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U.S. restaurant firm performance check: An examination of the impact of the recent recession

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Introduction

The National Restaurant Association (NRA) describes restaurants as “cornerstones” of the U.S. economy and local communities. Currently, there are 945,000 restaurants nationwide and the industry is projected to generate \$566 billion in annual sales with a total economic impact of more than \$1.5 trillion (NRA, 2009). In 2008, the industry employed nearly 13 million workers, representing 9% of the U.S. workforce (Hensley & Donohue, 2008). This “cornerstone” industry, however, is not immune from the current economic recession and has been facing great challenges in recent years. The restaurant industry has traditionally been relying heavily on consumers’ discretionary spending (Gu, 2002). The current credit crisis and extended recession of the U.S. economy have forced many customers to cut back their spending on travel and hospitality consumptions. Consequently, restaurant sales have decreased nationwide and the average profit margin fell below 4% (Frumkin, 2009). According to Lockyer (2009), 2010 will be an even more difficult year for the industry. While the costs of food commodity is expected to rise and the operating environment will remain extremely competitive, consumer spending is likely to be weak and restaurant customers will have little tolerance for increased menu prices (Fitch Ratings, 2009).

To make the situation even more challenging for restaurant firms, the proposed House Health Care Reform Bill (Frumkin, 2009) is projected to further increase the cost burden and has thus raised a hailstorm of public opinion and controversy among restaurant practitioners. Many industry experts are showing concerns as the bill would require employers to offer health benefits to part-time employees or pay a penalty (Frumkin, 2009). It has been reported that 91% of the foodservice industry is made up of small businesses with fewer than 50 employees and many part-time workers (NRA, 2009). Given the persistent economic weakness and substantial number of part-time restaurant employees, the bill is expected to place unforeseen hardships on the overall restaurant industry (Frumkin, 2009). Fitch Ratings (2009) anticipate more bankruptcy filings in upcoming years from highly leveraged restaurant chains and smaller independent restaurants.

The recession has hampered restaurant sales and profits since 2008. The tough market conditions are expected to continue and the U.S. restaurant industry is likely to have difficult years ahead. What should restaurant firms do to deal with this lingering recession? To come up with answers to the question, one must first carefully examine the impact of the current recession on the restaurant industry. Solutions should be based on a thorough assessment of the financial damages that have been inflicted on the industry. This study attempts to come up with such an assessment by comparing the financial performance of the industry before and during the recession. The primary purpose of this study is to identify areas that have been significantly weakened by the recession in the industry by examining some key financial ratios. Based on identified weaknesses, policies and strategies to cope with the recession will be proposed. To the best of our knowledge, there is no study that has specifically examined the impact of the current recession on the financial performance of the restaurant industry. The findings of our study will not only help restaurant operators better understand the impact of current recession on the industry but also provide them with some clues to successfully tide over the recession.

The Impact of Economic Downturns on the Hospitality Industries

The effects of economic recessions on business have been well documented. According to Mascarenhas and Aaker (1989), recession is one of the most significant exogenous events that threatens a firm's viability and continued profitability. Recession affects firms in almost all economic sectors, straining their cash flows and profit margin. This is because during periods of recession consumers spend less, unemployment rates soar, credit becomes less available, and competition intensifies, leading to the overall decline in economic activity (Pearce & Michael, 2006). Prospects of survival are often dubious for firms affected by recession. It has been reported that more than 500,000 companies have filed for bankruptcy in the U.S. during each of the recessions that have occurred since 1990 (Pearce & Michael, 2006).

The hospitality industries are typically vulnerable to economic recessions because they derive revenues mostly from people's discretionary consumptions. Discretionary consumptions are more affected by income levels and are thus more sensitive to economic conditions. During economic downturns, reduced income forces consumers to first cut back on their discretionary consumptions and hospitality operations are often the easy victims. The negative impacts of economic recession on hospitality firms have been well documented. For example, during the 1990-1991 economic recession, the hotel room occupancy in the U.S. was well below the breakeven level and two-thirds of the lodging firms in the U.S. went bankrupt (Romeo, 1997). It has been reported that during a slow economy fewer people travel or stay at upscale properties (Bodamer, 2002). The 2001 recession that began in March and lasted for eight months placed hardships on some of the well-known U.S. lodging properties (Hotel & Motel Management, 2001). In 2001, Wyndham International had to lay off 3% of its total workforce while Park Place Entertainment Corporation reduced the workforce at its Las Vegas Hilton property by 7% (Hotel & Motel Management, 2001). The most recent recession that began in December 2007 has already taken its toll on many hospitality firms. According to Smith Travel Research, domestic hotel occupancy in September 2008 was 5% lower than that of the previous September (Sharkey, 2008). Even the upscale four- and five-star properties that appeared immune to previous recessions are now suffering due to decreasing corporate travel and rising cancellations (Sharkey, 2008).

The restaurant industry is also vulnerable to recession. The terrorist attacks and an economic downturn that intensified the 2001 recession led to sluggish same-store-sales growth and declining profit margins especially for the quick service restaurants (Nation's Restaurant News, 2002). Adjusted for inflation, the financial performance of the overall restaurant industry in 2001 was the fifth-lowest since 1970 (Papiernik, 2002). While the current recession caused most damage to the full-service and family dining segments, fast-food chains also suffered due to the increase in the nation's unemployment rates (Edwards, 2009). These fast-food chains rely heavily on breakfast and lunch sales, and as more people lose their jobs, the demand for these meals fell sharply (Edwards, 2009). Since January 2008, six publicly traded restaurant companies have filed for Chapter 11 bankruptcy, namely Buffet Holdings Inc., VICORP Restaurants, Inc., Steakhouse Partners, Inc., Shoe Pavilion, Inc., Shells Seafood Restaurants, Inc., and most recently Uno Restaurant Holdings Corporation.

The impact of recession on the casino industry has also been severe. Back in 1991 when the nation was going through a recession triggered by a credit crisis and the war in the Middle East, gaming revenues in Nevada suffered their steepest-ever one-month drop in the state's 60 years of legalized gambling (Reinhold, 1992). By the end of the same year, two large Las Vegas casino operators – Main Street Station and Riviera – declared bankruptcy (Reinhold, 1992). The 2001 recession paired with the September 11 terrorist attack forced \$1.4 billion Aladdin hotel-casino out of business (Goldman, 2003). Aladdin was the third casino on the Las Vegas Strip that filed for bankruptcy protection in two decades (Goldman, 2003). Traditionally, the economy in Las Vegas has been heavily dependent on tourism and as a result it has been deeply affected by the economic downturn. The current deep global recession has taken its toll on some of the biggest casino operations in Las Vegas. Trump Entertainment Resorts, Inc. filed for bankruptcy protection for the third time in February 2009. Four months later, the Fontainebleau Las Vegas and two of its affiliates have filed for bankruptcy protection, shutting down a \$3 billion development project (Audi, 2009). Station Casinos Inc. also filed for Chapter 11 bankruptcy in July 2009 (Green, 2009). Sharp decreases in sales and passenger traffic are also observed in the airline industry. As of September 2008, the top seven U.S. airlines witnessed on average, a 9.47% drop in domestic passenger miles traveled and carried 9.2% fewer passengers compared to September 2007 (Sharkey, 2008). It is obvious that almost all sectors of the hospitality and tourism industry are heavily affected by the current recession and for many firms, the likelihood of survival is questionable.

Back in the 1990s, Gu (1996) compared financial ratios of four types of restaurant operations (upper scale restaurants, family restaurants, economy/buffet, and fast food restaurants). In that study, a firm's financial performance was measured before and after the 1989-1991 recession to investigate how the financial ratios of four different sectors changed in the post-recession period. Ten financial ratios measuring liquidity (current ratio, acid test ratio, operating cash flow to current liability), solvency (debt to equity, long-term debt to total capitalization, operating cash flow to total liability), profitability (net profit margin, return on assets, return on common equity), and efficiency (total assets turnover) of restaurant firms were employed. The findings suggest that the use of long-term debt, measured by long-term debt to total capitalization ratio, had a significant impact on firms' post-recession performance. A firm's higher reliance on long-term debt increased the amount of interest payment it had to pay and as a result deteriorated its liquidity and profitability. As a firm's use of long-term debt decreased, its liquidity and profitability generally improved.

More recently, Flouris and Walker (2005) assessed the impact of the September 11 terrorist attack on the accounting performance of three major U.S. airlines, namely Southwest, Continental, and Northwest. To be more specific, the study attempted to analyze the relative accounting performance of a low-cost airline (Southwest) to that of full-service airlines (Continental and Northwest) in the aftermath of the 9/11 attack. All three airlines were profitable in 2000 and the first half of 2001, prior to the 9/11 attack. The study employed seven financial ratios – current ratio, asset turnover, debt ratio, interest coverage, net profit margin, return on assets, and return on equity – to measure liquidity, activity, financing, and profitability of the sample firm's operation. Findings of the study indicate that while the ratios of all three firms deteriorated after the attack, the ratios of Southwest fared better than those of the others. For Southwest, the declines in the ratios (i.e. current ratio, asset turnover, and interest coverage) were

not as tremendous as they were for Continental or Northwest. The study concluded that low-cost carriers like Southwest are more likely to emerge from the crisis in a stronger market position due to their higher financial and operational flexibility. The airline's more variable cost structure, lower operating expenses, and lower breakeven point all contribute towards its financial and operational flexibility.

While many believe that hospitality firms are extremely vulnerable to the external financial crisis and economic swings, the literature addressing the impact of the current financial crisis on hospitality firms is very limited. This study attempts to fill this gap by investigating the financial performance of different restaurant sectors before and during the recession. By analyzing the reasons for their performance variances and the extent to which each sector has been affected, this study will propose strategies that restaurant operators may take to mitigate the damage of the current recession.

Ratios Examined, Sample Firms and Data Periods

Altman (1983) has pointed out that financial ratios are gaining their importance and popularity as simple summary measurements of complicated financial relationships. Without the use of ratio analysis, it would be difficult to identify these critical relationships. According to Dopson and Hayes (2009), ratio analysis is most useful when a firm compares its actual performance to a previous time period, industry averages, or planned goals. In particular, Keown et al. (2006) posit that ratios allow the users to make meaningful comparisons of a firm's data across time to compare the firm's current and past performance and thereby identify underlying changes and trends (Keown et al., 2006). To identify the changes in the financial performance and conditions of the restaurant industry as a result of the recent economic downturn, this study compares the ratios of restaurant firms in 2006, the year prior to the recent economic recession, to those of restaurant firms in 2008, the year during which the economy experienced the full impact of the recession. Many studies report that within the restaurant industry, characteristics pertaining to each restaurant sector are likely to be different due to each sector's different operating and financing characteristics (Kim & Gu, 2003). In their study on risk-adjusted performance of U.S. restaurants, Kim and Gu (2003) divided the sample restaurant firms into three groups based on their types of operation: (a) full-service restaurants, (b) economy/buffet restaurants, and (c) fast-food restaurants. Based on the classification criteria set up by Kim and Gu (2003), this study divided the sample restaurant firms into a full-service sector (29 firms), an economy/buffet sector (7 firms), and a fast-food sector (27 firms) as listed in Table 1. Each sector is analyzed separately to provide more relevant outcomes.

(Table 1: A List of Sample Restaurant Firms Selected for Each Sector)

To determine the overall impact of the recent recession on the restaurant industry, all the five groups of financial ratios categorized by Singh & Schmidgall (2001) were examined, including liquidity, leverage, solvency, efficiency, and profitability ratios. According to Singh and Schmidgall (2001) and Dopson and Hayes (2009), liquidity ratios address the ability of a firm to pay its short-term obligations on time. Leverage ratios indicate the extent to which a company is relying upon debt financing while solvency ratios help managers assess a firm's ability to use operation generated earnings and cash flows to cover its debts and interest expenses.

On the other hand, efficiency ratios evaluate the productivity of a firm for a given level of inputs. They assess a firm's ability to effectively use the firm's assets to generate sales. Profitability ratios measure the management's ability in generating profits for the firm. Fourteen ratios across these five categories that have been widely used in previous ratio analysis studies for restaurant firms (Gu, 1996; Kim & Gu, 2006) were selected for the cross-time comparative analysis in this study. Those ratios and their derivation formulas are presented in Table 2.

(Table 2: Summary of Financial Ratios)

All firms with a Standardized Industrial Classification (SIC) code of 5812, which represents "Eating Places" or restaurant firms, and had financial statements available for 2006 and 2008 were searched from the Standard and Poor's COMPUSTAT database. The search came back with 63 companies which composed the sample. From the financial statements of these restaurant firms in 2006 and 2008, the 14 financial ratios as listed in Table 2 were computed for each firm for the two years. According to the National Bureau of Economic Research, the U.S. economy officially sank into a recession in December 2007 (Andrews, 2008). Therefore, the 2007 ratios were not used for comparison in our study because they would reflect only the partial impact of the recession on the industry. While the ratios of 2006 can best represent the status of the industry in the year just before the recent recession, the ratios of 2008 can reflect the position of the industry in a year when the recession was in full swing.

Findings for the Full Service Sector

The mean value of each of the 14 ratios was calculated for the U.S. restaurant firms based on the 2006 and 2008 data. Paired sample t-tests were then employed to test the difference between the group means of each ratio for each sector. Table 3 summarizes the group means of the 14 financial ratios for the full service sector. The t-test statistics and related significance levels are also reported.

(Table 3: Summary of Ratio Statistics of Full Service Restaurant Firms)

Based on the results of the paired sample t-tests, the two groups were significantly different in six ratios at the 0.01 level – debt ratio, long-term debt to total capitalization (LTD to TC), earnings before interest, tax, depreciation and amortization (EBITDA) to total liabilities (TL), interest coverage ratio, profit margin, and return on assets (ROA). At the 0.05 level, two more ratios became significant, namely current ratio and inventory turnover ratio. Quick ratio, EBITDA to current liabilities (CL) and return on equity (ROE) also turned out to be significant at the 0.10 level indicating that among the 14 ratios employed in this study, ten of them changed significantly over the two-year timeframe. For these full service restaurant firms, the ratios in 2008 showed considerable deterioration in all five areas of firm performance indicating the severe negative impact of the current recession on these firms.

Debt ratio and interest coverage ratio appeared to have changed the most. Debt ratio measures a firm's leverage status indicating the extent to which the firm is relying on borrowed funds. On a similar note, LTD to TC assesses a firm's use of long-term debt relative to its total capitalization. Prior to the recession, an average restaurant firm's debt ratio was 0.35 indicating

that on average, U.S. full service restaurant firms were financed by 35 percent of debt and 65 percent of equity. The ratio almost doubled in 2008, indicating a firm's significantly higher use of debt financing. In 2008, these restaurant firms were twice more indebted than they were two years ago. At the 0.01 level, the reliance of an average restaurant firm on long-term debt has significantly increased as well. The increase in debt ratio was more significant than the increase in LTD to TC, suggesting an even greater increase in short-term liabilities, consistent with the significantly lowered current ratio. During the recession, firms may have borrowed more, for both short-term and long-term debts. As a solvency ratio, the interest coverage ratio measures a company's ability to pay interest on its outstanding debt. The significantly lower interest coverage ratio observed in 2008 indicates that many firms struggled in making their scheduled interest payment probably due to higher interest expenses resulting from increased borrowing and lower profitability.

In 2008, all three profitability ratios of the sector turned negative implying that an average full service restaurant in the U.S. experienced net loss during the year. According to Singh and Schmidgall (2001), solvency ratios provide information about a company's ability to withstand operating losses. As shown in Table 3, both solvency ratios were significantly lower in 2008. The coverage provided by operating income and cash flow to debts and interests was significantly reduced. The deterioration may well be a result of (1) lower sales, which led to lower operating income and cash flow; and (2) more borrowing due to greater amount of TL and interest expenses. The dramatic decrease in these ratios indicates that these full service restaurant firms may not be able to endure operating losses for extended period of time. It is imperative that these firms revise their current financing policies and reduce the amount of loss they are carrying as otherwise they may not survive through the recession.

Findings for the Economy/Buffer Sector

The group means of the 14 financial ratios for the economy/buffet restaurants and their paired sample t-test statistic results are summarized in Table 4.

(Table 4: Summary of Ratio Statistics of Economy/ Buffet Restaurant Firms)

The economy/buffet sector seems to have the least significant changes in their ratios, suggesting that they may have fared better than other sectors during the current recession. However, the limited sample size of this group could have made it difficult to observe significant differences between the ratios. Only two ratios were found to be significant at the 0.10 level, namely EBITDA to CL and debt ratio. EBITDA to CL is a liquidity ratio that examines a firm's ability to pay its short-term obligations using operating cash flows. The ability of a firm in using its operation generated cash flow to cover CL was weakened as indicated by EBITDA to CL in 2008. The debt ratio assesses the proportion of a firm's assets that are financed through debts. Much higher debt ratio in 2008 indicates significantly higher debt financing used by firms compared to 2006. The significant increase in debt ratio, combined with the insignificant change in LTD to TC ratio, suggests that debt increase in this sector was mainly caused by an increase in short-term liabilities and this may have lead to the deteriorated EBITDA to CL ratio. Though less affected by the recession, the economy/buffet restaurant firms need to be watchful of their rising current liabilities and keep this ratio from deteriorating further.

Findings for the Fast-Food Sector

Table 5 reports the group means of the 14 financial ratios for the fast-food sector. The paired t-test statistics and related significance levels are also presented. While fewer significant changes in ratios were observed in this group than in the full service restaurants, this sector had more ratios showing significant deterioration than the economy/buffet sector.

(Table 5: Summary of Ratio Statistics of Fast-Food Restaurant Firms)

The debt ratio was significantly different at the 0.01 level. Changes in EBITDA to TL, inventory turnover, and ROA were all significant at the 0.05 level. When tested on the 0.10 significance level, EBITDA to CL and ROE also turned out to be significant. In summary, among the 14 ratios examined for fast-food industry, seven of them changed significantly over the two years.

The comparison of the two groups' mean debt ratio shows that in 2008 firms were twice more indebted than they were two years ago. On average, these firms were financed by 80% of debt and 20% of equity. Back in 2006, they had much healthier financial structure with only 42% of debt financing. According to Schwei (1996), debt ratio exceeding 0.50 is troublesome as higher debt ratio usually leaves the company with smaller margins for error through tighter loan covenants and higher interest rates. Excessive use of debt financing increases the company's interest expenses and further decreases the profitability of the operation. EBITDA to CL and EBITDA to TL are ratios that demonstrate the extent to which operating earnings can be used to cover short-term and long-term debt, respectively. As indicated in Table 5, U.S. fast-food restaurant firms were worse positioned in 2008 in both aspects.

For the efficiency ratios of this group, both accounts receivable (AR) turnover and inventory turnover decreased in 2008 at least at the 0.10 level. Fast-food restaurant firms in 2006 had AR turnover at 61.8 and the ratio slowed down to 47.6 in 2008, indicating much slower collection of sales money. This could be due to clients' weakened ability to pay on time and restaurants' more lenient credit policy in an attempt to increase sales. On the other hand, inventory turnover assesses the efficiency of a firm in using the invested resources (Schwei, 1996). Higher inventory turnover indicates more efficient use of inventories. The fast-food restaurant companies had considerably lower inventory turnover in 2008, suggesting that either they were selling inventories much slower or they were carrying more excessive amount of inventory than they were two years ago (Youn & Gu, 2009). Significantly lower inventory turnover in 2008 indicates slowed sales not accompanied by proportionately lowered inventory carrying which may be a sign of inefficient inventory management. Both total assets turnover and fixed assets turnover ratios increased in 2008, though not significantly, probably due to slowed or suspended expansion activities during the recession. Obviously in 2008 lower sales were accompanied by shrinking assets, especially fixed assets, thus leading to insignificant change in the efficiency of total assets and fixed assets. For this group, asset efficiency problem seems to exist in their AR turnover and inventory turnover.

The ROA ratio measures the amount of net income generated from each dollar invested in the firm's assets while the ROE ratio assesses the amount of return to the investment made by

the investors. Both ratios were significantly lower in 2008. In 2006, an average fast-food restaurant firm was able to generate \$0.06 for every dollar invested in assets and \$0.14 for every dollar invested by the owners. Two years later, these restaurant firms on average generated a negative return on the assets and brought a loss to their investors.

In summary, deteriorations in ratios of restaurant firms over time are noticeable. All three sectors of U.S. restaurant firms were worse positioned in 2008 in all five dimensions, namely liquidity, leverage, solvency, efficiency, and profitability, with most significant ratio deteriorations observed in the full service sector, followed by the fast-food group and the economy/buffet restaurants.

Conclusions and Suggestions

This study investigated the impact of the current recession on U.S. restaurant firms by comparing 14 financial ratios in 2006, the pre-recession year, with the same ratios in 2008, the during-recession year, to assess different aspects of restaurant firms' financial performance and conditions. The findings indicate that all three sectors of the restaurant industry, namely full service, economy/buffet, and fast-food sectors, have been negatively affected by the recession. Full service restaurants, however, were found to have suffered more than the other two sectors. Full service restaurants sell meals with menu prices higher than those in the other two sectors. The current financial crisis and economic recession have caused higher unemployment rate and lower disposable income, thus making consumers more sensitive to higher priced full service restaurant menus and greatly weakening this sector's sales and financial performance. On the other hand, the economy/buffet and fast-food restaurants have fared better than full service restaurants. Their relatively more affordable menu prices may have made consumers less sensitive to the recession-caused income effect and hence their less affected conditions in the economy recession. While the small sample size of the economy/buffet restaurants may make the findings for this group less reliable, the limited sample size of this group itself may suggest that there are not too many economy/buffet restaurant firms competing with each other in the sector which may be the reason why they outperformed the other two sectors. The underperformance of the fast food sector in contrast to the economy/buffet sector may well be due to the intense competition among numerous fast food restaurants in the sector. Our findings are also in line with Gu's earlier study (1996) reporting that fast-food operations are more recession-resistant whereas full service restaurants are more vulnerable to financial crisis. This is because the products of fast-food operations are considered as necessities while the products of full service restaurants are viewed as luxuries (Gu, 1996). Elan (2009) predicts that among all of the dining segments, fast-food is expected to outperform all of the others in upcoming years.

The findings of this study carry important managerial implications for the U.S. restaurant industry. While changes were observed in numerous ratios within each restaurant sector, two ratios – EBITDA to CL and debt ratio – were significant for all three sectors of restaurant firms. Debt ratio almost doubled over the two-year period for all three groups. It is well known that carrying excessive debt leads to higher risk for the company due to heavy interest expenses and principal repayment burden. When the economy is booming and sales are high, debt financing can further increase the return to the owner because the interest cost is fixed (Youn & Gu, 2007). However, when the economy is in recession and sales are sluggish, the fixed interest payment

will further press down the net income and possibly even make it negative. In a situation like this, it is recommended that U.S. restaurant firms take urgent measures to avoid getting further indebted and adopt a conservative financing policy. Gu (1993) proposed issuing new equity as a means to obtain additional capital, rather than issuing bonds or borrowing from financial institutions. U.S. restaurant firms may take advantage of the current recovery of the stock market and raise additional equity to help improve their liquidity, leverage and solvency ratios.

The significant drop in EBITDA to CL ratio observed in all three restaurant sectors indicates the pressure on restaurant firms' EBITDA or operating cash flow during the recession. The deterioration of EBITDA was noticeable across all the three sectors. For the economic/buffet sector, there are no significant changes in other ratios that may provide clues to explain this deterioration and thus it may simply be a result of the slowdown of the dining market during this recession. For the full service sector, on the other hand, the sharp decline in inventory turnover could be a major contributor to the significant deterioration in EBITDA. Inventory turnover ratio, which is computed by dividing the cost of food sold during a period by the average inventory on hand during the same period, determines an operation's efficiency by measuring how long food remains in inventory (Reynolds, 1999). Analyzing this ratio is important as the way a firm manages its inventory has a direct impact on its profitability. While there is no ideal minimum or maximum turnover ratio, lower ratio, which may indicate excess inventory, can result in inordinate waste, increased labor costs and storage costs, spoilage, and theft (Farsad & LeBruto, 1993; Reynolds, 1999). U.S. full service restaurant firms may need to adopt some advanced inventory management models to improve inventory turnover. According to Reynolds (1999), there are practices that firms may use to optimize the inventory management. These practices include limiting the number of suppliers, standardizing and rotating stock, and periodically conducting physical inventory valuation.

For the fast-food restaurant firms, both AR and inventory turnover show considerable deterioration and they may have caused the significant drop in EBITDA to CL ratio. A firm's inventory level and credit policy have direct impact on the volume of sales and profit as lenient credit policy is likely to increase sales while an efficient control of inventory is required to maximize profit (Mehtar, 2005). During recessions, firms usually face liquidity problem as it is more difficult to collect outstanding receivables (Page, 1980). In addition, many firms carry excess inventories at the beginning of a recession (Mehtar, 2005). The excess inventory paired with decreased sales often lead to lower inventory turnover. It is recommended that U.S. fast-food restaurant firms speed up the AR turnover while raising their inventory turnover ratios. They should re-examine their current credit policy and optimize the inventory size to improve the operating efficiency of these two assets. While faster AR turnover could help lower bad debt expenses and improve liquidity, higher inventory turnover may help lower cost of food sold, thus lower the operating costs and increase the profitability, especially the EBITDA.

In summary, the findings of this study indicate that U.S. restaurant firms have suffered severe negative impacts from the recession in terms of liquidity, leverage, solvency, efficiency, and profitability. In particular, restaurant firms need to strengthen their coverage to liabilities provided by EBITDA or operating cash flow, speed up their inventory turnover and accounts receivable turnover and lower their indebtedness. To cope with the current recession, first of all, restaurant firms need to make efforts to raise their sales and EBITDA. Although the negative

impact of the recession on sales and EBITDA is inevitable, restaurant firms could do something to minimize the impact. For example, a recent survey by NRA (2009) found that 75% of full service restaurant customers and 60% of fast-food customers would eat out more frequently if they could get discounts for dining on less busy days of the week. Restaurant firms may consider giving more 'happy hour' promotions for dining on weekdays or in early hours to increase their sales. During a recession time, consumers may be more sensitive to prices due to the recession's income effect. Giving discounts could be a more effective way to stimulate sales during the recession than in normal economic times. Fitch ratings (2009) also report that offering great values together with high quality food and service will remain a key priority for the industry. Secondly, restaurant firms should manage their inventories in a more scientific and efficient way. Thirdly, restaurants should not overly use lenient credit policy to stimulate sales as it is likely to carry a much higher bad-debt risk during a recession. Sales promotion should be based on smart discounting with sustained improvement in market share, rather than loose credit policy (Fitch ratings, 2009). Finally, restaurant firms could capitalize on the recovery of the stock market to raise more equity in order to reduce their indebtedness. Raising sales and EBITDA, improving the efficiency of their accounts receivable and inventory and reducing indebtedness are critical steps for U.S. restaurant firms to take to survive through the current recession.

Limitations and Suggestions for Future Research

This study empirically examined the impact of the current recession on U.S. restaurant firms using only secondary data and financial ratio analysis. Restaurant managers' assessment of the recession impact is not reflected in our study. Future studies may use a questionnaire to survey restaurant managers directly to validate the findings obtained by this study. Another major limitation of this study is that it only utilized one-year's worth of data to assess the firms' financial performance before and during the recession, respectively. While the majority of economists believe that the U.S. recession is finally over, the National Bureau of Economic Research has yet to announce an official end to the current recession (Quinn, 2010). Many experts expect the recovery to be slow and halting, which will leave many people and firms feeling the effects of the downturn in upcoming years (Isidore, 2009). According to Pearce and Michael (2006), some companies emerge from a recession stronger and more highly valued than others. As such, future research investigating the impact of economic recession on restaurant firms may study the firms' financial conditions and performances during two periods, pre-recession and post-recession, and identify the 'survivors.' Financial and operational characteristics pertaining to these 'survivors' should help restaurant operators revise their current business policies and strategies.

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Table 1
A List of Sample Restaurant Firms Selected for Each Sector

Full-Service Restaurants (29 firms)	Economy/ Buffet Restaurants (7 firms)	Fast-Food Restaurants (27 firms)
Ark Restaurants Corp.	Buffets Holdings, Inc.	AFC Enterprises, Inc.
Benihana Inc -CI A	Denny's Corp.	Brazil Fast Food Corp.
BJ's Restaurants, Inc.	Luby's Inc.	Burger King Holdings, Inc.
Bob Evans Farms	NPC International, Inc.	Caribou Coffee Co.
Brinker Intl, Inc.	Panera Bread Co.	CEC Entertainment, Inc.
Buffalo Wild Wings, Inc.	Star Buffet, Inc.	Carrol's Corp.
California Pizza Kitchen, Inc.	Western Sizzlin Corp.	CKE Restaurants, Inc.
CBRL Group, Inc.		Diedrich Coffee, Inc.
Cheesecake Factory, Inc.		Domino's Pizza, Inc.
Chipotle Mexican Grill, Inc.		Einstein Noah Restaurant Grp
Cosi Inc.		Good Times Restaurants, Inc.
Cracker Barrel Old Ctry Stor		Jack In The Box, Inc.
Darden Restaurants, Inc.		Jamba, Inc.
Dineequity, Inc.		McDonald's Corp.
Eat At Joe's Ltd.		Morgans Foods, Inc.
Famous Daves Of America, Inc.		MTY Food Group, Inc.
Flanigans Enterprises, Inc.		Nathan's Famous Inc.
Granite City Food & Brewery		Papa Johns International, Inc.
J. Alexander's Corp.		Priszm Corp.
Kona Grill, Inc.		Red Robin Gourmet Burgers
Landry's Restaurants, Inc.		Rubio's Restaurants, Inc.
Mccormick & Schmicks Seafood		Sonic Corp.
Mexican Restaurants, Inc.		Starbucks Corp.
Morton's Restaurant Group, Inc.		Steak N Shake Co.
O'Charley's, Inc.		Tim Hortons, Inc.
Perkins & Marie Callenders		Wendy's/Arby's Group, Inc.
P F Chang's China Bistro, Inc.		Yum Brands, Inc.
Ruth's Chris Steak House		
Texas Roadhouse, Inc.		

Table 2
Summary of Financial Ratios

Category	Ratio	Formula
Liquidity	Current ratio (CR)	Current assets / Current liabilities
	Quick ratio (QR)	(Current assets – inventories – prepaid expenses) / Current liabilities
	Earnings before interest, tax, depreciation and amortization (EBITDA) to current liabilities (CL)	EBITDA / Current liabilities
Leverage	Debt ratio	Total liabilities / Total assets
	Long term debt to total capitalization ratio (LTD to TC)	Long term debt/ (Long term debt + Total stockholder's equity)
Solvency	Earnings before interest, tax, depreciation and amortization (EBITDA) to total liabilities (TL)	EBITDA / Total liabilities
	Interest coverage ratio	EBIT / Interest expense
Efficiency	Accounts receivable (AR) turnover	Total revenues/ Average accounts receivable
	Inventory turnover	Cost of goods sold / Average inventories
	Fixed assets (FA) turnover	Total revenues / Average fixed assets
	Total assets (TA) turnover	Total revenues / Average total assets
Profitability	Profit margin (PM)	Net income / Total revenues
	Return on assets (ROA)	Net income / Total assets
	Return on equity (ROE)	Net income / Equity

Table 3
Summary of Ratio Statistics for Full Service Restaurant Firms

Ratios	Average in 2008	Average in 2006	t-value	Sig.
Liquidity				
CR (n=29)	0.8196	1.1079	-2.7420	.0110**
QR (n=29)	0.6316	0.8296	-1.8780	.0710*
EBITDA to CL (n=29)	0.7046	0.8039	-1.7640	.0890*
Leverage				
Debt Ratio (n=29)	0.6910	0.3478	11.9000	.0000***
LTD to TC (n=28)	0.2748	0.1793	5.1900	.0000***
Solvency				
EBITDA to TL (n=29)	0.2573	0.3570	-3.6970	.0010***
Interest coverage (n=29)	1.9065	6.0650	-3.1410	.0050***
Efficiency				
AR turnover (n=27)	83.9270	92.7317	-0.4880	.6300
Inventory turnover (n=29)	71.6862	103.2455	-2.4410	.0220**
FA turnover (n=29)	3.6800	2.7881	0.8780	.3880
TA turnover (n=29)	1.6105	1.5392	1.1460	.2610
Profitability				
Profit Margin (n=29)	-0.0528	0.0135	-4.0550	.0000***
Return on Assets (n=29)	-0.0702	0.0239	-4.6200	.0000***
Return on Equity (n=29)	-0.2948	0.0905	-1.7950	.0830*

Note. * indicates $p < 0.1$, ** indicates $p < 0.05$, *** indicates $p < 0.01$

Table 4
Summary of Ratio Statistics for Economy/ Buffet Restaurant Firms

Ratios	Average in 2008	Average in 2006	t-value	Sig.
Liquidity				
CR (n=7)	0.8202	0.9801	-0.9440	.3820
QR (n=7)	0.7162	0.7686	-0.4310	.6810
EBITDA to CL (n=7)	0.7308	1.0408	-2.2290	.0670*
Leverage				
Debt Ratio (n=7)	0.8355	0.4555	2.1440	.0760*
LTD to TC (n=7)	0.2651	0.3743	-0.8600	.4230
Solvency				
EBITDA to TL (n=7)	0.3184	0.4433	-1.5930	.1620
Interest Coverage (n=7)	9.3043	11.4500	-0.2460	.8140
Efficiency				
AR turnover (n=7)	76.0655	136.9670	-1.4310	.2020
Inventory turnover (n=7)	112.3906	125.5121	-1.1910	.2790
FA turnover (n=7)	1.9757	2.3049	-1.3790	.2170
TA turnover (n=7)	1.7058	1.5134	1.0360	.3400
Profitability				
Profit Margin (n=7)	-0.0909	0.0258	-1.8840	.1090
Return on Assets (n=7)	-0.1340	0.0420	-1.4160	.2070
Return on Equity (n=7)	0.0557	0.0320	0.1970	.8500

Note. * indicates $p < 0.1$, ** indicates $p < 0.05$, *** indicates $p < 0.01$

Table 5
Summary of Ratio Statistics for Fast-Food Restaurant Firms

Ratios	Average in 2008	Average in 2006	t-value	Sig.
Liquidity				
CR (n=27)	1.0891	1.1086	-0.1680	.8680
QR (n=27)	0.9423	0.8532	0.7660	.4510
EBITDA to CL (n=27)	0.8666	1.0038	-2.0310	.0530*
Leverage				
Debt Ratio (n=27)	0.8030	0.4209	4.1990	.0000***
LTD to TC (n=27)	0.4444	0.3603	0.9710	.3400
Solvency				
EBITDA to TL (n=27)	0.2648	0.3339	-2.1750	.0390**
Interest Coverage (n=23)	0.6548	4.2309	-1.5830	.1280
Efficiency				
AR turnover (n=27)	47.5840	61.7790	-1.8090	.0820*
Inventory turnover (n=27)	63.6306	85.0851	-2.5200	.0180**
FA turnover (n=27)	3.4093	3.2263	0.2530	.8020
TA turnover (n=27)	1.6707	1.5661	0.9120	.3700
Profitability				
Profit Margin (n=27)	0.0077	-0.0393	0.5820	.5660
Return on Assets (n=27)	-0.0207	0.0627	-2.2160	.0360**
Return on Equity (n=27)	-0.6056	0.1447	-1.9010	.0680*

Note. * indicates $p < 0.1$, ** indicates $p < 0.05$, *** indicates $p < 0.01$