

CAPITAL BUDGETING PRACTICES OF LISTED PHILIPPINE FIRMS

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The paper examines the disparity between theory and practice in the use of quantitative techniques in the evaluation of capital expenditures by publicly-listed Philippine firms. Survey questionnaires were mailed to all 185 publicly-listed Philippine firms in 1996 of which forty-one firms responded representing 22.2% of the total. The questionnaire focused on : 1) the constraints on the size of the firm's capital budget; 2) the quantitative evaluation techniques used in the evaluation of capital investments; and 3) determination of discount rates for evaluating proposed capital investments. Results of the survey showed that publicly-listed Philippine firms apply the same quantitative techniques applied by firms in such developed countries as the U.S and U.K. in the evaluation of capital expenditures. Between the NPV and the IRR, more Philippine firms use the IRR. The popularity of the payback period method was also confirmed by the survey results in this study. The payback period method ranked second to IRR while NPV ranked third only. Lastly, respondent firms selected discount rates that were easier to determine or simpler than the WACC. These are: the cost of specific capital used for the project and the t-bill rate plus premium.

Introduction

In finance theory, the capital budgeting process requires evaluating projects using discounted cash flow techniques, namely, Net Present Value (NPV) or Internal Rate of Return (IRR). Generally, projects with NPVs greater than zero or IRRs greater than the cost of capital are accepted. The purpose of this research is to determine if there is disparity between theory and practice in the use of quantitative techniques in the evaluation of capital expenditures by publicly-listed Philippine firms.

Review of Previous Studies

In the 60s, Istvan (1961) interviewed executives of forty-eight major US corporations that ranked within the ten largest in their industry. The purpose of

the study was to ascertain how large firms make investment decisions. Of the forty-eight respondents, only seven evaluated their proposed capital expenditures using methods that reflect the economic value of time. Thirteen had the misconception that early payback indicates profitability of investment. The firms studied made up a significant sample of capital spenders in the US. In 1959, they spent \$8 billion for plant and equipment representing 25% of total expenditures recorded by the US Department of Commerce for that year. Several of the executives interviewed stated that discounting techniques were impractical because they required financial forecasting beyond three or four years and that these forecasts were too vague for use in the computations. Most of these executives used the "payback" criterion because it did

not require long-range estimates. The author concluded that generally, the failure of businessmen to employ sound economic theory in their evaluation of capital expenditures was due to their inability to understand the concepts rather than to excessive implementation costs.

Klammer (1972) drew his sample for his study from the 1969 Compustat database. Only firms that made at least \$1 million capital expenditures in each of the five years 1963 through 1967 were included. Fifty percent of the 369 firms responded. The respondents were asked whether they used specific methods or techniques for capital budgeting. The results showed a clear majority using discounting methods and that the payback method had declined in popularity.

In the 70s, several studies were undertaken including that by Mao (1970), and Schall, et al (1978). Mao interviewed eight firms to compare current theory of capital budgeting with practice. Only four firms used IRR. The study confirmed the prevalence of payback period and the accounting profit criteria in practice. Reasons cited by the respondents for the slow acceptance of NPV/IRR included: 1) failure of IRR/NPV to consider the effect of an

investment on reported earnings, 2) "payback" is simple; it measures "liquidity" and solves "uncertainty" and, 3) accounting profit is important if the company is widely-held and relies on external sources of financing.

In the late 70s, Schall, et al (1978) conducted a survey of capital budgeting methods used by US firms. All 424 firms from the Compustat tape were included in the sample. One hundred eighty-nine responded. Survey results indicated increasing sophistication in capital budgeting techniques used by the firms. Over 86% used either IRR or NPV or both.

Kamath and Oberst (1992) surveyed the capital budgeting practices of 427 hospitals with 200 or more beds which included the large and successful hospitals. The response rate was 188 firms or 44%. Table 1 shows the responses with regard to the various capital budgeting techniques used by the respondents. The respondents were asked to report only one technique as a primary tool for evaluating capital projects. As shown in Table 1, the payback period was relied upon as the primary method by 28.7% of the respondents, followed by the NPV and the IRR methods which were relied upon as a primary tool by 17.9% and 17.2% of the respondents, respectively.

Table 1
Capital Budgeting Methods Used by Responding Hospitals

Method	Method Used as a Primary Tool	
	Responses	Percent of Total Responses
1. Accounting Rate of Return	7	7.45
2. Payback Period	27	28.72
3. Discounted Payback Period	4.5	4.79
4. Net Present Value	16.8	17.87
5. Internal Rate of Return	16.2	17.23
6. Profitability Index	6.5	6.92
7. Some Method Other than the Above Six	9	9.57
8. None	7	7.45
Total	94	100.00

Source : Kamath and Oberst (1992), p. 211

Wilner, et al (1992) surveyed 500 large industrial firms to find out which capital budgeting practices were used for high-technology projects such as CAD-CAM, quality control, and inventory management projects. All firms had capital expenditures of \$100 million or more. The response rate was 20%. Findings of the study showed that 70% of the firms specified that one of the discounted cash flow methods was used as the primary method. Multiple methods were also commonly used with payback as the most popular secondary (or additional) method used.

In the 90s, Hatfield, et al. (1996/1997), surveyed 118 US manufacturing firms to inquire about the capital budgeting techniques that were employed and the financial criteria used to evaluate projects. Results of the study were the following : 1) 71% indicated that some proposed projects were exempt from formal financial analysis and, 2) the survey listed the payback period (PB),

average rate of return (ARR), net present value (NPV) and the internal rate of return (IRR) as project evaluation techniques used. Results indicated that a high IRR and short payback period were considered important in determining project acceptance. The authors concluded that many of the tools used by practitioners were not consistent with those tools presented in financial theory. They proposed that to improve long-term investment decision-making, financial managers should rely less on IRR, PB and ARR and more on the NPV.

Evans and Forbes (1993) dealt with the question : If NPV is theoretically a superior indicator, why do practitioners continue to prefer the IRR? The authors argued that IRR is preferred by practitioners because it is more cognitively efficient—i.e., IRR is expressed as an interest rate and is evaluated relative to the required return. The authors concluded that academicians should reorient their efforts from promoting the NPV to teaching methods about dealing with the limitations of IRR.

Pike (1996) conducted a longitudinal survey in UK on capital budgeting practices based on surveys conducted between 1975 and 1992 using the same

firms at approximately 5-year intervals. The first survey was made in 1980, the second in 1986 and the third in 1992. Results of the survey are shown in Table 2 below.

Table 2
Investment Evaluation Procedures and Techniques
(100 Large Firms in United Kingdom)
Percentage

Year of Survey	1975	1980	1986	1992
Evaluation Techniques Used:				
Payback	73	81	92	94
Average accounting rate of return	51	49	56	50
Internal rate of return	44*	57*	75*	81*
Net Present value	32	39	68*	74*

Note : *Size a significant factor in degree of use at the 5% level.

Source : Pike (1996), p. 82.

The author found that, by 1992, the use of IRR and NPV were well established with 81% and 74%, respectively, of responding firms reporting usage. As

reflected in Table 3 below, his results also indicated that very few firms used only a single evaluation method. Thirty-six percent used a combination of all four methods.

Table 3
Combined Evaluation Techniques
(Response : 100 Large Firms in United Kingdom)
Percentage

Year of Survey	1975	1980	1986	1992
Firms using :				
<i>No Methods</i>	2	0	0	0
<i>A Single Method</i>				
PB	14	12	6	4
AARR	12	7	0	0
IRR	5	4	2	0
NPV	0	1	0	0
	31	24	8	4
<i>Two Methods</i>				
PB/AARR	14	13	10	8
PB/IRR	14	15	8	9
PB/NPV	4	6	5	6
AARR/IRR	0	2	2	0
AARR/NPV	1	1	1	0
IRR/NPV	1	4	3	5
	34	40	29	28
Total				

Table 3 (cont'd.)
Combined Evaluation Techniques
(Response : 100 Large Firms in United Kingdom)
Percentage

<i>Three Methods</i>				
PB/AARR/IRR	7	10	5	5
PB/AARR/NPV	4	4	3	1
PB/IRR/NPV	10	9	21	26
AARR/IRR/NPV	1	1	0	0
	<hr/>	<hr/>	<hr/>	<hr/>
Total	22	24	29	32
<i>Four Methods</i>				
PB/AARR/IRR/NPV	11	12	34	36
	<hr/>	<hr/>	<hr/>	<hr/>
Total	100	100	100	100

Code : PB - Payback period
AARR - Average accounting rate of return

IRR - Internal rate of return
NPV - Net present value

Source : Pike (1996), p.83

The author concluded that while an increased awareness of the time-value of money in decision-making may have assisted in its rapid growth, a more likely

In the Philippines, Agulto (1990) interviewed five firms to find out what quantitative techniques they use in their evaluation of capital expenditures. Findings of the study indicated that the

explanation lies in the increasing use of computers making NPV calculations as easy as the simple payback method.

IRR and the payback period were the preferred primary and secondary techniques. The preference for IRR is due to the ease of understanding and use of the method.

Methodology

A survey questionnaire (see Appendix B) was mailed to all 185 publicly-listed Philippine firms in 1996. Forty-one firms responded representing 22.2% of the total (see Appendix C). The average size of a firm's annual capital expenditures ranged from P1 million to P25 billion.

The questionnaire focused on: 1) the constraints on the size of the firm's capital budget; 2) the quantitative evaluation techniques used in the evaluation of capital investments; and 3) determination of discount rates for evaluating proposed capital investments

Results of the Survey

Capital Budgeting Techniques

Seventy-three percent of the respondents or 30 firms indicated that all proposed capital investments are subjected to quantitative evaluation techniques. Of the projects that do not require quantitative analysis, respondents identified these projects to include: 1) projects initially approved by top management, 2) projects below a certain cut-off amount and, 3) projects that are required by law or regulations e.g., projects for environmental protection.

With respect to the particular quantitative technique used, Tables 4 and 4a show the survey results. Table 4 shows the number of respondents that rated the following techniques or methods according to perceived importance: 1) internal rate of return or IRR, 2) net present value or NPV, 3) accounting rate of return, 4) payback period, 5) profitability index, and 6) residual income. The respondents were asked to rate these various techniques on a Likert scale of 0 to 5 where 0 is "not used", 1 is "unimportant" and 5 is "very important". This approach not only reveals which methods are used in the Philippines, it also provides information on the relative importance of each method in decision-making. As shown in Table 4, the IRR method is the most preferred technique followed by the payback period and the NPV. About 66% or 27 respondents rated the IRR as "very important" while about 44% and 39% rated the payback period and the

NPV methods as "very important". Some respondents indicated more than one method for each rating on the scale which explains why the total percentages (see Table 4) are greater than 100%.

Table 4a shows the comparative mean ratings ranked by order of perceived importance (see Table 4a). The IRR, Payback period and the NPV received the top ranking with mean ratings of 3.78, 3.51 and 3.34, respectively.*

In their application of quantitative techniques, respondents were asked whether cash flows (or earnings) of proposed capital investments were evaluated before or after income taxes. In spite of a high corporate income tax rate of 35%, only 56% used "after tax" earnings while 44% used "before tax" earnings.**

As to the size of projects that require quantitative analysis (see Table 5), about 38.7% of the respondents evaluate project proposals amounting to P3 million only and 70.9% of the respondents evaluate proposals using quantitative techniques with project size of P10 million or less.

* The mean ratings were computed by multiplying the percentages of responses in each category with values 0 to 5. A score of 0 was assigned when not rated.

** Managers that used "before tax earnings" probably assumed that the firm as a whole will not have to pay income taxes for the period or as Division Managers, they have no control over taxes paid by the firm and hence are not held accountable for performance on an after tax basis.

Table 4
Quantitative Evaluation Techniques in Investment Decisions

Rating Choice	0	1	2	3	4	5	(% of respondents)
IRR	6	1	4	1	2	27	65.8%
NPV	8	2	1	3	11	16	39.0%
ARR	13	6	5	4	4	9	21.9%
Payback Period	4	2	5	6	6	18	43.9%
Profitability Index	19	1	4	6	3	8	19.5%
Residual Income	28	4	2	3	0	4	9.7%

Code : IRR – Internal rate of return

0 - not used

NPV – Net present value

1 - unimportant

ARR – Accounting rate of return

5 - very important

Table 4a
Mean Ratings of Quantitative Method

Method	Mean Rating
IRR	3.78
Payback Period	3.51
NPV	3.34
ARR	2.17
Profitability Index	1.93
Residual Income	0.90

Table 5
Size of Projects that Require Quantitative Analysis

Project Size in Php	No. of Respondents	%	Cumulative %
Less than 1 million	8	25.8	} 38.7
One million – 3 million	4	12.9	
5 million – 10 million	10	32.2	
20 million	4	12.9	
Greater than 20 million	1	3.3	
Others (qualitative criteria, type of project, etc.)	4	12.9	87.1
Total	31	100.0%	100

RISK ANALYSIS

The respondents were also asked which methods or techniques they use to assess project risk. The respondents were asked to rate the following techniques

according to the perceived importance: 1) scenario analysis, 2) sensitivity analysis, 3) decision tree and 4) probabilistic (i.e., Monte Carlo) simulation. Table 6 shows the

survey results. Scenario analysis and sensitivity analysis methods were rated 'most important' by majority of the respondents with 68% and 61% of the respondents rating these two methods as

'very important'. Table 6a shows the mean ratings for each risk-assessment method/technique. The scenario analysis and the sensitivity analysis received mean ratings of 4.10 and 4.02 respectively.

Table 6
Techniques for Risk Analysis

Rating Technique	0	1	2	3	4	5 %
Scenario	3	1	2	2	8	25 61
Sensitivity	4	3	0	2	4	28 68
Decision Tree	24	1	1	10	2	3 7
Probabilistic	30	1	2	4	2	2 5

0 - not used; 1 - unimportant; 5 - very important

Table 6a
Mean Ratings of Risk-Assessment Techniques

Technique	Mean Rating
Scenario Analysis	4.10
Sensitivity Analysis	4.02
Decision Tree	1.36
Probabilistic	0.85

Discount Rates

The respondents were asked to indicate their firm's estimated overall weighted cost of capital (WACC) and the method that they used to estimate their cost of equity capital. Table 7 (see next page) shows that majority of the respondents have an estimated WACC of 15% and higher.

In the estimation of the cost of equity capital, 51% use cost of debt plus risk premium followed by the dividend yield plus growth rate model which is used by 27% of the respondents. Only 17% used the CAPM model in the estimation of the cost of equity capital. This is because firms might have difficulties in estimating their firm's "beta".

Table 7
Overall Estimated WACC

WACC (%)	No. of Respondents	%
6-10	4	15.4
11-14	6	23.1
15-20	12	46.1
22-25	2	7.7
Others	2	7.7
Total	<u>26</u>	<u>100.0</u>

Table 8 shows the survey results on the discount rates used. Twenty-nine percent of the respondents use either the cost of the specific capital that will be used to finance the project or the T-bill interest rate plus an appropriate risk premium. Only 12% use the firm's estimated

WACC as the discount rate. The firms that indicated WACC as their discount rate were also asked how they incorporated project risk in the evaluation of proposed capital expenditures. Some answers given were: 1) use of sensitivity or scenario analysis, and 2) use of discount rate plus risk premium.

Table 8
Discount Rates Used in Capital Budgeting

Discount Rate	No of respondents	%
Cost of Specific capital to finance projects	12	29.3
T-bill interest rate + premium	10	24.4
WACC (single rate)	5	12.2
Multiple-Risk Adjusted	4	9.8
Others	4	9.7
No response	6	14.6
Total	<u>41</u>	<u>100.0</u>

The respondents were also asked how they adjusted for risk in the determination of discount rate used. Fourteen out of forty-one respondents used risk-adjusted discount rates (T-bill

interest rate plus premium and multiple-risk adjusted). As shown in Table 8, 34.2% of the respondents used these two rates. Table 9 shows the methods used by these respondents to adjust for risk.

Table 9
Method of Estimating Multiple-Risk Adjusted Discount Rates

Method	No. of Respondents	%
a. Proposed capital expenditures are classified into subjectively-defined risk categories. The discount rate for average-risk projects is the firm's overall weighted cost of capital. The discount rate for lower-risk projects is a rate lower than the average cost of capital.	9	64.2%
b. A two-step procedure is used. First, divisional costs of capital are established for each major operating division of the firm. Second, within each division, projects are classified into risk categories. Then, each division used its divisional cost of capital for average risk projects, and higher and lower discount rates for projects of higher and lower risk, respectively.	2	14.3%
c. The Capital Asset Pricing Model is used to determine project discount rates based upon estimates of each project's beta (or market) risk.*	1	7.2%
d. No response	2	14.3%
Total	14	100.0%

Respondent firms that used risk-adjusted discount rates were mostly holding companies, property developers and companies engaged in mining, oil or gas exploration. By the nature of their businesses or operations, these firms undertake heterogeneous investments that have different risk levels.

Constraints on the Size of Investments

Sixty-six percent or 27 respondents indicated that the firms limit the size of their investments subject to the following : 1) projected earnings, and 2) their borrowing limits. This implies that respondent firms set the limits of their

capital on the amount of funds that they could raise either internally or externally from creditors. Theoretically, to maximize their values, firms should undertake all acceptable projects and simply raise the funds from the financial markets. When firms impose constraints on the size of capital investments, this is referred to as "capital rationing".

Threshold Levels for Approval and Post Approval Analysis of Projects

Seventy-three percent of the respondents indicated that projects must meet certain threshold levels to be accepted (see Table 10). The threshold levels currently used for

* Theoretically, well-diversified firms should consider beta risk in the determination of the discount rate. However, managers find the CAPM approach difficult to implement. Furthermore, market imperfections makes CAPM infeasible.

the payback period and IRR methods are shown in Table 10a. No response was given by the respondents for the NPV threshold levels. For the NPV threshold levels, some respondents merely stated: 1) depends on hurdle

rate, 2) depends on project cost, and 3) depends on the project. For the Payback period, 96% indicated a short period of five years or less while for the IRR, 82.6% of the respondents indicated threshold levels of 18% to 30%.

Table 10
Respondents that Require Projects to Meet Certain Threshold Levels

Response	No.	%
Yes	30	73
No	3	7
No Response	8	20
	41	100

Table 10a
Threshold Levels

Quantitative Method Used	No. of Respondents	%
Payback		
Less than 5 years	22	96
More than 5 years	1	4
	23	100
IRR		
15%	2	8.7
18% - 20%	15	65.2
24% - 30%	4	17.4
Greater than 35%	2	8.7
	23	100.0
Total	23	100.0

As to the post approval or post implementation analysis, 85% of the respondents indicated that this is

undertaken, 10% do not undertake this and the remaining 5% undertake this on a case to case basis.

CONCLUSION

Results of the survey showed that publicly-listed Philippine firms apply the same quantitative techniques applied by firms in such developed countries as the U.S. and U.K. in the evaluation of capital expenditures. Between the NPV and the IRR, more Philippine firms use the IRR. This is consistent with the practice of US and UK firms as shown in the studies by Pike, Evan and Forbes, and Hatfield.

The popularity of the payback period method was also confirmed by the survey results in this study. The payback period method ranked second to IRR while NPV ranked third only. One explanation is that in the Philippines the cost of borrowed funds is high such that

Implications of Survey Results

While the majority of Philippine firms surveyed reported that they use discounted cash flow methods in evaluating investment decisions, there are more firms that use IRR than NPV. Theoretically, the NPV method is superior to the IRR because for mutually exclusive projects, the former selects the project that maximizes the firm's stock value. If a firm undertakes a project that is expected to have a positive NPV, this surplus will accrue to shareholders and, is expected to increase the value of the firm's stock. Despite the superiority of the NPV over the IRR, the latter method is more popular perhaps because managers can easily defend their investment decisions by simply comparing the IRR with the project

firms may prefer projects with shorter payback periods. Another reason could be the fact that firms find projects with long payback periods to be too risky. Projects with long payback periods are exposed to high cost of financing or foreign exchange risk if financed by foreign currency.

Lastly, the respondent firms selected discount rates that were easier to determine or simpler than the WACC. These are : the cost of specific capital used for the project and the t-bill rate plus premium. This is consistent with the preferred method used to determine the cost of equity. The majority of the respondents indicated that they use the cost of debt plus risk premium method to estimate their firms' cost of equity.

financing cost or because it is easier to understand and communicate than NPV.

The other commonly used method is the Payback Period. The survey even showed that the payback period is preferred over the NPV method. This implies a bias for projects that require short recovery periods. The preference for projects with shorter payback periods is influenced by the available financing which is generally short-term in the Philippines. Financial institutions may therefore prefer short payback periods to reduce their risk-exposure. While theoretically, the value of the firm should be directly affected by the application of either the NPV or the IRR methods, the Philippine stock market has some imperfections so that other methods, e.g., the payback period,

are used alternatively.

In the long term, projects should be ranked correctly with the end-view of maximizing shareholder's wealth, which in turn is also good for creditors and all other stakeholders. Thus, banks, credit-

rating agencies, the stock exchange and other regulatory agencies should require firms to use the appropriate capital budgeting techniques, particularly the NPV method, supporting their application for additional borrowings or equity.

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Appendix A Definition of Terms

Capital Asset Pricing Model (CAPM) is a model based on the proposition that any stock's required rate of return is equal to the risk less rate of return plus the risk premium, where risk is measured by the beta coefficient.¹

Decision Tree is a risk analysis technique in which final decision is made in stages with subsequent decisions depending on the results of previous decisions. The sequence of events can be mapped out like the branches of a tree - hence, the name decision tree.²

Internal Rate of Return (IRR) Method is a method of evaluating investment using the rate of return on an asset investment calculated by finding the discount rate that equates the present value of future cash flows to the investment cost.²

Monte Carlo Simulation is a probabilistic risk analysis technique in which probable future events are simulated on a computer.²

Net Present Value Method (NPV) is a method evaluating investment using the net present value, which is equal to the present value of future returns discounted, minus the present value of the cost of the investment.²

Scenario Analysis is a risk analysis technique in which "bad" and "good" sets of financial circumstances are compared with a most likely, or base.²

Sensitivity Analysis is a risk analysis technique in which key variables are changed one at a time and the resulting changes in the NPV on the rate of return are observed. The more sensitive the NPV or other measure is to a change in a particular variable, the riskier the project.²

Weighted Average Cost of Capital (WACC) refers to a weighted average of the component costs of debt, preferred stock and common equity.²

¹ Brigham, Eugene F. (4th Edition). *Fundamentals of Financial Management*. The Dryden Press.

² Weston, J. Fred and Thomas E. Copeland (9th Edition). *Managerial Finance*. The Dryden Press.

Appendix B

SURVEY QUESTIONNAIRE
Survey on Capital Budgeting Practices

1. a) What is the principal nature of your business? ___ Manufacturing ___ Construction ___ Retail/Wholesale
 ___ Finance ___ Plantation ___ Property ___ Hotel ___ Mining ___ Holding Company
 Other (please specify) _____
 b) Please check if : Publicly -Listed ___ Not Listed ___
2. What is the amount of your firm's Total Assets? P _____ As of _____
 (Date)
3. a) What is the average size (in Ph Pesos) of your firm's annual capital budget? P _____
 b) What is your firm's Annual Total Sales/Revenues? P _____ For _____
 (Period)
4. Does your firm place a limit on the size of its annual capital budget? (Please circle one)
 a. Yes b. No
5. a) If Yes, which of the following limit the size of your capital budget? (Please rank the appropriate item)
 _____ Projected earnings
 _____ Capacity to borrow
 _____ Common Stock Issue
 _____ Others _____
 b) Are all proposed capital investments subjected to quantitative evaluation technique? (Please circle one)
 a. Yes b. No
 If No, please answer (c) below
 c) What projects do not require quantitative evaluation techniques? (Please check one)
 _____ Projects initially approved by Top Management (President/Board)
 _____ Projects below a certain amount (Please state cut-off amount : P _____)
 _____ Others _____
6. Are estimated cash flows (or earnings) of proposed capital investments evaluated before or after income taxes? (Please circle one)
 a. Before income taxes b. After income taxes
7. Please indicate the relative importance of the following quantitative evaluation techniques used in your firm to rank proposed capital investments and to decide whether or not they should be accepted for inclusion in the capital budget (on a scale of 0 to 5, where 0 = Not used, 1= Unimportant and 5 = Very Important).
 a. _____ Internal rate of return (IRR)
 b. _____ Net present value of cash flows (NPV)
 c. _____ Accounting rate of return (average earnings return on assets)
 d. _____ Payback period
 e. _____ Profitability Index (NPV ÷ Amount of Investment)
 f. _____ Residual Income (Income – Cost of Capital of Project)
 g. _____ Other (please specify) _____
8. Do you require projects to meet certain threshold levels to be accepted? ___ Yes ___ No
 If yes, please indicate the threshold levels currently used in your company.
 a. _____ Payback Period ≤ _____ Years
 b. _____ NPV ≥ P _____
 c. _____ IRR ≥ _____ %
 d. Others _____

9. Please indicate the relative importance of the following techniques used in your firm to assess risk (on a scale of 0 to 5, where 0 = Not used, 1 = Unimportant and 5 = Very Important).
- _____ Scenario analysis (i.e., optimistic/most likely/pessimistic forecasts)
 - _____ Sensitivity analysis
 - _____ Decision tree
 - _____ Probabilistic (i.e., Monte Carlo) simulation
 - _____ Other (please specify) _____
10. What is your firm's estimated overall weighted average cost of capital (in percent)? _____
11. Which of the following methods does your firm use to estimate its cost of equity capital? (Please circle one)
- Capital Asset Pricing Model (based upon the firm's estimated beta)
 - Dividend yield plus growth rate (discounted cash flow method)
 - Cost of debt plus risk premium
 - Other (please specify) _____
12. Do you do post-approval and post-implementation analysis? ____ Yes ____ No
13. What project size requires a formal quantitative analysis in your firm?
Greater than (please specify in Ph Pesos) _____

The following questions should be answered only if your firm uses internal rate of return and/or net present value of cash flows to rank proposed capital investments and to decide whether or not they should be accepted.

14. Which one of the following approaches is used in your firm to determine the minimum acceptable rate of return (discount rate) for evaluating proposed capital investments? (Please circle one)
- The discount rate used for each project is the cost of the specific capital that will be used to finance the project (i.e., the discount rate for a project that will be financed entirely with debt is the cost of debt). *(Do not answer questions 15 and 16)*
 - T-bill interest rate plus appropriate risk premium *(Please answer question 15)*.
 - Multiple risk-adjusted discount rates are used; the riskier the proposed capital investment, the higher the discount rate. *(Please answer question 15)*.
 - A single discount rate based on the firm's overall weighted average cost of capital is used to evaluate all proposed capital investments. *(Please answer question 16)*.
15. If your answer to question 14 was (b) or (c), then which of the following procedures does your firm use to determine risk-adjusted discount rates? (Please circle one)
- Proposed capital expenditures (projects) throughout the firm are classified into subjectively-defined risk categories (i.e., replacement, expansion of existing products, expansion into new products or markets, etc.). The discount rate for average-risk projects is the firm's overall weighted average cost of capital. The discount rate for lower-risk projects is a rate lower than the average cost of capital.
 - A two-step procedure is used. First, divisional costs of capital are established for each major operating division of the firm. Second, within each division, projects are classified into risk categories. Then, each division uses its divisional cost of capital for average risk projects, and higher and lower discount rates for projects of higher and lower risk, respectively.
 - The Capital Asset Pricing Model is used to determine project discount rates based upon estimates of each project's beta (or market) risk.
 - Other (please explain) _____

16. If your answer to question 14 was (d), then how does your firm explicitly incorporate project risk into the evaluation of proposed capital expenditures?

Thank you very much! Happy Holidays!

Appendix C List of Respondents

Company	Industry Sector/Type	Total Assets (P000)
1	Unidentified	1,800,000.00
2	PDCP Development Bank	10,000,000.00
3	San Miguel Corporation Group	94,100,000.00
4	Manila Broadcasting Company	383,268.00
5	Far East Bank & Trust Company	90,700,000.00
6	Central Azucarera dela Carlota	1,634,024.00
7	Lepanto Consolidated	4,300,000.00
8	Phil National Oil Company	1,400,000.00
9	Central Azucarera de Tarlac	1,499,607.00
10	Monterey Farms Corporation	1,400,000.00
11	EEI Corporation	4,800,000.00
12	Phil Realty & Holdings Corp	6,780,000.00
13	Ayala Corporation	56,500,000.00
14	Asia Amalgamated Holdings Corp	450,000.00
15	Bacnotan Consolidated Industries	22,900,000.00
16	Globe Telecommunications	9,800,000.00
17	Saniwares	555,700.00
18	Republic Glass	1,400,000.00
19	Empire East Land, Inc	11,600,000.00
20	Metrobank & Trust Company	201,000,000.00
21	Waterfront Philippines	466,448.00
22	East Asia Power Corporation	8,000,000.00
23	Pryce Properties Corporation	2,998,000.00
24	Phil. Long Distance Telephone	103,000,000.00
25	Jollibee Foods Corporation	3,500,000.00
26	Anglo Philippine Holdings Corp	1,000,000.00
27	Guoco Holdings Phils., Inc.	8,000,000.00
28	Vulcan Industrial & Mining Corp	682,904.00
29	Saztec Philippines, Inc.	225,000.00
30	Int'l Container Terminal Services	8,060,000.00
31	Easycall Communications	722,000.00
32	Union Bank of the Philippines	35,000,000.00
33	Benguet Corporation	5,202,400.00
34	Petrofields Explo & Dev't Co., Inc.	5,500,000.00
35	Meralco	59,311,399.00
36	Primetown Property Group	3,800,000.00
37	Ionics Circuit, Inc.	1,425,743.00
38	First Phil Holdings Corp	10,100,000.00
39	Acesite Philippines	1,287,000.00
40	Vitarich Corporation	5,400,000.00
41	Davao Union Cement	6,710,000.00