THE RESTAURANT INDUSTRY: BUSINESS CYCLES, STRATEGIC FINANCIAL PRACTICES, ECONOMIC INDICATORS, AND FORECASTING

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(ABSTRACT)

The essential characteristic of the future is uncertainty. A basic feature of the economy, and life in general, is that decisions are made under conditions of uncertainty-the future is unknowable. Having reliable guidelines or indicators that provide discipline and signposts to the future is required for the process of successful investing. Conditions are constantly changing, and there are no rewards for replaying the same old game over and over. To answer for this demand, continued from the previous studies (Choi, 1996; Choi et al., 1997a; Choi et al., 1997b; Choi et al., 1999), this study developed the restaurant industry business cycle models and examined financial practices of the high and low performing firms over the industry cycles.

The U.S. restaurant industry demonstrated three cycles (peak to peak or trough to trough) for the period of 1970 through 1998. The restaurant industry peaked in 1973, 1979, and 1989. The industry troughed in 1970, 1974, 1980, and 1991. The mean duration of the restaurant industry cycles is 8 years (SD: 2) calculated by peak to peak and 6.5 years (SD: 2.08) calculated by trough to trough. Expansion takes an average of 6 years in the restaurant industry but declines sharply after it reaches the peak taking average 1.33 years.

The restaurant industry experienced high growth (boom) every five years on average. The troughs of the growth cycles, contrasted to the peaks of the growth cycles, coincided with those of the restaurant industry business cycles in each case except one (1985). During that year a low growth phase interrupted industry business expansion but did not terminate it. Restaurant industry growth cycles, then, tend to be relatively symmetrical: since 1970 the average duration was about 2.25 years for both expansion (L-H) and contraction (H-L). In contrast, the restaurant industry business cycles in the same period show a strong asymmetry: the expansions lasted on the average 6 years; the contractions, 1.33 years. The expansions have varied in duration much more than the high growth phases have (the respective standard deviations are 2.58 and 0.95 years).

This study supports the view that the cyclical fluctuations of the growth of the restaurant industry can be projected by measuring and analyzing series of economic indicators and each economic indicator has specific characteristics in terms of time lags, and thus can be classified into leading, coincident, and lagging indicators. This study formed a set of composite indices with twelve indicators classified in the leading category, six as coincident, and twenty as lagging.

The high performing firms' financial practices regarding investment decisions measured by capital spending, and price earning ratio, and part of financing and dividend decisions measured by market value of common share outstanding are independent of the cyclical fluctuations of the industry cycles. But, their practices regarding dividend decisions measured by the earning per share, investment decision measured by cash flow per share, and financing decisions measured by asset value per share and long term debt level are dependent on the events (Expansion/Contractions) in the Restaurant Industry Cycles. Conclusively, high performers exercise their capital investment (reflected by capital spending) and equity management (reflected by common share outstanding and P/E ratio) independently while being less influenced by the industry swings. They exercise, however, their working capital management (reflected by cash flow per share), earning

management (reflected by EPS), asset management, and long term debt management quite dependently while being more influenced by the industry swings.

The financial practices exercised by the low performing firms are independent from the events in the industry cycle. Although some financial practices are related to the events in the industry cycle, the directions are opposite to the events in the industry cycle. Specifically, for all of the selected financial strategies except common share outstanding and long-term debt, the low performers practice them independently from the cyclical fluctuations of the industry cycles. Even for common share outstanding and long-term debt strategies, they practiced their strategies in opposite directions to the events (Expansion/Contractions) in the Restaurant Industry Cycles.

It is expected that the above results can be used for improving investment performance through understanding the cyclical behavior of the economy and the restaurant industry. With that model, investors should be able to take part in the upswings while avoiding the cyclical downturns, and to structure a portfolio that keeps risk to a minimum. This should then presumably result in competitive investment decisions of firms, thereby improving the effectiveness of resource allocation.

DEDICATED

To my wife (Kyeong-Ran Yang), daughter (Allis, SuhJung Choi), and son (Alvin JinSung Choi)
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Jeong-Gil Choi

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Forecasting and Hospitality Business

A major function of management is planning, and a subset of the planning function is forecasting. Forecasting is generally used to predict what will happen in a given set of circumstances. The forecast gives an idea of expected results if management makes no changes in the way things are done. In planning, forecasts are used to help make decisions about which circumstances will be most desirable for the hospitality operation. Thus, if a forecast shows room demand will decrease next month, management should prepare an action plan to prevent a sales decline. After the action plan is completed, a new forecast must be made to reflect the impact of the action plan.

Forecasting is pervasive in hospitality operations. Every hospitality manager's job includes forecasting, which is the calculation and prediction of future events such as sales for the following day, week, or month. Forecasting is necessary in order to plan the most effective and efficient ways to meet an expected sales volume. For example, if the food and beverage manager of a hotel forecasts 500 dinner guests, then food, beverage, and other supplies must be obtained, and the appropriate personnel must be scheduled to prepare and serve the food and beverages to the guests. Generally, the accuracy of sales forecasts is a major determinant of the cost effectiveness of the hospitality operation. For instance, if forty meals are forecast and fifty guests show up, the food and beverage provisions and the number of employees scheduled to work may not be adequate. This may result in poor service and overtime wages. On the other hand, if sixty meals had been forecast and fifty guests showed up, service would probably have been outstanding; however, due to possibly excessive labor costs, efficiency would have been reduced.

The need for accurate forecasts of hospitality and tourism demand and supply is well recognized. As an example, Archer (1987) points out that "In the tourism industry, in common with most other service sectors, the need to forecast accurately is especially acute because of the perishable nature of the product. Unfilled airline seats and unused hotel rooms cannot be stockpiled" (p.77). However, although the benefits of accurate forecasts to the hospitality and tourism industry are clear, no forecast can guarantee complete accuracy. The aim of demand forecasting, therefore, is to predict the most probable level of demand and supply that is likely to occur in the light of known circumstances or, when alternative policies are proposed, to show the different levels of demand that may be achieved.

Forecasting is also an essential element in the process of management. No manager can avoid the need for some form of forecasting. A manager must plan for the future in order to minimize the risk of failure or, more optimistically, a manager must use forecasts. Forecasts will always be made, whether by guesswork, teamwork, or the use of complex models, and the accuracy of the forecasts will affect the quality of the management decision.

Industry Business Cycle

Industries react in different ways to the business cycle fluctuations of the U.S. economy (Berman and Pfleeger, 1997). Some industries are very vulnerable to economic swings, while others are relatively immune to them. For those industries that are characterized as cyclical, the degree and timing of these fluctuations vary widely. The industries that experience only modest gains during expansionary periods may also suffer only mildly during contractions, and those that recover fastest from recessions may also feel the impact of a downturn earlier and more strongly than other industries.

Churchill and Lewis (1984) examined how over 1000 small firms adapted to a recession. Fay and Medoff (1985), through a small survey of 168 plant managers, examined the labor adjustment of firms in downturns and noted that firms retained more workers than were immediately needed. Mascarenhas and Aaker (1989) concluded that

firms do indeed adjust their strategies systematically over cycle stages, and managers should try to maintain flexibility with respect to the strategy choices exhibiting changing relationships with profitability over the cycle, and exploit their contemporaneous, leading, or lagging effects. According to a previous study (Choi, 1996), in the hotel industry, there were many chances to gain competitive advantages over the cycles, but many companies missed the opportunities because there were fears to take business actions at different stages of the industry cycle. Such fears stopped many U.S. hotel investors from buying at the bottom of the cyclical troughs in 1969,1974,1982, and 1991. Many of them also missed opportunities to add value by selling their assets at the cyclical peaks in 1967, 1973, 1980, and 1989.

Muller and Woods (1994) emphasize that accuracy in forecasting, when business is highly predictable and cyclical, can offer significant competitive advantages. Relying on accurate forecasting also means that margins can be kept slim, giving a company an edge in the competitive bidding process for new business. Early signals of recession or of recovery are of great interest to business people, policy makers, job seekers, and investors. Because such decision makers consider turning points in the aggregate level of economic activity to be of special importance, considerable effort has been spent to forecast when these turns will occur. Moncarz and Kron (1993) also remind us that early warning signals are vital in assessing a company's health. Recognizing that a business is in financial distress and identifying its developing problems provides the best chance to take the necessary corrective action to turn the firm around.

A reasonable way to forecast these turning points is to search for sectors of the economy that tend to lead the overall economy; observed turning points in these sectors would suggest that the overall economy will soon turn. The business cycle analysis techniques have been used mainly for identifying general business activities as a whole. Between the 1920's and 1940's, one such technique developed by the National Bureau of Economic Research (NBER), business cycle dating and analysis techniques, was criticized as a measurement without theory (Niemira and Klein, 1994). The pros and cons of this

criticism are well documented in the literature. Nonetheless, the techniques survived, thrived, and are now well founded in economic theory. That these techniques stood the test of time reflects the usefulness of this approach for business and policy makers (Niemira and Klein, 1994).

One of the most striking aspects of the business cycle is that it is a phenomenon which, sooner or later, is reflected in similar patterns in almost every macro-economic variable, thus illustrating their interdependence (Berk and Bikker, 1995). Such interdependence is not restricted to national macro-economic variables either; it is also an industry phenomenon. It is important to understand the industry business environment if we are to forecast the impact of the cycle on our firm and to fix strategy on the basis of that forecast. In a sense, measuring, monitoring and forecasting business cycles is a relatively new class of methods in investigating the industry's overall phenomena. The systematic analysis of cycles in the hotel and restaurant business provides clues to help us forecast future direction and improve our ability to manage.

It can be applied to almost any type of business function. Aside from such obvious applications as the advance purchase of inventory and borrowing, an understanding of long-wave business cycles would also provide specific information as to when to be aggressive in expanding business operations, when to sell businesses, and even when to enter certain types of new business. Monitoring and forecasting hotel and restaurant industry cycles clearly gives the manager insight into industry turning points. Moreover, a company that quickly recognizes a change in the phase of the industry cycle could use either a recession or a recovery strategy to optimize profit. To take any benefit from this type of analysis, it is necessary to understand the functions of the industry cycle models and economic indicator system.

Economic Indicator System

Economic indicators, as a general category, are descriptive anticipatory data used as tools for business condition analysis and forecasting (Zarnowitz and Moore, 1977). There are potentially as many subsets of indicators in this sense as there are

different targets at which they can be directed. As an example, some indicators may relate to employment, others to inflation. This may lead to the uses of such time series as lagged explanatory variables in econometric models and regression equations. But there is a different, established meaning to what is often called the "indicator approach." This is a system of data and procedures designed to monitor, signal, and confirm cyclical changes, especially turning points, in the economy at large. The series that serve this purpose are selected for being comprehensively and systematically related to business cycles and are known as cyclical indicators (Zarnowitz, 1992).

What matters particularly in the present context is the characteristic variation of cyclical indicators with respect to their relative timing (Zarnowitz 1992). Thus many economic time series, called leading indicators, tend to reach their turning points before the corresponding business cycle turns. Turns in the series of coincident economic indicators occur roughly at the same time as those of the business cycle. They go down at the peak and up at the time of the trough. There are also many series that tend to reach their turning points after the peaks and troughs in the business cycle, and they are the lagging indicators. Geoffrey Moore (1983) explains some of the particular reasons why series normally turn at different times:

> More especially, series that represent early stages of production and investment processes (new orders for durable goods, housing starts, or permits) lead series that represent late stages (finished output, investment expenditures). Under uncertainty, less binding decisions are taken first. For example, hours of work are lengthened (shortened) before the workforce is altered by new hiring (layoffs) (Moore 1983, p. 27)

Leading series anticipate impending changes in production and employment and, therefore, changes in aggregate economic activity. Some of the lagging indicators lag because they represent activities that are influenced by the cycle. Thus interest rates, for example, usually lag behind the cyclical downturn because the downturn causes

emergency credit needs, which are accommodated in part but are charged at higher interest rates (Sherman, 1991).

Each type of indicator series serves to qualify or to support the information or evidence supplied by the other two categories. The function of leading economic indicators is to warn of impending changes in economic activity. The coincident indicators are useful for helping to track the course of the economy, but do not provide much help in predicting future turning points. The lagging indicators have no use in predicting the beginning or end of recession, but it can be useful in helping verify that a recession has actually started or ended. Thus, each type of indicator can be a good tool to track the changes in aggregate activity of a certain economy or industry.

There has been no effort to make a study for developing the restaurant industry cycle model and it's economic indicator system. Further, there has been no research that has empirically examined the intersection between the hospitality industry (including hotel and restaurant industry) cycle, strategy, and strategic outcomes.

Hospitality and Tourism Industry Forecasting

What would be the significance of such turning points to the hospitality and tourism industry? It would lead to the elimination or reduction of the industry cycle risk. This should then presumably result in an improvement in the investment decisions of firms, thereby improving their effective allocation of resources. In the hospitality and tourism industry literature, there are no studies using economic indicators to determine and analyze industry cycles. As reviewed and summarized in chapter two, most of the studies deal with different methods or techniques, and focus on different subjects.

Most of the forecasting studies focus on the tourism industry (Armstrong, 1972; Shaw, 1979; Smith, 1979; Uysal and Crompton, 1985;Moutinho and Witt, 1985; Calantone, Benedetto, and Bojanic, 1987; Martin and Witt, 1989;Yang, Keng, and Leng, 1989; Witt and Witt, 1990; Morley, 1991; Enders, Sandler, and Parise, 1992; Athiyaman and Robertson, 1992; Witt, Newbould, and Watkkins, 1992; Sheldon, 1993; Baum and Mudambi, 1994; Bloom and Leibold, 1994; Tonini, 1994; Moutinho and Witt, 1995)

focused on air traffic forecasting, tourism demand forecasting, terrorism impact, and the tourism environment.

For the hotel industry, there are some studies focused on capacity (Lambert, et al, 1989; Yesawich, 1993; Scott et al, 1995), lodging performance (Wood, 1994), customer expectations (Schuster, 1996), economic and market condition forecasting (Yesawich, 1984; Olsen, 1989; Littlejohn and Watson, 1990; Chon and Singh, 1993; Olsen, Murthy, and Teare, 1993), forecasting with time series (Pheifer and Bodily, 1990; Bonham, Carl, et al, 1992; Bonham, Carl, and Gangnes, 1996; Smith and Lesure, 1996; Wheaton and Rossoff, 1998), and the hotel business cycle and economic indicator system (Choi, 1996; Choi et al., 1997a; Choi et al., 1997b; Choi et al., 1999).

Most of the studies are qualitative in nature. Providing industry experts' opinion or discussion is the major character of the studies. Some of the studies analyzed the industry future more systematically. Rushmore (1992) estimated occupancy for the proposed Sheraton Hotel in his book. His method for occupancy estimation was simple. He averaged the occupancy levels recorded during a 20-year period (he called it the "Occupancy Cycle") and stabilized it based on the market demand and supply. The growth and turning points of the hotel and restaurant industry, however, can not be projected by a few operational indicators such as occupancy rate. This is because the industry phenomena interact strongly with the rest of the economy. To project the industry growth and turning points, developing economic indicator systems based on a wide-range of economic variables for the particular industry is required. Besides, occupancy rate does not reflect the industry's total output. It just shows how many rooms available in the industry are occupied in a given period. In short, the rate could be 100 percent if the rooms are free of charge.

Another study (Smith and Lesure, 1996) examined lodging industry trends by using the twelve months moving average technique. They examined the average trends in supply, demand, and room sales for different geographic hotel markets, location types, price segments and Census regions since 1991. Time series approaches always assume

that a pattern recurs over time which may be used to forecast values for any subsequent time period. This study, for instance, used past occupancy percentage changes to project future occupancy percentage changes. That is, this technique was concerned solely with the statistical analysis of past data for the same single variable to be forecast.

Again, this study also relied on single variables to forecast the change of the same variables in the future. Considering single variables to forecast future industry business direction has a built-in disadvantage in terms of accuracy because of the dynamic and complex nature of the business environment. It is true that the hotel and restaurant industry is highly dependent on the rest of the economy; if the economy goes into recession the performance of the industry will fall. The occupancy percentages and asset prices of the hotel and restaurant business do not move in a vacuum, somehow independent of what is happening within the rest of the economy. All markets are interrelated and many business environmental variables need to be considered together. Understanding the industry requires an understanding of how it interacts with the rest of the economy. Therefore, in analyzing the cyclical nature of the industry and forecasting the industry cycle, it is essential to recognize that the various markets are highly interrelated, and thus it is necessary to analyze as many economic indicators as possible. Failure to recognize the likely reactions to current events and policies results in a great deal of confusion, bad policy and poor investment decisions. Increasing awareness of the linkages that exist is the greatest single way that investors can improve their results.

Wheaton and Rossoff (1998) examined whether the hotel market moved closely with the overall economy. They concluded that the demand for hotel night stays moves very closely with U.S. GDP. However, new hotel investment moves in a long range pattern that bears little connection to macroeconomic fluctuation. Further, the average hotel rental rate displays this same long run pattern and moves almost independently of short term demand shocks. They concluded that the industry appears reluctant to rapidly adjust rental rates in response to the kind of short-run changes in occupancy that are caused by the economy. In other words, hotel investments as well as pricing are not based

upon the informative messenger-economic indicators- even though they move closely with the hotel market. Now it is clear that a clue for understanding the industry comes from the highly correlated complex relationships between the industry and the rest of the economy. That is, the high interdependence of the industry with the rest of the economy is not only bad news but also good news for projecting the industry future if the relationships between the industry and economic variables are identified. Choi (1996) investigated this. He identified the cyclical characteristics that exist between the hotel industry and various economic indicators. He developed the US hotel industry cycle model and analyzed the patterns of the changes (see Chapter Two for more detail). The model provides information including the cyclical nature of the industry cycle, projected cyclical turning points and growth rates. The results of the study provide useful guideposts for taking every possible advantage of the cycle study to the practitioners and researchers in the hotel industry.

Choi (1996) also develops the Economic Indicator System as a forecasting technique for the hotel industry. He identified and selected seventy economic indicators for the hotel industry by reviewing literature and testing the characteristics of each time series that are available in public. By classifying the indicators into leading, coincident, and lagging indicators, this study formed composite indices for the groups of indicators and defined the relationships in terms of time lags between the hotel industry growth cycle and the series of composite indices.

The performances of the composite indices for the leading, coincident, and lagging indicators were measured based on their timing differences of turning points compared with those of the industry cycles. The usefulness and effectiveness of the indicator system composed of composite indices of leading, coincident, and lagging indicators were empirically supported in the study.

Restaurant Industry Forecasting

It is not difficult to find literature discussing the impact of forecasting on food management. In fact, the forecasting function has an effect on many components

contributing to the overall success of the foodservice (Messersmith and Miller, 1992). However, the literature on forecasting in the restaurant industry is very limited in terms at least of the number of studies. Some of the studies introduce a menu item forecasting system (Messersmith, Moore, & Hoover, 1978), discuss traditional planning problems of the restaurant industry (Wacker, 1985), explain forecasting menu item demand in food service operations (Miller and Shanklin, 1988), forecast restaurant sales (Forst, 1992), introduce general forecasting techniques for restaurant operation (Messersmith and Miller, 1992), present a case study for demand forecasting (Yavas, 1996), and discuss market trends (Silverstone, 1993; Troyer, 1996). Most of the studies are discussions and thus hard to apply to dynamic and complex economic trends and therefore industry's overall trends. There is no systematic forecasting study for the restaurant industry as a whole and no restaurant industry business cycle study and its economic indicator system.

A Tool for Restaurant Industry Forecasting

As stated above, however, it is possible to improve our forecasts by finding the relationship between changes in the industry's as well as specific company's business cycles and changes in the overall economy. As several studies (Choi, 1996; Choi et al., 1997a; Choi et al., 1997b; Choi et al., 1999; Wheaton and Rossoff, 1998) already discovered, these relationships exist, and once they are uncovered, accurate forecasting is then a simple matter of monitoring changes in those economic indicators and determining their effect on the future trends of the industry and sales of individual companies. Therefore, there is merit to developing a systematic industry cycle model as a forecasting tool and providing a guidepost for the restaurant business managers and investors.

Part II

Need for Examining Financial Practices (or Strategies) of the High and Low Performing Firms for the period of Peaks and Troughs of the Restaurant Industry Cycle

It is imperative that top managers have a good understanding of the strategic nature of their industry so that they can effectively select businesses and allocate resources. Industry analysis is the starting point for almost any strategic plan. It is the process through which managers can evaluate the factors within the environment critical for business success (Bernhardt, 1993). To have an effective strategy, competitive intelligence should focus on information related to competitor analyses, environmental trends, and market dynamics (Sammon, Kurland, and Spitalnic, 1984; Cartwritht, Boughton, and Miller, 1995). Competitive intelligence has to incorporate probable future developments and changes in the structure of the industry and the market if it is to be of any practical value for managers (Bernhardt, 1993).

There are some studies for turnaround strategies: Schendel, Patten, and Riggs (1975), Hofer (1980) and Bibeault (1982). Schendel et al. (1975) studied 54 firms that, based on Compustat data, had suffered four consecutive years of earnings decline and then four consecutive years of earnings improvement. Using business periodicals, the authors subjectively rated the causes of the declines and the actions accounting for the upturns and classified each as either "strategic" or "operating" in nature. The authors generally found support for their theory: that declines caused by operating problems (e.g., production bottlenecks, labor strife) tend to be followed by operating cures (e.g., new cost controls, plant modernization) and that declines caused by strategic factors (e.g., obsolete products, intense price competition) tend to be followed by strategic cures (e.g., new products, redefining the business).

By analyzing written cases on 12 poorly performing firms, Hofer (1980) found support for his theory that the appropriateness of a strategic or operating turnaround depends on whether the firm's "illness" stems from poor strategy or poor operations. He also laid out a framework for choosing among different operating turnarounds according to the firm's closeness to breakeven, and here again he found some support. In particular, he found that firms operating close to breakeven tended to turn around successfully if they pursued cost-cutting strategies and that firms operating far below breakeven required more ambitious revenue-increasing or asset reduction strategies.

Bibeault (1982) conducted a survey of 81 chief executives who had faced turnaround situations. He coupled the data with anecdotes to discuss why failures occurred, characteristics of successful and unsuccessful turnarounds, and leadership aspects of turnarounds. He concluded that most turnarounds involve five stages. First, is the management change stage (Hofer, 1980) agrees that a change in top management almost always is required). Second is the evaluation stage (generally a matter of several weeks). Third is the emergency stage ("stop the bleeding" or "unloading"). Fourth is the stabilization stage (with emphasis on organizational rebuilding). Fifth is the return-to-normal growth stage (new products and other entrepreneurial activity). It implies that cost cutting and/or asset reduction is done before any entrepreneurial activity is undertaken. Hofer (1980) indirectly expressed some agreement saying that, in general, efficiency-oriented moves tend to produce the quickest, most dramatic results.

The study of the impact of the restaurant industry cycle on restaurant firms (both high and low performers) and their financial practices over the cycle warrant our attention. This is because the complications posed by the restaurant industry cycles may call for different strategies. Because of the nature of heterogeneity, a strategy may not be equally effective over the restaurant industry cycle, and compromise strategies that are less than optimal for either an up or down market or dynamic strategies with built-in cycle adjustments may be needed.

Research on strategy in a cyclical environment has been provocative, though limited in scope and focus. Several articles have suggested the need for strategy adjustments over the business cycle. The potential use of counter-cyclical strategies has been discussed by Dhalla (1980) for advertising, Greer (1984) for employment hiring, and Nolan (1982) for data processing investments. Few studies have empirically examined firm strategies over the business cycle. Churchill and Lewis (1984) examined how over 1000 small firms adapted to a recession. Fay and Medoff (1985), through a small survey of 168 plant managers, examined the labor adjustment of firms in downturns and noted that firms retained more workers than were immediately needed. Hultgren (1965) examined the indices of prices, costs, volume and profits of the aggregate manufacturing sector over several economic cycles and observed that unit costs move inversely with sales but with a lag. Mascarenhas and Aaker (1989) analyzed strategy over the business cycle and concluded that firms adjusted their strategies significantly and asymmetrically over business cycle stages and there was no consistency in performance between up markets and down markets. Ruggeri (1991) explained the usefulness of the business cycle for forecasting future directions of a business. Some other studies focused on the determinants of the cyclical behavior of real industrial output and price. Mankiw (1990) provides a theoretical explanation of industrial business cycle. The cyclical behavior of real industrial output and price is dependent on flexibility of the nominal wage in the face of aggregate demand shocks (Kendil, 1997). Identifying and understanding the various strategies of different firms can provide managers with the capability to foresee the impact on industry structure and evolution. Analyzing the variety of competitors within the industry can be immensely helpful in predicting future industry conditions (Kight, 1996).

On the other hand, the impact of the business cycle on firm strategy has been neglected in strategy research (Bishop, Graham and Jones, 1984). This claim can be well applied to the restaurant industry. Part one of this study provides useful information for the industry cyclical nature and trends. A firm that fails to take into account the changes occurring in the industry and the broader macro-environment will miss out on

opportunities, and will be vulnerable to external threats. Inability to identify and respond to how external changes reflect on the industry cycle would subject the firm to serious competitive attacks.

Risk is often defined as the variation in returns (probable outcomes) over the life of an investment project. Uncertainty refers to a state of knowledge about the variable inputs to an economic analysis. If restaurant management is unsure of the value of the information, there is uncertainty. The uncertainty of the market and other factors in the restaurant creates risks to the business. The general financial decision rules[1] such as the NPV (Net Present Value) method, therefore, should be adjusted to the cyclical nature of the business, which creates dynamic risk and uncertainty in practicing financial strategies in the restaurant industry.

Within an industry, it is true that some firms perform well during a certain phase of a cycle and some don't. In 1991, the Persian Gulf war was in full stride; the recession resulted in massive layoffs; consumer confidence was plummeting; and bank failures were reducing the availability of credit and raising its cost. Although it hasn't been proved yet, it is assumed most companies scaled back their planned capital expenditures. But some restaurant companies in 1991 were increasing their capital budgets. They could obtain capital equipment at bargain prices, and they increased their capacity while their competitors were cutting back. Finally they could gain more market share at the expense of their hesitant competitors. However, had the economy continued to slide, those restaurant companies that expanded would have found themselves saddled with excess capacity, high depreciation charges, and if, they borrowed to finance the expansion, high interest charges which could lead to bankruptcy. There are always risks and opportunities over the industry cycles. The restaurant industry cycle progresses through a set, chronological series of events, each of which greatly affects the performance of specific restaurant businesses.

[1] Some of these will be discussed in chapter two. General procedure of Financial practices, value creation, capital budgeting, and decision rules are also discussed in the chapter.

Then, who are the winners in the market taking every possible opportunity from the cyclical nature of the industry? Who are not? In what manner does the industry cycle impact on an individual firm's performance? How has the high performer been reacting to the change of the industry cycle? In other words, is there a significant difference between high performers' financial practices and low performers' for different cycle phases?

Dynamic relationships between the restaurant industry cycle and firm performance have been neglected in the literature. There has been no research that has empirically examined the interaction between the restaurant industry cycle and firm financial practices, and performance, which makes a richer understanding possible. Analyzing the dynamic relationships and revealing the financial practices of the high performing restaurant firms have merit for gaining competitive advantages in the market.

Every farmer knows that there is a season for planting and one for harvesting. The same is true for financial managers because the industry business cycle provides an optimum time for buying and liquidating each specific financial asset. In farming, if a farmer is familiar with the crops that are suitable for the local soil and climate and knows when to plant and harvest, barring an unforeseen natural disaster, it should be possible to obtain reasonable yields. Successful financial practices are no different. If management has an understanding of the characteristics of the various asset classes and can identify the points in the business cycle when they traditionally do well, it is possible to attain superior returns relative to the risk undertaken.

The industry business cycles are not as predictable as the calendar year seasons because they vary more in length and intensity. However, the guidelines derived from the past historical practices in the cycle will provide enough information to identify the various business seasons and the type of financial performance to be expected from financial practices (including financing, investment, and dividend decisions) during that stage of the cycle. Especially, if we find financial strategies or patterns of financial practices of high performing restaurant firms, which are presumably significantly different from those of low

performing firms, it could be important information for optimizing financial practices within a portfolio on the basis of the business cycle condition in the restaurant industry.

Purpose and Objectives

Part I

The preceding section highlights the need for developing the restaurant industry cycle model and its economic indicator system. The principle objectives of this study are providing for these needs. Therefore, the objective of part one of this study is to develop the restaurant industry cycle model and its economic indicator system. The specific objectives of Part I of this study are: (1) Developing the U.S. restaurant industry cycle that would cover restaurant activity as broadly as possible, and date and measure the cycles, (2) Developing for the U.S. restaurant industry a growth cycle model that would represent the change and magnitude of growth in the industry, and date and measure the cycle, (3) Identifying and selecting the economic indicators for the U.S. restaurant industry by testing the characteristics of each time series, and classifying the indicators as leading, coincident, or lagging, (4) Forming the composite indices for the leading, coincident, and lagging indicators to use for defining the relationships in terms of time lags between the restaurant industry cycle and the series of composite indices, and (5) Using the economic indicator system for measuring and forecasting the turning points (peaks and troughs, or highs and lows) of the industry cycles.

Part II

The preceding section also highlights the need for examining the financial practices of high and low performing restaurant firms over the industry cycle. Specifically, this study tries to capture the strategic financial practices of the high and low performers over the industry cycles and to find if there are any differences between high performers' financial practices and low performers'. By doing so, this study tries to reveal the best financial practices of the restaurant firms over the industry cycles.

Overview of the Research Design

Part I: Developing the Restaurant Industry Cycle Model and Its Economic Indicator System

The research questions under Part I of this study are: (1) What types of cyclical fluctuations has the restaurant industry experienced over the last several decades? (2) What are the leading, coincident, and lagging economic indicators for the industry? (3) Is it possible to predict the future turning points, peaks and troughs, by using the composite index of the leading indicators? The research questions that were raised through the above theoretical underpinning are framed into the following research propositions to be verified or empirically tested in the proposed research. These research propositions are stated as follows:

Proposition 1: It is believed that the restaurant industry reacts in different ways to the business cycle fluctuation of the US economy, while making a unique cyclical character (degree and timing of its fluctuation).

Proposition 2: It is believed that cyclical fluctuations of the growth of the restaurant industry can be projected by measuring and analyzing series of economic indicators.

Proposition 3: It is believed that each economic indicator will have specific characteristics in terms of time lags, and thus can be classified into leading, coincident, and lagging indicators.

Proposition 4: It is believed that compilation of groups of indicators into composite indicators will be necessary because no single indicator is perfect for explaining the time lag relationships with industry cycles, and the composite indices can be used for forecasting the future turning points (peaks and troughs) of the industry's growth.

To test the above propositions and thus to achieve the purpose and objective of part one, the study began with articulating the importance of forecasting in the restaurant industry. This is followed by reviewing literature for identifying types of forecasting studies that have been done in the hospitality and tourism industry to provide a comprehensive picture of the issue. By reviewing all of the methods of forecasting, the usefulness of the economic indicator system as a different class of forecasting method is introduced.

Once the review of literature was completed, the study developed a restaurant industry business cycle model and its economic indicator system. This is to identify the characteristics of the cyclical fluctuations of the restaurant industry such as: When did the peak and trough years, in terms of business performance in the restaurant industry, occur over the last three decades? What is the average restaurant industry cycle duration? What is the average duration of restaurant industry cycle expansion or contraction? When were the restaurant industry boom or recession periods over the last decades? How do we define the boom and recession periods over the restaurant industry cycle?

This is followed by developing an economic indicator system of the restaurant industry. We know there are many business environmental variables or indicators. What are the leading, coincident, and lagging indicators for the restaurant industry? This study

answers this question. In addition to the identification of the indicators, this study forms composite indices to forecast the restaurant industry activity systematically. Specific methods are explained in Chapter three.

Part II: Examining Financial Strategies of the High and Low Performing Firms in each Stage of the Restaurant Industry Cycle

The main research questions under Part II are: (1) Are there any significant differences between high performers and low performers in terms of allocating their financial resources for the changes of the industry cycles? (2) Are there any significant patterns of financial practices for high performing restaurant firms over the industry cycles? The research question that was raised through the above theoretical underpinning was framed into the following research proposition to be verified or empirically tested in the proposed research. These research propositions are stated as follows:

Proposition 5: It is believed that financial strategies practiced by high performing restaurant firms are independent of the cyclical fluctuations of the industry cycles.

Proposition 6: It is believed that financial strategies practiced by low performing restaurant firms are independent of the cyclical fluctuations of the industry cycles.

To answer the above questions, this study examined data on seven major family restaurants including Bob Evans Farms (NDQ-BOBE), Cracker Barrel (NDQ-CBRL), Luby's Cafeterias (NYSE-LUB), Piccadilly (NYSE-PIC), Ryan's Family Steak (NDQ-RYAN), Shoney's Inc. (NYSE-SHN), and Vicorp Rest (NDQ-VRES) for the period of 1982-1998. Selection of the family restaurant segment is based upon two fundamental criteria. First of all, businesses in the segment are less vulnerable to the change of external business environment than other segments such as the fast food restaurant segment. Other considerations are of a practical nature, such as the availability of long time series with as

few interruptions as possible and availability of data with minimum delay. The seven firms are classified in either high or low performing restaurant firms over the same period. Specific method for classification is explained in the Chapter Three.

The structure of financial strategy[2] consists of three interrelated decisions: the investment decision, the financing decisions, and the dividend decision (Van Horne, 1992). The investment is the allocation of capital to competing investment opportunities. The financing decision is concerned with determining the optimal capital structure for the corporation. The dividend decision determines the proportions of earnings paid to shareholders, and the proportion retained and reinvested in the corporation. Assuming that the objective of the corporation is to maximize shareholder value, 'the firm should strive for an optimal combination of the three interrelated decisions, solved jointly (Van Horne, 1992).

This study, referring to Slater and Zwirlein (1996), employs seven financial decision variables to examine the dynamic interaction between the restaurant industry cycle, firm financial practices, and performance, which makes a richer understanding possible. This study hypothesizes that there is a significant difference in practicing financial strategies between high performing restaurant firms and low performing firms.

In selecting variables under the three categories of financial decisions including financing, investment, and dividend decision, a vitally important consideration is content and construct validity. For the general business, Slater and Zwirlein (1996) used six major financial variables. Under the investment decision, they used two decision variables including capital investment (%)[3] and current investment (%)[4]. Under the financing

[2] See Slater and Zwirlein (1996) for a more detailed explanation of the definition of financial strategy. This study borrows the concepts and explanation developed by Slater and Zwirlein (1996) for constructing a foundation for current research agenda.

[3] The ratio of capital expenditures divided by total (net property, plant, and equipment. This ratio indicates the rate at which the corporation's fixed asset base is growing. Capital expenditures are taken from either the statement of cash flows or statement changes in financial positions to the companies' property, plant, and equipment.

[4] The ratio of total current assets to total assets.

decision, debt to total capital (%)[5] and total debt to total assets (%)[6] were used. For the dividend decision, they used dividend growth (%)[7] and dividend payout (%)[8]. In addition to the common variables of corporate finance, considering any particular variables for the restaurant industry would improve the content validity. Unfortunately, there is no published study of evaluating financial variables for the restaurant industry. This study, therefore, went through a review of sources[9] of all restaurant industry financial data to find if there are any different variables from the above six variables. The common financial variables used in the sources of restaurant industry's data are: cash flow per share, capital spending per share, book value per share, revenue, net income, operating profit margin, return on capital, return on assets, return on equity, current ratio, debt/capital ratio, working capital, cash & marketable securities, price-earnings ratio, dividend payout ratio, and earning per share. The following six variables represent proxies for measuring the three financial constructs (investment, financing, and dividend decisions): capital investment, current investment, debt-to-total capital, total debt-to-assets, dividend growth, and dividend payout ratio. Complete data was unavailable for all six variables. Conclusively, the following financial variables were selected for measurement: Capital Spending Per Share, Market Value of Common Share Outstanding, Earning Per Share, Cash Flow Per Share, Book Value Per Share, P/E Ratio, and Long-Term Debt. More detailed methods are explained in Chapter Three.

[5] The ratio of the book value of total long-term debt to total capital. Total long-term debt represents all debt obligations with maturities greater than one year from the balance sheet date. Total capital is the book value of the corporation's total common equity, preferred stock, and long-term debt.
[6] Book value of current liabilities plus long-term debt divided by total assets
[7] Average growth rate in dividends
[8] The ratio of total dollar dividends declared on common shares to net income less required preferred dividend payments of the company.
[9] Major published data sources of restaurant industry include: the Almanac of Business and Industrial Financial Ratios, the S&P Official Series, the Analyst's Handbook, National Income and Product Accounts of the United States, Economic Report of the President, Business Failure Record, Survey of Current Business, Industry Report, Standard & Poor's Stock Price Indices.

Outline of Dissertation

The following chapter is the literature review for business forecasting techniques and studies in the hospitality and tourism industry, business cycle studies, the rationale for using the economic indicator system, the hotel industry cycle model, a hotel industry economic indicator system. Specific and detailed methodologies for research purposes are presented in Chapter Three. Chapter Four will present the results of this study with discussion. Finally, conclusions, limitations, and suggestions for future research are covered in Chapter Five.

CHAPTER 2: REVIEW OF THE LITERATURE

Chapter Preview

The purpose of this chapter is to provide comprehensive literature review for business forecasting, business cycle studies, the rationale for using an economic indicator system, a hotel industry cycle model, a hotel industry economic indicator system. This chapter begins by reviewing and classifying all of the forecasting studies and techniques in the hospitality and tourism literature.

Overall, this chapter is composed of two parts: the foundation for developing a restaurant industry cycle model and economic indicator system and the foundation for developing an analytical and empirical framework for examining financial strategy over the business cycle.

PART ONE: Hospitality and Tourism Business Forecasting

Introduction

In this study, an effort is made to collect as many empirical and theoretical studies of hospitality and tourism demand and supply as could be found. The collected studies are classified into three broad sections including the hotel sector, restaurant sector, and tourism sector, chronologically. Those studies are reviewed comprehensively and discussed. The purpose of this review is to identify available forecasting studies in the hospitality and tourism literature and to provide a foundation of developing a restaurant industry cycle model and its economic indicator system.

Forecasting reviews exist mainly in tourism journals. The reviews aim at tourism audiences; hence, considerable attention is devoted to explaining the various techniques which can be used to forecast tourism demand, together with their advantages and disadvantages. Some reviews go no further than this (Archer, 1980, 1987; Vanhove, 1980; BarOn, 1984; Van Doorn, 1984). Other reviews additionally include a brief discussion of empirical results regarding the relative accuracy of different forecasting methods when applied to tourism demand (Van Doorn, 1982; Uysal and Crompton, 1985), while yet others include a more comprehensive discussion (Witt and Martin, 1989). Calantone, DiBenedetto, and Bojanic (1987) also incorporate empirical material relating to the goodness of fit of regression models explaining tourism demand, in their review paper.

Meanwhile, a hotel and restaurant forecasting literature review does not exist in published journals at this time, although many forecasting techniques and discussions exist in published academic and trade journals. For example, Teare (1995) reviewed articles published in the International Journal of Contemporary Hospitality Management during the period 1989-1994. The review, related to forecasting of hotel and restaurant demand and supply, includes only qualitative discussion papers in a thematic perspective. Hence, this section presents an up-to-date and more comprehensive review of tourism as well as

hotel and restaurant business forecasting literature than has appeared elsewhere. Those studies are presented chronologically, while capturing major trends of forecasting studies.

Forecasting Studies

Hotel Industry

Although literature related to hotel business forecasting is limited, there are some studies that focus on capacity, lodging performance, customer expectations, economic and market condition forecasting. In addition to these studies, studies proposing forecasting techniques are also reviewed and discussed.

By using the Ordinary Least Square Regression (OLS) technique, Combs and Elledge (1979) analyzed effects of a room tax on resort hotels. The question addressed was “does it -- (lodging tax) -- impose a higher relative tax burden on low-income people than on high-income people," which the researchers term “the incidence of the tax." The authors state that if income elasticity is greater than one, then the tax is progressive and if less than one, the tax is regressive. In 1984, Yesawich proposed a forecasting technique named the "Market-Based Approach to Forecasting." As he said, preparing a believable market forecast for a lodging property may need to be facilitated by market-based forecasting designed to put management's projections on the soundest foundation possible.

Fujii, Khaled, & Mak (1985) conducted an analysis of the exportability of hotel occupancy taxes from Hawaii. The term exportability arises from the reasoning that if some portion of the burden of the tax is born by visitors to Hawaii, then that portion of the tax is exported since the persons who pay the tax are not from Hawaii. They used the Almost Ideal Demand System (AIDS) for analysis. Scarfe, Krantz (1988) examined the evolution of the accommodations, food, and beverage industry in Canada and analyzed employment and productivity, comparing the Canadian with the U.S. industry. They also discussed the impact of foreign travel on the industry, the nature of demographic shifts in connection with employment, the growth of demand for restaurant meals, the seasonal

patterns, and the influence of government policies including the potential impact of a business transfer tax.

A hotel has a fixed number of rooms. The demand for these rooms is uncertain and hotel managers traditionally have accepted the idea that a full house is a gamble. When availability is a problem, reservations managers often gamble on expectations, using history and instinct to "guesstimate" how many reservations will not show, how many expected departures will extend their stay, and how many unexpected guests will arrive. A conservative overbooking policy runs the risk of unfilled rooms, but a more aggressive policy could result in disgruntled guests. Lambert, Lambert, and Cullen (1989) proposed a model for helping the overbooking problem. It is to use a simulation model to derive an optimal reservations policy. The in-depth analysis inherent in developing a simulation helps managers to understand the complexity of the reservation problem. According to the study, the simulation model then becomes an important strategic tool that allows managers to test the impact of policy changes without implementing them until the optimum solution for their property is found.

Olsen (1989) addresses the issues facing multi-unit hospitality organizations in mature US markets. He reviews the main trends in the hospitality industry environment during the mid-to-late 1980s and assesses their impact on organizational strategy, structure and performance. He concludes by predicting a decline in the fortunes on US based companies which are over-dependent on US domestic markets.

Turning to the 1990s, forecasting studies in the hospitality and tourism industry became more sophisticated. Pheifer and Bodily (1990) initiated a new attempt. Space-Time Autoregressive Moving-average (STARMA) modeling is applied to demand-related data from eight hotels from a single hotel chain in a large US city. Important spatial characteristics of the space-time process are incorporated into the model using a simple weighting matrix based on driving distances between the hotel sites. Using a holdout sample, the forecasting performance of this space-time approach was found to be better than eight separate univariate ARMA models. Some of the built-in advantages of the

STARMA approach are: 1. It should take less effort than the univariate approach. 2. Its model building for the given number of sites is accomplished simultaneously by a single model builder. 3. This approach requires an explicit examination of the covariance of forecast errors. Several reasons suggest that the forecasting performance of the STARMA model will be better than that of the separate univariate models: 1. STARMA can incorporate important physical characteristics of the site system into the model form. 2. It will estimate parameters through a procedure appropriate to the form of the covariance matrix of model errors. 3. This approaches pushes toward simple models with few parameters.

Along with the STARMA model, in 1992, Bonham, et al employed interrupted time series analysis to estimate the impact of a hotel room tax on real net hotel revenues by analyzing that time series before and after the imposition of the tax. They find that the tax had a negligible effect on real hotel revenues.

Other studies that are qualitative discussions include Carey (1992), Martin (1993), Yesawich (1993), Wood (1994), Scott, Sattler, & Highfill (1995), Schuster (1996), and Smith and Lesure (1996). Carey (1992) proposes a theory and empirical methodology for determination of optimal hotel capacity. This is applied to the Barbados luxury hotel sector for the period 1978-1984. The results are suggestive of excess capacity in the Barbados case. Martin (1993) discusses the market condition and provides an investment guideline to avoid the volatile lodging industry. Yesawich (1993) also discusses about the overbooking problem. All of them are qualitative discussions representing the authors' opinion.

Wood (1994) discusses somewhat the technical side of forecasting studies. According to his conclusion, as economic circumstances change, traditional views of hotel real estate, financial analysis tools, and valuation methods must also be reevaluated and modified. The traditional practice of analyzing a hotel's occupancy and average daily rate (ADR) separately significantly increases the potential for an appraisal or investment study to be erroneous or misleading. Another forecasting model is the rooms-revenue-per-

available-room (REVPAR), which provides a succinct indication of how well a hotel is performing by combining into a single factor the two prominent hotel operating statistics: occupancy and ADR. A REVPAR analysis quantifies a market's ability to support a certain level of room revenues and recognizes that lodging demand is influenced by price. REVPAR analysis provides a straightforward and reliable method of forecasting hotel room revenue.

Scott, Sattler, & Highfill (1995) discuss the hotel capacity problem while considering a hotel whose capacity is a fixed number of rooms. The demand for these rooms is uncertain and has the usual characteristics of queuing problems. The hotel is assumed to operate as a monopoly and to be risk neutral. The paper shows that a hotel will always choose a price for which it expects to have excess capacity even while pursuing profit maximization. The model can also be used to show that hotels may be willing to considerably undercut their published room rates if by doing so they can gain certain demand.

Another time series study of Bonham and Gangnes (1996) analyze the effect on hotel revenues of the Hawaii room tax using time series intervention analysis. It specifies a time series model of revenue behavior that captures the long run co-integrating relationships among revenues and important income and relative price variables, as well as other short-run dynamic influences. This study estimates the effect on Hawaii hotel room revenues of the 5% Hawaii hotel room tax introduced in January 1987. This study concludes no evidence of statistically significant tax impacts.

Schuster (1996) discusses how to find out what customers want. Customer satisfaction has always been a priority for foodservice professionals. But as cost pressures escalate and competition for the customer's foodservice dollar increases, foodservice directors are more concerned with measuring, monitoring, and improving that satisfaction on a consistent, ongoing basis. Customer surveys, focus groups, and other research tools, not only help an organization get closer to the customer, but also assist in evaluating customer satisfaction with specific products and services, forecasting the needs of

customers based on changing demographics or environments, and learning if improvements in products and services are being noticed by the customer.

Recently, Smith and Lesure (1996) have provided their opinion of forecasting studies in the hotel industry. They say the way to construct a forecast is to build a statistically reliable database of information that can be analyzed against new economic and financial information. Those numbers can further be used to develop a short-term outlook for the industry as a whole or various geographic and market segments. Regardless of how reliable the base data are, however, long-term predictions - longer than 6 or 12 months - are just educated guesses.

Tourism Industry

Acceptable forecasts that indicate the sizes, direction and characteristics of future international tourist flows are now required by many and various organizations. However, the selection of forecasting methodology depends upon the statistical data available and the type of result required. In 1972, Armstrong described a world international tourism model which indicates the potential of applying more sophisticated techniques than econometric methods such as linear programming and simulation

Shaw (1979) reviewed the econometric techniques that are utilized in air traffic forecasting. The London-area airports system is cited as an example. The reliability of these forecasts is addressed particularly where they predict significant increases in traffic. It is concluded that although the long-term growth of air passenger traffic in the United Kingdom will be limited by the constraints of supply and demand, it is likely that the number of international leisure passengers will triple before the S-curve begins to flatten out in the 21st century. Hotel provision and tourist-site congestion are the most obvious areas of supply constraint, and the demand for inbound tourism to the United Kingdom appears to be effectively unlimited. Saturation may result for travel out of the country by residents, however.

Relative prices are often used as an independent variable in models that attempt to explain international travel from an origin to a destination. Relative price is usually the

input into a forecasting model in the form of an index reflecting prices in the generating countries relative to those in the destination country. Overseas tourists frequently include more than one country in their itineraries; thus, a higher-than-expected price level in one country may cause less time to be spent there and more time and money to be spent in another country. To measure the responsiveness of international tourist demand to the level of relative prices, an index is required that specifically measures the relative prices of tourist services. Such an index was constructed by Uysal and Crompton (1985) as part of a study concerned with developing a model to explain and predict international tourist flows to Turkey. The weights used were derived in 2 phases and were adjusted to incorporate the relative competitiveness of other tourist destination countries with Turkey. The derivation of weights is shown for 11 tourist-generating countries

In 1985, a review of forecasting methods was made by Uysal and Crompton. Forecasts of tourism demand significantly influence short-term tourism marketing decisions as well as long-term tourism investment policies in both the public and private sectors. An overview is presented of the various quantitative and qualitative methods used to forecast tourism demand. Quantitative methods include time series analysis for studying changes in tourism over time, gravity and trip generation modeling for analyzing the origin-destination patterns in tourism, and multivariate regression modeling for assessing how a number of variables influence demand for tourism. Qualitative forecasting methods use information gathered from consumers or experts to predict tourism demand. These methods may include traditional approaches based on analysis of past consumer surveys or new primary market research, or expert panel approaches, such as the Delphi approach of judgment-aided modeling. Both quantitative and qualitative methods are shown to have limited accuracy, suggesting that they should be used in combination to improve forecasts of tourism demand, especially for studies covering time periods longer than a year.

Qualitative techniques are generally used to forecast the long-term tourism environment. Although the Delphi approach is often employed for this purpose, Moutinho

and Witt (1985) adopted an alternative consensus approach (on account of the radical nature of some of the possible tourism developments) that permits full discussion among the experts taking part in the forecasting exercise. The results show that the tourism experts expect advances in science and technology to have major impacts on tourism development during the period up to 2030.

Calantone, Di Benedetto, & Bojanic (1987) made another review of forecasting methods. The ability to forecast tourism demand accurately despite a changing environment can be very beneficial in this highly competitive industry. Several recent articles provide overviews of forecasting methods available to the tourism industry. Most of the tourism forecasting studies in the literature are exploratory or speculative. Exploratory studies often employ regression models, time series, and gravity approaches. Speculative approaches -- which use such methods as Delphi forecasting and scenario writing -- require identifying experts in tourism and obtaining their input. Generally, speculative models are able to provide longer-term projections than the exploratory approaches. Simple regression models, while easy to interpret and inexpensive to run, tend to have low explanatory ability and a short usable time horizon. Like regression models, time series models are most useful in short-term forecasting, although they may yield seriously misleading forecasts if unforeseen occurrences happen. Finally, simple tourism gravity models exhibit the same poor explanatory ability as regression models

Courcelle, Tashman (1989) introduced a graphical aid in forecasting - Box Plots. As they said, Box-plot displays can be used in the selection of appropriate forecasting techniques by clarifying the patterns in a time series and by guiding the analyst in such procedures as transformations, desegregation of the data, and type of seasonal adjustment. Box plots were developed in the 1970s as part of the statistical methodology known as exploratory data analysis. The plots collect a specific number of observations into distinct time intervals. The desired time interval is selected by choosing the number of observations per interval. An average level in the center of each box is marked with an asterisk. Trends in the data can be identified by following the asterisks in the centers of the

boxes from the beginning of the time series to the end. The amount of variance present for each period is indicated by the width of the box itself. Broken lines extending from the top or bottom of the box indicate comparatively high or low observations.

It has been shown that no one forecasting method is superior to all others in all situations, so forecasters usually consider a range of methods. Martin and Witt (1989) examined forecasting accuracy in the context of international tourism demand. Seven quantitative forecasting methods were used to generate out-of-sample forecasts of tourist flows across 24 origin-destination pairs and 2 forecasting horizons. Two alternative measures of accuracy were employed to evaluate forecasting performance. Statistically significant differences in forecasting accuracy were identified using the ANOVA and Scheffe tests. A number of the simple forecasting methods[10] produced more accurate forecasts than econometric forecasts. As predicted, one-year-ahead forecasts were shown to be more accurate than 2-years-ahead forecasts. Aggregation of data series seemed to reduce forecasting accuracy slightly.

Yong, Keng, & Leng (1989) used the Delphi method, a qualitative forecasting technique, to project the future of Singapore's tourism industry. Projections were made by 2 panels, one consisting of people from the local tourist industry and the other consisting of an international group of business executives. Positive future trends include: 1. increased purchasing power for leisure and travel services for individuals from developed countries, 2. better access to travel information, 3. fewer constraints for cross-border travel movements, and 4. higher pressure for regional collaboration in tourism-related activities. Negative trends include the imposition of more stringent exit taxes and a decrease in business travelers. In order to exploit opportunities and overcome problems, government policy makers and private tourism-related industries need to take such actions as: 1. increasing tourism education and training, and 2. developing tourism products

An attempt is made by Witt and Witt (1990) to ascertain whether it is possible to devise a set of criteria relating to model estimation that will give some indication of the

[10] Please see Martin and Witt (1989) for more detail.

likelihood that a specific econometric model will generate accurate forecasts of tourism demand. Alternative econometric models of international tourism demand are estimated over the time period 1965-1980; the "superior" models are used to generate forecasts for 1981 and 1982. The data used relate to tourism flows from four major tourist-generating countries to six destinations. Equations first are estimated by ordinary least squares using the Cochrane-Orcutt iterative procedure in an attempt to lessen the likelihood of autocorrelation. Results indicate that it would have been impossible to identify, with a reasonable degree of certainty, which of the various models used to generate forecasts for a given origin-destination pair would provide the most accurate forecasts from the data contained in the estimated models.

Multiple regression is used widely as a tool for estimating tourism demand functions, which are needed for planning, policy making, and budgeting purposes by tourism operators, investors, and government bureaus. Problems of heteroscedasticity, multicollinearity, and autocorrelation are well recognized by modelers, but questions of model specification are less widely understood. Misspecification of the model, such as failure to include an important explanatory variable or a wrong functional form, can have significant impacts on the model estimated. According to Morley (1991), more complex or general functional forms yield better models than simpler functions, such as the commonly used log-linear model. Since the lag structure of tourist demand is likely to be an important aspect of a well-specified model, a dynamic structural model for tourism demand as a quadratic function is constructed

Forecasting accuracy can be assessed in various ways. The most popular accuracy measures are based on the magnitude of error, but directional accuracy and trend change accuracy are also important. Witt and Witt (1991) used seven quantitative forecasting methods to forecast one-year-ahead international tourist flows, and the consistency of accuracy rankings across the various accuracy measures is analyzed. The "no change" extrapolation model is ranked most accurate in terms of error magnitude, econometrics is

ranked first in terms of direction of change error, and exponential smoothing is ranked first in terms of trend change error.

Planning, both operational and strategic, relies on accurate forecasting. Planning in tourism is no less dependent on accurate forecasts. However, tourism demand forecasting has been dominated by the application of regression/econometric techniques. Past studies on the forecasting accuracy of econometric/regression models suggest that forecasts generated by these models are not necessarily superior to forecasts generated by simple time-series techniques. Athiyaman and Robertson (1992) used the following time-series forecasting techniques to generate forecasts of international tourist arrivals from Thailand to Hong Kong: 1. naive, 2. moving average, 3. single exponential smoothing, 4. linear moving average, 5. Brown's one-parameter linear exponential smoothing, 6. Holt's 2-parameter linear exponential smoothing, and 7. Winter's 3-parameter exponential smoothing. The results confirm that simple techniques may be just as accurate and often more time- and cost-effective than more complex ones.

Enders, Sandler, and Parise (1992) quantify the impact that terrorism has had on tourism since 1970. To accomplish this task, the authors estimate a forecasting equation for a country's (region's) share of tourism using an ARIMA model with a transfer function based on the time series of terrorist attacks in the country (or region). Their results focus on three European countries--Greece, Italy, and Austria--that have experienced noteworthy terrorist attacks since 1970. The authors also calculate revenue losses for continental Europe. Since 1974 these losses are large, amounting to sixteen billion SDRs in present value terms. Much of the loss occurred in the 1980s.

Witt, Newbould, and Watkins (1992) use various models to generate forecasts of visitor arrivals in Las Vegas. The study illustrates that the superiority of the no change extrapolation model in the context of international tourism forecasting does not carry over to the domestic tourism forecasting case. The study shows that exponential smoothing generates forecasts with lower error magnitudes than no change. There is evidence that domestic tourist flows are more predictable than international tourist flows, and it seems

possible to capture the major features of the data series pattern, thus generating the relatively accurate forecasts of tourism demand.

Issues relating to the measurement and forecasting of international tourist expenditures and tourism arrivals are examined by Sheldon (1993). The examination shows that the two series fluctuate differently, and considers the accuracy of six different forecasting techniques (time series and econometric causal models) to forecast tourism expenditures. The results show that the accuracy of the forecasts differs depending on the country being forecast, but that the no-change model and Brown's double exponential smoothing[11] are, overall, the two most accurate methods for forecasting international tourism expenditures

According to Baum and Mudambi (1994), the UK's fully inclusive tour industry is characterized by: 1) demand volatility, 2) an oligopolistic market structure, and 3) an unstorable product. The interplay of these factors leads to an asymmetric reaction of industry pricing to demand forecasting errors. Demand underestimation results in stable and relatively high prices. However, demand overestimation ensures price and market structure instability. During such periods, lowering price is unlikely to yield a stable outcome for the industry. In fact, there are forces working against prices falling to levels commensurate with demand. Concentration of unit ownership at the margin, and not elsewhere, determines the extent of this price rigidity.

The forecasting of tourism demand is generally seen to be one of the more complex functions of tourism management. Demand may be defined in a variety of ways and measured on a range of scales. The changes and challenges usually associated with developing tourism markets result in tourism businesses trying to convert negative and-or latent demand into effective demand. Inadequate forecasts have become a serious constraint to the efficiency of operators on both the domestic and international fronts. Bloom, and Leibold (1994) provided a practical insight into tourism demand forecasting procedures in South Africa, with comparison of international practices. Frechtling (1996)

[11] Please see Sheldon (1993) for more detail.

provides a practical guidance to forecasting demand. It discusses thirteen different techniques, presents the strengths and weakness of each, and offers rules for determining the optimum and appropriate model for a given forecasting project (cited in Uysal, 1988).

Tonini (1994) dealt with--applying to the Italian case--various stochastic models (ARIMA and dynamic models with transfer functions) aimed to make more reliable tourism projections. The better performances are given by transfer function models with exogenous factors having a great effect on tourism demand (moving holidays, interventions, and outliers). This is because a model including moving holiday factors is more appropriate for this tourism data; in addition, the moving holiday variables are predictable. Finally, the ARIMA models with outliers can produce substantially better forecasts provided that the outlier types are correctly detected and the outliers occur in the last year under observation (or in the months just before this year).

Qualitative techniques are generally used to forecast the long-term tourism environment. The Delphi approach is often employed for this purpose. Moutinho and Witt (1995) used an alternative consensus approach (on account of the radical nature of some of the possible tourism developments) that permits full discussion among the experts taking part in the forecasting exercise. The results show that the tourism experts expect advances in science and technology to have major impacts on tourism development during the period up to 2030.

Witt and Witt (1995) discussed forecasting tourism demand and main methods used to forecast tourism demand which are reported in published empirical studies together with the empirical findings. The vast majority of such studies are concerned with econometric modeling/forecasting, and the most appropriate explanatory variables are examined. Particular emphasis is placed on empirical comparisons of the accuracy of tourism forecasts generated by different techniques. Considerable scope exists for improving the model specification techniques employed in econometric forecasting of tourism demand. No single forecasting method performs consistently best across different

situations, but autoregression, exponential smoothing and econometrics are worthy of consideration as alternatives to the no change model.

Restaurant Industry

Wacker (1985) examined the traditional planning problems of the restaurant industry and explained the restaurant planning procedures implemented to solve these problems. The planning procedures include: 1) forecasting, 2) menu analysis, 3) recipe information, 4)material requirements planning, 5)capacity requirements planning, and 6) using these components to derive an effective cost plan. A well-known New Orleans restaurant was used to illustrate the planning method. Ordinary least square regression was used to estimate the aggregate daily forecast. The procedures demonstrated allow managers to plan for different and specific aggregate sales for a lucid cost picture for the longer-range restaurant needs. The restaurant owner reported that through enhanced planning there has been a much closer control of materials through lower inventory spoilage and shrinkage

In an increasingly competitive milieu, managers of fast food restaurants need to forecast the demand for their services. They also need to manage their inventories effectively to reduce waste. Forst (1992) used several regressions and Box-Jenkins models to forecast weekly sales at a small campus restaurant for two years. Forecasted sales were compared with actual sales to select the three most promising forecasting models. These three models were then used to forecast sales for the first 44 weeks of the third year, and they were then compared against actual sales. The results indicate that a multiple regression model with two predictors (a dummy variable and sales lagged one-week) was the best forecasting model considered.

Recent trends have combined to reshape the style, delivery, and definition of fast food systems (Silverstone, 1993). Today, the major market players are fighting for a larger share of static or diminishing markets. In addition, consumer attitudes relating to

health and the quality of life are causing shifts in demand. There is evidence of a slowdown in the pace of operations. Boss and Schechter (1994) reported a study of restaurant industry trends. Twelve foodservice industry leaders addressed the needs of today's customers and how the industry is responding to those needs, plus trends in purchasing, forecasting and technology in a roundtable discussion.

According to Troyer (1996), in the foodservice supply chain, more than $14 billion can be realized if the concepts of the industry's Efficient Foodservice Response (EFR) initiative are implemented, according to a recently concluded study by Computer Sciences Corp. and the Stanford University Global Supply Chain Forum. To effectively capture this market - and do so profitably - the foodservice industry must streamline its supply chain and build a solid platform that enables food service companies to capitalize on this growth. EFR is designed to help the industry do just that. Many EFR product flow initiatives are similar to those in Efficient Consumer Response, but there are a few key differences in foodservice, including (1) labor redirection, (2) market-level forecasting, (3) alternative flows for fast-movers, and (4) alternative flows for slow-movers. Recently, a mini-case study conducted by Yavas (1996) was presented showing practical solutions to the demand forecasting and labor and material management problems faced by a fast-food operator. A modified regression model was ultimately selected. The 2-stage model incorporated the variables of month, day and sales. Both month and day were specified as dummy variables. After finalizing the forecasting model, a framework was designed to assist the owner-manager in coordinating labor and materials management activities in response to the anticipated demand. Questions dealing with quantity, quality, and procedures for labor and material management were addressed by integrating demand forecasts with labor and material requirements. Similarly, the demand forecast also served as input to the labor management system in determining the number and mix of labor hours needed to meet the demand.

The above sections have reviewed the existing empirical and theoretical literature on hospitality and tourism business forecasting. The collected studies were classified into

three broad sections including hotel sector, and restaurant sector, and tourism sector, chronologically. As many studies of hospitality and tourism forecasting as could be found were reviewed comprehensively and the focus and descriptions of findings of each of the forecasting studies were discussed. As reviewed above, forecasting studies available in the hospitality and tourism literature deal with different methods or techniques, and focus on different subjects.

From the literature review, it has been shown that simple regression models, while easy to interpret and inexpensive to run, tend to have low explanatory ability and a short usable time horizon. Time series may yield seriously misleading forecasts if unforeseen occurrences happen. Also, simple industry gravity models exhibit the same poor explanatory ability as regression models. Before we conclude or assess the forecasting models or methods, it is good to review all of the available forecasting models or methods in literature. The following sub-section presents the forecasting methods under two categories including qualitative methods and quantitative methods.

Forecasting Methods[12]

There are numerous ways to forecast, ranging from the simple, unsophisticated methods of intuition to complex approaches such as econometric models, where sets of two to more multiple regression equations are used. Figure 1 shows the relationships between many of the modeling methods discussed in this study. The first breakdown is between informal and formal forecasting procedures. Formal forecasting methods outline steps to be followed so they can be applied repeatedly. Formal forecasting methods are either qualitative or quantitative. Uysal and Crompton (1985) reviewed the various quantitative and qualitative methods used to forecast tourism demand. Quantitative methods include time series analysis for studying changes in tourism over time, gravity and trip generation modeling for analyzing the origin-destination patterns in tourism, and

[12] The methods presented in this sub-section come from Archer (1987) with some modification.

multivariate regression modeling for assessing how a number of variables influence demand for tourism. Qualitative forecasting methods use information gathered from consumers or experts to predict tourism demand. These methods may include traditional approaches based on analysis of past consumer surveys or new primary market research, or expert panel approaches, such as the Delphi approach of judgment-aided modeling. Both quantitative and qualitative methods are shown to have limited accuracy, suggesting that they should be used in combination to improve forecasts of tourism demand, especially for studies covering time periods longer than a year.

Qualitative Techniques

Qualitative methods tend to provide reasonably good forecasts in the short term because of the familiarity of experts with ongoing changes in their field. The qualitative methods work best when the forecasting scope is limited. The primary problem with qualitative methods is identifying experts in the appropriate fields and then getting them to agree on a common forecast.

Examples of qualitative methods include the Delphi method and market research methods. The Delphi method involves asking various experts what they anticipate in the future, without attempting to attach high degrees of precision to the forecast results. This technique involves obtaining opinions from a group of experts to achieve consensus on future events that might affect an operation's markets. Rather than meeting together in one place, the group interacts anonymously. Questionnaires are often used. The responses are then analyzed and resubmitted to the experts for a second round of opinions. This process may continue for several rounds until the researcher is satisfied that consensus regarding the forecast has been achieved.

Another example of the qualitative methods includes market research methods. The market research method involves systematically gathering, recording, and analyzing data related to a hospitality business's marketing of products and services. Large hotel chains generally conduct extensive market research before opening a new property to

determine whether there is adequate demand. This market research provides data which can then be used in preparing formal sales forecasts.

The jury of executive opinion technique uses key financial, marketing, and operations executives to estimate sales for the forecast period. The person using this technique will provide the executives with expected economic conditions and changes in the establishment's services. The executives will then independently make their sales forecasts. The person using this technique will then reconcile differences among the executives' opinions.

The sales force estimates technique is similar to the jury of executive opinion in that opinions of corporate personnel are obtained. However, in this case, the input is from lower echelon personnel who estimate their next year's sales. This approach is sometimes used by multi-unit food service operations. Unit managers estimate and their immediate superiors review and discuss these estimates with each unit manager. Then, the separate sales estimates are combined to create a sales forecast for the food service operation.

Qualitative methods range from hunches and managerial inspiration at one end of the scale to carefully structured attempts to gather and amalgamate the opinions of many experts at the other end. Figure 1 shows the qualitative methods. The methods are divided into Delphi Studies and Market Survey methods.

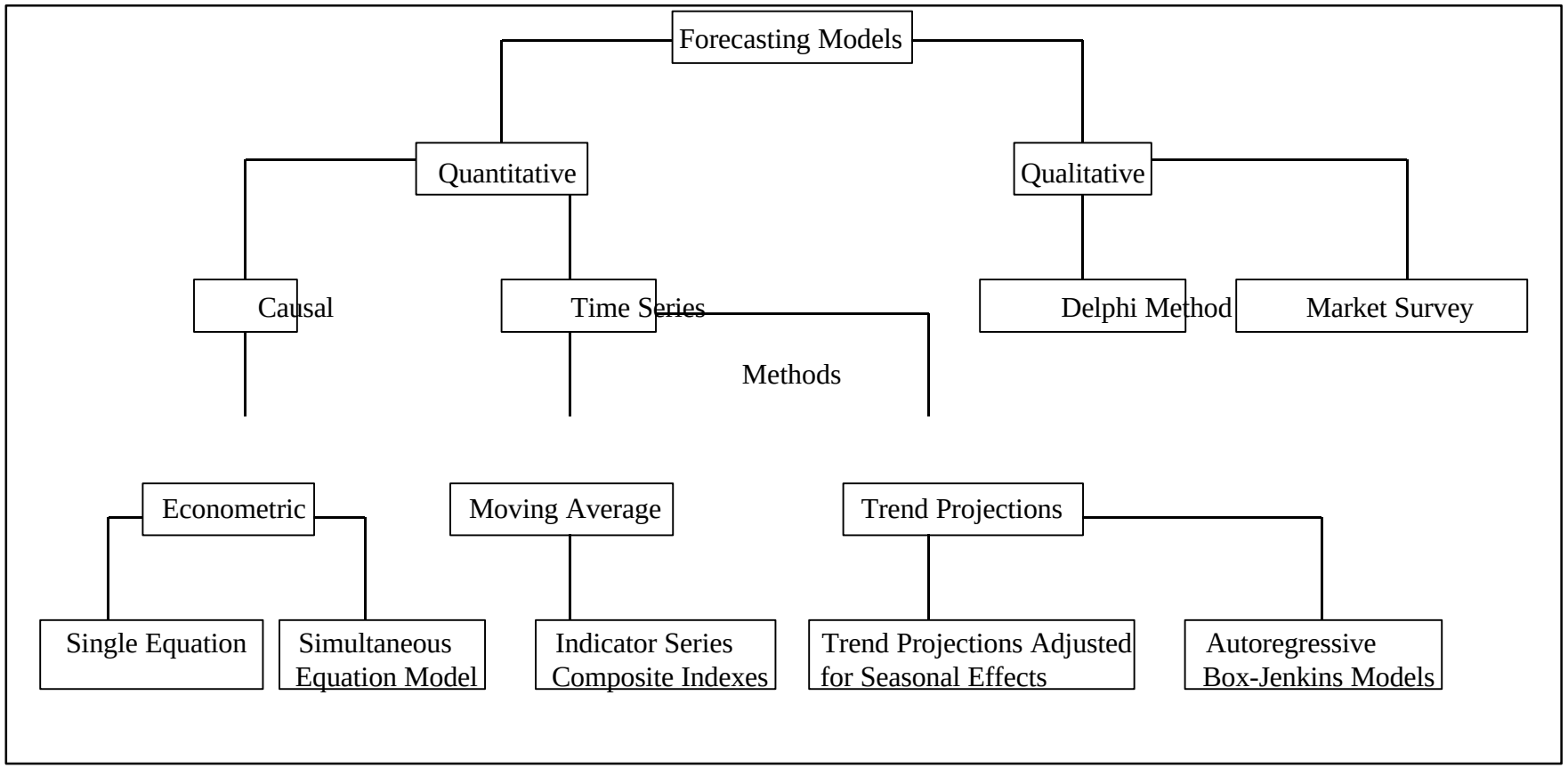


Figure 1. Relationships between Different Forecasting Models

There are three situations in which qualitative methods are preferable to quantitative ones. These are when: (1) Data are insufficient or are known to be unreliable; (2) It is not possible to construct a suitable numerical model; (3) Time is insufficient to initiate and operate a quantitative analysis.

Quantitative Techniques

Quantitative models are based upon an analysis of historical data, attempting to find relationships or trends that can be used for forecasting. Quantitative models are separated into three basic types: time series and causal models, system models, and some of the more sophisticated models incorporating elements of each.

Time series models are based upon the premise that what has happened in the past has some relevance for the future. These models ignore the determinants of demand per se and assume that the effects of causal factors are already implicit in the past data of the variable to be forecast. Forecasts are obtained by analyzing movements in the data and extrapolating this forward into the future. In consequence, although they may provide accurate forecasts, they give no reasons for the prediction. Causal models, on the other hand, take into account the principal factors influencing demand and analyze their separate effects upon the variables under consideration. Forecasts are made by calculating the impact on demand predicted changes in causal factors such as income levels, relative prices, and the cost of travel. System models describe the operation of systems and/or economies and can be used to assess the effect of changes in demand on their operation.

Time Series Models

The time series approaches always assume that a pattern recurs over time which, when identified, may be used to forecast values for any subsequent time period. For example, if a seasonal pattern of December hotel occupancies of 30% below the monthly average has been identified, then the estimated hotel occupancy for December of

the following year would most likely be 30% below the monthly average for that year. Time series approaches assume that the underlying pattern can be identified solely on the basis of historical data from that series. They do not consider the potential effects of certain decisions, such as pricing and advertising, that the manager makes for the future periods.

All of the approaches described in this section are univariate; that is, they are concerned solely with the statistical analysis of past data for the variable to be forecast, Such models are available in varying degrees of sophistication from simple trend extrapolation to highly complex mathematical algorithms, involving the analysis and projection of individual components of the data.

Simple Trend Projection

In cases where the data exhibit great regularity, forecasts can be obtained merely by extrapolating the principal trends. The most common relationships are linear, exponential, and cyclical, and the objective is to project these curves forward into the future. Since it is unrealistic to expect these relationships to hold for more than a limited period, simple trend projection is suitable only for very short-term forecasting.

One variant of trend projection, however, known because of its shape as an S-curve, is used in some industries for long term forecasting. This technique is used to analyze past demand over a period of several years and, on the basis of the mathematical relationship disclosed, to forecast by making various assumptions about the future growth path of demand

Arithmetic Moving Average

Another naive technique that can produce usable results is to base the forecast on an arithmetic moving average of previous data. In essence, the data for previous years, months, or seasons are added together and divided by the number of observations to give an average figure. When the next observation becomes available, the oldest in the sequence is dropped and a new average is calculated. Unfortunately, the presence of linear or cyclical trends in the data causes the moving average to lag behind the movement of the

data. Although methods exist to ameliorate the effects of such lags, the technique in this simplest form is not accurate enough to produce reliable forecasts.

Decomposition Analysis

A more sophisticated use of moving average is to break down (decompose) the main components in the time series and to analyze each of these mathematically. The task is to identify each of the principal components- seasonal variations, secular trends, and irregular fluctuations- and to produce formulae that describe their interrelationships. Forecasts are produced by applying moving averages, where relevant, to each of the data series. The forecasts are updated by including new data as soon as they become available.

This approach can be used with any tourism data that exhibit sufficient regularity.

Perhaps the most successful application of this technique in the field of tourism is the work of Baron (1975) in Israel, who forecasts tourist arrivals, foreign currency earnings from tourists, the demand for bed-nights in hotels, and the numbers of residents departing. Because moving averages inevitably lag behind movements of the data, decomposition analysis is not an appropriate technique to use when substantial changes are taking place in the data.

Exponential Smoothing

Moving averages, however, can be estimated exponentially as well as arithmetically. In such cases, the object is to produce a weighted moving average of past data with the weights assigned in geometric progression so that the heaviest weights are given to the most recent data and past data are discounted more heavily. As in the case of arithmetic moving averages, the data are then extrapolated into the future to produce a forecast.

If, however, the time series data contains trends, a simple, or single, exponential smoothing model is not appropriate. The effect of trends can be identified by a double exponential smoothing model, for example, Brown's model (1963), which reduces forecasts containing both a constant level term and a linear-trend term.

Autoregressive Models

It is quite common in time series for there to be a strong relationship between the data for any one time period and the corresponding data for the preceding time period. Indeed, many simple and naive forecasting models are based upon this observation. More rigorous forecasts, however, can be produced by the use of stepwise autoregressive models.

The technique involves the use of stepwise regression modes, which add data for past years one at a time into the calculation until no further data is statistically significant. The aim is to select only the minimum set of data necessary to produce a forecast and to omit data that is statistically insignificant. Such models are very flexible and, unlike many forecasting methods, can be used in cases where the trends are nonlinear.

Box-Jenkins Method I

The time series approach developed by George Box and Gwilym Jenkins (1970) is a highly sophisticated technique that is relatively inexpensive to use. Basically the approach is (1) to identify the form of model that expresses relatively well the relationships between the values of a series of data through time, and then (2) to use the model to calculate numerical values for these relationships.

The technique can provide short- and medium-term forecasts as accurately as most causal approaches. An interesting example of the degree of accuracy attainable with this method can be seen in a study of tourism in Hawaii conducted by Guerts and Ibrahim (1975). Their 24-month forecast of tourist arrivals in the state was shown to have an average forecast error of only 3.5 percent- a level of accuracy that would be very acceptable for any causal model.

In its simplest forms, the Box-Jenkins method is univariate; that is, it is concerned with the extrapolation of a time series of data based on its own movements through time. It can be used to predict when, but not why, demand may change and in consequence, it cannot be used to assess the impact of changes in any of the factors that influence demand. Yet Box and Jenkins themselves (1970, pp. 337-420) showed how the

model could be adapted to take some causal factors into account (see Box-Jenkins Method II). It is in this later form that the technique provides a bridge between simple univariate time series analysis and the causal approaches described below.

Causal Models

Time series models identify historical patterns in the data and use these patterns to develop a forecast of the future, under the assumption that these patterns will continue. Time series models do not attempt to determine how the forecast variable is affected by other variables. Causal models, on the other hand, statistically identify the relationships between variables, or how changes in one (or more) variable cause changes in another variable.

Casual models involve the analysis of data for other variables considered to be related to the one under consideration and the use of these to forecast demand for the variable of interest. For example, the sales of food and beverages in a hotel are a function, among other things, of hotel occupancy. Thus, a food and beverage sales forecast is based in part on forecasted rooms sales. Causal methods include single and multiple regression methods and econometric models. The approaches vary in sophistication from the use of simple indicators and surveys to the application of complex mathematical and econometric techniques.

Regression analysis

Regression analysis involves estimating an activity on the basis of other activities that are assumed to be causes or highly reliable indicators of the activity. The activity to be forecasted (such as food sales) is the dependent, unknown variable, while the basis on which the forecast is made (such as room sales and/or advertising expenses) is the independent variable or known variable. Regression analysis is used to predict the dependent variable given the value of the independent variables.

The level of demand to be estimated is thought to depend upon, or be closely related to, the independent variable. In order to forecast the operation's demand, the closely related items would be a lodging property's rooms sales and food sales in its

restaurant operation. Two measures of closeness are the coefficient of correlation and the coefficient of determination. The coefficient of correlation is the measure of the relation between the dependent and independent variables, such as food sales and rooms sales.

Regression analysis forecasting used when two or more independent variables are related to the dependent variable is called multiple regression analysis. For example, the manager of the food and beverage department at a lodging operation may desire to forecast food sales, which are highly dependent upon the number of room guests and advertising expenditures. The usefulness of these regression analysis techniques depends on the appropriateness of the independent variables. That is, the higher the correlation of the dependent and independent variables, the greater the probability regression analysis will yield meaningful forecasts.

Econometric Models

An econometric model is a way of determining the strength and statistical significance of a hypothesized relationship. Econometric models are used when there is the existence of a causal relationship between two or more variables. Suppose that we are attempting to determine the relationship between two variables. To describe this relationship we need a set of observations on each variable and a mathematical form of the relationship that connects them. Econometric models, such as linear regression, are a means of estimating the functional relationship or equation between two or more variables

A forecast variable is called the dependent, or endogenous, variable. The endogenous variables' value is determined within, or by, the model. The value of the dependent variable is determined by a set of independent, or exogenous, variables. The values of the exogenous variables are determined outside the model, either from the results of another model, known values or assumed values.

Input-Output Models

Input-output analysis is a matrix technique used to analyze the structure of an economic system and to assess the impact of changes. Although not a suitable technique to use for tourism demand forecasting, it provides a useful method of assessing the

economic effects for changes in demand and, in particular, the repercussive impact of such changes on sales, output, income, and employment in the area concerned.

Box-Jenkins Method II

Although normally used in its univariate form, more sophisticated versions of the Box-Jenkins method involve the use of a transfer function, which takes into account the movement through time of another variable or variables thought to affect the one of concern. Thus, for instance, forecasts can be made of tourist arrivals to movements in real incomes per capita in the tourists' countries of origin. (It may prove necessary, however, to use time lags to allow the effect of the changes in income to be reflected in the arrivals data.)

An interesting application of this method is a study of tourist arrivals in Puerto Rico (Wandner and Van Erden, 1979), where forecasts were obtained by relating the time series data for tourist arrivals to changing levels of unemployment in New York, the principal origin area. It is in its transfer function form that the Box-Jenkins method offers its most effective medium-term alternative to econometric model building.

Market Analysis

Surveys- of tourists, potential tourists, or business establishments- are perhaps the most popular form of market analysis. Although not strictly a quantitative method, surveys can provide valuable data and useful insight into potential demand. Unfortunately, surveys aimed at discovering the future intentions of tourists are rarely accurate; apart from the normal difficulties of obtaining a representative sample when the potential tourists are numerous and difficult to locate, and, for most, the planning horizon, at least as far as a particular destination is concerned, is even shorter. Because of the weaknesses and limitations of survey techniques, however, it is unrealistic to use the results of such surveys for medium-or long-term forecasts.

Spatial Models

International tourist flows occur within a given spatial framework. Hence in order to describe and analyze these flows the researcher should first establish a theoretical

framework for this so-called “tourist space” (Husbands, 1983). Spatial models postulate some basic relationship to explain the flow of traffic between specified places. In their simplest form- gravity models- the movement of traffic is stated to be directly proportional to the population of each region and inversely proportional to the distance apart of the origins and destination.

Spatial models have a wide application and have been used by tourism researchers to predict the future spatial demand for international tourism, to analyze the flow of tourists between particular countries and regions, to estimate the future demand for recreational and tourist facilities, and to examine how the demand for tourism is affected by highway improvements and increases in fares. The principal difference between spatial models and multivariable demand models lies more in their initial formation than in their application. Table 1 summarizes the forecasting methods.

Assessing Forecasting Methods and Section Summary

Forecasting studies available in the hospitality and tourism literature deal with different methods or techniques, and focus on different subjects. The most important methodological dimensions include the nature of the demand coefficient estimation method, the functional form of the model, the type of data used, whether a single or simultaneous equation approach was adopted, and the ways in which multicollinearity and serial correlation were managed.

Table 1. Summary of Forecasting Methods

JUDGMENT METHODS	COUNTING METHODS	TIME SERIES METHODS	ASSOCIATION OR CAUSAL METHODS
Naive Extrapolation: the application of a simple assumption about the economic outcome of the next time periods, or a simple, if subjective, extension of the results of current events.	**Market Testing**: representative buyers responses to new offerings, tested and extrapolated to estimate the products' future prospects.	**Moving Averages**: recent values of the forecast variables averaged to predict future outcomes	**Correlation Methods**: predictions of values based on historic patterns of covariation between variables.
Sales-Force Composite: a compilation of estimates by salespeople (or dealers) of expected sales in the territories, adjusted for presumed biases and expected changes.	**Consumer Market Survey:** attitudinal and purchase intentions data gathered from representative buyers.	**Exponential Smoothing**: an estimate for the coming period based on a constantly weighted combination of the forecast estimate made for the previous periods and the most recent outcome.	**Regression Models:** estimates produced from a predictive equation derived by minimizing the residual variance of one or more predictor (independent) variable.
Jury of Executive opinion: the consensus of a group of "experts," often from a variety of functional areas within a company.	**Industrial market Survey:** data similar to consumer surveys but fewer, more knowledgeable subjects sampled, resulting in more informed evaluations.	**Adaptive Filtering**: a derivation of a weighted combination of actual and estimated outcomes, systematically altered to reflect data pattern changes.	**Leading Indicators**: forecasts generated from one or more preceding variable that is systematically related to the variable to be predicted.
Scenario Methods: smoothly unfolding narratives that describe an assumed future expressed through a sequence of time frames or snapshots.		**Time Series Extrapolation**: a prediction of outcomes derived from the future extension of a least squares function fitted to a data series that uses time as an independent variable.	**Econometric Models**; outcomes forecast from an integrated system of simultaneous equations that represent relationships among elements of the national economy derived from combining history and economic theory.

JUDGMENT METHODS	COUNTING METHODS	TIME SERIES METHODS	ASSOCIATION OR CAUSAL METHODS
Delphi Technique: a successive series of estimates independently developed by a group of "experts" each member of which, at each step in the process, uses a summary of the group's results to reformulate new estimates.		**Time Series Decomposition:** a prediction of expected outcomes from trend, seasonal, cyclical and random components, which are isolated from a data series.	**Input-Output Models:** a matrix model showing how demand changes in one industry can directly affect aggregate national or regional economic activity.
Historical Analogy: predictions based on elements of past events that are analogous to the present situation.		**Box-Jenkins:** a complex, computer-based iterative procedure that produces an autoregressive, integrated moving average model, adjusts for seasonal and trend factors, estimates appropriate weighting parameters, tests the model, and repeats that cycle as appropriate.	

Source: David Georgoff and Robert Murdock, "Manager's Guide to Forecasting," Harvard Business Review, January-February 1986, 110.

Regression analysis has been the most widely used approach. Its advantages include the ability to model cause and effect, to carry out "what if" forecasting, and to provide statistical measures of accuracy and significance. However, regression analyses "may be inappropriate in certain cases and are generally more expensive than non-causal models. Summary (1987) concludes that multivariable regression analysis has limited usefulness in identifying the significant factors which influence tourists' decisions. Uysal (1983) identified five limitations: (1) supply factors are often ignored; (2) it may be difficult to forecast explanatory variables for forecasting purposes; (3) the appropriateness of variables may change; (4) in the long term, non-economic factors, which are often omitted from such models, may be more important; and (5) they are frequently only static representations (p.51).

Regression modeling has generally been of three types. Econometric models have focused on analysis of the impact of economic influences on demand. Gravity models adopt a geographic perspective, with an emphasis on mass (i.e., population) and distance considerations. Trip generation models are a hybrid of these two models. The three types differ more in terms of origin than of method, with gravity models being expressed in a more rigid form (Archer, 1980).

Data in the form of time series has been commonly employed. Typically, travel from a single origin country to a single destination country has been modeled in this way. On occasions, aggregate inbound or outbound travel has been modeled as a time series. The principal advantage of time series analysis is that it enables the modeling of trends (Armstrong, 1972). Its main limitation is that sample sizes are often severely limited by the periods of available data (Cigliano, 1980). As a consequence, the number of explanatory variables that may be studied can be restricted. Furthermore, certain demand determinants (such as population and cultural differences) are largely irrelevant in time series studies.

Cross-sectional analysis has been used to investigate changes in the pattern of demand across countries, rather than across time. Although time trends cannot be

investigated and results are less useful for forecasting purposes, cross-sectional analysis can be used to investigate different types of factors. Kanafani (1983) also noted that "In the case of cross-sectional analysis, it can be assumed that a static equilibrium exists and that the supply variables are not influenced by demand. This is not as good assumption as in time-series modeling where the data will reflect adjustments of supply conditions from time period to time period that are possibly influenced by demand" (p.275).

Hanon (1976) has noted, however, that "the parameters of cross-sectional models generally reflect a different kind of behavior than that which is examined in time-series analyses. Basically, the main difference is that cross-section parameters measure long-term adjustments, whereas time-series relationships are affected by short-term fluctuations. In many cases, this may mean that time-series estimates of demand elasticity are smaller than cross-section estimates" (p.48). A small number of researchers pooled time-series and cross-sectional data in order to mitigate the limitations of these approaches, but pooling might violate the assumption of constant error variances assumed by regression analysis (Uysal, 1983; Clarke, 1978).

Further methodological problems concerning data relate to its availability and accuracy. For example, modelers frequently resorted to the use of consumer price indices to reflect changing prices of tourism services, since travel price indices are rarely available. Data on airfares are also difficult to obtain and are complicated by the wide array of fare types. White and Walker (1982) effectively demonstrated the questionable accuracy of demand data by comparing reported departures from country A to country B with reported arrivals to country B from country A.

Most studies have applied regression analysis to the estimation of parameters in single-equation models. A small number of studies, however, have examined the application of simultaneous equations. Bakkalsalihoglu (1987) argued that such an approach is theoretically more flexible. Fujii, Khaled, and Mak (1985) noted that single-equation models are inefficient in their use of information and are deficient in their analysis of cross-price elasticity. They argued for the use of a system approach favoring the

application of the Almost Ideal Demand System (AIDS) of Deaton and Muellbauer (1980) over the Linear Expenditure System (LES) of Stone (1954). Other researchers who have propounded the use of simultaneous equations include Smeral (1988), Taplin (1982), White (1982), Walker and White (1980), Mazanec (1983), and Van Soest and Kooreman (1987).

On the other hand, users of single-equation models generally justify their decision on the basis that, with regard to the modeling of international tourism demand, the explanatory variable can be assumed to be predetermined; the analyst can ignore the problem of simultaneity of supply and demand, since the smaller demand by foreigners for tourism services, compared to the demand by national, causes supply to be largely perfectly elastic (Kanafani, 1983; Krause, Jud, and Joseph, 1973; Uysal and Crompton, 1984).

The most common methodological problem encountered has been the difficulty of separating the effect of certain determinants as a result of multicolinearity. The simultaneity of changes since the Second World War, such as rising real incomes and falling real air fares, has made it difficult to isolate individual effects (Gray, 1982). To date, the problem has not been satisfactorily addressed. In response, some researchers have simply dropped collinear variables from the model. This is likely to result in a misspecified model, where the estimated regression coefficients of the remaining variables are biased because the model omits other important explanatory variables. Other researchers have reacted by combining collinear variables to form a single composite variable, but their practice makes it difficult to interpret the estimated regression coefficients (elasticity), since a change in the explanatory variable may occur for different reasons. Pooling data to increase the variability in the explanatory variables might also partially overcome the problem (Karuse, Jud, and Joseph, 1973), but results are again difficult to interpret, since time series and cross-sectional data reflect different kinds of behavior.

Based upon literature review, this study now concludes that regression models, while easy to interpret and inexpensive to run, tend to have low explanatory ability and a short usable time horizon. Time series may yield seriously misleading forecasts if unforeseen occurrences happen. Also, simple industry gravity models exhibit the same poor explanatory ability as regression models.

Unlike the previous studies, the economic indicator system and hotel industry business cycle model developed by Choi (1996) overcomes the problems that other forecasting methods have. He developed an economic indicator system for the hotel industry as a forecasting method. Projecting industry turning points by measuring, monitoring and forecasting industry cycles is a new class of methods in investigating the hotel industry's business characteristics. The study explores this issue by attempting to develop for the U.S. hotel industry a business cycle that would cover hotel activity as broadly as possible and one that would represent the magnitude of growth of the industry. The study found that an Economic Indicator System (EIS) forecasted the U.S. hotel industry's performance (total receipts) quite successfully. The hotel industry business cycle model developed by Choi (1996) also gives a useful tool for analyzing the cyclical nature of the hotel industry, while forecasting future hotel industry performance.
The following section launches a new research application of forecasting method, the so-called "business cycle studies." It begins with reviewing general business cycle studies and their theories. Then, more specific detail of the hotel industry cycle model and its economic indicator system model will be followed. This review provides rationales for setting up an advanced step-stone of developing the restaurant industry cycle model and its economic indicator system.

Business Cycle Studies

Business Cycle

The definition of the business cycles conducted by Burns and Mitchell (1946) is the most widely cited in the business cycle related literature. The definition is as follows:

> Business cycles are a type of fluctuation found in the aggregate economic activity of nations that organize their work mainly in business enterprises: a cycle consists of expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions, and revivals which merge into the expansion phase of the next cycle; this sequence of changes is recurrent but not periodic; in duration business cycles vary from more than one year to ten or twelve years; they are not divisible into shorter cycles of similar character with amplitudes approximating their own (p.3).

The business cycle typically consists of an interlude of prosperity rising into boom, peaking out, sliding into recession, recovering , and launching into a new phase of prosperity. Although the length and breadth of its phases have differed widely from one cycle to another, this general pattern has repeated itself with little variation. The business cycle is accompanied by wide swings in the main economic and financial variables such as incomes, output, employment, business profits, interest rates and stock prices. Niemira and Klein (1994) explained phases within the cycle as follows:

> The popular terminology often retains only three of the four segments that Burns and Mitchell posited: recession, recovery, and expansion. The term recession refers to the period from the upper turning point (the initial peak) to the lower turning point (the trough). Recovery refers to the period from the trough to the point at which business activity returns to its previous peak level. Expansion refers to the period when the economy increases beyond previous boundaries.

In practice, when business activity delineates in absolute levels and then rebounds, this is called a "classical business cycle"; more frequently, it is simply referred to as a "business

Growth Cycles

Another definition of the business cycle defined by the National Bureau of Economic Research (hereafter NBER) is termed the deviation cycle or, more commonly, the growth cycle. A growth cycle is a pronounced deviation around the trend rate of change. Thus this definition portrays periods of accelerating and decelerating rates of growth in the economy, a type of fluctuation that also has a long-standing history. Burns and Mitchell (1946) noted:

> If secure trends were eliminated at the outset as fully as are seasonal variations, they would show that business cycles are a more pervasive and a more potent factor in economic life... For when the secular trend of a series rises rapidly, it may offset the influence of cyclical contractions in general business, or make the detection of this influence difficult. In such instances [the classical business cycle method] may indicate lapses from conformity to contractions in general business, which would not appear if the secure trend were removed. (Burns and Mitchell 1946, p.40-41)

The economic history of the last 200 years reveals a consistent repetition of a pattern of alternating prosperity and recession. This experience is not limited to the United States but has occurred with regularity in all countries. The business cycle is commonly assumed to last for four years from trough to trough (Pring, 1992). In fact, the average duration is closer to 41.6 months, or a little under four years (Pring, 1992).

Economists have also noticed several other cycles in business activity. In his book about business cycles, Joseph Schumpter listed what he considered to be the three dominant ones: Kondratieff, Juglar, and Kitchin. Among these cycles the Kondratieff

cycle is explained next because this cycle offers some valuable long-term perspectives and gives us some useful clues to the characteristics of the many other cycles.

Kondratieff Cycle

The so-called Kondratieff cycle, also referred to as the long-wave or super cycle, assumes a certain automaticity or inevitability. Nikolai Kondratieff was a Russian economist who was commissioned by the communist government in the 1920s to prove that capitalism would not work (Pring, 1992). During the 1920s he set out to study the economic history of capitalist countries over the previous 150 years. What he found was quite different. On the basis of historical observations, he was led to conclude that capitalistic countries experience long economic cycles of approximately a 50 to 60 year duration and the capitalist system could cleanse and renew itself, eventually moving on to greater strength. The Kondratieff cycle is depicted in Figure 2.

The super cycles which Kondratieff thought he had detected were defined by three distinct phases. The first one is characterized by a long expansion period of growth and rising prices. The expansion phase was followed by a relatively much shorter period when economic activity and prices stabilized. That was succeeded by a long period of falling output, employment, and prices. The depression, in turn, would be followed by economic recovery, prosperity, and all the rest.

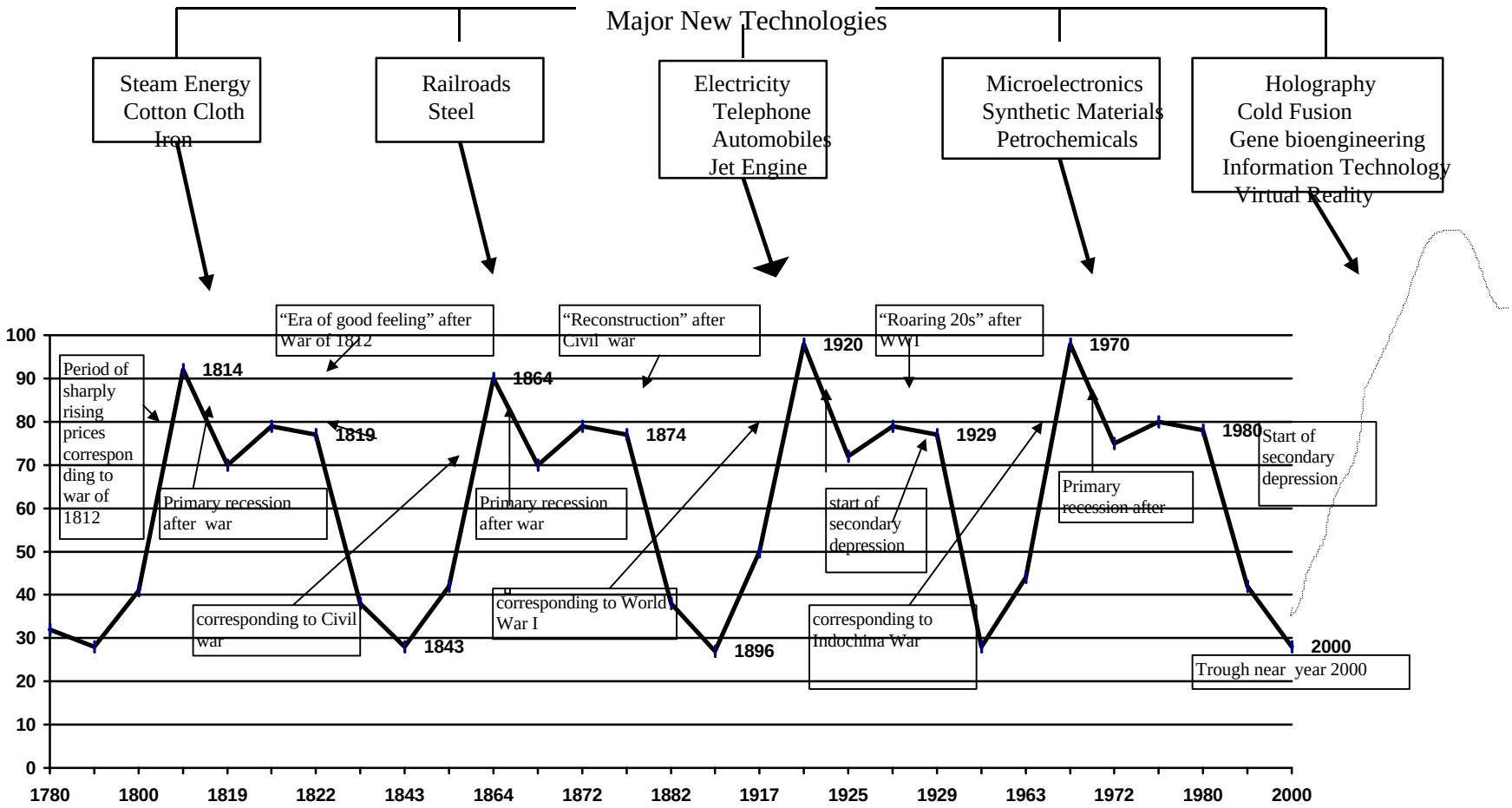


Figure 2: The Kondratieff Wave (Based on annual averages with a ratio scale of 1967 = 100.)

Source: Adapted from Martin J. Pring, Technical Analysis Explained, McGraw-Hill, NY, 1991 and Peter Dicken, 1992, the Global Shift, p.99)

The task that confronts forecasters tied to the super cycle theory is how to identify or to project the various phases of the Kondratieff cycle. The problem is that no one knows exactly at which point the economy, as the locomotive force, finds itself and the difficulty of how to interpret the underlying socioeconomic forces and to make specific forecasts. The current economic expansion of the United States is a good example. General business cycle theories have not explained the current long business expansion. It is even clear that such popular forecasts proved wrong.

Zarnowitz (1998) proposed to analyze new trends and factors at play under the extraordinary cyclical trend of the economy for better forecasting. He said "a frequently used type of forecasting error is underestimation of change, which is not just due to the presence of unpredictable random elements in the actual values but is often apparently systematic, applying on the average to both longer growth trends and shorter cyclical expansions and contractions, to real economic activity and inflation." He concludes that new trends of rationalization (a positive term for downsizing) and globalization may have potential effects on current business cycles and in the long run, more open and intensive foreign trade and investment should raise growth in all participating countries, and economies that grow strongly suffer less from business.

Has the business cycle have abolished? Zanorwitz (1998) provides a warning message as follows. “Widespread optimism that prosperity will prevail for a long time if not indefinitely - in other words, that the economic and financial cycles have been somehow eliminated - appears to be enjoyed in the United States today. Expansion did become longer and contractions milder in the United States and elsewhere during the post World War II period. The evidence comes from the behavior of financial markets, opinion surveys, and discussions in the media. The condition draws considerable public attention and meets with both approval by many and anxiety by some. But this is hardly new or surprising. Similarly hopeful expectations developed on a large scale in the mid- and late 1920s, before the onset of the Great Depression; during the long expansion of the 1960s, mission again the troubles of the next decade; and less pronouncedly, in the latter half of

the 1980s when economic growth steadied after the inflation and recovery from the oil price shocks and related inflationary recessions of the turbulent 1973-82 period (p.3)."

Business Cycle Forecasting with Economic Indicator System

Much of the efforts to develop business cycle theories have come in this century. Some explanations emerged in the nineteenth century, from what Robert Heilbroner (1953) once called "the underworld of economics." Business cycle study in the United States dates back to 1790, in the United Kingdom back to 1792, in Germany back to 1866, and in France back to 1840[13]. For forecasting cyclical behavior of the economy, economic indicators including leading, coincident, and lagging are used. Economic indicators, as a general category, are descriptive anticipatory data used as tools for business condition analysis and forecasting (Zarnowitz and Moore, 1977).
Leading indicators signal in advance a change in the basic performance of the industry as a whole. This tells us future industry turning points in advance. Coincident indicators are those whose movements coincide with, and provide a measure of, the current performance of industry activity. Hence, they inform us as to whether the economy is currently experiencing a slowdown, a boom, or something else. Lagging indicators confirm all of the above transactions.

Rationales for leading Indicators

There are five rationales for using economic indicators as forecasting tools. These are: production time, ease of adaptation, anticipation of future activity, prime mover, and change-versus-level. For these rationales, their central ideas and comments discussed by De Leeuw (1991) are presented next. The following eleven leading indicators for the general business cycle are used for the purpose of discussion.

1. Manufacturers' new orders for consumer goods and materials in constant dollars
2. Contracts and orders for plant and equipment, in constant dollars

[13] see Arthur F. Burns, the business Cycle in a Changing world, New York: NBER, 1969, Chapter 1, especially pp. 16-17.

3. Index of new private housing units authorized by local building permits
4. Average weekly hours of production workers in manufacturing
5. Vendor performance, percentage of companies receiving slower deliveries
6. Index of stock prices, 500 common stocks
7. Change in sensitive materials prices
8. Money supply (M2) in constant dollars
9. Average weekly initial claims for unemployment insurance
10. Change in business and consumer credit outstanding
11. Change in manufacturing and trade inventories, in constant dollars

Each series can be justified by one of the five rationales -- some by more than one.

Production Time

The first three of the series - new orders for consumer goods and materials, contracts and orders for plant and equipment, and housing units authorized by building permits - are all indicators of an early stage in a production process. These series might be expected to lead economic activity simply because it takes time to translate the placing of an order, to sign a contract, or to take out a permit and complete construction

That simple explanation, however, rests on an equally simple, perhaps naive, view of expectations. New orders will be a leading indicator of production if producers do not try to anticipate demand changes, but simply wait until orders come in before beginning to produce. If, instead, producers succeed to some extent in anticipating bulges or shortfalls in orders, it is not clear that a lead-lag relationship ought to hold. Production could begin to rise or fall at the same time that new orders are expected to rise or fall; whether they do is, at least in part, a matter of costs of failing to fill orders promptly versus costs of changing production rapidly. It is only in the case of unexpected bulges or shortfalls in demand that a lead-lag relationship ought clearly to hold.

Seasonal variations in orders and production probably fit the successful anticipation model more closely than the naive model. Toy manufacturers do not wait until Christmas orders come in to start production; they no doubt anticipate a bulge in orders and plan to increase their production when orders are expected to rise. For a toy retailer, to be sure, there must be at least a short lag between placing orders with the

manufacturer and actually receiving toys. But for manufacturers, it is possible to try to match the timing of production with the timing of orders.

On the other hand, complex and limited-volume products, such as large commercial aircraft or new manufacturing plants, probably fit the naive model more closely than the successful anticipation model. In these cases, attempting to produce in advance of demand could lead to huge losses if the orders or contracts do not arrive, and to expensive changes in specifications even if they do. Airlines, consequently, do not expect to buy a new fleet of carriers "off the shelf"; they expect long delays between their demand decisions and delivery of new aircraft. Which of the two models, the anticipatory or the naive, best explains business fluctuations generally is not known.

Ease of Adaptation

The fourth and fifth leading indicators, average weekly hours and vendor performance, can be rationalized as measuring dimensions of economic activity that can change rapidly without large transitional costs. For some elements of production - employment, for example - there are sizable costs associated with changes besides the recurrent costs associated with levels. Elements without such costs - easily adaptable variables - might be expected to be used heavily to absorb fluctuations in production. Therefore, one may expect the use of such inputs to fluctuate more with business activity levels than inputs that are less adaptable.

Average weekly hours is used as a leading indicator because it is more adaptable compared to employment. Delivery times (measured by vendor performance series) is also used as a leading indicator because it has low cost of change compared with other ways of responding to a surge or a drop in demand, at least in the short run (in the long run, chronic delays or even unpredictable delivery times have the cost of driving customers away).

Questions about expectations are at least as pertinent to this rationale as to the production time rationale. Under the naive view of no anticipated change in demand, a rise in sales or orders would first cause a change in average hours or in delivery delays and later a change in employment or shipments. For demand changes that are expected, however, the case for a lead-lag relationship is less clear. A normal seasonal bulge in orders, for example, could plausibly cause employment, average hours, and production to all rise at approximately the same time. Even in the case of complex, customer-designed products (construction of a new factory, for example), if production plans are known in advance it is hard to see why hours should start rising before employment. Indeed, it is conceivable that a business eager to assure itself of a capable work crew will increase employment before production and keep average hours to a minimum until full-scale production is underway.

Another problem with this rationale is that it rests entirely on demand-initiated changes - on business's response to changes in orders or sales. Supply-initiated changes (for example, a productivity improvement leading to higher output but lower employment) might have quite different implications for the timing of easily adaptable variables.

A third problem with the view of adaptable variables as leading indicators is that, even in the simple case of an unanticipated change in demand, the case for lead-lag relationships is unclear. What might be expected is an initial change in the adaptable variable at the same time that production increases, followed by a return to a normal level. An unexpected step-up in orders, for example, may lead to an increase in overtime hours when production responds, to avoid abrupt increases in employment; but then, as employment increases, hours should return to their normal level. The first, overtime increasing, phase is an early (but contemporaneous rather than leading) indicator of production. The second, return-to-normal, phase is not an indicator of production at all.

Anticipation of Future Activity

Probably all the leading indicators are sensitive in some degree to changes in expectations about economic activity, but the sixth and seventh, stock prices and changes

in sensitive materials prices, may be especially sensitive. For stock prices, sensitivity to expected earnings may be at the root of the relationship. For materials prices, the anticipated degree of excess demand/excess supply may be most relevant.

Other forces besides anticipation about economic activity are equally important in their effect on stock prices and prices of sensitive materials. To mention obvious examples: tax changes and interest rates influence stock prices; supply influence commodity prices; and speculative forces affect both series, adding to their volatility. These other forces affect future economic activity as well, but not in the same way as the anticipation of future activity. For example, an increase in commodity prices is associated with rising economic activity if it is caused by anticipation of strong demand, but not if it is caused by the restrictive activities of a cartel or by some other supply restriction.

Changes versus Levels

For the remaining three leading indicators (Average weekly initial claims for unemployment insurance, Change in business and consumer credit outstanding, Change in manufacturing and trade inventories, in constant dollars), the principal rationale that suggests itself is that changes in a time-series seem to be a leading indicator of levels. This generalization does not apply to all-time-series contours. But it does apply to the smoother contours that are typical of aggregate production and employment. Changes in business and consumer credit clearly fit this rationale. Initial claims for unemployment insurance also fit, for it is when employment is falling that initial claims are highest and when employment is rising that initial claims are lowest. The change in inventories can also be rationalized in this way, since the level of inventories is broadly related to the level of business activity. (Inventory change is also a key element in short-run business behavior, however, suggesting that this indicator may be rationalized in a different way as well.

In this section, the term economic indicator has been defined and the rationales for the indicators discussed. The function of leading economic indicators is to warn of impending changes in economic activity. The coincident indicators are useful for helping

track the course of the economy but do not provide much help in predicting future turning points. The lagging indicators have no use in predicting the beginning or end of recession, but it can be useful in helping verify that a recession has actually started or ended. Thus, each type of indicator can be a good tool to track the changes in aggregate activity of a certain economy or industry.

The business and growth cycle as well as the Kondratieff cycle all tell us that there are some cyclical patterns that we might be able to predict in advance. The usefulness of the cycle study is precisely this. Industry business cycle analysis has been used mainly for identifying overall patterns of change in a given industry. This type of analysis is useful in decisions that address capital investment, capital structure, current and long term asset management and financing. By understanding what variables influence the industry business cycle, decision making in each of these areas can be improved. Choi (1996) developed for the U.S. hotel industry a business cycle that would cover hotel activity as broadly as possible and one that would represent the magnitude of growth of the industry. The next section is a brief review and summary of the study composed of two different parts: the hotel industry cycle model and the Economic Indicator System for the Hotel Industry.

The Hotel Industry Cycle Model (Choi, 1996)[14]

According to Choi (1996), the hotel industry cycle (hereafter HIC) is defined as a series of fluctuations found in the aggregate business activity of the whole hotel industry (See Figure 3 and Table 2). In his study, the aggregate business activity of the hotel industry is represented by the total sales of the industry. The total receipts of the hotel industry means all charges or billings for all services rendered even though payment may be received at a later date in the industry (Bureau of Census).

Because the total receipts of the hotel industry in a given period represent the market value of all final goods and services which are produced in the hotel industry in the

[14] The explanation of the hotel industry cycle model here are from Choi (1996).

period, the aggregate business activity of the hotel industry can be represented by total receipts of the industry. The hotel gross receipts measure includes all receipts from all hotel business units including room-division and non-room divisions.

The study utilized annual data to discover the overall cyclical characteristics of the hotel industry. As Burns and Mitchell (1946) point out at great length, annual data leave out many cyclical turning points and are not sufficiently detailed. On the other hand, data given daily, weekly, or even monthly tend to have too much static; in a different metaphor, they lose the forest and show only the trees (Sherman, 1991).

The study used total receipts to represent the total output of the industry. By using the CPI-U data series, the study converted the nominal data series to real data series (constant dollars) to track the real changes in the industry cycle. Changes in the CPI can be used to see whether increases in incomes have been wiped out by increases in prices. The higher the price level, the less that can be bought with any given nominal or dollar income. A price index is accordingly used to convert nominal income to real income by adjusting for changes in the price level since a given base period.

The first objective was to form the HIC. The cycle is a time series representing the total activity of the hotel industry. Figure 3 portrays the HIC as measured by real total receipts in the hotel industry. The identified and dated peaks and troughs of HIC are also plotted in Table 3.

The cycle covered a twenty-eight year period (from 1966 to 1993). During this period the hotel industry demonstrated three cycles (peak to peak or trough to trough). The turning points of the HIC are analyzed in Table 2. The hotel industry peaked in 1967, 1973, 1980, and 1989. The industry troughed in 1969, 1974, 1982, and 1991.

Overall, the mean duration of the HIC was 7.3 years, calculated either by peak to peak or trough to trough. The mean duration for the expansion was about six years (5.7) and for the contraction was about two years (1.7).

The results were supported by reviewing the historical background of the U.S. hotel industry. Historically, in the late 1960's budget motels were introduced and

flourished during the building boom of the early 1970s. As budget motels began to inundate the market in the 1970s, the entire lodging industry experienced the start of a construction boom reminiscent of the 1920s (Rushmore, 1992). The expansion period (from 1969 to 1973) of the first cycle (peak to peak) is related to the combination of readily available financing and aggressive hotel franchising.

The bubble burst on the lodging industry when inflation caused construction costs and interest rates to escalate. The 1973 energy crisis drastically reduced travel, and the accompanying recession curtailed business trips, conference, and conventions, and eventually hotel industry troughed in 1974. After the six-year expansion (from 1974 to 1980) of the second cycle (peak to peak), the hotel industry experienced another recession (from 1980 to 1982). After the contraction, the environment appeared suitable for a period of renewed hotel expansion.

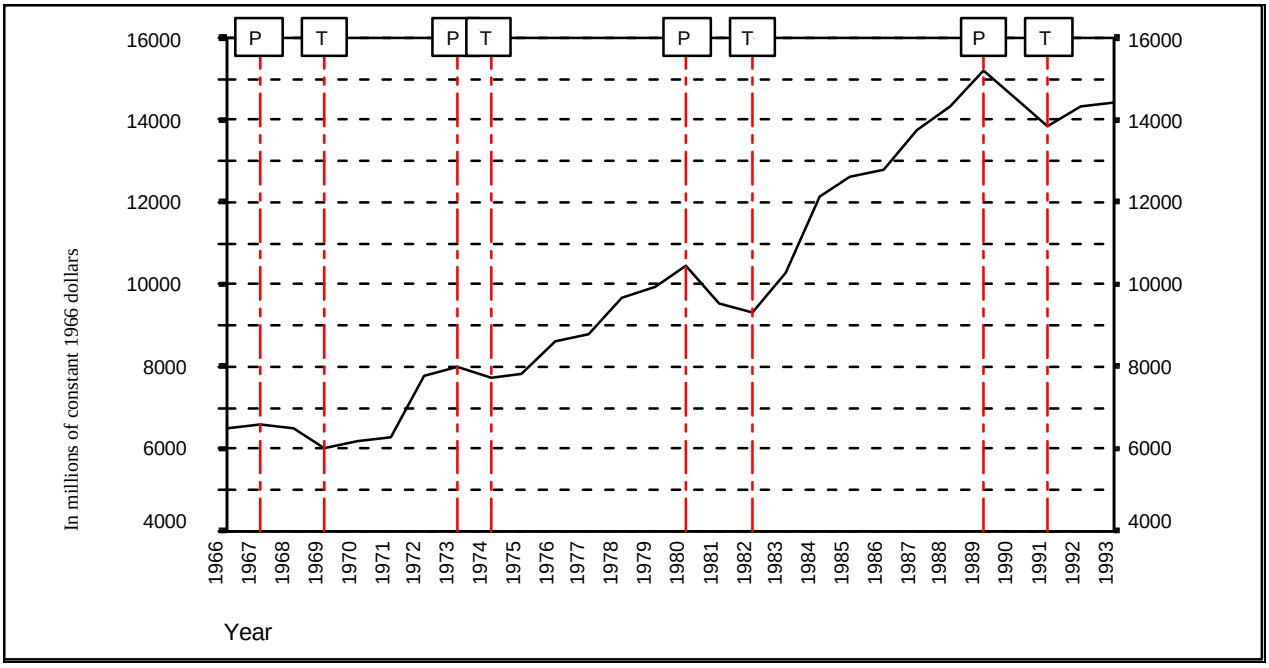


Figure 3. The Hotel Industry Cycle: Long -Term Cyclical Fluctuation

Note: "P" stands for Peak and "T" stands for Trough

Table 2. Turning Points of the Hotel Industry Cycle

Hotel Industry		**Cycle Duration (years)**			
Peak	Trough	Peak to Peak	Trough to Trough	Expansion (T-P)	Contraction (P-T)
1967	1969				2
1973	1974	6	5	4	1
1980	1982	7	8	6	2
1989	1991	9	9	7	2
Mean		7.3	7.3	5.7	1.7
SD		1.5	2.1	1.5	0.6

Note: SD: Standard Deviation

Government monetary and fiscal policies, along with declining energy prices produced a downtrend in hotel interest rates beginning in 1983 and suddenly massive amounts of capital were available for real estate investments

Hotel industry experienced another long period of expansion (from 1983 to 1989) in the third cycle (peak to peak). From 1989 to 1991, another trough of the cycle occurred. Smith (1992) said that between 1987 and 1990, room rate increases failed to keep pace with inflation. In 1990 alone, the Consumer Price Index rose 6.1 per cent while room rates rose a mere 2.9 percent. For this or other reasons, the hotel industry experienced a deep trough in 1991 after a seven-year expansion.

The U.S. Hotel Industry Growth Cycle

The HIC was reformed with the HGC based on year-to-year growth rate because the study was trying to determine the yearly fluctuation of the cycle. The study was especially interested in forecasting turning points in the industry's growth by analyzing the cyclical characteristics of the HGC. The HGC is shown in Figure 4. The turning points of the HGC are presented in Table 3. The hotel industry experienced high growth in 1967, 1972, 1976, 1980, 1984, and 1989. The industry experienced low growth in 1969, 1974, 1977, 1981, 1986, and 1991.

Note that the growth change should be more than 4.75, the mean absolute deviation of the HIC, to be considered a cycle. For example, the HGC experienced a growth period during 1967 through 1970, but adjacent contraction (1970-1971) was only 1.32, which is less than 4.75. So, the period 1967-1971 was not considered a cycle and was eliminated.

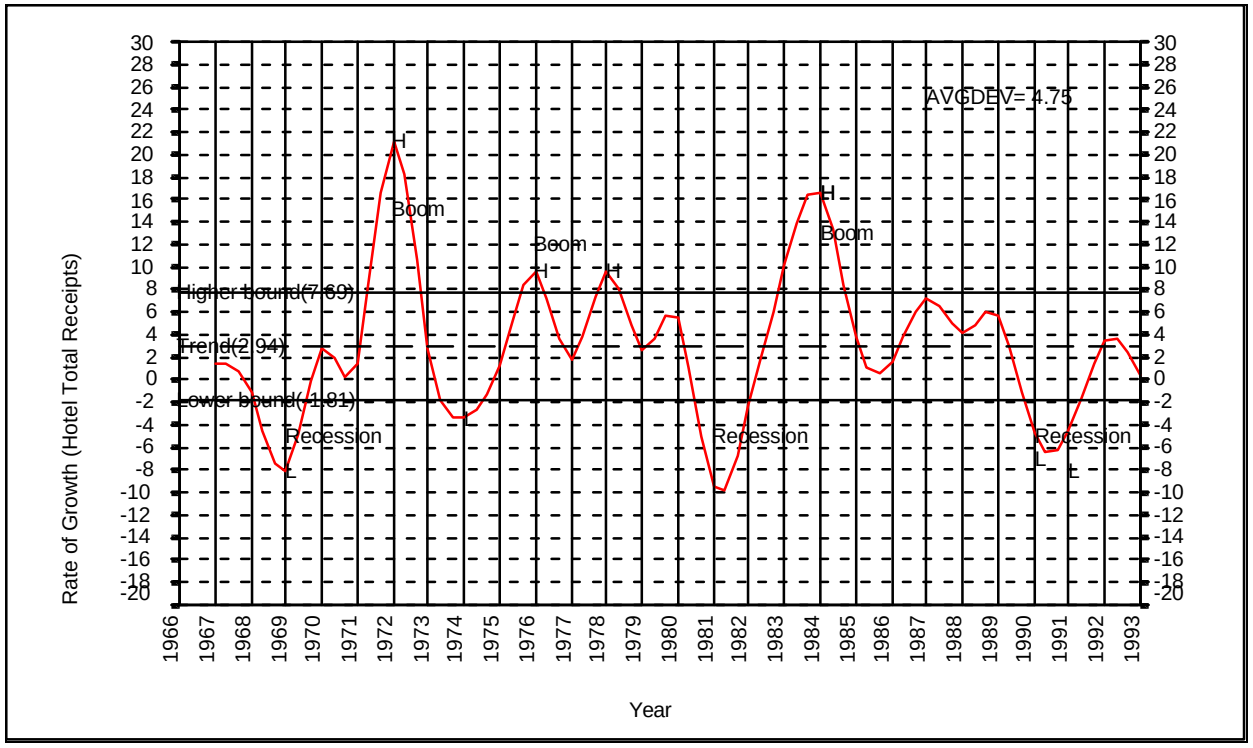


Figure 4. The Hotel Industry Growth Cycle (Symmetric percentage change, year-to-year)

Table 3. Turning Points of the Hotel Industry Growth Cycle.

Hotel Industry		**Cycle Duration (years)**			
High	**Low**	**High to High**	**Low to Low**	**Expansion (L-H)**	**Contraction (H-L)**
1967	1969				2
1972	1974	5	5	3	2
1976	1977	4	3	2	1
1980	1981	4	4	3	1
1984	1986	4	5	3	2
1989	1991	5	5	3	2
Mean		4.4	4.4	2.8	1.7
SD		0.5	0.9	0.4	0.5

Note: SD: Standard Deviation

As Figure 4 and Table 3 show, the hotel industry experienced high growth (boom) every four or five years. The average expansion (L-H) period is about three years and the average contraction (H-L) period is about two years, and the industry growth declined sharply once it reached its peaks.

Implications

Monitoring and forecasting industry cycles provides a means of desegregating the general business cycle into its component parts. It opens up a new avenue for exploring timing relationships between industries and gives the business manager insight into the industry turning points. Note that the mean duration of the HIC (long-term fluctuation) is 7.3 years, calculated either by peak to peak or trough to trough, and the mean duration of the HGC is 4.4 years. This implies the growth cycle fluctuates about twice while the industry cycle fluctuates once. In fact, it is possible that the industry can experience a peak, while the growth rate for the particular year has not increased significantly. By the same token, industry cannot experience a peak, although it experiences high growth for particular year, if the growth rate of next year is higher or equal to that of that year. This is the difference between the HIC and the HGC cycle duration.

Furthermore, because the HGC fluctuates about twice while the HIC fluctuates once, it means that, unless significant developments occur in the industry, it is possible that industry reaches the peak point as well as the beginning of the recession after the industry experiences the peak growth twice. This information would provide a tip for forecasting the business of the industry.

Economic Indicator System (EIS) for the Hotel Industry (Choi, 1996)[15]

Choi (1996) also developed an economic indicator system for the U.S. hotel industry to project the industry's growth and turning points. By conducting a comprehensive literature review, and by using National Bureau of Economic Research

(NBER) turning point criteria and statistical correlation method, twelve leading, ten coincident, and ten lagging indicators were identified.

Leading, coincident, and lagging indicators

The final indicator series included in the model are presented in Table 4. Note that the lag in the Table means time difference between HGC and each indicator series. For instance, the former American Stock Exchange index has the strongest correlation at T(-2) with the HGC at T(0). The plus and minus signs are irrelevant here because the study concerned the degree of association between two series over time, not the direction of the series. The maximum number of lags plotted in this study is five (T-5 to T+5). Since the indicators in the leading category turn their peaks and troughs before the turns of HGC, they will signal the changes of the industry's future in advance. The coincident and lagging indicators presented in Table 4 also provides useful information.

[15] The explanation of the economic indicator system here is from Choi (1996).

Table 4. The Final indicators for Forming Composite Indices and Cross Correlation of the Component Series of the Hotel Indicators, 1966-93

A. Leading Indicators Series*	**lag****	**CCF*****
American stock exchange index	-2	-0.473
Business failures, number	-3	0.3
CPI for motor fuels	-4	0.415
Hotel Dividends Per Share	-5	0.424
GDP of service	-2	0.456
Hotel stock index	-2	0.429
Money supply (M2) in constant dollars	-1	0.333
New York stock exchange index	-2	-0.348
Prime interest rate charged by banks	-1	0.547
S & P 500 stock price index	-2	-0.325
Savings percentage of disposable income	-5	0.394
Wages & salaries	-1	0.474
B. Coincident Indicators Series*	**lag****	**CCF*****
Average weekly initial claims for unemployment insurance	0	-0.437
Consumer confidence	0	0.632
Consumer expenditures in service industry	0	0.441
GDP	0	0.571
Hotel failure liabilities	0	-0.504
Manufacturers' unfilled orders in non-durable goods industries	0	0.412
Hotel occupancy percentage	0	0.576
The value of new construction in general business	0	0.513
Total sq. ft. of hotel construction	0	0.499
Value of hotel construction	0	0.465
C. Lagging Indicators Series*	**lag****	**CCF*****
Discount rate on new issues of 91-day Treasury-bill	1	0.515
Federal funds rate	1	0.536
GNP	1	0.547
Hours of all persons in business sector, percentage change	2	-0.544
Interest rate in hotel industry	3	0.501
Net new room openings	1	0.493
New housing units, value put in place	2	-0.594
Total employment	1	0.499
Unemployment rate, persons unemployed 15 weeks and over	1	-0.651
Unit labor costs in business sector, percentage change	2	0.592

Note: * Indicators were selected based on the top ten strongest cross correlation. ** The maximum number of lags plotted: 5. *** "CCF" stands for Cross Correlation Function.

Table 5. The Composite Indices of the Leading, Coincident, and Lagging Indicators for the Hotel Industry and their Symmetric Percentage Change

Year	Target Index	Target SPC	Leading Index	Leading Index SPC	Coincident Index	Coincident Index SPC	Lagging Index	Lagging Index SPC
1966	100.00	.	100.00	.	100.00	.	100.00	.
1967	101.46	1.45	103.52	3.46	101.34	1.33	99.96	-0.04
1968	100.32	-1.14	105.56	1.95	103.12	1.74	101.55	1.58
1969	92.58	-8.02	107.12	1.46	104.77	1.59	103.03	1.44
1970	95.20	2.78	108.20	1.01	105.63	0.82	102.80	-0.22
1971	96.60	1.46	110.22	1.85	107.18	1.46	103.27	0.46
1972	119.46	21.16	111.88	1.49	109.96	2.57	104.73	1.39
1973	122.87	2.82	113.47	1.41	111.92	1.76	106.29	1.48
1974	118.76	-3.40	113.91	0.38	111.52	-0.35	106.58	0.28
1975	120.35	1.33	115.95	1.77	112.07	0.49	106.04	-0.51
1976	132.41	9.54	118.16	1.89	113.90	1.62	106.99	0.89
1977	134.88	1.85	119.54	1.16	115.69	1.55	108.05	0.99
1978	148.41	9.55	122.26	2.25	118.05	2.03	109.53	1.36
1979	152.47	2.70	126.41	3.34	120.23	1.83	110.85	1.20
1980	160.99	5.44	130.62	3.27	120.72	0.40	111.22	0.33
1981	146.38	-9.50	133.59	2.25	121.37	0.54	112.13	0.81
1982	143.03	-2.31	134.44	0.64	121.43	0.05	111.47	-0.59
1983	158.12	10.02	137.01	1.90	123.22	1.47	112.59	1.00
1984	186.53	16.49	139.43	1.75	125.50	1.83	114.43	1.63
1985	193.63	3.74	141.90	1.75	127.05	1.23	114.80	0.32
1986	196.82	1.63	143.95	1.43	128.30	0.98	115.19	0.33
1987	211.47	7.17	145.73	1.23	129.74	1.12	116.36	1.01
1988	220.50	4.18	148.00	1.55	131.08	1.02	117.42	0.90
1989	233.49	5.72	150.03	1.36	132.03	0.72	118.09	0.57
1990	222.88	-4.65	150.93	0.60	131.95	-0.06	117.57	-0.44
1991	213.13	-4.47	151.99	0.70	130.88	-0.82	116.60	-0.83
1992	220.56	3.43	152.10	0.07	131.70	0.63	115.44	-1.00
1993	221.64	0.49	152.05	-0.04	131.76	0.05	115.44	0.00

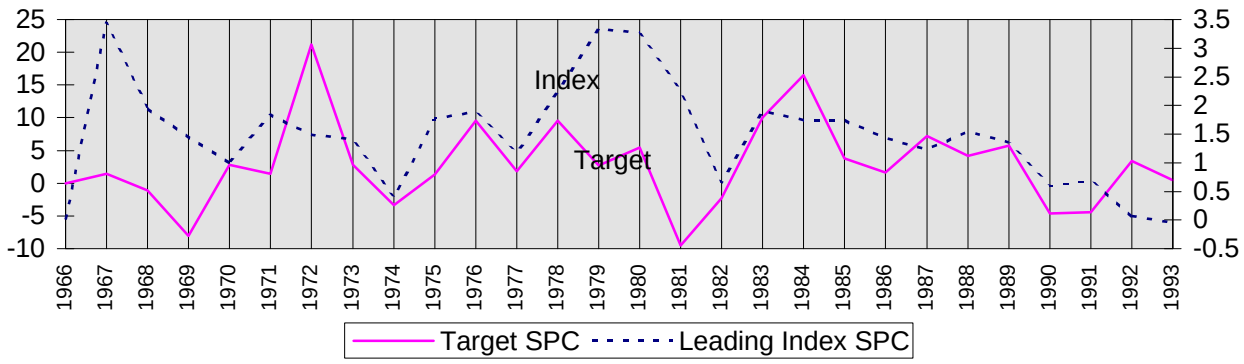
The Composite Indices for the leading, coincident, and lagging indicators

The results of the analysis for forming composite indices are presented in Table 5. These indices are the key results of this study. These are used for testing time relationships between the actual turning points of the HGC (or called here target cycle) and those of indices' cycles for the past twenty-eight year period. The final indices for the leading, coincident, and lagging indicators and their symmetric percentage changes are in Table 5.

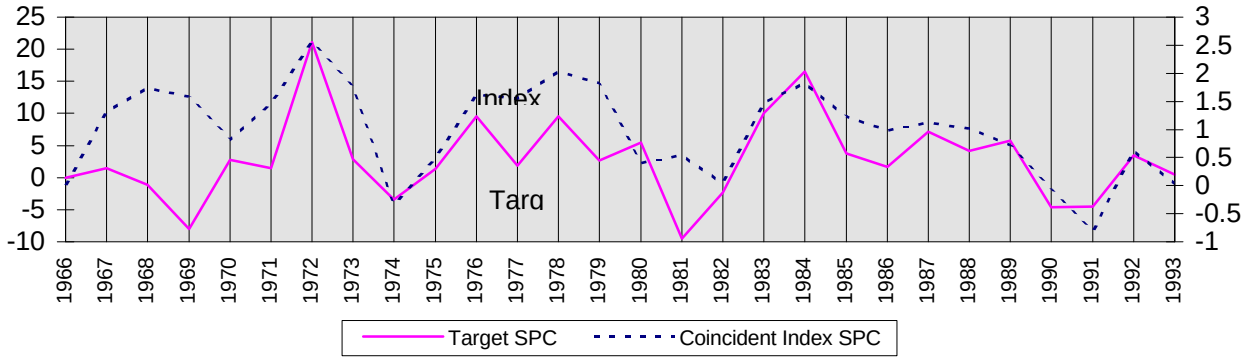
Performance of the EIS

The composite indices are used for forecasting the turning points of the industry cycles. The performance of the system for the hotel industry is presented in Figure 5 and Table 6 (see only turning points of the cycles, not the magnitudes of growths). As shown in Table five, the leading indicator system leads the peaks of the HGC by one year throughout the whole cycle. The coincident EIS coincides with the peaks and troughs of the HGC almost perfectly. The turning points of the lagging indicator system lagged those of the HGC by one or two years.

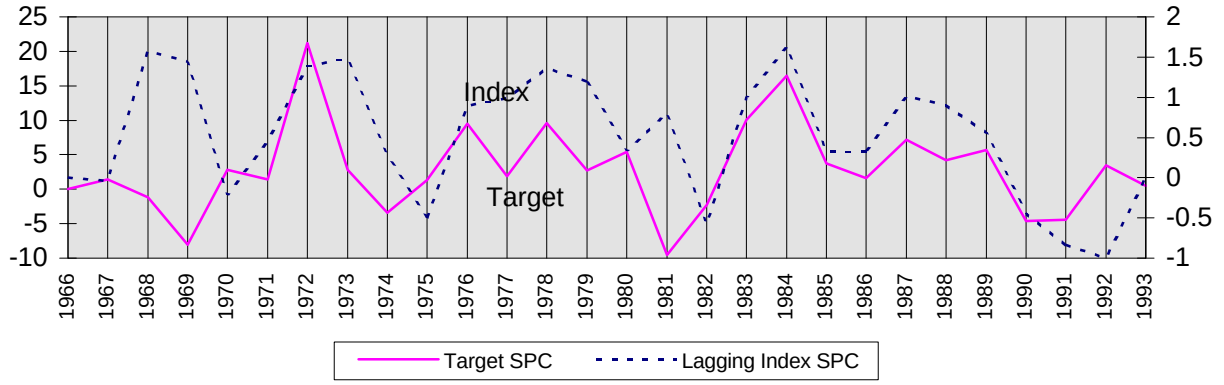
Figure 5. Performance of Composite Indices



Performance of Leading Composite Index



Performance of Coincident Composite Index



Performance of Lagging Composite Index

Table 6. Performance Evaluations of the Hotel Industry Indicators: leads (-) and lags (+) in years of turns in composite indices at growth cycle turns (1966-1993)

Hotel Industry		Leading		Coincident		Lagging	
P	T	P	T	P	T	P	T
1967		0		+1		+1	
	1969		+1		+1		+1
1972		-1		0		+1	
	1974		0		0		+1
1976		0		0		+2	
	1977		0		0		+3
1980		-1		-2		+1	
	1981		+1		+1		+1
1984		-1		0		0	
	1986		+1		0		0
1989		-1		-		0	
	1991		-1		0		+1
Median		-1	+1	0	0	+1	+1
Mean		-1	0	0	0	+1	+1
Accuracy		67%	17%	50%	67%	67%	83%

Note: “P” stands for Peak and “T” stands for Trough

Results and Implications of the above study

As presented in Table Five, the leading indicators include: American stock exchange index, business failure number, CPI for motor fuels, dividends per share, GDP of service, hotel stock index, money supply (M2) in constant dollars, New York stock exchange, prime interest rate charged by banks, S&P 500 stock price index, savings percentage of disposable income, wages & salaries. These leading series anticipate impending changes of the aggregated hotel business activity represented by the total receipts of the industry. Theoretically, all the leading indicators are sensitive in some degree to changes in expectations about economic activity. For example, the S&P 500 stock price index may be especially sensitive to changes in expectations about future economic activity of the hotel business. For stock prices, sensitivity to expected earnings may be at the root of the relationship.

The coincident indicators include average weekly initial claims for unemployment insurance, consumer confidence, consumer expenditures in service industry, GDP, hotel failure liabilities, manufacturers' unfilled orders (non-durable goods industries), hotel occupancy percentage, value of new construction (general business), total sq. ft. of hotel construction, and value of hotel construction. These lagging indicators trace patterns of economic activity that indicate the present state of the hotel industry. It is quite sure that the changes of total receipts in the hotel industry go along with the changes of consumer expenditures in the service industry and hotel occupancy percentage. However, the underlying logic for the time relationship with some other series such as average weekly initial claims for unemployment insurance is not clear in this study. The series of average weekly initial claims for unemployment insurance is classified as a leading indicator of the general business cycle. Explaining why the series goes along (in terms of turning points) with the series of HGC is beyond the objectives of this study. Future study may define the logic behind the time relationships.

The lagging indicators include the discount rate on new issues of 91-day Treasury-Bill, federal funds rate, GNP, hours of all persons in business sector (percentage

change), interest rate in hotel industry, net new room openings, new housing units (value put in place), total employment, unemployment rate (persons unemployed 15 weeks and over), unit labor costs in the business sector. Some of the lagging indicators lag because they represent activities that are influenced by the cycle. Thus interest rates in the hotel industry, for example, usually lag behind the cyclical downturn because the downturn causes emergency credit needs, which are accommodated in part but are charged at higher interest rates.

The performances of the composite indices for the leading, coincident, and lagging indicators were measured in order to test the possibility of using the indicator system for future industry forecasting. As presented in Table 7, the leading indicator system led the peaks of the hotel growth cycle by one year throughout the whole cycle with 67 per cent accuracy. The system, however, led only one out of six troughs in the cycle. The coincident EIS coincided with the peaks and troughs of the hotel growth cycle with 50 and 67 per cent accuracy respectively. The lagging indicator system also performed well. Its peaks and troughs lagged those of hotel growth cycle by one or two years with 67 and 83 per cent accuracy respectively. Choi (1996) concluded that the measurement and analysis of selected economic indicators can predict the cyclical fluctuations of the hotel industry.

Section Summary

The need for accurate forecasts of hospitality and tourism demand and supply has been well recognized in the literature. There are numerous ways to forecast, ranging from the simple, unsophisticated method of intuition to complex approaches such as econometric models. Based upon literature review, this study now concludes that regression models, while easy to interpret and inexpensive to run, tend to have low explanatory ability and a short usable time horizon. Time series may yield seriously misleading forecasts if unforeseen occurrences happen. Also, simple industry gravity models exhibit the same poor explanatory ability as regression models.

Unlike the previous studies, the industry business cycle model and its economic indicator system overcomes the problems that other forecasting methods have. Projecting industry growth and turning point by measuring, monitoring and forecasting industry cycles is a new class of methods in investigating the industry's business characteristics. The true test of a forecasting system is in how well it predicts the future**.** This same claim also might be made about statistical models and techniques.

The fundamental reasoning and conceptualization for Part I of this study are rooted in a study of development of the hotel industry cycle model (Choi, 1996) and are summarized below.

> The cyclical fluctuations of the growth of the hotel industry can be projected by measuring and analyzing a series of economic indicators. Each economic indicator will have specific characteristics in terms of time lags, and thus can be classified into leading, coincident, and lagging indicators. Since no single indicator is perfect for explaining the time lag relationships with the industry cycles, the compilation of groups of indicators into composite indicators will be necessary. The composite indices can be used for forecasting the future turning points (peaks and troughs) in the industry cycle. The turning points of the leading composite index series will lead the turning points of actual industry growth series by a certain time lag. The turning points of the coincident composite index series will coincide with the turning points of the actual industry growth. Finally, the turning points of the lagging composite index will lag the turning points of actual industry growth by certain time differences.
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> Once the time differences of the three indices are defined, each index can serve as a forecasting and examining tool for the industry growth. As the definition and rationales of the indicators discussed in the previous section, leading indicators are mainly the series concerned with business decisions to expand or to curtail output. Time is required to work out their effects, and so they tend to move ahead of turns in industry cycles. Leading indicators signal in advance a change in the basic performance of the industry as a whole. This tells us future industry turning points in advance, which is the main interest of practitioners in this industry. Early warning signals provided by leading indicators aid in forecasting short-term trends in the coincident series. Coincident indicators are those whose movements coincide with, and provide a measure of, the current performance of industry activity. Hence, they inform us whether the economy is currently experiencing a slowdown, or a boom. Movements of lagging indicators usually follow, rather than lead, those of the coincident indicators.

> In order to test the indicator system as a useful forecasting technique for the hotel industry, the performances of the composite indices of the leading, coincident, and lagging indicator groups are evaluated by comparing with the hotel industry cycle in terms of turning points. It will be accomplished by analyzing and comparing the statistical outputs (i.e. dates of peaks and troughs, and cycle duration) between the series of composite indices and the series of hotel growth cycles. If the leading composite index leads the target cycle for many years consistently, it will be a good forecasting system because it signals the changes in the industry's future performance in advance. The coincident composite index also will give information regarding current industry's situation if the turning point of the index coincides with the turning points of the target cycle. The lagging index will confirm all of the above occurrences.
>
> Choi (1996)

On the other hand, the indicator system is not universal. Different industries will have different systems that can fit their own structures. For the industry level, given that different levels of heterogeneity can be found across different industries, researchers have questioned the relationship between heterogeneity and industry performance. Miles, Snow, and Sharfman (1993) empirically studied heterogeneity or the concept of industry variety in 12 industries, defining variety as the number and strategic diversity of competitors in an industry. Their study found a positive relationship between industry variety and industry performance. The primary argument for this relationship is based on the benefits-both tangible and intangible-that accrue to firms from having competitive rivals. For example, firms in competition may improve their strategies by drawing on the experience of other firms (Huff, 1982), establishing better supplier networks, and increasing their level of technology (Poter, 1990). Also firms are expected to be more innovative when faced with strong competitors (Porter, 1990). Finally, at the industry level, variety ensures that all firms have a range of responses available in order to meet and match changing industry conditions (Nelson and Winter, 1982). Miles et al. (1993) also found that there was greater variety in growth industries than in declining industries, which could explain the poor performance of many declining industries.

Several industries have developed economic indicators for their particular industries and developed their own industry cycles to monitor, measure, and forecast their cycles. The textile industry (Karfunkle, 1969), chemical industry (Niemira, 1982), energy and mineral industry (Maurer, 1985) and hotel industry (Choi, 1996) are some examples. Those models suggest ways to understand the workings of the economic cycles for the restaurant industry. Through reviewing general business cycle studies and their theories, and more specific detail of the hotel industry cycle model and its economic indicator system, it has been concluded that there is a merit in developing a systematic restaurant industry cycle model as a forecasting tool and its economic indicator system.

Developing a restaurant industry cycle model and its economic indicator system is a foundation of industry forecasting. However, development itself is not enough for full utilization of the advantages of the system. It is imperative that top managers have a good understanding of the strategic nature of their industry cycle so that they can effectively select businesses and allocate resources. Industry analysis is the starting point for almost any strategic plan. It is the process through which managers can evaluate the factors within the environment critical for business success (Bernhardt, 1993). The following part explores the system to provide useful information to people in restaurant industry and investors. Part two examined financial practices of the high and low performing firms for the period of peaks and troughs of the industry cycle and test significance in financial practices between high performers and low performers.. This is for improving investment performance through understanding the cyclical behavior of the economy and identifying winning strategies in the restaurant industry. With that model, investors should be able to take part in the upswings while avoiding the cyclical downturns, and structure a portfolio that keeps risk to a minimum. This should then presumably result in competitive investment decisions of firms, thereby improving the effectiveness of resource allocation.

PART TWO: Examining Financial Practices of High and Low Performing Firms for the Period of Peaks and Troughs of the Industry Cycle

Introduction

Running a restaurant, just like running any business, is about managing money. Without managing money, not many businesses can be successfully operated and will probably eventually fail. Thus, it is just as important to plan for cash as it is for profit. Cash availability will result only if we have good financial practices. Financial practices means: (1) knowing where we are at any time from a profit and cash perspective; (2) planning where we are going through the use of budgets and other tools; (3) ensuring we reach where we plan to go through regular financial reports that monitor our progress (Michael 1992).

Financial practices are accompanied by scanning the economic situation of a particular market. When we talk about financial practices, this does not mean that a financial manager can control economic fluctuations, it means controlling internal and external financial resources according to the fluctuation of an economy in order to achieve business goals. The economic fluctuation shows its shape through business cycles implying a lot of financial transactions and decisions over the cycles.

To be successful in business, it is imperative that top managers have a good understanding of the strategic nature of their industry so that they can effectively select businesses and allocate resources. Bernhardt (1993) emphasizes that industry analysis is the starting point for almost any strategic plan. From Part 1 of this study, the usefulness of studying industry cycles has been articulated: it predicts the turning points of the industry's business, and therefore optimizes firm performance. From the review, it has been apparent that there are some cyclical patterns and it is possible to predict them in advance. The manger must know how the business cycle affects both businesses in

general and his own industry and firm. In addition, the manager must pay particular attention to the cycle's impact on money supply, interest rates, and stock prices. Also the manager must be aware of how drastically the cycle's successive phases may change the cost and availability of borrowed funds and the firm's cost of equity capital. Besides, the manager must also recognize and be able to forecast how his own firm's needs for funds will change over the cycle. And he or she must develop his or her timing skill so that the firm's additions and retirements of fixed and working capital can be timed advantageously in relation to cyclical change.

In order to examine the practices of financial strategy over the restaurant industry cycle, one must examine the major financial variables in the restaurant companies within the same time frame with the restaurant industry cycle. A financial strategy may not be equally effective over the industry cycles, and compromise strategies that are less than optimal for either an up or down market or dynamic financial strategies with built-in cycle adjustments may be needed. Also, an empirical study of the industry cycle strategies may help to reveal dynamic financial strategies of the high performing restaurant companies for the cycle. Are there any significant differences between high performers and low performers in terms of practicing financial decisions for the changes of the industry cycles? Are there any significant patterns of financial practices for high performing restaurant firms over the cycle? In Chapter One, fundamental research questions and the rational for studying this issue were articulated. The purpose of this section is therefore to provide a comprehensive review of the literature of the research question.

The Concept of Strategic Management

Strategy

Strategy has been defined in various ways. Strategy entails the analysis of internal and external environments of a firm to maximize the utilization of resources in relation to objectives (Bracker, 1980). Miles and Snow (1978) defined strategy as a consistent pattern in the decisions that guide a firm in competing in a given business." Olsen, Tse, &

West (1992) provide a complete explanation of the concept of strategic management in the hospitality industry. According to their explanation, strategic management can be thought of as a consistent pattern of decisions made by an organization's management as it pursues its mission and objectives and it consists of four basic elements: environmental scanning, strategic formulation, strategy choice, and strategy implementation. They say "To apply the strategic management concept in an organization there must be a synergy among all four components-a synergy that must be understood for the application to yield fruitful results for the organization (p.1)."

Co-Alignment Principle

Firms are required to focus development on co-alignment structure and strategy. The major constructs of the concept include (1) Business Environment, (2) organizational structure, (3) Strategy choice, (4) and Firm performance. These constructs are to be co-aligned in order to maximize the firm value (Cash flow per share). The use of co-alignment principles is important to the success of this establishment. The environmental events should influence the strategy choices which should in turn influence the firm structure, and finally these should maximize the firm's performance. The environment should be maximized for opportunities and minimized for threats. The strategy should be the best possible choice of the competitive methods used. The firm's structure should include the effective and efficient allocation of resources as well as the successful implementation of the competitive methods previously mentioned. The firm's performance should in turn produce added value to the establishment in the eyes of the owners, share holders, managers, employees, and guests.

Olsen (1993) summarizes that without co-alignment between structure, strategy, and the environment organizations may find difficulty in achieving long-term success. Defined more simply, decisions will only be successful if implemented into a supportive or suitable structure. Due to the complex dynamics within the market environment, this fit (alignment) is not a one-time event. Hospitality organizations should continually engage their business in attempting to match their competitive methods and competitive strategies

with their organizational structure. A consideration for both the products and services and market environment is also required, so that the firm has a thorough knowledge of the situation that it faces. Schaffer (1986) explained that for a hotel company to succeed, it must match up its competitive strategy and its organizational structure according to the realities of the market.

Business Environment

Many of the challenges facing managers today originate outside their firms. A careful analysis of the external environment can identify major opportunities and threats. Environmental analysis provides managers with important information for strategic decision making and encourages strategic thinking in organizations. Successful firms follow broad environmental trends and continually assess changes taking place in their industry. Open systems theory, which holds that the firm is a creature of its environment (Selznick 1948), introduced the concept of environmental influence on the firm-a concept in which successful firms adapt to changing environmental pressures while unsuccessful firms do not (Olsen, Tse, and West 1992).

Environment is defined as the totality of physical and social factors taken into consideration in the decision-making behavior of individuals in the organization (Duncan 1972). Organizations, therefore, need to be knowledgeable within and without the boundaries of the organization. This is possible when the firm's executives continually scan the environment. The environmental scanning activity is an important part of the strategic management process. Strategic management is referred to as the process of examining both present and future environments, formulating the organization's objectives, and making, implementing and controlling decisions focused on achieving these objectives in the present and future environments (Smith, Arnold and Bizzell, 1988).

The organizational environment consists of two major components: task (or specific) environment and remote (or general) environment (Olsen 1980). The task environment has a more direct relationship with the day-to-day success of an organization, and consists of events occurring in the customer, supplier, regulator and competitor

segments. The remote environment, meanwhile, is related to events that take place in such categories as economic, technological, sociocultural, ecological, and political. Since these events are so broadly based, it is often difficult to determine how they will influence the organization. This remote environment is especially important to multinational operators because many events have crucial impacts upon corporate decisions to enter and operate in international markets (Olsen 1980).

A firm cannot typically control its general environment. Also, many developments in the general environment are difficult to predict with any degree of accuracy. For example, macroeconomic developments, such as interest rates, the rate of inflation, and exchange rates, are extremely difficult to predict on a medium and long-term basis. However, some trends in the general environment, such as population distribution by age, ethnicity, and income levels, can be forecast with a high degree of accuracy. When there is clearly defined key environmental risk variables, managers are able to focus on the key variables that have the greatest impact on performance.

Environmental Scanning

Environmental scanning is the process by which executives learn of events and trends outside of their organization. In the past decade environmental scanning researchers have taken two basic approaches. One approach examines environmental scanning as a formalized procedure; while the other treats environmental scanning as a responsibility of the individual executives in his/her effort to remain current and competitive in the industry. In 1985, Sawy defined strategic scanning as the acquisition of information about events, trends, and relationships in an organization's environment, the knowledge of which would be of assistance to top executives in identifying and understanding strategic threats and opportunities.

The major objective of environmental scanning activities is to identify threats and opportunities. Lawrence and Lorsch (1967) studied ten U.S. industrial firms. They developed and used an instrument to assess environmental characteristics in three of the firms' sub-environments: production, marketing, and research and development.

Lawrence and Lorch developed an environment uncertainty index for each of the sub-environments based on three scales dealing with: (1) lack of clarity of information about the environment, based on the degree to which the job requirements in each sub-environment were clearly stated or known, (2) general uncertainty of causal relationships which exist between environmental constraints and organizational effectiveness, based on the degree of difficulty faced by each department given the limitation of resources available to it, and (3) the time span of feedback regarding information on the efforts of each sub-environment related to success of job performance.

Duncan (1972), in an effort to further contingency research, developed an instrument to measure uncertainty. In attempting to develop a theory of organization-environment interaction, Duncan sought to facilitate contingency research through clarifying uncertainty concepts by relating two dimensions of an organization's environment-complexity and dynamism-to a manager's perception of uncertainty. Building on earlier work in this area, Duncan sought to develop a measure of uncertainty from an analysis of individuals' verbalizations of the concept of uncertainty. The validity of this approach is based on the ability of individuals to verbalize their views concerning the breadth and scope of the dimensions of uncertainty.

The three dimensions included in Duncan's measure of uncertainty include: (1) lack of information regarding the environmental factors associated with a given decision making situation; (2) lack of knowledge about the outcome of a specific decision in terms of how much the organization would lose if the decision were incorrect; and (3) the ability or inability to assign probabilities as to the effect of a given factor on the success or failure of a decision unit in performing its function. Both uncertainty and environmental dimensions were drawn from organizational member's perceptions.

The significant issues in environment analysis mentioned above can be restated and classified into four categories as following:(1) Quality of information (frequency, sources, reliability, and validity), (2) cause and effect relationships (what are the impacts? , threats and opportunities, probability of impacts, and interdependency with other threads), (3)

timing (history of events, rate of change, and expected duration), and (4) describing the events (describing the key variables shaping the events or trends, assessing whether it is a fad, trend, or fact of life).

In the hospitality industry, according to West and Olsen, the major weakness of the scanning process was a lack of reliable information. Other weaknesses arise because executives are unable to assign probabilities to events and impacts, and because information is incorrectly interpreted. Also, the quality of information gathered may be restricted by a narrow perception of what actually constitutes the firm's environment.

No one generally accepted or "right" way exists for doing environmental analysis. However, there is always a best way to overcome certain problems such as those mentioned above. The first step in the analytical framework is to clearly delineate what is meant by " the environment." This step is important not only because it influences much of the rest of the analysis but also because different firms adopt different definitions of environment. As with the environment as a whole, each environmental segment needs to be defined. The definition of each segment determines the focus and breadth of the analysis. Although the definition of any segment is necessarily somewhat arbitrary, consideration of what each segment entails serves to sharpen the organization's understanding of the scope and composition of each segment as well as how the segments may be related.

Once the segment is defined, an effective point of departure is to identify the dominant current changes and emerging patterns within the segment. The ultimate purpose of scanning and monitoring is to do precisely this: to identify changes under way or precursors of impending and likely change (or both). Knowing that a trend exists is not enough. To monitor, forecast, and assess the direction and magnitude of a trend, we need to be able to operationalize the pattern-that is, establish indicators by which the pattern can be tracked and predicted. We need to know what data or evidence allows us to assert that a trend is apparent and what direction it may take. Knowing the current status of a pattern or potential trend is not enough. Indeed, knowing only the current status may be

misleading unless we also have some understanding of the evolution of the pattern over time. This step is analogous to the distinction between point estimates and trend lines in statistics.

Identifying the degree of change currently evident within a trend is of paramount importance. At a general level, broadly identifying the degree of change of a trend is sometimes possible by noting which phase of its life cycle it's in. Trends often have distinct life cycles; they emerge, develop, mature (peak), and decline. They may not necessarily disappear. Although specifying a trend's life cycle is not always easy, trying to do so is useful as a means of understanding its evolution to date.

Changes do not just appear, and trends do not just happen. To identify changes is not to explain them; something is driving them. Values and life-styles don't change merely on their own accord. Regulatory change reflects many forces. Technological change is dramatically influenced by social. economic, and political forces. Therefore, before one can develop a forecast, identifying the forces underlying or driving the changes is imperative. An important point is that rarely will all forces push a trend in the same direction. In environmental analysis, countervailing forces almost always seem to exist. Hence, assessing whether the forces driving trends are reinforcing, conflicting, or unrelated is important.

The exigencies surrounding environmental analysis-time constraints on those involved, the need for instant information-create pressures to short-circuit the analysis process. One consequence is that analysts may go through analysis routine or technique only once or as quickly as possible. Much learning is lost, however, if analysts do not go through the steps in the technique a number of times using different assumptions, testing different causal relationships, and so on. Environmental analysis in many organizations often stops at describing the current or anticipated environment. The emphasis must be upon the search for causal processes-that is, the forces driving environmental change. An essential element of insightful environmental analysis is the need to focus on major events and their consequences; this is a central part of the search for causal processes.

Distinguishing between framework, data-gathering methods, and forecasting techniques is important. Frameworks are content specific; they direct analysts' attention to issues or areas they should focus on and provide them with the constructs to look at the environment. They also sometimes provide some of the relationships among concepts, often making these on the theoretical bases developed from past experience. Framework thus specifies a structure for data collection and points in the direction of data sources.

Data gathering methods specify data sources and the methods of data collection. Data sources may be either primary or secondary. Primary sources are sources of data tapped by an organization or by agencies hired by it with a specific purpose in mind. Secondary sources are sources of data gathered by various agencies for general purposes and are typically available to most organizations. Competitive informational advantages primarily accrue to a firm from primary sources.

The data may be quantitative, qualitative, or inferential. The first two categories are self-explanatory. The word inferential is used to describe data that are arrived at as a result of drawing conclusions from various data sources. For example, social values are often not directly manifest or measurable, but need to be inferred from the behavior and words of individuals

A major handicap in the efforts of many organizations engaged in environmental analysis is overemphasis upon quantitative data and underemphasis upon qualitative data. Quantitative data do not speak for themselves: numbers must be interpreted, and statistics must be imbued with meaning. The point here is that the nonquantified or nonquantifiable is often crucial in creating meaning out of the quantitative data. For example, in the political arena, electoral results are easily quantified, yet to assess the implications of these results requires an understanding of the political process and its interactions with other environmental segments. Stated differently, the rationale underlying any environmental assessment or forecast always goes beyond mere numbers or statistics; the quantitative and the qualitative must be integrated.

Strategic Management and Company Performance

Performance is a function of influences and organizational characteristics in addition to the choices of organizational leaders. It is a complex and multidimensional phenomenon that consists of multiple objectives such as strategy, structure, relative competitive strength. It is generally measured with respect to objectives such as sales, profits, costs, quality, and product performance.

1. Hard Performance: Sales, Gross Profit, Production, Commissions, and Services Rendered
2. Soft: supervisor appraisals, self-perceptions, etc.

Rhyne (1986) investigated the relationship between financial performance and characteristics of corporate planning systems. Planning systems that combined an external focus with a long-term perspective were found to be associated with superior 10-year total return to stockholders. A lagged relationship between such systems and 4-year average annual returns to investors also was identified.

Snow and Hrebiniak (1980) conducted a study on the relationships among strategy, distinctive competence, and organizational performance. They noted that several strategies are potentially feasible within a particular industry. However, in order to achieve high performance, each strategy must be supported with appropriate distinctive competencies. The sample consists of firms in four industries-plastics, semiconductors, automobiles, and air transportation. The findings indicated that top managers in the four industries confirmed the contention that the four strategy types (defender, prospectors, analyzer, and reactors) exist in the environment that are generally similar, and that the strategy type and industry characteristics were strongly related to the financial performance of the firms.

Tse (1991) analyzed the relationship between organizational structure and financial performance in the restaurant industry. She found that (1) High performers are less centralized, more formalized, and specialized than low performers, (2) A company with a high degree of formalization, specialization, and low centralization has the highest average % of ROA and sales than companies with other structural configurations.

Schaffer & Litschert (1990) studied internal consistency between strategy and structure: performance implications in the lodging industry. This study addresses the contingent nature of strategy by examining the Miles and Snow (1978) internal consistency assumptions in a single industry setting. Results suggest that a range of structural arrangements exist among firms exhibiting each strategic type. Within strategic types, firms that achieve internal consistency exhibited higher mean performance scores than those that did not, but the differences were not significant. Therefore, the study revealed only marginal evidence that internal consistency as described by Miles and Snow contributes to higher performance regardless of the appropriateness of the performance measure.

Choice of strategy should be a function of the requirements of the environment and the type of performance being sought at the time. Any strategy begins with decision making to establish where one wants to go and how one intends to get there. Every strategy, in turn, is supposed to guide the behavior and set the direction of an organization in its environment. The business environment rules of yesterday may not apply tomorrow and the information that was useful yesterday will likely not be useful tomorrow. The rapid internationalization of industries, the widespread use of computers, and the growth of information transfer have led to radical revisions of how organizations operate. As a result, success today depends on close monitoring of both internal and external forces and on being flexible and adaptable so as to take advantage of them.

Organizations and concept of Life cycle

The concept of the organizational Life Cycle is one that has received a great deal of attention in the literature on organization theory. The theory of the life cycle suggests that a firm, or any organization, proceeds through stages of life similar to any biological organism (Olsen, Tse, and West, 1995). Many scholars have suggested models of the organizational life cycle. The most representative of models is that proposed by Kimberly and Miles (1980). This model suggests three stages: creation; transformation, including

growth and maturity, and decline. Strategy differs as a company goes through the various life cycle stages. Thus awareness of the life cycle concept is crucial in strategic planning for organizations. Sasser et al. (1978) also proposed that the typical service organization's life spans through five stages: the entrepreneurial stage; rationalization; growth; maturity; and decline or regeneration. Again, each stage of development will have its own characteristics and implications for business strategy and management style selection.

Levitt (1965) first implied that the stage of life cycle must be carefully considered in strategic decision making. Hofer (1975), in support of Levitt's proposition argued that the stage of the life cycle is the most essential variable in determining the most appropriate business strategy for an organization. The effectiveness of a firm's business strategy varies according to the stage of evolution and the business unit's competitive position (Sandlberg, 1986).

Since strategies depend on their resources and the environmental circumstances they face, any theory of business strategy must be a contingency theory (Hofer, 1975). The most fundamental variable in determining an appropriate business strategy is the stage of the product life cycle. Major changes in business strategy are usually required during three stages of the life cycle: introduction, maturity, and decline. In the introductory stage of the life cycle, the major determinants of business strategy are the newness of the product, the rate of technological change in product design, the needs of the buyer, and the frequency with which the product is purchased. In the maturity stage of the life cycle, the major determinants of business strategy are the nature of buyer needs, the degree of product differentiation, the rate of technological change in process design, the degree of market segmentation, the ratio of distribution costs to manufacturing value added, and the frequency with which the product is purchased. In the declining stage of the life cycle, the major determinants of business strategy are buyer loyalty, the degree of product differentiation, the price elasticity of demand, the company's share of market, product quality, and marginal plant size.

The organizational leaders and strategy

Research has shown that a firm's strategy is influenced by a number of variables, including management style and characteristics of the organizational leader, and the stage of the corporate life cycle. Tse and Elwood make the attempt at analyzing the management style and characteristics of leaders, and business strategy in two hospitality corporations during their transition through the life cycle. Strategy changes as an organization evolves, and executive management needs to adapt the business strategies to different stages of the life cycle. The concept of the life cycle has been established as an important element in the theory of strategic management. The effectiveness of a firm's business strategy varies according to the stage of evolution and the business unit's competitive position.

A firm's success lies in the decisions made by the leaders who identify opportunities, develop strategies, assemble resources, and take initiatives (Low and MacMillan, 1988). Miles and Snow (1978), support the strategic-adaptation approach to the study of organizations. They argue that organizational behavior is only partially a function of the environment, and that the choices top managers make are the critical determinants of organization structure and strategic process.

Miller and Toulose (1986) noted that there are several common personality types of chief executives that are thought to be central in determining the strategies and structures of many organizations. Literature also points to three personality dimensions of the leader that are particularly pertinent in influencing the strategy and structure of an organization: flexibility, need for achievement, and locus of control (Miller and Toulouse, 1986). Research in the area indicates that the personality of the leader will be most closely related to strategy and structure in organizations that are small. Smith (1967) was one of the first researchers to develop a classification of entrepreneurs according to their motivations or management efforts. He identified the presence of two different types of entrepreneurs in the manufacturing industry; 'craftsmen' entrepreneurs and 'opportunistic' entrepreneurs.

The organizational leaders and the life cycle

Smith and Miner (1983) have shown that it takes a particular type of organizational leader to develop a venture to a substantial size. Entrepreneurs are not like corporate or middle mangers. The typical 'entrepreneurial' stage is the beginning or creation of an organization, and is where the entrepreneur recognizes a market opportunity and initiates the supply of product or service. Kimberly and Miles (1987) agree with this entrepreneurial approach in that they believe that the creation of a new organization focuses on the characteristics of the founder. Greiner (1972) asserts that each stage/phase of organizational development requires a different dominant management style and is faced with a unique managerial problem. In short, Greiner's model moves from stages emphasizing creativity and entrepreneurship to formalization, and then to adaptability and flexibility.

CHOICE OF STRATEGY

Organizational performance is largely the outcome of a series of choices made by the creators or top managers of the organization. The top managers must assess the market environment of the organization's chosen product and choose the appropriate competitive strategy. Then they must create an organizational structure that properly supports that strategy. The choice of strategy and structure is not a one-time event, because the market environment is dynamic. Therefore, organizations must continuously engage in matching their competitive strategies and organizational structures to the product and market environment. As the market changes, management must review the question of exactly how to serve the market. Then management must adjust its competitive strategy to the new market situation and make sure its organizational structure and processes fit the strategy. In other words, strategy is the means through which an organization intends to come to terms with its environment.

Varying environmental conditions have different implications for strategy formulation and implementation. In particular, when there is little change in the environment, strategies can be specified in great detail because the organization's needs are likely to remain fairly constant over time. Such programmed strategies are implemented with precision and under strict control over time. When the environment is changing, programmed strategies can inhibit the organization's adaptation to new circumstances. Flexibility is necessary to allow for variation of strategic emphasis to keep abreast of changing environmental conditions over time. When the environment is highly unpredictable, the strategic challenge moves beyond even the advantage that flexibility provides. Uncertainty requires contingency planning in the sense that a set of alternative strategies exist, each ready for implementation when a specific change of circumstances makes it appropriate. Whether the external environment is richer or poorer in nature must always be properly identified and interpreted as an input to the planning process. This puts great weight on the manager's ability to gather appropriate information on the environment and to spot and interpret important trends. All strategies and structures must be consistent with environmental challenges, both as experienced in the present and as predicted for the future.

According to Hamel and Prahalad (1996), any company intent on creating industry revolution has four tasks. First, the company must identify unshakable beliefs that cut across the industry - the industry's conventions. Second, the company must search for discontinuities in technology, life styles, working habits, or geopolitics that might create opportunities to rewrite the industry's rules. Third, the company must achieve a deep understanding of its core competencies. Forth, the company must use all this knowledge to identify the revolutionary ideas, the unconventional strategic options, that could be put to work in its competitive domain. What one sees from the mountaintop is quite different from what one sees from the plain. There can be no innovation in the creation of strategy without a change in perspective.

Different strategy types were associated with different business performance outcomes and important trade-offs exist between cashflow, return on investment, and changes in market share position depending on the strategy type. Also, the impact of these strategies upon business performance varied according to the relative competitive strength of firms, with dominantly positioned firms generally enjoying more favorable performance results than competitors holding less dominant positions (Hamel and Prahalad,1996).

As was discussed earlier, financial practices are accompanied with scanning the economic situation of a particular market. When we talk about financial practices, this does not mean that a financial manager can control economic fluctuations, it means controlling internal and external financial resources according to the fluctuation of an environmental factor in order to achieve business goals. The economic fluctuation, as an example, shows its shape through business cycles implying a lot of financial strategic practices over the cycles. Bernhardt (1993) emphasizes that industry analysis is the starting point for almost any strategic plan. In the following section, a literature review of financial practices including financing, investment, and dividend decision is reviewed. This review is to provide a ground works for finding relationships between industry cycles and firms' financial practices as a choice of strategies.

CHOICE OF FINANCIAL STRATEGIES

Introduction

Finance refers to the process by which special markets deal with cash flows over time. These markets are called financial markets. Making investment and financing decisions requires an understanding of the basic economic principles of financial markets. It could be possible to describe a financial market as one that makes it possible for individuals and corporations to borrow and lend. As a consequence, financial markets can be used by individuals to adjust their patterns of consumption over time and by corporations to adjust their patterns of investment spending over time. Finance is a subject of critical importance to the successful operation and management of a hospitality firm. An operation with an elegant dining room, a world renowned chef, thousands of guestrooms, or extensive modern conference facilities can fail if it cannot generate a rate of return that makes it worthwhile for people and institutions to invest their money in the operation (Andrew and Schmidgall, 1993).

The six seminal and internally consistent theories upon which modern finance is founded are: (1) utility theory, (2) state-preference theory, (3) mean-variance theory and the capital asset pricing model, (4) arbitrage pricing theory, (5) option pricing theory, and (6) the Modiglini-Miller theorems. Their common theme is "How do individuals and society allocate scarce resources through a price system based on decision making in the face of risky alternatives. It focuses on the question "How do people make choices?" The objects of choices are described by state-preference theory, mean-variance portfolio theory, arbitrage pricing, and option pricing theory. When we combine the theory of choice with the objects of choice, we are able to determine how risky alternatives are valued. When correctly assigned, asset prices provide useful signals to the economy of the necessary task of resource allocation. Finally, the Modigliani-Miller theory asks the question "Does the method of financing have any effect on the value of assets, particularly

the firm?" The answer to this question has important implications for the firm's choice of capital structure (debt-to-equity mix) and dividend policy (Copeland and Weston, 1992).

The structure of financial strategy consists of three interrelated decisions: the investment decision, the financing decisions, and the dividend decision (Van Horne, 1992). Investment is the allocation of capital to competing investment opportunities. The financing decision is concerned with determining the optimal capital structure for the corporation. The dividend decision determines the proportions of earnings paid to shareholders, and the proportion retained and reinvested in the corporation. Assuming that the objective of the corporation is to maximize shareholder value, 'the firm should strive for an optimal combination of the three interrelated decisions, solved jointly (Van Horne, 1992).

The following sub-sections begin with describing the overall procedure of financial practices and value creating in the restaurant industry. This is followed by a review for the primary theories of corporate financial practices (financing, investment, and dividend decision making).

Overall Procedure of Financial Practices and Value Creation in the Restaurant Industry[16]

Financial Practices

The assets of the Restaurant Company (hereafter RC) are on the left-hand side of the balance sheet. These assets are current and fixed. Fixed assets are those that will last a long time, such as a building. Some fixed assets are tangible, such as machinery and equipment. Other fixed assets are intangibles, such as patents, the price paid for trademarks, or goodwill. The other category of assets, current assets, comprises those that have short lives, such as inventory. The meats that a RC has purchased but has not

[16] This study refers to many finance text books and adapts the basic procedures of financial practices and value creation illustrated in the text books into the context of the restaurant industry. The main text books includes: Brigham (1992), Ross, Westerfield, & Jaffe (1993), White, Sondhi, & Fried (1994), Andrew and Schmidgall (1993), Tarras (1991).

yet sold are part of its inventory. Unless it has been over-purchased, they will leave the restaurant shortly.

Before a company can invest in an asset, it must obtain financing, which means that it must raise the money to pay for the investment. The forms of financing are represented on the right hand side of the balance sheet. A RC will issue (sell) pieces of paper called debt (loan agreements) or equity shares (stock certificates). Just as assets are classified as long-lived or short-lived, so too are liabilities. Long-term debt is debt that does not have to be repaid within one year. Shareholders' equity represents the difference between the value of the assets and the debt of the RC. In this sense it is a residual claim on the RC's assets.

Financial practices can be thought of as answering the following questions: In what long-lived assets should the RC invest? How can the RC raise cash for required capital expenditures? How should short-term operating cash flows be managed?

The first question concerns the left-hand side of the balance sheet. The second question concerns the right-hand side of the balance sheet. The answer to this involves the RC's capital structure, which represents the proportions of the RC's financing from debt, both current and long-term, and equity. The last question concerns the upper portion of the balance sheet. In most cases, there is a mismatch between the timing of cash inflows and cash outflows during operating activities. Furthermore, the amount and timing of operating cash flows are not known with certainty. Financial managers must attempt to manage the gaps in cash flow.

Value Creation

The restaurant enterprise can be thought of as a complex organization made up of processes utilizing various technologies to provide both services and products. The investment in these products and services and the technologies to produce them form the competitive heart of the hospitality enterprise. The manager carefully evaluates the investment made in each to be sure that it adds to the RC's competitive advantage thus ensuring that appropriate returns are achieved. The evaluation processes require the

synthesis of concepts from the field of financial management and strategic management. When the investor makes a decision to put his/her hard earned dollars into assets, there is an expected return, one that offsets inflation, and compensates for the risk that is being taken. Put differently, the investor seeks wealth maximization at minimum levels of risk. This can be accomplished by achieving the following goals:

1. Investing in competitive methods that give the RC's a sustainable competitive advantage. This might in turn produce growth in the value of the assets of the RC.
2. Making full utilization of assets.
3. Minimizing risk
4. Balancing long-term growth against short-term objectives.

In a more technical sense, value adding means that management is able to earn in excess of the cost of capital. This demands that each investment should have a positive NPV. If investments of the RC do not meet this criteria, managers fail to achieve their most essential responsibility, that of "Creating Wealth."

Financial arrangements determine how the value of the RC is divided. The persons or institutions that buy debt from the RC are called creditors. The holders of equity shares are called shareholders. Sometimes it is useful to think of the RC as a pie. Initially, the size of the pie will depend on how well the RC has made its investment decisions. After an RC has made its investment decisions, it determines the value of its assets (e.g., its building, land, and inventories). The RC then determines its capital structure. The RC might initially have raised the cash to invest in its assets by issuing more debt than equity; now it can consider changing that mix by issuing more equity and using the proceeds to buy back some of its debt. Financing decisions like this can be made independently of the original investment decisions. The decisions to issue debt and equity affect how the pie is divided.

The size of the pie is the value of the RC in the financial market. We can write the value of the RC, V as $V = B + S$ where B is the value of the debt and S is the value of the equity. If so, the goal of the financial manager will be to choose the ratio of debt to equity that maximizes the value of the pie-that is, the value of the RC. There are basically two

ways to create value. First, the company buys assets that generate more cash than they cost. Secondly, the RC sells bonds and stocks and other financial instruments that generate more cash than they cost. Thus, the RC must create more cash flow than it uses. The cash flow paid to bondholders and stockholders of the RC should be higher than the cash flows put into the RC by the bondholders and stockholders.

To see how this is done, we trace the cash flow from the RC to the financial markets and back again over time. Suppose we begin with the RC's investment activities. These include generating the capital necessary to produce and sell goods and services, and the purchase of fixed assets. To finance its investment the RC sells debt and equity shares to participants in the financial markets. The resulting cash flows are from the financial markets to the RC. The cash generated by the RC after paying all costs of production is paid to shareholders and bondholders. The shareholders receive cash in the form of dividends; the bondholders who lent funds to the RC receive interest and, as the initial loan is repaid, principal. Not all of the RC's cash is paid out. Some is retained, and some is paid to the government as taxes. Over time, if the cash paid to shareholders and bondholders is greater than the cash raised in the financial market, value will be created.

Managing Financial Resources (Capital Budgeting)

Here the term "capital" refers to fixed assets used in production, while a "budget" is a plan which details projected inflows and outflows during some future period. Thus, the capital budget is planned expenditures for fixed assets, and capital budgeting is the whole process of analyzing projects and deciding whether they should be included in the capital budget.

A number of factors combine to make capital budgeting decisions perhaps the most important ones financial mangers must make. First, since the results of capital budgeting decisions continue for many years, the decision-maker loses some of his or her flexibility. For example, the purchase of a restaurant with an economic life of 40 years "locks in" the RC for a 40-year period. Further, because asset expansion is fundamentally

related to expected future sales, a decision to buy a fixed asset that is expected to last 40 years involves an implicit 40-year sales forecast.

Also, capital budgeting is important because asset expansion typically involves substantial expenditures. RC contemplating a major capital expenditure program should arrange its financing in advance to be sure the funds required are available. An error in the forecast of asset requirements can have serious consequences. If the RC invests too much in assets, it will incur unnecessarily heavy expenses. If it does not spend enough on fixed assets, two problems may arise. First, its equipment may not be efficient enough to enable it to produce competitively. Second, if it has inadequate capacity, it may lose a portion of its market share to rival restaurant companies, and regaining lost customers requires heavy selling expenses and price reductions, both of which are costly.

Timing is also important in capital budgeting-capital assets must be ready to come "on line" when they are needed. Only when a RC forecast demands properly and plans its capacity requirements a year or so in advance it is possible to maintain or increase its market share. Effective capital budgeting can improve both the timing of asset acquisitions and the quality of assets purchased. A RC which forecasts its need for capital assets in advance will have an opportunity to purchase and install the assets before they are needed. If sales increase because of an increase in general market demand, all restaurant companies in the industry will tend to order capital goods at about the same time. This results in backlogs, long waiting times for assets, and an increase in their prices. The RC, which foresees its needs and purchases capital assets early, can avoid these problems. Note, though, that if a RC forecasts an increase in demand and then expands to meet the anticipated demand, but sales then do not expand, it will be saddled with excess capacity and high costs. This can lead to losses or even bankruptcy.

Thus, an accurate forecast is critical. A RC's growth, and even its ability to remain competitive and to survive, depends upon a constant flow of ideas for new products and services, ways to make existing products and services better, and ways to produce and serve output at a lower cost. All of these performances are possible only

when the financial manager tracks the market trends and applies appropriate financial strategy to the changes. It is necessary to utilize forecasting methods.

General Procedure of Financial Practices

Financial practices used by a RC are the consequences of different functions in the restaurant business. For example, on the operations side, a sales representative in a restaurant may report that customers are asking for a particular service that the restaurant does not now have. The sales manager then discusses the idea with the marketing research group to determine the size of the market for the proposed service. If it appears likely that a significant market does exist, cost accountants and financial mangers will be asked to estimate the costs. If it appears that the service can be served and sold at a sufficient profit, the project will be undertaken.

Conceptually, financial practices involve six steps that are used in security analysis:

1. First, the cost of the project must be determined. This is similar to finding the price that must be paid for a stock or bond.

2. Next, management estimates the expected cash flows from the project, including the salvage value of the asset at the end of its expected life. This is similar to estimating the future dividend or interest payment stream on a stock or bond, along with the stock's expected sales price or the bond's maturity value.

3. Third, the riskiness of the projected cash flows must be estimated. For this assessment, management needs information about the probability distributions of the cash flows.

4. Then, given the project's riskiness, management determines the appropriate cost of capital at which cash flows are to be discounted.

5. Next, the expected cash inflows are put on a present value basis to obtain an estimate of the asset's value to the RC. This is equivalent to finding the present value of a stock's expected future dividends.

6. Finally, the present value of the expected cash inflows is compared with the required outlay, or cost; if the PV of the cash flows exceeds the cost, the project should be accepted. Otherwise, it is rejected. (Alternatively, the expected rate of return on the project can be calculated, and if this rate of return exceeds the project's cost of capital, the project is accepted.)

If an individual investor identifies and invests in a stock or bond whose market price is less than its true value, the value of the investor's portfolio will increase. Similarly, if a RC identifies (or creates) an investment opportunity with a present value greater than its cost, the value of the RC will increase. Thus, there is a very direct link between financial practices and stock values: the more effective the RC's financial practices, the higher the price of the stock, and the more value adding.

Financial Practices Decision Rules

In general, there are four primary methods that are used to rank projects and to decide whether or not they should be accepted for inclusion in financial practices. These are: accounting rate of return, payback, net present value, and internal rate of return.

Accounting Rate or Return

The ARR model considers the average annual after tax project income (project revenues less project expenses generated by the investment) and the average investment. The calculation of ARR is simply:

ARR = Average Annual after tax Project Income / Average Investment

The average annual project income is the total project income over its life divided by the number of years. Average investment is project cost less salvage value divided by two. The proposed investment is accepted if the ARR exceeds the minimum ARR required. Some managers consider ARR to be useful because it relies on accounting income and, thus, it is easy to calculate and easy to understand. However, these advantages are more than offset by its disadvantages: ARR fails to consider cash flows (considering depreciation) or the time value of money.

Payback Period Method

Payback Period is defined as the expected number of years required for the net revenues of an investment to recover the cost of the investment. The lower the payback

the better. The payback model compares annual cash flows to the project cost to determine a payback period as follows:

Payback Period = Project Cost / Annual Cash Flows

If the calculated payback period is equal to or less than the payback objective, then the project is accepted. The payback model is reasonably popular in the hospitality industry because it is conceptually simple. Management simply sets the payback period at the determined length of time required for the operation to get its money back from the project. Also, the payback model is often used as a screening device in conjunction with more sophisticated models, especially in high-risk situations. Some operations will not consider evaluating proposed projects using the NPV or IRR approaches unless their initial review using the payback model suggests that the proposed project is viable. Disadvantages to the payback model that require careful consideration are that it fails to consider either the time value of money or the project flows after the payback period. If this is not readily clear, it will be as we now turn to consider the net present value model.

Net Present Model (NPV)

Both the NPV and IRR models overcome the weaknesses of the previous models in that they consider the time value of money. The net present value approach discounts cash flows to their present value. The net present value is calculated by subtracting the project cost from the present value of the discounted cash flow stream. The project is accepted if the NPV is equal to or greater than zero. If the capital budgeting decision considers mutually exclusive alternatives, the alternative with the highest NPV is accepted and other alternatives are rejected. The advantage of the NPV model over the two models presented previously is the consideration of all cash flows and the time value of money.

Internal Rate of Return (IRR)

The IRR model is a capital budgeting approach that considers cash flows and the time value of money and determines the rate of return earned by a proposed project. In determining IRR, the net present value of cash flows is set at zero and the discount rate is

determined. Using the IRR model, a project is accepted if the IRR is equal to, or greater than, the established minimum IRR, which is commonly called hurdle rate by hospitality financial managers.

Like the NPV model, the IRR model is superior to the ARR and payback approaches because it considers the time value of money. The IRR is also superior to the ARR model because it considers all cash flows. When there is a capital budgeting decision involving mutually exclusive projects, results from the IRR model may conflict with the NPV approach. Since operations normally invest in the most profitable projects first, one should not assume that other projects would result in the same return. Although the brief illustration of IRR above may have appeared simple, in practice, computer calculations are necessary. Various discount rates are tried until the approximate net present value is found to be zero. In general, the NPV approach is more useful when mutually exclusive projects are considered.

Risk and Uncertainty

The major component of the above decision rule is the use of the time value of money. In other words, finding the best appropriate discount rate that can reflect the future market risk and uncertainty. Risk is often defined as the variation in returns (probable outcomes) over the life of an investment project. Uncertainty refers to a state of knowledge about the variable inputs to an economic analysis. If restaurant management is unsure of the value of the information used as a basis for the study, there is uncertainty. The uncertainty of the market and other factors in the restaurant creates risks to the business.

How do we estimate the riskiness of the projected cash flows? For this assessment, management needs information about the probability distributions of the cash flows. Given the project's riskiness, management determines the appropriate cost of capital at which cash flows are to be discounted. The decision rules presented above, however, should be adjusted to the cyclical nature of the business, which creates dynamic risk and uncertainty in practicing financial strategies in the restaurant industry.

No matter what type of technique is used, analysis of investment potential is usually based on a "best estimate" financial evaluation. The successes of the forecasts, which are based on this evaluation, vary directly with the quality of the background information that is incorporated into the study. The investor may want to compare returns on the proposed investment with returns from alternative opportunities. The investor may want to get useful information from past financial practices in each business cycle.

Choice of Financial Strategies Based Upon Theories

Finance Theory in the Hospitality Literature

The financial strategies have been well debated in finance literature. In hospitality research, however, this topic has been insufficiently discussed. Currently available studies related to financial practices are: Kwansa, Johnson, & Olsen, 1987 (the capital structure determinants of hotels); Wood, 1992 (equity financing of restaurant firms); Sheel, 1994 (capital structure determinants of hotels); Sheel and Wattanasuttiwong, 1998 (the relevance of financial leverage for equity returns of restaurant firms); Gu, 1998 (a discriminant analysis for light and heavy debt users in the restaurant industry).

Kwansa, Johnson, & Olsen (1987) found no significant relationship between sample hotel's debt/equity rations and all the explanatory variables including growth, profitability, and size in their across-firm model. Sheel (1994), however, arrived at the conclusion that all independent variables including size, profitability, and operating risk are significantly related to the debt to assets ratio. In a comparative study on financial ratios of different types of restaurant firms, Gu and McCool (1993/1994) found significant difference in debt ratios across different types of restaurant firms. Gu's (1998) discriminant analysis concludes that managerial control is the most important contributor to the diversity in debt use in the restaurant industry. The analysis shows that small full-service restaurant firms with low managerial ownership tend to use less debt, while large economy/buffer or fast-food restaurant firms under tight managerial control are likely to

be heavy debt users. Another study of Sheel and Wattanasuttiwong (1998) found that there is a significant relationship between a restaurant firm's debt/equity ratio and its risk/size-adjusted common equity returns.

Finance Theory in General Business Literature

Dividend Policy under Asymmetric Information

The standard finance model of optimal investment/financing/dividend decisions for the firm assumes, among other things, that outside investors and insider managers have the same information about that firm's current earnings and future opportunities (Miller and Rock, 1985). Replacing that assumption with the more plausible one that managers know more than outside investors about the true state of the firm's current earnings brings both good news and bad news. The good news is that dividend (and financing) announcement effects, amply documented in recent empirical research, now become implications of the basic decision model rather than qualifications appended to it as in the original Miller-Modigliani (MM) treatment. In a world of rational expectations, the firm's dividend (or financing) announcements provide just enough pieces of the firm's sources and uses statement for the market to deduce the unobserved piece, to wit; the firm's current earnings (Miller and Rock, 1985). The bad news is that the price of allowing for information asymmetry and dividend announcement effects may be the loss of the familiar Fisherian criterion for optimal investment by the firm-viz., invest in real assets until the marginal internal rate of return equals the appropriately risk-adjusted rate of return on securities. In a world where the market takes announced dividends (or financing) as a clue to unobserved earnings, temptations arise to run up the price by paying out more dividends (or engaging in less outside financing) than the market was expecting, even if that means cutting back on investment. The market will eventually learn the truth and the price will presumably then fall back as MM and others have noted. But that eventual restoration will be of little concern to those shareholders who have managed to sell out at

the inflated post announcement price (or to those managers whose compensation is tied directly or indirectly to the firm's short-run price performance).

Investor attitude and stock prices

Many early observers of financial markets believed that security prices could diverge from their fundamental values (Keynes, 1936; Williams, 1938). More recently, the idea that fashions and fads in investor attitudes may affect stock prices has gained new respectability with work by, among others, Shiller (1984), De Long, Shleifer, Summers, and Waldmann (1987) and Shefrin and Statman (1988).

Chan (1988) and Ball and Kothari (1989) argue that the winner-loser results are due to failure to risk-adjusted returns. Zarowin (1989) finds no evidence for the Debondt-Thaler (1987) hypothesis that the winner-loser results are due to overreaction to extreme changes in earnings. He argues that the winner-loser effect is related to the size effect of Benz (1981); that is, small stock, often losers, have higher expected returns than large stocks. Another explanation, consistent with an efficient market, is that there is a risk factor associated with the relative economic performance of firms that is compensated in a rational equilibrium-pricing model (Chan and Chen, 1991).

Leland and Pyle (1977) consider an entrepreneur seeking additional equity financing for a single venture. The entrepreneur knows the project's expected return but outside investors do not. However, the outside investors observe the fraction of the entrepreneur's personal wealth committed to the project, and set their valuation accordingly. The greater the entrepreneur's willingness to take a personal stake in the project, the more investors are willing to pay for their share of it. Giammarino and Neave (1982) present a model in which the firm and investors have different perceptions of the risk - e.g., variance - of the return on an investment opportunity, but agree on the mean return. They concentrate on the choice among financing instruments, and develop a rationale for convertibles.

Miller and Rock (1982) present a model of dividend policy under asymmetric information. If the amount of investment and external financing is held fixed, the cash

dividend paid by the firm reveals its operating cash flow. Thus, a larger-than-expected dividend reveals larger-than-expected cash flow, and stock price increases. A larger-than-expected external financing reveals lower-than-expected cash flow, which is bad news for investors. Thus Miller and Rock's model predicts that announcements of new security issues will, on average, depress stock price.

Determinants of Corporate Borrowing

Why do some firms borrow more than others, why some borrow with short, and others with long-maturity instruments? A variety of ideas has been advanced to answer this question. Modigliani and Miller (MM) have suggested (1963) that firms maintain 'reserve borrowing capacity' - although the need for such flexibility is not clear in the frictionless capital markets MM rely on - and that the incremental tax advantage of borrowing declines as more debt is issued and interest tax shields become less certain. Since then, many economists have followed the path they mapped.

Miller (1977) has presented a model in which the advantage entirely disappears. These arguments rationalize firms' reluctance to borrow as much as possible, but they give specific guidance beyond that. There are other lines of argument. Firms' debt policies may reflect imperfect or incomplete capital markets. The literature on credit rationing by banks and other lenders may help explain the limits on corporate borrowing (Jaffee and Russell, 1976). Perhaps managers avoid high debt ratios in an attempt to protect their jobs and stabilize their personal wealth (Donalson, 1963). Perhaps firms' financing decisions are actually signaling devices, conveying information to investors about the firm's business risk and profitability (Ross, 1977). Bankruptcy costs (the transaction costs of liquidation or reorganization) probably discourage borrowing, although Warner (1977) questions whether these costs are large enough to be significant. Perhaps, as Robicheck and Myers (1966) argue, costs of financial distress are incurred when the firm comes under the threat of bankruptcy, even if bankruptcy is ultimately avoided.

Within the usual set of explanatory variables, asset risk is perhaps most appealing on theoretical grounds, and is hypothesized to be negatively related to leverage due to

agency and bankruptcy costs (Friend and Hasbrouck, 1988). In the empirical analysis, this has been typically proxied by the degree of operating leverage, or by historically estimated variance in operating income or return on assets. The direction of the estimated effect is a matter of some dispute. With profitability variability as proxy, Gordon (1962) found a negative relationship and Ferri and Jones (1979) found no effect. Toy et al. (1974) found a surprising positive effect, for which no rationale was advanced. Ferri and Jones did find, however, a negative relationship to operating leverage.

Firm size is hypothesized to be positively related to leverage on the grounds that larger firms have better access to credit markets. Positive size dependencies were found by Ferri and Jones (1979), Gordon (1962), and Scott and Martin (1975); no effect was found by Remmers et al. (1974); and a negative effect was found by Gupta (1969). Asset composition data (relative amount of land, plant, equipment, etc.) bears on the collateral value of the assets, with an obvious link to the debt capacity, and was found empirically significant by Auerbach (1985).

Models Based on Agency Costs

A significant fraction of the effort of researchers has been devoted to models in which capital structure is determined by agency costs, i.e., costs due to conflicts of interest. These models predict that leverage is positively associated with firm value (Hirshleifer and Thakor, 1989; Harris and Raviv, 1990; Stulz, 1990), default probability (Harris and Raviv, 1990), extent of regulation (Jenson and Meckling, 1976; Stulz, 1990), free cash flow (Jensen, 1986; Stulz, 1990), liquidation value (Williamson, 1988; Harris and Raviv, 1990), extent to which the firm is a takeover target (Hirshleifer and Thakor, 1989; Stulz, 1990), and the importance of managerial reputation (Hirshleifer and Thakor, 1989). Also leverage is expected to be negatively associated with the extent of growth opportunities (Jensen and Meckling, 1976; Stulz, 1990), interest coverage, the cost of investigating firm prospects, and the probability of reorganization following default (Harris and Raviv, 1990). Some other implications include the prediction that bonds will have covenants that attempt to restrict the extent to which equityholders can pursue risky

projects that reduce the value of the debt (Jensen and Meckling, 1976) and that older firms with longer credit histories will tend to have lower default rates and costs of debt (Diamond, 1989). Finally, the result that firm value and leverage are positively related follows from the fact that these two endogenous variables move in the same direction with changes in the exogenous factors (Hirshleifer and Thakor, 1989; Harris and Raviv, 1990; Stulz, 1990). Therefore, leverage increasing (decreasing) changes in capital structure caused by a change in one of these exogenous factors will be accompanied by stock price increases (decreases).

Asymmetric Information

The introduction into economics of explicit modeling of private information has made possible a number of approaches to explaining capital structure. In these theories, firm managers or insiders are assumed to possess private information about the characteristics of the firm's return stream or investment opportunities. In one set of approaches, choice of the firm's capital structure signals to outside investors the information of insiders. This stream of research began with the work of Ross (1977) and Leland and Pyle (1977). In another, capital structure is designed to mitigate inefficiencies in the firm's investment decisions that are caused by the information asymmetry.
The main predictions of asymmetric information theories concern stock price reaction to issuance and exchange of securities, the amount of leverage, and whether firms observe a pecking order for security issues. Myers and Majluf (1984) and Krasker (1986) predict the absence of price effects upon issuance of (riskless) debt. Noe (1988) and Narayanan (1988) predict a positive price effect of a (risky) debt issue. Myers and Majluf (1984), Krasker (1986), Noe (1988), Korajczyk, et al. (1990), and Lucas and McDonald (1990) predict a negative price effect of an equity issue. This price drop will be larger the larger the informational asymmetry is and the larger the equity issue. Moreover, Lucas and McDonald (1990) show that, on average, equity issues will be preceded by abnormal stock price increases.

Myers and Majluf (1984) implies that leverage increases with the extent of the informational asymmetry. Ross (1977), Leland and Pyle (1977), Heinkel (1982), Blazenko (1987), John (1987), Poitevin (1989), and Ravid and Sarig (1989) all derive a positive correlation between leverage and value in a cross-section of otherwise similar firms. Ross (1977) also predicts a positive correlation between leverage or value and bankruptcy probability, while Leland and Pyle (1977) predict positive correlation between value and equity ownership of insiders.

Summary of Theoretical Results

It is clear that the literature provides a substantial number of implications and there are very few cases in which two or more theories have opposite implications (Harris and Raviv, 1991). Such conflicts can provide sharp tests capable of rejecting one or more theories in favor of another. The only instances of conflicting results are: 1) Chang (1987) predicts a negative relationship of leverage and firm profitability while several studies predict a positive relationship; 2) Myers and Majlur (1984) predict a negative relationship between leverage and free cash flow while Jensen (1986) and Stulz (1990) predict a positive relationship; 3) Stulz (1988) predicts a positive relationship between leverage and the takeover premium captured by a target while Israel (1992) predicts the opposite relationship; 4) Myers and Majluf (1984) and related papers predict the absence of a stock price reaction to a debt issue announcement while numerous papers predict a positive reaction; and 5) several papers argue against the pecking order theory of Myers and Majluf (1984) and others. Since conflicting implications are rare, the large majority of the studies must therefore be considered as complements (Harris and Raviv, 1991).

Summary

The above review of finance theory provides all the central paradigms of finance theory and shows fundamental theories related to the financial practices in investment, financing, and dividend decision making. This study believes that a sound foundation in finance theory requires not only a complete presentation of theoretical concepts, but also a review of the empirical evidence that either supports or refutes the theory as well as enough practical information to allow the practitioner to apply the validated theory. Most of the studies, however, have been made for testing or finding relationships existing among financial key variables while leaving enough practical application of the theories. The purpose of Part II of this study is not to find relationships existing among key financial variables but to identify relationships between restaurant industry cycles and financial practices of high and low performing firms.

This study, unlike the previous studies, raises questions: Is there a significant difference between high performers' financial practices (Investment/Financing/Dividend Decisions) and low performers' for different industry cycle phases? Unlike previous studies, this study examines firms' financial practices over time according to changes of business environment. Identifying financial practices of high and low performing restaurant firms over the industry cycle is to provide a piece of that type of information to the practitioners. The economic fluctuation shows its shape through business cycles implying a lot of financial transactions and decisions over the cycles. A good understanding of the industry cycle is essential for effective resource allocation. Bernhardt (1993) emphasizes that industry analysis is the starting point for almost any strategic plan. All of the financial practices are strongly associated with understanding the cycle’s impact on money supply, interest rates, stock prices, and cost and availability of borrowed funds and the firm’s cost of equity capital.

Dynamic relationships between the restaurant industry cycle and firm performance have been neglected in the literature. There has been no research that has empirically examined the interaction between the restaurant industry cycle, firm financial practices, and performance, which would make a richer understanding possible. Analyzing the dynamic relationships and revealing the financial practices of the high performing restaurant firms have merit for gaining competitive advantages in the market.

Table 6-A presents the summary of propositions of the study and supporting literature and the following chapter will present the research questions and objectives of the study and the methods to be used.

Table 6-A. Summary of Propositions and Supporting Literature

Propositions	Supporting Literature
Proposition 1: It is believed that the restaurant industry reacts in different ways to the business cycle fluctuation of the US economy, while making a unique cyclical character (degree and timing of its fluctuation).	*Karfunkle, 1969; Nelson and Winter, 1982; Niemira, 1982; Mauer, 1985; Miles et al., 1993; Silverstone, 1993; Sharfman, 1993; Troyer, 1996; Choi, 1996; Yavas, 1996; Berman and Pfleeger, 1997; Choi et al., 1997a; Choi et al., 1997b; Choi et al., 1999.*
Proposition 2: It is believed that cyclical fluctuations of the growth of the restaurant industry can be projected by measuring and analyzing series of economic indicators.	*Zanornowitz and Moore, 1977; Zarnowitz, 1992; Geoffrey Moore, 1983; Choi, 1996; Choi et al., 1997a; Choi et al., 1997b; Choi et al., 1999.*
Proposition 3: It is believed that each economic indicator will have specific characteristics in terms of time lags, and thus can be classified into leading, coincident, and lagging indicators.	*Zanornowitz and Moore, 1977; Geoffrey Moore, 1983; Sherman, 1991;; Zarnowitz,1992; Choi, 1996; Smith and Lesure, 1996; Choi et al., 1997a; Choi et al., 1997b; Wheaton and Rossoff, 1988; Choi et al., 1999*
Proposition 4: It is believed that compilation of groups of indicators into composite indicators will be necessary because no single indicator is perfect for explaining the time lag relationships with industry cycles, and the composite indices can be used for forecasting the future turning points (peaks and troughs) of the industry's growth.	*Burns, 1961; Zanornowitz and Moore, 1977; Geoffrey Moore, 1983; Sherman, 1991;; Zarnowitz,1992; Niemira and Klein, 1994; Choi, 1996; Smith and Lesure, 1996; Choi et al., 1997a; Choi et al., 1997b; Choi et al., 1999*
Proposition 5: It is believed that financial strategies practiced by high performing restaurant firms are independent of the cyclical fluctuations of the industry cycles.	*Keynes, 1936; Williams, 1938; Donalson, 1963; Levitt, 1965; Lawrence and Lorch, 1967; Greiner, 1972; Hofer, 1975; Jaffee and Russell, 1976; Ross, 1977; Leland and Pyle, 1977; Miller, 1977; Bracker, 1980; Snow and Hrebiniak, 1980; Olsen, 1980; Benz, 1981; Miller and Rock, 1982; Churchill and Lewis, 1984; Shiller, 1984; Fay and Medoff, 1985; Miller and Rock, 1985; Schaffer, 1986; Rhyne, 1986; Sandlberg, 1986; De Long et al., 1987; Kimberly and Miles, 1987; Kwansa, Johnson, and Olsen, 1987; Debondt-Thaler, 1987; Jackson and Dutton, 1988; Shefrin and Statman, 1988; Chan, 1988; Ball and Kothari, 1989; Zarowin, 1989; Mascarenhas and Aaker, 1989; Schaffer and Litschert, 1990; Van Tse, 1991; Horne, 1992; Wood, 1992; Copeland, 1992; Olsen, Tse, and West, 1992; Michael, 1992; Bernhardt, 1993; Moncarz and Kron, 1993; Muller and Woods, 1994; Sheel, 1994; Slater and Zwirlein, 1996; Choi, 1996; Sheel and Wattanasuttiwong, 1998; Gu, 1998.*

Proposition 6: It is believed that financial strategies practiced by low performing restaurant firms are independent of the cyclical fluctuations of the industry cycles	*Keynes, 1936; Williams, 1938; Donalson, 1963; Levitt, 1965; Lawrence and Lorch, 1967; Greiner, 1972; Hofer, 1975; Jaffee and Russell, 1976; Ross, 1977; Leland and Pyle, 1977; Miller, 1977; Bracker, 1980; Snow and Hrebiniak, 1980; Olsen, 1980; Benz, 1981; Miller and Rock, 1982; Churchill and Lewis, 1984; Shiller, 1984; Fay and Medoff, 1985; Miller and Rock, 1985; Schaffer, 1986; Rhyne, 1986; Sandlberg, 1986; De Long et al., 1987; Kimberly and Miles, 1987; Kwansa, Johnson, and Olsen, 1987; Debondt-Thaler, 1987; Jackson and Dutton, 1988; Shefrin and Statman, 1988; Chan, 1988; Ball and Kothari, 1989; Zarowin, 1989; Mascarenhas and Aaker, 1989; Schaffer and Litschert, 1990; Van Tse, 1991; Horne, 1992; Wood, 1992; Copeland, 1992; Olsen, Tse, and West, 1992; Michael, 1992; Bernhardt, 1993; Moncarz and Kron, 1993; Muller and Woods, 1994; Sheel, 1994; Slater and Zwirlein, 1996; Choi, 1996; Sheel and Wattanasuttiwong, 1998; Gu, 1998.*

CHAPTER 3: METHODOLOGY

Introduction

The preceding chapters identified the purpose and objectives of this research study, and an effort was made to collect published empirical and theoretical studies of hospitality and tourism forecasting. The collected studies are classified into three broad sections including the hotel sector, restaurant sector, and tourism sector, chronologically. Those studies were reviewed comprehensively and discussed. From the review, this study identified a need for developing a restaurant industry cycle model and its economic indicator system and examining financial strategic practices of restaurant firms in the industry cycle. This chapter lays down the research procedures used in this study. Revisiting the research propositions and research purpose and objectives, and exploring the methods to be used are the focus of this chapter.

Research Propositions and Objectives

Part I

Proposition 1: It is believed that the restaurant industry reacts in different ways to the business cycle fluctuation of the US economy, while manifesting a unique cyclical character (degree and timing of its fluctuation).

Proposition 2: It is believed that cyclical fluctuations of the growth of the restaurant industry can be projected by measuring and analyzing series of economic indicators.

Proposition 3: It is believed that each economic indicator will have specific characteristics in terms of time lags, and thus can be classified into leading, coincident, and lagging indicators.

Proposition 4: It is believed that compilation of groups of indicators into composite indicators will be necessary because no single indicator is perfect for explaining the time lag relationships with industry cycles, and the composite indices can be used for forecasting the future turning points (peaks and troughs) of the industry's growth.

Part II

Proposition 5: It is believed that financial strategies practiced by high performing restaurant firms are independent of the cyclical fluctuations of the industry cycles.

Proposition 6: It is believed that financial strategies practiced by low performing restaurant firms are independent of the cyclical fluctuations of the industry cycles.

By empirically testing the above propositions, this study achieves a number of research objectives. The preceding section highlights the need for developing the restaurant industry cycle model and its economic indicator system. The principle objectives of this study are to meet that need.

Methodologies

PART ONE: Developing the restaurant industry cycle model and its economic indicator system,

The purpose of developing a restaurant industry business cycle model and its economic indicator system is to identify the characteristics of the cyclical fluctuations of the restaurant industry such as: When were the peak and trough years in terms of business performance in the restaurant industry over the last decades? What is the average restaurant industry cycle duration? What is the average duration of restaurant industry cycle expansion or contraction? When were the restaurant industry boom or recession periods for the last decades? How do we define the boom and recession periods over the

restaurant industry cycle? We know there are many business environmental variables or indicators. What are the leading, coincident, and lagging indicators for the restaurant industry? This study answers these questions. In addition to the identification of the indicators, this study forms composite indices to forecast the restaurant industry activity systematically.

Formulating the Restaurant Industry Cycles (RIC)

Definition

The restaurant industry cycle is a type of fluctuation found in the aggregate business activity of the whole restaurant industry. The aggregate business activity of the restaurant industry is represented by the total sales of the industry in this study. Because the total sales of the restaurant industry in a given period represent the market value of all final goods and services which are produced in the restaurant industry in that period, it is safely said that the aggregate business activity of the restaurant industry can be represented by the data of total sales of the industry.

The Data

By definition, the restaurant industry cycle is the cyclical fluctuations of the total output of all activities in the industry, and this study employs total sales to represent the total output of the industry. The National Restaurant Association reports the restaurant industry sales in nominal terms (current dollars). This study converted the nominal data series to real data series (constant dollars) to track the real changes in the industry cycle.

Ideally, monthly or quarterly data for certain time periods are required to improve the accuracy of the analysis. Unfortunately, data on a monthly basis for key economic variables (to permit a comprehensive study of the economic fluctuations in the restaurant industry) are very limited as far as the restaurant industry is concerned. Short-term data on the restaurant industry are either not available or, where they are available, do not begin until quite recently.

As Burns and Mitchell (1946) point out at great length, data given daily, weekly, or even monthly tend to have too much static; in a different metaphor, they lose the forest and show only the trees. On the other hand, annual data leave out many cyclical turning points and are not sufficiently detailed (cited in Sherman, 1991). Knowing this fact, this study will utilize annual data anyway, not monthly data, because data for every month is not available. Thus, dating peaks and troughs of the restaurant industry cycle in this study may be less accurate than dating cycles by using monthly data. Caution needs to be exercised in assessing the suitability for economic indicator analysis of series available for only a relatively short period. This is because their performance as a leading, coincident, or lagging indicator may vary from one cycle to another.

The Dating of the Industry Cycle

A business cycle is usually measured from peak to peak. According to the U.S. Department of Commerce, for a period of economic fluctuations to be classified as a business cycle, it should be at least fifteen months long with any significant upward or downward movement in economic activity being at least five months in duration (Karsten 1990). So this study followed this rule for analyzing restaurant industry cycles.

The criteria for cycle dating described in Burns and Mitchell's Measuring Business Cycles remains the cornerstone of the traditional NBER method of determining cyclical turning points in a time series. A specific cycle is a set of turning points observable in a particular series; these turns may or may not correspond to the overall business cycle turning point dates. Niemira and Klein (1994) say the selection of a turn must meet the following criteria:

- The cycle duration must be at least 15 months, as measured from either peak to peak or trough to trough.
- If the peak or trough zone is flat, then the latest value is selected as the turn.
- Striking activity or other special factors generally are ignored, if their effect is brief and fully reversible.

In 1971, these decision rules were formalized by Bry and Boschen (B-B) and incorporated into a computerized routine for determining cyclical turning point dates. The main steps in the B-B computerized routine to select specific cycle turning point dates are:

- Smooth the data after first adjusting the time series for any outliers.
- Select preliminary turning points using the smoothed series and then search for turning points in the raw series around the dates found in the smoothed series.
- Once these tentative dates are selected in the raw series, a check is made of the duration. If the duration criteria are not met, then one pair of cycle dates is eliminated.
- Although it is not part of the B-B methodology, a final check of the amplitude can be made using the Haywood (1973) amplitude criterion, which is based on a moving standard deviation of the series.
- After the series has passed through all these tests, a statement of the turning point dates is given.

The NBER turning point selection method has largely been done by visual inspection or can be done using a computer program. But the method is no less effective in summarizing the cyclical movement of a time series than turning points from spectral analysis or some other purely statistical technique (Niemira and Klein, 1994)

In this study, the above dating rules are considered but applied differently since the data used in this study are not monthly or quarterly series. If this study is a time series analysis for forecasting linear trends, the data representing the entire year can be converted to monthly terms by the method of least squares for an annual trend equation. But this study is trying to forecast the turning points in the restaurant industry cycle without trying to forecast linear trends of the time series. In order to track the turning points in a cycle the original data series should be used even though the data are on an annual basis. Because of this limitation this study can not follow the above dating rule exactly in terms of measuring the number of months. For this reason, the study may lose a certain level of accuracy in the analysis. Recognizing the limitation, this study tries to minimize the loss of accuracy by developing a number of criteria. According to the selection rule of a turn

presented above, the cycle duration must be at least 15 months, as measured from either peak to peak or trough to trough. Since a cycle duration should be at least 15 months, this study using annual data series restricts the cycle inclusion to the cycles formed within no less than two years. In other words, the cycle duration must be at least twenty-four months to be considered a cycle in this study. In addition, the duration of contraction or expansion has to be at least 1 year (6 months in the NBER rule). Further, the growth change for a year should be more than the mean absolute deviation of the restaurant growth cycle. If the above duration criteria are not met, then one pair of cycle dates is eliminated. The dates of peaks and troughs of the restaurant growth cycle are used as benchmark dates against which the specific cycles of the various candidates for inclusion in the model as restaurant indicator series are matched.

Formulating the Restaurant industry Growth Cycle (RGC)

The restaurant industry cycle is reformed based upon a year-to-year growth rate. The reformed cycle is called the restaurant industry growth cycle. Dating rules discussed above are applied also to this cycle. However, there is an additional rule for defining turning points. As it was defined in Chapter Two, a growth cycle is a pronounced deviation around the trend rate of change. Thus, in order to be considered as a cycle, the accelerating and decelerating rates of growth should be at least greater or equal to the mean absolute deviation of the growth. The growth rate change of the restaurant industry growth cycle is a symmetric percentage change. The dates of peaks and troughs are used as benchmark dates against the specific cycles of the various indicators.

Selecting Potential Economic Indicators for the Restaurant industry

Selecting cyclical indicators in forming a composite indicator is the most important task in constructing the restaurant industry cycle. Thus, the selection of indicators requires some judgment and a knowledge of data sources and the restaurant industry itself. The potential economic indicators for the hospitality industry are selected by reviewing the

hospitality and general business literature. The current body of literature regarding the economic indicators that will be used for the composite index for the restaurant industry is not developed well enough. Because it is better to evaluate as many as possible potential indicators to make better economic systems for the industry, considering all available indicators obtainable in other sources are required.

Choi (1996) reviewed the hospitality literature as well as general business literature comprehensively and identified seventy variables. The list of the variables covers almost all variables discussed in the hospitality industry literature. For developing the indicator system of the restaurant industry, this study starts with those seventy variables as a foundation. Table 7 presents the variables.

Table 7. A Set of Variables (From Choi, 1996)

1. ADR
2. American stock exchange
3. Average room sales
4. Average weekly initial claims for unemployment insurance
5. Bad debt in hotel industry
6. Business failure number
7. Common stock price-earning ratio
8. Compensation of employees
9. Consumer confidence
10. Consumer expectation
11. Consumer expenditures in service industry
12. CPI for food and beverages
13. CPI for motor fuels
14. CPI for shelters
15. CPI for transportation
16. CPI-U
17. Discount rate on new issues of 91-day Treasury-bill
18. Disposable income
19. Dividends Per Share (hotel DPS adjusted to stock price index level)
20. Dow Jones industrial average
21. Earning Per Share (hotel EPS adjusted to stock price index level)
22. Federal fund rate
23. GDP
24. GDP of service
25. General business failure liabilities (per failure)
26. General business failure rate
27. GNP
28. Government surplus or deficit
29. Hotel cash flow, per share data, adjusted to stock index
30. Hotel employment (women)
31. Hotel failure liabilities
32. Hotel failure numbers
33. Hotel profit margin percentage data adjusted to stock price index
34. Hotel stock index
35. Hours of all persons in business sector, percentage change
36. Income taxes (hotel income taxes adjusted to stock price index level)
37. Interest rates in the hotel industry
38. Manufacturers' new orders in non-durable goods industries

39. Manufacturers' unfilled order in non-durable goods industries
40. Money supply (M2) in constant dollars
41. NASDAQ
42. Net corporate dividend payments
43. Net foreign investment (U.S. total exports minus total imports of goods and services)
44. Net hotel new rooms
45. Net new room openings
46. Net rooms under construction
47. New housing units, value put in place
48. New York stock exchange composite index
49. Non-supervisory-worker average weekly hours in the hotel industry
50. Occupancy percentage
51. Output per hour of all persons (business sector), percentage change.
52. Population
53. Price/Earning Ratio (hotel P/E ratio adjusted to stock price index level)
54. Prime interest rate charged by banks
55. Room demand
56. Room supply
57. S & P 500 stock price index
58. Saving percentage of disposable income
59. Savings rate
60. Tax (excluding federal tax) in percentage of net sales in hotel industry
61. The value of new construction in general business
62. Total employment
63. Total room in hotel industry
64. Total Sq. Ft. of hotel construction
65. Unemployment rate
66. Unemployment rate, persons unemployed 15 weeks and over
67. Unit labor costs in business sector, percentage change
68. Value of construction
69. Value of hotel construction per sq. ft.
70. Wages & salaries

However, the variables in Table 7 do not reflect the restaurant industry fully. Therefore, in deciding what data series to include, the study developed a number of criteria. First, variables directly related to the restaurant industry will be used. Second, variables having a long history to the present are employed. Third, this study will use only

variables that are publicly available. Fourth, this study will use variables having economic significance and applicability to the restaurant industry as much as possible (for example, this study uses not only CPI-U which was discussed in the hospitality literature, but also uses CPI for food and beverage, CPI for motor fuels, CPI for transportation, and so on).

In this study, those potential indicators are reevaluated based on the context of the study. The selected fifty-six indicators as a final are presented in Table 8. These candidates for the indicator system of the restaurant industry will be reevaluated based upon data availability, and then classified into leading, coincident, and lagging indicator groups for further analysis.

Table 8. Economic Indicators for Developing the Restaurant Industry Cycle Model and Economic Indicator System.

1. Restaurant sales, per share data adjusted to stock price index
2. Preferred stock yield index (yield in percent)
3. Common stock price-earning ratio
4. Compensation per hours in business sectors (% change)
5. Consumer confidence
6. Personal consumer expenditures in service industry
7. CPI for food and beverages
8. CPI for motor fuels
9. CPI for shelters
10. CPI for food away from home
11. CPI-U
12. Discount rate on new issues of 91-day Treasury-bill
13. Disposable personal income (per capita, chained 1992 dollars)
14. Dividends Per Share (restaurant DPS adjusted to stock price index level)
15. Dow Jones industrial average
16. Earning Per Share (restaurant EPS adjusted to stock price index level)
17. Federal fund rate
18. GDP
19. GDP of service
20. General business failure rate
21. Government surplus or deficit (billions of dollars)
22. Restaurant cash flow, per share data, adjusted to stock price index
23. Average Daily Rate (hotel industry)
24. Revenue per available room (hotel industry)
25. Restaurant profit margin percentage, data adjusted to stock price index
26. Restaurant stock index
27. Hours of all persons in business sector, percentage change
28. Income taxes (restaurant income taxes adjusted to stock price index level)
29. Manufacturers' new orders in non-durable goods industries
30. Manufacturers' unfilled order in non-durable goods industries
31. Foreign exchange rates (Yen per U.S. dollar)
32. New York stock exchange composite index
33. Occupancy percentage in hotel industry
34. Output per hour of all persons (business sector), index numbers

35. Population
36. Price/Earning Ratio (restaurant P/E ratio adjusted to stock price index level - high)
37. Prime interest rate charged by banks
38. Dividend yields percent (high)
39. Saving percentage of disposable income
40. Gross private domestic investment (nonresidential), billions of dollars
41. Total new construction (value put in place, billions of dollars)
42. Room starts (hotel industry)
43. Unemployment rate
44. Unemployment rate, persons unemployed 15-26 weeks
45. Unit labor costs in business sector, percentage change
46. Total value put in new commercial building construction (billions of dollars)
47. Construction cost index, 1967=100.
48. Wages & salaries in service industry
49. Index of leading economic indicators, overall economy
50. Average weekly initial claims for unemployment insurance (Thousands)
51. Building permits, new private housing units
52. S & P 500 stock price index
53. Money supply (M2) in constant dollars
54. Consumer expectation
55. Index of coincident economic indicators, overall economy
56. Index of lagging economic indicators, overall economy

Sources:

The Department of Commerce, Bureau of Economic Analysis. Business Statistics
The Almanac of Business and Industrial Financial Ratios,
Analyst's Handbook, the S&P Official Series
National Income and Product Accounts of the United States,
Economic Indicators Handbook,
Economic Report of the President.
Business Failure Record
Survey of Current Business
U.S. Department of Labor, Bureau of Labor Statistics
Smith Travel Research/Leventhol & Horwath
Smith Barney, Industry Report
Standard & Poor's Stock Price Indices

Selecting Cyclical Indicators that will be included in the model

Selecting cyclical indicators in forming a composite indicator is the most important task in constructing the restaurant industry cycle. Thus, the selection of indicators requires some judgment and a knowledge of data sources. Frank de Leeuw's (1991) suggestions for the selection of leading economic indicators guided the selection process of this study. His suggestions are as follows: indicators should (1) lead the production process (e.g., new orders), (2) reflect rapid economic adjustment (e.g., weekly hours), (3) reflect market expectations (e.g., consumer buying plans), (4) serve as policy levers (e.g., monetary and fiscal policy indicators), and (5) have a mathematical lead (e.g., a growth rate versus a level). Niemera and Klein (1994) give some useful rules for screening cyclical indicators. These are:

1. Search for leading and lagging indicators based upon causal relationship- they are most likely to be robust over numerous cycles.

2. Look for data with the highest frequency; for example, if there is an option, use monthly rather than quarterly data.

3. Look for a series with the longest history

4. Do not overlook reliable coincident indicators or lagging indicators. While these coincident and lagging indicators, by themselves, will not help to forecast, they can confirm and forecast when used in other forms.

This study follows these selection rules. The selection process in this study, however, has data limitations for following these rules. The monthly data for the restaurant industry are not available. This generates a fundamental limitation for improving accuracy of the proposed cycle. Although the selection rules give a useful guideline, it is still difficult to say what should or should not be included in a composite indicator (Niemera and Klein, 1994). Therefore, it was the goal in this study to find as many possible potential economic indicators as possible.

Determining Leading, coincident and lagging indicators

The indicators selected above are then classified into leading, coincident, or lagging indicators. There are three typical techniques to determine whether a series leads, lags, or coincides with movement of another indicator. These methods are (1) cross-spectral analysis, (2) the NBER turning point criteria, (3) statistical correlation. Before these methods are discussed it may be necessary to review the characteristics of each indicator category: leading, coincident , and lagging.

To determine whether a series leads, lags, or coincides with the movement of another indicator, the cross-spectral analysis can be considered first. Cross-spectral analysis is the two-series counterpart of spectral analysis. This assesses the strength of the wave length relationships between pairs of economic indicators. To determine the lead or lag between pairs of economic indicators, two cross-spectral statistics are used: coherence and phase. However, this technique has some limitations. To apply cross-spectral analysis, it is desirable to have a minimum of 200 observations, which is not available in this study, and the economic indicators must be stationary, that is, the mean and variance must be constant over time.

In order to determine whether a series leads, lags, or coincides with movement of another indicator, this study employs two methods: the National Bureau of Economic Research (hereafter NBER) turning point criteria and statistical correlation method. The NBER turning point criteria is a method using the “two-thirds rule” to select leading , coincident, and lagging indicators. The two-thirds rule is applied as follows: A series is considered an acceptable indicator of revivals if its specific cycle troughs led the corresponding reference troughs at two-thirds or more of the reference troughs it covered; or if it is roughly coincident (turned within 3 months of the reference trough) at two-thirds or more of the troughs; or even if it lagged at two-thirds or more or the troughs. Similarly, the process is also applied to the determination of peaks (Moore, 1961). The NBER turning point criteria may lose accuracy in determining the turning point dates because the

technique is based on visual inspection. The other method is the statistical correlation method.

A statistical correlation is a technique used to determine the average relationship between two (or more) series over the entire time series. Instead of just looking at turning points, correlation techniques answer the question: What is the typical relationship between series "A" and series "B"? Correlation is a measure of the strength of co-movement between the two series. Since this method can assess the degree of association between the two series over time, it can be used to support the claim that series A should lead (or lag) series B by quantifying the timing relationship (Niemira and Klein, 1994, p.220).

To examine the relationships between two time series, a set of bivariate data $(x_1, y_1),...,(x_{n,} y_n)$, cross-correlation functions are computed by using statistical program SPSS. The cross-correlation coefficient of lag *v* is given by

$$\hat{r}_{xy}(v) = \begin{Bmatrix} \dfrac{\sum_{t=1}^{n-v}(x(t)-\bar{x})(y(t+v)-\bar{y})}{\sqrt{\sum_{t=1}^{n}(x(t)-\bar{x})^2 \sum_{t=1}^{n}(y(t)-\bar{y})^2}}, & v = 0,...., n-1 \\ \hat{r}_{yx}(-v), & v = -(1-1),....,0 \end{Bmatrix},$$

Note that $\hat{r}_{xy}$ is not symmetric about $v = 0$. A plot of $\hat{r}_{xy}(v)$ versus *v* for *v* = -*M*,...,*M* is called the cross-correlogram of *x* and *y*.

In order to use the cross-correlation function, the two series should be stationary, that is, the mean and the variance of each of the series stay about the same during the series. To make the series in this study stationary, this study will transform the time series by using the combination of the natural log transform and the difference. The natural log transformation is useful for removing varying amplitude over time and differencing the series converts a nonstationary series to a stationary one with a constant mean and variance. If any values in a pair of series are less than or equal to 0, the natural log transform method can not be used because non-positive values cannot be log transformed. In that case only the difference transform method (replacing each value of

the original series by the differences between adjacent values in the original series) is employed.

Formulating Composite Indices

Depending on a single indicator for identification and prediction of turning points is often not prudent (Burns, 1961). Since no single leading indicator is perfect, the compilation of groups of indicators into composite indices is necessary. The composite approach has proven to be more stable in determining turning point dates on an ongoing basis (Niemira and Klein, 1994, p.314). In order to form composite indices, this study employs the commerce department/NBER method. The main steps in compiling their composite indices are to (1) compute the standardized and weighted average changes, (2) modify the average changes and cumulate these changes into an index, and (3) trend-adjust the index.

First of all, calculate the symmetrical percentage change in the components of the series. If the time series is already expressed as a ratio or percentage change, then the change is calculated as a first difference: $C_i = X_t - X_{t-1}$. The values derived from step one are standardized by dividing each observation by the mean absolute change, calculated using the formula: $S_{it} = (C_{it} / A_i)$, where:

$$A_i = \frac{\sum |C_{it}|}{(N-1)}$$

and N equals the number of observations. The A_i do not change from period to period, but are fixed for a given period. The effect of this calculation is to amplitude-adjust the components of the index so that each component's change over the long run equals one. This will ensure that no single indicator will dominate movement in the indicator.

Individual indicators can be scored according to a scheme including: their economic significance (their importance in business cycle theory or broadness of coverage), statistical adequacy (how good the indicator is from a technical standpoint), conformity to the business cycle, consistency in its timing relationship with the business

cycle, the promptness of reporting the data, and the smoothness of the series. Based on these criteria, each indicator can be assigned a composite score. In this study, all the indicator components will be equally weighted because it is impossible to judge the importance of each indicator such as economic significance at this time.

Next, calculate the average absolute change for the sum of the components of the leading, coincident, and lagging composites. Then determine the ratios of the average absolute change for the leaders relative to the average absolute change in the coincident composite and the lagging indicator. This can be expressed as:

$$F = \left[\left(\sum_{t=2}^{n}|R|\right)/(N-1)\right] / \left[\left(\sum_{t=2}^{n}|P|\right)/(N-1)\right]$$

where P is the coincident index counterpart of R, which was defined above. Note that adjustment is calculated only for the leading and lagging indicators since F = 1 for the coincident index.

Finally, derive the adjusted yearly changes r_t as follows: $r_t = R_t / F$. Once this is done, accumulate the standardized average changes r_t into an index using this formula: $I_t = I_{t-1}\left[(200 + r_t)/(200 - r_t)\right]$, where the initial value of "I" is arbitrarily set equal to 100 as a base point. This then yields the raw index.

Evaluating the Performances of the EIS

In order to test how the indicator system works as a forecasting technique for the restaurant industry, this study will evaluate the performances of the composite indices of the leading, coincident, and lagging indicator groups by comparing the statistical outputs (i.e. dates of peaks and troughs, and cycle duration) between the series of composite indices and the series of the RGC. If the leading composite index leads the target cycle for many years (at least a year) consistently, it will be a good forecasting system because it signals the changes of the industry's future in advance. The coincident composite index also will give good information regarding the current industry's situation if the turning point of the index coincides with the turning points of the RGC. The lagging

index will confirm all of the above transactions. The following sub-section is a method to be used for examining financial practices of high and low performing restaurant firms in the industry cycle.

Part II: Examining Financial Strategies of the High and Low Performing Firms in each Stage of the Restaurant Industry Cycle

The main research questions under Part II are: (1) Are there any significant differences between high performers and low performers in terms of allocating their financial resources for the period of peaks and troughs of the cycle? (2) Are there any significant patterns of financial practices for high performing restaurant firms for the period of peaks and troughs of the cycle?

Context and Classification

To answer the above questions, this study examined data on seven major family restaurants including Bob Evans Farms (NDQ-BOBE), Cracker Barrel (NDQ-CBRL), Luby's Cafeterias (NYSE-LUB), Piccadilly (NYSE-PIC), Ryan's Family Steak (NDQ-RYAN), Shoney's Inc. (NYSE-SHN), and Vicorp Rest (NDQ-VRES) for the period of 1982-1998. A brief corporate profile information of the seven restaurant companies follows (Source: Value Line-Investment Survey; S&P's Stock Market Encyclopedia).

Bob Evans Farms: Bob Evans Farms, Inc. operates, as of 8/18/98, 407 family-style restaurants in 20 states, with the largest number of restaurants located in Ohio; other areas of concentration include Indiana, Michigan, Florida and Pennsylvania. The restaurants are typically open from 6 a.m. to 10 p.m. Sunday through Thursday, with extended hours on Friday and Saturday. The restaurants feature a wide variety of menu offerings, including sausage products, with emphasis on breakfast entrees served all day. Approximately 63% of total revenues from restaurant operations are generated from 6 a.m. to 4 p.m. Sales on Saturday and Sunday account for about 40% of a typical week's revenues. In 98, 97, and 96, the company opened 14, 23, and 37 (net) new restaurants, respectively. During 99, Bob Evans plans to open at least 23 new restaurants, with about 80% to be located in current restaurant markets.

Cracker Barrel: Stores are primarily located along America's inter-state highway system. Cracker Barrel Old Country Store, Inc. operated 360 stores in 35 states as of August 11, 1998. The restaurant portion of the units generates about 78% of total sales. The company typically serves breakfast, lunch and dinner, between 6:00a.m. and 10:00 p.m. The restaurant feature home-style country cooking prepared on the premises from the company's own recipes. The restaurants do not serve alcoholic beverages. Net sales in FY 97 (Jul) crossed the billion dollar mark, to $1.1 billion, up from $943.3 million in FY 96. About 50 new stores are planned for FY 98, with about

half to be in the company's core markets. The company's growth strategy consists of adding 50 stores a year for the next few years.

Luby's Cafeterias: Luby's cafeteria Inc. operates a chain of 231 cafeterias. Most stores (about 70%) are located in Texas, with the remainder in AZ, TN, OK, FL, AK, KS, NM, MO, LA, & MS. About two-thirds of the units are freestanding, with the remainder in shopping malls. The company owns 56% of the locations. Each seats about 300 people. Serves a wide variety of foods to luncheon and dinner clientele.

Piccadilly: Piccadilly cafeterias operates 265 cafeterias in 17 states (mostly in the Southeast) and 7 Ralph & Kacoo's seafood restaurants in LA, AL, and MS. Serves a wide variety of food to luncheon and dinner clientele. Cafeterias operate with high volume and low average checks. Older units seat 250 to 450 patrons; new prototype seats 165 to 200 customers.

Ryan's Family Steak Houses: Ryan's Family Steak Houses operates a single concept restaurant chain consisting of 278 company-owned and 26 franchised restaurants located principally in the southern and mid-western United States. This firm has about 18,000 employees and 20, 000 shareholders.

Shoney's Inc: Shoney's Inc. operates and licenses restaurants, primarily in the Southeast. At 10/26/97, had 770 Shoney's full-service restaurants (36% franchised), 591 captain D's quick-service seafood outlets (36% franchised) and 26 casual dining restaurants.

Vicorp Restaurant: VICORP Restaurants, Inc. emphasizes sit-down, mid scale family dining. Had 97 company-operated and 108 franchised Village Inn Pancake Houses and 150 Bakers Square dessert shops/restaurants. Operations are mainly located in AZ, CA, FL, the Rocky Mountain region, and the upper Midwest. Direct cost: 32% of 1997 sales; food cost, 31%. 1997 depreciation rate: 7.1%, has about 12,400 employees, 500 stockholders.

The seven firms are classified in either high, neutral, or low performing restaurant firms over the same period. Average annual Cash Flow Per Share (Cash Flow from Operations/average number of common shares outstanding) data series are used for measuring firm performance and classification of the firms. Importance of using Cash Flow data as we analyze financial performance is well described by Schmidgall et al. (1993). Cash flow is the lifeblood of the hospitality business. To manage a restaurant's assets properly, management must understand cash flow. General managers and other users of financial statements will find that the statement of cash flow (SCF), with its focus on cash , will be more useful than the obsolete statement of changes in financial position (SCFP), because the SCFP could be prepared based on either cash or working capital.

Unlike the SCFP, the SCF shows cash flows related to the three major financial activities: operations, investment, and financing (Schmidgall et al., 1993).

A step-by step procedure is as follows:

1. Find the group (high/low performing firms) mean value of cash flow per share over the period
2. Find the group mean absolute deviation (MAD) value of cash flow per share over the period
3. Use (1) and (2) for scoring the firm's performance. If a firm's performance changes in the same direction as the restaurant industry cycle and the difference reaches the MAD, a score of –1 (contraction) to +1 (expansion) is given[17]. An incremental score of 1 is assigned as it reaches another tier of MAD. The total score received throughout the cycles of the restaurant industry determines the firms' respective positions.
4. High performing firms are those which receive greater or equal to the top 1/3 of the score in the score range. Low performing firms are identified as those which receive the bottom 1/3 of the score in the score range. If a firm's average score is in the middle 1/3 of the range, the firms are classified into "neutral."

Examining financial practices

The Investment Decision

To create value for shareholders, resource allocation decisions should be consistent with the principle of modern financial theory which states that only those investment

[17] No satisfactory theory would argue that the relation between firm performance in the financial markets and macroeconomy is entirely in one direction. However, firm performance in the stock market (Cash Flow Per Share in this study) is usually considered as responding to external forces (even though they have a feedback on the other variables). It is apparent that all economic variables are endogenous in some ultimate sense. Only natural forces, such as supernovas, earthquakes, and the like, are truly exogenous to the firm's performance. Some systematic factors such as a firm's life cycle are well beyond the purpose of the current study. The present goal of the second part of the study is to examine financial practices of restaurant firms over the industry cycle and to find if there is any significant difference between high and low performing firms. Hence, this study will control the life cycle of each firm out of analysis while focusing on a broader concept - industry business cycle.

opportunities that have a positive net present value should be funded. As Myers (1984) explains,

> A strategic commitment of capital to a line of business is an investment project. If management does invest, they must believe the value of the firm increases by more than the amount of capital invested - otherwise they are throwing money away. In other words, there is an implicit estimate of net present value.

Major commitments of capital include investments in fixed assets, advertising and marketing, research and development (Hansen and Hill, 1991; Johnson and Pazderka, 1993). The investment decision at its most fundamental level determines whether the corporation will grow in size, be relatively stable, or possibly shrink. This has substantial implications for the capital structure and dividend decision which is well illustrated through the sustainable growth model (Higgins, 1977; Porter, 1980: Donaldson, 1985). The sustainable growth model shows that a business's ability to sustain investment growth is dependent on its profitability, its debt-to-equity (financing decision) ratio, and its payout (dividend decision) ratio.

The Financing Decision

The financing or capital structure decision has probably stimulated the most debate in finance and strategic management (Slater and Zwirlein, 1996), although there are a few studies in the hospitality literature (Kwansa, Johnson, and Olsen, 1987; Sheel, 1994; Sheel and Wattanasuttiwong, 1998). Following is a brief review of corporate finance theory. Modigliani and Miller (1958) offered what is considered to be the dominant theory of corporate finance (Gordon, 1989). Their proposition I holds that the value of a firm is independent of its capital structure. Proposition II states that the required rate of return on equity rises in a linear manner with financial leverage. The relevant cost of capital is a weighted average of the costs of debt and equity which does not change with increases in the use of leverage.

Modigliani and Miller offer proofs of the validity of these propositions in perfect capital markets. In 1963, Modigliani and Miller introduced corporate tax effects into their

model. In this model, firm value increases as more leverage is used because the deductibility of interest payments allows more of the operating income to flow through to investors. The lower cost of equity as leverage increases, causes the weighted average cost of capital to continue to decline and firm value to increase.

The finance literature has developed theories that view the firm as a set of contracts among the factors of production, with each factor motivated by its self-interest. Under these conditions, there is good reason to believe that managers (agents) will not always act in the best interest of the shareholders (owners or principals in the firm). Owners influence managers to act in their interest by offering incentives to managers' activities. The incentives, monitoring, and bonding costs are agency costs borne by the principals and result when the owners turn over the day-to-day operations of the firm to agents. The further explanation of the agency theory is presented in chapter two.

The pecking-order theory of capital structure (Myers, 1990) holds that there is no well-defined debt to equity ratio. However, there is a preference for certain forms of financing because of their costs and because of the messages sent to the capital markets. In general, firms prefer internal (retained earnings) to external financing (Slater and Zwirlein, 1996). Dividend payout ratios are aligned with investment opportunities to avoid unanticipated changes in dividends or trips to the capital market. This leads to a buildup of cash during some periods and a draw down of financial slack in others. If firms do require external financing, they will issue the safest securities (e.g. debentures) before riskier ones (e.g. convertible issues) with new equity being the least desirable choice. The preference of safer securities stems, in part, from information asymmetries in the capital markets. Information asymmetries occur when managers have more information than investors about expected future cash flows. If a firm attempts to issue new equity, investors assume managers believe the stock is overvalued (new issues would not be sold if they were undervalued) and devalue both existing shares and the new issue.

Taking the 'business policy' perspective, Andrews (1980) proposed that the capital structure decision is an important element of the overall corporate strategy of the firm.

While the economic component of corporate strategy greatly influences decision making, it also is well accepted that top managers may satisfy, rather than maximize, with respect to economic objectives (Cyert and March, 1963; Simon, 1976). This allows them to pursue their own agendas once the minimum requirements of the owners have been met. The result may be underutilization of leverage due to risk aversion or investment in low NPV projects that still enable the business to grow (Barton and Gordon, 1987, 1988).

The collective evidence on capital structure indicates that moderate use of debt does increase firm value and lowers the cost of capital. However, at some point the costs associated with leverage more than offset any benefits from further increases in the level of debt. Firms maximize value at the point where the marginal benefits are balanced against the marginal cost of increasing debt. Moreover, firms may adapt their capital structure to minimize the total agency costs and the negative signals that may be sent out as a result of information asymmetries. The investment and dividend decisions clearly play an important role in setting the optimal capital structure ((Slater and Zwirlein, 1996).

The Dividend Decision

Modigliani and Miller (1961) argue that dividend policy is irrelevant in perfect capital markets. Gordon (1963) and Lintner (1962) advocate high dividend payout arguing that investors place more value on dividend distributions than expected capital gains because they are less risky. In contrast, Litzenberger and Ramaswamy (1979) advance a tax-based argument for low dividend payout. Since capital gains realized from stock ownership are taxed only when the stock is sold, there is a tax advantage to paying small or no dividends to shareholders and deferring capital gains taxes to the time when the stock is sold. Ross (1977) and Bhattacharya (1979) suggest that dividends contain information and can be used as reliable signals of firms' future prospects. Firms that increase dividend payments are signaling the market of higher prospects while dividend decreases signal lower future expected cash flows (Slater and Zwirlein, 1996).

Finally, the dividend decision is often characterized as a residual decision. That is, after investment opportunities with a positive NPV have been funded, remaining funds

may be distributed as dividends. However, given the preference for internally generated funds suggested by the pecking-order theory, the double taxation on dividends, and the negative signal sent out by an equity offering or dividend decrease, corporations might prefer to retain a certain amount of financial slack as suggested by Myers and Majluf (1984) to ensure that all positive NPV projects are accepted.

Financial strategies are interrelated (Slater and Zwirlein, 1996). Investments in assets must be funded either internally by retaining corporate cash flow or externally by selling new securities. The optimal amount of debt and equity must be considered when new securities are issued to fund these projects. Dividends distribute corporate cash that otherwise would be reinvested in new or existing assets, thus affecting the financing decision. Moreover, if there are information asymmetries, managers have incentives to alter the financing, dividend, and investment decisions in an attempt to send reliable messages to investors about the future cash flows of the firm. These 'signaling effects' may lead to a reduction in investment, increase in 'financial slack', reliance on internally generated funds, and preference for debt over equity when external funds are required (Slater and Zwirlein, 1996).

In theory, the simultaneous solution to the three decisions should be driven by the investment opportunities of the firm (Slater and Zwirlein, 1996). As the third law of Brealey and Myers (1991) states, 'You can make a lot more money on the left-hand side of the balance sheet than on the right. In other words, sound investment decisions add more value than sound financing and dividend decisions. The financing decision is determined by the available investment opportunities as well as the ability to generate internal cash flow.

Profitable firms with many investment opportunities including acquisitions may be able to fund these opportunities primarily from internal sources with reliance on external sources. Other firms require large doses of external finance to fund opportunities and may have a preference for debt over equity. Firms with limited investment opportunities might require little or no external funding and will use leverage strategically to lower tax

payments, enhance equity return, and maximize firm value. The dividend decision will complement the financing activity. Firms that generate consistent cash flow will develop a policy of stable dividend growth. Other firms may establish high or low dividend payout dependent upon the 'dividend clientele' (Slater and Zwirlein, 1996).

Firms with few investment opportunities may be very profitable but in mature or even declining industries. Alternatively, changes in industry structure or just poor management may have driven the profits from these firms. Low profit firms may continue to use external debt in an attempt to prop up equity returns. The proceeds from issuing debt may be squandered on low-return projects which further reduce shareholder return and value. The continual downward spiral may end in a takeover, bankruptcy, or liquidation of the firm (Slater and Zwirlein, 1996).

Variables

The literature review in chapter two provides several key financial decision variables. In selecting variables under three financial decision-making constructs including financing, investment, and dividend decisions, a vitally important consideration is content and construct validity. The following six variables were identified in the literature as variables that measure the three financial constructs: capital investment, current investment, debt-to-total capital, total debt-to-assets, dividend growth, and dividend payout ratio. Complete data, however, was unavailable for all six variables. Therefore, for purposes of this study, a new and relevant list of six variables was selected as proxies to measure the three financial decision-making constructs. The following are the six variables: Capital Spending Per Share, Market Value of Common Shares Outstanding, Earning Per Share, Cash Flow Per Share, Book Value Per Share, P/E Ratio, and Long-Term Debt. These variables can be classified into three constructs (investment decisions, financing decisions, and dividend decisions). Some of the variables represent more than one construct. For example, the variable, market value of common shares outstanding, reflects the two

constructs of financing and dividend decisions. The variables under the investment decisions may include: capital spending, cash flow per share, book value per share, price-earning ratio. The variables under the financing decisions may include: market value of common share outstanding, long-term debt, book value per share, price-earning ratio. The variables under the dividend decisions may include: market value of common share outstanding and earning per share. Table 8-A summarizes the financial decision-making constructs and variables.

Table 8-A. Summary of Financial Decision-Making Constructs and Variables

Financial Decision-Making Constructs	Variables
Investment Decisions	capital spending, cash flow per share, book value per share, price-earnings ratio
Financing Decisions	market value of common shares outstanding, long-term debt, book value per share, price-earnings ratio
Dividend Decisions	market value of common shares outstanding and earnings per share

Testing

It is believed that each group (high and low performing restaurant firms) has different patterns of financial practices over the changes of the restaurant industry cycles. Financial practices according to the changes of the industry cycle are tested if there are no significant differences between two groups (high and low performing restaurant firms).

This study adopts a non-parametric procedure to test the significant difference in practicing financial strategies between two groups of restaurant firms (high and low) over the restaurant industry cycles. By ignoring information on the magnitude of change and considering only the direction of financial practices of high and low performers over the industry cycles, this study is able to construct 2 X 2 contingency tables recording a variety of financial practices as in Table 9.

Table 9. Contingency Table Form for Financial Practices (The Investment Decision for example) of High and Low Performers over the Industry Cycles (example)

	High Performing Firms (Capital Investment (%))			
Restaurant Industry Cycle		Expansion (+)	Contraction (-)	Subtotal
	Expansion (+)	n_{00}	n_{01}	n_0
	Contraction (-)	n_{10}	n_{11}	n_1
	Subtotal	n_0	n_1	N

Note: 0=i, 1=j

The table enables this study to measure the association between the financial practices (two-way directions including + and -) of different strategic financial variables of two different groups of restaurant firms using a conventional contingency table statistic. A two-way contingency table analysis evaluates whether a statistical relationship exists between two variables.

An important statistic that is not based on chi-square but that does use contingency tables is Kappa (k), commonly known as Cohen's kappa (Cohen, 1960). Cohen (1960) proposed a chance-corrected measure of agreement known as kappa. To calculate kappa we first need to calculate the expected frequencies for each of the diagonal cells assuming that events are independent. Kappa is defined as

$$k = \frac{\sum f_0 - \sum f_e}{N - \sum f_e}$$

where f_o represents the observed frequencies on the diagonal and f_e represents the expected frequencies on the diagonal. As the formula says, the correction is applied. In the numerator we subtract, from the number of agreements, the number of agreements that we would expect merely by chance. In the denominator we reduce the total number of directions (events) by that same amount. Kappa is a measure rather than a test. Its size

is judged by using an asymptotic standard error to construct a *t* statistic (that is, measure divided by standard error) to test whether the measure differs from 0. A value of kappa greater than 0.75 indicates *excellent* agreement beyond chance, a value between 0.40 to 0.75 indicates *fair to good*; and a value below 0.40 indicates *poor* agreement (Cohen, 1960; SPSS Inc., 1997).

If the two binary series are independent, then the above contingency table shows $n_{ij} = n_i n_j$. With complete dependence, it shows that $n_{ij} = n_i = n_j$ ($i = 0,1$). In this study, independence indicates that there is no contemporaneous relationship between the financial practices (expansions/contractions) of the high or low performing firms and the directions (expansions/contractions) of the industry cycles. For example, the changes of the industry cycles have no effect on the high or low performers' strategic financial choices. This study proposed that financial strategies practiced by high/low performing restaurant firms are independent from the cyclical fluctuations of the industry cycles. The following chapter presents the research results.

CHAPTER 4: RESEARCH RESULTS

Introduction

The previous three chapters have provided the basis for developing the restaurant industry cycle model and its economic indicator system, and examining financial practices of the restaurant firms. In chapter one, the basic framework for this study was constructed. Various business forecasting techniques and studies in the hospitality and tourism industry, business cycle studies, the rationale for using an economic indicator system, a restaurant industry cycle model, a restaurant industry economic indicator system were all reviewed and discussed in chapter two. Specific and detailed methodologies for the research purposes were presented in Chapter Three. In this chapter, the results of research are presented.

Results

Part I

The overall objective of part one of this study is to develop the restaurant industry cycle model and its economic indicator system. The specific objectives of Part I of this study are to: (1) develop a U.S. restaurant industry cycle that would cover restaurant activity as broadly as possible, and date and measure the cycles, (2) develop a U.S restaurant industry growth cycle model that would represent the change and magnitude of growth in the industry, and date and measure the cycles, (3) identify and select the economic indicators for the U.S. restaurant industry by testing the characteristics of each time series, and classify the indicators as leading, coincident, or lagging, (4) form the composite indices for the leading, coincident, and lagging indicators to use for defining the relationships in terms of time lags between the restaurant industry cycle and the series of composite indices, and (5) use the economic indicator system for measuring and forecasting the turning points of the industry cycles.

I. The U.S. restaurant industry cycle

The first objective was to form the restaurant industry cycle. The cycle is a time series representing the total activity of the restaurant industry. Figure 6 portrays the restaurant industry cycle as measured by real total sales in the restaurant industry. The identified and dated peaks and troughs of the restaurant industry cycle are also plotted in the figure 6. This study converted the nominal data series to real data series (constant dollars) to track the real changes in the industry cycle. The total sales data in nominal terms and real terms, and their symmetric percentage changes are presented in table 11. Figure 7 shows the difference between trends of the current dollars and those of the constant dollars which were made by different Consumer Price Index-Urban (CPI-U) in different time periods.

The cycle covers the twenty-nine year period (from 1970 to 1998). During this period the restaurant industry demonstrated three cycles (peak to peak or trough to trough). The restaurant industry peaked in 1973, 1979, and 1989. The industry troughed in 1970, 1974, 1980, and 1991. The mean durations of the restaurant industry cycles are 8 years (Standard Deviation (SD): 2) calculated by peak to peak and 6.5 years (SD: 2.08) calculated by trough to trough. The restaurant industry took an average of 6 years for

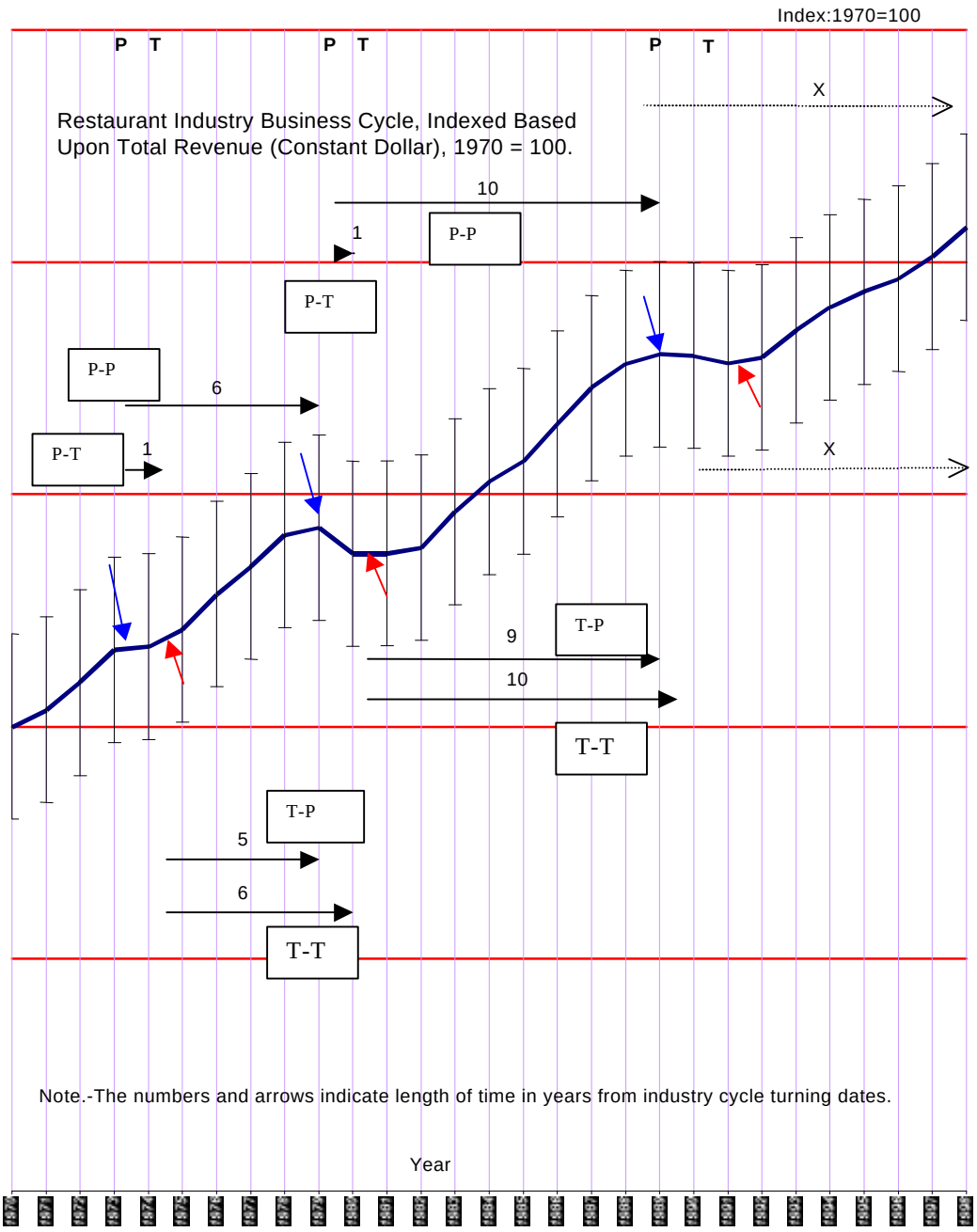


Figure 6. Restaurant Industry Business Cycles (1970-1998)

Table 10. Turning Points of Restaurant Industry Cycle

Restaurant Industry Cycle Duration (Years)					
Peak	Trough	Peak to Peak	Trough to Trough	Expansion (T-P)	Contraction (P-T)
	1970				
1973	1974		4	3	1
1979	1980	6	6	5	1
1989	1991	10	9	9	2
Mean		8	6.5	6	1.33
Standard Deviation (SD)		2	2.08	2.58	0.577

expansion but declined sharply after it reached the peaks taking an average of 1.33 years. It can be seen by a visual analysis of figure 6 and table 10.

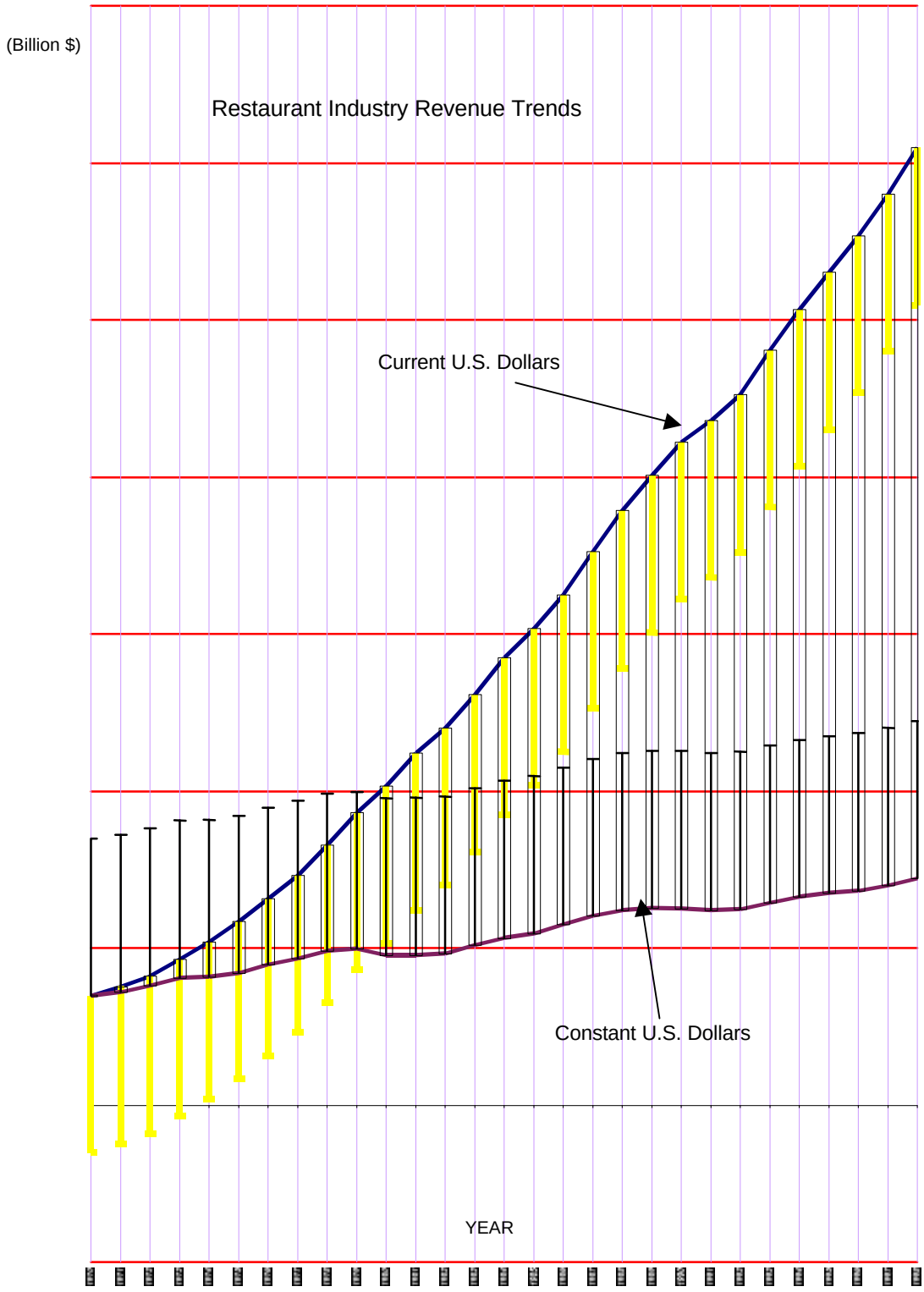


Figure 7. Restaurant Industry Revenue Trends (1970-1998)

Table 11. Symmetric Percentage Change of the Industry Total Sales

Year	(current$,000)*	CPI-U**	(constant 1970 $,000)	Symmetric Percentage Change
1970	34,829,134	38.8	34,829,134	-
1971	37,658,625	40.5	36,077,893	3.52
1972	41,062,230	41.8	38,115,180	5.49
1973	46,450,093	44.4	40,591,523	6.29
1974	51,883,729	49.3	40,833,442	0.59
1975	58,392,138	53.8	42,111,802	3.08
1976	65,635,167	56.9	44,756,493	6.09
1977	73,139,924	60.6	46,828,862	4.53
1978	82,672,592	65.2	49,197,800	4.93
1979	93,104,904	72.6	49,758,544	1.13
1980	101,529,072	82.4	47,807,379	-4.00
1981	112,058,040	90.9	47,831,155	0.05
1982	119,991,881	96.5	48,245,440	0.86
1983	130,762,838	99.6	50,939,740	5.43
1984	142,493,688	103.9	53,212,272	4.36
1985	151,761,568	107.6	54,724,432	2.80
1986	162,528,483	109.6	57,537,456	5.01
1987	176,312,012	113.6	60,219,244	4.55
1988	189,288,737	118.3	62,082,866	3.05
1989	200,582,781	124.0	62,762,999	1.09
1990	211,083,125	130.7	62,662,779	-0.16
1991	217,982,704	136.2	62,097,863	-0.91
1992	226,140,546	140.3	62,539,224	0.71
1993	240,419,302	144.5	64,555,494	3.17
1994	253,401,944	148.3	66,284,605	2.64
1995	265,097,187	152.5	67,456,524	1.75
1996	276,830,630	157.0	68,435,989	1.44
1997	290,131,006	160.6	70,080,826	2.37
1998	304,746,830	163.6	72,288,176	3.10

Source of data: *. National Restaurant Association

****. Economic Report of the President,**

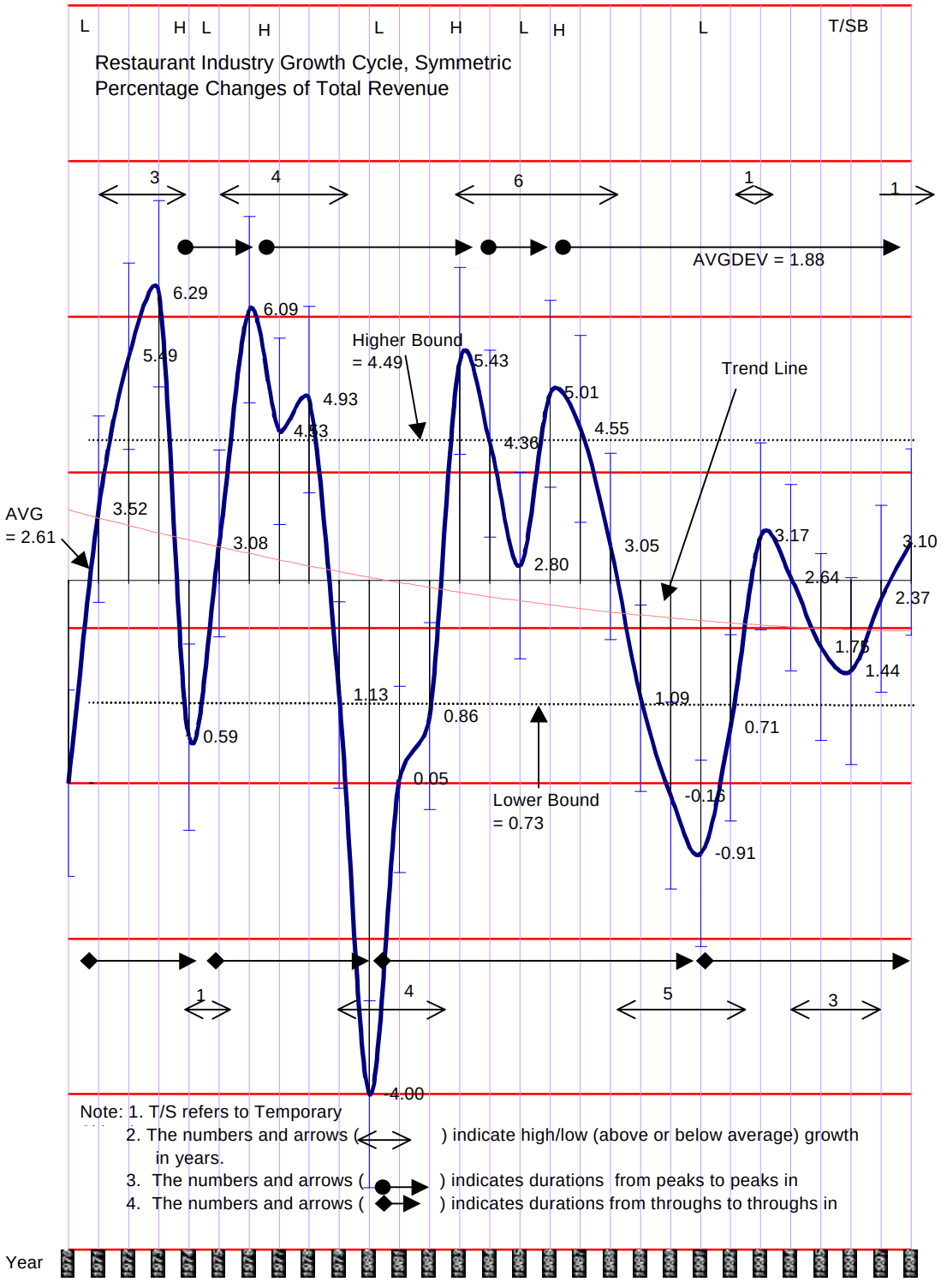


Figure 8. Restaurant Industry Growth Cycles (1970-1998)

Table 12. Turning Points of Restaurant Industry Growth Cycle

Restaurant Industry Growth Cycle Duration (Years)					
High (Peak)	Low (Trough)	High to High	Low to Low	Expansion (T-P)	Contraction (P-T)
	1970				
1973	1974		4	3	1
1976	1980	3	6	2	1
1983	1985	7	5	3	2
1986	1991	3	6	1	5
1993		7			
Mean		5	5.25	2.25	2.25
Standard Deviation		2.3	0.95	0.95	1.89

II. The U.S. Restaurant Industry Growth Cycle

The restaurant industry growth cycle representing the rate of growth changes was developed by standardizing the changes and measuring and dating the cycles (Figure 8). Table 12 analyzes the turning points of the restaurant industry growth cycle. The results show that the restaurant industry experienced high growth (boom) every five years on the average. The troughs (1970, 1974, 1980, 1985, and 1991) of the growth cycles, contrasted to the peaks of the growth cycles, coincided with those (1970, 1974, 1980, and 1991) of the restaurant industry business cycles in each case except one (1985). On that occasion-in 1985-a low growth phase interrupted industry business expansion but did not terminate it. As would be expected, growth cycles are more frequent than industry business cycles, for example, there were five growth cycle upturns in the 1970-1998 period but 3 industry business peaks.

Restaurant industry growth cycles, then, tend to be relatively symmetrical: since 1970 the average duration was about 2.25 years for both expansion (L-H) and contraction (H-L). In contrast, the restaurant industry business cycles (see figure 6) in the same period show a strong asymmetry: the expansions lasted on the average of 6 years; the contractions, 1.33 years. The expansions have varied in duration much more than the high growth phases have (the respective standard deviations are 2.58 and 0.95 years). Growth cycles show greater uniformity than their counterparts for the industry business cycle.

III. Economic Indicator System for the Restaurant Industry

III-1. Leading, Coincident, and Lagging Indicators.

All data were analyzed for classification into leading, coincident, and lagging indicator groups. The statistical program SPSS generated the outputs for the cross-correlation between the restaurant industry cycle and the candidate data series. Again, these results were reevaluated by comparing the actual charts and cross correlation results. The indicators in each category were again evaluated based on data availability, data variability, and economic significance in the restaurant industry series (see page 159-164 for complete list and procedure of data evaluation). This study classified twelve indicators for the leading category, six for coincident, and twenty for lagging. The final indicator series included in the model are presented in Table 13.

Table 13. The Final Indicators for the Restaurant Industry to use for Forming Composite Indices

A. Leading Indicators
Compensation per hours in business sectors (% change)
General business failure rate
Foreign Exchange rates (Yen per U.S. dollar)
New York stock exchange composite index
Output per hour of all persons (business sector), index number
Population (total)
Saving percentage of disposable income
Unemployment rate
Unemployment rate, persons unemployed 15-26 weeks
Construction cost index
Average weekly initial claims for unemployment insurance
Consumer expectation (Index of Bureau of Economic Analysis)
B. Coincident Indicators
Consumer confidence
Disposable income
Dow Jones Industrial Average
Hours of all persons in business sector, percentage change
Index of leading economic indicators, overall economy
Building permits, new private housing units
C. Lagging Indicators
Preferred stock yield index (yield in percent)
Common stock price-earning ratio
CPI for food and beverage
CPI for motor fuels
CPI for food away from home
CPI - U
Discount rate on new issues of 91-day Treasury-bill
Federal fund rate
GDP of service
Average daily rate (hotel industry)
Revenue per available room (hotel industry)
Manufacturers' new orders in non-durable goods industries
Prime interest rate charged by banks
Dividend yield percent (high)
Gross private domestic investment (nonresidential), billions of dollars
The total new construction (value put in place, billions of dollars)
Unit labor costs in business sector, percentage change

Total value put in new commercial building construction (billions of dollars)
Wages & salaries in service industry
Index of coincident economic indicators, overall economy
Index of lagging economic indicators, overall economy

IV. The Composite Indices

The results of the analysis for forming composite indices are presented in Table 14. The final indices for the leading, coincident, and lagging indicators and their symmetric percentage changes are also in the Table 14. Performances of the composite indices are presented in Figures 9 through 14, and are summarized in Table 15.

Table 14. The Composite Indices of the Leading, Coincident, and Lagging Indicators for the Restaurant Industry and their Symmetric Percentage Change

Year	Target Index	Target SPC	Leading Index	Leading Index SPC	Coincident Index	Coincident Index SPC	Lagging Index	Lagging Index SPC
year 1970	100		100		100		100	
year 1971	103.59	3.52	110.67	10.13	107.79	7.50	106.30	6.10
year 1972	109.43	5.49	110.52	-0.13	118.49	9.45	121.28	13.17
year 1973	116.54	6.29	102.19	-7.83	114.44	-3.48	142.98	16.42
year 1974	117.24	0.59	105.03	2.74	94.68	-18.90	170.51	17.57
year 1975	120.91	3.08	127.65	19.44	93.52	-1.24	175.65	2.97
year 1976	128.50	6.09	127.47	-0.14	108.60	14.93	192.25	9.03
year 1977	134.45	4.53	123.29	-3.34	113.50	4.41	221.90	14.31
year 1978	141.25	4.93	113.76	-8.04	114.29	0.70	271.33	20.04
year 1979	142.86	1.13	113.49	-0.24	108.93	-4.80	350.05	25.34
year 1980	137.26	-4.00	131.50	14.70	100.63	-7.93	429.59	20.40
year 1981	137.33	0.05	140.44	6.58	99.58	-1.04	505.59	16.25
year 1982	138.52	0.86	161.55	13.97	93.96	-5.81	526.41	4.04
year 1983	146.26	5.43	172.70	6.67	115.90	20.91	534.14	1.46
year 1984	152.78	4.36	162.77	-5.92	122.07	5.19	621.64	15.14
year 1985	157.12	2.80	166.45	2.24	124.47	1.95	667.41	7.10
year 1986	165.20	5.01	165.94	-0.31	130.56	4.77	657.98	-1.42
year 1987	172.90	4.55	156.05	-6.15	135.58	3.77	705.00	6.90
year 1988	178.25	3.05	149.12	-4.54	135.41	-0.13	771.15	8.96
year 1989	180.20	1.09	147.21	-1.29	138.43	2.21	833.15	7.73
year 1990	179.91	-0.16	153.19	3.98	129.91	-6.35	885.08	6.04
year 1991	178.29	-0.91	174.83	13.19	121.40	-6.78	835.64	-5.75
year 1992	179.56	0.71	179.11	2.42	125.62	3.42	837.25	0.19
year 1993	185.35	3.17	172.79	-3.59	131.43	4.52	877.61	4.71
year 1994	190.31	2.64	168.85	-2.31	143.28	8.63	951.80	8.11
year 1995	193.68	1.75	167.68	-0.69	147.67	3.02	1044.61	9.30
year 1996	196.49	1.44	175.75	4.70	157.60	6.50	1137.40	8.50
year 1997	201.21	2.37	185.37	5.33	169.52	7.29	1223.98	7.33
year 1998	207.55	3.10	186.27	0.48	173.03	2.05	1273.02	3.93

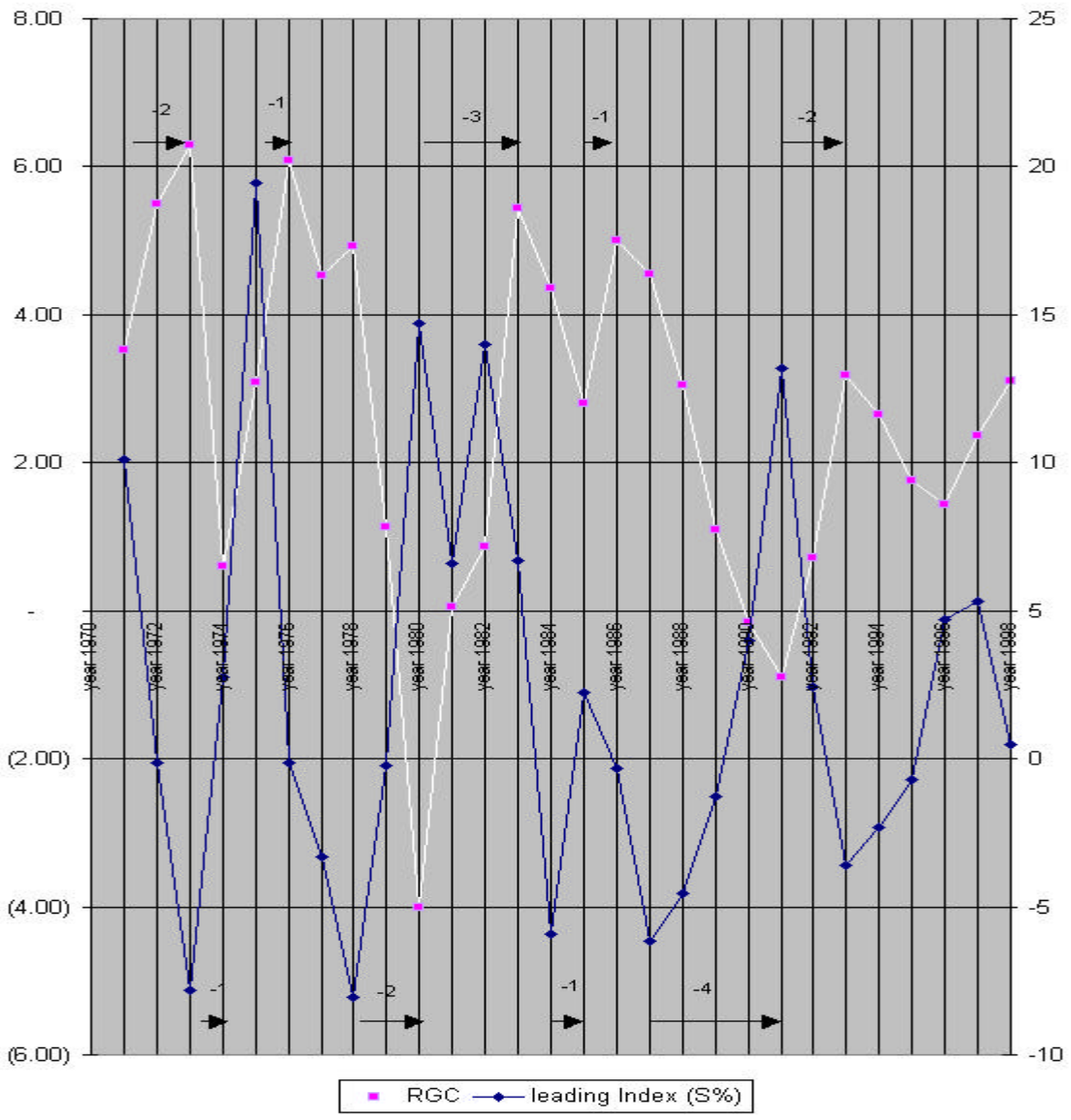


Figure 9. Performance of Leading Composite Index (% Changes)

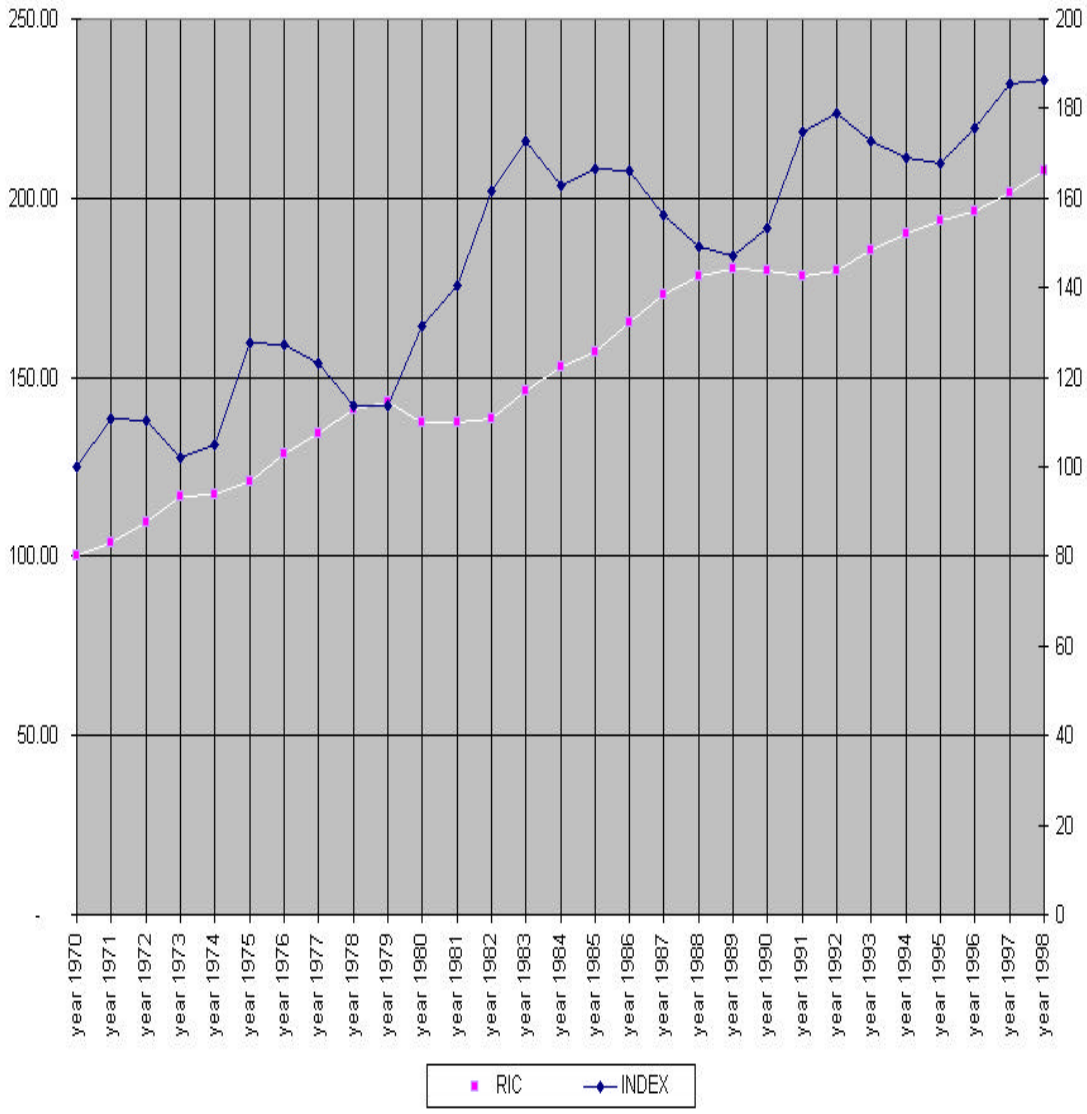


Figure 10. Performance of Leading Composite Index

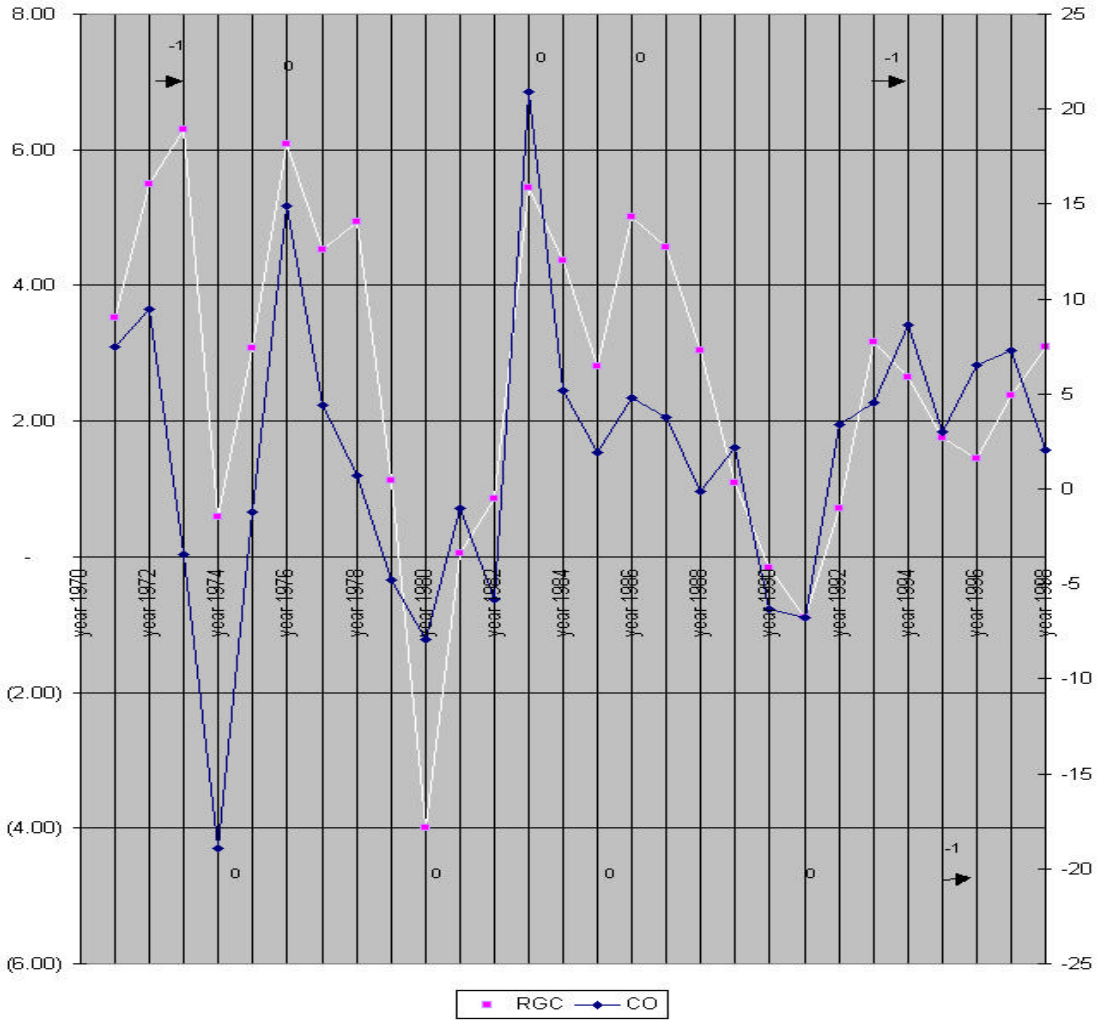


Figure 11. Performance of Coincident Composite Index (% Changes)

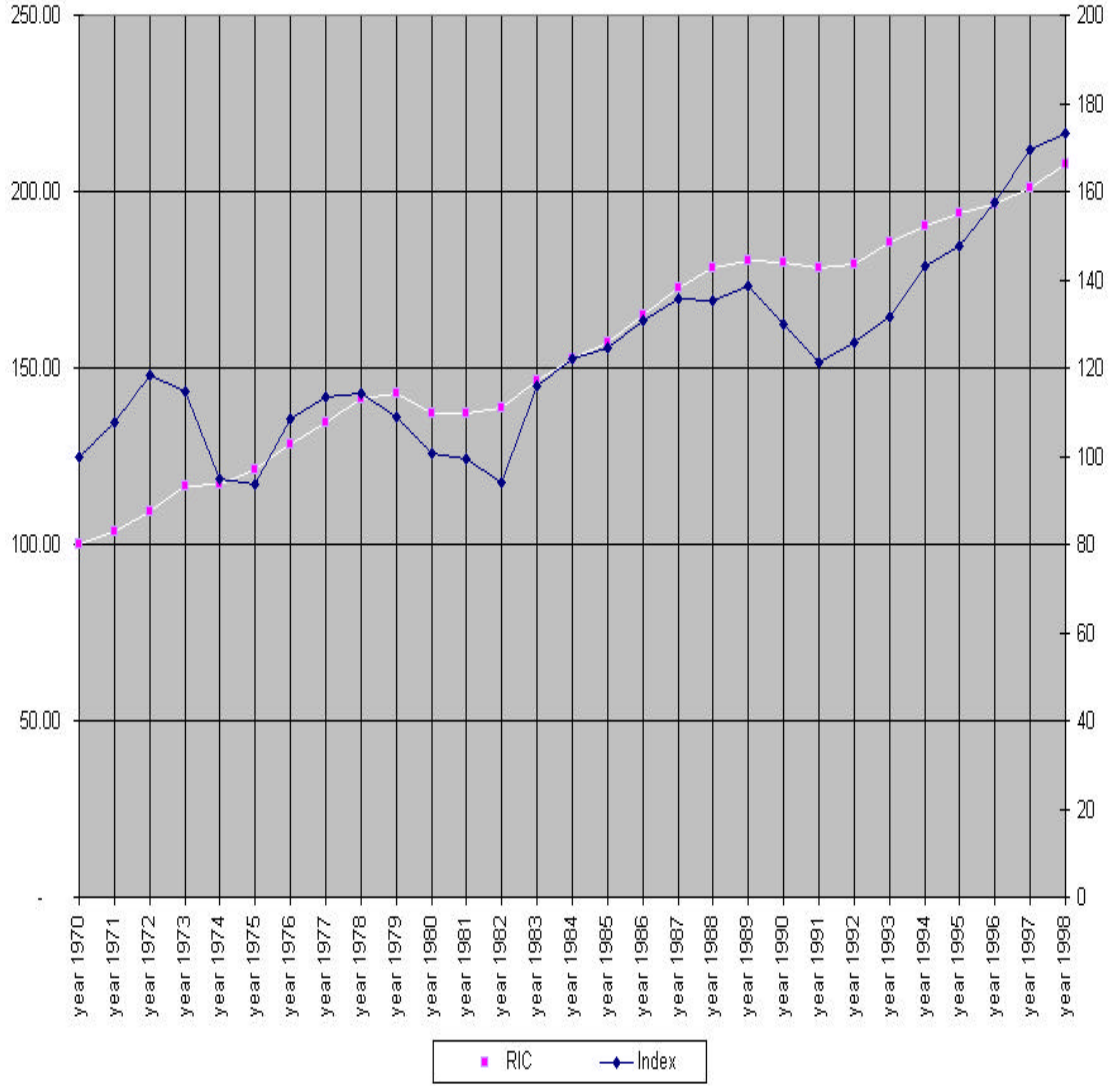


Figure 12. Performance of Coincident Composite Index

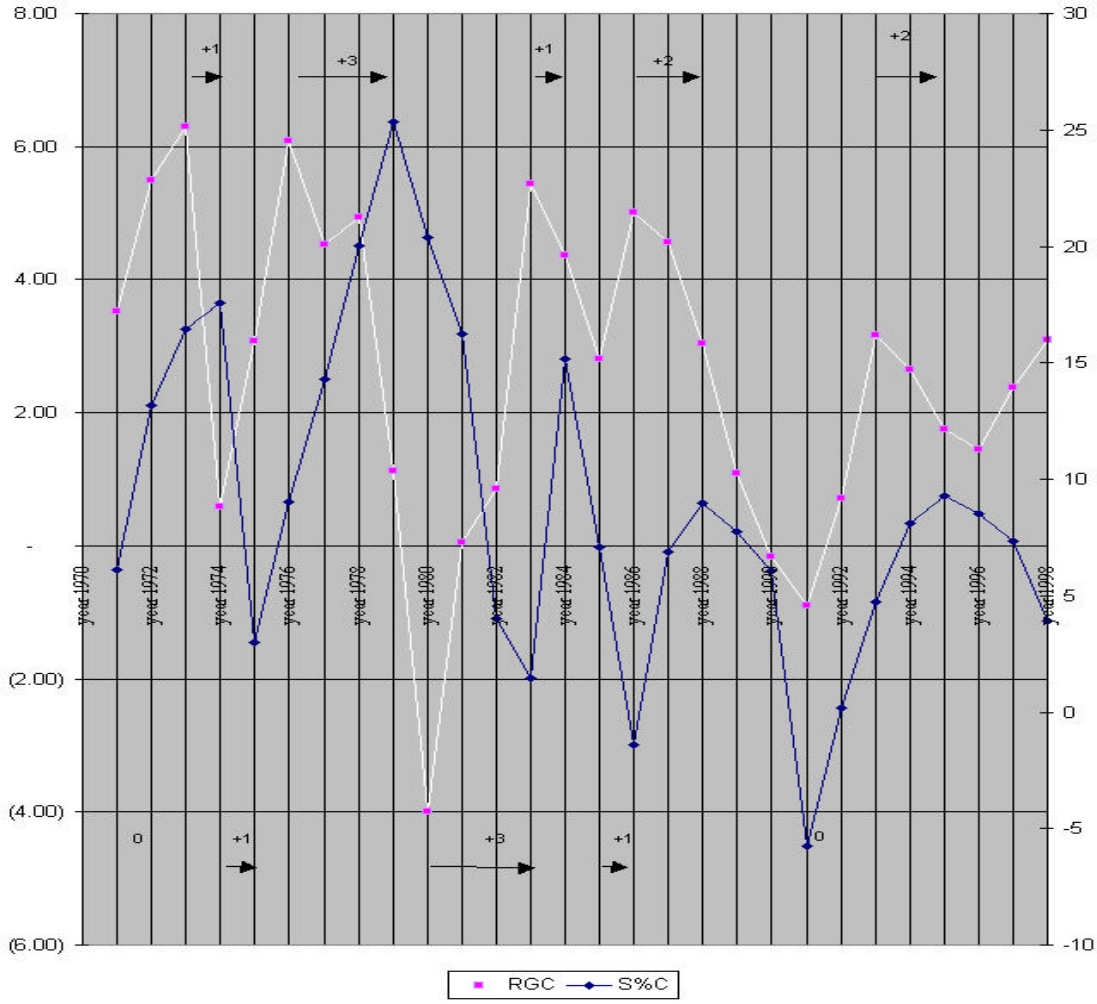


Figure 13. Performance of Lagging Composite Index (% Changes)

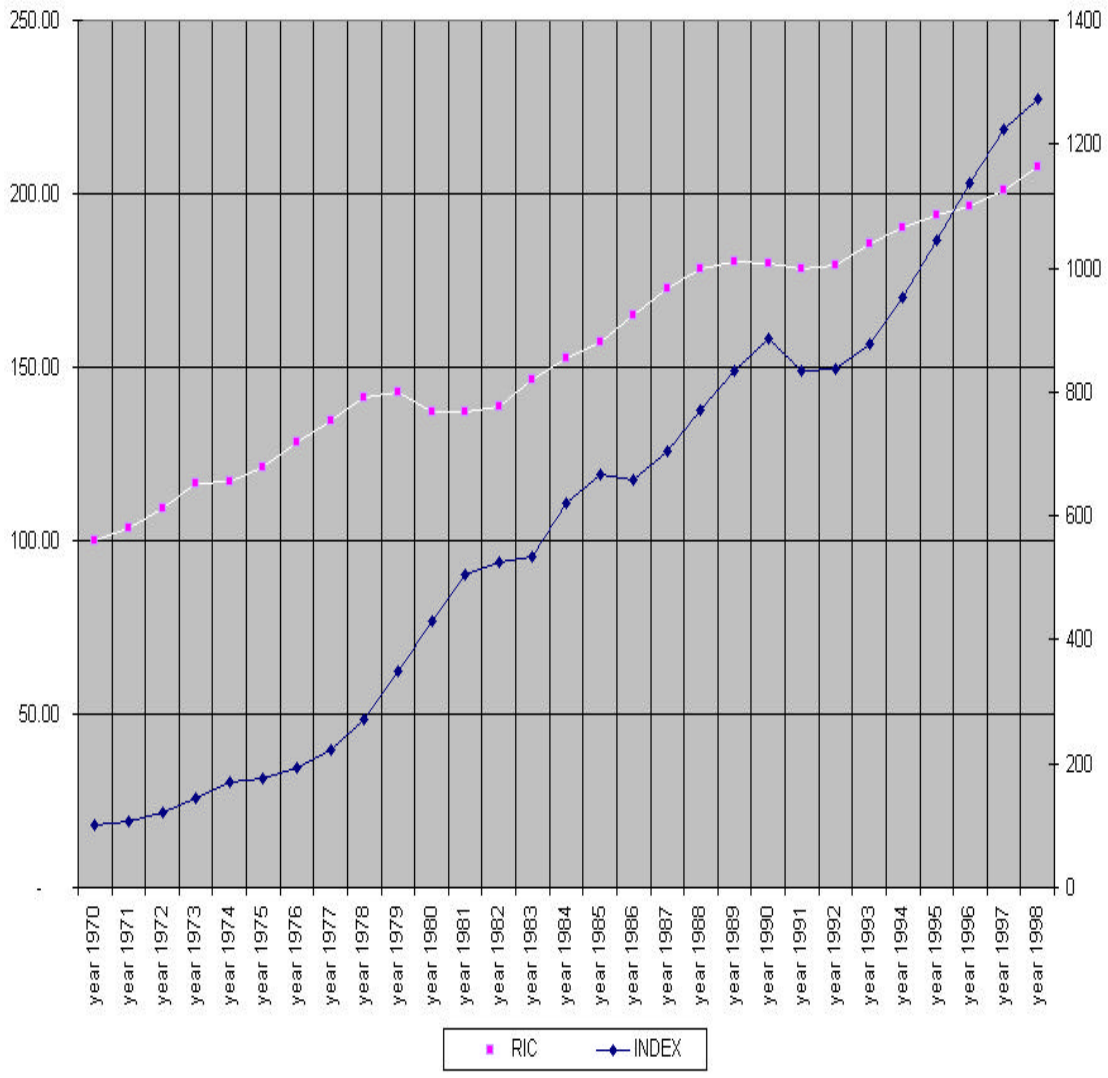


Figure 14. Performance of Lagging Composite Index

Summary

The performances of the composite indices are summarized in Table 15. As presented in the above figures and Table 15, the leading economic indicator system performed very well. For the period of 1970 through 1998, the leading indicator system led both the peaks and troughs of the restaurant industry cycle by about two years throughout the whole cycle. The coincident indicator system mirrored about 80 % of the troughs and 60 % of the peaks of the industry cycle. The lagging economic indicator system lagged throughout the peaks of the industry cycle with 100% and the troughs of the industry with 60%.

Table 15. Performance Evaluations of the Restaurant Industry Indicators: Leads (-) and Lags (+) in Years of Turns in Composite Indices at Growth Cycle Turns (1970-1998)

Restaurant Industry		Leading		Coincident		Lagging	
(P)	(T)	(P)	(T)	(P)	(T)	(P)	(T)
	1970		-1		0		0
1973	1974	-2	-2	-1	0	+1	+1
1976	1980	-1	-1	0	0	+3	+3
1983	1985	-3	-4	0	0	+1	+1
1986	1991	-1	-3	0	-1	+2	0
1993		-2		-1		+2	
Mean		-2	-2	0	0	2	1
Median		-1.8	-2.2	-0.4	-0.2	1.8	1
Accuracy		100%	100%	60%	80%	100%	60%

Part II

The preceding section suggests that there are relationships needing investigate on. The principle objectives of part II are to examine the financial practices of high and low performing restaurant firms over the industry growth cycle. Specifically, this study tries to capture the financial strategies of the high and low performing restaurant firms over the industry growth cycles and examine any significant differences between high performers and low performers.

V-1. High Performers/Low Performers

As an exploratory study, limited numbers of restaurant firms (seven major family restaurants) are examined. These include: Bob Evans Farms (NDQ-BOBE), Cracker Barrel (NDQ-CBRL), Luby's Cafeterias (NYSE-LUB), Piccadilly (NYSE-PIC), Ryan's Family Steak (NDQ-RYAN), Shoney's Inc. (NYSE-SHN), and Vicorp Rest (NDQ-VRES). These companies are classified into high performers or low performers based upon their CFPS (Cash Flow Per Share) for the period of 1982-1998. The specific methods were explained in Chapter Three. Figures 15 through 21 show the selected firms' financial performances (CFPS) over the restaurant industry growth cycle. Tables 16 through 22 show the step-by-step procedure and results of the ranking.

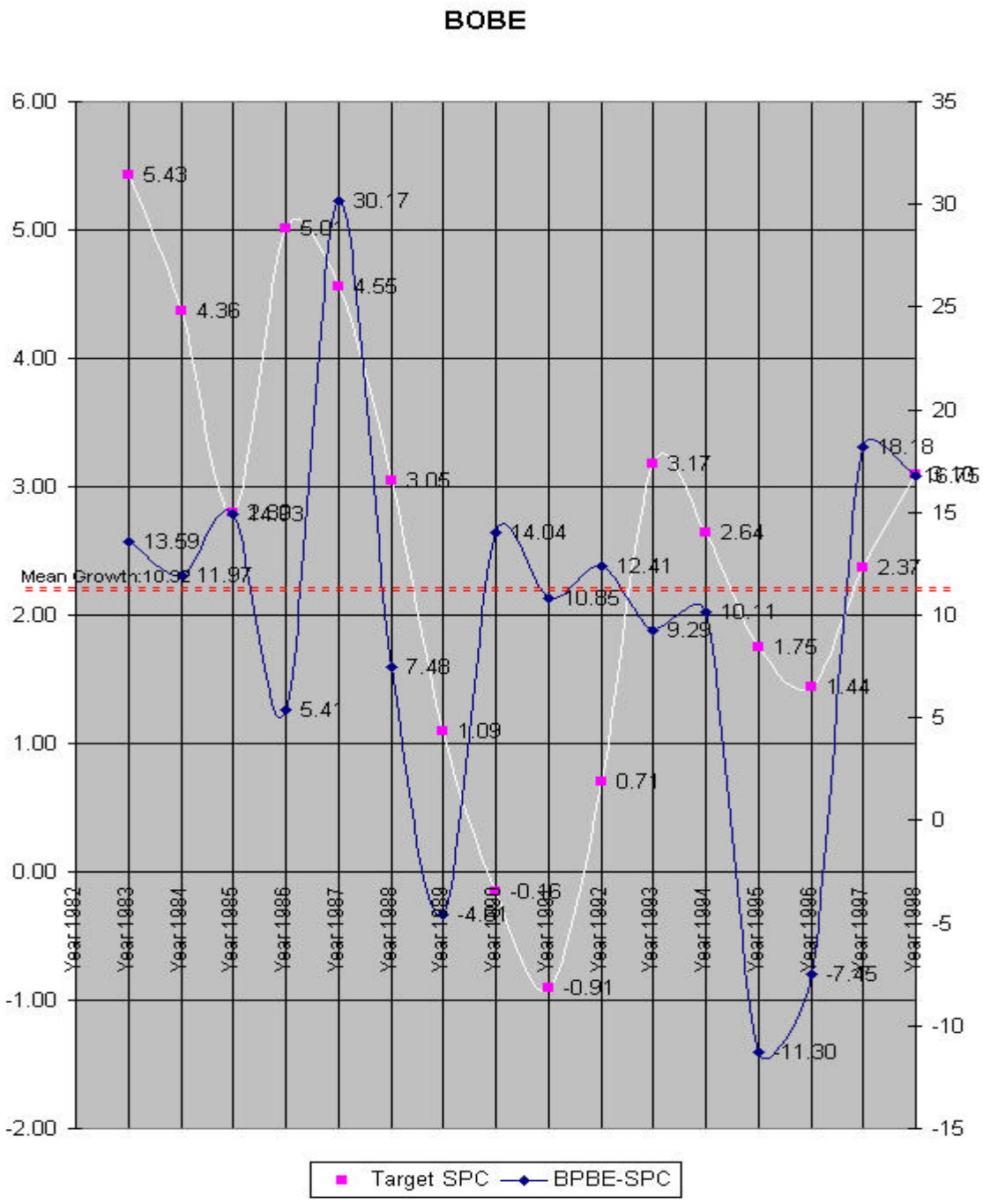


Figure 15. Financial Performance (Cash Flow Per Share) of Bob Evans Farms (NDQ-BOBE) over the Restaurant Industry Growth Cycle.

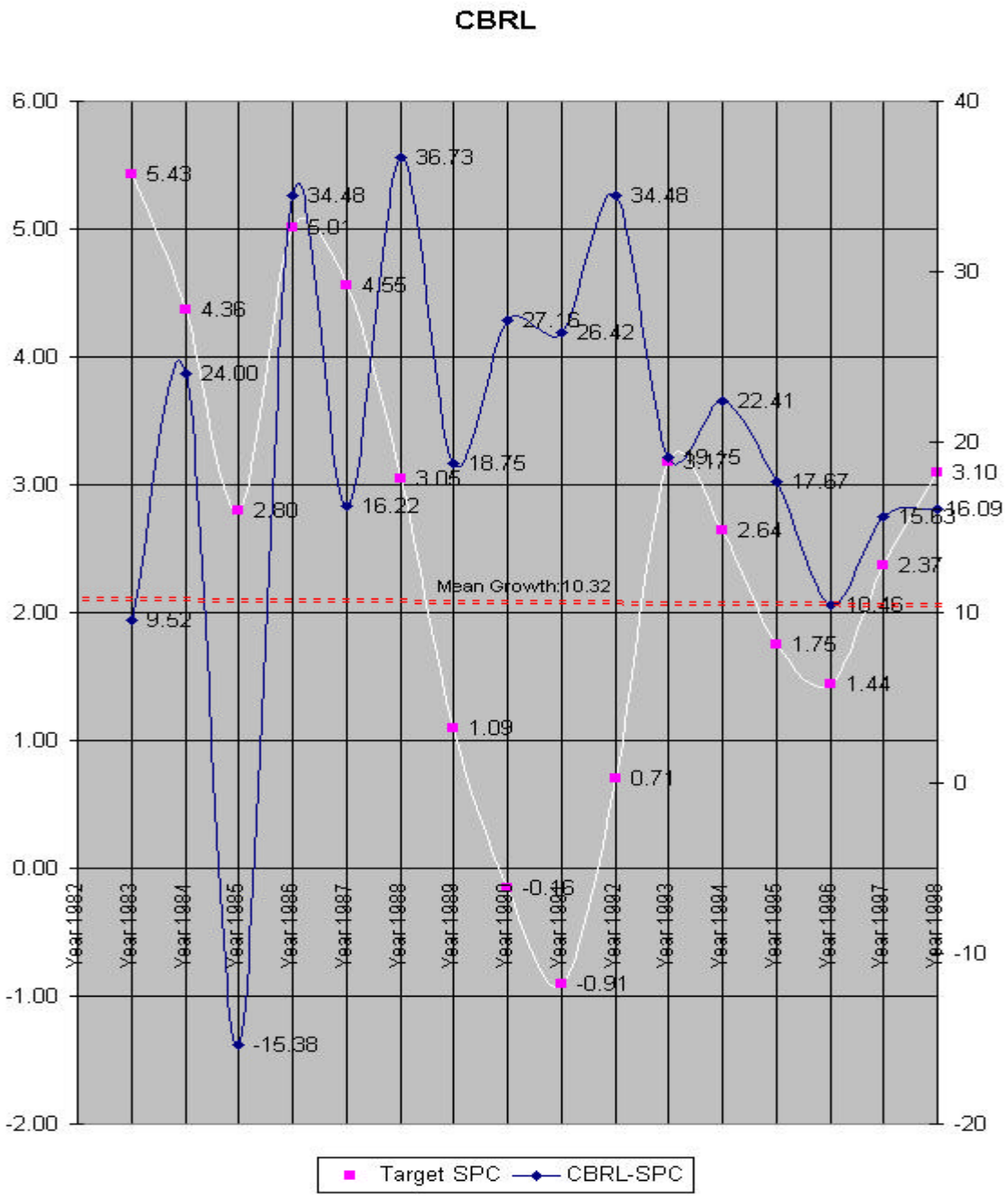


Figure 16. Financial Performance (Cash Flow Per Share) of Cracker Barrel (NDQ-CBRL) over the Restaurant Industry Growth Cycle.

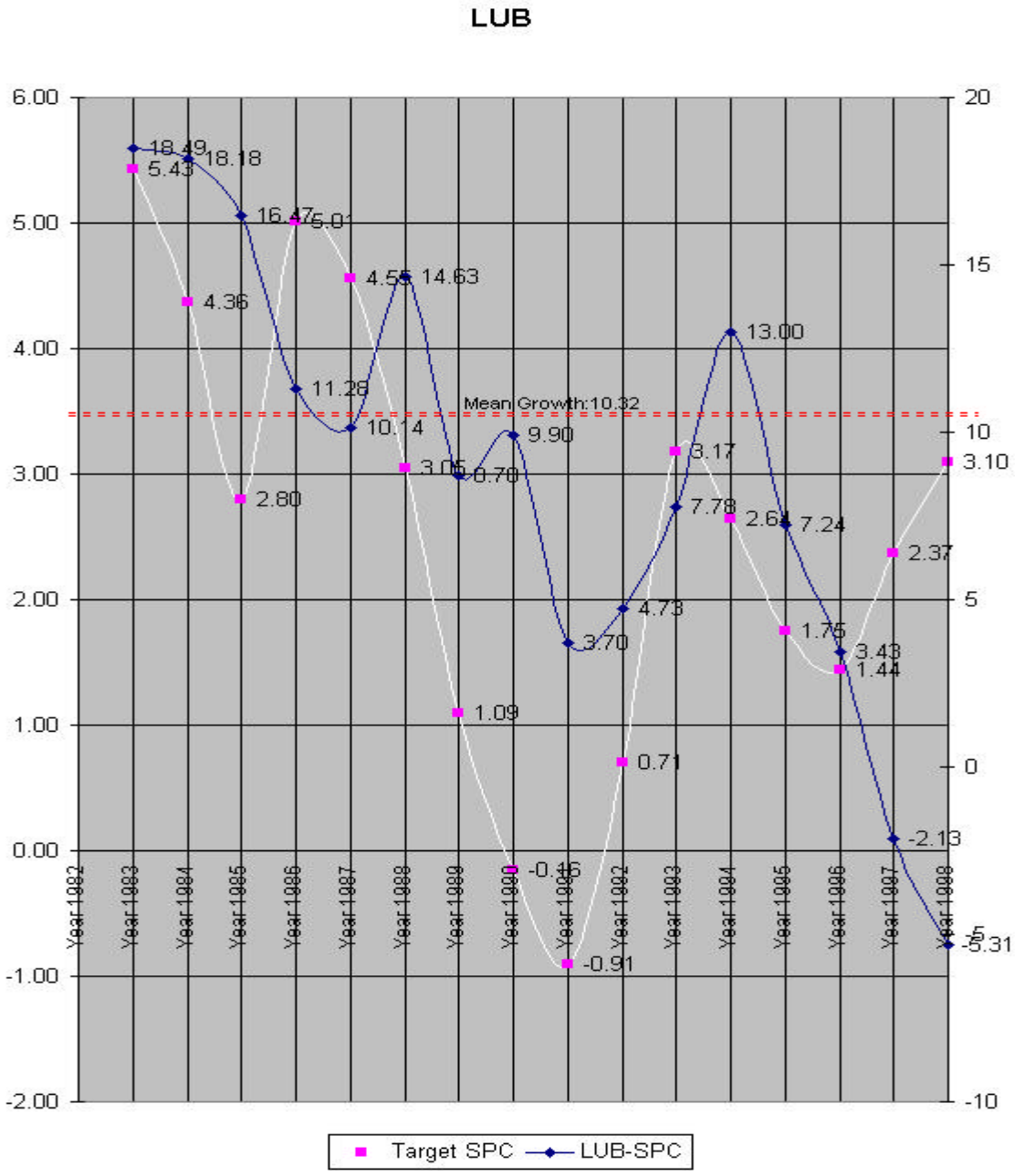


Figure 17. Financial Performance (Cash Flow Per Share) of Luby's Cafeterias (NYSE-LUB) over the Restaurant Industry Growth Cycle.

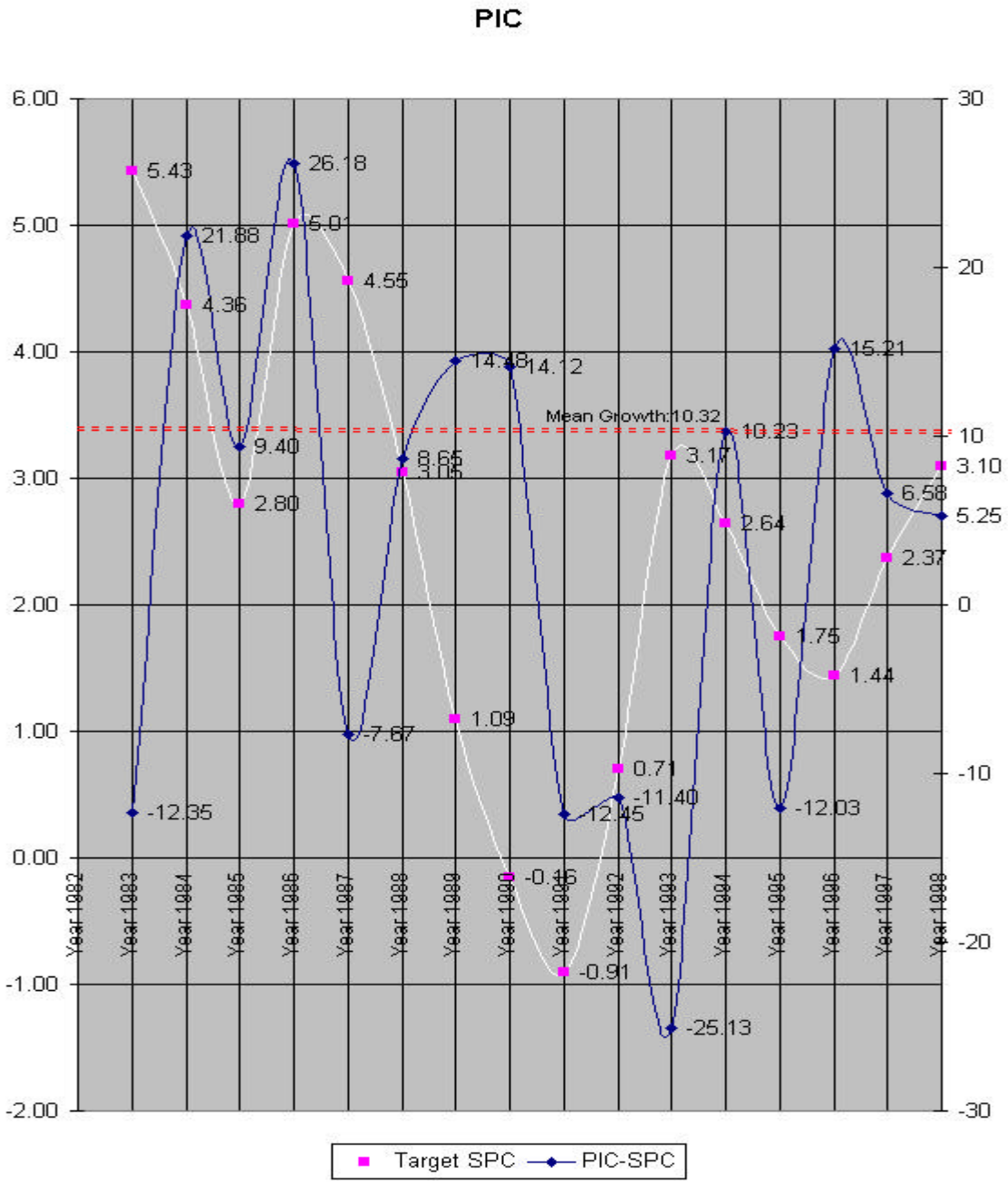


Figure 18. Financial Performance (Cash Flow Per Share) of Piccadilly (NYSE-PIC) over the Restaurant Industry Growth Cycle.

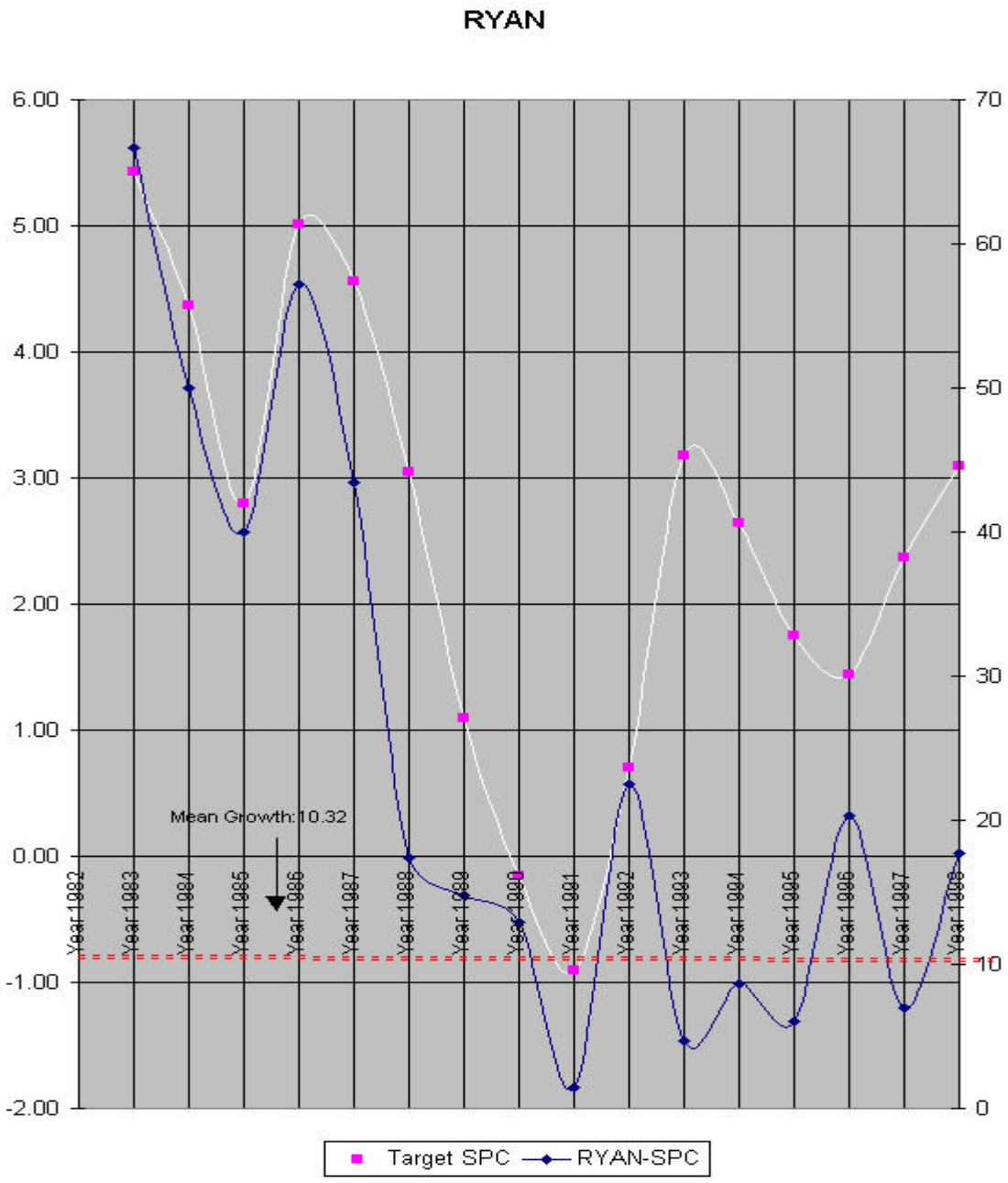


Figure 19. Financial Performance (Cash Flow Per Share) of Ryan's Family Steak (NDQ-RYAN) over the Restaurant Industry Growth Cycle.

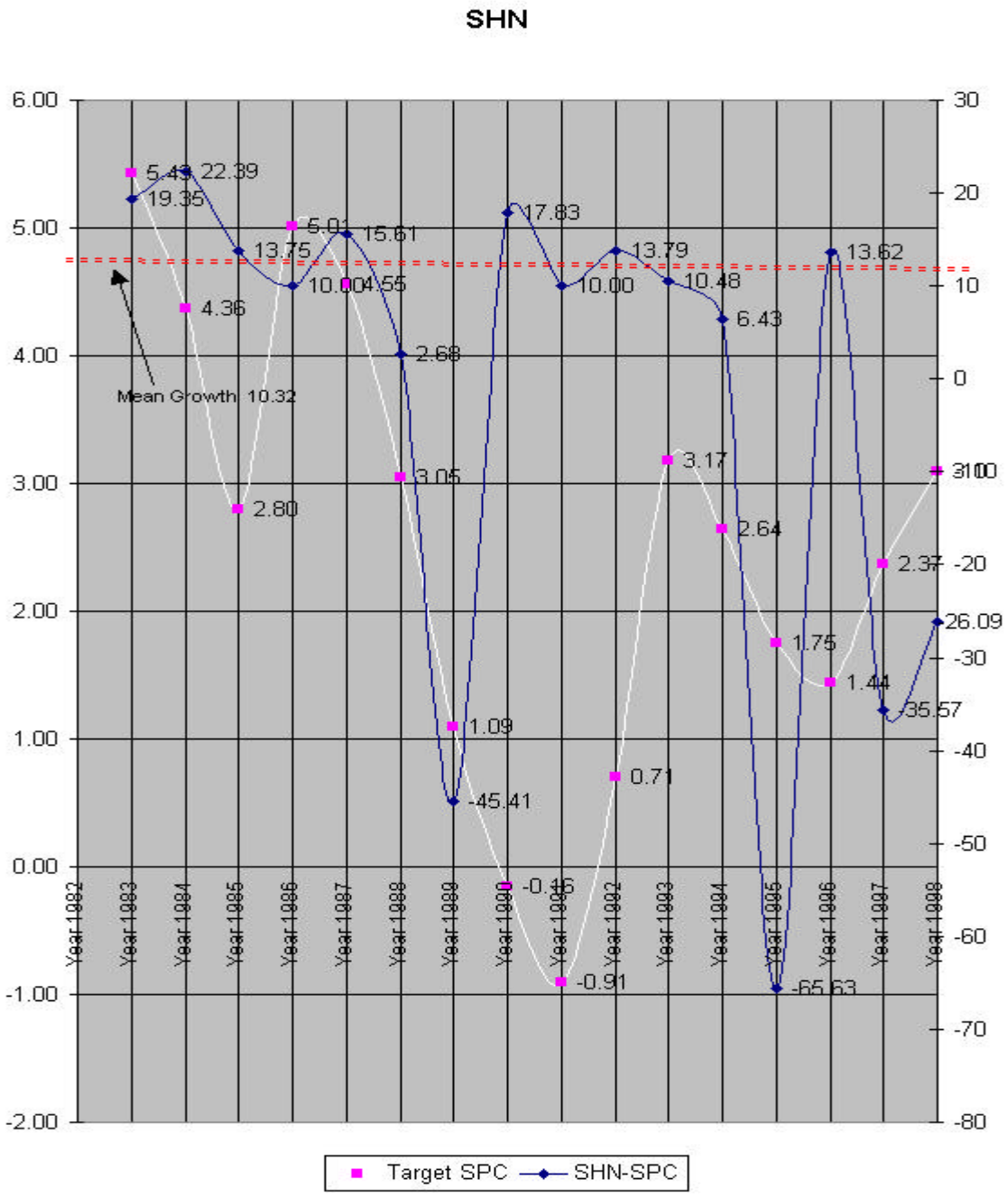


Figure 20. Financial Performance (Cash Flow Per Share) of Shoney's Inc. (NYSE-SHN) over the Restaurant Industry Growth Cycle.

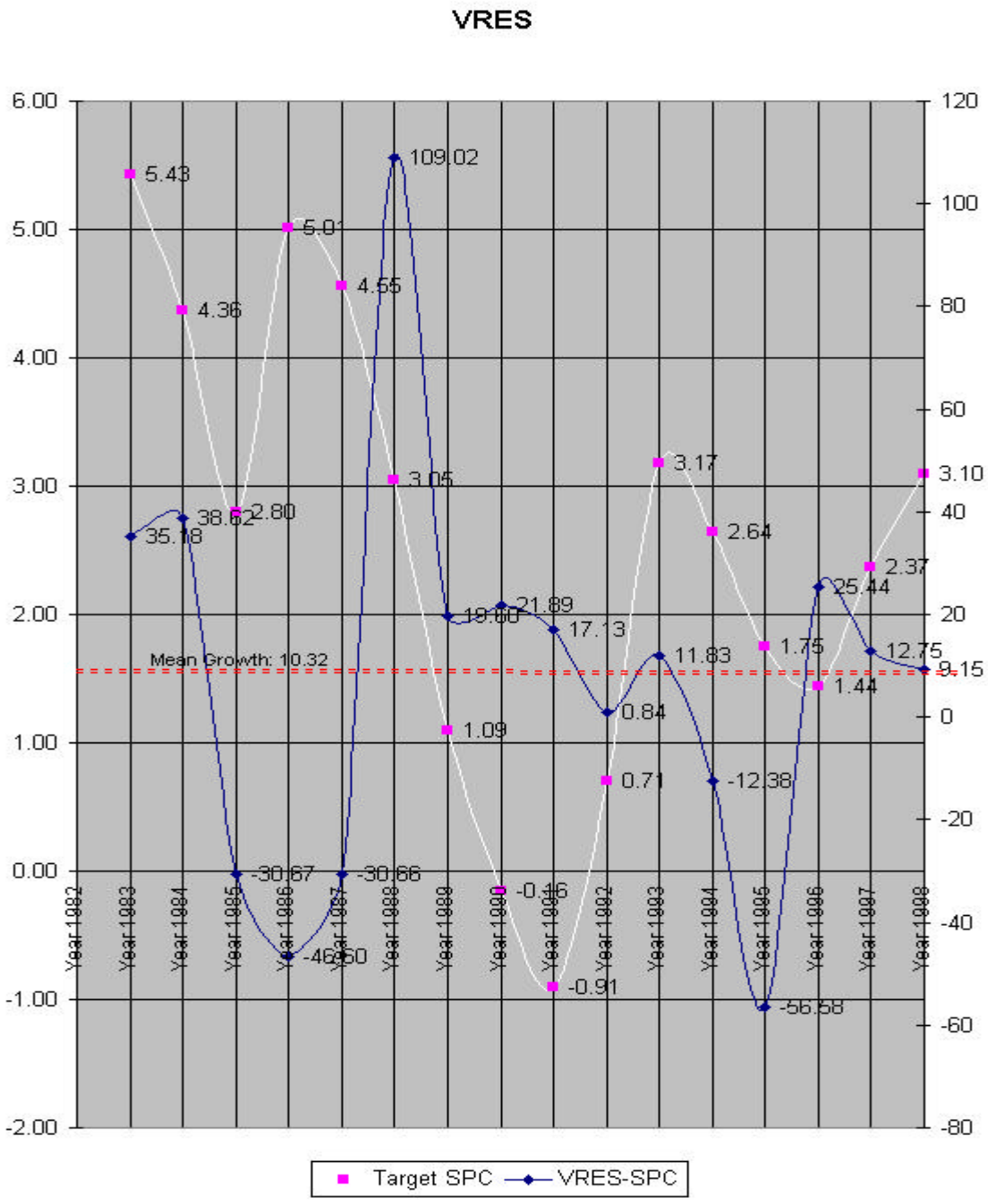


Figure 21. Financial Performance (Cash Flow Per Share) of Vicorp Rest (NDQ-VRES) over the Restaurant Industry Growth Cycle.

Table 16. Scoring the Financial Performance (Cash Flow Per Share) of Bob Evans Farms (NDQ-BOBE) over the Restaurant Industry Growth Cycle.

Year	BOBE	BOBE-SPC	1st Up-Tier (>16.95?	2nd Up-Tier (>23.58?)	3rd Up-Tier (>30.21?)	Score	1st Down-Tier (<3.69?)	2nd Down-Tier (<-2.94?)	3rd Down-Tier (<-9.57?)	4th Down-tier (<-16.2?)	Score	Total Score
1982	0.48					0					0	0
1983	0.55	13.59				0					0	0
1984	0.62	11.97				0					0	0
1985	0.72	14.93				0					0	0
1986	0.76	5.41				0					0	0
1987	1.03	30.17	1	1		2					0	2
1988	1.11	7.48				0					0	0
1989	1.06	-4.61				0	-1	-1			-2	-2
1990	1.22	14.04				0					0	0
1991	1.36	10.85				0					0	0
1992	1.54	12.41				0					0	0
1993	1.69	9.29				0					0	0
1994	1.87	10.11				0					0	0
1995	1.67	-11.30				0	-1	-1	-1		-3	-3
1996	1.55	-7.45				0	-1	-1			-2	-2
1997	1.86	18.18	1			1					0	1
1998	2.2	16.75	1			1					0	1
Grand Score												**-3.00**

Table 17. Scoring the Financial Performance (Cash Flow Per Share) of Cracker Barrel (NDQ-CBRL) over the Restaurant Industry Growth Cycle.

Year	CBRL		1st Up-Tier (>16.95?)	2nd Up-Tier (>23.58?)	3rd Up-Tier (>30.21?)	4th Up-Tier (>36.84?)	Score	1st Down-Tier (<3.69?)	2nd Down-Tier (<-2.94?)	3rd Down-Tier (<-9.57?)	4th Down-tier (<-16.2?)	Score	Total Score
1982	0.1						0					0	0
1983	0.11	9.52					0					0	0
1984	0.14	24.00	1	1			2					0	2
1985	0.12	-15.38					0	-1	-1	-1		-3	-3
1986	0.17	34.48	1	1	1		3					0	3
1987	0.2	16.22					0					0	0
1988	0.29	36.73	1	1	1		3					0	3
1989	0.35	18.75	1				1					0	1
1990	0.46	27.16	1	1			2					0	2
1991	0.6	26.42	1	1			2					0	2
1992	0.85	34.48	1	1	1		3					0	3
1993	1.03	19.15	1				1					0	1
1994	1.29	22.41	1				1					0	1
1995	1.54	17.67	1				1					0	1
1996	1.71	10.46					0					0	0
1997	2	15.63					0					0	0
1998	2.35	16.09					0					0	0
Grand Score													**16.00**

Table 18. Scoring the Financial Performance (Cash Flow Per Share) of Luby's Cafeterias (NYSE-LUB) over the Restaurant Industry Growth Cycle.

Year	LUB		1st Up-Tier (>16.95?	2nd Up-Tier (>23.58?)	Score	1st Down-Tier (<3.69?)	2nd Down-Tier (<-2.94?)	3rd Down-Tier (<-9.57?)	Score	Total Score
1982	0.54				0				0	0
1983	0.65	18.49	1		1				0	1
1984	0.78	18.18	1		1				0	1
1985	0.92	16.47			0				0	0
1986	1.03	11.28			0				0	0
1987	1.14	10.14			0				0	0
1988	1.32	14.63			0				0	0
1989	1.44	8.70			0				0	0
1990	1.59	9.90			0				0	0
1991	1.65	3.70			0				0	0
1992	1.73	4.73			0				0	0
1993	1.87	7.78			0				0	0
1994	2.13	13.00			0				0	0
1995	2.29	7.24			0				0	0
1996	2.37	3.43			0	-1.00			-1	-1
1997	2.32	-2.13			0	-1.00			-1	-1
1998	2.2	-5.31			0	-1.00	-1.00		-2	-2
Grand Score										**-2.00**

Table 19. Scoring the Financial Performance (Cash Flow Per Share) of Piccadilly (NYSE-PIC) over the Restaurant Industry Growth Cycle.

Year	PIC		1st Up-Tier (>16.95?	2nd Up-Tier (>23.58?)	3rd Up-Tier (>30.21?)	Score	1st Down-Tier (<3.69?)	2nd Down-Tier (<-2.94?)	3rd Down-Tier (<-9.57?)	4th Down-tier (<-16.2?)	5th Down-Tier (<-22.83?)	Score	Total Score
1982	1.29					0						0	0
1983	1.14	-12.35				0	-1	-1	-1			-3	-3
1984	1.42	21.88	1			1						0	1
1985	1.56	9.40				0						0	0
1986	2.03	26.18	1	1		2						0	2
1987	1.88	-7.67				0	-1	-1	-1			-3	-3
1988	2.05	8.65				0						0	0
1989	2.37	14.48				0						0	0
1990	2.73	14.12				0						0	0
1991	2.41	-12.45				0	-1	-1	-1			-3	-3
1992	2.15	-11.40				0	-1	-1	-1			-3	-3
1993	1.67	-25.13				0	-1	-1	-1	-1		-4	-4
1994	1.85	10.23				0						0	0
1995	1.64	-12.03				0	-1	-1	-1			-3	-3
1996	1.91	15.21				0						0	0
1997	2.04	6.58				0						0	0
1998	2.15	5.25				0						0	0
Grand Score													**-16.00**

Table 20. Financial Performance (Cash Flow Per Share) of Ryan's Family Steak (NDQ-RYAN) over the Restaurant Industry Growth Cycle.

Year	RYAN		1st Up-Tier (>16.95?	2nd Up-Tier (>23.58?)	3rd Up-Tier (>30.21?)	4th Up-Tier (>36.84?)	5th Up-Tier (>43.47?)	6th Up-Tier (>50.10?)	7th Up-Tier (>56.73?)	8th Up-Tier (>63.36?)	9th Up-Tier (>69.99?)	Score	1st Down-Tier (<3.69?)	2nd Down-Tier (<-2.94?)	Score	Total Score
1982	0.03											0			0	0
1983	0.06	66.67	1	1	1	1	1	1	1	1.00		8			0	8
1984	0.1	50.00	1	1	1	1	1	1				6			0	6
1985	0.15	40.00	1	1	1	1						4			0	4
1986	0.27	57.14	1	1	1	1	1	1	1			7			0	7
1987	0.42	43.48	1	1	1	1	1					5			0	5
1988	0.5	17.39	1									1			0	1
1989	0.58	14.81										0			0	0
1990	0.66	12.90										0			0	0
1991	0.67	1.50										0	-1.00		-1	-1
1992	0.84	22.52	1									1			0	1
1993	0.88	4.65										0			0	0
1994	0.96	8.70										0			0	0
1995	1.02	6.06										0			0	0
1996	1.25	20.26	1									1			0	1
1997	1.34	6.95										0			0	0
1998	1.6	17.69	1									1			0	1
Grand Score																**33.00**

Table 21. Scoring the Financial Performance (Cash Flow Per Share) of Shoney's Inc. (NYSE-SHN) over the Restaurant Industry Growth Cycle.

Year	SHN		1st Up-Tier (>16.95?	Score	1st Down-Tier (<3.69?)	2nd Down-Tier (<-2.94?)	3rd Down-Tier (<-9.57?)	4th Down-tier (<-16.2?)	5th Down-Tier (<-22.83?)	6th Down-Tier (<-29.46?)	7th Down-Tier (<-36.09?)	8th Down-Tier (<-42.72?)	9th Down-Tier (<-49.35?)	10th Down-Tier (<-55.98?)	11th Down-Tier (<-62.61?)	12th Down-Tier (<-69.24?)	Score	Total Score
1982	0.98			0													0	0
1983	1.19	19.35	1	1													0	1
1984	1.49	22.39	1	1													0	1
1985	1.71	13.75		0													0	0
1986	1.89	10.00		0													0	0
1987	2.21	15.61		0													0	0
1988	2.27	2.68		0	-1.0												-1	-1
1989	1.43	-45.41		0	-1.0	-1	-1	-1	-1	-1	-1	-1					-8	-8
1990	1.71	17.83	1	1													0	1
1991	1.89	10.00		0													0	0
1992	2.17	13.79		0													0	0
1993	2.41	10.48		0													0	0
1994	2.57	6.43		0													0	0
1995	1.3	-65.63		0	-1.0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-11	-11
1996	1.49	13.62		0													0	0
1997	1.04	-35.57		0	-1.0	-1	-1	-1	-1	-1							-6	-6
1998	0.8	-26.09		0	-1.0	-1	-1	-1	-1								-5	-5
Grand Score																		**-28.00**

Table 22. Scoring the Financial Performance (Cash Flow Per Share) of Vicorp Rest (NDQ-VRES) over the Restaurant Industry Growth Cycle.

Year	VRES		1st Up-Tier (>16.95?	2nd Up-Tier (>23.58?)	3rd Up-Tier (>30.21?)	4th Up-Tier (>36.84?)	5th Up-Tier (>43.47?)	6th Up-Tier (>50.10?)	7th Up-Tier (>56.73?)	8th Up-Tier (>63.36?)	9th Up-Tier (>69.99?)	10th Up-Tier (>76.62?)	11th Up-Tier (>82.95?)	12th Up-Tier (>89.58?)	13th Up-Tier (>96.21?)	14th Up-Tier (>102.84?)	15th Up-Tier (>109.47?)	Score
1982	0.82																	0
1983	1.17	35.18	1	1	1													3
1984	1.73	38.62	1	1	1	1												4
1985	1.27	-30.67																0
1986	0.79	-46.60																0
1987	0.58	-30.66																0
1988	1.97	109.02	1	1	1	1	1	1	1	1	1	1	1	1	1	1		14
1989	2.4	19.68	1															1
1990	2.99	21.89	1															1
1991	3.55	17.13	1															1
1992	3.58	0.84																0
1993	4.03	11.83																0
1994	3.56	-12.38																0
1995	1.99	-56.58																0
1996	2.57	25.44	1	1														2
1997	2.92	12.75																0
1998	3.2	9.15																0
Grand Score																		

Table 22 (-Continued). Scoring the Financial Performance (Cash Flow Per Share) of Vicorp Rest (NDQ-VRES) over the Restaurant Industry Growth Cycle.

1st Down-Tier (<3.69?)	2nd Down-Tier (<-2.94?)	3rd Down-Tier (<-9.57?)	4th Down-tier (<-16.2?)	5th Down-Tier (<-22.83?)	6th Down-Tier (<-29.46?)	7th Down-Tier (<-36.09?)	8th Down-Tier (<-42.72?)	9th Down-Tier (<-49.35?)	10th Down-Tier (<-55.98?)	11th Down-Tier (<-62.61?)	Score	Total Score
											0	0
											0	3
											0	4
-1	-1	-1	-1	-1	-1						-6	-6
-1	-1	-1	-1	-1	-1	-1	-1				-8	-8
-1	-1	-1	-1	-1	-1						-6	-6
											0	14
											0	1
											0	1
											0	1
-1											-1	-1
											0	0
-1	-1	-1									-3	-3
-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-10	-10
											0	2
											0	0
											0	0
												-8.00

The mean and mean absolute deviation value for the entire seven restaurant firms' growth fluctuations for the period of 1982 through 1998 was 10.32 and 6.63 respectively. The dotted line on Figures 15 through 21 represents the mean value of the entire seven restaurant firm's growth fluctuations for the period. Accordingly, the 1st upper tier of the average growth is 16.95 and the 2nd upper tier is 23.58, and so on. If the firm's growth goes down below 3.69, then it cross the1st downward tier, and so on.

The results of the evaluation of the firms' financial performances with scoring for the purpose of classification are reported in Table 23 and Figure 22. For the seven restaurant firms, the range of the score is from -28 points to 33 points. This study uses the following criteria: High--Top 1/3 (33.33%) of the scores; Neutral--Middle 1/3 of the scores; Low--Bottom 1/3 of the scores. The scoring system classified Cracker Barrel (NDQ-CBRL) Ryan's Family Steak (NDQ-RYAN) into High Performers; Bob Evans Farms (NDQ-BOBE) and Luby's Cafeterias (NYSE-LUB) into Neutral Performers; Piccadilly (NYSE-PIC), Shoney's Inc. (NYSE-SHN), and Vicorp Rest (NDQ-VRES) into Low Performers.

Table 23. Classification of the Restaurant Firms: High Performers, Neutral, and Low Performers.

High Performers	**Points**	**Neutral**	**Points**	**Low Performers**	**Points**
Cracker Barrel (NDQ-CBRL)	16	Bob Evans Farms (NDQ-BOBE)	-3	Piccadilly (NYSE-PIC)	-16
Ryan's Family Steak (NDQ-RYAN)	33	Luby's Cafeterias (NYSE-LUB)	-2	Shoney's Inc. (NYSE-SHN)	-28
				Vicorp Rest (NDQ-VRES)	-8

Note: High--Top 1/3 (33.33%) of the scores; Neutral--Middle 1/3 of the scores; Low--Bottom 1/3 of the scores. Range: lowest score (-28) - highest score.

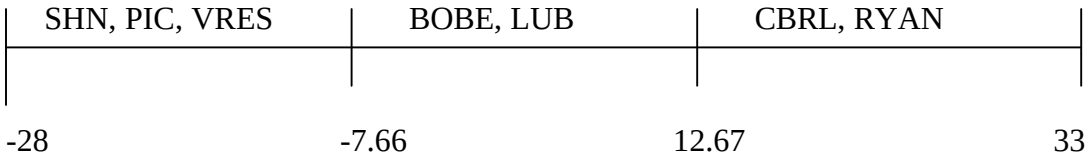


Figure 22. Classification of the Restaurant Firms: High Performers, Neutral, and Low Performers.

V-2. Practicing Financial Strategies over the Industry Growth Cycles and Their Patterns

The preceding section classified the restaurant firms into high and low performers. The distinct differences of financial performance were identified. Then, how did the high/low performers exercise financial strategies over the industry cycles to become a high/low performer? As can be seen in Chapter One, this study proposed that each group (high and low performing restaurant firms) has different patterns of financial practices for the changes of the restaurant industry growth cycles. The results of the testing of this proposition are reported in this section.

Figure 23 shows the directions (Expansion (+)/Contraction (-)) of the restaurant industry growth cycles. As can be seen in Figure 23, the restaurant industry, in a year to year analysis, experienced 6 expansions and 10 contractions for the period of 1982 through 1998. Only the period (1982-1998) is examined in this study because of data availability. The directions of the industry cycles (called "events" hereafter) and each group's directions in financial practices were examined in Figures 24 through 30 and Cohen's kappa (Cohen, 1960) was reported in Tables 24 through 37 (See Chapter three).

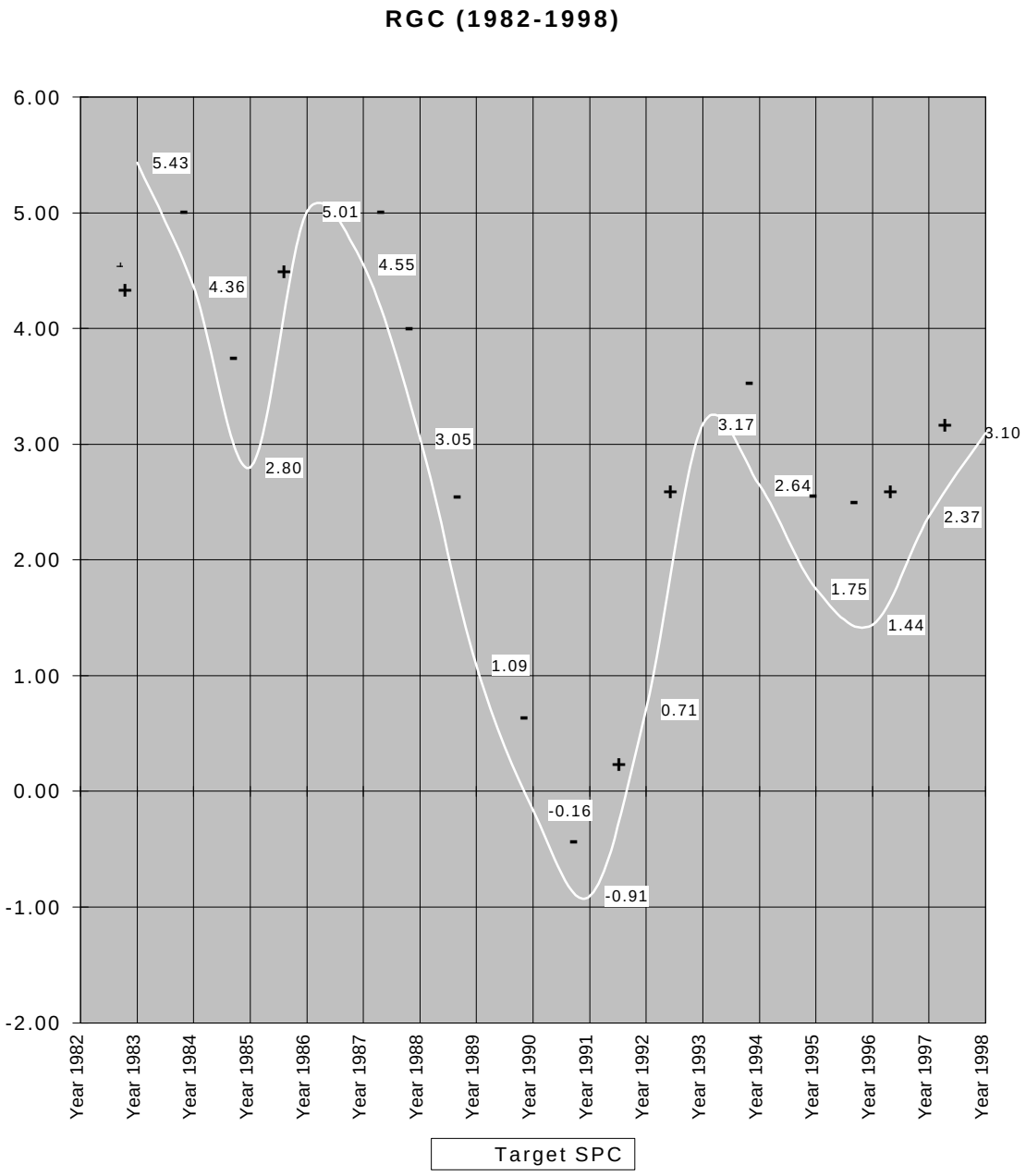


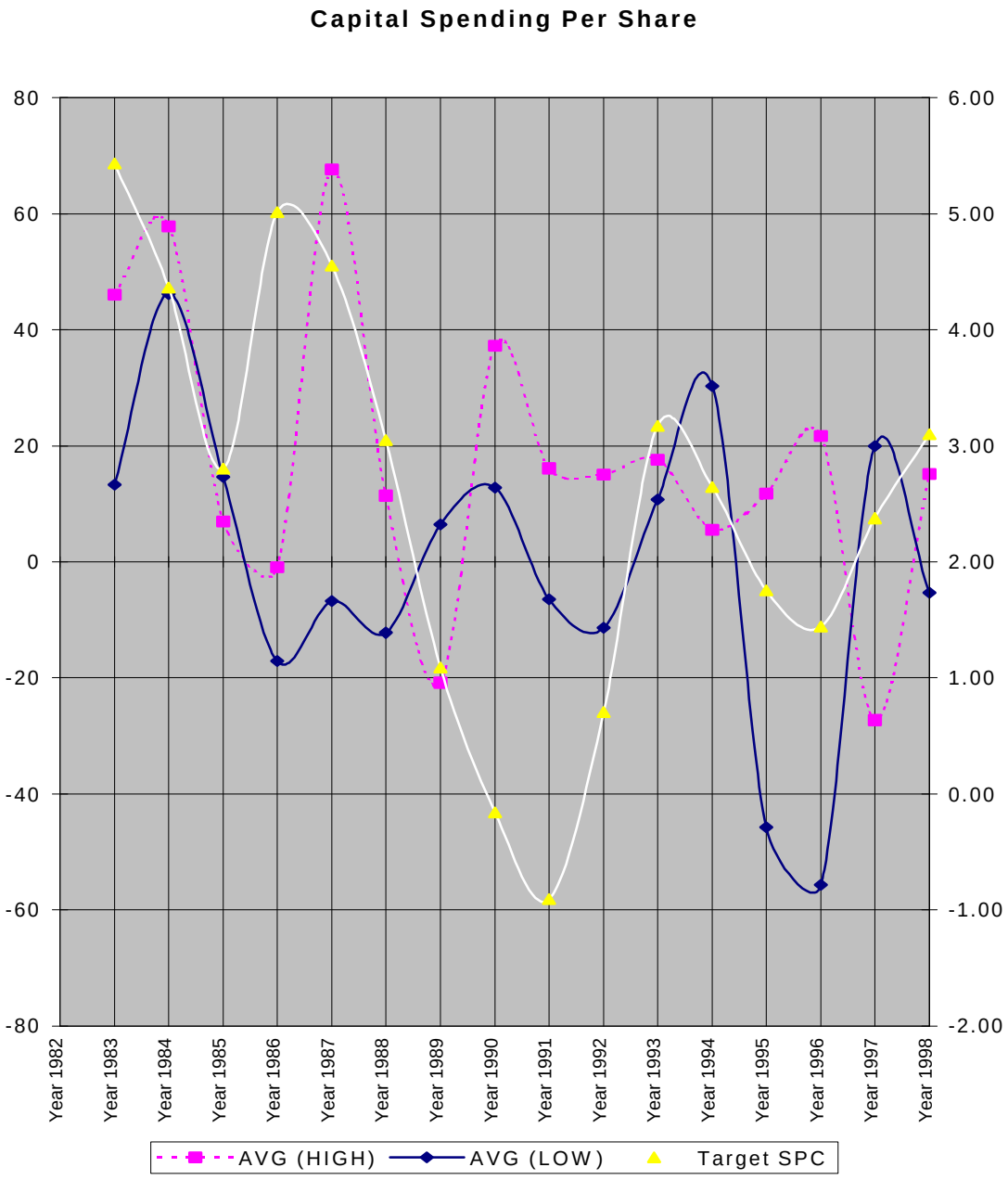
Figure 23. The Events (Expansion (+)/Contraction (-)) in the Restaurant Industry Growth Cycles.

Capital Spending

Figure 24 shows the patterns (Expansion (+)/Contraction (-)) of the firms capital spending over the industry cycle and Tables 24 and 25 represent a cross tabulation of high and low performers' capital spending by the changes of the industry growth cycles. For both groups, the measure of agreement, kappa (k), after correcting for chance is .000. This leads to a conclusion that high and low performers' capital spending patterns did not significantly go along with the events in the industry cycles. Their capital spending practices were matched or mismatched with the events of the industry cycles just by chance. No significant relationship is found.

Common Share Outstanding

Figure 25 and Tables 26 and 27 represent patterns and a cross tabulation of high and low performers' managing common shares outstanding by the changes of the industry growth cycles. For both high and low performing groups, the measure of agreement, kappa (k), after correcting for chance is .200 and -.419 respectively. This leads to a conclusion that high performers' common shares outstanding did not significantly mirror the events in the industry cycles except the contraction part of the cycle (See Figure 25 and Table 26). On the other hand, the low performers managed the common shares outstanding in quite opposite ways of the events of the industry cycles. As the industry contracted ten times the low performers expanded the common shares outstanding six times. As the industry expanded six times the low performers contracted the common shares outstanding five times (See Figure 25 and Table 27). The pattern is fairly significant.



Note: AVG: Average value of financial variable of the high performing group (HIGH) and low performing group (LOW)

Figure 24. Financial Practices (Capital Spending, % Changes) of the High and Low Performers over the Restaurant Industry Growth Cycle.

Table 24. The Kappa Measure of Agreement: High Performers Capital Spending.

RGC Direction (Growth) * High-Firm Direction (Capital Spending per Share) Crosstabulation

			High-Firm Direction (Capital Spending per Share)		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	5	5	10
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%
	Expansion	Count	3	3	6
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%
Total		Count	8	8	16
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	.000	.242	.000	1.000
N of Valid Cases		16			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table 25. The Kappa Measure of Agreement: Low Performers Capital Spending

RGC Direction (Growth) * Low-Firms Direction (Capital Spending per Share) Crosstabulation

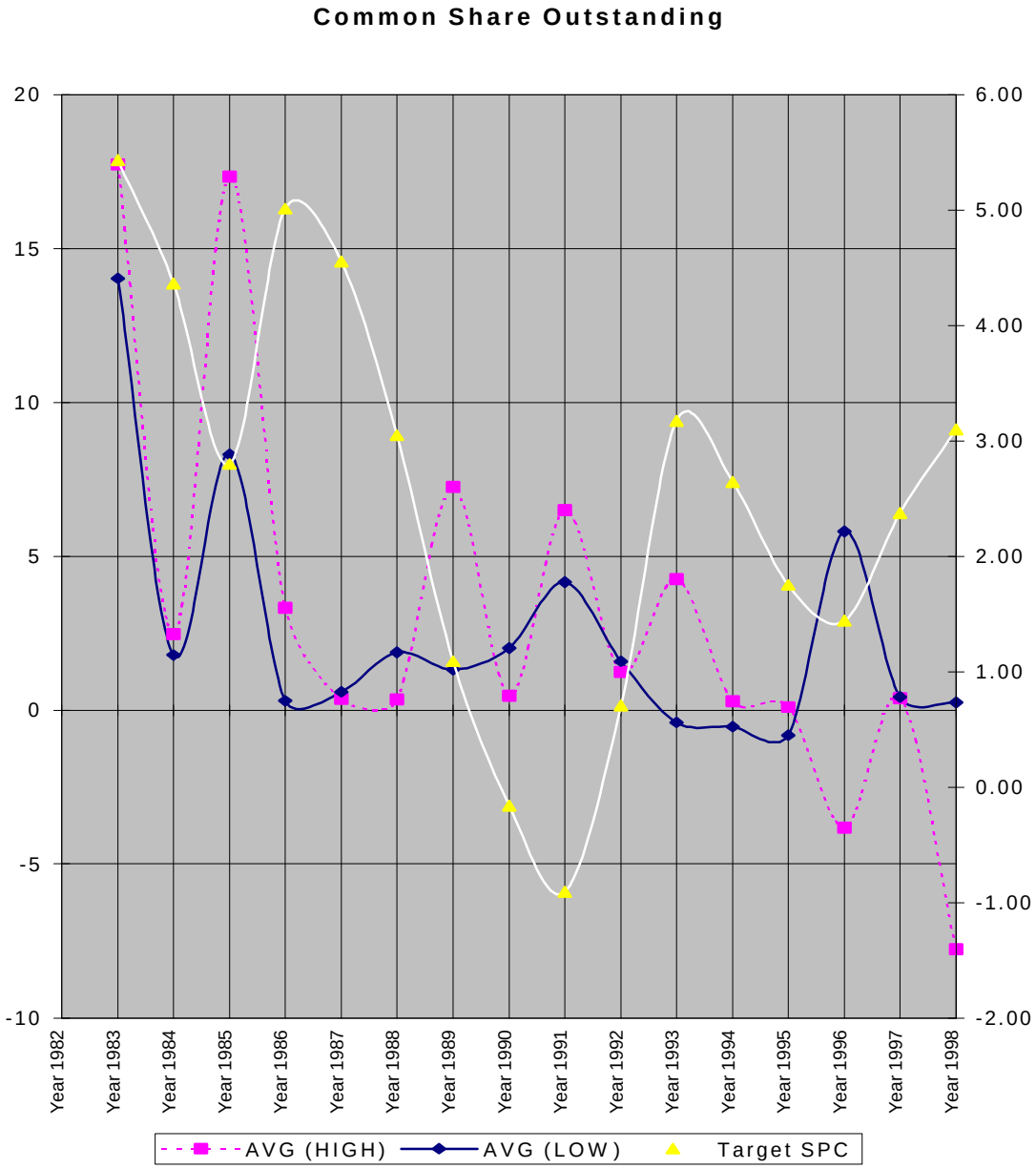
			Low-Firms Direction (Capital Spending per Share)		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	5	5	10
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%
	Expansion	Count	3	3	6
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%
Total		Count	8	8	16
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	.000	.242	.000	1.000
N of Valid Cases		16			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.



Note: AVG: Average value of financial variable of the high performing group (HIGH) and low performing group (LOW)

Figure 25. Financial Practices (Common Share Outstanding) of the High and Low Performers over the Restaurant Industry Growth Cycle.

Table 26. The Kappa Measure of Agreement: High Performers' Common Share Outstanding.

RGC Direction (Growth) * High- Common Share Outstanding Crosstabulation

			High- Common Share Outstanding		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	7	3	10
		% within RGC Direction (Growth)	70.0%	30.0%	100.0%
	Expansion	Count	3	3	6
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%
Total		Count	10	6	16
		% within RGC Direction (Growth)	62.5%	37.5%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	.200	.250	.800	.424
N of Valid Cases		16			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table 27. The Kappa Measure of Agreement: Low Performers' Common Share Outstanding

RGC Direction (Growth) * Low- Common Share Outstanding Crosstabulation

			Low- Common Share Outstanding		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	4	6	10
		% within RGC Direction (Growth)	40.0%	60.0%	100.0%
	Expansion	Count	5	1	6
		% within RGC Direction (Growth)	83.3%	16.7%	100.0%
Total		Count	9	7	16
		% within RGC Direction (Growth)	56.3%	43.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	-.419	.212	-1.692	.091
N of Valid Cases		16			

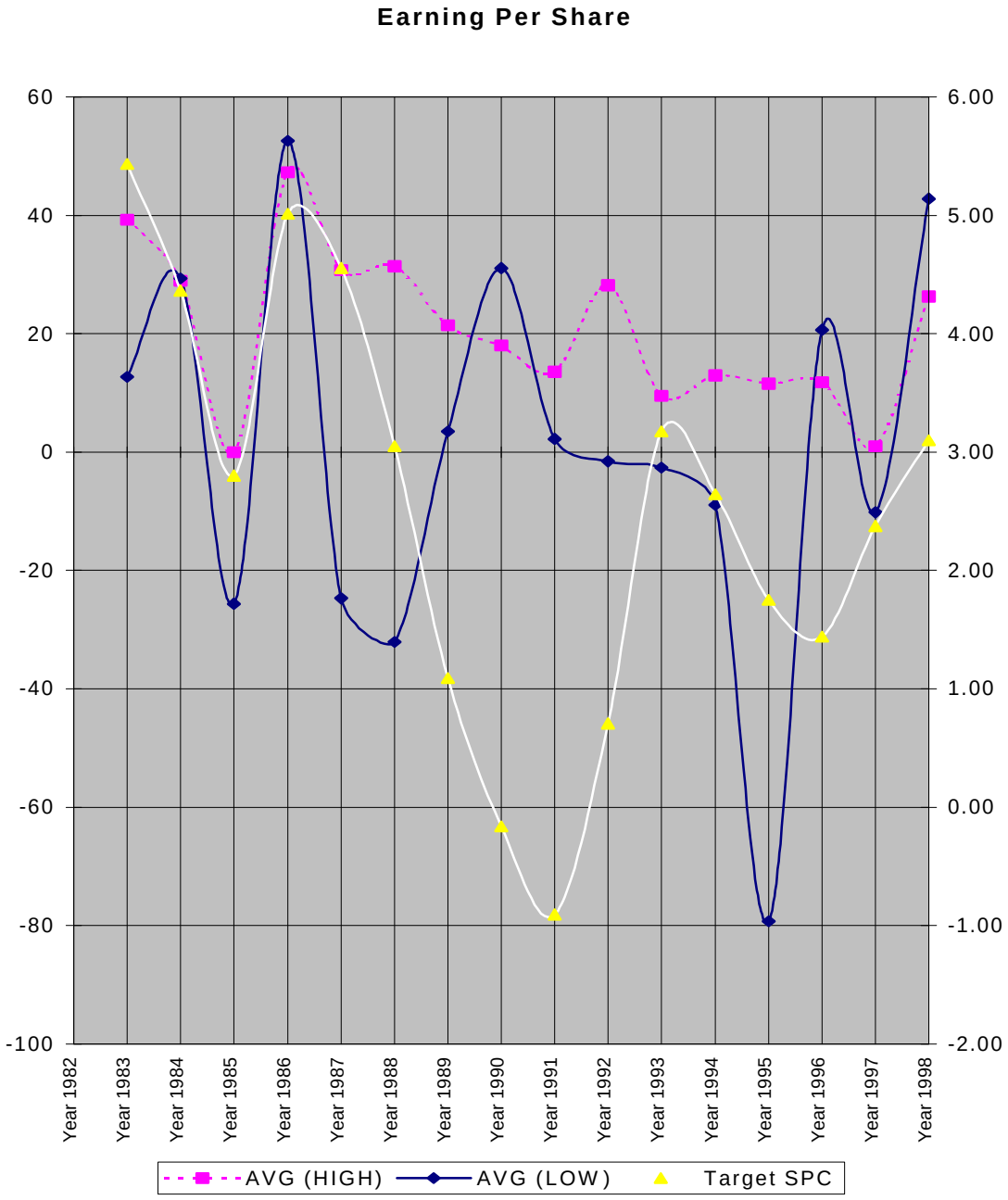
a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Earning Per Share (EPS)

Figure 26 shows the directions (Expansion (+)/Contraction (-)) of the firms' EPS over the industry cycle and Tables 28 and 29 represent a cross tabulation of high and low performers' Earning per Share by the changes of industry growth cycles. Earning Per Share is a common profitability ratio and is a function of the asset and the capital structure of a firm. It is used for comparative analysis of operating performance and valuation either directly or with market prices in the familiar form of price/earning ratios (White, Sondhi, and Fried, 1993). Changes in EPS is a clue for capturing financial practices of a firm. The reduction of common stock outstanding by the issuing establishment's purchase of its own stock (treasury stock) results in an increased EPS, all other things equal. Further, EPS is expected to increase as a firm reinvests earning in its operations because a larger profit can then be generated without a corresponding increase in shares outstanding (Andrew and Schmidgall, 1993).

For the high and low performing groups, the measure of agreement, kappa (k), after correcting for chance is .355 and .097 respectively. This leads to the conclusion that high performers' EPS went along in the fairly same direction as the events in the industry cycles. On the other hand, low performers present their changes of EPS having no pattern over the industry cycles.



Note: AVG: Average value of financial variable of the high performing group (HIGH) and low performing group (LOW)

Figure 26. Financial Practices (Earning Per Share) of the High and Low Performers over the Restaurant Industry Growth Cycle.

Table 28. The Kappa Measure of Agreement: High Performers' EPS

RGC Direction (Growth) * High-Earning Per Share Crosstabulation

			High-Earning Per Share		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	7	3	10
		% within RGC Direction (Growth)	70.0%	30.0%	100.0%
	Expansion	Count	2	4	6
		% within RGC Direction (Growth)	33.3%	66.7%	100.0%
Total		Count	9	7	16
		% within RGC Direction (Growth)	56.3%	43.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	.355	.235	1.431	.152
N of Valid Cases		16			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table 29. The Kappa Measure of Agreement: Low Performers' EPS

RGC Direction (Growth) * Low-EPS Crosstabulation

			Low-EPS		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	6	4	10
		% within RGC Direction (Growth)	60.0%	40.0%	100.0%
	Expansion	Count	3	3	6
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%
Total		Count	9	7	16
		% within RGC Direction (Growth)	56.3%	43.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	.097	.248	.390	.696
N of Valid Cases		16			

a. Not assuming the null hypothesis.

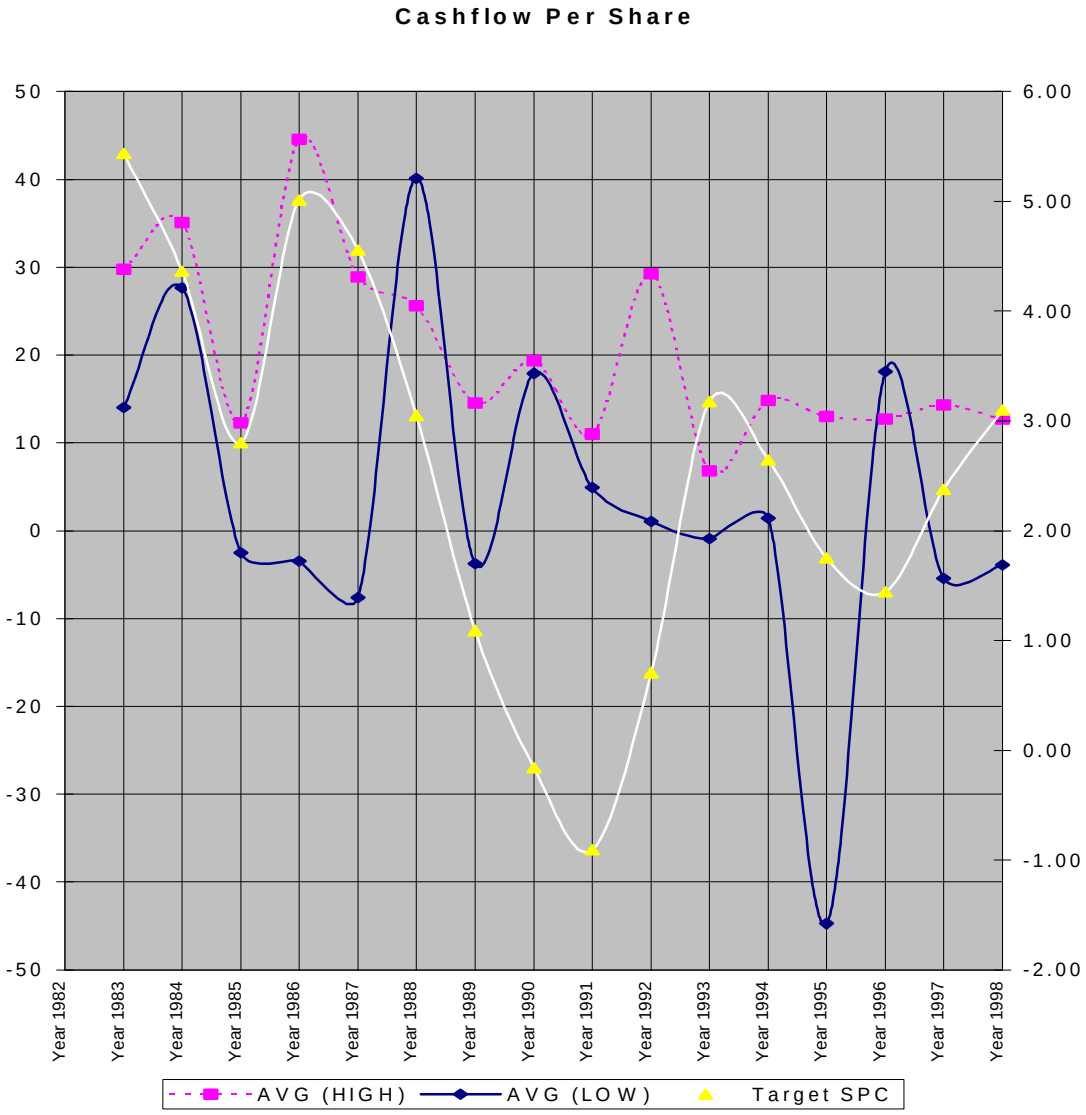
b. Using the asymptotic standard error assuming the null hypothesis.

Cash Flow Per Share (CFPS)

Figure 27 shows the directions (Expansion (+)/Contraction (-)) of the firms' CFPS over the industry cycle and Tables 30 and 312 represent a cross tabulation of high and low performers' CFPS in relation to the changes of the industry growth cycles. For both groups, the measure of agreement, kappa (k), after correcting for chance are .355 and -.161. This leads to the conclusion that high performers' cash management corresponds fairly closely to the events in the industry cycles. About 70 % of their contraction directions matched and about 66.7 % of the expansion directions matched. A fairly significant relationship is found. However, low performers managed cash without having any pattern over the events in the industry cycles.

Book Value

Figure 28 shows the directions (Expansion (+)/Contraction (-)) of the firms' Book Value over the industry cycle and Table 32s and 33 represent a cross tabulation of high and low performers' managing assets of their firms in relation to the changes of the industry growth cycles. For the high and low performing groups, the measure of agreement, kappa (k), after correcting for chance is .250 and -.067 respectively. This means high performers manage their assets fairly well according to the events in the industry cycles. These statistics also tell us that the low performers do not show any pattern in terms of managing their assets in relations to the events in the industry cycles.



Note: AVG: Average value of financial variable of the high performing group (HIGH) and low performing group (LOW)

Figure 27. Financial Practices (Cash Flow per Share) of the High and Low Performers over the Restaurant Industry Growth Cycle.

Table 30. The Kappa Measure of Agreement: High Performers' CFPS

RGC Direction (Growth) * High-CFPS Crosstabulation

			High-CFPS		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	7	3	10
		% within RGC Direction (Growth)	70.0%	30.0%	100.0%
	Expansion	Count	2	4	6
		% within RGC Direction (Growth)	33.3%	66.7%	100.0%
Total		Count	9	7	16
		% within RGC Direction (Growth)	56.3%	43.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	.355	.235	1.431	.152
N of Valid Cases		16			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table 31. The Kappa Measure of Agreement: Low Performers' CFPS

RGC Direction (Growth) * Low-CFPS Crosstabulation

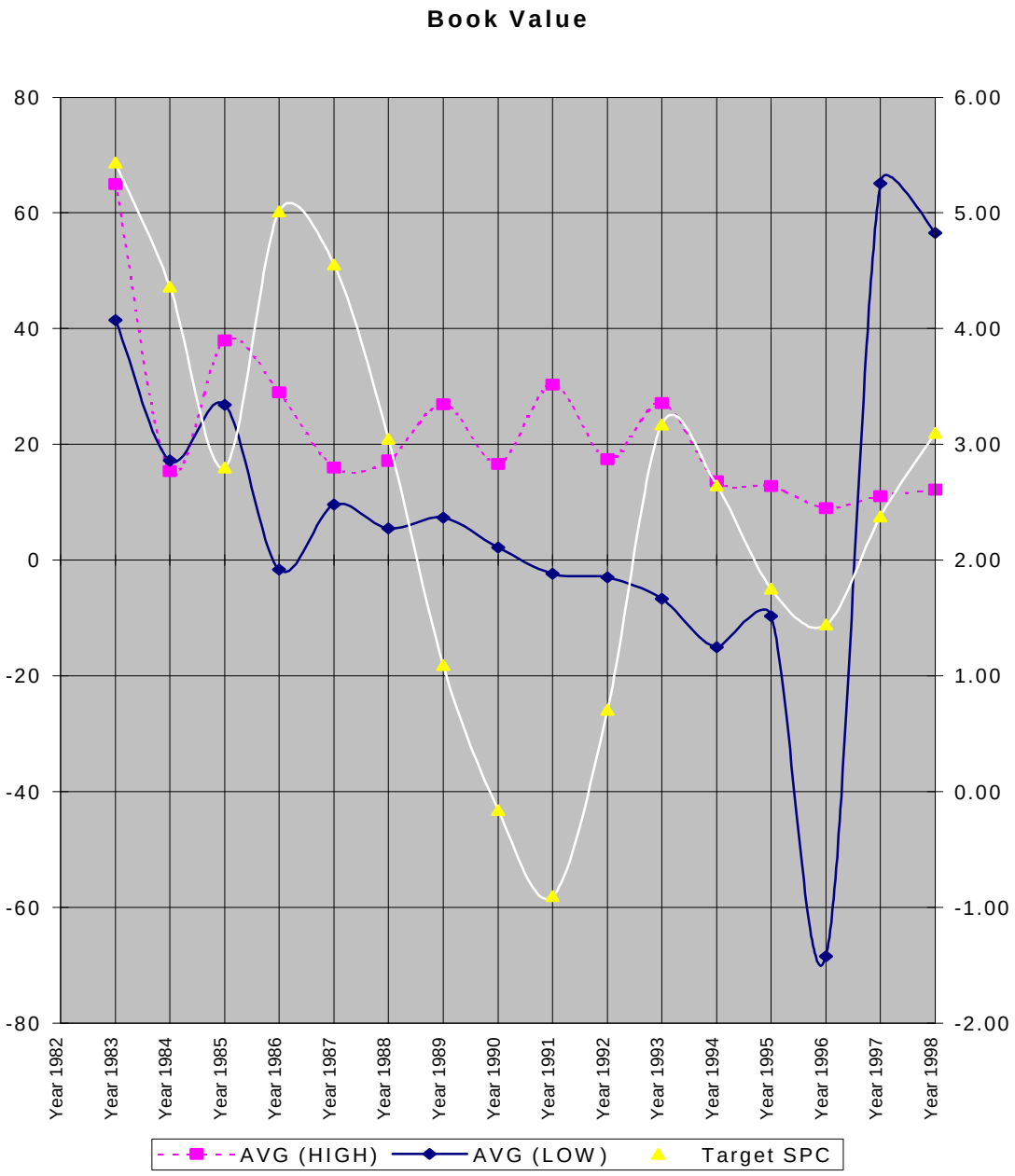
			Low-CFPS		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	5	5	10
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%
	Expansion	Count	4	2	6
		% within RGC Direction (Growth)	66.7%	33.3%	100.0%
Total		Count	9	7	16
		% within RGC Direction (Growth)	56.3%	43.8%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	-.161	.241	-.651	.515
N of Valid Cases		16			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.



Note: AVG: Average value of financial variable of the high performing group (HIGH) and low performing group (LOW)

Figure 28. Financial Practices (Book Value - Asset) of the High and Low Performers over the Restaurant Industry Growth Cycle.

Table 32. The Kappa Measure of Agreement: High Performers' BV-Asset

RGC Direction (Growth) * hIGH-Book Value per Share Crosstabulation

			hIGH-Book Value per Share		
			Contraction	1.00	Total
RGC Direction (Growth)	Contraction	Count	6	4	10
		% within RGC Direction (Growth)	60.0%	40.0%	100.0%
	Expansion	Count	2	4	6
		% within RGC Direction (Growth)	33.3%	66.7%	100.0%
Total		Count	8	8	16
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	.250	.234	1.033	.302
N of Valid Cases		16			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table 33. The Kappa Measure of Agreement: Low Performers' BV-Asset

RGC Direction (Growth) * Low-Book Value per Share Crosstabulation

			Low-Book Value per Share		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	6	4	10
		% within RGC Direction (Growth)	60.0%	40.0%	100.0%
	Expansion	Count	4	2	6
		% within RGC Direction (Growth)	66.7%	33.3%	100.0%
Total		Count	10	6	16
		% within RGC Direction (Growth)	62.5%	37.5%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	-.067	.247	-.267	.790
N of Valid Cases		16			

a. Not assuming the null hypothesis.

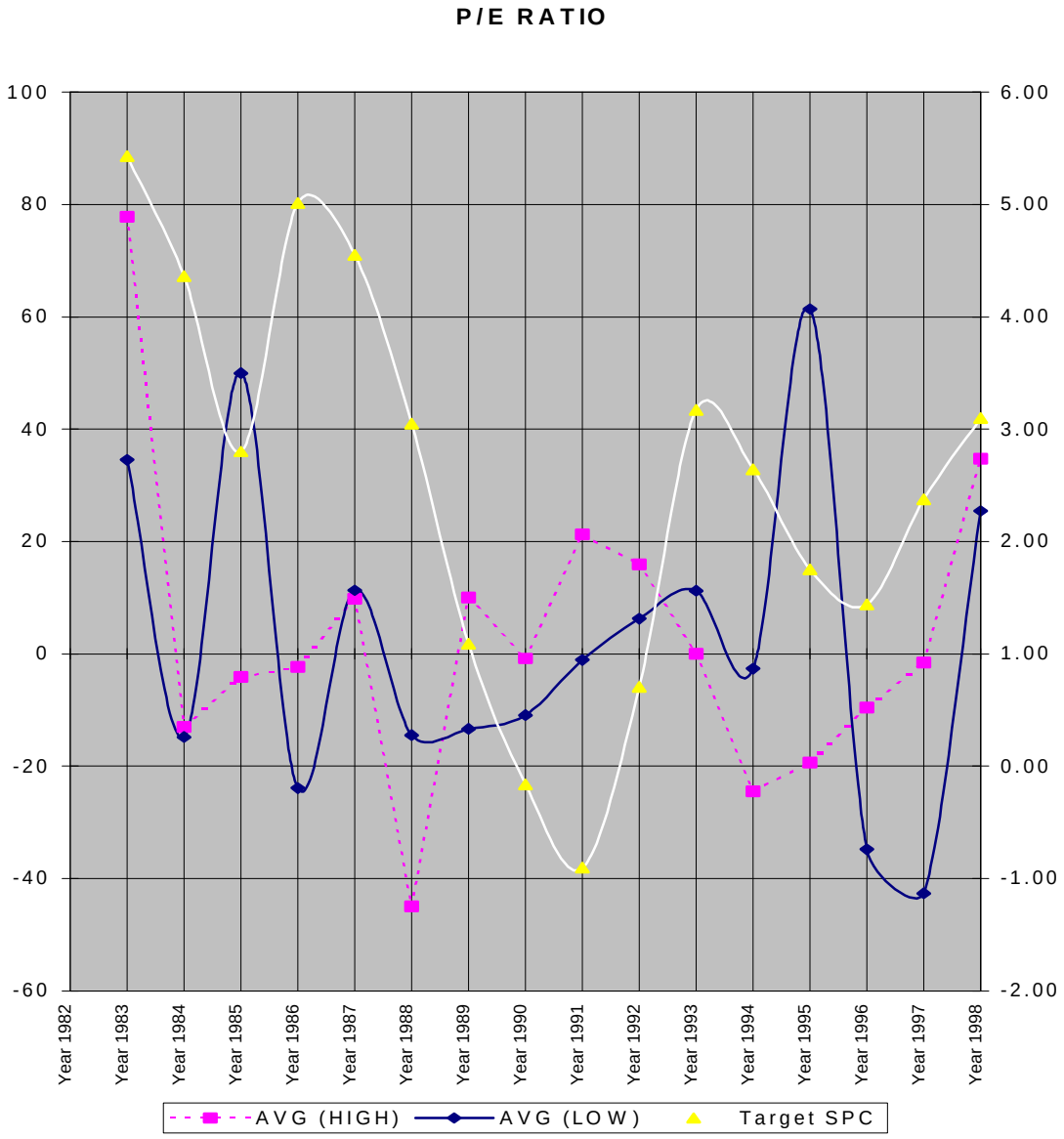
b. Using the asymptotic standard error assuming the null hypothesis.

Price Earning Ratio (P/E Ratio)

Figure 29 shows the directions (Expansion (+)/Contraction (-)) of the firms' P/E Ratio over the industry cycle and Tables 34 and 35 represent a cross tabulation of high and low performers' P/E Ratio in relation to the changes of the industry growth cycles. For both groups, the measure of agreement, kappa (k), after correcting for chance is .059. This leads to the conclusion that high and low performers' P/E ratio management does not show any pattern over the events in the industry cycles.

Long-Term Debt

Figure 29 shows the directions (Expansion (+)/Contraction (-)) of the firms' Long-Term Debt over the industry cycle and Tables 36 and 37 represent a cross tabulation of high and low performers' managing debt in relation to the changes of the industry growth cycles. For the high and low performing groups, the measure of agreement, kappa (k), after correcting for chance is .250 and -.50 respectively. Both high and low performers managed their long-term debt fairly well according to the events in the industry cycles. Their patterns, however, are quite opposite. The high performers more likely try to match the directions of decisions (expansions/contractions) for their debt level according to the events in the industry cycles but low performers do not. The low performers expanded their debt level as the industry contracted its growth and contracted as the industry expanded. Significant relationships are found.



Note: AVG: Average value of financial variable of the high performing group (HIGH) and low performing group (LOW)

Figure 29. Financial Practices (P/E ratio) of the High and Low Performers over the Restaurant Industry Growth Cycle.

Table 34. The Kappa Measure of Agreement: High Performers' P/E Ratio

RGC Direction (Growth) * High-P/E Ratio Crosstabulation

			High-P/E Ratio		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	4	6	10
		% within RGC Direction (Growth)	40.0%	60.0%	100.0%
	Expansion	Count	2	4	6
		% within RGC Direction (Growth)	33.3%	66.7%	100.0%
Total		Count	6	10	16
		% within RGC Direction (Growth)	37.5%	62.5%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	.059	.218	.267	.790
N of Valid Cases		16			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table 35. The Kappa Measure of Agreement: Low Performers' P/E Ratio

RGC Direction (Growth) * Low-P/E Ratio Crosstabulation

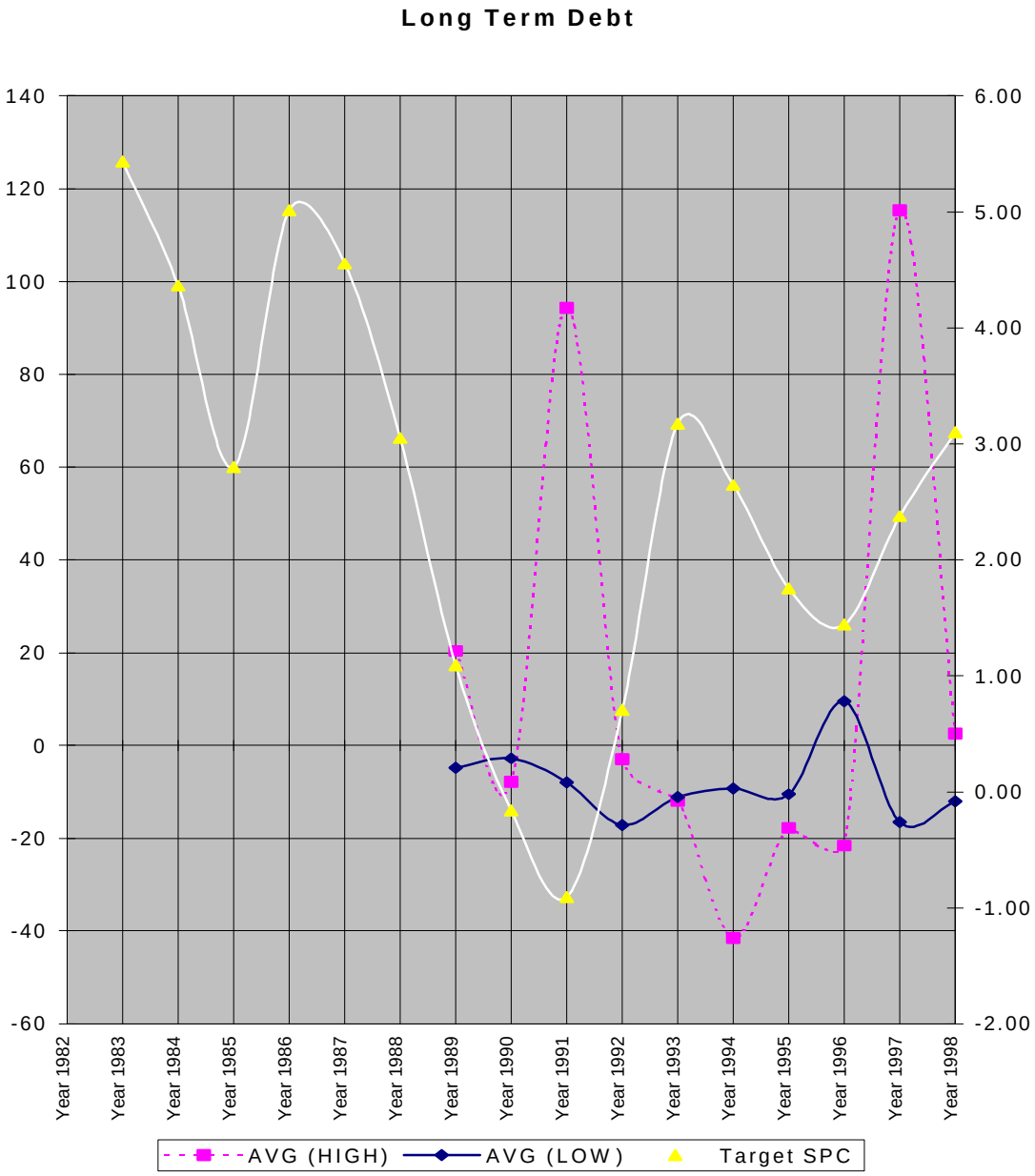
			Low-P/E Ratio		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	4	6	10
		% within RGC Direction (Growth)	40.0%	60.0%	100.0%
	Expansion	Count	2	4	6
		% within RGC Direction (Growth)	33.3%	66.7%	100.0%
Total		Count	6	10	16
		% within RGC Direction (Growth)	37.5%	62.5%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	.059	.218	.267	.790
N of Valid Cases		16			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.



Note: AVG: Average value of financial variable of the high performing group (HIGH) and low performing group (LOW)

Figure 30. Financial Practices (Long-Term Debt) of the High and Low Performers over the Restaurant Industry Growth Cycle.

Table 36. The Kappa Measure of Agreement: High Performers' L-T Debt

RGC Direction (Growth) * High-LT-Debt Crosstabulation

			High-LT-Debt		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	3	1	4
		% within RGC Direction (Growth)	75.0%	25.0%	100.0%
	Expansion	Count	2	2	4
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%
Total		Count	5	3	8
		% within RGC Direction (Growth)	62.5%	37.5%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	-.500	.306	-1.414	.157
N of Valid Cases		8			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table 37. The Kappa Measure of Agreement: Low Performers' L-T Debt

RGC Direction (Growth) * Low-LT-Debt Crosstabulation

			Low-LT-Debt		
			Contraction	Expansion	Total
RGC Direction (Growth)	Contraction	Count	1	3	4
		% within RGC Direction (Growth)	25.0%	75.0%	100.0%
	Expansion	Count	3	1	4
		% within RGC Direction (Growth)	75.0%	25.0%	100.0%
Total		Count	4	4	8
		% within RGC Direction (Growth)	50.0%	50.0%	100.0%

Symmetric Measures

		Value	Asymp. Std. Error [a]	Approx. T [b]	Approx. Sig.
Measure of Agreement	Kappa	.250	.331	.730	.465
N of Valid Cases		8			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Summary

This chapter has reported the results of the study. For the first part of the study, the restaurant industry cycle model and its economic indicator system were developed and tested for performance. Examining the financial practices of high and low performing restaurant firms is a main issue in part two of this study. The classification of the restaurant firms was performed and graphic presentations of the financial performance of each firm were reported. The two classified groups of restaurants were tested in terms of their financial practices over the industry cycles whether there were significant differences between the two groups and reported in this chapter. The findings will be discussed and elaborated upon in the next chapter.

CHAPTER 5: DISCUSSION AND CONCLUSIONS

Introduction

In the previous chapter, the results of all the analyses performed on objectives of this study were reported. In this chapter those results are discussed with reference to the major proposition of this study and the associated objectives that were set up in the earlier chapter. The limitations of this study, suggestions for future research, and insights gained while conducting the analysis are presented.

Summary of Findings

In the context of the propositions, this study has yielded the following results for the six sub objectives developed in previous chapter.

1. The first of the propositions states that "The U.S restaurant industry reacts in different ways to the business cycle fluctuation of the US economy. This proposition is well supported by the following summary of results. The U.S. restaurant industry demonstrated three cycles (peak to peak or trough to trough) for the period of 1970 through 1998. The restaurant industry peaked in 1973, 1979, and 1989. The industry troughed in 1970, 1974, 1980, and 1991. The mean duration of the restaurant industry cycles is 8 years (SD: 2) calculated by peak to peak and 6.5 years (SD: 2.08) calculated by trough to trough. Expansion takes an average of 6 years in the restaurant industry but declines sharply after it reaches the peak taking an average of 1.33 years.

The restaurant industry experienced high growth (boom) every five years on the average. The troughs of the growth cycles, contrasted to the peaks of the growth cycles, coincided with those of the restaurant industry business cycles in each case except one (1985). During that year a low growth phase interrupted industry business expansion but did not terminate it. As would be expected, growth cycles are more frequent than industry business cycles, for example, there were five growth cycle upturns in the 1970-1998 period but 3 industry business peaks during the same period.

Restaurant industry growth cycles, then, tend to be relatively symmetrical: since 1970 the average duration was about 2.25 years for both expansion (L-H) and contraction (H-L). In contrast, the restaurant industry business cycles in the same period show a strong asymmetry: the expansions lasted on the average of 6 years; the contractions, 1.33 years. The expansions have varied in duration much more than the high growth phases have (the respective standard deviations are 2.58 and 0.95 years).

2. The second proposition states that "The cyclical fluctuations of the growth of the restaurant industry can be projected by measuring and analyzing series of economic indicators." This proposition is well supported by this study. The performance of the economic indicator system was presented in Table 15.

3. The third proposition states that "Each economic indicator has specific characteristics in terms of time lags, and thus can be classified into leading, coincident, and lagging indicators." This proposition is closely related to the second proposition and it is supported by this study. Among fifty-six indicators thirty-eight indicators demonstrated their distinct characteristics in terms of time relationships with the restaurant industry cycle. This study classified twelve indicators in the leading category, six as coincident, and twenty as lagging (see Table 13).

4. The fourth proposition states that "The compilation of groups of indicators into composite indicators is necessary because no single indicator is perfect in explaining the time lag relationships with industry cycles, and the composite indices can be used for forecasting the future turning points of the industry's growth." This proposition is closely related to proposition three and turned out to be correct.

5. The fifth proposition states that "It is believed that financial strategies practiced by high performing restaurant firms are independent of the cyclical fluctuations of the industry cycles. The results for this proposition are mixed. Specifically, the high performing firms'

financial practices regarding investment decisions measured by capital spending, and price earning ratio, and part of financing and dividend decisions measured by market value of common share outstanding are independent of the cyclical fluctuations of the industry cycles. But, their practices regarding dividend decisions measured by the earning per share, investment decision measured by cash flow per share, and financing decisions measured by asset value per share and long term debt level are dependent on the events (Expansion/Contractions) in the Restaurant Industry Cycles. Conclusively, high performers exercise their capital investment (reflected by capital spending) and equity management (reflected by common shares outstanding and P/E ratio) independently while being less influenced by the industry swings. They exercise, however, their working capital management (reflected by cash flow per share), earning management (reflected by EPS), asset management, and long term debt management quite dependently while being more influenced by the industry swings. Table 38 summarizes these results.

Table 38. Summary of the Kappa Measure of Agreement for the Events (Expansion/Contractions) in the Restaurant Industry Cycles and those of High Performers' Financial Practices

Financial Practices	Significant Relationship with the Events in the Industry Cycle?	Direction	Kappa level
Capital Spending	No	No pattern	.000
Common Shares Outstanding	No*	No pattern	.000
EPS	Yes	Same direction	.355
Cash Flow Per Share	Yes	Same direction	.355
Book Value- Asset	Yes	Same direction	.250
P/E	No	No pattern	.059
Long Term Debt	Yes	Same direction	.250

Note: * significant for contraction strategies.

6. The sixth proposition states that "It is believed that financial strategies practiced by low performing restaurant firms are independent from the cyclical fluctuations of the industry cycles. The results for this proposition are mixed but the financial practices exercised by the low performing firms are most likely independent from the events in the industry cycle. Although some financial practices are related to the events in the industry cycle, the directions are opposite to the events in the industry cycle. Specifically, for all of the selected financial strategies except common shares outstanding and long-term debt, the low performers practice them independently from the cyclical fluctuations of the industry cycles. Even for common shares outstanding and long-term debt strategies, they practiced their strategies in directions opposite the events (Expansion/Contractions) in the Restaurant Industry Cycles. Table 39 summarizes these results.

Table 39. Summary of the Kappa Measure of Agreement for the Events (Expansion/Contractions) in the Restaurant Industry Cycles and those of Low Performers' Financial Practices

Financial Practices	Significant Relationship with the Events in the Industry Cycle?	Direction	Kappa level
Capital Spending	No	No pattern	.000
Common Shares Outstanding	Yes	Opposite direction	-.419
EPS	No	No pattern	.097
Cash Flow Per Share	No	No pattern	-.161
Book Value- Asset	No	No pattern	-.067
P/E	No	No pattern	.059
Long Term Debt	Yes	Opposite direction	-.500

Proposed Hypothesis

The summary of findings allow us state that:

1. The restaurant industry is characterized as cyclical. The industry also reacts in different ways to the business cycle fluctuations of the U.S. economy.

1-1: The mean duration of the restaurant industry cycle is 8 years calculated by peak to peak and 6.5 years calculated by trough to trough.

1-2: Expansion takes an average of 6 years in the restaurant industry but declines sharply after it reaches the peak taking an average of 1.33 years.

1-3: The restaurant industry experiences high growth (boom) every five years on average.

1-4: The restaurant industry growth cycles tend to be relatively symmetrical in contrast to the restaurant industry business cycles showing a strong asymmetry.

2. The economic indicator system is not universal. The restaurant industry has particular systems that can fit its own structure.

2-1: The cyclical fluctuations of the growth of the hotel industry can be projected by measuring and analyzing a series of economic indicators.

2-2: Each economic indicator has specific characteristics in terms of time lags, and thus can be classified into leading, coincident, and lagging indicators.

2-2-1: The following indicators signal in advance a change in the basic performance of the restaurant industry as a whole: Compensation per hours in business sectors (% change), General business failure rate, Foreign Exchange rates (Yen per U.S. dollar), New York stock exchange composite index, Output per hour of all persons (business sector), index number, Population (total), Saving percentage of disposable income, Unemployment rate, Unemployment rate, persons unemployed 15-26 weeks, Construction cost index, Average weekly initial claims for unemployment insurance, Consumer expectation (Index of Bureau of Economic Analysis)

2-2-2: The following indicators are those whose movements coincide with, and provide a measure of, the current performance of restaurant industry activity: Consumer confidence, Disposable income, Dow Jones Industrial Average, Hours

of all persons in business sector, percentage change, Index of leading economic indicators, overall economy, Building permits, new private housing units

2-2-3: The following indicators are those whose movements lag with the current restaurant industry activity: Preferred stock yield index (yield in percent), Common stock price-earning ratio, CPI for food and beverage, CPI for motor fuels, CPI for food away from home, CPI - U, Discount rate on new issues of 91-day Treasury-bill, Federal fund rate, GDP of service, Average daily rate (hotel industry), Revenue per available room (hotel industry), Manufacturers' new orders in non-durable goods industries, Prime interest rate charged by banks, Dividend yield percent (high), Gross private domestic investment (nonresidential), billions of dollars, The total new construction (value put in place, billions of dollars), Unit labor costs in business sector, percentage change, Total value put in new commercial building construction (billions of dollars), Wages & salaries in service industry, Index of coincident economic indicators, overall economy, Index of lagging economic indicators, overall economy

2-3: Since no single indicator is perfect for explaining the time lag relationships with the industry cycles, the compilation of groups of indicators into composite indicators is necessary. The composite indices are used for forecasting the future turning points (peaks and troughs) in the industry cycle.

2-4: The turning points of the leading composite index series lead the turning points of actual industry growth series by a certain time lag. The turning points of the coincident composite index series coincide with the turning points of the actual industry growth. Finally, the turning points of the lagging composite index series lag the turning points of actual industry growth by certain time differences. Each index can serve as a forecasting and examining tool for the industry growth.

3. The high and low performing restaurant firms have different patterns of financial practices for the changes of the restaurant industry cycles.

3-1: The high performers' financial practices of capital spending, market value of common shares outstanding, and price earning ratio are independent of the cyclical fluctuations of the industry cycles.

3-2: The high performers' financial practices of EPS, CFPS, book value per share, and long term debt management are dependent of the cyclical fluctuations of the industry cycles.

3-3: The low performers' financial practices of capital spending, EPS, cash flow per share, book value per share, P/E ratio are independent of the cyclical fluctuations of the industry cycles.

3-4: The low performers' financial practices of market value of common share outstanding and long-term debt are dependent of the cyclical fluctuations of the industry cycles, but they practices their strategies in directions opposite the cyclical fluctuations of the industry cycles.

Contribution of This Study

Part I

As stated in Chapter One, this research is beneficial in terms of its contribution to both the restaurant industry and the academic community. Benefits to the restaurant industry will be gained from a better understanding of the characteristics of the cyclical fluctuations of the industry activity. Industries react in different ways to the business cycle fluctuations of the U.S. economy (Berman Pfleeger, 1997). Some industries are very vulnerable to economic swings, while others are relatively immune to them. Understanding the industry requires an understanding of how it interacts with the rest of the economy. Before this study, however, there had been no effort to develop a study of the restaurant industry cycle model and its economic indicator system. There were no systematic forecasting studies for the restaurant industry as a whole and no restaurant industry business cycle study and its economic indicator system. As stated in Chapter One, most of the related studies are discussions and thus hard to apply to dynamic and complex economic trends and therefore an industry's overall trends. Part I of this study provided a systematic restaurant industry cycle model and its economic indicator system that can be used for forecasting industry cyclical trends. The specific results were presented in the previous section. With these results it is expected that people in this

industry can gain insight into the nature of the industry cycle and thus eliminate or reduce the risk in terms of decision making over the industry swings.

The academic community, specifically disciplines of study focusing on hospitality and tourism, can benefit from research that attempts to quantify time relationships between various economic indicators and the restaurant industry that have never been addressed in the past.

Part II

Part II of this study was an attempt to gain a possible advantage for the industry cycle study. It examined the financial practices of high and low performing restaurant firms over the industry swings. Industry analysis is the starting point for almost any strategic plan. It is the process through which managers can evaluate the factors within the environment critical for business success (Bernhardt, 1993). To have an effective strategy, competitive intelligence should focus on information related to competitor analysis, environmental trends, and market dynamics (Sammon, Kurland, and Spitalnic, 1984; Cartwritht, Boughton, and Miller, 1995). Analyzing the variety of competitors within the industry can be immensely helpful in predicting future industry conditions (Kight, 1996). Part II of the study focused on the financial practices of the high and low performers over the industry cycles. This study found that there are significant differences between high performers' financial practices and low performers'. The patterns of exercising their financial strategy over the industry cycles are different. The results presented in the previous sections will provide significantly different financial strategies of high and low performing restaurant firms. Accordingly, the results can provide managers with the capability to foresee the impact on industry structure and evolution, and to gain founding information for exercising their best financial practices. Analyzing the dynamic relationships and revealing the financial practices of the high performing restaurant firms over the industry cycle will provide competitive advantages in the market.

Discussions and Concluding Remarks

Successful forecasting requires expert blending of economic theory, significant statistical expertise, and thorough familiarity with the relevant statistical data. It should utilize both quantitative and qualitative information. The users must have the ability to distinguish between new facts that are important and those that are not. They must be competent to judge under what conditions past relationships can be relied upon and when they cannot. They must be able to appreciate the effects of nonmeasurable socioeconomic and political forces upon business activities. In other words, forecasting is, and, probably will remain, more an art than a science.

Clearly, indicators provide a picture of the ebb and flow of industry tides that a skillful analyst of the industry can use to improve the chances of making a valid forecast of short-run industry trends.

A financial strategy is a comprehensive plan or action orientation that sets critical direction and guides the allocation of resources in a firm. Any financial practice is decision making to establish expansion or contraction of resources. Choice of a firm's financial practices, according to the events in the industry cycle, turns out to be important to obtain a sustainable advantage. According to the research findings of this study, they suggest that the high performers appear to be more systematic with regard to financial practices and strategy choices in the context of industry cycles. The firms who selected their directions of financial practices strategically along with the events in the industry cycle performed significantly well. The high performers adjust all their practices with a great deal of flexibility and specialty. They had very formal patterns for selecting financial practices according to the events in the industry cycle. This finding bears out a study of Tse (1991) who found that high performers are less centralized, more formalized, and specialized than low performers. West (1988) also supported the research finding. His study found that "High performing firms in both differentiation and low cost strategies

were found to engage in significantly greater amounts of environmental scanning than low performing firms."

Financial performance of a firm is a function of influences and organizational characteristics in addition to the choices of organizational leaders. It is a multidimensional phenomenon that is influenced by factors such as strategy, structure, and relative competitive strength. It is true that a firm's success lies in the decisions made by the leaders who identify opportunities, develop strategies, assemble resources, and take initiatives (Low and MacMillan, 1988).

Industry analysis is the starting point for a strategic plan. It is the process through with managers can evaluate the factors within the environment critical for business success (Bernhardt, 1993). To have an effective strategy, as Sammon et al. (1984) said, competitive intelligence should focus on information related to competitor analysis, competitive trends, and market dynamics. They have to incorporate probable future developments and changes in the structure of the industry.

The study of the impact of the industry cycle on restaurant firms and their financial practices over the cycle warrants our attention. The research findings of this study say that there are differences in terms of financial practices of high and low performers. Certainly, the complications posed by the restaurant industry cycles call for different strategies. Mascarenhas and Aaker (1989) analyzed strategy over the business cycle and concluded that firms adjusted their strategies significantly and Ruggeri (1991) explained the usefulness of the cycle study for forecasting future directions of a business. Inability to identify and respond to how external changes reflect on the industry cycle would subject the firm to serious competitive attacks. Choice of strategy should be a function of the requirements of the environment and the type of performance being sought at the time. Any strategy begins with decision making to establish where one wants to go and how one intends to get there. Every strategy, in turn, is supposed to guide the behavior and set the direction of an organization in its environment. This study, along with the above six

propositions, concludes that industry cycle study provides useful information for maximizing the effectiveness of financial strategy management.

Limitation

The practical and fundamental limitation of this study is data availability. Ideally, monthly or quarterly data for certain time periods are required to improve the accuracy of the analysis. Unfortunately, data on a monthly basis for key economic variables (to permit a comprehensive study of the economic fluctuations in the restaurant industry) are very limited as far as the restaurant industry is concerned. Short-term data on the restaurant industry are either not available or, where they are available, did not begin until quite recently. No detailed data on output are available for the restaurant industry on less than an annual basis. These limitations led this study to eliminate the possible variables related to the restaurant industry from the list of final indicators for forming an economic system. The insufficient data also limits the study of financial practices over the industry cycle. The number of companies included in this study is only seven in the family restaurant segment. Care must be taken in applying the results to another segment of the restaurant industry.

Another limitation of the indicator system is that the indicators are selected mainly in accordance with their historical performance. Their timing patterns will change with changes in the structure of the economy, in consumers' preferences, in managerial decision procedures, and in the reactions of business and government to changing business conditions.

Because of these limitations, the results of this study must be used together with other data and with full awareness of the background of business and consumer confidence and expectations, governmental policies, and international events.

Agenda for Future Study

Future research possibilities, directly related to this study, would include tracking the performance of individual indicators continuously. By conducting the

research, a set of good indicators over time for the restaurant industry can be given. Once the good indicators are defined and selected, the indicator system should improve its accuracy of forecasting and usefulness. Some areas of interest that have risen as a result of this study would include developing a statistical indicator system for specific interest groups such as individual firms, regions, states, and countries. As stated through this study the indicator system is not universal. Different individuals or organizations will have a different system that can fit their own structures.

Another possible area that can be explored is analyzing the relationships among indicator groups. Possibly there could be some causal relationships among leading, coincident, and lagging indicators. If the future study can find some causal relationships among them, the results could contribute to research in the restaurant industry.

Finally, evaluating financial practices of more firms will insure the result of the findings. By doing so the results can be generalized with more confidence. Further the events in each firm's business for a certain period of time will also increase the understanding of major trends in the practice of the financial strategies.

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Founder and President: (1987-1988)

* Kyung Hee Culinary Science-Kyung Hee Hotel Administration College, Korea.

Projector and General Manager: (May 1988)

* "The World Food Festival" -Kyung Hee Hotel Administration College, Korea.

Exhibitor:

* Michigan State University Booth of the National Hotel, Restaurant Show in Chicago, USA (1993)

PROFESIONAL ASSOCIATIONS/AFFILIATIONS

* Association of Hospitality Financial Management Educators (AHFME)
* Council on Hotel, Restaurant and Institutional Education (CHRIE)

PROFESSIONAL ACTIVITIES:

Paper Reviewer: Reviewed papers submitted to 1997 and 1999 Annual CHRIE Conference.

PROFESSIONAL INDUSTRY EXPERIENCE:

January 1995 - present

Research Associate

Conducted researches for the International Hotel and Restaurant Association (IH&RA) White Paper on the Global Hospitality Industry and now working on equivalent IH&RA publication for the restaurant sector

May - August, 1995

Management/Operation Controller

Farm House Restaurant, Christiansburg, Virginia, USA

* Performed continual internal, external environmental scanning and developed financial strategies. Duties were pricing and cost control, purchasing, receiving, storing, issuing, quality control, and menu development

May - August, 1994

Professional Management Training

Sheraton Hotel, Lansing, Michigan, USA

September, 1993 - March, 1994

Executive Housekeeper Intern

Kellogg Center Hotel, Michigan State University, East Lansing, Michigan, USA

* Exercised whole Room Division functions.

July, 1989 - November, 1989

Sales Manager

Duc-Soo Bakery Production, Seoul, Korea.

* Supervised the Sales Department and worked closely with the general manager and president.

May, 1988 - July, 1989

Assistant Chef

Korean-Airline Hotel, Seoguipo, Jejudo, Korea, & Korean Airline Catering Center, Seoul, Korea

* Supervised kitchen staff and assisted chef in management functions.

July - September, 1987

Food and Beverage Summer Intern

Sheraton Walker Hill Hotel, Seoul, Korea.

SPECIAL EXPERIENCE:

Military Services August 1983 – February 1986

March, 1999

CONSULTING EXPERIENCE:

* For the Korea House Restaurant, East Lansing, Michigan, Pricing & Menu Development. Summer, 1994.
* For the Korea House Restaurant, East Lansing, Michigan, Pricing & Menu Development. Winter, 1997.

PROFESSIONAL GRANTED RESEARCH EXPERIENCE:

January, 1997 – March 15, 1999

Co-Principle Investigator with Dr. Olsen, M.D.:
Conducted a research project to determine the scale of the international restaurant industry, econometric multivariate analysis for the global restaurant Industry, restaurant industry trends in Asia, focused on Korea. Funded by the International Hotel and Restaurant Association.

January, 1995 - September, 1996

Co-Principle Investigator with Dr. Olsen, M.D.:
Conducted a research project to determine the size and scale of the international hotel industry for a White Paper on the Global Hotel Industry. Funded by the International Hotel and Restaurant Association.

September, 1993 - March, 1994

Researcher (Task Force):
Contributed to a research project named "VISA Asia/Pacific Project" on developing a video designed for training food and beverage employees in Asia. Funded by the American Hotel and Motel Association, Educational Institution.

PROFESSIONAL TEACHING EXPERIENCE:

August, 1997 - May, 1998
Instructor: Hospitality Strategic Financial Management and Cost Control (HTM 3444)
Department of Hospitality and Tourism Management, Virginia Polytechnic Institute and State University, USA

August, 1996 – August, 1997
Instructor: Hospitality Industry Field Study (HTM 2964, HTM 4964)
Department of Hospitality and Tourism Management, Virginia Polytechnic Institute and State University, USA

August, 1996 – August, 1997
Kitchen Lab Instructor: Food Service Management (Green Garden) in HTM Department
Department of Hospitality and Tourism Management, Virginia Polytechnic Institute and State University, USA

September, 1994 - May, 1995
Teaching assistant: Hospitality Strategic Finance
Department of Hospitality and Tourism Management, Virginia Polytechnic Institute and State University, USA

January, 1993 - December, 1994
Tutor: Finance, Mathematics and Accounting
The School of Hospitality Business, Michigan State University, USA

March, 1999

PUBLICATION

Refereed Journal Articles - International

Choi, Jeong-Gil, Woods, R.H., & Murrmann, S.K. (1999). "International Labor Markets and the Migration of Labor Forces as an Alternative Solution for Labor Shortage in the Hospitality Industry." International Journal of Contemporary Hospitality Management, Vol.11, No.6

Choi, Jeong-Gil, Olsen, M.D., and Kwansa, F. A. (1999). "Forecasting Industry Turning Points: The U.S. Hotel International Journal of Hospitality Management, Forthcoming, Edition #1015.

Choi, Jeong-Gil (1997). "A Review of Current Financial Issues facing the International Hotel Industry." The Journal of Hospitality Financial Management, Vol. 5, No. 1

Weaver, P., **Choi, Jeong-Gil**, Tammie, K (1997). " Question Wording and Response Bias: The Case of Students' Perceptions of Ethical Issues in the Hospitality and Tourism Industry." Hospitality and Tourism Educator, Vol. 9, No.2.

Choi, Jeong-Gil & Han, Jin-Soo (1996). "The worldwide Hotel Industry - Its Size, Scope, and Economic Impact." The Korea Academic Society of Tourism and Leisure, 8(2), 235-244.

Choi, Jeong-Gil (1996). "Scientific Management Theories and Philosophy in the Food Service Industry." Korean Food and Beverage Research Society, Vol. 6, 289-303.

Refereed Conference Proceedings - International

Choi, Jeong-Gil, Uysal, Muzaffer. (1998). "Forecasting International Tourist Flows and Destination Switching Patterns: A Markov Chain Analysis." Proceedings of the 1998 CHRIE Conference

Choi, Jeong-Gil, Olsen, M.D., & Kwansa, F. A. (1997). "Developing an Economic Indicator System (A Forecasting Technique) for the Hotel Industry." Proceedings of the 1998 CHRIE Conference

Choi, Jeong-Gil, Olsen, M.D., and Kwansa, F. A. (1997). "Hotel Industry Cycle - An analysis of cyclical characteristics of hotel business." Advances in Hospitality and Tourism Research. Vol. 2. Proceedings of the Second Conference on Graduate Education and Graduate Student Research. Las Vegas, Nevada

Industry Trade Publications and Special Reports - International

Choi, Jeong-Gil (1999). Congress Report: Forces Driving Changes in the Casual Theme Restaurant Industry. *One to One: Marketing in the Interactive Age*, The International Hotel and Restaurant Association, Paris, France, pp. 16-17.

Olsen, M. D. & **Choi, Jeong-Gil** (1996). "The Scale of the International Hotel Industry - A Statistical Analysis", *Into the New Millennium: A White Paper on the Global Hospitality Industry*, The International Hotel Association, Paris, France, pp. 15-26.

Olsen, M. D. & **Choi, Jeong-Gil** (1995). *The worldwide Hotel Industry - Its Size and Scope*. The Hotel and Motel Management, November 6.

March, 1999

PAPERS IN BLIND REVIEW PROCESS FOR PUBLICATION:

Final Revision
Choi, Jeong-Gil (1999). "Developing an Economic Indicator System for the Hotel Industry." Hospitality Research Journal

First Round Revision
Choi, Jeong-Gil, & Connolly, D.J. (1999). "Investment in the Information Technology and Technology Intensity Measures of the Hotel Industry." Journal of Hospitality Finance

Choi, Jeong-Gil (1998). "Forecasting International Tourist Flows and Destination Switching Patterns: A International Journal of Hospitality Management

PAPERS IN PROCESS FOR PUBLICATION:

* Hotel General Managers' Differences in Perceptions of Strength and Weaknesses Indicators and Environmental Uncertainty.
* Strategic Hospitality Financial Management over the Industry Cycles.
* Analysis of the Financial Performance of the Hospitality Industry Based upon Property Sizes.

PAPER PRESENTATION:

International/Invited

October 22 - 26, 1998, International Hotel Association Congress '98, Manila, Philippine
Worldwide Restaurant Industry White Paper
Panel Discussion for the Restaurant Industry in Asia

October 31 - November 6, 1995, International Hotel Association Congress '95, Tel Aviv, Israel
Worldwide Hospitality Industry Statistics, General Agreement on Trade in Services (GATS). Sustainable tourism and the environment. Presented by Michael D. Olsen, Ph.D. Virginia Polytechnic Institute & State University.

International Refereed Presentations
July 29 - August 1, 1998, Miami, Florida, USA
Forecasting International Tourist Flows and Destination Switching Patterns: A Markov Chain Analysis.
1998 Annual CHRIE (Council on Hotel, Restaurant, and Institutional Education) Conference.

August 6 - 9, 1997, Providence, Rhode Island, USA
Developing an Economic Indicator System (A forecasting technique for the hotel industry)
1997 Annual CHRIE (Council on Hotel, Restaurant, and Institutional Education) Conference.

January 6 - 8, 1997, Las Vegas, Nevada, USA
Hotel Industry Cycle - An analysis of cyclical characteristics of hotel business
Second Conference on Graduate Education and Graduate Student Research, Las Vegas, Nevada

March, 1999

A brief about Jeong-Gil Choi

Jeong-Gil Choi was born in Yangpyeong, Korea in April of 1963. Choi launched his academic career at the Kyung-Hee Hotel Administration College in Seoul, Korea. He holds a Bachelor of Arts degree in Hotel, Restaurant, and Institutional Management from The School of Hospitality Business in Michigan State University, and a Master of Science degree and Ph.D. degree with a concentration in hospitality strategic financial management from Virginia Polytechnic Institute and State University.

Throughout his school years, Choi has been acknowledged as an honor student for his academic and research excellence. He received a full academic scholarship throughout his college years in the Kyung Hee Hotel Administration College and Dean's recognition for outstanding academic performance at Michigan State University. In 1995, he was awarded a scholarship for his academic and research excellence by the Korean American Foundation. He also has served his community by performing several services. He was the founding student president of the Kyung Hee Culinary Science organization and served as the Vice President of the Graduate Hospitality and Tourism Association at Virginia Tech. As a member of CHRIE (Council on Hotel, Restaurant, and Institutional Education), he also served as a paper reviewer for the conferences of that organization.

In over fifteen years of hands-on experience in industry and academe, Choi has accomplished important tasks in the following areas: conducting projects, publishing articles, teaching students, consulting industry people, and creating new knowledge.

Choi has worked on several international projects and participated in international conferences. For example, he has conducted several projects for the International Hotel Association. Some of his works were published in a White Paper on the Global Hospitality Industry by the International Hotel Association and presented at the IHA Congress 95', Tel Aviv, Israel, and in the IH&RA Congress '98, Manila, Philippine. His academic works include tens of articles in both trade and professional journals, and Choi has presented his research findings routinely at international and national conferences. He has taught undergraduate courses including a Hospitality Financial Management and Cost Control course and Hospitality Industry Field Study course at Virginia Tech. Working with industry, he has diligently consulted several hospitality management concerns in Korea and the USA.

Currently, in his major field of hospitality strategic finance, Choi is focusing on developing hospitality and tourism industry forecasting models and business strategies, demand and supply analysis, local and international economic condition analysis, business cycle analysis, and Markov chain analysis. He seeks to be a financial economist who will create new knowledge for the hospitality industry. He is now working on a global restaurant industry White Paper for the IH&RA to identify comprehensive relationships that play important roles within and beyond the global hospitality industry.

The academic and career goals that he made when he launched his career in the hospitality industry are the same as those of today. He wants to be an educator, a contributory researcher, an industry consultant, and a leader in his fields. His family including his wife (Kyeong-Ran Yang), his daughter (Allis SuhJung Choi), and his lovely son (Alvin Jinsung Choi), accompanies with him in God.

Jeong-Gil Choi