THE MARKET PERFORMANCE OF FRANCHISE COMMON STOCK: A COST OF EQUITY PERSPECTIVE

E. Hachemi Aliouche, Ph.D.
Rosenberg International Center of Franchising
Whittemore School of Business and Economics
University of New Hampshire

Fred Kaen, Ph.D.
Whittemore School of Business and Economics
University of New Hampshire

Udo Schlentrich, Ph.D.
Rosenberg International Center of Franchising
Whittemore School of Business and Economics
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1. Introduction

From an investor's perspective, common stock returns represent a return on investment. However, from the company's perspective, these returns represent its cost of equity capital – the return the company must earn based on the returns available to investors elsewhere on equally risky investments. In efficient markets, the company's stock would be priced (and the stock price would unfold) such that the investor would earn, on average, neither more nor less than this opportunity cost of capital. Consequently, we can use ex post measures of investor returns on common stock to evaluate whether investors had mispriced franchise company common stocks either because they over or underestimated ex ante the company's cost of equity capital or they over or underestimated the returns the companies were able to earn on their investments. The measures we use to evaluate investor returns are Jensen's alpha and the Sharpe ratio. Both measures provide information about whether an investment earned more or less than its risk adjusted required rate of return or what, from a company's perspective, is its cost of equity capital.

We find that, over the full sample period (1990-2005) and most of the sub periods, a portfolio of franchise stocks outperformed the benchmarks. The only notable exception was the 1995-2000 period, the period associated with the internet boom.

Our study is organized as follows: We describe the companies in our sample in Section 2. Our research procedures and data are described in Section 3. Our empirical results are reported in Section 4. Section 5 contains our analysis and conclusions.

2. Franchising and Franchise Companies

The US Department of Commerce has defined franchising as follows: "Franchising is a method of doing business by which a franchisee is granted the right to engage in offering, selling, or distributing goods or services under a marketing format which is designed by the franchisor. The franchisor permits the franchisee to use the franchisor's trademark, name, and advertising" (Kostecka, 1987, p.2). Franchising is present in a large number of sectors of the US economy, and even dominates in some service sectors. For example, 56 percent of fast food restaurants are franchises (PriceWaterhouseCooper, 2004). In a survey of 2,471 franchise systems over the 2002-2006 period, the International Franchise Association reported franchise operations in 18 broad business categories. Of these 2,471 franchise systems, 20 percent were fast food restaurants, 12 percent were in retail, 11 percent were service businesses, 8 percent provided maintenance services, 6 percent automotive, 5 percent real estate, and 5 percent building and construction. (International Franchise Association, The Profile of Franchising, 2006).

As franchising grew in popularity, a number of franchisors and multiple franchise owners took their companies public through IPOs. Furthermore, a number of individual franchises were spun off by their publicly or privately owned companies, including Chipotle Mexican Grill, Burger King, Jackson Hewitt Tax Services, Texas Roadhouse,

Tim Hortons, Domino's Pizza, and Realogy Corp. Using data from a number of sources, including company Uniform Franchise Offering Circulars (UFOCs), SEC filings, *Entrepreneur* magazine, and the CRSP financial database, we estimate that the market capitalization of all US based publicly traded franchise companies grew from $26 billion in 1990 to $240 billion in 2005.

Our franchise sample consists of those publicly traded companies that identified franchising as their primary business format. These companies were culled from the *Entrepreneur* magazine's "Franchise 500" listings, UFOCs, Franchise Times, Bond's Franchise Guide and SEC filings. A sample of these companies is listed in Table 1.

3. Research Method and Data

3.1 Performance measures

We use two measures of whether common stock portfolios generated excess returns relative to passive benchmark portfolios. These are Jensen's alpha and Sharpe's ratio of excess returns to portfolio variance.

3.1.a. Jensen's alpha:

Jensen's alpha is based on the capital asset pricing model (CAPM) (Jones, 2004). In this model the expected return on any portfolio can be defined as follows:

$$R_{pt} \; = \; RF_t \; + \; \beta_p[R_{mt} - RF_t] \; + \; e_{pt} \qquad (1)$$

where:

R_{pt} = return on portfolio p in period t

RF_t = risk-free rate in period t

R_{mt} = return on the market in period t

e_{pt} = random error term for portfolio p in period t

$[R_{mt} - RF_t]$ = the market risk premium during period t

β_p is a measure of the portfolio's systematic risk relative to the market portfolio – the risk of assets that cannot be eliminated through diversification. A key assumption of the CAPM – or any other asset pricing model – is that investors require a risk premium only for the systematic risk of an asset.

When the CAPM equation is rewritten as (2), it can be used to test whether a portfolio generated ex post returns greater or less than what would have been required given its systematic risk.

$$R_{pt} - RF_t = \alpha_p + \beta_p [R_{mt} - RF_t] + E_{pt} \qquad (2)$$

In equation 2, $[R_{mt} - RF_t]$ is the excess return on the market portfolio or market risk premium. The ex post excess return on portfolio p is $[R_{pt} - RF_t]$. The excess return on portfolio p should be proportional to the excess return on the market portfolio given the beta or relative systematic risk of portfolio p. Under equilibrium conditions the intercept term α_t should be equal to zero, indicating that the portfolio earned exactly its risk adjusted required rate of return. A positive α_p means that the portfolio earned a

return in excess of its required rate of return. A negative α_p means that portfolio earned less than its risk adjusted return.

We interpret a positive alpha to mean that investors underestimated the returns that would be generated by a company and/or that investors overestimated the company's cost of equity capital. We interpret a negative alpha to mean that investors overestimated the returns that would be generated by a company and/or that investors underestimated the company's cost of equity capital.

3.1.b   Sharpe ratio:

The Sharpe ratio is the ratio of the portfolio's excess return to the portfolio's standard deviation (Sharpe, 1966). It is calculated as:

$$SR = [TR_p - RF] \; / \; SD_p \tag{3}$$

where:

SR = Sharpe ratio

TR_p = Average Total Return for portfolio p during a given period

RF = Average risk-free rate of return during period

SD_p = standard deviation of return for portfolio p during period

The Sharpe ratio measures the excess return per unit of total risk. The higher the ratio, the better the portfolio performance. Since it is a relative measure, it can be used to rank the performance of different portfolios.

We compare the Sharpe ratios for our portfolios to the Sharpe ratios for the benchmark portfolios. We interpret a Sharpe ratio greater than the benchmark portfolio to mean that investors had underpriced the portfolio. We interpret a Sharpe ratio less than the benchmark portfolio to mean that investors had overpriced the portfolio relative to the benchmark portfolio.

3.2 Holding periods

We calculate performance measures over our entire sample period of January, 1990 through December, 2005 as well as over a number of sub holding periods. These include: January 1990 through December 1994; January 1995 through August 2000 (the period of what some have called the equity market bubble period); and September 2000 through December 2005 (what we call the post bubble period).

We also break our sample into recessionary and non recessionary periods. The recessionary periods are July, 1990 through March, 1991 and March, 2001 through November, 2001 to determine whether the franchise firms are evaluated differently by investors depending on economic conditions.

3.3 Data

Monthly share returns were collected from the Center for Research in Securities Prices (CRSP) database for the January 1990 to December 2005 period for the US-based publicly traded firms with business format franchising as their primary source of income. Using these monthly returns, a broad franchise portfolio was built, including all active US based publicly traded franchise companies in any industry and of any size, ranging

from large cap McDonalds (over \$42 billion) to micro cap Good Times Restaurants (less than \$13 million). A broad-based index containing all the NYSE, AMEX and NASDAQ stocks in CRSP was constructed and served as our benchmark against which the franchise portfolio was measured. For illustrative purposes, the S&P 500 index was also used as an additional benchmark, as it is the benchmark most commonly used by US portfolio managers.

The risk free interest rate that we use to calculate excess portfolio and market returns is the 3-month US Treasury bill rate. It was obtained from the Federal Reserve Bank of St Louis' web site. This 3-month T-bill rate was subtracted from the franchise portfolio total monthly returns to compute the excess return $(R_t - RF_t)$, and from the CRSP index and the S&P 500 index to compute the market excess return $(R_{mt} - RF_t)$. The standard deviations of the monthly portfolio excess returns and the monthly market excess returns were computed for each sample period.

4. Empirical results

The average monthly excess return, the standard deviation, the Sharpe ratio, and the Jensen's alpha results for each period are displayed in Tables A1 through F2 in Appendix A. These are summarized in Tables 1 through 4 and Charts 1 through 4 below.
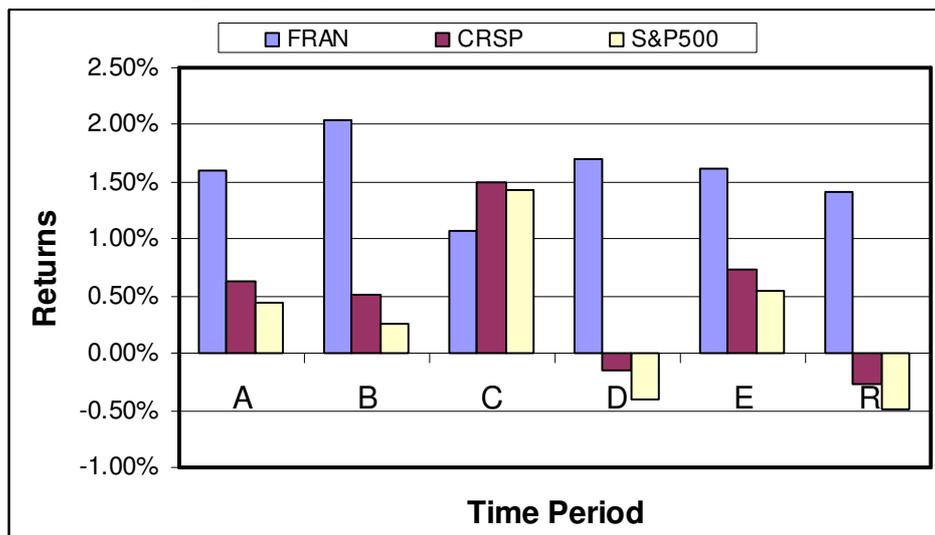
4.1.a Average monthly excess returns

Table 1 and Chart 1 below display the average monthly excess returns over all time periods. From these, we can see that:

- The franchise portfolio outperformed the CRSP index and the S&P 500 index over all

holding periods except the 1/1995-8/2000 period;

- During the recessionary periods, the franchise portfolio had positive returns while both

the CRSP index and the S&P 500 index had negative returns; and

- During the September 2000 through December 2005 holding period, the franchise

portfolio had positive returns while both the CRSP index and the S&P 500 index had

negative returns.

Table 1. Average monthly returns:

Average Monthly Returns

Period	Period	FRAN	CRSP	S&P500
1/90-12/05	A	1.59%	0.64%	0.45%
1/90-12/94	B	2.04%	0.51%	0.26%
1/95-8/00	C	1.07%	1.50%	1.44%
9/00-12/05	D	1.71%	-0.15%	-0.41%
Expansion	E	1.61%	0.73%	0.55%
Recession	R	1.41%	-0.27%	-0.49%

Chart 1. Average monthly returns

4.1. b Standard Deviations

Table 2 and Chart 2 display the standard deviations of the monthly excess returns over all holding periods. Highlights include:

- For almost all holding periods, the standard deviations of the excess returns of the franchise portfolio were higher than those for the CRSP index and the S&P 500 index; and

- The only exception is the September 2000-December 2005 holding period when the franchise portfolio had a slightly lower standard deviation than the CRSP index.

Table 2. Standard deviations

Standard Deviations

Period	Period	FRAN	CRSP	S&P500
1/90-12/05	A	0.0503	0.0420	0.0409
1/90-12/94	B	0.0552	0.0346	0.0346
1/95-8/00	C	0.0504	0.0426	0.0415
9/00-12/05	D	0.0451	0.0460	0.0436
Expansion	E	0.0474	0.0401	0.0393
Recession	R	0.0747	0.0582	0.0544

Chart 2. Standard deviations
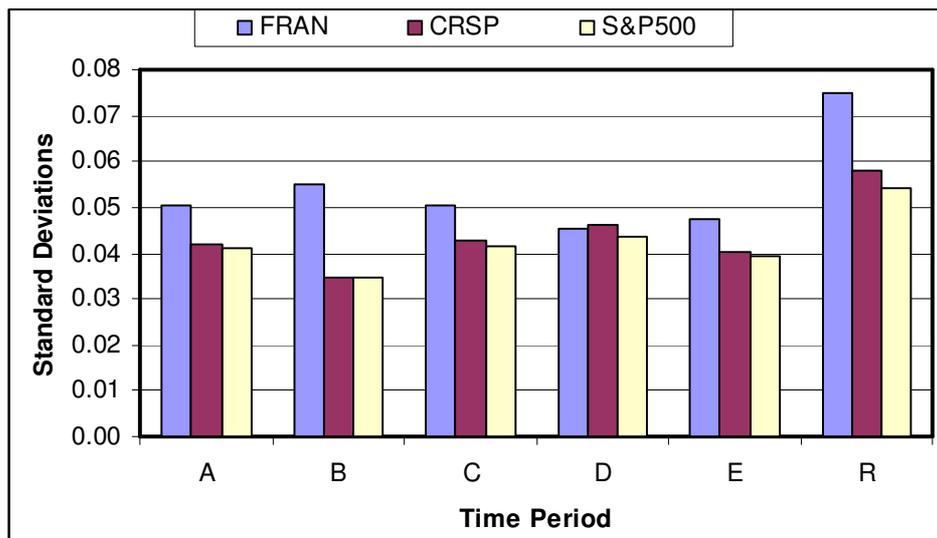
4.1.c Sharpe Ratios

Table 3 and Chart 3 display the Sharpe ratio results for all holding periods.

Highlights include:

- The franchise portfolio had higher Sharpe ratios than both the CRSP index and the S&P

500 index for almost all time periods; and

- The only exception is the January 1995 through 2000 holding period when both the

CRSP index and the S&P 500 index had superior Sharpe ratios.

Table 3. Sharpe ratios:

Sharpe ratio

Period	Period	FRAN	CRSP	S&P500
1/90-12/05	A	0.3169	0.1522	0.1097
1/90-12/94	B	0.3688	0.1481	0.0738
1/95-8/00	C	0.2122	0.3525	0.3462
9/00-12/05	D	0.3783	(0.0333)	(0.0933)
Expansion	E	0.3405	0.1833	0.1389
Recession	R	0.1892	(0.0472)	(0.0895)

Chart 3. Sharpe ratios:
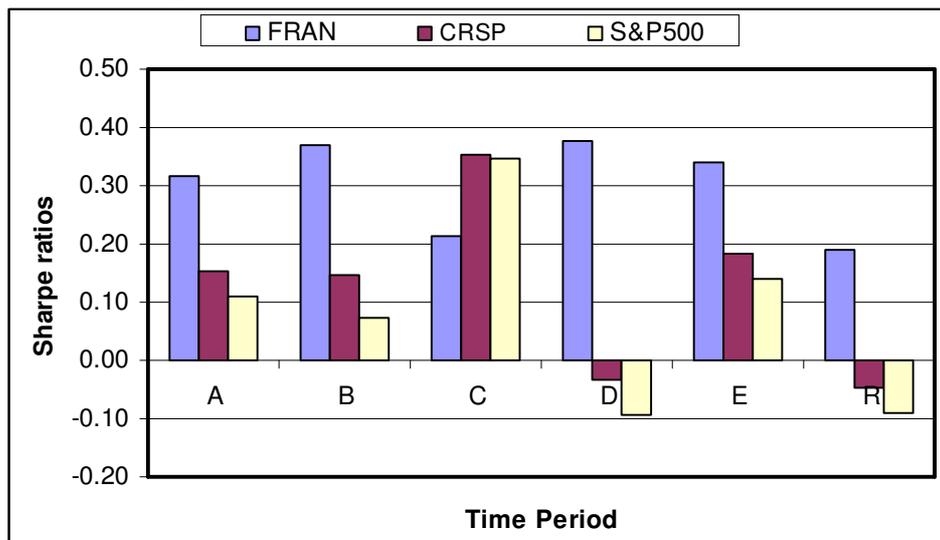
4.2 Jensen's alpha results

  Table 4 and Chart 4 display the Jensen's alpha results for all holding periods.

Highlights include:

- The Jensen's alpha of the franchise portfolio are significantly positive for 4 out of the 6

holding periods under consideration; and

- The two holding periods when the franchise portfolio had non-significant alphas are the

January 1995 through August 2000 holding period and the recessionary periods (1990

and 2001).

Table 4. Jensen's Alpha results summary

Period	Period	Alpha	t-stat	R-square
1/90-12/05	A	0.0111	3.88	0.3977
1/90-12/94	B	0.0148	2.78	0.4670
1/95-8/00	C	(0.0007)	(0.14)	0.4127
9/00-12/05	D	0.0181	4.28	0.4482
Expansions	E	0.0109	3.72	0.3612
Recessions	R	0.0168	1.45	0.5889

Chart 4. Jensen's Alpha results summary
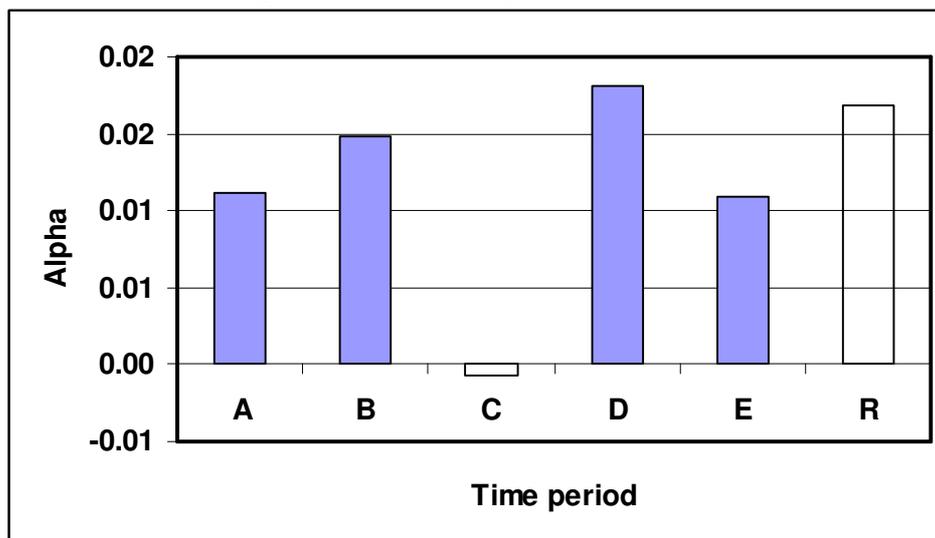
5. Analysis and Conclusions

From the above results, it appears that the franchise portfolio had superior average monthly excess returns and higher volatility than the benchmarks. However, the higher volatility is compensated for by the larger returns, resulting in superior Sharpe ratios and significantly positive Jensen's alphas in most cases. These results lend some support to the conclusions of an earlier study that used a different methodology with a different performance measure (cumulative shareholder returns) and a different sample period (January 1990 through December 1999) (Leleux, Spinelli, and Birley, 2003). This study concluded that their representative sample of public franchisors appeared to have outperformed the general market while the average risk level was similar.

The only holding period when the franchise portfolio underperformed the benchmarks is the January 1995 through August 2000 period. This is the period of the internet bubble when the stock prices of technology companies such as Cisco Systems, Yahoo!, Dell, CMGI, etc. increased at spectacular rates driven by the euphoria generated by the internet boom. As there was no high technology company involved in franchising, the franchise portfolio was not affected directly by this euphoria.

The results of this study seem to contradict the implications of the efficient market hypothesis (EMH), one of the most important theories in finance. This theory holds that it is not possible for an investor to consistently outperform the market (Brigham, Houston, and Ehrhardt, 2006). Yet, over a long period of time (1990-2005),

and over a number of different holding periods, the franchise portfolio appears to have outperformed the market as represented by the S&P 500 index and the CRSP index. Even though the evidence supporting the EMH appeared to be overwhelming at some point (Eugene Fama once stated "The evidence in support of efficient markets models is extensive, and (somewhat uniquely in economics) contradictory evidence is sparse" (Fama, 1970), the EMH has been shown in recent years not to be applicable in a number of instances called "anomalies" (Singal, 2004). Two well-known anomalies are the "small firm effect" (the empirical evidence that small firms have earned abnormally high risk-adjusted returns over long periods of time) (Reinganum, 1981), and the "neglected firm effect" (the case where few analysts follow some lesser known stocks and/or few institutions own these stocks, making the market for these stocks less efficient) (Jones, 2004). These two anomalies may help explain the abnormally high returns of the franchise portfolio. The proportion of small firms in the franchise portfolio is larger than in the S&P 500 index and in the CRSP index. Also, many of the franchise firms are "neglected." Therefore the franchise portfolio may have benefited from these two anomalies.

This study has found that a portfolio composed of all active US-based publicly traded franchise companies outperformed on a risk-adjusted basis the "market" as represented by broad benchmarks (the CRSP index and the S&P 500 index) for most of the 1990-2005 period and several sub-periods, including expansionary periods and recessionary periods. The only holding period when the franchise portfolio underperformed the market is the 1995-2000 sub-period, the period of the internet

bubble. It seems therefore that, for most of the sample periods considered, investors underestimated the returns that would be generated by franchise companies and/or that investors overestimated franchise companies' cost of equity capital.

An extension of this work could be to use the Fama-French three-factor model to control for the effects of firm size and value characteristics of the portfolios (Fama and French, 1993). A further extension could be to break down the franchise portfolio into industry-specific portfolios and measure their performance against the appropriate industry benchmarks. This disaggregated analysis could provide additional insights into the apparent outperformance of the franchise portfolio.

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Table A1. Period A - Sharpe ratios

Sharpe Ratio

Metric	Franchise Portfolio	CRSP Index
Average Excess Returns	1.59%	0.64%
Standard Deviation	0.0503	0.0420
Sharpe Ratio	0.3169	0.1522

Table A2. Period A: Jensen's Alpha

Jensen's Alpha

R-square	0.3977
Alpha	0.0111
t-test	3.8786

Table B1. Period B: Sharpe ratios

Sharpe Ratio

Metric	Franchise Portfolio	CRSP Index
Average Excess Returns	2.04%	0.51%
Standard Deviation	0.0552	0.0346
Sharpe Ratio	0.3688	0.1481

Table B2. Period B: Jensen's Alpha

Jensen's Alpha

R-square	0.4670
Alpha	0.0121
t-test	2.9675

Table C1. Period C: Sharpe ratios

Sharpe Ratio

Metric	Franchise Portfolio	CRSP Index
Average Excess Returns	1.07%	1.50%
Standard Deviation	0.0504	0.0426
Sharpe Ratio	0.2122	0.3525

Table C2. Period C: Jensen's Alpha

Jensen's Alpha

R-square	0.4127
Alpha	(0.0007)
t-test	(0.1440)

Table D1. Period D: Sharpe ratio

Sharpe Ratio

Metric	Franchise Portfolio	CRSP Index
Average Excess Returns	1.71%	-0.15%
Standard Deviation	0.0451	0.0460
Sharpe Ratio	0.3783	(0.0333)

Table D2. Period D: Jensen's Alpha

Jensen's Alpha

R-square	0.4482
Alpha	0.0181
t-test	4.2778

Table E1. Period E: Sharpe ratio

Sharpe Ratio

Metric	Franchise Portfolio	CRSP Index
Average Excess Returns	1.61%	0.73%
Standard Deviation	0.0474	0.0401
Sharpe Ratio	0.3405	0.1833

Table E2. Period E: Jensen's Alpha

Jensen's Alpha

R-square	0.3612
Alpha	0.0109
t-test	3.7177

Table F1. Period R: Sharpe ratio

Sharpe Ratio

Metric	Franchise Portfolio	CRSP Index
Average Excess Returns	1.41%	-0.27%
Standard Deviation	0.0747	0.0582
Sharpe Ratio	0.1892	(0.0472)

Table F2. Period R: Jensen's Alpha

Jensen's Alpha

R-square	0.5889
Alpha	0.0168
t-test	1.4457

APPENDIX B
Sample Franchise Companies (1990-2005)

AARON RENTS INC
ACE CASH EXPRESS INC
ALOETTE COSMETICS INC
APPLEBEES INTERNATIONAL INC
BANDAG INC
BEN & JERRYS HOMEMADE INC
BENIHANA INC
BLIMPIE INTERNATIONAL INC
BLOCK H & R INC
BOSTON CHICKEN INC
BRINKER INTERNATIONAL INC
CENDANT CORP
CENTURY BUSINESS SERVICES INC
CHECKERS DRIVE IN RSTRNTS INC
CHOICE HOTELS INTERNATIONAL INC
COLE NATIONAL CORP NEW
CUCOS INC
DIEDRICH COFFEE INC
DOLLAR THRIFTY AUTOMOTIVE GRP IN
DWYER GROUP INC THE
EATERIES INC
EINSTEIN NOAH BAGEL CORP
FAMOUS DAVES OF AMERICA
FOODMAKER INC
FRIENDLY ICE CREAM CORP
GOOD TIMES RESTAURANTS INC
GREASE MONKEY HOLDING CORP
GRILL CONCEPTS INC
GYMBOREE CORP
HILTON HOTELS CORP
I H O P CORP
INTERNATIONAL DAIRY QUEEN INC
JACKSON HEWITT INC
MANHATTAN BAGEL INC
MARCUS CORP
MARRIOTT INTERNATIONAL INC
MAX & ERMAS RESTAURANTS INC
MCDONALDS CORP
MIDAS INC
NATHANS FAMOUS INC NEW
OPTION CARE INC
OUTBACK STEAKHOUSE INC
PAPA JOHNS INTL INC
QUIZNOS CORP
SCHLOTZSKYS INC
SHOWBIZ PIZZA TIME INC
SNAP ON INC