Financial Services Review 8 (1999) 199–210

FINANCIAL SERVICES REVIEW

International mutual fund returns and Federal Reserve policy

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Received 26 April 1999; received in revised form 15 October 1999; accepted 8 November 1999

Abstract

This study examines the performance of international mutual fund indexes across alternative Federal Reserve monetary policy environments. The results suggest that the benefits touted by advocates of international diversification may be less than previous studies indicate. Specifically, during restrictive US monetary policy periods, international mutual fund indexes provide lower excess returns than domestic counterparts. Additionally, the correlations between international mutual funds and domestic mutual funds are higher during restrictive monetary policy periods. This evidence may represent a partial explanation for the home country bias exhibited by US-based individual and institutional investors.

JEL classification: E44; E52; G15

Keywords: Federal Reserve; International diversification; Discount rate; Monetary policy

1. Introduction

Academic research has touted the benefits of international portfolio diversification arguing that US investors could improve their risk-return profiles by purchasing international equi-

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1057-0810/00/$ – see front matter
PII: S1057-0810(00)00043-8

ties. However, home asset bias, or the tendency of investors to over invest in assets based in their home country, is particularly pronounced in US markets. For many years, market watchers have recognized that monetary conditions, and the Federal Reserve in particular, have a significant influence on security returns. Academic research (summarized in Section 2) shows that stock and bond returns are significantly higher in periods characterized by an expansive monetary policy than security returns during restrictive monetary periods. The influence of the Federal Reserve is not limited to domestic stock and bond returns, however, as recent research has shown that US central bank policy is also associated with foreign market return patterns.

The objective of this study is to examine the performance of international mutual fund indexes across alternative Federal Reserve monetary policy environments. The focus is on the potential diversification benefits of investing in international mutual funds. The results suggest that the benefits touted by advocates of international diversification may be less than previous studies indicate and may help explain home asset bias. The results also suggest that the greatest diversification benefit for US investors is achieved by investing in Diversified Asia/Pacific funds. However, in the time period studied, this diversification benefit is achieved at the cost of lower returns.

The remainder of this study is organized as follows: Section 2 reviews the literature on international diversification and the influence of monetary policy on security returns; Section 3 describes the methodology of the study and data employed; Section 4 reviews the results of our analysis; and Section 5 concludes the paper.

2. Literature review

2.1. International diversification

Proponents of international diversification claim that the volatility of domestic markets can be somewhat offset by investing in foreign markets. Aiello & Chieffe (1999) conclude that investment into international mutual funds may offer significant diversification benefits. Still, as summarized by Shawky, Kuenzel, & Mikhail (1997), the benefits of international portfolio diversification continue to be a controversial topic in the financial literature. Opponents contend that international diversification has no economic rationale (see Sinquefeld, 1996).

US institutional investors seem to be slowly embracing the concept of international diversification as the trend has been toward greater commitment of funds internationally. From 1991 to 1996, foreign securities held by tax-exempt US pension funds more than doubled. However, the potential for additional international investment is enormous. Gorman (1998) reports that with respect to the equity portfolio, the cross-border commitment of the typical US pension plan is less than half that of the typical non-US pension plan. Almost 90% of US assets are still invested domestically, which far exceeds the domestic holdings in most countries with developed pension systems. According to Melton (1996), the United Kingdom and Hong Kong pension funds have 28.0% and 56.8% of their assets in overseas equities and bonds, respectively.

The potential benefits of international diversification have resulted in increased individual investor interest in international mutual funds. As reported by Bers (1998), in 1984 only 13 international mutual funds existed. By 1995, this number had increased to 335. According to the Investment Company Institute (ICI), as of December 1996, the average individual investor in the US held a position similar to US pension plans. Gorman (1998), notes that of the $2637 billion in reported mutual fund holdings in the US, only $321 billion, or 12%, is invested abroad (principally in stocks). Although this commitment is relatively small in percentage terms, as with institutional investors, the trend is increasing.

The costs of international diversification and the ability of a domestic stock portfolio to hedge domestic inflation risk are cited as primary reasons for home asset bias. Tesar & Werner (1995) find that the high turnover on foreign equity investments relative to turnover on domestic equity markets suggests that transactions costs alone are an unlikely explanation for home asset bias. Cooper & Kaplanis (1994) examine each of these explanations and find that, at best, each is only a partial explanation for the home asset bias.

Previous research investigated the effectiveness of various forms of investment in obtaining international diversification for US investors. Bailey & Lim (1992), Chang, Eun, & Kolodny (1995), and Barry, Peavy, & Rodriguez (1997) find that country funds listed on US exchanges are more highly correlated with US markets than the returns from their respective benchmarks. Russell (1998) concludes that US exchange listed securities such as American depository receipts, closed-end country funds, and multinational corporations behave more like the host exchange than their home exchange. This result suggests that these US exchange-listed securities, on average, do not perform an effective international diversification role for US investors.

Several recent studies provide evidence that the benefits of international diversification may be substantially less than suggested by early academic researchers. In a study of the US and its G-7 partners, Hanna, McCormick, & Perdue (1999) find that markets do not move in opposite directions with enough frequency to justify the assertion that foreign gains will compensate for domestic losses. Ho, Milevsky, & Robinson (1999) conclude that international diversification provides a substantial benefit to Canadian investors by reducing shortfall risk, but does not benefit American investors materially.

The benefits of international diversification rest largely on the correlation structure of international market returns. As discussed by Conover, Jensen, & Johnson (1999), an underlying factor that significantly influences the benefits of international diversification is the stability of cross-country correlations over time. The consistency of the co-movements between international stock market indexes is examined in several studies. Longin & Solnik (1995) and Solnik, Boucrelle, & LeFur (1996) find that the correlation structure has fluctuated widely over time, yet has only risen slightly during the 30-year time period examined. Another interesting finding of Longin and Solnik and confirmed by Shawky, Kuenzel, & Mikhail (1997) is that the correlations seem to be higher in times of high market volatility. Erb, Harvey, & Viskanta (1994) report that international equity correlations are higher during recessions than during expansions, confirming these findings. Bookstaber (1997) concludes that markets are not normal and that diversification benefits are greatly mitigated when the investor needs them most.

2.2. Federal Reserve monetary policy and capital market returns

Short-term reactions to changes in Federal Reserve monetary policy have been empirically documented in both the US and foreign markets. Among others, Jensen & Johnson (1993) find evidence of monetary policy "announcement effects" in the stock market. Furthermore, the short-term effects are not limited to US markets, as Johnson & Jensen (1993) report that US monetary policy changes are also associated with reactions in foreign equity markets.

Recent evidence suggests that monetary conditions are also related to long-term performance patterns in security markets. Prather & Bertin (1997) present a simple trading strategy for individual investors based on Federal Reserve announcements of discount rate changes. Conover, Jensen, & Johnson (1999) provide evidence indicating that international stock markets also exhibit patterns that are linked to monetary policy changes. The authors demonstrate that the patterns are in the same direction as US market patterns and, for several countries, of comparable size to those documented in the US stock market.

3. Methodology and data

3.1. Mutual fund indexes

The international mutual fund data used in this analysis is from Morningstar and the indexes chosen are the Morningstar Aggregates that have a majority of assets invested in non-US securities. In addition, to allow comparability across indexes, the index had to be in existence at the end of 1976. The five non-US indexes examined in this paper are 1) Diversified Emerging Markets, 2) Foreign Stock, 3) Multi-Asset Global, 4) Diversified Asia/Pacific, and 5) World Stock Index. For comparative purposes, two Morningstar US mutual fund indexes, US Balanced and US Growth & Income, are also examined.

Although the investment objective stated in a fund's prospectus may or may not reflect how the fund actually invests, Morningstar assigns each mutual fund to a category based on the underlying securities in its portfolio. Categories are assigned by Morningstar based on the average of the past three years' portfolio holdings. Each index is a simple arithmetic average of all mutual funds in the category in existence at that time. Table 1 provides a detailed description of each of the indexes examined in this analysis.

3.2. Defining Federal Reserve monetary policy

Defining Federal Reserve monetary policy is controversial. Numerous approaches to "Fed-watching" involve monitoring money supply, interest rates, bank reserves, open market operations, and combinations of monetary variables. However, operationally, many of these strategies are not conducive to the vast majority of investors, as the methods are quite complex and require a constant monitoring of economic variables (see Jones, 1989 for a detailed description of various approaches). The simple and unambiguous binary definition of Fed policy utilized in this analysis is consistent with Conover, Jensen, & Johnson (1999),

Table 1
Description of the Morningstar international indexes[a]

Morningstar index	Description
Diversified Emerging Markets	An equity fund with at least 50% of stocks invested in emerging markets.
Foreign	An international equity fund having no more than 10% of stocks invested in the United States.
Multi-Asset Global	Funds in this objective seek total returns by investing in varying combinations of equities, fixed income securities, and other asset classes. These funds may invest a significant portion of assets in securities of foreign issuers.
Diversified Asia/Pacific	An equity fund with at least 65% of stocks invested in Pacific countries with at least an additional 10% of stocks invested in Japan.
World	An international fund having more than 10% of stocks invested in the United States.
US Balanced	Seek both income and capital appreciation by investing in a generally fixed combination of stocks and bonds. These funds generally hold a minimum of 25% of their assets in fixed-income securities at all times.
US Growth & Income	Growth of capital and current income are near-equal objectives. Investments are typically selected for both appreciation potential and dividend-paying ability.

[a] Source: Morningstar Mutual Fund 500, 1998–1999 edition, Chicago, Morningstar.

Jensen, Mercer, & Johnson (1996), Booth & Booth (1997) and Prather & Bertin (1997) and employs the Federal Reserve discount rate.

Textbook discussions of monetary policy treat the discount rate as one of the Federal Reserve's three principal policy tools, the others being reserve requirements and open market operations. Technically, the discount rate is the rate at which member institutions can borrow reserves from the Federal Reserve. In practice, however, discount rate changes are often interpreted as signals of the future course of monetary policy. Previous researchers note that discount rate changes occur only at substantial intervals, they represent a rather discontinuous instrument of monetary policy, and are established by a public body having special information and competence to judge whether changes in bank credit and money is consistent with the economy's cash needs. Thus, discount rate changes may be viewed as precursors of future Fed monetary policy.

We classify the monetary environment as either expansive or restrictive based on the most recent discount rate change. The monetary environment remains the same until the discount rate is changed in the opposite direction, because the central bank is assumed to be operating under the same general policy until the discount rate change is reversed. The period following a decrease in the discount rate is classified as expansive. Further discount rate decreases do not affect the classification of the monetary environment. Likewise, restrictive monetary environments begin when the discount rate first increases and end when the

Table 2
Discount rate change series

Series	Increasing (I) or decreasing (D)	First rate change in series	Rate changes in series	Monthly observations in series
1	D	12/09/74	0	8[a]
2	I	08/30/77	14	32
3	D	05/29/80	3	3
4	I	09/26/80	4	13
5	D	11/02/81	9	28
6	I	04/09/84	1	6
7	D	11/23/84	7	33
8	I	09/04/87	3	38
9	D	12/18/90	7	24
10	I	05/17/94	4	19
11	D	01/31/96	3	32

[a] Beginning with December of 1976.

discount rate is decreased. Jensen, Mercer, & Johnson (1996) employ this classification scheme and report empirical evidence demonstrating that the levels of, as well as changes in, the federal funds premium, monetary aggregates, and reserve aggregates differ significantly across the defined environments, thus supporting the view that this classification technique effectively differentiates monetary conditions. Although this classification technique has been effectively employed to differentiate fundamentally different monetary conditions, the procedure is not advocated as the best technique for identifying minor changes in the stringency of monetary policy. A more refined approach that adjusts more frequently would be required to accomplish this task (see Thorbecke, 1997 and Patelis, 1997 for examples). Use of such measures, however, requires more frequent trading, more subjective evaluation, and a more sophisticated investor.

3.3. Time period examined

In the nearly 22-year period covered in this study (the period is 2 months short of 22 years), the Federal Reserve changed the discount rate 55 times: 26 increases and 29 decreases. In this period, however, there are only eleven "rate-change series," effectively representing what we believe are fundamental changes in the monetary environment (see Table 2 for a list of these dates).

We examine monthly return data from December 1976 through September 1998. Consistent with previous research, we do not include the month in which the Federal Reserve changed from an expansive to a restrictive monetary policy or from a restrictive to an expansive policy. These months are omitted for two reasons. First, our objective is to focus on the long-term relationship between monetary conditions and security returns, and thus, we eliminate any announcement-period effect. Second, the return associated with months that mark the initiation of a new monetary environment would include both expansive and restrictive days. A total of 252 months are in the sample: 144 months in expansive periods and 108 months in restrictive periods.

3.4. Methodology

Summary statistics are computed for the six international and two domestic indexes included in the study. In this context, a monthly excess return is defined as the monthly index return minus the monthly risk-free rate. For the riskless rate of return, we use the monthly T-bill return as compiled by Ibbotson (1999). Sharpe ratios are computed for each of the mutual fund indexes for the total sample period, expansive monetary policy periods, and restrictive monetary policy periods. The Sharpe ratio(s) measures the average excess return per unit of total risk. The ratio is calculated as follows:

$$s = [(r_i - r_f)/\sigma_p]$$

where, r_i is the average rate of return on the mutual fund index, and r_f is the average rate of return on the risk free asset, and σ_p is the standard deviation of the mutual fund index returns.

Differences in the distributions of monthly excess returns across monetary policy environments are also gauged by analyzing skewness and excess kurtosis. Stuart & Ord (1987) find that in large samples of normally distributed data, the sample skewness and sample kurtosis estimates are normally distributed with means 0 and 3 and variances $6/N$ and $24/N$, respectively (where N = the number of observations). Because 3 is the kurtosis of the normal distribution, sample *excess kurtosis* is defined to be sample kurtosis less 3. Campbell, Lo, & MacKinlay (1997) find that sample estimates of skewness for daily US stock returns tend to be negative for stock indexes but close to zero or positive for individual stocks. Sample estimates of excess kurtosis for daily US stock returns are large and positive for both indexes and individual stocks, indicating that returns have more mass in the tail areas than would be predicted by a normal distribution. Sample statistics for monthly returns show that these are generally less leptokurtic than daily returns.

4. Results

4.1. Returns and distributions of returns

Table 3 presents summary statistics for the first four moments of monthly excess returns of Mutual Fund indexes and Sharpe ratios. The patterns of mean monthly excess returns are identical for each of the seven mutual fund indexes examined. For each index, the mean excess return during expansive periods is higher than the mean excess return during restrictive monetary policy periods.

As expected, the Sharpe ratios indicate that the return per unit of risk during expansive periods is much greater than the return per unit of risk during restrictive periods for each of the indexes examined. For the total sample period, the highest Sharpe ratios were realized for the two US indexes, whereas the lowest Sharpe ratios were realized by the Diversified Emerging Market and Diversified Asia/Pacific stock indexes. During expansive monetary policy periods, the highest Sharpe ratio was realized by the Multi-Asset Global index, whereas the lowest Sharpe ratio was realized by the Diversified Emerging Markets index. In

Table 3
First four moments of monthly excess returns of Mutual Fund indexes and Sharpe ratios

Index	Mean %	St. dev. %	Skewness	Excess kurtosis	Sharpe ratio
US indexes					
US Balanced					
Total	0.4550	2.8011	−0.65016*	2.3987*	0.1624
Expansive	0.7485	2.5568	−0.08779	1.3324*	0.2928
Restrictive	0.0273	3.0966	−1.25359*	2.5995*	0.0089
US Growth & Income					
Total	0.6014	3.8394	−0.84386*	3.5475*	0.1566
Expansive	0.9660	3.5282	−0.43631*	2.0961*	0.2738
Restrictive	0.0884	4.2917	−1.14309*	3.4793*	0.0206
International indexes					
World					
Total	0.6025	4.1841	−1.18929*	4.2607*	0.1440
Expansive	1.0290	3.6920	−0.77808*	2.4189*	0.2787
Restrictive	0.0111	4.8053	−1.37309*	3.9742*	0.0023
Div. Emerging Markets					
Total	0.2995	5.7242	−1.17958*	4.1321*	0.0523
Expansive	0.5317	5.4097	−1.30914*	5.5130*	0.0983
Restrictive	−0.0676	6.2520	−1.00430*	2.6243*	−0.0108
Foreign					
Total	0.4838	4.0568	−1.04231*	4.0158*	0.1193
Expansive	0.9777	3.7638	−0.83259*	2.1898*	0.2598
Restrictive	−0.2197	4.4192	−1.67300*	5.6920*	−0.0497
Multi-Asset Global					
Total	0.4331	2.9166	−1.12913*	5.5812*	0.1485
Expansive	0.7902	2.4834	0.12967	1.1254*	0.3182
Restrictive	−0.1189	3.4027	−1.54121*	5.4171*	−0.0349
Diversified Asia/Pacific					
Total	0.4036	5.4497	−0.35636*	1.0417*	0.0741
Expansive	0.7097	5.2129	−0.33147	0.9290*	0.1361
Restrictive	−0.2145	5.7949	−0.30478	1.0145*	−0.0370

* Significant at the 5% level.

restrictive periods, the two US indexes and the World stock index realized the only positive Sharpe ratios.

As shown in Table 3, the distribution of excess monthly returns for each of the seven mutual fund indexes examined all exhibit negative skewness with the exception of Multi-Asset Global index during expansive periods. Each of the other 20 excess returns distributions exhibit negative skewness. With the exceptions of the Diversified Emerging Market and Diversified Asia/Pacific stock indexes, the restrictive period distributions for the indexes examined are more negatively skewed during restrictive periods than during expansive periods. In addition, with the exceptions of the US Balanced and Multi-Asset Global indexes during expansive periods and the Diversified Asia/Pacific stock index during both expansive and restrictive periods, each of the excess returns distributions examined exhibits statistically significant negative skewness.

Table 3 also shows that each of the excess return distributions examined exhibit statistically significant excess kurtosis. This means that the distributions have more mass in the tail areas than would be predicted by a normal distribution. Therefore, investors in these funds

Table 4
Tests for differences in returns and risk between expansive and restrictive monetary policy periods

Index	Difference in mean monthly excess returns (*t*-statistic)	Difference in standard deviation of mean monthly excess returns (*F*-statistic)
US indexes		
US Balanced	0.7212	−0.5398
	(1.97)*	(0.68)*
US Growth & Income	0.8776	−0.7635
	(1.73)*	(0.68)*
International indexes		
World	1.0178	−1.1133
	(1.83)*	(0.59)*
Diversified Emerging Markets	0.5993	−0.8423
	(0.80)	(0.75)
Foreign	1.1974	−0.6554
	(2.27)*	(0.73)*
Multi-Asset Global	0.9091	−0.9193
	(2.35)*	(0.54)*
Diversified Asia/Pacific	0.9242	−0.5820
	(1.31)	(0.81)

* Significant at the 5% level.

would have a greater probability of realizing larger positive or negative excess returns than predicted using a normal distribution. A pattern in excess kurtosis is also evident. With the exception of the Diversified Emerging Markets index, each index exhibits greater excess kurtosis in restrictive periods than expansive periods. Thus, the leptokurtic nature of the distributions is less pronounced in expansive periods as compared to restrictive periods.

Interpreting only the first two moments suggested that the restrictive periods offer both lower returns and higher variability. Although this conclusion is valid, the skewness and kurtosis results imply that the restrictive period is even more risky than this initial analysis suggested. During a restrictive monetary environment the probability of realizing a large negative return is much larger than that suggested by the normal distribution. Additionally, the probability of realizing a large negative return during a restrictive environment is larger than during an expansive environment. These findings further distinguish the behavior of security returns during the two monetary policy environments and have important investment implications. Consistent with previous researchers, the results presented in Table 3 show that the security returns are not normal; they also suggest that the investment environment is far more risky than the normal distribution would indicate. The investor would be wise to adopt a tactical asset allocation strategy moving assets away from those categories that are most negatively affected by the monetary policy environment.

As shown in Table 4, using a simple *t*-test for differences in means assuming unequal variances, the differences in mean excess returns during expansive and restrictive monetary environments are statistically significant at the 5% level for five of the seven indexes examined. The magnitudes of the differences are not only statistically significant, but are economically significant. On an annualized basis, the excess return differences range from a high of 14.37% for the Foreign stock index to a low of 7.19% for the Diversified Emerging Market index. Curiously, with the exception of the World stock index, all of the international

Table 5
US balanced fund and international mutual fund correlations

Correlation of US Balanced Fund with:	Expansive returns correlation	Restrictive returns correlation	Total correlation
US Growth & Income	0.967	0.974	0.972
International indexes			
World	0.863	0.903	0.883
Diversified Emerging Markets	0.746	0.859	0.796
Foreign	0.593	0.745	0.678
Multi-Asset Global	0.797	0.885	0.844
Diversified Asia/Pacific	0.369	0.440	0.415

indexes have negative excess returns during restrictive monetary policy periods, whereas each of the two domestic indexes have positive excess returns during restrictive periods. This indicates that investors would, on average, improve their absolute performance by simply investing in T-bills instead of Diversified Emerging Market, Foreign stock, Multi-Asset Global, and Diversified Asia/Pacific stock funds during restrictive monetary policy periods.

Patterns in the variability of excess returns are also apparent. For each of the seven indexes examined, the excess returns during restrictive periods are more variable than excess returns in expansive periods. As indicated in Table 4, the results of the *F*-tests indicate that the risk differences are statistically significant for all indexes except the Diversified Emerging Markets and Diversified Asia/Pacific stock indexes. One cannot conclude that the extra returns realized during expansive periods are the result of compensation for bearing extra risk. As one might anticipate, the standard deviation of excess returns for the Diversified Emerging Market index is the highest, while the standard deviation of excess returns for the US Balanced index is lowest of the indexes examined. Thus, periods of decreasing discount rates are associated with both higher returns and lower variability of returns for each of the seven classes of mutual funds examined.

4.2. The correlation structure of returns

Table 5 presents the correlations between US Balanced funds and the other indexes of mutual funds examined in this study. Balanced funds are chosen to serve as representative of the average US individual investor's holdings. These funds contain both stocks and bonds and are often utilized by individuals in retirement plans. The extremely high correlation (0.972 overall) between the indexes for US Balanced funds and US Growth & Index funds indicates that the correlation results would be very similar if US Growth & Index funds were used as the representative class of funds.

The correlations between US Balanced funds and the five international funds range from a low of 0.415 (with Diversified Asia/Pacific funds) to a high of 0.883 (with World Stock funds). It is not surprising that the correlation between US Balanced funds and World Stock funds is the highest, as World Stock funds are defined as international funds having more than 10% of stocks invested in the United States. Overall, the correlations are higher than the typical correlations reported in studies between country indices. This implies that investors

who target international mutual funds may not be realizing the diversification benefits assumed by examining the results of previous academic studies. Furthermore, as shown in Table 5, the correlations during restrictive monetary policy periods are higher than the correlations during expansive monetary policy periods for each of the indexes examined. If a portfolio is formed based on average correlations, which implicitly assumes symmetry, the performance of the investment could be worse than expected in restrictive monetary policy environments because the correlations increase. Similar to the conclusions of previous researchers, portfolios need to be constructed on the basis of expected correlation rather than past averages. Our results suggest that one of the factors investors should use in forecasting the expected correlation structure of security returns is the monetary environment. The results show that the diversification benefits are reduced (higher correlations) when we need them most (during a restrictive environment). These findings further suggest that the investor adopt a tactical asset allocation strategy that reduces these effects during restrictive environments.

5. Conclusions

The results of this study provide evidence of the relative inability of international mutual funds to allow investors to realize the anticipated level of diversification benefits across Federal Reserve monetary policy environments. Specifically, during restrictive monetary periods, international mutual funds indexes provide lower excess returns than domestic counterparts. Additionally, the correlations between international mutual funds and domestic mutual funds are higher during restrictive monetary policy periods. The ineffective diversification provided by international mutual funds is consistent with other forms of international investment (i.e., country funds, and American depository receipts), which have been shown previously to offer limited diversification benefits for US investors. This evidence may represent a partial explanation for the home country bias exhibited by US-based individual and institutional investors.

References

Aiello, S. & Chieffe, N. (1999). International index funds and the investment portfolio. *Financial Services Review, 8*(1), 27–36.

Bailey, W. & Lim, J. (1992). Evaluating the diversification benefits of the new country funds. *Journal of Portfolio Management, 18*(3), 75–80.

Barry, C. B., Peavy, J. W., III, & Rodriguez, M. (1997). *Emerging Stock Markets: Risks, Return, and Performance*. Charlottesville, VA: Research Foundation of the Institute of Chartered Financial Analysts.

Bers, M. K. (1998). Causal relations among stock returns, inflation: Persistence of international mutual fund performance. *Global Finance Journal, 9*, 225–240.

Bookstaber, R. (1997). Global risk management: Are we missing the point? *The Journal of Portfolio Management, 23*(3), 102–107.

Booth, J. R. & Booth, L. C. (1997). Economic factors, monetary policy, and expected returns on stocks and bonds, *Economic Review: Federal Reserve Bank of San Francisco*, 32–42.

Campbell, J. Y., Lo, A. W., & MacKinlay, A. C. (1997). *The econometrics of financial markets*. Princeton, NJ: University Press.

Chang, E., Eun, C. S., & Kolodny, R. (1995). International diversification through closed-end country funds. *Journal of Banking and Finance*, *19*, 1237–1263.

Conover, C. M., Jensen, G. R., & Johnson, R. R. (1999a). Monetary conditions and international investing. *Financial Analysts Journal*, *55*(4), 38–48.

Cooper, I. & Kaplanis, E. (1994). Home equity bias in equity portfolio, inflation hedging, and international capital market equilibrium, *Review of Financial Studies*, *7*, 45–60.

Erb, C. B., Harvey, C. R., & Viskanta, T. E. (1994). Forecasting international equity correlations. *Financial Analysts Journal*, *50*(6), 39–45.

Gorman, S. A. (1998). *The international equity commitment*. Charlottesville, VA: Research Foundation of the Institute of Chartered Financial Analysts.

Hanna, M. E., McCormack, J. P., & Perdue, G. (1999). A nineties perspective of international diversification. *Financial Services Review*, *8*(1), 37–46.

Ho, K., Milvesky, M. A., & Robinson, C. (1999). International equity diversification and shortfall risk. *Financial Services Review*, *8*(1), 11–26.

Ibbotson Associates. (1999). *Stocks, bonds, bills and inflation: 1999 yearbook*. Chicago: Ibbotson Associates.

Jensen, G. R. & Johnson, R. R. (1993). An examination of stock price reactions to discount rate changes under alternative monetary policy regimes. *Quarterly Journal of Business and Economics*, *32*, 26–51.

Jensen, G. R., Mercer, J., & Johnson, R. R. (1996). Business conditions, monetary policy, and expected security returns. *Journal of Financial Economics*, *40*, 213–237.

Johnson, R. R. & Jensen, G. R. (1993). The reaction of foreign stock markets to U.S. discount rate changes. *International Review of Economics and Finance*, *2*, 181–193.

Jones, D. M. (1989). *Fed watching and interest rate projections*. New York: New York Institute of Finance.

Longin, F. & Solnik, B. (1995). Is the correlation of international equity returns constant: 1970–1990? *Journal of International Money and Finance*, *14*, 3–26.

Melton, P. (1996). *The investor's guide to going global with equities*. London: Pitman Publishing.

Morningstar. (1998–1999). *Morningstar Mutual Fund 500*. Chicago: Morningstar.

Patelis, A. (1997). Stock return predictability and the role of the monetary sector. *Journal of Finance*, *52*, 1951–1972.

Prather, L. & Bertin, W. (1997). A simple and effective trading rule for individual investors. *Financial Services Review*, *6*, 285–294.

Russell, J. W. (1998). The international diversification fallacy of exchange-listed securities. *Financial Services Review*, *7*, 95–106.

Shawky, H. A., Kuenzel, R., & Mikhail, A. D. (1997). International portfolio diversification: A synthesis and update. *Journal of International Financial Markets, Institutions and Money*, *7*, 303–327.

Sinquefield, R. (1996). Where are the gains from international diversification? *Financial Analysts Journal*, *52*(1), 8–14.

Solnik, B., Boucrelle, C., & LeFur, Y. (1996). International market correlation and volatility. *Financial Analysts Journal*, *52*(5), 17–34.

Stuart, A. & Ord, K. (1987). *Kendall's advanced theory of statistics* (Vol. 1). New York: Oxford University Press.

Tesar, L. L. & Werner, I. M. (1995). Home bias and high turnover. *Journal of International Money and Finance*, *14*, 467–492.

Thorbecke, W. (1997). On stock market returns and monetary policy. *Journal of Finance*, *52*, 635–654.