

INTERNATIONAL DIVERSIFICATION: ARE THE BENEFITS DWINDLING?

By Stephen E. Wilcox and Mikko E. Huuonen

In order for diversification to work, the securities that make up a portfolio must have low correlations. But over time, the correlation between the S&P 500 and the dollar-based EAFE index has increased substantially.

One of the primary justifications U.S. investors have given for casting their investment nets overseas in recent years is that diversification with foreign securities may reduce portfolio risk.

But the recent economic problems in many foreign countries and their effect on the U.S. economy and stock market has led many investors to question the benefits of international diversification.

This article focuses on the issue of whether or not the diversification benefits of international investment are beginning to diminish.

INTERNATIONAL CORRELATION

In order to form a diversified portfolio, the securities that make up the portfolio must have low correlations—in other words, their returns are influenced by different factors, and they do well and poorly at different times. This produces a portfolio whose overall returns are less variable—and hence less risky—than the returns of its individual components.

For a U.S.-based investor considering international investments, the relevant question concerns the correlation of the international markets with the U.S. market.

To examine this question, we used Global Financial Data's World Stock Market Dollar Indexes (www.globalfindata.com) to compute U.S. dollar-based percentage changes in the S&P 500 index and the Morgan Stanley EAFE (Europe, Australia, and Far East) index over the time period January 1, 1919, to September 30, 1998. (Although the EAFE index was first reported in 1970, Global Financial Data has extended the index back to 1919.)

Figure 1 illustrates the results based on five-year rolling time periods using monthly data. (In other words, we examined the percentage change in the two indexes from January 1919 to January 1924, then from February 1919 to February 1924, etc.) The correlation coefficient indicates the degree to which the movements of the two indexes over each five-year time period are correlated (the dates in Figure 1 indicate the ending time period). The closer the coefficient is to 1.00, the greater the correlation; negative coefficients indicate returns moving in opposite directions (one is up while the other is down).

Looking at the figure, it is quite obvious that the correlation between the S&P 500 index and the dollar-based EAFE index has varied considerably over time. However, you can see from the trendline in Figure 1 that the correlation between the S&P 500 and dollar-based EAFE has also increased over time.

What explains this trend? Most experts argue that financial markets have become increasingly integrated due to the lifting of many restrictions associated with international investment. As governments continue to agree to coordinate their fiscal, monetary, and trade policies, it is reasonable to believe that the correlation among the developed equity markets will continue to increase.

Another interesting phenomenon is that correlations increase with increases in the investor's holding period. Figure 1 represents correlations based on

Stephen E. Wilcox, Ph.D., CFA is a professor of finance at Minnesota State University, Mankato. Mikko E. Huuonen is an MBA student at Minnesota State University, Mankato.

monthly data; using annual data produced higher correlations [these annual results are not illustrated], so increasing holding periods results in a substantial increase in correlation.

Other research has provided evidence that the returns among developed markets are almost perfectly correlated for long investment holding periods. From a risk diversification standpoint, the closer the markets are correlated, the smaller the benefits of international diversification. In turn, this implies that the benefits of international diversification may be illusory for market participants with long investment horizons, such as young investors saving for retirement.

BEAR MARKET PROTECTION

It is also fairly simple to show

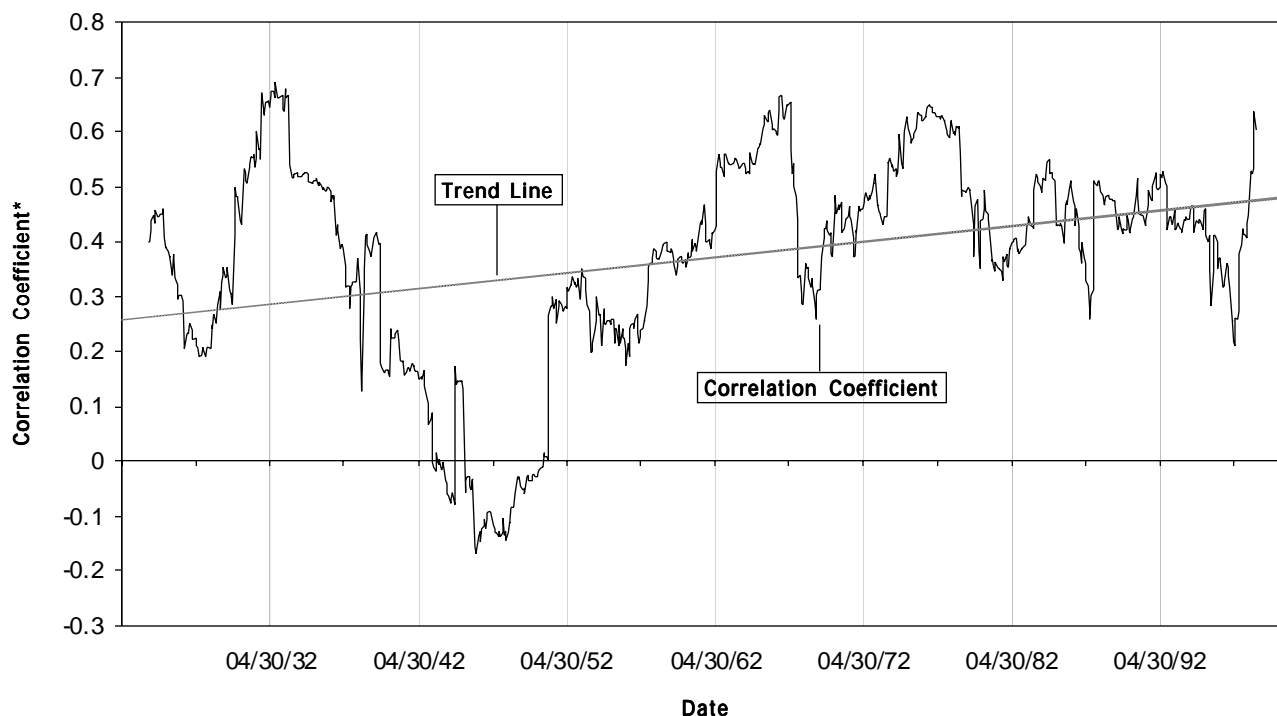
that international diversification fails to protect investors in the short term, particularly during bear markets.

Table 1 lists the 20 worst monthly percentage declines in the S&P 500 index since January 1970 and the corresponding changes in the dollar-based EAFE index. The table indicates that the dollar-based EAFE index increased in value in only four of the 20 months listed. Furthermore, percentage decreases in the dollar-based EAFE index exceeded percentage decreases in the S&P 500 index in six of the 20 months listed. The table supports results of other research that suggests international diversification may not be much of a safety net, particularly in bear markets. In fact, most of the evidence indicates that bear markets are contagious at the international level.

IS THERE ANY GOOD NEWS?

Fortunately, there is some good news. First, recent research indicates that emerging markets continue to have low correlations with developed markets and do not seem to be linked to each other or the U.S. market. Of course, in most recent years, the lack of correlation has been due to devastating returns from these markets, compared to exceptionally high returns from the developed markets, and particularly the U.S. markets. Nonetheless, there have been times when the emerging markets produced stellar returns, and the lack of correlation dictates that there may be more of a role for emerging market securities, rather than those from developed markets, in the portfolios of long-term investors.

**FIGURE 1. THE S&P 500 VS. EAFE: CORRELATION COEFFICIENTS
(CORRELATIONS OF DOLLAR-BASED INDEXES USING MONTHLY DATA)**



*The coefficient indicates the degree of correlation between the two indexes over each period; the closer the coefficient is to 1.00, the greater the correlation.

**TABLE 1. 20 WORST MONTHLY DECLINES IN THE S&P 500 AND
CORRESPONDING EAFE* RETURNS (1/70 TO 9/98)**

Date	S&P 500 Index (%)	EAFE* Index (%)	Date	S&P 500 Index (%)	EAFE* Index (%)
October 1987	-21.8	-14.1	November 1987	-8.5	0.9
August 1998	-14.6	-12.5	July 1974	-7.8	-5.4
September 1974	-11.9	-7.6	January 1970	-7.6	-1.4
November 1973	-11.4	-14.6	January 1990	-6.9	-3.8
March 1980	-10.2	-11.0	October 1979	-6.9	-8.3
August 1990	-9.4	-9.8	July 1975	-6.8	-4.5
October 1978	-9.2	5.4	August 1981	-6.2	2.1
April 1970	-9.0	-8.6	January 1978	-6.2	1.0
August 1974	-9.0	-10.6	May 1970	-6.1	-5.3
September 1986	-8.5	-1.2	February 1982	-6.1	-6.7

**Using the dollar-based EAFE index*

Second, the fact that the correlations on international markets and securities have varied so much over time suggests that future correlations may be unpredictable. There may be future macroeconomic events that result in lower correlations. For example, Figure 1 indicates that the correlation between the S&P 500 index and the dollar-based EAFE index was negative around the time period of World War II. Given the possibility, however remote, that future correlations will be lower, it may be in a long-term investor's interest to maintain an exposure to developed international markets.

Finally, simply focusing on the diversification benefits of international investing is myopic. Historical evidence indicates the returns on

non-U.S. securities often substantially exceed the returns of U.S. securities.

CONCLUSION

There are limitations inherent in attempting to diversify a U.S. equity portfolio through international equity investment. Short-run diversification benefits appear to be virtually non-existent because most major bear markets are contagious at the international level.

It is also questionable whether long-term investors who choose to allocate a part of their portfolio to developed international markets or their securities will ever realize a diversification benefit from this allocation, since all of the developed

markets appear to be so closely tied together, with almost perfect long-term correlation.

But it is important for investors not to ignore the positive aspects of international investment:

- Avoiding foreign markets drastically reduces your available investment opportunities.
- Many international securities and markets will undoubtedly provide rates of return that are superior to their U.S. counterparts.

These reasons alone justify investing internationally, and it may be time for investors to stop worrying about diversification benefits that may or may not be created, and begin to focus more on the profit potential of international investment. ♦

Discount Broker Survey Corrections

Due to a typographical error, the January *AAIL Journal's* 1999 Discount Broker Survey misquoted Peremel & Co.'s commission rate for trading 100 shares of a \$50 stock. The commission rate charged by Peremel is \$38.00, which is 0.76% of the total \$5,000 investment amount. This error appeared at the end of the list of traditional "live" brokers as the highest commission. The correct highest commission for trading 100 shares of a \$50 stock is \$75.00, 1.5% of the total investment.

In the list of primarily on-line brokers, the on-line commission rate for National Discount Brokers is misquoted as \$24.95 for all three sample trades. National Discount Brokers charges a flat commission rate of \$14.75 for on-line market orders involving stock trades.

Corrections are reflected in the Discount Broker Survey tables on our Web site at www.aail.com, found in the Special Features area.