THE PERFORMANCE OF U. S. DOMESTIC EQUITY MUTUAL FUNDS DURING RECENT RECESSIONS

Dr. Zakri Y. Bello[1]

Central Connecticut State University, U.S.A.

E-mail: belloz@ccsu.edu

ABSTRACT

In this study, I investigate the performance of five categories of U.S. domestic equity mutual funds during the recessions of 1990 and 2001 and during the 12 months following each recession. I show that recessions identified by the National Bureau of Economic Research (NBER) are not all the same with regard to their impact on the behavior of common stock prices, and that investment strategies based on a fixed rule of thumb are likely to lead to disastrous outcomes. For example, the rule of thumb which dictates picking small capitalization common stocks in the ensuing 12 months from the end of a recession produced good results after the recession of 1990, but produced disappointment results after the recession of 2001. During the recession of 1990, stock-mutual fund performance was higher in the post recession period, which is in line with past research on the behavior of common stock prices. The funds as a group earned higher returns than the S&P 500 index during the recession and after. However, during the recession of 2001, four of the five mutual fund categories and the S&P 500 index realized negative returns during the recession. Moreover, all of the fund categories and the market realized negative returns in the 12 months following the recession.

Key Words: mutual funds, performance evaluation, recessions, economics cycles, market efficiency, anomalies

JEL Codes: G2, G14, G17, G23, N2

I. INTRODUCTION

According to the National Bureau of Economic Research (NBER), a recession is a significant decline in economic activity as measured by the real GDP and other indicators of economic activity, including employment and real income. In contrast, the financial press often defines a recession as two consecutive quarters of decline in real GDP—a rule of thumb that is not consistent with the economic cycles in the US and abroad.[2] In particular, the recession of 2001 would not have been correctly identified using this rule of thumb. From 1873 to 1982, the US economy experienced 26 recessions and, most often, stock prices rose as the economy expanded, and declined as the

[1] Dr. Zakri Y. Bello, Central Connecticut State University, 1615 Stanley Street, New Britain, CT 06050, Telephone: 860-832-3262

[2] See the NBER Web site: http://NBER.org/cycles.html.

economy entered a recession, as observed by Moore and Cullity (1988). Moore (1975) contends that significant changes in stock prices have been associated with even the milder slowdowns in economic growth. Similarly, bond prices also moved closely with economic activity. However, Moore and Cullity contend that there were few substantial swings in stock prices that were not associated with swings in the business cycle. For example, since 1983 there were three recessions when stock prices did not decline.

Typically, stock prices are leading economic indicators although, according to Moore and Cullity, stock prices have a propensity to send false signals. Mills (1988) also argues that stock prices have been unreliable leading indicators in recent years. Bond yields and other interest rates are either coincident indicators or lagging indicators. Moreover, Moore and Cullity suggest that investors tend to shift to common stocks and away from bonds during business cycle upswing, and away from common stocks toward bonds during a recession. Surprisingly, bond prices most often lead stock prices according to Moore and Cullity (1988). Moore and Cullity argue that it is important for investors to know when the turn in the business cycle occurs, bearing in mind however that it is difficult to pick out all of the significant declines in stock prices.

Investors often rely on a fixed rule of thumb which dictates that small capitalization stocks tend to realize higher returns than large capitalization stocks following recessions. In this study, I use stock-mutual-fund prices to investigate the return performance of several mutual fund categories in connection with the usefulness of this rule of thumb during the two most recent NBER identified recessions. My objective is to show that the most recent economic recessions provide a stark contrast concerning the behavior of stock prices, and to show that an investor blindly following this rule of thumb might have had an unpleasant surprise. In other words, recessions are not all the same for the purpose of rational investment activity.

II. THE PERFORMANCE OF SMALL CAPS

It is generally agreed that small capitalization common stocks had historically performed quite well at the beginning of an economic recovery. In the past 40 years, small caps begin to outperform large caps about six to nine months before the end of a recession, according to Phillip (1993). However, small caps perform poorly during down markets and recessions (Arshanapalli and Nelson, 2007). Moreover, Brown (1991) observed that small caps declined 21.6% during 1990 alone while the S&P 500 index declined only 3.2%, although over the long term from 1925 to 1991 small caps returned 12% versus 10.2% for the S&P 500 index. Further, Brown observed that over the last 65 years the United States had experienced 11 recessions and that during these recessions, small caps had underperformed the S&P 500 index by a median of -3% and outperformed the S&P 500 index during periods of economic growth by a median of +2.9%. It is particularly noteworthy that during the 12 months following a recession, small caps had an 11.2% performance edge on average.

An important caveat however is that it is not easy to predict a turning point in the economic cycle and this could lead to a disastrous investment performance when a fixed rule of thumb is depended upon. And even when an investor is able to predict the

turning point in the economic cycle, they might not be able to pick out the turning point in the stock market cycle. I use the 2001 recession to illustrate this point. The stock market cycle coincides with the economic cycle most often, but not all of the time (Moore and Cullity, 1988). A case in point is the recession of 2001 which the NBER appears to have failed to identify precisely.[3]

III. THE DATA

A. Mutual Fund Data

The mutual fund sample consists of 1065 domestic equity funds randomly selected from five investment-objective categories including Aggressive Growth, Small Company, Growth, Growth and Income, and Equity income. A profile of the data is shown in Table 1. My sample excludes mutual funds that have more than 15% of their portfolio invested in bonds or in non-U.S. stocks. Moreover, mutual funds that have average net assets below $500 million are not included.

Table 1
Profile of the Mutual Fund Sample

Objective	PE	PB	Dstock %	Nassets ($m)	Holdings	Top-Ten %
AG	23.16	3.78	93.19	1005.65	134	27.88
SC	18.84	2.39	92.17	1020.78	278	21.69
G	19.40	3.21	91.80	1331.37	105	28.16
GI	15.49	2.43	93.95	2733.10	245	27.27
EI	14.58	2.35	89.13	2011.15	100	31.21
Sample	18.09	2.82	92.34	1685.55	174	26.95

Note: Objective refers to the fund's investment objective; PE and PB mean the average price-to- earnings ratio and the average price-to-book-value ratio, respectively; DStock is the percentage of portfolio funds invested in domestic equities; Nassets means net assets (in millions of dollars); Holdings is the number of companies held by the mutual fund; and TOP-Ten is the percentage of portfolio funds invested in the top ten companies held by the fund. The fund's investments in bonds, foreign stocks, cash, and other investments are not included in the Table.

Monthly returns were obtained from the Morningstar Principia database. Corresponding returns on the S&P500 index and on three months Treasury bills were also obtained from the same source. As shown in Table 1, the average price-to-earnings (P/E) ratio for the entire sample of 1065 domestic-equity funds is 18.09 times. The aggressive Growth category has the highest P/E ratio of 23.16 times, while the Equity Income category has the lowest ratio of 14.58 times. Domestic stocks as a percentage of the mutual-fund portfolio (Dstock %) is 92.24% for the entire sample, and foreign stocks as a percentage of the portfolio (Fstock %) is quite low at 4.64%. Bonds, although not

[3] See the NBER website: http://www.nber.org/cycles.html

shown in the Table, is only 0.13% of the portfolio. Cash, preferred stock and other investments are also not shown in Table. The net assets of the average mutual fund is $1,685.55 million, with an average holding of 174 companies, and with 26.95% of the average portfolio invested in the top ten companies it holds (Top-Ten %). The average holding, coupled with the "Top-Ten %," gives an indication of how well diversified the average mutual fund is. In this case, the average mutual fund appears to have too much of its portfolio invested in the top ten companies it holds, although an average holding of 174 companies definitely suggests that the average domestic mutual fund is well diversified.

B. Recession Data

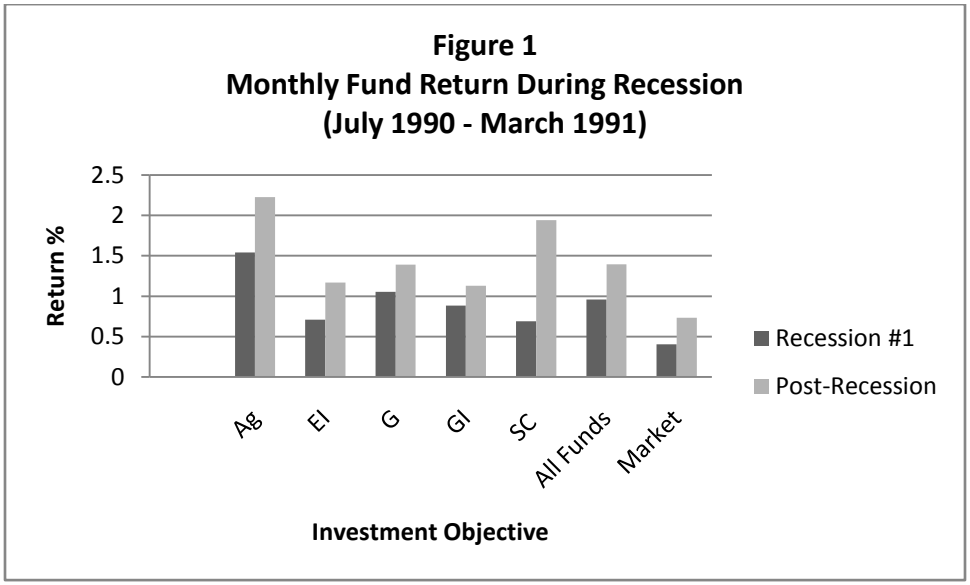
Data concerning recessions in the U.S. were obtained from the NBER website. I am using the data for two recent recessions: July 1990 to March 1991, and March 2001 to November 2001. Both recessions lasted 9 months. The ensuing 12 months after each recession are used as the post recession period. The average monthly returns on 1065 mutual fund portfolios are measured over each of the two recessions and then over each of the two post recession periods. Table 2 and both Figure 1 and Figure 2 show the average monthly returns arranged by investment objective category.

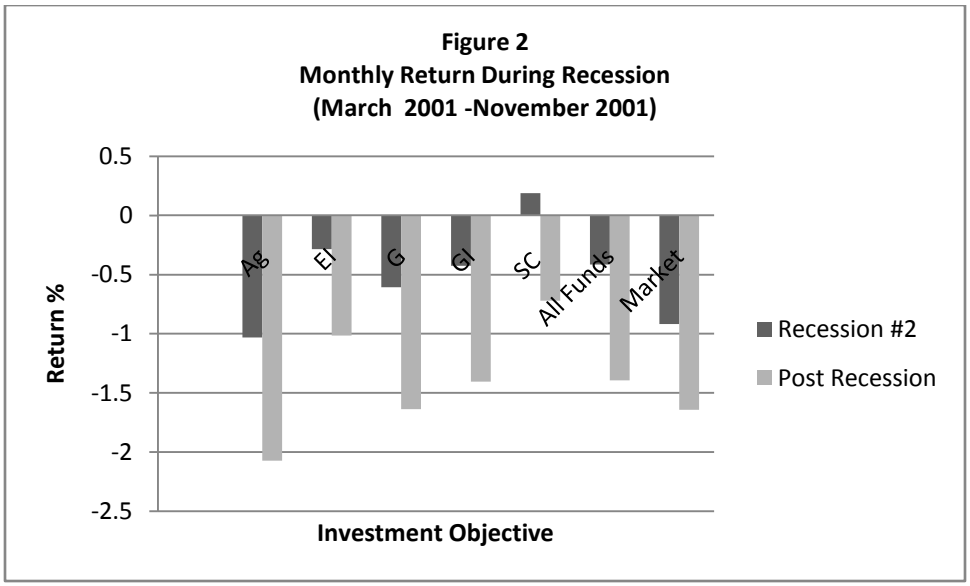
Table 2

The Performance of Mutual Funds around the Most Recent Recessions

Obj.	Ave. Ret. %	Std. Dev.	Ave. Ret. %	Std. Dev.
Panel A: The Recession of 1990				
	Recession		Post Recession	
AG	1.543	9.068	2.228	6.401
SC	0.689	7.485	1.940	4.732
G	1.054	6.044	1.390	4.773
GI	0.883	5.161	1.131	4.062
EI	0.709	4.883	1.168	3.258
Sample	0.958	6.090	1.396	4.563
Market	0.404	5.315	0.731	3.977
Panel B: The Recession of 2001				
	Recession		Post Recession	
AG	-1.032	9.680	-2.072	6.149
SC	0.190	6.969	-0.721	5.807
G	-0.606	6.782	-1.638	5.648
GI	-0.425	5.178	-1.404	5.606
EI	-0.284	4.141	-1.016	5.117
Sample	-0.414	6.423	-1.393	5.664
Market	-0.918	5.916	-1.642	5.298

Note: Obj. refers to the fund's investment objective; ave. ret. and std. dev. refer to the average monthly return and standard deviation of return.





IV. EMPIRICAL RESULTS

The results relating to the recession of 1990 are presented in Panel A of Table 2. The corresponding results for the recession of 2001 are shown in Panel B of that Table. Figure 1 and Figure 2 present the data pictorially. As shown in Panel A of Table 2, mutual fund performance was significantly higher in the 12 months following the recession. This phenomenon is exhibited across all the five categories of domestic equity mutual funds, for the entire sample, and for the S&P 500 index. For example, for the sample of mutual funds, the average return during recession was 0.958% per month. The corresponding return for the post recession period was 1.396% per month. The return for the market was 0.404% per month during the recession, and 0.731% during the post recession period. As a group, the mutual funds have earned higher return than

the market during the recession and in the post recession period. These results are in line with the past studies of common stocks as summarized by Moore (1975) and Moore and Cullity (1988). The Aggressive Growth category and the Small Company category outperformed the other categories in the post-recession period.[4] This is in line with both Phillip (1993) and Brown (1991) regarding the return performance of small capitalization common stocks during the 12 months following a recession.

The results for the second recession, contained in Panel B of Table 2 and illustrated in Figure 2, suggest that recessions as identified by the NBER are not all alike for the purpose investment activity. All of the five categories of mutual funds, the entire sample, and the market experienced a decline in the post recession period. In the recession period, the Small Company category alone had a positive return. This same category outperformed the other categories and the market in the post recession period. These results are not conformable to the past studies of common stock performance, including Arshanapalli and Nelson (2007), who argue that small cap stocks do poorly during down markets and recessions. The Aggressive Growth category, which also has substantial holdings of small cap stocks, however underperforms the other categories as well as the market during recession and in the post recession period. Apparently the fixed rule of thumb which dictates that investors are better off shifting to small stocks immediately after a recession would have done poorly by picking the Aggressive growth category. Again, as with the recession of 1990, mutual funds as a group outperformed the market during the recession of 2001 and in the post recession period.

V. SUMMARY AND CONCLUSIONS

In this study, I investigate the performance of five categories of domestic equity mutual funds during a recession and in the 12 months following a recession. My focus is on two recent recessions of 1990 and 2001. I show that recessions identified by the National Bureau of Economic Research (NBER) are not all the same with regard to the recession's impact on stock mutual fund prices and that any investment strategy based on a fixed rule of thumb is likely to lead to disastrous outcomes even if the investor were able to correctly pinpoint the turning points in the economic cycle.

For example, the rule of thumb which dictates picking small capitalization common stocks in the ensuing 12 months after a recession produced good results after the recession of 1990, but produced disappointment results after the recession of 2001. The rate of return on common stocks, and hence on stock mutual funds, during the two recessions was radically different. With regard to the recession of 1990, stock-mutual fund performance was higher in the post recession period, which is in line with past research on the behavior of common stock prices. Those funds that held small cap stocks earned higher returns than the other categories during the 12 months after the recession. Moreover, each of the 5 fund categories and the market realized higher returns after the recession. The funds as a group realized higher returns than the S&P

[4] The Morningstar, Inc. states that the Aggressive Growth category "often invests in small or emerging growth companies."

500 index during the recession and after. However, during the recession of 2001, four of the five fund categories and the S&P 500 index all realized negative returns during the recession, and all of the five categories and the market realized negative returns in the 12 months following the recession. The aggressive growth category which is known to hold most of its portfolio in small capitalization stocks realized the lowest return than the other categories and the market.

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