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Capital Investment Practices: A Survey of Large Corporations in a Developing Market

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The investigation of Capital Investment Practices (CIPs) in the GCC, as developing markets, has received no attention in the literature. In this study, we investigate the use of different Capital Budgeting Techniques (CBTs) to evaluate the capital investments by Kuwaiti large firms, as one of the Gulf Cooperation Council (GCC) markets. This study adds to the literature by investigating the CIPs across corporations of different sizes, number of projects per year, from different sectors and listed and unlisted firms in Kuwait. We surveyed all 167 listed firms in the Kuwait Stock Exchange (KSE), from investment, service, real estate, industrial and food sectors in addition to 344 comparable unlisted firms with response rate of 79.64% and 39.53% from listed and unlisted firms, respectively, and an overall response rate of 52%. We argue that listed, publicly held, companies from all sectors should apply more advanced CBTs than unlisted, privately held firms. Also, we argue that listed and unlisted firms from the same sector with large size and large numbers of projects to be evaluated per year should apply different CBTs to assist their selection of capital investments, We found that Net Present Value (NPV) and Payback Period (PBP) are the most popular CBTs used to evaluate capital investment among Kuwaiti corporations included in the study, while the advanced CBTs were showing no significant use by the Kuwaiti corporations. The surveyed corporations indicated that advanced CBTs are not applicable because of lack of staff and experience. Results show clear evidence of significant difference between corporations form different sectors and different project sizes in their practices of different CBTs, while the number of projects to be evaluated did not show significant differences in applying different CBTs. Also, results reveal strong evidence that there is no significant difference between listed and unlisted Kuwaiti corporations in their practice of CBTs.

1. Introduction

In recent years Kuwait has enjoyed major economic strengths resulting from the large oil reserve and income. Kuwait's GDP shows significant growth of 162% over the period of 2004-2010 from $51.5 billion to $135.1 billion. The strong and healthy net asset position and the good capitalization which created a surplus of capital classified the Kuwaiti economy as a surplus economy. On the other hand, Kuwait has some weaknesses as it depends highly on hydrocarbon revenues; its economy is dominated by the public service sector and less diversification to other sectors which slows down the economic growth.

Given the growing number of firms in the Kuwaiti economy after the liberation and the growing body of listed firms in KSE, it is timely to investigate the extent to which

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CBTs are practised by Kuwaiti firms in the evaluation and identification of new capital investment to be allocated in the country among different sectors.

In this study we investigated whether, or not, Kuwaiti firms apply CBTs differently to evaluate capital investments across sectors, project sizes and number of projects to be evaluated per year. This study improves the literature by investigating whether there are significant differences in applying CBTs across listed and unlisted firms. The cross-analysis of listed and unlisted companies applying different CBTs is the main contribution of this study to the body of knowledge.

In the literature, listed firms and unlisted firms were investigated separately in different countries but none of the existing studies analysed the use of different CBTs in evaluating capital investments across listed and unlisted companies for the same country. We argue that CBTs applied to evaluate capital investments should be different from listed to unlisted firms. Also, we argue that listed and publicly traded companies should apply advanced CBTs more than unlisted and privately held companies.

The primary data for this study were collected by conducting a survey among listed corporations in the KSE from Investment, Services, Industrial, Real Estate and Food Sectors. The same survey was conducted among Kuwaiti firms that are not listed in KSE with similar capital sizes and market share within the same sectors.

The survey overall response rate was 52%. As part of this study, the primary data collected by the survey were analysed and the results are presented. Quantitative methods were applied for the analysis of the primary data. We used “closed-type” questions in this paper for more efficient data organization and analysis process. The survey contained 20 questions. The answered surveys were completed by November 2009.

The paper is organized as follows. Section two is to review the relevant literature. Section three describes the survey design and sample. Hypotheses and methodology will be provided in section four. Section five is to report the result and analyse the findings. Finally, section six is to conclude the study.

2. Literature Review

Using a survey data base to compare the CIPs used by US and Canadian firms; Payne, Heath, and Gale (1999) show that Canadian managers utilize their own experiences and judgment in evaluating new projects while managers in the US prefer externally verifiable analysis. Regarding CBTs, the Discounting Cash Flow (DCF) methods were dominant in both countries. These results from the US are consistent with the findings of Bruner, Eades, Harris, and Higgins (1998) and inconsistent with Gitman and Forrester (1977) who found that payback period was adopted by a large number of US firms. Jog and Srivastava (1995) provide empirical evidence by surveying Canadian firms indicating that the use of DCF methods has become a norm in Canadian firms and that multiple evaluation criteria are being commonly used which is inconsistent with the previously mentioned research findings of Payne, Heath and Gale (1999).

Surveying UK's corporations, Arnold and Hatzopoulos (2000) investigate the extent to which modern CBTs are being employed by UK corporations. The survey results indicate that the majority of UK corporations have increasingly adopted advanced CBTs such as DCF, risk analysis and appropriate adjustment for inflation to enhance their decision making in their evaluation of new projects. Only a few firms do not make use of discounted cash flows.

Lazaridis (2004) shows that the most preferred technique by practitioners in Cyprus was the Payback Period (PBP). Also it was shown that 19 % of Cyprus firms do not use any formal CBTs for their investment evaluation. Also, Lazaridis (2004) found that small and medium-size Cyprus enterprises do not follow scientific evaluation techniques for their investment projects probably due to lack of familiarity with such methods.

Analysing the capital budgeting practices of Australian listed firms Truong, Partington and Peat (2008) found that Net Present Value (NPV), Internal Rate of Return (IRR) and PBP are the most popular evaluation techniques by Australian listed firms. Real Options (RO) have gained some popularity in capital budgeting but are not yet part of mainstream. The study conducted by Wong, *et al.* (2001) shows that executives from Malaysia, Singapore and Hong Kong consider IRR and PBP to be equally important. These results are consistent with Kester and Tsui (1998) findings from their study for Singapore and other countries in the Asia-Pacific region. It was also found by Bruner *et al.* (1998) that the practices classified as most important by firms in the surveyed countries of the Asia-Pacific region are NPV and IRR as capital budgeting technique, while scenario and sensitivity analysis are used to assess risk, which is also consistent with practices in the developed countries of the world.

Lam *et al.* (2008) highlighted the capital budgeting practices used by the contractors in the construction industry of Hong Kong SAR, China, The study indicated the that most popular capital budgeting practices was Pay Back Period and Accounting Rate of Return. Also the study showed that NPV and IRR were not the predominant techniques for capital budgeting as claimed in the literature. Studying which methods are more appropriate for small firms and if they differ from those applied by larger firms, Block (1997) found that capital budgeting may be more important to the smaller firm than its larger counterparts because of the lack of access to the public markets for funding and the inherent risk due to lack of diversification in a smaller firm. Small firms depend on the payback method as the primary method of analysis due to the pressure they face to payback their loans as quick as possible.

Although the ROE approach in capital budgeting adds flexibility to new projects, few firms apply this approach in capital budgeting decision. Bruner *et al.* (1998) and Graham and Harvey (2001) show limited evidence of the use of the ROE technique by US firms in capital budgeting.

Cengiz Kahraman et al (2002) argue that in an uncertain economic environment estimated cash flows and interest rates are vague. In their paper, they developed formulas for the analysis of fuzzy capital budgeting techniques such as present value, equivalent annual value, future value, benefit-cost ratio and payback period. The fuzzy formulas are developed for both discrete compounding and continuous

compounding. Their results show better estimation for the cash flow, therefore, more accurate capital investments decisions. Verbeeten (2006) investigates the use of advanced capital budgeting techniques by Dutch organisations. The empirical results show that multiple advanced capital budgeting techniques and procedures (such as Monte Carlo simulations, certainty equivalents, Game Theory decision rules and Real Option) are used with the increase in financial uncertainty.

Ryan and Ryan (2002) show that Chief Financial Officers consider net present value the most preferred technique over all other capital budgeting techniques, while academics use multiple techniques. However, most financial managers apply multiple capital budgeting techniques in evaluating capital investments, their results close the gap between the academic and business views. Graham and Harvey (2002) indicate that large companies are more likely to use DCF and NPV techniques than small companies. Also, they pointed out that small firms tended to rely heavily on the payback technique more than DCF techniques.

Examining the use of Discounted Cash Flow (DCF) techniques and non-financial measures in capital budgeting, Chen (2008) finds that DCF techniques are more important in capital budgeting than non-financial measures. The findings indicate that non-financial measures are used as a substitute for the DCF technique when DCF analysis is less efficient.

Surprising results from surveying the capital budgeting practices of Canadian municipal governments were provide by Yee-Ching Lilian Chan (2004). Results show that the minority of Canadian municipal governments used capital budgeting techniques in their evaluation of capital investments. The payback period is more widely used than cash flow analysis in evaluating capital investments

The contribution of this study to the relevant literature is related to the investigation of the use of advanced and less advanced capital budgeting techniques in evaluating capital investments across listed (publicly traded) firms and unlisted (privately held) firms of different size, number of projects to be evaluated and market capitalisation. The cross-sectional analysis of the use of capital budgeting techniques was not utilised in the body of literature related to this topic.

3. Survey Design and Sample

Since no single study had been conducted in the GCC to investigate the use of CBTs to assess capital investment decisions, we did not find any secondary data that can help conduct this study. Therefore, we adopted a structured survey similar to Lazaridis (2004) and Truong, Partington and Peat (2008) to gather primary data from Kuwaiti managers in their practice of CBTs to evaluate capital investments in an asymmetric way. Our structured survey is consistent with the literature for the validity of the comparison between the practice of CBTs in Kuwait and other countries.

The questionnaire employs structured multi-choice questions to reveal the choice of CBTs by the Kuwaiti firms' in their investment decision-making procedures. The design of the questionnaire was improved by the comments of experts and

executives of listed and unlisted Kuwaiti firms, these experts and executives were excluded from the final sample. The questionnaire was structured to be completed in the least time by Chief Executive Officers (CEO), Chief Financial Officer (CFO), Treasurers, Chief Operating Officer (COO), or by executive managers in charge of investment decision-making. The finalized questionnaire included 20 numbered "closed-type questions" for the ease of answering and more efficient data organization and analysis. The questionnaires were written in Arabic and English and required the respondents to identify themselves and their companies for further contact.

This study focus was on the practice of CBTs by Kuwaiti firms, therefore, foreign listed and unlisted firms in Kuwait were excluded for the fact that capital investment decisions are made in their home countries. Also, since the focus of this study is on the practice of CBTs for real assets, firms from the banking and insurance sectors were excluded. The final sample comprises 511 Kuwaiti firms from investment, real estate, industrial, service, and food sectors. The whole sample encompasses all listed firms in Kuwaiti Stock Exchange from the five mentioned sectors and accounts for 167 firms. The unlisted firms account for 344 firms from the same sectors with comparable size and capital for the validity of the analysis. Since the number of listed firms in Kuwait stock exchange is limited, we included all listed firms in the five sectors to have enough responses that can be analysed and give reliable results.

The questionnaires were sent out in June 2009 and answered questionnaires were completed by the end of November 2009. Only 382 questionnaires were returned with 74.76% response rate. The usable questionnaires (133) from Kuwaiti listed firms (70.42%) and 136 from Kuwaiti unlisted firms (39.53%) with a total number of 269 and usable response rate of 70.42%. The usable questionnaire rate as percentage of total questionnaires counts for 52.64%. Truong, Partington and Peat (2008) obtained a response rate of 24.4% from the Australian firms; Lazaridis (2004) obtained a response rate of 56% from Cyprus firms; Kester and Tsui (1998) obtained a response rate of 54% from Singapore; Kester et al. (1999) obtained a response rate of 41.4% from Hong Kong, 40% from Philippines, 42.3% from Singapore, 26.8% from Australia, 28.6% from Malaysia and only 6.7% from Indonesia; finally, Jog and Srivastava (1995) obtained a response rate of 22.9% from Canadian firms. In comparison with the response rates for questionnaires in literature, our questionnaire’s response rate is slightly above the international practices.

4. Hypotheses and Methodology

Several CBTs are available to assist the decision-making process in evaluating capital investment. This study examine which of these CBTs are most used by Kuwaiti listed and unlisted firms and whether these techniques differ from one sector to another, from one project size to another and by number of project to be evaluated per year. The CBTs we examine include Net Present Value (NPV), Adjusted Net Present Value (ANPV), Profitability Index (PI), Internal Rate of Return (IRR), Modified Internal Rate of Return (MIRR), Hurdle Rate (HR), Return On Assets (ROA), Return On Equity (ROE), Pay Back Period (PBP), Discounted Pay Back Period (DPBP), Real Option (RO) and Value at Risk (V@R). Since most managers

use more than one CBT to evaluate new project(s), the survey's questions are designed so that respondents are able to rank different technique in order of their preferences.

We argue that CBTs to be applied should differ from listed to unlisted firms and from firms with different size, projects and from one sector to another. In the literature, the CBTs that take Time Value of Money (TVM) into consideration when assessing the investment decision are considered advanced techniques, while others are considered less advanced techniques. Therefore, NPV, ANPV, PI, IRR, MIRR, and DPBP are considered advanced CBTs. On the other hand, HR, ROA, ROE, and BPB are considered less advanced CBTs, while RO and V@R are used for projects' risk management.

We also argue that firms evaluating projects with large initial investment will apply advanced CBTs, this argument should be valid with firms from the industrial, service, real estate sectors. Along the same line we argue that firms evaluating large number of projects per year should be capable of applying more sophisticated CBTs than firms evaluating few projects per year or every several years. Finally, we argue that listed firms should apply more advanced CBTs than unlisted firms for the large size and effect of these firms in the economy.

Specifically, this study examines four hypotheses regarding the differences among firms in their practice of CBTs. The four null hypotheses are:

Hypothesis (1): No significant differences between the CBTs used by Kuwaiti firms from different sectors, after adjusting for firm's sector.

Hypothesis (2): No significant differences between the CBTs used by Kuwaiti firms to evaluate projects with different size, after adjusting for project's size.

Hypothesis (3): No significant differences between CBTs used by Kuwaiti firms evaluating different number of projects per year, after adjusting for number of projects to be evaluated per year.

Hypothesis (4): No significant differences between the CBTs used by listed and unlisted Kuwaiti firms in KSE in regards to sectors, sizes, and number of projects to be evaluated per year, after adjusting for sectors, sizes and number of projects to be evaluated per year.

The Multivariate Analysis of Variance (MANOVA) procedure was employed to test vectors of CBTs against listed and unlisted firms, sectors, sizes, number of projects to be evaluated per year and any possible interaction between demographic characteristics. Wilks' Lambda statistics was computed using SPSS.

5. Statistical Analysis of the Survey Results

First, w argue that listed "publicly held" companies from all sectors should apply more advanced CBTs that depend on the discounted cash flow than unlisted, "privately held" firms. This is related to the fact that listed firms have more market share and stable market position in addition to larger capital than unlisted firms. These factors give listed firms the ability to apply more advanced CBTs in their

evaluation of new capital investments through their staff or by outsourcing to professionals.

Second, we argue that listed or unlisted firms from the same sector with large size and number of projects to be evaluated per year should apply different CBTs to assess their selection of capital investments. The literature suggests that large size firms with large numbers of projects to be evaluated per year should apply more advanced CBTs to assess their capital investment decisions due to their technical and capital abilities.

Therefore, the main objective of this study is to investigate the use of CBTs by Kuwaiti firms to assess their capital investment decisions while evaluating different projects. The main investigation was broken down to investigate if there are any significant differences in the application of the capital budgeting techniques across different sectors of listed and unlisted firms. Also, the study investigated the effect of the size of the projects being evaluated by Kuwaiti firms on the selection of the CBTs in their decision making process. In addition, the study investigated the effect of the number of the projects to be evaluated per year by each company on the selection of the CBTs in their decision making process. Finally, ranking of the importance of each CBT was considered in the analysis.

5.1 Respondents' Descriptive Statistics

Respondents comprise 133 listed firms in the KSE and 136 unlisted firms from the same sectors with comparable size for the validity of the analysis. Distributions of the survey sample and survey respondents by sector from listed and unlisted Kuwaiti firms are reported in Table (1).

Panels (A) and (B) of Table (1) show the distribution of the respondents of listed and unlisted firms in KSE, respectively, by sector classification. Respondents from listed firms in KSE are stretched over five sectors; Investment, Real Estate, Industrial, Service and Food, while respondents from unlisted firms are spread over four sectors only.

The Food sector from unlisted firms shows no response for the survey questionnaires. Service and Investment sectors provide the highest percentage of responses, accounting for 33.08% and 27.06%, respectively, of listed firms' total responses and for 30.88% and 29.42%, respectively, of unlisted firms' total responses. Listed firms from Real Estate and Industrial sectors have equal response rates of 18.05% of the listed firms' total response, while accounting for 21.32% and 18.38%, respectively of the unlisted firms' total responses. The smallest sector to contribute to the significance of the results driven by this study is the food sector with 3.76% of listed firms' total responses and zero response rate for unlisted firms.

Table (1): Survey Sample & Responses by Listed & Unlisted Kuwaiti Firms

Panel (A): Listed Firms in Kuwaiti Stock Exchange from Different Sectors

	Whole Listed Sample		Respondent Firms	
Sectors	# of Firms	Percentage	# of Firms	Percentage
1. Investment	44	26.35%	36	27.06%
2. Real Estate	34	20.36%	24	18.05%
3. Industrial	28	16.77%	24	18.05%
4. Service	55	32.93%	44	33.08%
5. Food	6	3.59%	5	3.76%
Total	167	100.00%	133	100.00%

Panel (B): Unlisted Firms in Kuwaiti Stock Exchange from Different Sectors

	Whole Unlisted Sample		Respondent Firms	
Sectors	# of Firms	Percentage	# of Firms	Percentage
1. Investment	84	24.42%	40	29.42%
2. Real Estate	88	25.58%	29	21.32%
3. Industrial	64	18.60%	25	18.38%
4. Service	98	28.49%	42	30.88%
5. Food	10	2.91%	0	0.00%
Total	344	100.00%	136	100.00%

The skewness of the respondents towards service and investment sectors for listed and unlisted firms can be explained by the fact that these two sectors had more active capital budgeting practices than firms from other sectors over the last few years. The website of KSE shows that the number of new listed firms in the five sectors of this study increased by 75% since year 2005, from 99 listed firms in year 2005 to 173 listed firms as of January 2009. Investment and service sectors newly listed firms account for 69% of total number of newly listed firms, while only 31% of newly listed firms are from industrial, real estate and food sectors. This increasing number of listed firms in service and investment sectors was accompanied by an increasing number of unlisted firms from the same sectors.

5.2 Comparative Statistics of Number of Projects Evaluated Annually by Listed & Unlisted Kuwaiti Firms

The first part of the questionnaire intends to drive some comparative statistics describing the capital budgeting practices of responding listed and unlisted Kuwaiti firms. Table (2) provides comparative statistics about the number of projects to be evaluated per year by listed and unlisted Kuwaiti firms.

We argue that the number of projects to be evaluated per year by Kuwaiti firms will affect their practice of capital budgeting evaluation and analysis for decision-making processes to assist their acceptance/rejection decision of different projects.

Table (2) shows that 58.37% of Kuwaiti firms evaluate 2-10 projects per year. Results did not show significant difference between the dominating number of projects to be evaluated annually by listed and unlisted firms in KSE. While 60.15% of Kuwaiti listed firms evaluate 2-10 projects per year, 56.62% of unlisted Kuwaiti firms evaluate the same number of projects per year. Also, results reported in panel (C) of Table (2) show that 8.55% of all Kuwaiti firms that responded to the questionnaires do not evaluate any number of projects per year.

Results reported in Panels (A) and (B) of Table (2), reveal that unlisted Kuwaiti firms are more active in capital budgeting practices than listed firms. Results show that 18.38% of unlisted firms responding to the questionnaires evaluate more than 10 projects per year in comparison to only 9.77% of listed firms. Table (2), Panels (A) and (B) indicate that there is no significant difference between listed and unlisted Kuwaiti firms that responded to the questionnaires in regards to the evaluation of 1 project every several years or per year.

A significant percentage of firms, accounting for 8.55% of the total responded firms, do not evaluate any number of projects per year. In regards to this finding, only 5.15% of unlisted firms responding to the questionnaires do not evaluate any number of projects per year in comparison to 12.04% of listed firms. These results reveal that responding unlisted Kuwaiti firms are more active than listed Kuwaiti firms in their practices for capital budgeting evaluation and analysis.

Table (2): Number of Projects Evaluated Annually by Listed and Unlisted Kuwaiti Firms

Number of Projects Evaluated Annually	Panel (A): Listed Firms		Panel (B): Unlisted Firms		Panel (C): Whole Sample	
	No.	%	No.	%	No.	%
None	16	12.04%	7	05.15%	23	08.55%
1 Each Several Years	1	00.75%	5	03.68%	6	02.23%
1 per Year	23	17.29%	22	16.18%	45	16.73%
2-5 per Year	29	21.80%	26	19.12%	55	20.45%
6-10 per Year	51	38.35%	51	37.50%	102	37.92%
More than 10 per Year	13	09.77%	25	18.38%	38	14.13%
Total	133	100.00%	136	100.00%	269	100.00%

5.3 Comparative Statistics of Size of Projects to be Evaluated Annually by Listed & Unlisted Kuwaiti Firms

Table (3) provides comparative statistics of respondent listed and unlisted Kuwaiti firms evaluating projects of different sizes. Panel A and B of Table (3) show that none of the responding unlisted firms apply CBTs to evaluate projects over $5 million, while Panel A of Table (3) shows that only two of the responding listed firms apply CBTs to evaluate projects over $5 million, 1.50%.. In terms of dominating project sizes, Panel (A) of Table (3) reveals that 38.35% of all projects evaluated by listed firms in KSE have a size range of $2 million - $5 million, while Panel (B) of Table (3) shows that 38.97% of projects evaluated by unlisted Kuwaiti firms have a size range of $500,000 to $1,000,000. The second highest percentage of projects size to be evaluated by respondent listed firms is 31.58% for project size range between $500,000 and $1,000,000. The second highest percentage of projects size to be evaluated by unlisted firms is 28.67% for project sizes that range between $2 million and $5 million.

Table (3) shows that projects with size range between $5 million and $25 million and $25 - $50 million are evaluated by only 0.75% of respondent listed firms, while none of the respondent unlisted firms evaluate projects of that size. More projects with size less than $100,000 are evaluated by respondent unlisted firms than listed firms, with 9.56% and 4.51%, respectively.

Table (3): Size of Projects to be Evaluated Annually by Listed and Unlisted Kuwaiti Firms

Project's Size in $US 000	Panel (A): Listed Firms		Panel (B): Unlisted Firms		Panel (C): Whole Sample	
	No.	%	No.	%	No.	%
Any Size	14	10.53%	9	6.62%	23	8.55%
Less than 100	6	4.51%	13	9.56%	19	7.06%
100 ≥ 500	4	3.01%	5	3.68%	9	3.35%
500 ≥ 1,000	42	31.58%	53	38.97%	95	35.32%
1,000 ≥ 2,000	14	10.52%	17	12.50%	31	11.52%
2,000 ≥ 5,000	51	38.35%	39	28.67%	90	33.46%
5,000 ≥ 25,000	1	0.75%	0	0.0%	1	0.37%
25,000 ≥ 50,000	1	0.75%	0	0.0%	1	0.37%
50,000 ≥ 100,000	0	0.0%	0	0.0%	0	0.00%
100,000 ≥ 50,000	0	0.0%	0	0.0%	0	0.00%
More than 50,000	0	0.0%	0	0.0%	0	0.00%
Total	133	100.00%	136	100.00%	269	100.00%

5.4 Comparative Statistics of Capital Budgeting Techniques Used by Listed & Unlisted Kuwaiti Firms

Distributions of the usage of capital budgeting techniques by the respondent listed and unlisted firms included in the sample are reported in Table (4).

Table (4) shows that 91.53% of respondent firms employed several capital budgeting techniques in their project evaluation process. Only 8.47% of all respondent from listed and unlisted firms do not apply any of the CBTs included in the survey in their decision-making process regarding the acceptance or the rejection of new projects. Statistics reported in Table (4) show a confusing surprise, the percentage of respondent firms that do not apply any capital budgeting technique in their evaluation of new projects is higher with the listed firms than with unlisted firms. Panel (A) of Table (4) shows that 11.35% of respondent listed firms do not apply any CBT, while only 5.49% of respondent unlisted firms do not apply any CBTs in their evaluation of new projects.

As for the most applied CBTs by respondent firms, Table (4) indicates that the common techniques are NPV, ROA, ROE and PI, which accounted for 21.62%, 12.97%, 9.91%, and 9.73% of all respondents, respectively. The techniques to be applied least by the respondent Kuwaiti firms were HR and MIRR techniques with low percentages of 3.24% and 3.96%, while ROM and VAR were not applied by any of the respondent firms. Comments from experts indicated that the ROM and VAR were not used due to lack of experience and knowledge of the Kuwaiti firms and not because they are not important.

Although the survey included most of the historical, advanced and recent CBTs that have been used in the literature to evaluate new projects, results show that 4.50% of the respondent firms included in the survey apply other techniques that were not included in our survey. Adding this percentage to the percentage of the firms that do not apply any other CBTs will give us a cumulative percentage equal to 12.97% which is consistent with the results shown in Table (2) and (3) indicating that no projects of whatever size are evaluated.

Reported results in Table (4) provide evidences that respondent listed firms use more sophisticated capital budgeting technique, such as ANPV and DPBP, in their evaluation of new projects than respondent unlisted firm. Panels (A) and (B) of Table (4) show that while 7.09% of listed firms use ANPV, only 1.83% of unlisted firms use the same technique. Also, results from panels (A) and (B) of table (4) confirm this finding, it shows that 7.09% of listed firms use DPBP in comparison to 5.13% of unlisted firms use same technique. Results reported in Table (4) related to the MIRR technique contradict the previous findings, whereas 4.4% of respondent unlisted firm use it in comparison to 3.55% of respondent listed firms included in the study.

Table (4): Analysis of CBT s Used by Kuwaiti Firms in their Project Evaluation

Capital Budgeting Technique	Panel (A): Listed Firms		Panel (B): Unlisted Firms		Panel (C): Whole Sample	
	#	%	#	%	#	%
None	32	11.35%	15	5.49%	47	8.47%
1. Net Present Value (NPV)	56	19.86%	64	23.44%	120	21.62%
2. Adjusted NPV (ANPV)	20	7.09%	5	1.83%	25	4.50%
3. Profitability Index (PI)	40	14.18%	14	5.13%	54	9.73%
4. Internal Rate of Return (IRR)	20	7.09%	16	5.86%	36	6.49%
5. Modified IRR (MIRR)	10	3.55%	12	4.40%	22	3.96%
6. Hurdle Rate (HR)	6	2.13%	12	4.40%	18	3.24%
7. Return On Assets (ROA)	30	10.64%	42	15.38%	72	12.97%
8. Return On Equity (ROE)	20	7.09%	35	12.82%	55	9.91%
9. Pay Back Period (PBP)	18	6.38%	29	10.62%	47	8.47%
10. Discount PBP (DPBP)	20	7.09%	14	5.13%	34	6.13%
11. Real Options (RO)	0	0.00%	0	0.00%	0	0.00%
12. Value at Risk (V@R)	0	0.00%	0	0.00%	0	0.00%
13. Other Techniques	10	3.55%	15	5.49%	25	4.50%

5.5 Analysis of Respondents' Ranking of the Importance of CBTs Used by Kuwaiti Listed and Unlisted Firms

Distributions of the respondents ranking of the importance of CBTs used by Kuwaiti listed and unlisted firms included in the study is reported in table (5). The unlisted firms are from the same sectors of listed firms with comparable size, capital, and market shares for the validity of the analysis. Panels (A) and (B) of Table (5) report that respondent listed and unlisted firms view the PBP method as the most important capital budgeting techniques to evaluate new projects. Panel (A) of Table (5) shows that 76.9% of listed firms with 2.6 mean and 1.2% standard deviation consider PBP method very important and applicable by 89.8%. This results confirmed by the response of unlisted firms reported in Panel (B) of Table (5). It reveals that 74.3% of unlisted firms with 2.62 mean and 2.03 % standard deviation consider BPB method very important and applicable by 82.8%.

The top five ranked capital budgeting techniques by respondents from listed firms, as reported in Panel (A) of Table (5), are: PBP, ROE, NPV, ANPV and DPBP methods, where 76.9%, 76.7%, 62.3%, 58.4%, and 53.2%, respectively, indicate that these CPT are very important and applicable by 89.8%, 81.8%, 69.9%, 39.5% and 15.8%, respectively. While, Panel (B) of Table (5) show that the top five ranked CBTs by respondents from unlisted firms are: PBP, Hurdle Rate, ROE, ROA and NPV methods, where 74.3%, 66.1%, 57.1%, 52.6% and 52.3%, respectively consider these CBTs are very important and applicable by 82.8%, 86.4%, 78.9%, 48.5% and 73.4%, respectively. These results are consistent with the practices of capital budgeting in publicly held corporations listed in KSE and privately held companies (unlisted). In publicly held companies, corporate managers are concerned more with the long-run performance of proposed projects to be evaluated, therefore they consider discounted cash flow methods more important than rates of return that measure the financial performance at a point of time.

Coming to know that the NPV of new projects represent the added wealth to the shareholders of listed firms and the wealth of the owner of the unlisted firms, results explore that increasing wealth in value through time is ranked as the third concern of the decision makers in listed firms and the fifth concern of the decision makers in unlisted firms. By interpreting the results regarding the PBP which does not incorporate the time value of money into the decision making process, Panel (A) of Table (5) shows that 76.9% of respondent listed firms and 74.3% of respondent unlisted firms view the payback period method as very important. In comparison to PBP, Panel (B) of Table (5) shows that 62.3% of respondent listed firms and 52.6% of respondent unlisted firms reveal that NPV method is very important in evaluating new projects. The percentage of PBP over NPV indicates that Kuwaiti managers of both listed and unlisted firms are not sure about their future earnings so they prefer to get back the money invested in a short period of time.

In practice, the ANPV and MIRR methods are more complicated than the regular NPV and IRR methods, which should lead to a higher percentage of the population to regard ANPV and MIRR as not more important or more applicable than NPV and IRR. The contradicting results show that respondents from listed and unlisted firms see that ANPV and MIRR are as much important as NPV and IRR, but less applicable. Panel (A) and Panel (B) of Table (5) show that respondents from listed and unlisted firms perceive ANPV and MIRR as much more important than NPV and IRR or moderately more important than NPV and IRR. This contradictory result reveals that the respondents who are in charge of applying CBTs only believe in the importance of ANPV and MIRR. Panel (A) of Table (5) shows that VAR, PI, IRR, MIRR and RO methods are the five capital budgeting techniques least used by listed firms. Results show that 49.7%, 36.6%, 32.9%, 30% and 29.6% of respondents see that VAR, PI, IRR, MIRR and RO methods, respectively, are not important for listed firm managers in the process of evaluating proposed projects. These findings are confirmed by the inapplicability of these methods. 91.5%, 64.5% and 83% of respondents indicated that VAR, MIRR, and RO methods, respectively, are not applicable.

Table (5): Ranking of CBTs Used by Listed and Unlisted Firms

Ranking Study Methods	Panel (A): Relative Frequencies of Listed Firms						
	Not Important	Moderately Important	Very Important	Applicable	Not Applicabl	Mean	St. Dev.
1. NPV	15.7	23.0	62.3	69.9	30.1	2.49	.96%
2. ANPV	18.6	25.0	58.4	39.5	60.5	2.34	1.2%
3. PI	36.6	33.7	29.7	74.1	25.9	1.93	1.2%
4. IRR	32.9	22.2	44.9	79.9	20.1	2.12	1.1%
5. MIRR	30.0	25.7	44.3	35.5	64.5	2.08	1.3%
6. Hurdle	27.2	27.6	45.2	74.6	25.4	2.18	1.3%
7. ROA	31.7	32.3	36.0	86.8	13.2	2.04	1.1%
8. ROE	10.3	13.0	76.7	81.1	18.9	2.66	1.1%
9. PBP	17.4	5.7	76.9	89.8	10.2	2.60	1.2%
10. DPBP	16.7	30.1	53.2	15.8	84.2	2.37	1.3%
11. RO	29.6	35.7	34.7	27.0	83.0	2.05	1.4%
12. VAR	49.7	34.9	15.4	8.5	91.5	1.66	1.4%
Ranking Study Methods	**Panel (B): Relative Frequencies of Unlisted Firms**						
	Not Important	**Moderately Important**	**Very Important**	**Applicable**	**Not Applicable**	**Mean**	**St. Dev.**
1. NPV	14.0	33.4	52.6	48.5	51.5	2.39	1.96%
2. ANPV	13.3	35.6	51.2	19.2	80.8	2.32	2.12%
3. PI	26.2	47.3	26.5	30.8	69.2	2.00	1.32%
4. IRR	22.3	44.1	43.6	35.2	64.8	2.41	1.91%
5. MIRR	83.8	9.2	8.0	15.7	84.3	1.26	1.32%
6. Hurdle	14.7	19.2	66.1	86.4	13.6	2.51	2.13%
7. ROA	18.9	28.8	52.3	73.4	26.6	2.33	2.07%
8. ROE	19.3	23.6	57.1	78.9	21.1	2.38	1.91%
9. PBP	12.5	13.2	74.3	82.8	17.2	2.62	1.82%
10. DPBP	67.2	21.3	11.5	25.2	74.8	1.44	2.03%
11. RO	69.1	25.5	5.4	14.5	85.5	1.36	1.94%
12. VAR	72.6	27.4	00.0	8.5	91.5	1.27	1.02%

Results reported in Panels (A) and (B) of Table (5) and statistics reported in Panels (A) and (B) of Table (4) show that RO and VAR were not used at all by any listed or unlisted firm, while Hurdle rate is used by 6 listed and 12 unlisted firms, that is, 3.24% of the 269 respondent firms. This result reveals that although Kuwaiti firms do not apply the mentioned advanced CBTs, they still view advanced techniques as a very important and important to be applied in their decision- making process. Experts explained that the lack of experience and knowledge in addition to the lack of well educated and highly trained staff are the main reasons why these methods

are not incorporated. To conclude, we find that the majority of respondents reveal that advanced CBTs are important, but not applicable in evaluating new projects with percentage range between 60.5% at minimum and 91.5% at maximum for listed firms and between 94.5% at minimum and 74.8% at maximum for unlisted firms.

5.6 Cross Sectional Analysis of Applied CBTs by Listed and Unlisted Kuwaiti Firms from Different Sectors

To test the significant differences in applying capital budgeting techniques by Kuwaiti firms from different sectors, with different sizes and different number of projects to be evaluated per year, Wilks' Lambda statistics were computed from SPSS and generated the results reported in Table (6).

Table (6): Overall Significance of Differences Between Sectors for Listed and Unlisted Firms in Applying Capital Budgeting Techniques

Effect	F-Value	Sig.
Sectors	1.410	.001
Listed/Unlisted	1.264	.142
Sector * Listed/Unlisted Interaction Effect	1.141	.153

Table (6) shows clear evidence that there are significant differences between sectors in their responses to the study questions. In regard to the status of the company being listed or unlisted, results reported in Table (6) indicate that there are no significant differences between listed and unlisted firms in their response to study questions regarding applied capital budgeting techniques. Moreover there is no interaction effect between sectors and the status of the company being listed or unlisted in their response to the study questions. That means sectors have more dominant effect in deciding the capital budgeting techniques being adopted but the legal form of the company to be publicly traded or privately held does not play a role in deciding which capital budgeting techniques to be adopted. With regards to the international practices, the publicly traded firms give more weight to capital budgeting techniques that depend on Discounted Cash Flow methods, such as: NPV, ANPV, IRR, MIRR and DPBP than capital budgeting techniques that are applied by private firms where PBP, PI, ROA and ROE are the most important capital budgeting techniques to be applied.

For those sectors who declared significance, the question would be which questions were significant? In our data analysis we find that questions 11, 13 and 16 reported in Table (7) are those capital budgeting techniques to be applied differently by different sectors. Other capital budgeting techniques did not show any significant differences across different sectors.

Table (7): Questions that Indicate Significance of Differences between Listed and Unlisted Firms from Different Sectors

	Questions
Q 11	How do you rank the importance of the Return On Assets (ROA) method in evaluating new projects?
Q13	How do you rank the importance of the Pay Back Period (PBP) method in evaluating new projects?
Q16	How do you rank the importance of the Value At Risk (VAR) method in evaluating new projects?

Only question 12 declared significance differences between listed and unlisted firms in their rankings of the importance of using different capital budgeting techniques in the evaluation of new projects.

Table (8) shows that Q12, regarding the ranking of the importance of the Return On Equity (ROE) method in evaluating new projects, has a p-value of 0.013 and the average mean of 2.66 for the listed firms and 2.38 for the unlisted firms. This indicates that both listed and unlisted firms were positive towards the ROE method but the listed firms were more positive and strongly significant in their perceptions towards ROE than unlisted firms. Other capital budgeting techniques did not show any significant differences across listed and unlisted firms.

Table (8): Questions that Indicate Significance of Differences Between Listed and Unlisted Firms.

	Questions	**Mean**		**Sig.**
		Listed	**Unlisted**	**P-Value**
Q12	How do you rank the importance of the Return On Equity (ROE) method in evaluating new projects?	2.66	2.38	.013

Therefore, the first hypothesis stating that: “No significant differences between the CIP s used by Kuwaiti firms from different sectors, after adjusting for firm’s sector” is rejected, partially, since results reported in Table (7) do not support this hypothesis. Therefore, we can say that Kuwaiti firms from different sectors apply different capital budgeting techniques in their evaluation of new projects.

The fourth hypothesis stating that: “No significant differences between the CBTs used by listed and unlisted Kuwaiti firms in KSE” is rejected according to the results shown in Table (6) but Table (8) shows some significant differences between listed and unlisted firms with regards to question 12.

5.7 Cross Sectional Analysis of the Practices of CBTs Between Sectors With Regard to Project with Different Size in Both Listed and Unlisted Firms

To test for significant differences in applying CBTs by Kuwaiti firms from different sectors, with different sizes and for both listed and unlisted firms, Wilks' Lambda statistics were computed from SPSS and results are reported in Table (9).

Table (9): Overall Significance of Differences Between Projects with Different Sizes of Listed and Unlisted Firms

Effect	F-Value	Sig.
Project Size	1.358	.000
Listed/Unlisted	.721	.864
Project Size and Listing Interaction Effect	1.129	.074

Table (9) shows clear evidence that there is a significant difference for any level between projects of different sizes in their response to the study questions. In regard to the status of the company being listed or unlisted, results reported in Table (9) indicate that there is no significant difference between listed and unlisted firms in their response to study questions regarding CBTs.

Moreover there is an interaction effect between project size and the status of the company being listed or unlisted in their response to the study question with 10% significant level. For those who declared significance (namely, project size), the question would be which questions were significant? In our data analysis we find that the significant differences related to certain questions regarding different project size. Those questions are reported in Table (10). Table (10) shows that listed firms in the Kuwaiti Stock Exchange are showing more significant and stronger difference; presented by the ***P***-value and the mean; in regards to their practices of CBTs. The listed firms gave a more important ranking than unlisted firms included in the study for the use of A NPV (2.34 vs. 1.29) and for the use of ROE (2.66 vs. 2.38).

Table (10): Questions that Indicate Significance of Differences with Regards to Project size in Both Listed and Unlisted Firms

	Questions	**Mean**		**Sig.**
		Listed	**Listed**	**P-Value**
Q6	How do you rank the importance of the ANPV method in evaluating new projects?	2.34	1.29	.039
Q12	How do you rank the importance of the Return On Equity (ROE) method in evaluating new projects?	2.66	2.38	.001

Therefore, the second hypothesis stating that: “No significant differences between the CBTs used by Kuwaiti firms to evaluate projects with different size, after adjusting for project’s size” is rejected partially; since results reported in Tables (9) and (10) are not supporting this hypothesis.

The fourth hypothesis stating that: “No significant differences between the CBTs used by listed and unlisted Kuwaiti firms in KSE” is also rejected with regards to the size of the company as reported in Table (9).

5.8 Cross Sectional Analysis of the Practices CIP With Regard to the Number of Projects to be Evaluated from Different Sectors

To test the significant differences in applying CBTs by Kuwaiti firms from different sectors, with different sizes, and for both listed and unlisted firms, Wilks’ Lambda statistics were computed from SPSS and generated the following results reported in Table (11).

Table (11): Overall Significance of Differences for Number of Projects to be Evaluated for Different Sectors.

Effect	F-Value	Sig.
Number of Projects	1.101	.165
Sectors	1.017	.439
Number of projects & Sectors interaction effect	.863	.985

Looking at Table (11) we can say that there is no significant difference in different sectors and number of projects being evaluated and there is no difference in their interaction effect.

Therefore, we can conclude that the third hypothesis which stated that: “No significant differences between CBTs used by Kuwaiti firms evaluating different number of projects per year, after adjusting for number of projects to be evaluated per year” is accepted. The acceptance of this hypothesis reveals that CBTs to be used by Kuwaiti firms from different sectors and different sizes and whether they are listed or unlisted, they apply the same techniques with regards to capital budgeting techniques.

6. Conclusion

The study has ripened enough to conclude on the findings and to bring it into view. Our aim was to identify the capital budgeting techniques used by Kuwaiti firms to evaluate different projects. Results indicate that the use of such techniques and methods in Kuwait is not similar to those used and applied in other countries where multiple evaluation techniques are being used.

The objective of this study was to prove whether or not the Kuwaiti firms that are listed in the Kuwait Stock Exchange and the unlisted firms from similar sectors employ different capital budgeting techniques in their decision making process to identify projects to invest in irrespective of the nature of the project.

The primary data for this study were collected by conducting a survey among Kuwaiti firms that are listed in the Kuwait Stock exchange from the following sectors: investment, services, industrial, real estate and food. Also the same survey was conducted among Kuwaiti firms that are not listed but they have similar size, capital and market share within similar sectors. The survey questionnaire was structured in a way that would require the least possible completion time by executives evaluating new projects. The response rate of this survey was 74% with usable rate of 52%. As part of this study project the primary data collected by this survey are analysed and the results are presented. The questions were "closed type" for easier and more efficient data organization and processing. The survey included 133 listed and 136 unlisted selected firms. The answered surveys were collected and complete by the end of November 2009.

MANOVA procedure, multivariate analysis of variance procedure, was employed to test vectors of study variables (Capital Budgeting Techniques) against listed and unlisted, sizes, number of projects to be evaluated and any possible interaction between demographic characteristics.

The descriptive analysis revealed that a very low percentage of Kuwaiti firms that have been included in the study apply advanced capital budgeting technique when they judge new projects for acceptance and rejection. Results revealed that a significant percentage of 8.55% of respondent firms do not apply any technique to assess their evaluation decisions.

The first hypothesis stating that: "No significant differences between the CBTs used by Kuwaiti firms from different sectors, after adjusting for firm's sector" was rejected. Results show significant differences between sectors in applying Capital Budgeting Techniques.

The second hypothesis stating that: "No significant differences between the CBTs used by Kuwaiti firms to evaluate projects with different size, after adjusting for project's size" was rejected; it was found that firms with different sizes apply different Capital Budgeting Techniques in their evaluation of new projects.

The third hypothesis stated that: "No significant differences between CBTs used by Kuwaiti firms evaluating different number of projects per year, after adjusting for number of projects to be evaluated per year" is accepted. The acceptance of this hypothesis reveals that Kuwaiti firms from different sectors and different sizes and whether they are listed or unlisted apply the same techniques with regards to Capital Budgeting Techniques.

The fourth hypothesis stating that: "No significant differences between the CBTs used by listed and unlisted Kuwaiti firms in KSE" was rejected based on some significant differences between listed and unlisted firms that have been realized in

some questions. This finding could be ignored since these differences were driven by the food sector which has less than 2% weight in the whole sample.

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