capital budgeting practices implemented at the hotel level. This is because it is the owner that is the key decision maker in capital budget ratification, as it is the owner that owns and must therefore finance assets purchased in the capital budgeting process. This signifies that two hotels operating within the same hotel chain, but owned by different owners that employ different approaches to capital budgeting can be expected to exhibit very different capital budgeting procedures.
- 3) To have selected Australian hotel companies would have resulted in too small a sample size to have enabled the application of a statistically robust data analysis.

questionnaires were returned (i.e., a 48% response rate). Table 1 provides an overview of the response rate for the hotel and also the non-hotel survey samples.

Insert Table 1 about here

The follow up phone calls were made to non-respondents two weeks following the second mailing in order to increase the response rate and also to ascertain the main reasons for non-respondents electing not to participate in the study. “Insufficient time” and “too many questionnaires received” were the main reasons cited for non-response. Five Financial Controllers cited their hotels’ lack of sophistication in capital budgeting as a factor contributing to their decision not to participate in the study. This gives rise to a non-response bias concern (i.e., the data collected may be biased towards hotels that apply relatively sophisticated capital budgeting practices). This concern over management sophistication and propensity to participate in surveys has been noted by Wallace and Mellor (1988). While this factor should be borne in mind, however, in this study it played a less prominent role because less than 5% of the non-respondents contacted made any reference to it.

A second investigation for non-response bias was conducted by comparing the responses provided by first mailing respondents with responses of the second mailing respondents.

In this investigation, late respondents proxy for non-respondents (Armstrong and Overton, 1977). The Mann Whitney U^3 statistic was computed for those questions employing a seven point Likert scale and the Chi-square statistic was computed for those questions that called for a dichotomous response. Of 13 questions investigated, statistically significant different responses for two of the questions were noted between the early and late respondents. A relatively higher proportion of second mailing respondents indicated that their organization has a formal body responsible for screening and reviewing investment proposals and also that their organization conducts a regular review of minimum rate of return required from investment proposals. This suggests that second mailing respondents may have more developed capital budgeting systems than first mailing respondents. This in turn signifies that non-respondents may have more developed capital budgeting processes and this factor should also be borne in mind when interpreting the study's findings.⁴

The initial sample of non-hotel companies comprised the top 300 Australian listed companies (measured by market capitalization), obtained from the "*Shareholder*" CD-Rom database.⁵ A copy of the questionnaire was mailed to the Financial Controller in

³ Many social scientists see Likert scales as failing to satisfy the criteria for parametric statistical testing (Bryman and Cramer, 1990). Because of this, the somewhat conservative convention of employing the non-parametric "Mann-Whitney U " statistic when appraising the significance of Likert scale measured differences has been observed.

⁴ This supposition conflicts with the view that because five Financial Controllers cited "lack of capital budgeting sophistication" as the reason for their non-participation in the study, there may be a tendency for the non-respondents to employ relatively unsophisticated capital budgeting practices.

⁵ Identification of an ideal non-hotel benchmark sample is highly problematical because many hotels operate as units within larger companies. An ideal sample might be operating units (of a similar size to hotels) owned by companies of a similar size to hotel companies. Even if such a sample could be identified, it should also be recognized that hotel owners are involved in hotel capital budgeting as they finance capital

these 300 companies. Nine of these mailings were returned as no company could be found at the recorded address and three companies advised that participation in the study would contravene company policy. The final useable response rate achieved was 37%.

Eighty-nine of the non-respondents in the non-hotel sample were also contacted. The main reasons cited by the non-respondents for not responding were “insufficient time” and “completing survey questionnaires contravened company policy”. No reasons suggesting the presence of non-response bias were noted. Consistent with the approach taken for the hotel sub-sample, a second investigation for non-response bias was conducted by comparing the responses provided by first mailing respondents with the second mailing responses. Of the 13 questions investigated, statistically significant different responses were noted between the early and late respondents for one question. Second mailing respondents reported less of a tendency for investment project sponsors to deflate projected cash inflow estimates. It appears likely that this observation constitutes little more than a statistical artifact, as it is difficult to develop a plausible reason why this characteristic of capital budgeting should affect the propensity of a financial controller to participate in the study.

The questions and measurement scales used in the survey questionnaire are described

outlays. A case could also therefore be made that the size of companies in the benchmark sample should also match the size of hotel owners. In light of these significant challenges, the approach taken here has been to heed the suggestion of benchmarking commentators who recommend using “best practice” for benchmarking comparison purposes (Hansen and Mowen, 2003; Horngren, Foster, and Datar, 2000). In light of this, and as a fairly robust finding of capital budgeting research indicates company size is positively associated with capital budgeting sophistication (DeFranco and Schmidgall, 1999; Lamminmaki et al,

below in connection with the related aspects of the study's findings.

THE FINDINGS

Biasing of investment proposal cash flow projections

A motivation for positive as well as negative biasing of cash inflow projections was noted above. In light of this, the strength of both effects was appraised by asking respondents to indicate the extent to which they agree or disagree with the following two statements:

- In my hotel there is a tendency for investment project sponsors (i.e., the managers most closely associated with the project's initiation and development) to inflate projected cash inflow estimates in order to increase the likelihood of the project gaining senior management support.
- In my hotel, as a result of investment proposal data being used as a basis for monitoring subsequent management performance, there is a tendency for investment project sponsors to deflate projected cash inflow estimates.⁶

Responses to these two questions were recorded on a seven point Likert scale that ranged from "1" (strongly disagree) to "7" (strongly agree). If the scores on the propensity to "inflate cash inflow estimates" measure are statistically significantly greater than the scores for the propensity to "deflate cash inflow estimates", one can conclude that a net

1996), the decision was taken to draw on large Australian companies as the benchmark sample.

bias towards inflating cash inflow estimates exists. To better exhibit this “net effect”, a composite “net bias” index has been computed by deducting each respondents’ score on the “deflation of cash inflow estimates” measure from their score on the “inflation of cash inflow estimates” measure. Descriptive statistics pertaining to the two measures and also the composite index are presented in Table 2.⁷

Insert Table 2 about here

From Table 2 it can be seen that the mean score for the net bias index is positive for both the hotel and non-hotel sub-samples. Further, it has been found that the scores on the “tendency to inflate projected cash inflows” measure are statistically significantly greater than the scores on the “tendency to deflate projected cash flows” measure (Wilcoxon signed ranks test; $p < 0.1$ for hotel sub-sample and $p < 0.01$ for non-hotel sub-sample).

With respect to the comparison between the hotel and non-hotel sub-samples, it has been found that the hotel sub-sample has a significantly lower tendency to inflate investment proposal cash inflow projections (Mann Whitney U ; $p < 0.01$). No statistically significant difference is apparent across the two sub-samples with respect to the propensity to deflate

⁶ For these two questions, in the survey questionnaires mailed to companies outside the hotel industry, the words “In my hotel” were replaced by “In my organization”.

⁷ The mean of the net bias index can also be computed by deducting the mean score of the deflation of cash inflow estimates from the mean score of the inflation of cash inflow estimates.

projected cash inflows, although the hotel sub-sample scores significantly lower with respect to the “net bias” composite index (Mann Whitney U ; $p < 0.05$).

Formalization of capital budgeting procedures

The degree of formalization in capital budgeting was appraised by posing questions that call for a dichotomised “Yes” or “No” response (e.g., “Does your organization have a formal body responsible for screening and reviewing investment proposals?”). Seven formalized procedures were appraised and these are presented in Table 3 in descending order of their degree of adoption by hotels. Following Scapens, Sales, and Tikkas (1982), Table 3 is divided into two panels in order to distinguish between pre-decision and post-decision controls.

Insert Table 3 about here

From Table 3 it can be seen that the non-hotel sub-sample uses two of the seven formalized capital budgeting procedures statistically significantly more than the hotel sub-sample, i.e.:

1. Regular reviews of minimum rates of return required are conducted by 68% of the non-hotel sample and 47% of the hotel sample (chi-square significant,

$p < 0.01$). This suggests a comparatively low incidence of reviewing required rates of return in the Australian hotel sector. Using the same measure, Pike (1996) observed that 69% of large UK firms (not a hotel focused sample) regularly review required rates of return. Pike's finding provides a second benchmark indicator suggesting that the incidence of reviewing minimum rates of return required in Australian hotels is relatively low.

2. 67% of the non-hotel sample requires post-completion audits on most major projects, compared to only 49% of the hotel sample (chi-square significant, $p < 0.05$). Pike's (1996) reported findings again underscore a suggestion of comparatively low capital budgeting procedure formalization in the Australian hotel sector. Pike's survey revealed that 72% of UK firms conduct post-completion audits on most major projects.⁸

Aside from these two differences, which suggest a relatively low degree of capital budgeting formalization in the hotel sector, the relative degree of capital budgeting formalization appears to be largely similar across the two sub-samples. For both samples, "company has formal screening and review body for investment proposals" has the highest uptake of the pre-decision controls. Of the post decision controls, the "monitoring of project performance once operational" and "evaluation of approved projects if cost over-runs are likely" are applied by more than 80% of the two sub-samples. It appears, therefore, that a degree of convergence as well as divergence is apparent across the

⁸ Post audits involve a review of projects following their commencement. These reviews have two main

samples with respect to capital budgeting formalization.

Financial Appraisal techniques

Table 4 outlines the findings concerned with the degree to which the payback (PB), net present value (NPV), average accounting rate of return (AARR) and the internal rate of return (IRR) investment appraisal techniques are employed. These four evaluation techniques are the most widely appraised methods in prior surveys of investment appraisal practice (see Damitio and Schmidgall, 2002; Lamminmaki et al, 1996; Payne et al, 1999; Pike, 1996). In this study, their relative usage has been appraised by asking the survey respondents to indicate the extent their organization uses each technique on a 7-point Likert scale where “1” corresponds to “not at all” and “7” corresponds to “to a large extent”. In Table 4 the four techniques are presented in descending order of usage by hotels.

Insert Table 4 about here

Some key differences between the two sub-samples under review are evident from this Table. It is widely claimed that NPV and IRR, which involve the discounting of future

aims. Firstly they may result in more realistic and careful approaches taken in subsequent capital budgeting.

cash flows, are the preferred and more sophisticated investment appraisal practices (Butler, Davies, Pike and Sharp, 1993; Payne et al, 1999). It is therefore particularly pertinent to highlight that these are the two practices that are used to a relatively low degree in hotels when compared to the non-hotel sector (Mann Whitney U , $p < 0.01$). Of the four investment appraisal techniques reviewed, in the non-hotel sector, NPV and IRR are the two highest ranking investment appraisal techniques. In the hotel sector they rank second and fourth. The fact that IRR ranks second in the non-hotel sector and last in the hotel sector appears to be a particularly noteworthy observation.

It is also noteworthy, in the light of the widely-claimed weaknesses of the payback method, that this is the most popular technique amongst hotels. It is used significantly more than all other techniques appraised (Wilcoxon signed ranks test; $p < 0.01$). Despite this, the hotel sector is not using payback significantly more than the non-hotel sector. It would appear that the non-hotel sector is placing greater emphasis on a breadth of investment appraisal techniques. This highlights the importance of developing an analysis of the way that the sample uses a portfolio of investment appraisal techniques. The results of such an analysis are provided in Table 5. In compiling this Table, a technique has been classified as “used” if the respondent has recorded a score above the mid-point of the 7-point Likert scale, i.e., a score of “5” or more. This table should be interpreted in the light of Collier and Gregory’s (1995a) observation that although many of the managers they interviewed indicated using a breadth of investment appraisal techniques, in all investment

Secondly, they may result in major changes to projects that are underway (Neale and Holmes, 1988).

cases considered, the decision to invest was driven by only one of the approaches.

Insert Table 5 about here

This Table highlights that a minority of the sample use only one method. Rather than saying payback is the most popular investment appraisal technique used in hotels, it is more pertinent to say that payback used in combination with one or more other techniques is the most popular investment appraisal approach used in hotels (44% of the hotel respondents indicate a significant role for payback used in combination with one or more other techniques). Despite this, we should not be distracted from the somewhat concerning observation that a much larger proportion of the hotel sub-sample use payback in isolation of other techniques (36%) compared to the proportion of the non-hotel sub-sample that use payback in isolation (5%).

A further notable observation that can be drawn from Table 5 is the fact that 17% of the hotel sub-sample recorded a score of “4” or less for all four of the investment appraisal techniques, while only 3% of the non-hotel industry recorded a score of “4” or less for all four techniques. This represents a further observation suggesting a lack of sophistication in the investment appraisal techniques used in hotels. It is also interesting to note that 13% of the hotel sub-sample use all four investment appraisal techniques while 22% of

the non-hotel sub-sample use all four investment appraisal techniques.

Due to their use of a field study that focused on six hotel groups, Collier and Gregory (1995a) did not seek to posit generalisable findings with respect to hotel capital budgeting practice. Nevertheless, they do claim “There appears to be no association between size of the company and complexity of approach” (p.33). This comment appears to counter a fairly enduring finding of capital budgeting research, i.e., that organization size is positively related to greater use of financial techniques in investment appraisal (Pike, 1996). In light of the inconsistency of Collier and Gregory’s observation, an examination of the relationship between hotel size and use of financial investment appraisal techniques has been conducted.

Table 6 presents a matrix of the Pearson correlations for the four financial investment appraisal techniques and also size (size is measured by number of hotel rooms). The four financial investment appraisal techniques all exhibit statistically significantly positive inter-correlations ($p < 0.01$). Size is positively related to the use of accounting rate of return at the 5% level of confidence, and positively related to use of the other three financial investment appraisal techniques at the 1% level of confidence. Due to the survey method used in this study, this finding represents a strong refutation of Collier and Gregory’s suggestion that hotel size is unrelated to investment appraisal techniques used.

Insert Table 6 about here

CONCLUSION

The particular distinctiveness of this study derives from the fact that it is believed to be the first to quantitatively investigate the presence of biasing in the preparation of cash flow projections used in hotel capital budgeting. It is also the first to identify and investigate the issue of budgetary slack in the context of capital budgeting in the broader capital budgeting literature. Further, it is also the first to benchmark hotel capital budgeting practices to capital budgeting practices applied outside the hotel sector. This benchmarking initiative is significant as it represents the first move away from temporal-based capital budgeting benchmarking analysis that has become something of a convention using data collected in the U.S.⁹

Three main findings can be distilled from the study. Firstly, it has been found that the propensity to inflate cash inflow estimates outweighs the propensity to deflate cash inflow estimates. While this finding pertains to the hotel as well as the non-hotel sectors, it appears that the tendency to inflate projected cash inflows is greater outside the hotel industry. This finding is contrary to what had been anticipated in advance of data collection. It had been expected that the hotel sub-sample would have a relatively high

⁹ Ashley et al (2000), Atkinson and LeBruto (1997) and Damitio and Schmidgall (2002) all provide a

propensity to inflate projected cash inflows. This expectation stemmed from the ubiquity of the management contract in the hotel industry. Under most management contracts the hotel operator's remuneration is revenue and profit-related. This suggests a strong incentive for the operator to encourage capital investment by the owner. It may be that the finding made here relates to the organizational size differential apparent in the two samples investigated. This issue is elaborated on below. In light of the limited prior research concerned with investment proposal cash flow biasing, further work concerned with this issue is to be welcomed. Findings arising from such a research initiative might well be particularly illuminating for senior managers charged with the task of appraising cash flow projection accuracy and approving investment proposal submissions. In addition to the two motivations for biasing cash flow projections developed in the context of capital budgeting that have been measured in this study, the potential for other motivating factors that may result in cash flow projection biasing should be noted. In light of this potential, in further research that is designed to build on this study, consideration should be given to gauging other potential motivations for biasing cash flow projections.

A second key finding pertains to the relative sophistication of capital budgeting practice in hotels. Findings made with respect to the formalization of capital budgeting systems and also investment techniques both highlight a potential for further capital budgeting

tabular, temporally-based, benchmarking analysis of capital budgeting practices in U.S. hotel and related

development in hotels. While many similarities exist with respect to the degree of capital budgeting formalization across the two samples, hotels exhibit a lower level of development with respect to reviewing required rates of return and also applying post-completion audits. This post audit finding is interesting as it counters Collier and Gregory's (1995a) sense of an increasing tendency to use post audits in hotels. With respect to financial investment techniques, it has been found that more advanced appraisal techniques, such as NPV and IRR, which are based on discounting approaches, are used to a relatively low degree in hotels. This finding is inconsistent with that observed by Damitio and Schmidgall (2002) who note the popularity of IRR in the US lodging industry in a series of studies dating back to 1984. This highlights a potentially systematic difference in hotel management practice between Australia and the US. Despite the fairly well-documented limitations of the payback method (Mephram, 1975; Pike, 1985), over half the Australian hotels surveyed use the payback method relatively exclusively (36%) or use no financial investment appraisal method at all (17%). This is a particularly significant finding and represents a fairly damning indictment of hotel management sophistication in this important decision making arena. Room for improvement appears to be considerable, especially when compared to the non-hotel sample where less than a sixth of firms fail to use discounting methods.

A third finding concerns the positive relationship found to exist between hotel size and use of financial investment appraisal techniques. This finding can be seen as

industries.

corroborating prior work concerned with organizational size and use of financial investment appraisal techniques (DeFranco and Schmidgall, 1999; Lamminmaki et al, 1996; McNally and Eng, 1980; Pike, 1996). The enduring nature of this finding is interesting, as Pike (1996) expressed the view that firm size may not be a direct causal factor affecting capital budgeting sophistication. He felt that the relationship might be mediated by larger firm's greater access to computer-based capital budgeting packages. As we now appear to be at a point where such technology is relatively accessible for all organizations participating in this study, it is pertinent to note that the size / capital budgeting relationship is still apparent. This finding therefore counters the mediating role for "computer package accessibility" theory expressed by Pike.

In addition to the normal limitations widely acknowledged in survey work, it should be noted that in this study several of the observed hotel sector / non-hotel sector differences might relate to the organization size differential apparent between the two samples. Organizations in the non-hotel sub-sample were drawn from a listing of Australia's largest companies, therefore they will tend to be bigger than the organizations in the hotel sub-sample (it should nevertheless be remembered that many of the hotels surveyed represent units within large international chains). The large volume of evidence pointing towards a positive relationship between organizational size and capital budgeting sophistication highlights the significance of this organizational size differential issue. While it is important to bear this factor in mind when interpreting the study's findings, it is not seen to constitute a shortcoming that should deter others from conducting

benchmarking analyses such as that reported here. Benchmarking to best practice has, in recent years, become an increasingly espoused management technique (Hansen and Mowen, 2003; Horngren et al, 2000). By benchmarking hotel management practice to the practice of large companies operating outside the hotel industry, we can derive useful insights with respect to hotels' relative management sophistication and those aspects of hotel management where further development may be warranted as well as anticipated in future years. Nevertheless, one might argue that the benchmark sample of companies might not be applying "best practices" that have been tailored to the idiosyncratic needs of the hotel industry (e.g., the commonplace nature of the hotel contract). The problems of identifying the ideal non-hotel benchmarking sample were outlined above in footnote 5. The use of large non-hotel companies as the benchmark sample in this study should not be taken as a suggestion that this is the optimal benchmark sample, but rather that it represents one of several potentially useful benchmarking samples that can be used to provide insights into the relative standing of capital budgeting practice in the hotel industry. Other benchmark samples that could be considered for use in further research include: non-hotel companies of a similar size to hotels, non-hotel companies of a similar size to companies specializing in hotel ownership, hotels in other countries, hotel companies in other countries, etc.

A further limitation of the study worthy of reiteration concerns the potential for non-response bias amongst the hotel sub-sample. Five of the non-responding hotel Financial Controllers cited a lack of capital budgeting sophistication as a factor affecting their

decision not to participate in the study. This suggests that the data collected may be biased towards hotels operating more sophisticated capital budgeting systems. This potential for bias does not detract from the finding that hotels apply less sophisticated financial investment appraisal techniques relative to the non-hotel sector. If the hotel sample is indeed biased towards hotels that operate relatively sophisticated capital budgeting procedures, then the apparent gap in the sophistication of capital budgeting procedures between hotels and the benchmark sample is larger than that reported in the data analysis section of the paper. It should also be noted that while no non-response bias was detected in the non-hotel sample, it is nevertheless likely that a degree of “sophistication bias” might also apply to this sample.

TABLE 1
Summary of survey reply pattern

| | <u>Hotel companies</u> | | | <u>Non-hotel companies</u> | | |
|-----------------------|------------------------|-----------------------|--------------|----------------------------|-----------------------|--------------|
| | First mailing | Second mailing | Total | First mailing | Second mailing | Total |
| Questionnaires mailed | 192 | 144 | 192 | 300 | 245 | 300 |
| Useable responses | 48 | 44 | 92 | 55 | 56 | 111 |
| Response rate | | | 48% | | | 37% |

TABLE 2
Appraising the incidence and direction of investment proposal cash flow biasing

| Direction of bias | <u>Hotel industry</u> | | | <u>Non-hotel companies</u> | | | Mann-Whitney <i>U</i> |
|---|-----------------------|-------------|-----------------|----------------------------|-------------|-----------------|------------------------------|
| | Cases | Mean | St. Dev. | Cases | Mean | St. Dev. | |
| Tendency to inflate projected cash inflows | 90 | 3.06 | 1.53 | 111 | 3.86 | 1.68 | 3630* |
| Tendency to deflate projected cash inflows | 91 | 2.79 | 1.29 | 109 | 2.99 | 1.19 | 4455 |
| Net bias (inflationary - deflationary propensity) | 90 | 0.27 | 1.52 | 109 | 0.87 | 1.90 | 4036** |
| *: $p < 0.01$ | | | | | | | |
| **: $p < 0.05$ | | | | | | | |

TABLE 3
Formalization of capital budgeting controls
- chi square test of dichotomous variables

| Procedure | Industrial sector | Cases | % Yes | Chi-square value |
|---|-------------------|-------|-------|------------------|
| Pre-decision Controls | | | | |
| Company has formal screening and review body for investment proposals | Hotel | 92 | 75 | 0.323 |
| | Non-hotel | 111 | 78 | |
| Company maintains up-to-date capital budgeting manual or procedures | Hotel | 92 | 74 | 1.257 |
| | Non-hotel | 111 | 67 | |
| Company has a capital budget looking beyond two years | Hotel | 92 | 62 | 1.287 |
| | Non-hotel | 111 | 54 | |
| Company conducts regular review of minimum rates of return required | Hotel | 89 | 47 | 8.947* |
| | Non-hotel | 110 | 68 | |
| Post-decision Controls | | | | |
| Company monitors project performance once operational | Hotel | 91 | 86 | 0.054 |
| | Non-hotel | 110 | 85 | |
| Company evaluates approved projects if cost over-runs are likely | Hotel | 90 | 81 | 1.941 |
| | Non-hotel | 110 | 88 | |
| Company requires post-completion audits on most major projects | Hotel | 90 | 49 | 6.395** |
| | Non-hotel | 108 | 67 | |

*: $p < 0.01$

** : $p < 0.05$

TABLE 4
Use of financial appraisal techniques

| Technique | Hotel industry | | | Non-hotel industry | | | Mann-Whitney <i>U</i> |
|---------------------------|-----------------------|-------------|-----------------|---------------------------|-------------|-----------------|------------------------------|
| | Cases | Mean | St. Dev. | Cases | Mean | St. Dev. | |
| Payback period | 91 | 5.20 | 1.69 | 109 | 4.88 | 1.81 | 4461 |
| Net present value | 89 | 3.42 | 2.11 | 110 | 5.65 | 1.58 | 2003* |
| Accounting rate of return | 89 | 3.34 | 1.89 | 107 | 3.80 | 2.02 | 4122 |
| Internal rate of return | 88 | 3.20 | 1.94 | 107 | 5.20 | 1.75 | 2133* |
| *: $p < 0.01$ | | | | | | | |

TABLE 5
Combined use of investment appraisal techniques

| | Hotel industry | | Non-hotel industry | |
|-----------------------|------------------|-------------------|--------------------|-------------------|
| | No. | % | No. | % |
| No method | | | | |
| Total | 16 | 17 | 3 | 3 |
| Single method | | | | |
| PB | 33 | 36 | 6 | 5 |
| AARR | 2 | 2 | 2 | 2 |
| IRR | 0 | 0 | 1 | 1 |
| NPV | <u>0</u> | <u>0</u> | <u>6</u> | <u>5</u> |
| Total | <u>35</u> | <u>38</u> | <u>15</u> | <u>13</u> |
| Two methods | | | | |
| PB / AARR | 11 | 12 | 7 | 6 |
| PB / IRR | 0 | 0 | 1 | 1 |
| PB / NPV | 7 | 8 | 7 | 6 |
| AARR / IRR | 0 | 0 | 3 | 3 |
| AARR / NPV | 0 | 0 | 2 | 2 |
| IRR / NPV | <u>1</u> | <u>1</u> | <u>17</u> | <u>15</u> |
| Total | <u>19</u> | <u>21</u> | <u>37</u> | <u>33</u> |
| Three methods | | | | |
| PB / AARR / IRR | 0 | 0 | 2 | 2 |
| PB / AARR / NPV | 2 | 2 | 0 | 0 |
| PB / IRR / NPV | 8 | 9 | 27 | 24 |
| AARR / IRR / NPV | <u>0</u> | <u>0</u> | <u>3</u> | <u>3</u> |
| Total | <u>10</u> | <u>11</u> | <u>32</u> | <u>29</u> |
| Four methods | | | | |
| PB / AARR / IRR / NPV | <u>12</u> | <u>13</u> | <u>25</u> | <u>22</u> |
| TOTAL | <u>92</u> | <u>100</u> | <u>112</u> | <u>100</u> |

TABLE 6
Matrix of pearson product moment correlation coefficients for hotel size and investment appraisal techniques used

| | Size | Payback period | Net present value | Accounting rate of return | Internal rate of return |
|---------------------------|--------|----------------|-------------------|---------------------------|-------------------------|
| Size | 1.00 | | | | |
| Payback period | 0.30** | 1.00 | | | |
| Net present value | 0.28** | 0.39** | 1.00 | | |
| Accounting rate of return | 0.24* | 0.29** | 0.48** | 1.00 | |
| Internal rate of return | 0.32** | 0.42** | 0.92** | 0.51** | 1.00 |

** : Significant at the 0.01 level (2-tailed)

* : Significant at the 0.05 level (2-tailed)

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