

Financial Control Limited

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Thought of the Month - How Sharp is the Sharpe Ratio?

Many investors and fund managers rely on the Sharpe ratio (SR) as a measure of fund performance, i.e. net return per unit of risk (a higher number implies better performance). Is there too much reliance on this figure? The SR is calculated using historical NAV returns in excess of a risk-free rate, divided by the volatility of those returns. As we discussed in the March 2002 newsletter, a manager can use derivatives to smooth monthly returns thereby resulting in lower return volatility and a higher SR. However, perhaps there is a more important and opaque factor that can affect the volatility of returns. What happens when a significant portion of a portfolio is invested in illiquid assets? Unless asset prices are updated regularly using some 'fair' value or model that reflects current market conditions, changes in NAV or fund returns could be dampened thus lowering the overall volatility of the portfolio and in turn raising the SR. Therefore, how reliable is the SR without carefully examining all the underlying positions and prices? Should we be considering alternative measures of risk and performance?

Why is the Sky Blue? – Why does Correlation Often Fail to Properly Inform?

Correlation is a term frequently used by investors, asset managers, traders, risk managers and many others within the financial community to study the price behaviour between two or more 'assets' such as exchange rates, stock prices, indices, fund NAV's, benchmarks, etc. When two assets tend to move in the same direction, correlation is positive, and if they move in opposite directions, then correlation is negative. The range of correlation values is between 1 and -1. A value close to 1 or -1 implies that two assets are highly positively/negatively related to each other, and a value close to 0 implies independence. This may sound like a valuable piece of information that can have many practical uses. However one should also note the following issues before jumping to conclusions:

- (1) Correlations can vary significantly depending on the time period used and frequency of observations – short-term and long-term correlations can be significantly different particularly when asset volatilities are rapidly changing.
- (2) Correlation is not stable over time - historical correlations, like volatilities, only provide an estimate of future behaviour between two assets. How regularly should they be updated?
- (3) Correlation may not explain cause and effect – a high correlation does not imply that the returns of two assets are dependent on each other.

For more on correlation coefficients, see "The Dangers of Using Correlation to Measure Dependence" by Harry M. Kat, University of Reading Working Paper, August 2002.

Nourishment - Is Globalization Eroding Market Diversification?

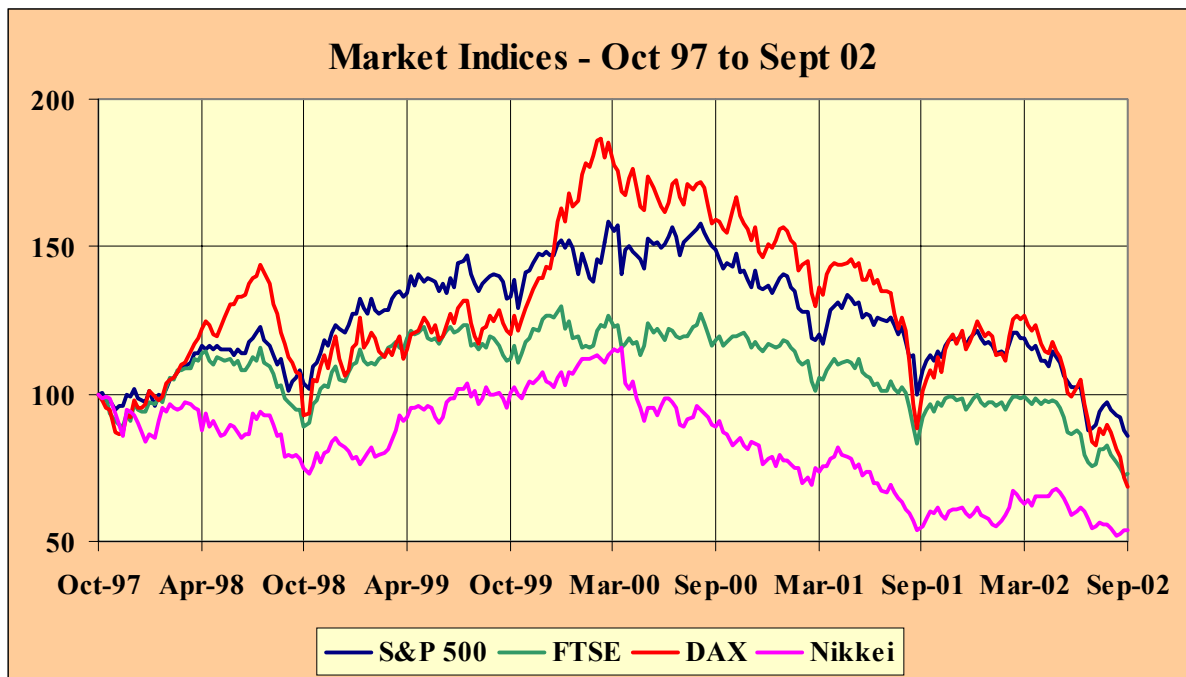
Investors often seek to maximize returns for a given level of risk by allocating capital to different asset classes across countries. The expectation is that economic cycles in different countries will not converge or start moving in tandem: otherwise the benefits from

diversification would diminish, particularly for long-only funds that are most susceptible to market down-turns. Has the corporate culture of the late 90's altered the game for investors? During the 90's we saw a wave of mergers and acquisitions where companies either sought to grow internationally through other companies that were already established, or expanded into other areas outside their core business to capture new opportunities and diversify their revenue streams. Take for example a traditional telecom company that expanded into the mobile / 3G business, the internet / on-line services, and then into totally unrelated business markets. Such companies may have achieved their own objectives by gaining exposure to various sectors and markets around the world with the intent of lowering the volatility of their earnings and stock-price. But now, they are no longer a one-sector, one-market company. Is globalization therefore causing stock prices to become more correlated and/or reducing the pool of uncorrelated stocks across different markets? Is this negating the efforts of some investors trying to diversify across a portfolio of global stocks?

In the next section, we look at four major market indices as a proxy for diversified portfolios by country and explore whether correlations have been increasing over the last five years. Although this study may not address the above questions at the micro level, it can still provide an indication whether the benefits from global diversification are eroding.

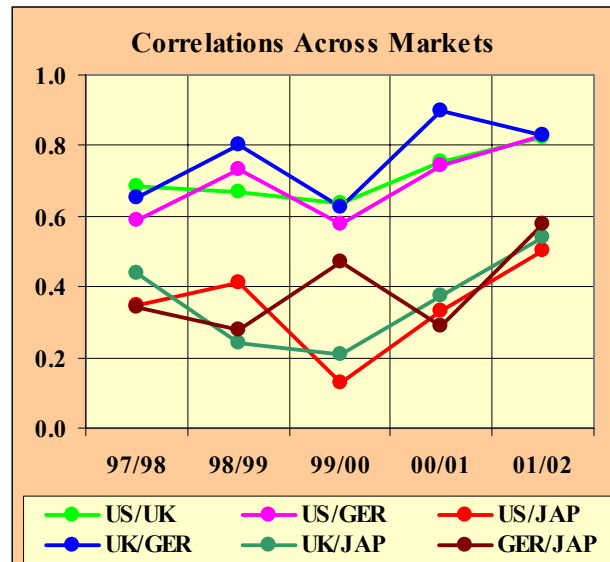
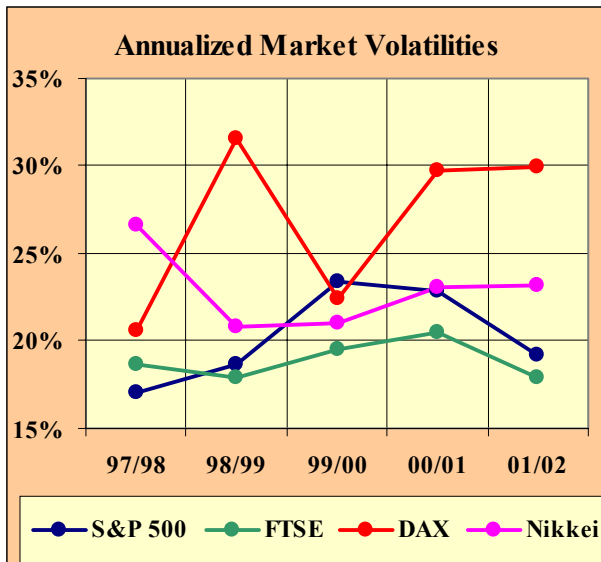
Data and Methodology

Market Indices: ¹ S&P 500, FTSE 100, DAX and Nikkei 225
 Total Period: October 1997 to September 2002
 Yearly Period: October to September
 Data Frequency: Weekly



Note 1 All indices were arbitrarily set at 100 to start the period.

In figure 1 above, it is striking to note that all four indices are below October 97 levels, including the Nikkei which has shed half its value over the same period.



Figures 2 and 3 provide snapshots of market volatilities and correlations ² over one-year periods

Note 2 Volatilities and correlations were calculated using 52 weeks of historical returns in each respective yearly period. Though these may be calculated in numerous ways, including weighting recent returns more heavily, for simplicity the returns were not weighted.

Figure 2 shows that the DAX was not only the most volatile market, with the exception of the Nikkei in 97/98, but it also exhibited wild swings in volatility from year to year. Figure 3 shows that market correlations formed two distinct clusters: (1) US, UK and Germany exhibited the highest correlations amongst themselves, and (2) correlations with Japan were the lowest. This is not unexpected as the Japanese market was partially hit by the Asian crisis in 97/98, started to recover up to March 2000, and then was dragged down again with the rest of the markets, which is clearly shown by rising correlations since 99/00.

It is impossible to say whether the rising correlations are due to globalization or a mix of several factors. However, it is clear that correlations between the US, UK and Germany have risen from approximately 0.65 in 97/98 to 0.83 in 01/02, and have risen to about 0.55 with the Nikkei.

Given the above data, are global equity portfolios diversified enough? We took a hypothetical portfolio with fixed allocations of 57% in the S&P 500, 14% in the FTSE, 21% in the DAX and 8% in the Nikkei to examine the degree of diversification.

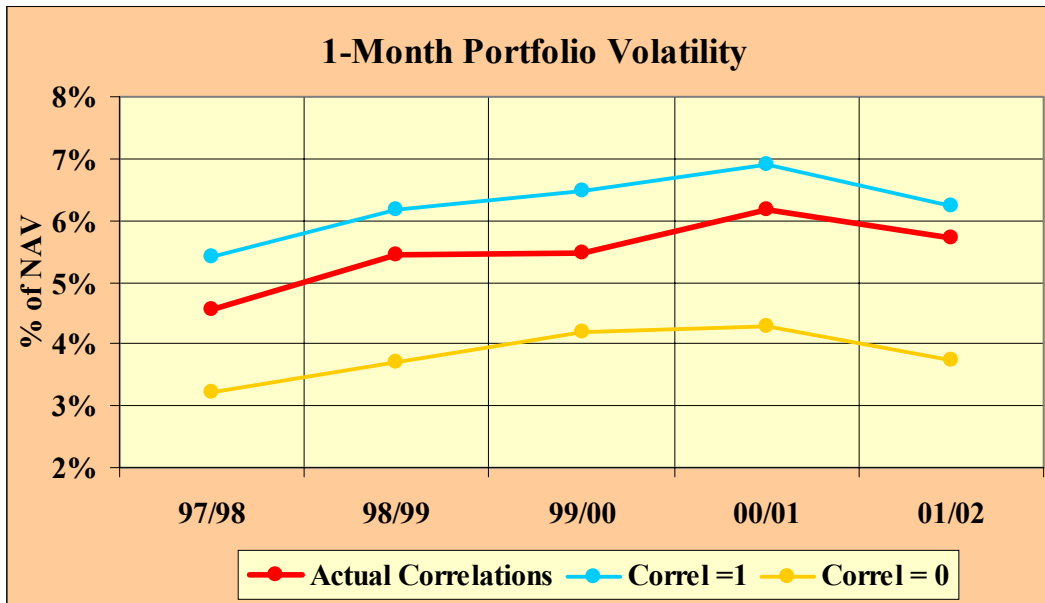


Figure 4 shows one-month return volatilities under three correlation scenarios.

Each value in figure 4 was calculated using our hypothetical portfolio, yearly volatilities, and three sets of correlations. The red line shows the portfolio return volatility for one month periods using actual correlations from each year shown in figure 3. This is compared with the one-month return volatilities assuming all correlations were equal to 1 (i.e. perfectly correlated) on the blue line, and correlations equal to 0 (i.e. uncorrelated) on the gold line. For example, using the 01/02 results, the portfolio has an expected monthly volatility of 5.7% using actual market correlations, a volatility of 6.2% if all correlations were equal to 1, and 3.8% if correlations were equal to 0. From looking at the gap between the red and blue lines, one may conclude that the benefits from global diversification by market may be eroding and are probably inadequate against systemic shocks.

As a result of potentially increasing correlations among countries, some investors have begun to focus more on individual industries and sectors instead of the traditional top-down approach of selecting favourable macro-economic environments (i.e., countries) before analysing industries.

Feedback

As always, we greatly appreciate your comments and feedback. We realize that our ideas and information might be cutting edge, futuristic kind of stuff or mysterious in some ways. E-mail us anytime at help@financialcontrollimited.com if you would like a) for us to clarify anything, b) to recommend improvements to us, or c) to just debate with us – we like philosophy especially as it relates to financial services! ! Or visit our site at www.financialcontrollimited.com

This issue of the newsletter was written by Ben Vella and edited by Robert Jones.

These newsletters are designed to provoke thought and stimulate debate based on real world challenges that we face in our daily lives as we manage investments for ourselves and for others.