Weighting For Correlation

Truly famous last words are hard to come by; the best-remembered often are those unintentionally ironic or just downright silly. Consider for example the purported last words of Alfred Graf von Schlieffen, developer of the eponymous plan put into action by Imperial Germany at the opening of World War I: "Remember to keep the right flank strong." His successor, Helmuth von Moltke failed to heed the advice and the rest is quite literally history. Or those of Pancho Villa: "Don't let it end like this. Tell them I said something."

Here is a set of famous last words you are unlikely to hear even from their creator: "Don't get into the business of index management." What was initially a good marketing tool by Charles Dow and Edward Jones to sell their *Wall Street Journal*, a simple shorthand for answering the question, "How did the market do today?, has morphed into a monstrosity of hundreds of thousands of little benchmarks sprawled across equities, fixed-income, currencies, commodities, real estate and all manner of non-traditional (translation: This is a bright orange tree frog. Do not get near it) investments.

Currency Indexation

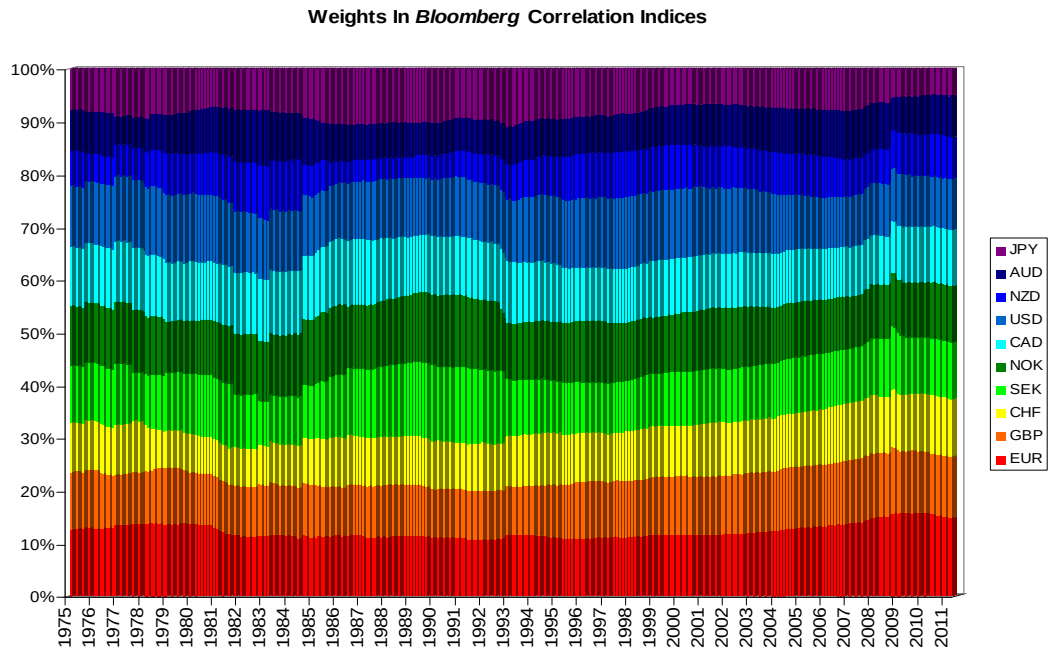
The demand for indices is, however, as insatiable as the incontinence of suppliers and so the search for the perfect or at least the serviceable currency index continues (see "The Index Approach To Currency Risk Management," April 2006). The venerable dollar index (see "What Drives The Dollar Index?" January 2006) occupies a great deal of mind space amongst traders, but none of the attempts to create a duplicate index for the euro (see "The Euro Index: The Dollar Index Meets Its Match," May 2006) have taken hold.

In the case of currencies, just as in the case of commodities, little agreement exists on what should be the driving factor in assembling an index; at least stock indices have gravitated toward market- and price-weighting schemes. Should a currency index be based on trade flows, financial flows, trading liquidity or some other measure? Should they include major and minor currencies or currencies pegged directly to, say, the U.S. dollar or allowed only to fluctuate in a narrow band? Should the weights of the currencies be fixed, as has been the case for the dollar index since inception, or should they be rebalanced and if so, on what basis?

The quants at *Bloomberg* addressed these questions and developed a set of correlation-weighted indices (BCWI) for a group of ten major currencies. These include the U.S., Australian, Canadian and New Zealand dollars, the Japanese yen, the euro, the Swiss franc, the British pound, the Norwegian krone and the Swedish krona. The indices are based on statistical measures designed to maximize the degree of variance explained for each currency. The exact methodology is available on *Bloomberg* and will not be replicated here. In a marked departure from all other currency indices, the weights used for each currency are updated daily. The actual indices published are the cumulative profit and loss, ignoring interest, starting in January 1975.

The long-term history of the weights involved contains a few surprises, not the least of which is the relatively small fluctuations over more than 35 years. The weight of the euro has increased and is the largest single component in compiling each of the currency indices; and while this may be expected given the long bouts of USD weakness over the period and number of major currencies in the euro bloc, the high weights for the GBP, CHF, SEK and NOK give the BCWI scheme a very Eurocentric flavor. So much for the rise of the BRIC nations, the importance of the Mexican peso to the U.S. or the wide swath of East Asian currencies: None are considered in the BCWI family. In fairness, the Chinese yuan has not traded freely and was a very minor currency until the 1990s, the Russian ruble was the currency of a country that went out of business in 1991 before its present incarnation and the Brazilian real was not introduced until 1994. Remember, do not get into the business of index management; these are the sorts of issues that will make your life miserable on the good days.

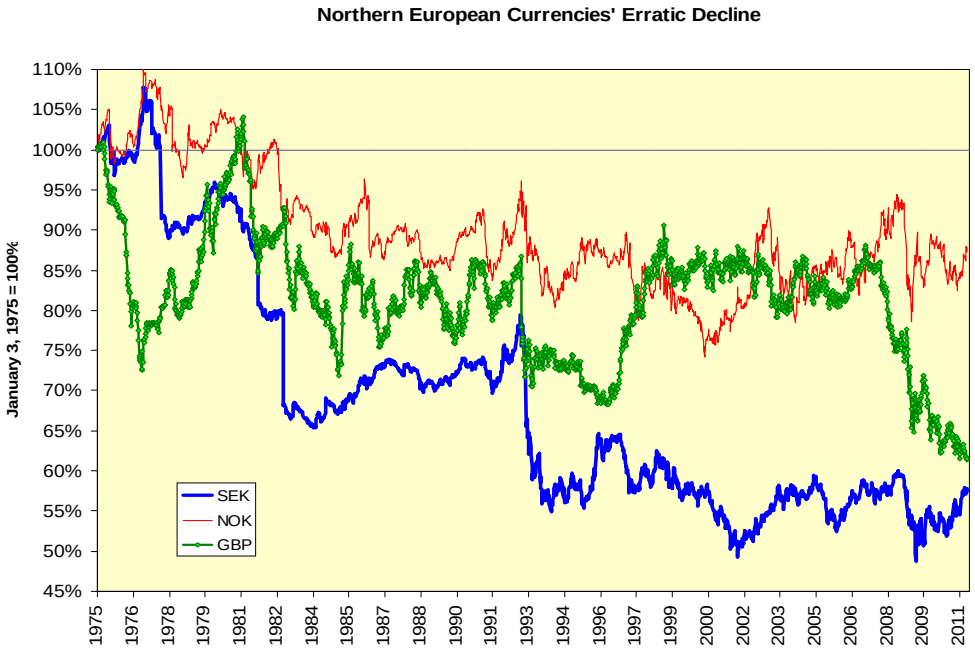
Other surprises include the CAD's greater weight than the USD and the gradual diminution of the JPY. In addition, the NZD has a greater weight than does the AUD even though Australia is linked far more closely to the millennial success of the Pacific Basin than is New Zealand.



The History of The Indices

Now let's get to the more interesting aspect, and that is the rise and fall of the ten different BCWI over time. As an aside, while the BCWI are set to January 2, 1975 = 100, which is on a daily basis; the charts in the section below use weekly data and therefore are set to January 3, 1975 = 100.

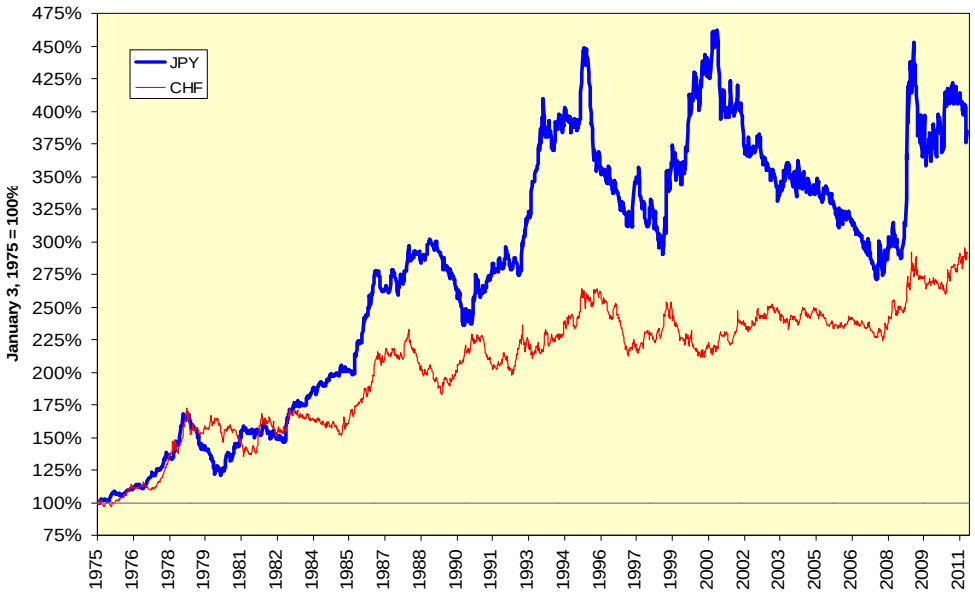
First, let's look at the three Northern European currencies, the GBP, NOK and SEK. The SEK has been the most persistently weak over time and the GBP has been the most volatile within a broad range. The NOK has trended sideways since the mid-1980s.



The two currencies with the strongest gains over time have been the JPY and CHF; this is an interesting duo as both currencies have had a reputation over the past fifteen years as low-interest funding currencies for carry trades. Indeed, it is this use that explains much of the action in the JPY especially; the rest of the world gets overly short of the yen to fund investment elsewhere and then has to engage in massive bouts of short-covering each time a financial crisis leads to a shedding of risk. In addition, both Japan and Switzerland tend to have significant "must-do" activity in their currencies. The persistent trade surpluses Japan runs means its customers have to buy yen to

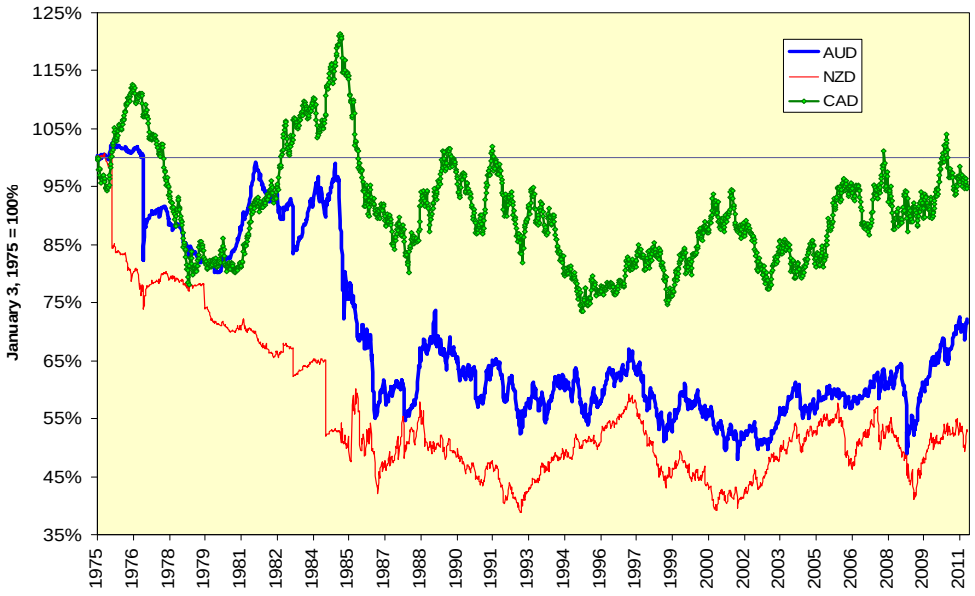
pay their Japanese suppliers, and the safe-haven inflow (polite version) of funds from various Middle Eastern and former Soviet Union commodity exporters into Switzerland puts the CHF under period upwards pressure.

Japanese Yen And Swiss Franc Most Persistent Gainers

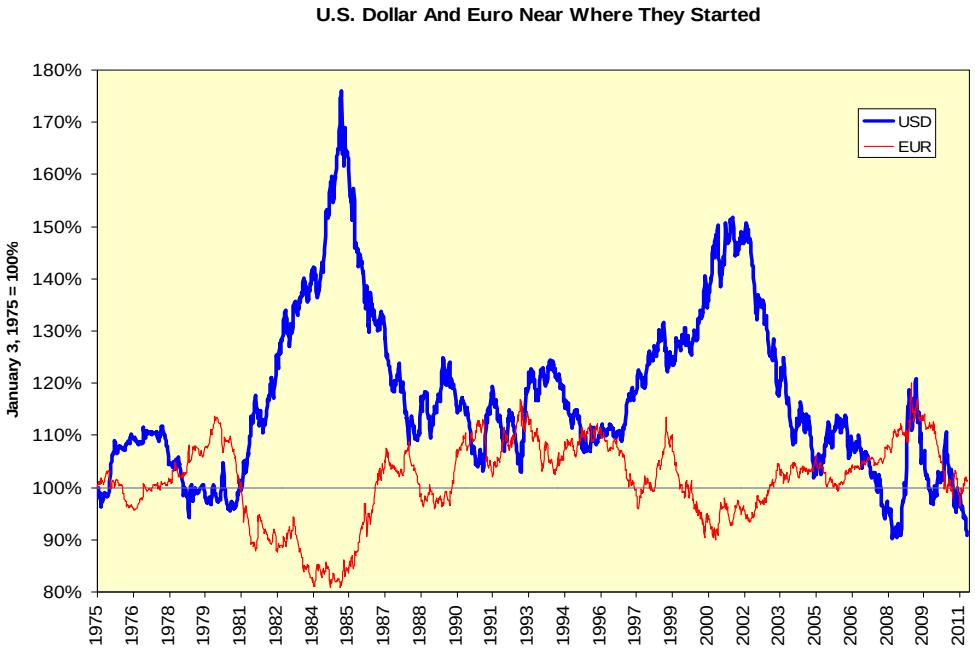


Now let's turn to the three non-U.S. dollars, the CAD, AUD and NZD. While the bilateral exchange rate between the U.S. and Canada has moved in favor of the CAD in recent years, this is something of an illusion according to the BCWI; on this measure, the rate has gone nowhere for a very long period of time. The same illusion applies to the NZD and AUD; both currencies turned lower in the 1980s and never recaptured the losses. This certainly seems like news to anyone who has watched the rise and fall of the Australian dollar especially over the years.

Canadian Dollar Has Retained Value

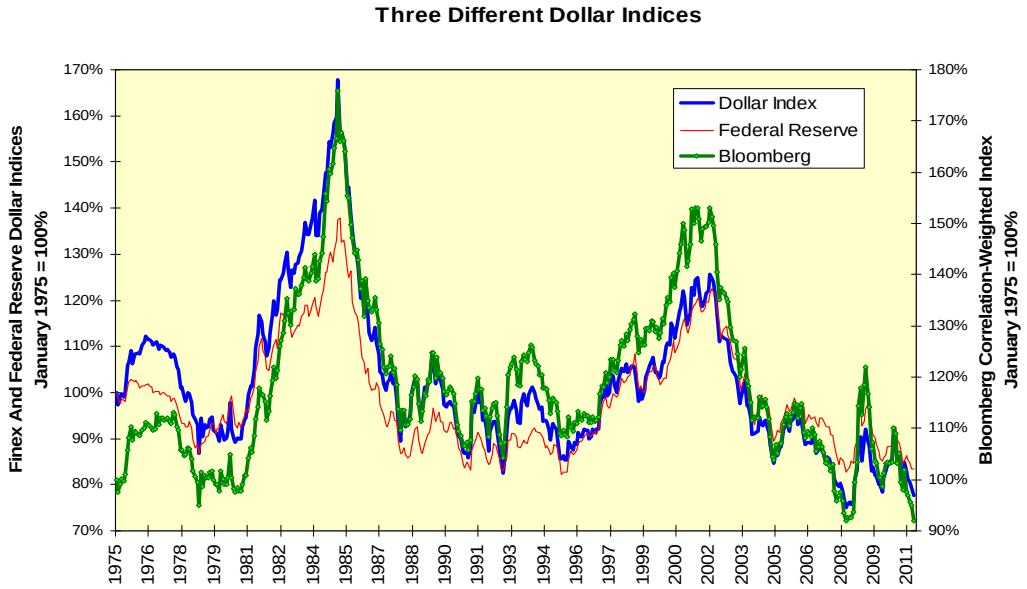


Now we can look at the Big Two, the USD and EUR. The USD chart looks rather familiar; the largest feature remains its massive rally in the early 1980s, one that was mirrored between 1997 and 2002 in the BCWI. The EUR chart simply fails to capture the large bilateral swings of the euro and its predecessors against the dollar over time. The BCWI version of the euro looks, well, boring.

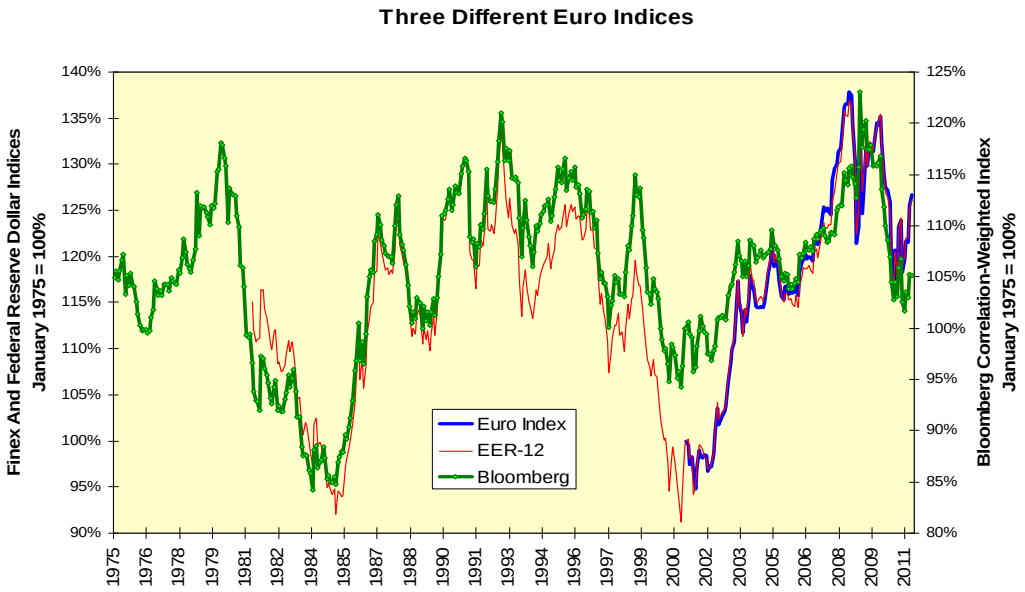


Comparison Against Other Indices

Now let's compare the BCWI for the USD and EUR against other common indices for both currencies on a monthly basis. For the dollar, we will compare the BCWI against the dollar index and the Federal Reserve's trade-weighted dollar index. The BCWI overstates the greenback's strength along with the dollar index against the Federal Reserve index in the early 1980s and against both other indices in 2001-2002. The construction of the BCWI treats downturns in Europe as major gains in the dollar regardless of the trade-weights employed in the Federal Reserve methodology.



In the euro case, we can compare the BCWI to the euro index and to the simplest of many European Effective Exchange Rates calculated by the European Central Bank, the 12-country index (they have a 41-country index; is that a bureaucracy out of control, or what?). The EER-12 index is back-calculated to April 1981 and the euro index to January 2001 (do not go into index management). Here the BCWI overstates the euro's strength against both indices in 2001-2003 and overstated the euro's weakness in the first half of 2010.



In the end, the BCWI provide us with an interesting and very rigorous methodology for measuring a currency against a set of counterparts. These indices can provide a mental anchor for assessing strength and weakness, but as bilateral trade arrangements are based overwhelmingly in single-currency terms and as interest rate arbitrage against a basket whose weights change every day by design is a bit challenging, we probably should not expect these indices to become dominant trading or hedging vehicles. Let's hope those are not destined to become famous last words.