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SOFTWARE ACCOUNTING POLICY: DOES IT MATTER?

ROBERT W. MCGEE*

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I. INTRODUCTION

The National Association of Accountants¹ recently conducted a study of software accounting policy. As a result of interviews conducted with executives of software manufacturing companies, it became apparent that there was concern that the inability to reflect software expenditures on the balance sheet adversely affected the ability to raise debt or equity capital. This view was confirmed when a questionnaire was mailed to software company executives.

In order to test the views of bankers and financial analysts, two different questionnaires, employing two different research methodologies, were mailed to two groups of commercial lending officers. A third questionnaire was mailed to financial analysts. Response to the two commercial lending officer surveys revealed the software companies that capitalize some software expenditures find it less difficult to obtain bank financing than do companies that expense all software costs. Responses to the financial analysts' survey revealed that some analysts prefer software companies that capitalize certain software expenditures. Others prefer companies that expense all software costs.

II. PRIOR STUDIES OF THE EFFECT OF CERTAIN ACCOUNTING POLICIES ON BANK LENDING DECISIONS AND STOCK PRICE

During the course of these interviews, several subjects expressed the view that the inability to place software costs on the balance sheet would adversely affect a software firm's ability to raise capital. This feeling was reinforced by the responses received from software vendor companies. In that questionnaire, 48.5 percent of privately held software companies and 30.2 percent of the public companies surveyed agreed that the inability to include software costs on the balance sheet adversely affects the ability to raise capital.

The view that accounting policy affects a company's stock price or the ability to raise debt capital has previously been expressed. In 1965, J. L. O'Donnell² examined the price earnings ratio trend of 37

1. The National Association of Accountants is the second largest accounting membership organization in the world (the American Institute of Certified Public Accountants is the largest). It recently moved its world-wide headquarters from New York City to 10 Paragon Drive, Montvale, New Jersey 07645. It has nearly 400 local chapters and sponsors a variety of educational activities, including conferences and seminars. It also funds and publishes research and publishes *MANAGEMENT ACCOUNTING*, a monthly referred journal with a circulation of 97,000.

2. O'Donnell, *Relationship Between Reported Earnings and Stock Prices in the Electric Utility Industry*, *THE ACCOUNTING REVIEW*, January 1965 at 135.

public utilities for the period 1949 through 1961. He determined that accounting policy can affect stock price. His second study³ produced the same result. On the other hand, Edward L. Summers⁴ studied the effect of investment tax credit, interperiod tax allocation, and funds flow statements of stock prices in the airline industry. He found no statistically significant impact. George J. Staubus,⁵ in studying the association between several accounting variables and stock price, concluded that investors found income before depreciation to be more useful than income after depreciation.

An experimental study conducted by R. E. Jensen⁶ concluded that variations in depreciation and inventory accounting policies affected the opinions of analysts. W. J. Burns, Jr.,⁷ concluded that inventory policy does not affect pricing, advertising, and production decisions. The three studies, conducted by T. R. Dyckman,⁸ reached conflicting results. His first study concluded that variations in inventory methods can influence financial statement readers, a conclusion that is diametrically opposed to that reached by Burns. Dyckman's second study⁹ concluded that inventory method does not influence decision-making. His third study,¹⁰ however, reached the opposite conclusion. Dopuch and Ronen,¹¹ using students for financial statement readers, concluded that inventory policy does influence readers of financial statements. Mlynarczyk's study¹² compared the flow-through and deferred method of tax accounting. He reached the same conclusion. Falk and Ophir¹³ found that investors react both to the content

3. O'Donnell, *Further Observation on Reported Earnings and Stock Prices*, THE ACCOUNTING REVIEW, July 1968 at 549.

4. Summers, *Observation of Effects of Using Alternative Reporting Practices*, THE ACCOUNTING REVIEW, April 1968 at 257.

5. Staubus, *The Association of Financial Accounting Variables with Common Stock Values*, THE ACCOUNTING REVIEW, January 1965 at 119.

6. Jensen, *An Experimental Design for Study of Effects of Accounting Variations in Decision Making*, JOURNAL OF ACCOUNTING RESEARCH, Autumn 1966 at 224.

7. Bruns, *Inventory Valuation and Management Decisions*, THE ACCOUNTING REVIEW, April 1965 at 345.

8. Dyckman, *On the Investment Decisions*, THE ACCOUNTING REVIEW, April 1964 at 285.

9. Dyckman, *The Effects of Alternative Accounting Techniques on Certain Management Decisions*, JOURNAL OF ACCOUNTING RESEARCH, Spring 1964 at 91.

10. Dyckman, *On the Effects of Earnings—Trends, Size and Inventory Valuation Procedures in Evaluating a Business Firm*, RESEARCH IN ACCOUNTING MEASUREMENT 175-185 (Jaedicke, et. al. eds. 1966).

11. Dopuch & Ronen, *The Effects of Alternative Inventory Valuation Methods*, JOURNAL OF ACCOUNTING RESEARCH, Autumn 1973 at 191.

12. Mlynarczyk, *An Empirical Study of Accounting Methods and Stock Prices*, EMPIRICAL RESEARCH IN ACCOUNTING: SELECTED STUDIES, 1969 at 63.

13. Falk & Ophir, *The Influence of Differences in Accounting Policies on Investment*

and form of disclosure.

There have been at least three major studies dealing with the effect of accounting policies on bank lending decisions. In 1970, T. N. Jain conducted a study¹⁴ of the effects of tax accounting methods on bank lending decisions. In that study, financial data for two companies were sent to 110 lending officers at large banks. The high response rate of 67 percent (74 responses) was due, in part, to the fact that most of the bankers were also contacted personally, and a follow-up letter was sent to the remainder. The financial data for the two companies was identical in all respects, except for the method of accounting for income taxes. One company used comprehensive allocation and one used partial allocation. The study found that the method of accounting for income taxes does influence lending decisions.

The second study¹⁵ was conducted by A. A. El-Arabi in 1977. In this study, two sets of financial statements were prepared for two hypothetical firms. The data for both sets of financial statements were identical except for the accounting principles used. One set used the FIFO method of inventory valuation and the straight-line depreciation method. The second used LIFO and the sum of the years digits method. The sample consisted of two groups of banks. Group one, consisting of 332 banks (of which 37 percent responded), was sent the FIFO/straight-line data. Group two, consisting of 331 banks (of which 32 percent responded), was sent the LIFO/sum of the years digits data. The study found that the accounting principles used did affect the lending decision.

The third study was conducted by M. M. El-Maksy.¹⁶ In this study, 1,050 loan officers from 240 banks were divided into seven groups. Responses were received from 267 lenders representing 143 banks. The first group received financial data containing no FASB No. 33 information. Each of the treatment groups received one piece of FASB No. 33 data (either constant dollar, current cost, or both) which was either presented in the notes to the financial statements or

Decisions," JOURNALS OF ACCOUNTING RESEARCH, Spring 1973 at 108. See also Falk, "Use of Financial Statements for Investment Decision Making in Israel's Companies," Ph.D. dissertation, Hebrew University (1971).

14. Jain, "A Study of the Effects of Alternative Methods of Accounting for Income Taxes on Term Loan Decisions," Ph.D. dissertation, Michigan State University (1970).

15. El-Arabi, "The Effects of Accounting Alternatives on Lending Decisions of Commercial Bankers," Ph.D. dissertation, the Louisiana State University and Agricultural and Mechanical College (1977).

16. El-Maksy, "A Theoretical and Empirical Investigation of the Effects of FASB Statement No. 33 on Lending Decisions," Ph.D. dissertation, City University of New York (1983).

on the face of the income statement and notes. The study found that lending decisions for the control group were not significantly different statistically from that of the treatment groups, although lending decisions for the treatment groups were less favorable than those for the control groups in 94 percent of the cases. The groups receiving constant dollar data made lending decisions that were not significantly different statistically from those decisions made by lenders who received current cost data.

III. RESULTS OF THE FIRST COMMERCIAL LENDING OFFICER SURVEY

A. *Background*

In a prior study,¹⁷ telephone interviews were conducted with more than twenty individuals representing several facets of the software industry. Eighteen individuals representing seven software manufacturers and internal users were personally interviewed on company premises. A questionnaire survey was also mailed to executives of software manufacturing companies. Information obtained from the interviews and mail survey revealed that a significant number of software company executives were of the opinion that the inability to reflect software expenditures on the balance sheet adversely affected their ability to raise debt or equity capital.

To test the validity of this view, two separate surveys employing different research methodologies were constructed and were mailed to different groups of commercial lending officers. A third survey was mailed to financial analysts.

B. *The First Commercial Lending Officer Survey*

Two questionnaires and related financial data were mailed to two separate groups of commercial lending officers,¹⁸ chosen from banks with assets in excess of \$500 million. Data for Campbell Corporation, a company that capitalizes software costs with net income of \$2,552,107, \$2,213,154, and \$903,131 for 1982, 1981, and 1980, respectively, was sent to 174 commercial lending officers. Campbell

17. R. McGee, *ACCOUNTING FOR SOFTWARE COSTS* (1984).

18. A similar methodology was employed by El-Arabi in "The Effects of Accounting Alternatives on Lending Decisions of Commercial Bankers," Ph.D. dissertation, the Louisiana State University and Agricultural College (1977). See also El-Maksy, "A Theoretical and Empirical Investigation of the Effects of FASB Statement No. 33 on Lending Decisions," Ph.D. dissertation, City University of New York (1983), where a slightly different methodology was employed.

Corporation is a real, publicly held software company. The financial data sent was authentic. Only the company name was changed.

Data for Edwards Corporation was sent to 174 other commercial lending officers. The only difference between Edwards and Campbell was that Edwards expenses all software costs. Edwards had a \$2,103,000 net loss in 1982 and net income of \$498,000 and \$301,000 in 1981 and 1980, respectively.

Twenty responses were received for Campbell and thirty for Edwards. Responses to the individual questions are summarized below.

QUESTION ONE:

How large a line of credit would your bank be willing to grant to this Company?

TABLE ONE

<u>Campbell Corporation</u>		<u>Edwards Corporation</u>	
<u>Number of Responses</u>	<u>Amount</u>	<u>Number of Responses</u>	<u>Amount</u>
5	\$ -0-	17	\$ -0-
1	750K-1M	1	1M
1	1M	1	3-6M
1	1-2M	1	4M
2	2m	1	4.5M
3	3M	6	5M
1	3.5M	1	6M
1	4.5M	1	10M
2	5M	1	10-15M
2	7M		
1	7.5M		
Total	<u>20</u>	<u>30</u>	

Table One summarizes the responses. Twenty-five percent of the commercial lending officers responding to the Campbell questionnaire would not grant a line of credit, compared to 57 percent of those responding to Edwards. For those who would grant a line of credit, the amounts ranged as high as \$7.5 million for Campbell and \$15 million for Edwards. A test of variability determined that the responses received from the two groups was not statistically different at the 10 percent level, even though the reject rate for Edwards (57 percent) was more than twice that for Campbell (25 percent). Perhaps this result is due to the low response rate and high degree of variability.

QUESTION TWO:

If your bank would not approve a line of credit for this company, please indicate why the application would be denied.

The banks denying Campbell's application responded as follows:

1. Too many questions raised in financial statements, i.e., purpose of line (to replace other bank?), carry receivables, carry proprietary software costs? We also question the quality of the financial statements: there is no cash/funds flow, no reconciliation of net worth, no amortization of property and equipment on the income statement, capitalized leases do not appear to be on the balance sheet and write-off of computer costs (in 4-6 years) does not appear to be taking place on P & L.

2. All needs appear to be permanent financing. It is impossible to determine if a line can be repaid by the liquidation of short term assets.

3. Concerns: leverage, vulnerability of main product line in competitive environment; bulk of assets (computers and software) could become obsolete rapidly.

4. The application would be denied until further information concerning the following could be obtained: an accounts receivable aging, projections indicating future profitability, capital expenditures, and the direction of the company. This would include projected income statements and balance sheets. We would also need a recent interim statement and a sources and uses of funds statement dated December 31, 1982.

5. Interest expense on bonds will be 11 percent of \$20 million, or \$2.2 million, which would entirely deplete earnings based on 1982 figures.

The banks denying Edward's application responded as follows:

1. Prior to my bank venturing a decision regarding this company's ability to receive from us a line of credit and/or a term loan, more in-depth analysis would need to be made. Certainly, we would wish to view pro forma balance sheets (five years) and income statements (five years). The pro formas would aid us in obtaining some insight into the company's future financial needs and management objectives.

The tremendous sales growth that the company has enjoyed during the past five years has certainly been a contributing force in the company's need for external funds. The pro formas that the bank would require would aid us in determining how much of the external funds would be needed to support the increased receivables

and inventory (short term), and how much external funds would be needed to support the increase in fixed assets (long term).

If the company's projections reveal a continuation of the rapid sales growth, we could conclude that repayment of a portion of the external funds would not be repaid until the rate of sales growth declines. Of course, those funds that will support the receivables and inventory will be considered to be self-liquidating.

We would request a break out of the G & A expenses so as to better calculate the company's G & A trends. Depreciation expense is needed to better analyze the company's cash flow and to calculate more revealing ratios.

The company's sales growth and interest expenses were very important in the decline of profitability for the Edwards Corporation. Next year, the servicing of the debenture, interest and sinking fund will add additional strain to profitability.

2. There is a significant increase in long term subordinated convertible debt with sinking fund requirements of \$1.5 million. Long term debt should provide a sufficient operating fund for the near term. There is no explanation for the loss other than increased cost of goods sold.

3. The company is not generating sufficient cash to support its current financing costs.

4. (a) Nature of business; (b) operating deficiencies; (c) risk of upcoming year; (d) uncertain nature of accounts receivable, operating expenses, payable and subordination convertible debentures; (e) increasing international business.

5. In general, we do not make loans without first hand knowledge and assessment of management. In particular, it is not clear what the purpose of the line would be given their present abundance of cash resources.

6. (a) Severe operating loss due to excessive increases in expenses; (b) insufficient financial data regarding expenses; (c) heavy current and long-term credit obligations; (d) no knowledge of management and its ability; (e) no interim financial data for any portion of 1983.

7. (a) Revenue recognition methods; (b) product is subject to obsolescence without warning.

8. (a) The investment in the building is too much for the company to carry (interest plus depreciation); (b) the three year life on computers used until 1981 was too long and the company has not shown an operating profit since the change.

9. (a) Insufficient information; (b) source and application of funds statement for 1982 was not given; (c) value or potential future income in program library being developed, market penetration and

permanence for one to five years; (d) this company is highly leveraged, and if present liquidity is used, there will be no place to go except lender financial losses with no valuable assets to liquidate.

10. The company is unable to generate operating profit. Cash flow is inadequate. Speculation is company having to discount below costs to meet competition.

11. (a) Downward trend in savings; (b) no clear source of repayment; (c) no evident secondary source of repayment; (d) a \$6 million revolver is already in place.

12. There is a question as to the quality of receivables. An aging schedule would be helpful. The line of business makes the company a high risk venture.

13. The company is insolvent based on the times interest earned ratio. It is also highly leveraged. Declining profitability and insufficient cash flow add to this credit risk. The company also has future debt obligations that would further deter their ability to service their debt.

14. (a) Volatile industry; (b) weak operating earnings; (c) excessive fixed asset expansion for a company that does not have excess cash to allocate to fixed assets and the nature of which does not require ownership of land and buildings. The company can operate from leased facilities; (d) the company incurred operating losses that will be compounded by the interest expense on the additional debt; (e) evidence of unsound judgment on the part of management.

15. (a) Existing \$6 million line of credit; (b) deteriorating profits; (c) receivables collection.

16. Account receivable turnover is slow (over 100 days).

With an operating loss experienced in 1982, the company could be running into a situation of evergreen credit.

QUESTION THREE:

What rate of interest would you charge?

TABLE TWO

<u>Campbell Corporation</u>		<u>Edwards Corporation</u>	
<u>Number of Responses</u>	<u>Rate</u>	<u>Number of Responses</u>	<u>Rate</u>
5	N/A	16	N/A
1	11.00	1	11.00
1	11.25	4	12.00
1	11.58	1	12.63
2	12.00	1	12.75
1	12.22	1	12.78
1	12.50	1	13.16
1	12.78	4	13.33
1	13.00	1	15.00
1	13.06		
1	13.16		
2	13.33		
1	13.53		
1	13.75		
Totals	<u>20</u>	<u>30</u>	

Table Two summarizes the response to this question.¹⁹ Interest rates have been adjusted in order to account for compensating balances. A test of variability revealed that there was not a significant different (at the 10 percent level) between the rate charged to Campbell and that charged to Edwards. This finding concurs with that found in the Jain study.²⁰

QUESTION FOUR:

What additional terms would you impose?

19. The interest rate provided was adjusted to take into account any compensating balance that would be required. The prime rate was 11 percent at the time the questionnaire was mailed. The rate did not change until after all responses had been received.

20. Jain, *supra* note 14, at 271. Jain also found no difference between groups for compensating balances, minimum working capital, maximum additional debt, maximum dividends or maximum officers salaries. *Id.*

The response to this question varied widely, but included the following terms:

1. compensating balance ranging from 5-15 percent, and/or a commitment fee ranging from 1/8 percent to 1/2 percent;
2. credit line granted up to 60-75 percent of accounts receivable. Procure a monthly account receivable aging schedule;
3. loan secured by inventory or other assets, security agreement on property, equipment and/or receivables;
4. quarterly financial data with 90 day review;
5. convert line to term loan with 3-5 year payout;
6. annual cleanup with zero balance for 30-60 days;
7. restrictions on capital expenditures, lease obligations, working capital, dividends, additional debt, bonuses, officers' salaries, and changes in ownership; and
8. require owner guarantee, approval of subordinated debt holders, and key insurance.

QUESTION FIVE:

If, instead of a line of credit, the company had applied for a \$2,000,000, five year loan, would your bank grant the loan?

TABLE THREE

	<u>Campbell Corporation</u>		<u>Edwards Corporation</u>	
	<u>Number of Responses</u>	<u>Percentage</u>	<u>Number of Responses</u>	<u>Percentage</u>
Yes	10	50%	9	30%
No	10	50%	21	70%
Totals	<u>20</u>		<u>30</u>	

Table Three summarizes the responses to this question. Although a larger percentage of lending officers said they would lend

to Campbell than to Edwards, the chi-square test indicated that this difference was not significant at the 10 percent level.

QUESTION SIX:

Do you consider this loan to be extremely risky, risky, marginal, safe, or extremely safe?

TABLE FOUR A

Do you consider this loan to be:	Campbell Corporation		Edwards Corporation	
	Number of Responses	Percentage	Number of Responses	Percentage
Extremely risky	2	10%	7	23%
Risky	4	20	12	40
Marginal	5	25	9	30
Safe	9	45	2	7
Extremely safe	0	0	0	0
Totals	<u>20</u>		<u>30</u>	

TABLE FOUR B

	Points	Campbell Corporation		Edwards Corporation	
		Number of Responses	Points	Number of Responses	Points
Extremely risky	5	2	10	7	35
Risky	4	4	16	12	48
Marginal	3	5	15	9	27
Safe	2	9	18	2	4
Extremely safe	1	0	0	0	0
		<u>20</u>	<u>59</u>	<u>30</u>	<u>114</u>
Weighted Average		2.95		3.80	
		Marginal		Risky	
Median		Marginal		Risky	
Mode		Safe		Risky	

Table Four shows that bankers tended to view a loan to Edwards as more risky than one to Campbell. The chi-square test indicated that this difference was significant at the 10 percent level.

QUESTION SEVEN:

If your bank would not approve this term loan, please indicate why the application would be denied.

The responses to this question were similar to those responses to question two.

QUESTION EIGHT:

What rate of interest would you charge for the term loan?

TABLE FIVE

<u>Campbell Corporation</u>		<u>Edwards Corporation</u>	
<u>Number of Responses</u>	<u>Percentage</u>	<u>Number of Responses</u>	<u>Percentage</u>
10	N/A	21	N/A
1	11.75	2	12.00
2	12.11	1	12.50
3	13.33	2	13.33
1	13.50	1	13.68
1	13.61	1	13.89
1	13.89	2	15.29
<u>1</u>	14.69	<u>—</u>	
Totals	<u>20</u>	<u>30</u>	

Table Five summarizes the responses to this question.²¹ The average interest rate charged to Campbell is 13.165 percent, compared to 13.473 percent for Edwards. Although the rate charged Edwards is somewhat higher than that charged Campbell, the difference is not significant at the 10 percent level.²²

QUESTION NINE:

What compensating balance would be required?

Ten banks suggested a willingness to grant a term loan to Campbell. Eight would require a compensating balance, ranging from 5 to 20 percent and averaging 9.7 percent. Of the nine banks that would

21. The interest rate given was adjusted to take into account any compensating balance that would be required. The prime rate was 11 percent at the time the questionnaire was mailed, and the rate did not change until after all responses had been received.

22. Jain, *supra* note 14, at 271.

lend to Edwards, six would require a compensating balance, ranging from 5 to 15 percent and averaging 10.6 percent.

QUESTION TEN:

What restrictions on working capital would be imposed?

Of the ten bankers that would lend to Campbell, three would require a \$10 million minimum in working capital. One would require \$5 million. One bank would require that the current level (\$10,614,400) be maintained. Others would require a current ratio of 1.5:1 to 2.1:1 or a working capital/asset ratio of 18 percent or a working capital/revenue ratio of 35 percent. One bank would place no restrictions on working capital. Responses for the Edwards Corporation were similar. Tables Six and Seven provide a more detailed breakdown of the responses for both companies.

QUESTION ELEVEN:

How much additional debt would the company be allowed to incur?

Five of the ten Campbell responses would not allow additional long-term debt without bank approval. Two banks would allow an additional \$1 million. One bank would allow an additional \$5 million. Two banks would require a debt/worth ratio of 2.0:1.

Of the nine Edwards responses, six would not permit additional debt. One bank would not place a restriction on additional debt. Another would allow \$2.5 million for each of the next five years. One would require a 3.0:1 debt/worth ratio.

QUESTION TWELVE:

What is the maximum annual dividend that could be paid?

Four of the ten Campbell responses would not permit any dividends. One bank would impose no restrictions on dividends. Other respondents would allow dividends ranging from 10 to 50 percent of net income or cash flow.

Four of the nine Edwards responses would not permit dividends. Two others would permit dividends up to 25 percent of earnings. One would require a debt/worth ratio 2.5:1.

QUESTION THIRTEEN:

What additional terms would you impose?

Most bankers would impose additional terms for both Campbell

and Edwards. The additional terms are summarized in Tables Six and Seven.

TABLE SIX
Banks Approving a Term Loan for Campbell Corporation
Summary of Restrictions

Bank No.	Question 10 Working Capital	Question 11 Additional Debt	Question 12 Maximum Annual Dividend	Question 13 Additional Terms
1	\$5 million minimum	\$5 million	None	Term loan agreement with usual covenants.
2	\$10 million minimum	No long term debt of more than \$1 million without bank approval	No response	Liability to stockholders equity ratio not more than 1.8:1; No capital expenditures in excess of \$1 million or purchase of treasury stock without bank approval
3	\$10 million minimum	None without permission, including additional leases	None without permission	Negative pledge on assets, no change in management, limit capital expenditures and lease commitments
4	Not to go below current levels (\$10.6M)	None without bank approval	None without bank approval	Net worth and liquidity tests
5	Working capital as a percentage of assets should be maintained at 18%	Debt to worth ratio should not exceed 2.0 in 1983, 1.8 in 1984, 1.7 in 1985 and should continue to improve over the 5 year period	10% of net profit after taxes	Secured by fixed assets
6	Current ratio 1.5:1, working capital 35% of revenues	Debt to worth not to exceed 2.0:1, no additional long-term debt without approval	10% of net cash flow from operations after long-term debt service	No net increase to fixed assets; courseware construction costs net balance maintained at 45% (or less) of annual dollar sales rate; quarterly financials
7	\$10 million minimum	Up to \$1 million more, depending on use and need	None	No dividends or outside debt financing without prior approval. Not to be used for working capital
8	Maintain current ratio (2.2:1)	None	30% net after tax	None stated
9	No restriction	Depends on purpose and ratio trends	No restrictions	Should be secured, guaranty of 20% stockholders, loan agreement, key insurance if necessary
10	Minimum current ratio 2.0:1	None	50% of net income	None stated

TABLE SEVEN
Banks Approving a Term Loan for Edwards Corporation

Summary of Restrictions

Bank No.	Question 10 Working Capital	Question 11 Additional Debt	Question 12 Maximum Annual Dividend	Question 13 Additional Terms
1	Required quick ratio 1.75:1, current ratio 2.00:1	None	None	Security agreements on property and equipment, accounts receivable; \$2 million guarantee of payment
2	Minimum current ratio of 2:1 and working capital minimum \$10 million	None without approval	None	Profitability within a predetermined time frame; actual performance tracking closely to projected, maximum leverage; negative pledge on assets; no other debt; dividends; no treasury stock purchases; no asset dispositions or mergers or acquisition unless prior approval given;
3	1.2 current ratio, \$8 million minimum	None	One year after profitable operations, 25% of after-tax earnings	Limit capital expenditures; leverage covenants-step up over course of loan; earnings recapture;
4	\$7 million minimum	No other senior debt or capital leases without prior bank approval	None, without prior bank approval	Net worth floor of \$11 million; no capital expenditures above a certain amount without approval; security, possibly, if no good evidence of turnaround
5	Maintain 1.75:1 current ratio	None without bank approval	Dependent on earnings and cash flow	No borrowings from other sources; no pledging of any assets; minimum working capital ratio; maximum debt/worth ratio; quarterly financial statements
6	\$7 million minimum	No restriction stated	No restriction stated	At the end of 2 years, if the company has not returned to profitable operations, the bank would reserve the right to restructure debt repayment
7	1.75:1 current ratio \$5 million minimum	\$2.5 million each year for next 5 years	25% of earnings	Maximum debt/worth ratio of 2.00:1
8	Secured by fixed assets with an 80% advance	Must maintain debt/worth ratio of 3.00:1	Allowed if debt/worth ratio remains 2.5:1 or below	None stated
9	1.75:1 current ratio \$7.5 million minimum	No additional debt without bank approval other than normal trade payables	None	Security agreements on accounts receivables, all machinery, equipment, furniture, fixtures, 2nd lien on all previously encumbered fixed assets; restrictive covenants on capital accounts

QUESTION FOURTEEN:

The bank's total assets are :

	<u>Campbell</u>	<u>Edwards</u>
More than \$5 billion	5	4
\$5 billion or less	<u>15</u>	<u>26</u>
	<u>20</u>	<u>30</u>

A correlation between bank size and other questionnaire responses was not made due to the small sample size.²³

QUESTION FIFTEEN:

The person completing this questionnaire has had—years experience in a loan department .

	<u>Campbell</u>	<u>Edwards</u>
Two or less	9	9
More than two, less than five	0	3
Five to ten	8	11
More than ten	2	6
No response	<u>1</u>	<u>1</u>
	<u>20</u>	<u>30</u>

A correlation between years of loan experience and other ques-

23. The El-Arabi study found that bank size was not a significant factor in the lending decision. See *supra* note 15.

tionnaire responses was not made due to the small sample size.²⁴

QUESTION SIXTEEN:

The position of the person completing this questionnaire is:

	<u>Campbell</u>	<u>Edwards</u>
Senior or executive vice president or other senior officer	0	4
Vice president, secretary or treasurer	5	11
Assistant vice president or other assistant officer	12	13
Not an officer	<u>3</u>	<u>2</u>
	<u>20</u>	<u>30</u>

A correlation between title and other questionnaire responses was not made due to the small sample size.²⁵

QUESTION SEVENTEEN:

The office where this questionnaire is being completed is located in the:

	<u>Campbell</u>	<u>Edwards</u>
Northeast	1	8
South	10	9
North Central	6	8
West	2	4
No response	<u>1</u>	<u>1</u>
	<u>20</u>	<u>30</u>

A correlation between geographic location and other questionnaire responses was not made due to the small sample size.²⁶

24. The El-Maksy and El-Arabi studies concluded that the experience is not a significant factor in the loan decision making process. *See supra* notes 15 and 16.

25. The El-Arabi study found that rank was a significant factor in the lending decision. *See supra* note 15. El-Maksy found, however, that sex and membership in a banking association were not significant factors. *See supra* note 16.

26. The El-Arabi and El-Maksy studies both concluded that the bank's geographic location is not a significant factor in the lending decision. El-Maksy also found that the amount of time spent responding to the questionnaire was insignificant. *See supra* notes 15 and 16.

C. *Summary and Conclusions*

Companies that do not capitalize software costs find it more difficult to raise debt capital than companies that do capitalize such costs. This fact was brought to the author's attention during the course of the interviews with executives from software vending companies. It was reinforced by the responses received on the software vendor questionnaire, which revealed that a substantial proportion of software vendor company executives feel that not capitalizing software costs hinders their ability to raise debt capital. Furthermore, the response to question six of the banker questionnaire indicated that bank lending officers view a loan to a company that expenses software costs as more risky than a loan to a company that capitalizes software costs.

Although insignificant at the ten percent level, some of the responses to the other questions in the banker questionnaire lead in the same direction. Seventeen of thirty (57%) lending officers would not grant a line of credit to Edwards, compared to five out of twenty (25%) for Campbell. Question two revealed that one of the main reasons for the loan officer's reluctance to lend was the weak operating performance of Edwards. Several banks mentioned that performance as a reason for not lending to Edwards. None of the bankers that received the Campbell questionnaire gave poor operating performance as a reason for not granting a line of credit to Campbell. Campbell showed 1982 net income of \$2,552,107, due to its software accounting policy, compared to a 1982 loss of \$2,103,000 for Edwards.

For those banks that would lend to Campbell or Edwards, the rate of interest charged, although not significant at the ten percent level, is higher for Edwards than for Campbell.

		<u>Campbell</u>	<u>Edwards</u>
Q-3	Interest rate charged for a line of credit	12.566%	12.760%
Q-8	Interest rate charged for a term loan	13.165	13.473

When asked whether the bank would grant a \$2 million term loan, half of the Campbell bankers responded in the affirmative compared to 30 percent for Edwards.

The interviews and questionnaire responses point to one conclusion. A company that capitalizes software costs will find it easier to raise debt capital than will a company that expenses these costs.

IV. RESULTS OF THE SECOND COMMERCIAL LENDING OFFICER SURVEY

A. *Methodology*

The sample for this survey consisted of 1,002 commercial lending officers, obtained randomly from a population of 5,700. The list was purchased from a company that sells mailing lists. Five data packets were returned as undeliverable. Forty-five usable responses were received. The response ratio was 4.5 percent. The material sent to commercial lending officers included²⁷ a cover letter, questionnaire, postpaid return envelope, modified annual reports for both Campbell Corporation and Edwards Corporation, an accounts receivable aging schedule for both companies, and a listing of certain key financial ratios²⁸ for both companies.

B. *Findings*

The responses can be subdivided into four distinct categories. Of the forty-five usable responses received, twenty-eight (62.2%) favored Campbell Corporation over Edwards Corporation.²⁹ Five responses (11.1%) favored Edwards. Six responses (13.3%) indicated they would treat the companies equally, but did not give any reason for similar treatment. Six responses (13.3%) indicated they would treat the companies equally, because a company's software accounting policy would not influence their lending decision.³⁰ These subdivisions

27. Jain, *supra* note 14.

28. The ratios chosen for inclusion in this list were selected partially based on a study that listed the ratios most frequently used by lending officers. See El-Maksy, "A Theoretical and Empirical Investigation of the Effects of FASB Statement No. 33 on Lending Decision," Ph.D. dissertation, City University of New York at 74-76 (1983).

29. Campbell Corporation capitalized certain software expenditures. Edwards Corporation expensed all software costs.

30. One of the deficiencies of using the research methodology employed in this survey is that some bankers may state that their decision to lend or not to lend is not influenced by a company's accounting policy, whereas their actual lending decisions may be so influenced. This deficiency can be avoided by sending different data to two different groups of bankers, as was done in the first survey. This approach may also be criticized, however, because the samples surveyed are different. Such criticism may be overcome by sending data for both companies to the same sample, as was done in the second survey.

are summarized in Table Eight.

TABLE EIGHT
Bankers Favoring Campbell and Edwards

	<u>Number of Responses</u>	<u>Percentage</u>
Bankers favoring Campbell	28	62.2%
Bankers favoring Edwards	5	11.1
Campbell and Edwards treated equally—no reason given	6	13.3
Campbell and Edwards treated equally because accounting policy should not affect the lending decision	<u>6</u>	13.3
Total responses	<u><u>45</u></u>	

QUESTION ONE:

Question one asked whether the bank would grant a \$3 million, five year unsecured loan to Campbell and Edwards. The responses revealed that 27 bankers (61.4%) would grant the loan to Campbell, but only 12 bankers (27.3%) would do so for Edwards. Seventeen of forty-five bankers responding to this question (38.6%) would not grant the loan to Campbell, compared to nearly three out of four (72.7%) who would deny a loan request by Edwards.

TABLE NINE

	<u>Campbell</u>		<u>Edwards</u>	
	<u>Number of Responses</u>	<u>Percentage</u>	<u>Number of Responses</u>	<u>Percentage</u>
Yes	27	61.4%	12	27.3%
No	<u>17</u>	<u>38.6</u>	<u>32</u>	<u>72.7</u>
	<u><u>44</u></u>	<u><u>100.0%</u></u>	<u><u>44</u></u>	<u><u>100.0%</u></u>

QUESTION TWO:

This question asked what interest rate would be charged. Of the 20 lending officers that gave a rate for both Campbell and Edwards, eleven (55%) would charge Campbell a lower rate, one (5%) would charge Edwards a lower rate, and eight (40%) would charge both

companies the same rate. Rates given varied from prime to prime plus four percent. Rates charged Edwards were generally higher than those charged Campbell. The weighted average rate for Campbell was prime plus 1.2%, compared with prime rate plus 1.9% for Edwards. The median rates for Campbell and Edwards were prime plus 1.0% and prime plus 1.75%, respectively. The mode for each company was prime plus 1%.

TABLE TEN A

	<u>Number of Responses</u>	<u>Percentage</u>
Lower rate for Campbell	11	55%
Lower rate for Edwards	1	5
Same rate for both	<u>8</u>	<u>40</u>
	<u>20</u>	<u>100</u>

TABLE TEN B

<u>Rate Charged Prime Plus</u>	<u>Campbell</u>		<u>Edwards</u>	
	<u>Number of Responses</u>	<u>Percentage</u>	<u>Number of Responses</u>	<u>Percentage</u>
0	1	3.1%	-	-
0.5	9	28.1	3	13.6
1.0	10	31.3	5	22.7
1.5	2	6.2	3	13.6
2.0	8	25.0	4	18.2
2.5	1	3.1	3	13.6
3.0	1	3.1	-	-
3.5	-	-	1	4.5
4.0	-	-	<u>3</u>	13.6
	<u>32</u>		<u>22</u>	
Weighted Average Rate	Prime plus 1.2%		Prime plus 1.9%	
Median Rate	Prime plus 1.0%		Prime plus 1.75%	
Mode	Prime plus 1.0%		Prime plus 1.0%	

QUESTION THREE:

Question three asked, "How would you rate this loan for each corporation?" Responses indicated that a loan to Campbell Corporation was generally regarded as safer than a loan to Edwards Corpora-

tion. Only one banker (2.3%) rated a loan to Campbell as being extremely risky, compared with thirteen bankers (31.7%) who classified the Edwards loan as extremely risky. Twelve bankers (27.9%) rated a loan to Campbell as risky, compared with sixteen (39.0%) for Edwards. A loan to Campbell was considered marginal by thirteen bankers (30.2%), compared with ten (24.4%) for Edwards. A Campbell loan was considered safe by seventeen bankers (39.5%), compared with two bankers (4.9%) who viewed an Edwards loan as safe. No bankers rated either Campbell or Edwards as extremely safe. The average response indicated that a loan to Campbell would be considered marginal, whereas a loan to Edwards would be considered risky.

TABLE ELEVEN A

	Campbell		Edwards	
	Number of Responses	Percentage	Number of Responses	Percentage
Extremely risky	1	2.3%	13	31.7%
Risky	12	27.9	16	39.0
Marginal	13	30.2	10	24.4
Safe	17	39.5	2	4.9
Extremely safe	<u>0</u>	0.0	<u>0</u>	0.0
Totals	<u>43</u>		<u>41</u>	

TABLE ELEVEN B

	Campbell			Edwards	
	Points	Number of Responses	Points	Number of Responses	Points
Extremely risky	5	1	5	13	65
Risky	4	12	48	16	64
Marginal	3	13	39	10	30
Safe	2	17	34	2	4
Extremely safe	1	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
		<u>43</u>	<u>126</u>	<u>41</u>	<u>163</u>
Weighted Average		2.93		3.98	
		Marginal		Risky	
Median		Marginal		Risky	
Mode		Safe		Risky	

QUESTION FOUR:

This question asked, "On a scale of 0% to 100%, what are the chances that the corporation will default on the loan, if made?" Of the 41 bankers responding to this question for both Campbell and Edwards, twenty-four (58.5%) rated Campbell as the better risk, six bankers (14.6%) rated Edwards as safer, and eleven bankers (26.8%) rated the corporations as equal risks.

Of the forty bankers giving percentages (one respondent answered "same"), Campbell was given a 23.5% chance of default, compared with 46.2% for Edwards. The median chance of default was 15% for Campbell and 50% for Edwards. The mode for 5% for each company.

TABLE TWELVE A

	<u>Number of Responses</u>	<u>Percentage</u>
Lower percentage chance of default for Campbell	24	58.5%
Lower percentage chance of default for Edwards	6	14.6
Same chance of default for Campbell and Edwards	<u>11</u>	26.8
	<u><u>41</u></u>	

TABLE TWELVE B

<u>Percentage Chance of Default</u>	<u>Campbell</u>		<u>Edwards</u>	
	<u>Number of Responses</u>	<u>Percentage</u>	<u>Number of Responses</u>	<u>Percentage</u>
0 - 10	19	47.5%	10	25.0%
11 - 20	4	10.0	3	7.5
21 - 30	6	15.0	2	5.0
31 - 40	3	7.5	3	7.5
41 - 50	2	5.0	2	5.0
51 - 60	1	2.5	4	10.0
61 - 70	3	7.5		5.0
71 - 80	0	-	6	15.0
81 - 90	0	-	5	12.5
91 - 100	<u>2</u>	<u>5.0</u>	<u>3</u>	<u>7.5</u>
	<u><u>40</u></u>	<u><u>100.0%</u></u>	<u><u>40</u></u>	<u><u>100.0</u></u>

TABLE TWELVE C

Approximate Percentage Chance of Default	Campbell		Edwards	
	Number of Responses	Points	Number of Responses	Points
5	19	95	10	50
15	4	60	3	45
25	6	150	2	50
35	3	105	3	105
45	2	90	2	90
55	1	55	4	220
65	3	195	2	130
75	0	0	6	450
85	0	0	5	425
95	2	190	3	285
	<u>40</u>	<u>940</u>	<u>40</u>	<u>1,850</u>
Weighted Average Chance of Default	23.5%		46.2%	
Median Chance of Default	15%		50%	
Mode Chance of Default	5%		5%	

QUESTION FIVE:

This question attempted to determine whether additional terms, such as restrictions on working capital, further debt, dividends, and officers' salaries, would be more restrictive for one of the companies. Of the 43 commercial lending officers responding to this question, three (7.0%) would have more restrictive terms for Campbell, twenty (46.5%) would have more restrictive terms for Edwards, and twenty (46.5%) would have equally restrictive terms.

TABLE THIRTEEN

	Number of Responses	Percentage
More restrictive for Campbell than for Edwards	3	7.0%
Less restrictive for Campbell than for Edwards	20	46.5
Equally restrictive	<u>20</u>	46.5
	<u>43</u>	

QUESTION SIX:

This question gave the following proposition: "For purposes of this question only, assume that your bank had only \$5 million available to lend. How much would be lent to Campbell? Edwards?" Twenty-four of the 38 bankers that responded to this question (63.2%) indicated they would lend more to Campbell. Four bankers (10.5%) would lend more to Edwards. Ten bankers (26.3%) would lend equal amounts to both companies.

TABLE FOURTEEN

	<u>Number of Responses</u>	<u>Percentage</u>
Bankers who would lend more to Campbell	24	63.2%
Bankers who would lend more to Edwards	4	10.5
Bankers who would lend the same amount to both companies	<u>10</u>	<u>26.3</u>
	<u>38</u>	<u>100.0</u>

QUESTION SEVEN:

This question asked, "If, instead of a term loan, Campbell and Edwards each applied for an unsecured line of credit, what is the maximum line your bank would be willing to grant to Campbell? Edwards?" Of the 37 lending officers responding to this question, twenty (54.1%) would grant a larger line to Campbell, two (5.4%) would grant a larger line to Edwards, and fifteen (40.5%) would grant an equal line to both companies.

Fifteen bankers (40.5%) would grant a line of credit to both companies. Thirteen (35.1%) would grant a line of credit to Campbell but not to Edwards. None of the bankers would grant a line to Edwards but not Campbell. Nine respondents (24.3%) would not grant a credit line to either company.

TABLE FIFTEEN A

	<u>Number of Responses</u>	<u>Percentage</u>
Bankers who would grant a larger line to Campbell	20	54.1%
Bankers who would grant a larger line to Edwards	2	5.4
Bankers who would grant the same line of credit to Campbell and Edwards	<u>15</u>	<u>40.5</u>
	<u>37</u>	<u>100.0</u>

TABLE FIFTEEN B

	<u>Number of Responses</u>	<u>Percentage</u>
Bankers granting a line of credit to both Campbell and Edwards	15	40.5%
Bankers granting a line of credit to Campbell but not to Edwards	13	35.1
Bankers granting a line of credit to Edwards but not to Campbell	0	0
Bankers not granting a line of credit either to Campbell or Edwards	<u>9</u>	24.3
	<u>37</u>	

QUESTION EIGHT:

This question was stated as follows: "If your bank would treat applications by Campbell and Edwards differently, please indicate the reasons for the different treatments. Feel free to use more space if needed."

Banks favoring Campbell Corporation cited the following reasons:

1. Campbell obviously has much better control of operating costs and has taken steps to position itself for the future.
2. Edwards' ratios in debt to worth are disturbing and his situation is deteriorating by the years indicated. The Edwards situation should indicate additional caution.

3. Both loans are marginal and should not be made.
4. I would work toward securing both credits. Edwards would have to be secured in order to extend the credit; however, with negative cash flow it still would be a questionable credit.
5. The Edwards statement would need additional explanation to credit committees because of the policy of expensing rather than capitalizing software development costs, causing higher variation of earnings and a loss in the most recent fiscal year.
6. Campbell has had two profit years in excess of \$2 million. Edwards performance is very marginal. Edwards would be incapable of repaying the loan from earnings.
7. Edwards' loss and deficit net worth would preclude our helping them.
8. If lent, both loans would have to be secured. We would need more information on the reasons for Edwards' loss.
9. I would have to recommend declining the loan request for both companies based on the following reasons:
 - (1) The highly speculative use of funds.
 - (2) The research and development nature of operations.
 - (3) The five year unamortized term of loan.
 - (4) The unsecured status.
 - (5) Declining TNW trend and increasing leverage.
 - (6) Declining profit margins and loss posted by the Edwards Corporation.
 - (7) Concentration of net worth in fixed assets.

These companies . . . could possibly be serviced by asset-based lending if they would agree to loans against a formula based on accounts receivable. Right now, Edwards Corporation does not have the cash flow to service the debt in a single payment sum and while Campbell Corporation does show sufficient cash flow, they are looking at a five year term before repayment and who's to say what cash flow would be like at the end of five years . . . ? Another option for the bank, if we were to lend to Campbell Corporation, would be to lend against an escrow account established with our trust department, into which amortization expense is deposited, invested for additional income, and then used to repay our loan at the end of the five-year term.

10. Because of the \$6 million unsecured line, additional unsecured money would be hard to obtain. Edwards would only be granted on a secured basis. Treatment would be different because of the expenses, profits, capital and other ratios.

11. Difference in net worth, debt to worth, all profitability ratios, ability to service, repayment requested.
12. Trends look much better for Campbell.
13. Campbell appears to have better liquidity than Edwards at present and would be more able to service long term debt.
14. Profitability and debt position of Campbell make it the much more desirable loan. Edwards debt position makes them more susceptible to rate risk.
15. Management of operating costs in an expanding market appears to be handled much better by Campbell than Edwards. Generated cash flow more evident by Campbell.
16. These credits would scare the hell out of upper management. My bank would not consider the loan request on unsecured terms. (This respondent would grant a loan to Campbell but not Edwards.)
17. Campbell is profitable and has positive cash flow to service debt. Edwards is unprofitable, cash flow does not service current charges, and expenses are rising faster than sales on a percentage basis.

Banks favoring Edwards Corporation gave the following reasons:

1. Different methods of accounting for computer software and educational courseware construction costs.
2. Companies are identical except that Edwards is more conservative. I assume the IRS accepts both capitalization and direct expense.
3. Due to the nature of software industry, expensing as incurred is more prudent.
4. In today's every-changing software business Edwards' policy of charging existing software costs to operations results in a more conservative financial presentation rather than capitalizing them as does Campbell.

Bankers treating both companies equally cited the following reasons:

1. I do not make loans based only on financial statements and, therefore, cannot definitively answer the questions. I would weigh each statement the same in my decision but would trust information from Edwards more than that from Campbell.
2. Edwards uses a more conservative approach to recording the software costs by expensing rather than capitalizing. This,

however, is still not enough to grant Edwards the loan instead of Campbell. Both loans are risky due to the nature of the equipment and the uncertainty of its marketability. Neither company in our opinion deserves unsecured credit.

3. No difference. Different accounting for construction costs creates the impression that Campbell earns a profit when the construction cost puts it into a loss position. Rapid growth and expansion a mixed blessing. Would require marketable security to both borrowers.
4. Generally the same. Balance sheets only reflect different handling of software. Campbell may find more credit available due to statement looks, thereby weakening current financial strength.
5. Would treat both requests the same as the only difference between the two appears to be accounting treatment of software. Not enough information to decline or approve loan. To do properly your questionnaire takes more time than is proper to request. This could make any results invalid.
6. Although Campbell Corporation's financial statements might appear more favorable at first glance, an experienced loan or credit officer will recognize the differences in the two companies' financial statements are due to the decision that (1) accounting treatment for Campbell Corporation and another accounting treatment for Edwards Corporation.
7. No difference—same basic economic facts—merely different accounting presentations.

One banker who did not return the survey telephoned the National Association of Accountants to say that he felt the questionnaire was an insult to his intelligence. He stated that anyone who gave a different response did not read the material.

QUESTION NINE:

The bank's total assets are:

TABLE SIXTEEN A

	<u>Number of Responses</u>	<u>Percentage</u>
More than \$5 billion	6	13.6%
\$5 billion or less	<u>38</u>	<u>86.4</u>
	<u>44</u>	<u>100.0</u>

TABLE SIXTEEN B

	Banks having assets of	
	More than \$5 billion	\$5 billion or less
Bankers favoring Campbell	2	26
Bankers favoring Edwards	1	4
Bankers treating Campbell and Edwards equally—no reason given	2	4
Bankers treating Campbell and Edwards equally because accounting policy should not affect the lending decision	<u>1</u>	<u>4</u>
	<u>6</u>	<u>38</u>

QUESTION TEN

This question asked the respondent to indicate the number of years lending experience. Half of the respondents (50.0%) had six years experience or less. A few (4.8%) had more than 25 years lending experience.

TABLE SEVENTEEN

<u>Years Experience</u>	<u>Number of Responses</u>	<u>Percentage</u>
0 to 3	10	23.8%
3+ to 6	11	26.2
6+ to 10	8	19.0
10+ to 15	5	11.9
15+ to 25	6	14.3
More than 25	<u>2</u>	<u>4.8</u>
	<u>42</u>	<u>100.0%</u>

QUESTION ELEVEN:

Responses to this question, inquiring about the position of the respondent, indicated that senior officers represented the smallest portion of the sample (6.7%), followed by non-officers (13.3%), officers (35.6%) and assistant officers (44.4%).

TABLE EIGHTEEN

	<u>Number of Responses</u>	<u>Percentage</u>
Senior or executive vice president or other senior officer	3	6.7%
Vice president, secretary or treasurer	16	35.6
Assistant vice president or other assistant officer	20	44.4
Not an officer	<u>6</u>	13.3
	<u>45</u>	

QUESTION TWELVE:

Lending officers responding to this survey were geographically located in the Northeast (22.2%), South (22.2%), North Central (44.4%) and West (11.1%).

TABLE NINETEEN

	<u>Number of Responses</u>	<u>Percentage</u>
Northeast	10	22.2%
South	10	22.2
North Central	20	44.4
West	<u>5</u>	11.1
	<u>45</u>	

V. RESULTS OF THE FINANCIAL ANALYSTS SURVEY

In order to determine whether software accounting policy has an effect on stock price, a questionnaire was sent to 803 financial analysts. Two hundred ninety-seven names were purchased from the Financial Analysts Federation and consisted of financial analysts that specialize in the computer or software industry. The remaining 506 analysts were chosen at random from a listing of financial analysts that are members of the New York City chapter of the Financial Analysts Federation. Forty-eight data packets were returned as undeliverable. Fifteen usable responses were received, for a response rate of about 2 percent. Each analyst received the financial data for both Campbell

Corporation and Edwards Corporation, a listing of ratios, a questionnaire, cover letter and postpaid return envelope.

Of the fifteen usable responses received, five favored Campbell, four favored Edwards, one had mixed feelings, and five analysts treated Campbell and Edwards equally. The background information needed to complete the questionnaire was as follows:³¹

The two fictitious companies to be compared in this study are Campbell Corporation and Edwards Corporation. The setting of the study is as follows: Suppose you are to consult an individual investor, named George Madison, with respect to his personal investment portfolio. Mr. Madison is a vice president of a large manufacturing corporation and is a resident of your city. He is acquainted with Andrew Monroe, the president of Campbell Corporation and Lyndon Adams, the president of Edwards Corporation. Mr. Madison confronts you with an annual report for each of these companies and asks you to compare them as investment alternatives. Mr. Madison is 32 years old, single, and in excellent health. His salary provides more than enough income for his present needs. He has \$50,000 in cash which he desires to invest in common stocks, preferably stocks which appear likely to have substantial price growth over the next five to ten years.

QUESTION ONE:

If Mr. Madison wants to allocate \$30,000 between these two investment alternatives, what proportions would you recommend for each common stock offering? (The percentage allocable to Campbell and Edwards is supposed to total 100%). Three of 13 respondents (23.1%) would allocate more money to Campbell, five (38.5%) would allocate more to Edwards and five (38.5%) would allocate the same percentage to each company.

31. A similar approach was taken by Robert E. Jensen in his doctoral dissertation at Stanford University. That study investigated relationships between security evaluation and portfolio selection and alternative inventory valuation and depreciation methods in financial reporting. See Jensen, *An Experimental Design for Study of Effects of Accounting Variations in Decision Making*, JOURNAL OF ACCOUNTING RESEARCH, Autumn 1966 at 224.

TABLE TWENTY

<u>Respondent</u>	<u>Campbell</u>	<u>Edwards</u>
1	0%	0%
2	80	20
3	70	30
4	-	-
5	75	25
60	100	
7	25	75
8	25	75
9	0	100
10	0	100
11	-	-
12	50	50
13	50	50
14	50	50
15	50	50

	<u>Number of Responses</u>	<u>Percentage</u>
More to Campbell	3	23.1%
More to Edwards	5	38.5
Same amount to each	<u>5</u>	38.5
	<u>13</u>	

QUESTION TWO:

Given only the information provided, what value or price share would you place on the common stock of these two companies at their annual report dates?³²

Of the thirteen analysts responding to this question, six (46.2%) would assign a higher price to Campbell stock than to that of Edwards, three (23.1%) would assign a higher price for Edwards stock, and four (30.8%) would assign the same price to each stock. The mean and median price for Campbell stock were both higher than

32. The financial information for Campbell Corporation for 1981-1983 is actually the financial data for Comserv Corporation for 1980-1982. The dates were changed for purposes of this study to make the financials appear more current. The financials for Edwards Corporation for 1981-1983 actually reflect what Comserv Corporation's financials for 1980-1982 would have actually appeared if Comserv had expensed all software costs as incurred. Comserv's actual stock price for 1982 fluctuated between \$11.50 and \$19.75. For 1981, it fluctuated between \$9.17 and \$16.00.

those for Edwards, and the most commonly assigned price for each stock was \$10. The range between high and low price was greater for Campbell (\$30) than for Edwards (\$17.50).

TABLE TWENTY-ONE

<u>Respondent</u>	<u>Price Per Share</u>	
	<u>Campbell</u>	<u>Edwards</u>
1	\$ 7.00	\$ 3.00
2	5.50	\$ 1.50
3	\$ 20.00	\$ 10.00
4	\$ 10.00	\$ 10.00
5	\$ 8.00	\$ 3.00
6	\$ 5.00	\$ 7.50
7	\$ 10.00	\$ 12.00
8	\$ 1.00	\$ 2.50
9	\$ 10.00	\$ 6.00
10	\$ 31.00	\$ 19.00
11	-	-
12	\$ 5.00	\$ 5.00
13	\$ 10.00	\$ 10.00
14	\$ 4.00	\$ 4.00
15	-	-
Median	\$ 9.73	\$ 7.19
Median	\$ 8.00	\$ 6.00
Mode	\$ 10.00	\$ 10.00
Range	\$1.00 \$31.00=\$30.00	\$1.50 \$19.00=\$17.50

	<u>Number of Responses</u>	<u>Percentage</u>
Higher price for Campbell	6	46.2%
Higher price for Edwards	3	23.1
Same price for both	4	30.8
	<u>13</u>	

QUESTION THREE AND FOUR:

This question asked the respondent to rank an investment in Campbell and Edwards stock according to risk. The majority of respondents rated an investment in Campbell to be either extremely risky (35.7%) or risky (42.9%). Most analysts also considered an investment in Edwards to be either extremely risky (21.4%) or risky

(50.0%). If point values are assigned for degrees of risk, Campbell (4.07) is found to be slightly more risky than Edwards (3.86). More than one-third of the respondents (35.7%) rated Campbell as riskier than Edwards, or just as risky (35.7%). A somewhat smaller group (28.6%) thought Edwards to be the riskier investment.

TABLE TWENTY-TWO

	Campbell		Edwards		
	Number of Responses	%	Number of Responses	%	
Extremely risky	5	35.7%	3	21.4%	
Risky	6	42.9	7	50.0	
Marginal	2	14.3	3	21.4	
Safe	1	7.1	1	7.1	
Extremely safe	0		0		
	<u>14</u>		<u>14</u>		
	Points	Number of Responses	Points	Number of Responses	Points
Extremely risky	5	5	25	3	15
Risky	4	6	24	7	28
Marginal	3	2	6	3	9
Safe	2	1	2	1	2
Extremely safe	1	0	—	0	—
		<u>14</u>	<u>57</u>	<u>14</u>	<u>57</u>
Weighted Average		4.07		3.86	
		Number of Responses	Percentage		
Campbell is more risky		5	35.7%		
Edwards is more risky		4	28.6		
Both are equally risky		5	35.7		

QUESTION FIVE:

Three respondents (20.0%) thought Campbell would experience more rapid growth than Edwards over the next five years. Two analysts (13.3%) thought Edwards would grow faster. An equal number of analysts either thought the companies would experience equal growth (33.3%) or had no opinion (33.3%).

TABLE TWENTY-THREE

	<u>Number of Responses</u>	<u>Percentage</u>
Campbell	3	20.0%
Edwards	2	13.3
Equal growth	5	33.3
No opinion	<u>5</u>	33.3
	<u>15</u>	

QUESTION SIX:

When asked to state reasons for the answers given to the first five questions, the analysts favoring Campbell Corporation said:

1. While Edwards sales have grown considerably, its margins indicate poor management, its cash flow has gone negative and it has already borrowed more than its worth. Campbell is in better control of its expenses and has some positive trends with decent rates of return, even though it is leveraged.
2. While little information is given as to the state of the art of either company, its place in the software industry and/or other pertinent management factors, this questionnaire appears to me to be constructed around whether I would invest in a computer software company which either expenses or capitalizes R&D construction costs. This has not been resolved yet by the SEC of ADAPSO. However, based on the paucity of data presented, I still favor Campbell Corporation for its long-term solvency as well as leverage factors plus software.
3. Looks like same company with different accounting (Conserv?). Hard to assign value without knowing details of "construction costs"—for example, will there continue to be 30% of revenues in next couple of years? However, the stock market would probably value Campbell at a higher price since it is showing 'profits'.
4. Since an 'investment' (speculation would be more accurate) must be made, prudence dictates that the great bulk of the money ought to be applied to the 'safest' equity, Campbell. If Edwards grows more, not all is lost. Earnings are better than no earnings. In the absence of earnings, book value must suffice as a basis for pricing; this is the basis behind Question 2 (\$8 for Campbell, \$3 for Edwards). In the absence of a satisfactory asset base, the only predicate for investment is least risk (P-E) or pure guesswork; so much for Questions 3 and 4 (Campbell—

risky, Edwards—extremely risky). Answer to Question 5 (no opinion) implies strongly that there is not satisfactory basis for projection of growth.

Analysts preferring Edwards Corporation had the following comments:

1. Difference turns on capitalizing (Campbell) or expensing software development and purchases (Edwards).

Write-off understates earnings initially since it ignores the investment aspect. Later earnings are overstated since development costs were charged earlier.

Edwards will be worth higher P/E since no surprise write-off of unsuccessful products and company likely more soberly view—so easier to finance growth.

Both companies are making heavy up-front software R&D investments—somewhat masking a profitable business. Needs analyses of sales and profits generated by earlier software R&D expenditures for evaluation of both companies.

2. Capitalization of software expense at Campbell Corporation lowers quality of reported earnings. Any changes (short-term) in technology could subject Campbell to write-offs. Also, debt ratios are high given poor quality of earnings. Both companies are small and subject to large company competition.
3. It remains to be seen whether the cost increase incurred to buy revenue increases in 1983 will prove profitable. That will require (a) strong further revenue growth and/or (b) ability to cut cost without impairing revenue and (c) ability to maintain existing business. For each company I judge underlying earnings may roughly be \$2.50. I give Edwards a 10X multiple and Campbell a 4X because Edwards' cost capitalization increases risk and dampens upward earnings response if things go well. If either software product is unique, and is going to be a barn burner, these financials don't show it.
4. Question 1 through 4 reflect Campbell earnings being overstated while Edwards understated—but Wall Street pricing reflecting current reported EPS. This questionnaire is incredibly stupid—the development capitalization issue deserves a more intelligent consideration by the accounting and investment communities.

The responded one analyst was mixed. Although 100% of investment funds (Question 1) would be allocated to Edwards, Campbell's stock (\$31) is valued higher than Edwards' (\$19). Campbell is consid-

ered to be an extremely risky investment, whereas an investment in Edwards is considered safe. Campbell is expected to experience more growth over the next five years. The following reasons were given by this analyst for these responses:

Question 1 (Allocate 100% to Edwards)

While Campbell appears to be growing more rapidly and has stronger profitability ratios, its accounting is responsible for jazzing up the numbers vis a vis Edwards. Like many companies in the software group (CMSV, AAC) Campbell's financials are built on a house of cards.

Question 2 (Stock Price—Campbell \$31; Edwards \$19)

Because investors do not discriminate regarding quality of earnings, Campbell's record appears more solid. Thus, I have arbitrarily assigned a value to Campbell of five times revenues which is how the market values similar companies. I have accorded a lower valuation—three times revenues to Edwards. Likewise, investors using some factor of book value to value the investment would start off on a higher base with Campbell, whose book value would include \$15 million in software plus education construction costs as assets, whereas Edwards books none.

Questions 3 & 4 (Campbell-extremely risky; Edwards-safe)

For reasons highlighted in Question 1 and Question 2 above, I consider Campbell's accounting to fly in the face of conservatism, which oftentimes catches up with companies. I feel the low quality of its earnings impairs its suitability as an investment, especially when one is looking out five to ten years. It could be suitable for a short-term trader with a six month time horizon.

Question 5 (Campbell will experience more growth)

In the early stages of product development, Campbell will be deferring more of its costs, while Edwards will be expensing its costs. Therefore, Campbell will appear to have more rapid earnings growth.

General Comment:

Do not agree with Campbell's method of accounting for what it calls "computer software and educational courseware construction costs." Construction implies product development, not enhancements, and I question the suitability under FASB No. 2 in deferring these costs.

Some analysts treated both companies equally. Their comments were as follows:

1. Companies are the same except for accounting treatment of computer software and education courseware construction costs.

(Campbell is) Riskier than Edwards because more aggressive accounting, but this issue is being debated—amortization and capitalization may more clearly portray match of income vs. expense but is more open to abuse.
2. Obviously the two companies are the same except for the accounting treatment of software development cost. The accounting treatment has little bearing on the fundamental worth of a company. The two are of equal but low value. Both are risky, unprofitable and unseasoned.
3. These companies are identical as to business and their potential growth rates. The financial statements are identical except that Edwards writes off its courseware construction costs and Campbell amortizes them. For most investors this is misleading but for evaluation purposes both companies must be valued using comparative accounting methods. While Edwards accounting is more conservative than Campbell's, both companies should have the same stock price.
4. Obviously the same company using different accounting rules.
5. You are asking questions about an industry that defies analysis on basis of accounting. As an advisor, given risk assumption of Mr. Madison, I'd suggest buying both.

Several analysts returned the questionnaires blank, or with minor notations. Their comments were as follows:

1. While this questionnaire is very short, the work involved in fully answering it will take more time than either my company or myself is willing to invest.
2. A quick review of the materials you sent me recently leads me to estimate this would require about three hours of work to read and analyze the material. I would be willing to do this but can't justify it to my firm. They would probably want me to charge a standard consulting fee, but since this would run around \$300/hour I doubt that this is feasible.
3. Not enough information. Stocks are and should not be evaluated on financial statements alone—management, reputation, etc., is critical.
4. I am sorry you are asking me to give you two or three hours of

my time—at \$100 an hour that's \$300 you would owe me . . . I suggest you hire some financial analysts as consultants.

5. You have omitted too much information to develop any reasonable values for two companies which differ only in how certain costs are either expensed or amortized. Even with other important data, this valuation process is involved and time-consuming (and expensive at my rate of \$120 per hour).

If you wanted to know how analysts view capitalization vs. expensing, you should have designed your survey that way.

QUESTION SEVEN:

Eight of the fifteen respondents (53.3%), when asked if they considered themselves to be specialists in the software industry, responded in the affirmative.

TABLE TWENTY-FOUR

Yes	<u>Number of Responses</u>	<u>Percentage</u>
Yes	8	53.3%
No	<u>7</u>	<u>46.7</u>
	<u>15</u>	<u>100.0</u>

VI. THE VIEWS OF SOFTWARE MANUFACTURING COMPANY EXECUTIVES ON THE EFFECT OF SOFTWARE ACCOUNTING POLICY ON BANK LENDING DECISIONS

Material for this part was taken from a survey of software vending company executives.³³

QUESTION TWELVE:

Table 25 summarizes the views of the private and public companies regarding the effect of software accounting policy on the ability to raise capital.

A slight majority of private companies disagreed with the statement. However, the public companies disagreed with the statement by a margin of 4 to 1.

33. See McGee, *supra* note 17.

TABLE TWENTY-FIVE³⁴

The inability to include software costs on the balance sheet adversely affects your ability to raise capital.

	<u>Number of Responses</u>	<u>Percentage</u>
<u>Private Companies</u>		
Agree	12	36.4%
Disagree	17	51.5
No opinion	4	12.1
Firms not responding	<u>4</u>	
	<u>37</u>	
<u>Public Companies</u>		
Agree	9	17.0%
Disagree	37	69.8
No opinion	<u>7</u>	13.2
	<u>53</u>	
<u>Public and Private Combined</u>		
Agree	21	24.4%
Disagree	54	62.8
No opinion	11	12.8
Firms not responding	<u>4</u>	
	<u>90</u>	

For those respondents who agreed with the statement, some of the reasons given were:

1. Companies that expense software construction costs are placed in an inferior position to those which capitalize such costs, especially in start-up situations.
2. Income producing assets need to be reflected on the balance sheet in order to fairly present the valuation of the company. A company would be grossly undervalued if these costs were expensed immediately.
3. Banks treat financial statements very literally.
4. Expensing software costs adversely affects current earnings.
5. Privately owned companies and companies that are not a subsidiary of a major conglomerate are at a definite disadvantage if they expense software costs.

34. Some of the responses included two answers.

Those who disagreed did so for the following reasons:

1. Ability to raise capital is impacted by future revenues from software development rather than the current balance sheet. Expensing software construction costs actually improves future profitability.
2. Other indicia of financial strength and leverage (e.g., revenue projections, business plan, etc.) are more meaningful than software accounting policy.
3. The amounts involved are not material.
4. The investment community offers a different multiple to companies that capitalize software. Bankers tend to delete software from the balance sheet.
5. The ability to raise capital is a function of profit and loss and growth experience. (But how is profit and loss affected by a firm's software accounting policy?)
6. The majority of assets on many vendor company balance sheets consists of cash and receivables.
7. The market is sophisticated enough to know the software business. Providers of capital to the software industry recognize special situations.
8. The cost of software on a balance sheet usually has no relationship to its value.

QUESTION THIRTEEN:

Table 26 shows that the vast majority of both private and public companies do not think the interest rate they must pay on borrowed capital is adversely affected by the inability to include software costs on the balance sheet.

TABLE TWENTY-SIX

The inability to include software costs on the balance sheet adversely affects the interest rate your company must pay to obtain capital.

	<u>Number of Responses</u>	<u>Percentage</u>
<u>Private Companies</u>		
Agree	4	10.8%
Disagree	24	64.9
No opinion	9	24.3
	<u>37</u>	
<u>Public Companies</u>		
Agree	5	9.8%
Disagree	38	74.5
No opinion	<u>8</u>	15.7
	<u>51</u>	
<u>Public and Private Combined</u>		
Agree	9	10.2%
Disagree	62	70.5
No opinion	17	19.3
	<u>88</u>	

QUESTION SIXTEEN:

Table 27 shows that the vast majority of both private and public firms do not think that expensing software construction costs adversely affects long-term growth. Private and public companies disagreed with the statement by ratios of two to one and five to one, respectively, which is even greater than the disagreement rate for Question 14, which asked basically the same question. On the other hand, a substantial minority of private firms (32.4%) do think that expensing software construction costs adversely affects long-term growth.

TABLE TWENTY-SEVEN

If all software development costs were expensed rather than capitalized, your company's long-term growth would be adversely affected.

	<u>Number of Responses</u>	<u>Percentage</u>
<u>Private Companies</u>		
Agree	12	32.4%
Disagree	24	64.9
No opinion	1	2.7
	<u>37</u>	
<u>Public Companies</u>		
Agree	8	16.0%
Disagree	38	76.0
No opinion	4	8.0
Firms not responding	<u>1</u>	
	<u>51</u>	
<u>Public and Private Combined</u>		
Agree	20	23.0%
Disagree	62	71.3
No opinion	5	5.7
Firms not responding	<u>1</u>	
	<u>88</u>	

VII. THE VIEWS OF SOFTWARE MANUFACTURING COMPANY EXECUTIVES ON THE EFFECT OF SOFTWARE ACCOUNTING POLICY ON STOCK PRICE AND GROWTH

Material for this section was taken from a survey of software vending company executives.³⁵

QUESTION FOURTEEN:

Table 28 summarizes the view of private and public companies on the relationship of software accounting policy on investment and growth. A small majority of private companies (51.4%) feel that investment and growth would be inhibited by requiring software construction costs to be expensed rather than capitalized. A substantial minority of public companies (33.3%) feel the same way. Overall, the

35. See McGee, *supra* note 17.

sample firms are about evenly divided on the issue, with 40.7 percent agreeing, 43.0 percent disagreeing and 16.3 percent having no opinion.

TABLE TWENTY-EIGHT

If all software development costs were expensed rather than capitalized, the level of these expenditures for software companies would have to be much lower; companies would be forced to put a cap on investment in new product programs in order to reflect good earnings performance to shareholders.

	<u>Number of Responses</u>	<u>Percentage</u>
<u>Private Companies</u>		
Agree	18	51.4%
Disagree	16	45.7
No opinion	1	2.9
Firms not responding	<u>2</u>	
	<u>37</u>	
<u>Public Companies</u>		
Agree	17	33.3%
Disagree	21	41.2
No opinion	<u>13</u>	25.5
	<u>51</u>	
<u>Public and Private Combined</u>		
Agree	35	40.7%
Disagree	37	43.0
No opinion	14	16.3
Firms not responding	<u>2</u>	
	<u>88</u>	

QUESTION FIFTEEN

Table 29 shows that private companies are about evenly split on the question of whether expensing software adversely affects stock price. Public companies disagree by a two to one margin. Overall, a majority of companies (56.8%) disagrees that expensing software adversely affects stock price.

TABLE TWENTY-NINE

If all software development costs were expensed rather than capitalized, the price of your company's stock, if publicly traded, would be adversely affected.

	<u>Number of Responses</u>	<u>Percentage</u>
<u>Private Companies</u>		
Agree	17	45.9%
Disagree	18	48.6
No opinion	2	5.4
	<u>37</u>	
<u>Public Companies</u>		
Agree	16	31.4%
Disagree	32	62.7
No opinion	3	5.9
	<u>51</u>	
<u>Public and Private Combined</u>		
Agree	33	37.5%
Disagree	50	56.8
No opinion	5	5.7
	<u>88</u>	