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Papers

Analysis of financial ratios commonly used by US lodging financial executives

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Abstract

Financial ratios have always been a valuable tool for lodging industry managers. Ratios allow the user to summarise and analyse related data to provide meaningful information for making decisions. The purpose of the present study was to identify commonly used ratios in the lodging industry and discover their importance level for lodging financial executives. Operating and Profitability ratios clearly stand out as the most important ratios for lodging managers. The study makes a contribution by educating managers about the range of ratios, their relative importance, and opportunities for using ratios not currently considered useful.

INTRODUCTION AND STUDY CONTEXT

As part of their analysis and financial reporting functions, financial executives need to provide critical decision making information, both internally to general managers, division heads and department heads, and externally to investors and financial institutions. A variety of ratios exists to assist financial managers to summarise and analyse the financial and operating data contained in the three major financial statements (balance sheet, income statement and statement of cash flows). Textbooks on managerial accounting and financial management have classified these ratios into five categories based on their purpose:^{1,2}

- liquidity ratios: ability of the company to meet short-term obligations
- solvency ratios: ability of the company to pay long-term financial obligations
- activity ratios: efficiency in management's use of the enterprise's assets
- profitability ratios: management's return on sales and investments
- operating ratios: management's efficiency with regard to its operation.

Ratio research

REVIEW OF RELEVANT LODGING INDUSTRY RATIO RESEARCH

In 1988 and 1989 two studies,^{3,4} identified ratios considered most useful by financial executives in the lodging industry, and analysed differences in the importance of ratios between various user groups such as corporate executives, bankers, owners and lodging general managers. The studies concluded that there were differences between these user groups. General managers found operating and activity ratios more useful than other user groups and owners considered profitability ratios more useful, whereas corporate executives found liquidity ratios more useful than other user groups, bankers ranked solvency ratios higher than others and financial executives ranked profitability, activity and operating ratios as most important.

Another set of lodging industry and general business studies have focused primarily on the application of ratio analysis. The studies include Temling's paper on measuring profitability.⁵ Schmidgall and Singh's practitioner-oriented paper interpreted and explained the use of key lodging industry ratios.⁶ Damitio *et al.*⁷ explained three methods of analysing financial statements, with ratio analysis being a key tool. Damitio *et al.*⁸ and Phillips⁹ performed a comprehensive review of the performance measurement literature and proposed a more holistic measurement framework for the hotel industry which would consider internal processes, environmental influences and strategic orientation. Finally, lodging industry consultants such as Smith Travel Research, Pannell Kerr Forster, and Horwath International regularly survey the industry to establish operating and profitability ratio comparables.

STUDY OBJECTIVES

While the previous ratio studies have focused on the definition, application, interpretation, measurement and benchmarks of performance and ratio usage between different user groups, the present study focuses on the degree of importance which financial executives attach to the 36 commonly used financial ratios. Furthermore, it extends the examination of the importance ranking across different hotel operating and ownership structures. The two objectives for this study are:

- to analyse differences in importance of the financial ratios most commonly used by US lodging financial executives
- to examine differences in importance of commonly used financial ratios between the hotel ownership and operating structures (independent hotels, franchised hotels, management-company-operated hotels and chain-owned and operated hotels).

METHODOLOGY

A study sample of 500 lodging financial executives were randomly selected from a directory of hospitality financial and technology professionals (HFTP). This resulted in 81 usable responses, which is a response rate of 16.2 per cent. Approximately 90 per cent of the

respondents were financial executives working in independent (34 per cent), franchise (13 per cent), management company (17 per cent) and chain-owned and operated (12 per cent) organisations.

The questionnaire was divided into three sections: a profile of the respondents and their organisation, frequency and standards used to evaluate ratios, and importance, and frequency of usage — this paper presents only results regarding the importance variables. The survey instrument had primarily closed ended questions using mainly an ordinal level of measurement. The measurement scale was a six point semantic differential, measuring importance and frequency of usage. The instrument was pre-tested on a small group of lodging financial executives before the final mailing. The data were analysed in SPSS (a statistical software package) and the findings presented using descriptive statistics and rank order.

ANALYSIS OF RESULTS AND DISCUSSION

The analysis and discussion which follow summarise the mean responses based on a five point scale importance scale ranging from 5 (indicating a crucial ratio) to 1 (indicating an unimportant ratio). Each of the 36 ratios analysed received an importance ranking within the five categories:

- liquidity ratios
- solvency ratios
- activity ratios
- profitability ratios
- operating ratios

Importance of liquidity ratios

Table 1 summarises the importance of liquidity ratios by lodging executives. In general, executives consider liquidity ratios important (mean score 3.14). The two most important liquidity ratios for financial executives are accounts receivable turnover and average collection period. Both had mean scores of about 3.5, indicating usefulness ranging from important to very important.

Two of the liquidity ratios in this study, accounts receivable turnover and current ratio, were compared with Schmidgall's 1988 study on the usefulness of financial ratios.¹⁰ In 1988, financial executives gave accounts receivable turnover ratio a mean score of 4.08 (indicating very important) as compared to 3.55 in the present study (between important and very important). The current ratio received a mean score of 3.20 (slightly over average importance) in the former study, while the mean score in this study was 2.78 (slightly less than important). These importance rankings have remained reasonably consistent across the 11-year period.

The respondents did not rank current and acid test ratios as high as the accounts receivable ratios, even though they are directly related. A reduction or increase in accounts receivable directly affects the two coverage ratios by raising or lowering current assets.

**Cash flow measures
are very important**

Table 1: Importance of liquidity ratios

Liquidity ratios	Calculation	Overall mean	Importance rank
AR turnover	Total revenue/average accounts receivable	3.55	1
Average collection period	365/accounts receivable turnover	3.48	2
Operating cash flow to average current liability	Operating cash flow/average current liabilities	2.81	3
Current ratio	Current assets/current liabilities	2.78	4
Acid test	Cash, marketable securities, notes receivable and accounts receivable/current liabilities	2.72	5
Total		3.14	

Scale: Crucial 5 Very important 4 Important 3 Somewhat important 2 Unimportant 1 No opinion 0

Interpreted this way, these two categories of ratios are 'cause-effect' ratios, where a change (cause) in accounts receivable impacts (effect) on current and acid test ratios. Specific actions (ability to collect receivables) ultimately affect current and acid test ratios. Accounts receivable ratio refers to a specific asset that needs to be carefully monitored to ensure the conversion to cash. This may offer an alternative explanation for its popularity.

While the results do not show much difference in the importance of liquidity ratios across ownership and operating structures (Table 2), franchise executives, management companies and chain operators tend to give more importance to operating cash flow ratios (mean 3.55 and 3.0 respectively). In addition, while the current and acid test ratios received an overall low score, there were two exceptions. Financial executives in chain operations considered the current ratio important (mean 3.25), while franchise executives considered the acid test ratio as important (mean 3.0). A final point of interest is that executives at chain owned hotels considered all liquidity ratios with the exception of the acid test ratio as important (mean 3.0 to 3.87)

Importance of solvency ratios

In general, financial executives of individual hotels did not appear to be very interested in the degree of debt financing and their

Table 2: Importance of liquidity ratios by ownership and operating structure

Liquidity ratios	Independent	Franchise	Management contract	Chain owned
AR turnover	3.24	3.60	4.0	3.87
Average collection period	3.08	3.60	3.92	3.87
Operating cash flow to average current liabilities	2.66	3.55	3.0	3.0
Current	2.73	2.77	2.18	3.25
Acid test	2.59	3.0	2.0	2.83

Scale: Crucial 5 Very important 4 Important 3 Somewhat important 2 Unimportant 1 No opinion 0

Table 3: Importance of solvency ratios

Solvency ratios	Calculations	Overall mean	Importance rank
Debt-equity	Total liabilities/total owners' equity	2.64	1
Solvency	Total assets/total liabilities	2.61	2
Operating cash flow-total Liabilities	Operating cash flows/average total liabilities	2.58	3
Times interest	Earnings before interest and taxes/interest expense	2.55	4
Fixed charge	EBIT + lease expense/interest and lease expense	2.46	5
Total		2.59	

Scale: Crucial 5 Very important 4 Important 3 Somewhat important 2 Unimportant 1 No opinion 0

Lukewarm reception to solvency ratios

hotel's ability to meet its long-term debt obligations (Tables 3 and 4). As noted in Table 3, the overall mean scores for the five solvency ratios studied was less than 3.0. While executives ranked the debt to equity ratio as the most important among the five ratios, there was not much difference in the overall mean between the first and fifth-ranked ratios (Mean 2.64–2.46).

The low rankings across all solvency ratio categories (Table 3) was not surprising, as these ratios are primarily of interest to bankers, owners and corporate financial executives. Furthermore, this study focused on property-level financial executives as opposed to a corporate fiscal officer. An alternate explanation for the low ranking may be a lack of awareness or understanding of these ratios.

In Schmidgall's 1988 study,¹¹ financial executives gave solvency ratios an overall score of 3.09 (indicating average importance). The importance of this ratio has not changed much over the interim period, as the results of the current study are reasonably similar to the former study. Given the similarity of results during these two periods one may infer that changes in lodging industry capital structure (ratio of debt to equity) and the lodging industry's inability to meet debt service do not necessarily make this ratio important to the fiscal officer at a hotel property. US hotels in general were more highly leveraged and the rates of lodging industry loan defaults were higher during the time of the study in 1988, as opposed to the environment during the present study.¹² Finally, increased industry profitability during the study period, the significant reduction in interest costs over the 11-year period and the lack of leased properties in the study sample may partially explain why many executives consider number of times interest earned and fixed charge coverage ratios as less important than other solvency ratios.

To the extent that these ratios measure the ability of a hotel to meet long-term obligations and cover annual interest expenses, these findings may also prompt the financial stakeholders (money partners) to re-evaluate their reporting requirements from property financial controllers. The authors feel that the reporting of these

Table 4: Importance of solvency ratios by ownership and operating structure

Solvency ratios	Independent	Franchise	Management contract	Chain owned
Debt-equity	2.65	2.55	2.25	2.83
Solvency	2.63	2.62	2.33	2.33
Operating cash flow-total liabilities	2.72	2.88	2.25	2.40
Times interest	2.31	3.0	2.14	2.5
Fixed charge	2.35	2.66	2.43	2.0

Scale: Crucial 5 Very important 4 Important 3 Somewhat important 2 Unimportant 1 No opinion 0

ratios is particularly important for hotels that are highly leveraged and during periods when the industry is facing a shortage of capital. Combined with this, it is also recommended that property controllers should be involved in the capital structure (debt and equity) decisions related to their properties.

Importance of activity ratios

This category of ratios measures management's effectiveness and efficiency in using its resources. The overall mean score of 3.62 indicates that the executives consider this a very important ratio group. As expected, in general most of the ratios in this category scored high on the importance scale. Paid occupancy and average occupancy per room were the two most important ratios, with an overall mean score of 4.56 and 4.18 respectively (Table 5). Employee turnover, daily seat turnover, multiple occupancy and inventory turnover followed this, with mean scores ranging from 3.31 to 3.72.

When analysing these ratios across ownership and operating structures, it was noted that there is not much difference in the importance scores of these ratios. The notable exception was employee turnover ratio. Executives at management companies and chain owned properties considered it more important (mean 4.0 and 4.22) as compared with independent and franchise operations (Table 6).

Table 5: Importance of activity ratios

Activity ratios	Calculation	Overall mean	Importance rank
Paid occupancy	Paid rooms occupied/available rooms	4.56	1
Average occupancy per room	Number of guests/number of rooms occupied	4.18	2
Employee turnover	Number of terminations/average number of full-time equivalent employees	3.72	3
Daily seat turnover	Number of covers per day/number of seats in restaurant	3.52	4
Multiple occupancy	Rooms occupied by two or more people/rooms occupied	3.34	5
Inventory turn	Cost of food used/average food inventory	3.31	6
Fixed asset turn	Total revenue/average property and equipment (fixed assets)	2.20	7
Total		3.62	

Scale: Crucial 5 Very important 4 Important 3 Somewhat important 2 Unimportant 1 No opinion 0

Table 6: Importance of activity ratios by ownership and operating structure

Activity ratios	Independent	Franchise	Management contract	Chain owned
Paid occupancy	4.41	4.00	4.92	4.75
Average occupancy per room	4.20	4.00	4.31	4.00
Employee turnover	3.19	3.33	4.00	4.22
Daily seat turnover	3.63	3.70	3.53	3.75
Multiple occupancy	3.45	3.10	3.33	3.11
Inventory turn	3.30	3.37	3.85	2.89
Fixed asset turn	2.28	2.22	2.12	2.14

Scale: Crucial 5 Very important 4 Important 3 Somewhat important 2 Unimportant 1 No opinion 0

The measurement of the effectiveness with which hotel assets such as room space (three occupancy-related ratios) and dining room space (seat turnover) are utilised is clearly important to financial executives. This is consistent with Schmidgall's 1988 study¹³ that ranked occupancy percentage as very important. It is interesting to observe that while average occupancy per room and multiple occupancy percentage measure essentially the same activity, financial executives in the current study ranked the former higher than multiple occupancy percentage. This preference may be the result of one ratio being intuitively more informative than the other ratio.

While most management companies and chain-owned and operated hotels expressed the crucial nature of employee turnover ratio, it was noted that independent hotels and franchise companies ranked this ratio relatively low on the importance ranking. Cross tabulation of the results revealed that this was due to 11 (13.6 per cent) independent and franchise executives ranking this as somewhat important, unimportant and no opinion. Interestingly, nine of these 11 executives worked at mid-priced or economy hotels. In this tight labour market, it was not expected to find anyone who would view this ratio as unimportant. The authors suspect that in this segment of the industry there needs to be a better understanding of this vital monitoring ratio.

The speed with which inventory is turned over impacts on the amount of cash tied up in physical goods and space costs associated with storage. It was noted that in both this study and the previous study conducted in 1988¹⁴ the food inventory ratio scored relatively low as compared to the other ratios in this category. The executives ranked it sixth out of the seven ratios, with a mean score of 3.31. In the 1988 study, the respondents categorised this ratio between important and average importance. An individual analysis of the 17 hotels that scored this ratio between somewhat important and no opinion revealed that the same hotels scored the food cost percentage as very important to crucial. A possible explanation of this anomaly is that a subset of the industry may not have a full understanding of the cost savings associated with proper inventory

controls. Specifically, this may indicate an incomplete understanding of costs associated with dead stock, spoilage, theft, economic order quantity (EOQ) and other issues associated with achieving optimal inventory levels. Alternatively, inventory may be a minor part of the costs at these hotels and therefore considered inconsequential to the overall results.

While the capital-intensive nature of the lodging industry makes the fixed asset turnover ratio a logical choice for being important and a regularly referenced ratio, it received a uniformly low score across all segments of the industry. The lack of interest expressed by the executives may be due to difficulty with its interpretation. The denominator of this ratio is the average book value of property and equipment for a period, while the numerator represents total revenue. The combination of a continuously depreciating asset base and steady or improving revenue (numerator in ratio) results in a high asset turnover. However, what does that indicate? Is this a better use of assets or a reflection of ageing assets in proportion to revenue? Furthermore, as hotels invest increasing amounts in new technology to stay competitive and improve service levels, there may be minimum, lagged, or no direct impact on revenues. This would result in a lower turnover ratio, which in this case is meaningless.

Importance of profitability ratios

Return on sales and investment

The majority of the profitability ratios scored high on the importance scale (overall category mean 3.56). As noted in Table 7 executives considered profit margin and operating efficiency as the most important profitability ratios. Return on assets and gross return on assets both had mean scores of less than 3.0 and ranked sixth and seventh in importance.

Chain-owned hotels (assumed to be often part of a public company) considered the price-earnings ratio crucial (mean 5.0) while independent hotels considered it less than important (mean 2.6).

Both the 1988¹⁵ and the present studies scored profit margin and

Table 7: Importance of profitability ratios

Profitability ratios	Calculation	Overall mean	Important rank
Profit margin	Net income/total revenue	4.47	1
Operating efficiency	Income after undistributed operating expenses/total revenue	3.97	2
Price-earnings ratio	Market price per share/earnings per share	3.28	3
Earnings per share	Net income/average common shares outstanding	3.24	4
Return on equity	Net income/average owners' equity	3.20	5
Return on assets	Net income/average total assets	2.81	6
Gross return on assets	Earnings before interest and taxes/average total assets	2.77	7
Total		3.56	

Scale: Crucial 5 Very important 4 Important 3 Somewhat important 2 Unimportant 1 No opinion 0

Table 8: Importance of profitability ratios by ownership and operating structure

Profitability ratios	Independent	Franchise	Management contract	Chain owned
Profit margin	4.26	4.00	4.84	4.87
Operating efficiency	3.64	4.00	4.62	4.50
Price-earnings ratio	2.60	3.00	3.14	5.00
Earnings per share	3.00	2.80	3.00	3.00
Return on equity	3.15	3.25	3.25	3.33
Return on assets	2.68	3.25	2.67	2.57
Gross return on assets	2.67	3.33	2.88	2.66

Scale: Crucial 5 Very important 4 Important 3 Somewhat important 2 Unimportant 1 No opinion 0

operating efficiency as very important and crucial ratios. However, this study further qualified the results by showing that management companies and chain owned and operated hotels considered these ratios even more important than franchise or independent hotels (Table 8). As these two ratios (especially operating efficiency) measure the efficiency of management's performance, these results were expected.

As in the case with the asset turnover ratio, the return on asset (ROA) ratio was expected to receive a higher score due to its ability to measure the return on assets employed by the hotel. A very low ROA may result from inadequate profits or excessive assets. On the other hand, a high ROA may suggest that older assets require replacement in the near future or that the hotel needs to add new assets to support growth in revenues. Lack of interpretation of the ratio may explain its low ranking score. In order to promote the use of this ratio, it is recommended that companies specifically include this ratio as part of a property financial executive's evaluation criteria.

Even though the mean scores indicated that return on equity was important (3.20) to the respondents, only about half these respondents considered it an important ratio. Cross tabulation of the results showed that 35 per cent of the respondents who scored this ratio less than important worked at independent hotels and 25 per cent were with management companies. While it is easy to understand why a financial executive with a management company may not consider this ratio important, one can only assume that respondents with the independent hotel have a corporate entity (investor or partnership entity) that monitors this ratio.

Importance of operating ratios

Financial executives were unanimous in ranking operating ratios as very important and crucial. While average daily rate had the highest mean score (4.67), the narrow band of agreement on ten of the 12 ratios in this category (mean 4.67 to 4.15) makes it difficult to state that one ratio is more important than the other ratios (Table 9).

The strong agreement across all ownership and operating

Table 9: Importance of operating ratios

Operating ratios	Calculation	Overall mean	Importance rank
ADR	Total room revenue/number of rooms sold	4.67	1
REVPAR	Room revenue/available rooms	4.62	2
Labour cost %	Total labour cost/total revenue	4.55	3
Rooms dept profit	Total departmental profit/departmental revenue	4.39	4
Food profit %	Total departmental profit/departmental revenue	4.37	5
Beverage profit %	Total departmental profit/departmental revenue	4.37	5
Food cost %	Cost of food sales/food sales	4.32	6
Beverage cost %	Cost of beverage sales/beverage revenue	4.29	7
Telephone profit %	Total department profit/department revenue	4.21	8
Average food check	Total food revenue/number of food covers	4.15	9
Sales mix	Departmental revenue/total revenue	3.89	10
REVPAC	Total revenue from hotel guests/number of hotel guests	3.31	11
Total		4.34	

Scale: Crucial 5 Very important 4 Important 3 Somewhat important 2 Unimportant 1 No opinion 0

Keeping a close eye on daily operations

structures on the importance of operating ratios indicates their key role in assisting management in the operation of a hotel. In 1988,¹⁶ many of the same ratios were studied with the similar results. Labour cost percentage, average daily rate and food and beverage costs were ranked as the most important ratio in 1988. As noted in Table 10 the relatively low mean scores for sales mix at franchise hotels is indicative of the narrower market mix at many of the smaller franchised properties. The vast majority of franchised properties have rooms only operations.

It was instructional to note that the range (dispersion) of importance for the top nine mean scores for operating ratios was much narrower for management companies (4.38–5.0), chain operated hotels (3.88–5.0), and independent hotels (3.76–4.58) than for franchised properties (3.0–4.20). As expected, this is a reflection of the smaller size (limited service) and less complex operation of

Table 10: Importance of operating ratios by ownership and operating structure

Operating ratios	Independent	Franchise	Management contract	Chain owned
ADR	4.51	4.00	5.00	5.00
REVPAR	4.40	4.20	5.00	5.00
Labour cost %	4.58	4.20	4.69	4.78
Rooms dept profit	4.31	3.50	4.77	4.89
Food profit %	4.27	3.50	4.77	4.78
Beverage profit %	4.29	3.44	4.77	4.66
Food cost %	4.27	3.90	4.46	4.44
Beverage cost %	4.20	3.90	4.46	4.44
Telephone profit %	4.16	3.20	4.77	4.55
Average food check	4.19	3.10	4.38	4.44
Sales mix	3.76	3.00	4.61	3.88
REVPAC	3.33	2.67	3.27	3.16

Scale: Crucial 5 Very important 4 Important 3 Somewhat important 2 Unimportant 1 No opinion 0

REVPAR and ADR 'rule'

most franchised hotels, resulting in the use of fewer operating ratios.

It was also interesting to note that, contrary to the popular notion that financial executives are more 'bottom-line' focused, they ranked two revenue maximization ratios, revenue per available room (REVPAR) and average daily rate (ADR), as the two most important operating ratios. This was different from the study in 1988¹⁷ where profit margin had the highest importance score. Furthermore, executives at management companies scored sales mix as a very important ratio (4.61). This may be indicative of a higher use and reliance on revenue management programmes. Overall, financial executives at lodging properties appear to take a balanced approach towards evaluating their operations by focusing on revenue maximisation, cost reduction and ultimate flow through to the bottom line. Even though executives may be top-line focused, they still prefer to compare revenue to rooms versus the customer. While the trade press frequently writes about the importance of REVPAC (revenue per available customer), its importance is still minimal in the industry.

CONCLUSION

Given the vast array of ratios available to lodging managers, selecting a critical or crucial ratio may be a daunting task. By identifying and ranking ratios considered important by financial executives at US lodging properties, the study assists managers by giving them a focus. Hotel managers should review their ratio analysis practices to see if they are at least using ratios considered important based on the results of the study. Additionally, users can compare their own importance scale to the results reported in the study to adjust their use of ratios accordingly. Table 11 lists the ten most important ratios for financial executives.

At a more advanced level, the results of the study indicate that the basic responsibilities and evaluation criteria of a financial controller have not changed much between the two study periods

Table 11: Most important ratios for lodging financial executives

Ratio	Ratio category	Rank 2000	Mean importance 2000
Average room rate	Operating	1	4.66 (crucial)
REVPAR	Operating	2	4.63 (crucial)
Occupancy percentage	Activity	3	4.56 (crucial)
Labour cost percentage	Operating	4	4.55 (crucial)
Profit margin	Profitability	5	4.47 (v.imp-crucial)
Rooms department profit	Operating	6	4.39 (v.imp-crucial)
Food department profit	Operating	7	4.37 (v.imp-crucial)
Beverage department profit	Operating	8	4.36 (v.imp-crucial)
Food cost percentage	Operating	9	4.32 (v.imp-crucial)
Beverage cost percentage	Operating	10	4.28 (v.imp-crucial)

(1988 and 2000). The study reaffirms the importance of operating, profitability and activity ratios to financial controllers. While it is encouraging to note that hotel controllers are more aligned with the operations of their properties (seven of the top ten ratios are operating), it also belies a status quo in their professional certification, education and responsibilities. In 1984, Geller and Schmidgall's study¹⁸ on the role of hotel controllers concluded with a disturbing finding: a lack of professional certification among controllers. When the study was repeated in 1990,¹⁹ it showed a marginal improvement, but still only 14 per cent of the respondents were certified public accountants (CPAs). The same studies also showed that the basic responsibilities for controllers between the two study periods remained the same, with one major exception: use of computers. This is an important point because even though the operating environment of hotels was very different in 1983 as compared with 1989, the responsibilities of the controller did not reflect this. (In 1983, the industry was flush with capital and resulted in many hotels being financed, which led to overbuilding at the end of the decade.) As a result, Schmidgall's ratio study in 1989²⁰ showed that controllers still focused on ratios related to profitability, operations and activity, with little regard for solvency or liquidity ratios.

This divorce of changes in the external environment with the responsibilities of the financial executives is reflected in the present study as well. As hotel assets become larger and more dependent upon external financing and as operating structures become more complex, hotel managers are being viewed more as asset managers rather than merely managing the business component of a hotel. In light of this, it is important that their financial executive is knowledgeable and their performance is evaluated on specific balance sheet ratios in addition to income statement ratios. In particular, the authors are concerned about the lack of attention to the current ratio, operating cash flow to average current and total liabilities ratios and a general lack of awareness of many solvency ratios and ratios measuring the efficiency with which assets are used (asset turnover and ROA ratios).

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