

## The Short, Awful Life Of The Dollar Carry Trade

Sinclair Lewis entitled a 1935 anti-fascist political satire, *It Can't Happen Here*. The message was of course “it,” whatever it may be, can happen here if we cease to pay attention. Such a sentiment is applicable to the idea the dollar might become a low-interest funding currency for the rest of the world, just as the yen has been for years. The yen carry trade was the subject of June 2007’s “Looking at the Carry Trade.” A carry trade involves borrowing a low-yielding currency, selling it, and then lending in a high-yielding currency.

Here is the punchline, right up front. Not only can it happen here, using the future tense, but it has been happening here, using the present perfect tense. The longer-term implications for the U.S. from this development are not good. As we saw in April’s “Currencies and Relative Stock Market Performance,” only Japan’s stock market has underperformed the U.S. since May 2001. Switzerland, whose Swiss franc carry trade will be examined next month, also has underperformed the world. When you are trying to reflate your economy by printing money, others with a better use therefor tend to swoop in, borrow those funds, and put them to better use elsewhere.

Let’s take a look at the dollar carry trade in greater detail using a structure parallel to June 2007’s examination of the yen carry trade. Indeed, the parallels between the two carry trades are so strong that some sections of the text were left intact deliberately.

### **Carry Trade Decomposition**

All currency trades can be broken into their interest rate spread component and their spot rate component. Let’s look at the interest rate spread component first across a range of 29 selected currencies. A table of these currencies and their ISO codes is presented below, color-coded by status as a major currency (green background), EMEA (Emerging Europe, Middle East, Africa; yellow background), Latin American (orange background) or Asia (violet background).

ISO Code      Country

ARS	Argentina
AUD	Australia
BRL	Brazil
CAD	Canada
CHF	Switzerland
CLP	Chile
COP	Colombia
CZK	Czech Rep.
DKK	Denmark
EUR	Eurozone
GBP	United Kingdom
HKD	Hong Kong
IDR	Indonesia
INR	India
JPY	Japan
KRW	Korea
MXN	Mexico
NOK	Norway
NZD	New Zealand
PEN	Peru
PHP	Philippines
PLN	Poland
SEK	Sweden
SGD	Singapore
THB	Thailand
TRY	Turkey
TWD	Taiwan
USD	United States
ZAR	South Africa

The carry trade returns calculated below are based on borrowing at the three-month LIBOR rate of the lower-yielding currency ( $LY_3$ ) and lending at the three-month LIBOR rate of the higher-yielding currency ( $HY_3$ ). The returns on the higher-yielding currency are adjusted for the daily changes in the spot rate for the lower-yielding currency ( $LYS$ ). A 260-day trading year is used.

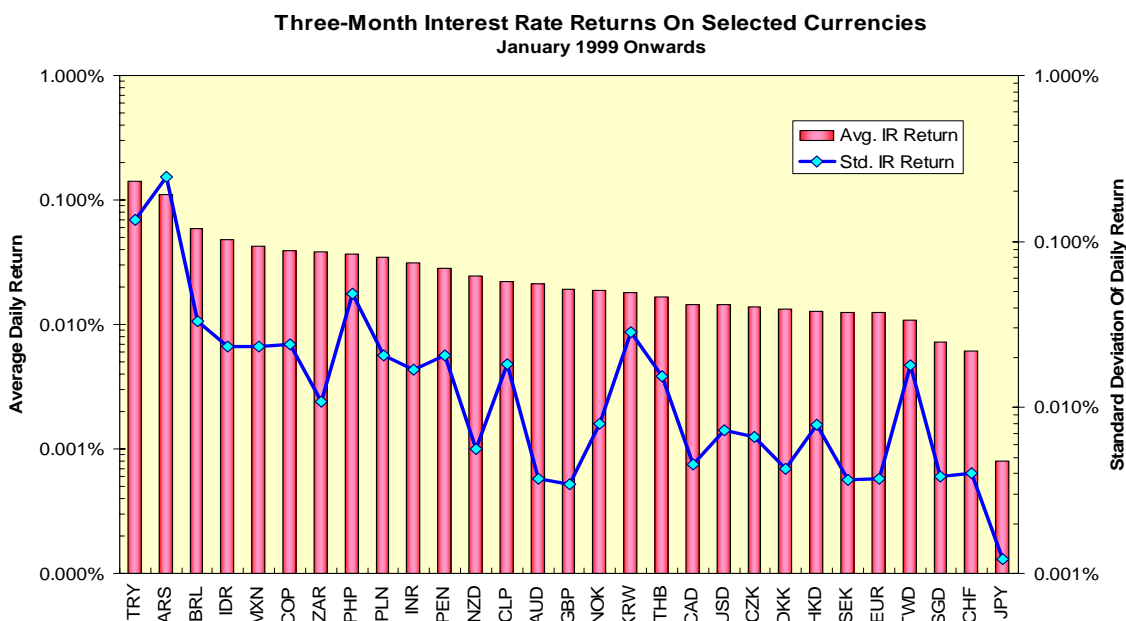
1.  $Long\ Return_t = \left[ \left( 1 + \frac{HY_{3_t}}{260} \right) * \frac{LYS_t}{LYS_{t-1}} \right] - 1$
2.  $Short\ Return_t = \frac{LY_{3_t}}{260}$
3.  $NetCarry\ Return_t = Long\ Return_t - Short\ Return_t$

What do these interest rate carry returns look like since the January 1999 advent of the euro? Several observations are in immediate order. First, even on the logarithmic scales used, the low return on the JPY is an outlier. The dollar's interest rate returns are pretty much in the middle of the pack. Second, Argentina and in particular Turkey are, as before, outliers both on their average daily returns and on the standard deviation of these returns.

Third, several G-10 countries with high-yielding currencies, such as New Zealand (see "Getting Carried Away With The Kiwi," July 2008), Australia (see "What's Down With The Australian Dollar?" March 2008) and the United Kingdom have unexpectedly low standard deviations of return. Fourth and finally, the opposite is true for several Asian countries, including Taiwan and Korea.

We commented previously this fourth relationship might have been the result of the U.K./New Zealand/Australia central banks copying the Federal Reserve's transparency. As that no longer exists, we will need to abandon it as an

explanation going forward. The higher standard deviation of interest rate returns for the Asian countries may be the result of their currency board-like pegging of currencies via interest rate volatility.



A second set of observations emerges from a correlation matrix of these returns over the period in question, and it involves several of the countries noted above. We might feel safe in assuming short-term interest rates worldwide are positively correlated (green cells) over long periods of time, and this is the near-universal case for 25 of the 29 countries in question. However, the carry returns for the ARS, BRL, AUD and NZD exhibit large swaths of negative correlation (yellow cells) against other currencies.

**Correlation Of Three-Month Interest Rate Total Returns Since January 1999**

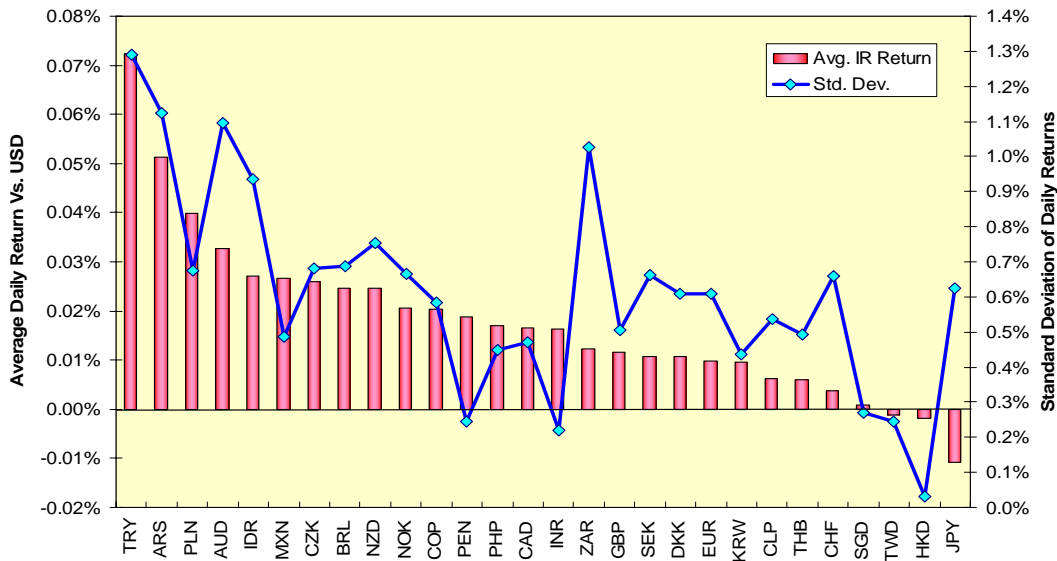
	ARS	AUD	BRL	CAD	CHF	CLP	COP	CZK	DKK	EUR	GBP	HKD	IDR	INR	JPY	KRW	MXN	NOK	NZD	PEN	PHP	PLN	SEK	SGD	THB	TRY	TWD	USD	ZAR		
ARS	1.000																														
AUD	-0.321	1.000																													
BRL	0.168	0.031	1.000																												
CAD	-0.314	0.466	0.079	1.000																											
CHF	0.012	0.425	-0.065	0.704	1.000																										
CLP	0.015	0.282	0.687	0.642	0.405	1.000																									
COP	0.015	0.120	0.590	0.545	0.242	0.808	1.000																								
CZK	0.130	0.036	0.355	0.640	0.504	0.745	0.844	1.000																							
DKK	0.086	0.434	0.013	0.739	0.923	0.492	0.371	0.612	1.000																						
EUR	0.063	0.430	-0.165	0.646	0.942	0.322	0.189	0.453	0.941	1.000																					
GBP	-0.286	0.718	0.063	0.804	0.712	0.569	0.448	0.540	0.698	0.631	1.000																				
HKD	-0.185	0.322	0.134	0.898	0.615	0.692	0.546	0.649	0.614	0.505	0.730	1.000																			
IDR	0.235	-0.303	0.263	0.282	0.098	0.462	0.617	0.677	0.237	0.103	0.071	0.388	1.000																		
INR	0.109	0.287	0.364	0.723	0.637	0.796	0.702	0.822	0.735	0.580	0.649	0.764	0.554	1.000																	
JPY	-0.146	0.747	-0.090	0.512	0.570	0.291	0.250	0.247	0.590	0.644	0.674	0.379	-0.043	0.400	1.000																
KRW	0.052	0.331	0.644	0.305	0.106	0.656	0.586	0.408	0.258	0.076	0.322	0.306	0.273	0.542	0.201	1.000															
MXN	-0.107	-0.066	0.329	0.633	0.296	0.719	0.791	0.863	0.373	0.206	0.482	0.708	0.666	0.711	0.061	0.333	1.000														
NOK	0.306	-0.019	0.052	0.530	0.613	0.469	0.503	0.774	0.778	0.701	0.345	0.467	0.554	0.703	0.280	0.223	0.549	1.000													
NZD	-0.218	0.881	0.098	0.285	0.335	0.219	-0.037	-0.153	0.326	0.342	0.549	0.215	-0.335	0.221	0.660	0.339	-0.258	-0.133	1.000												
PEN	-0.162	-0.005	0.194	0.746	0.456	0.686	0.721	0.849	0.507	0.380	0.540	0.749	0.636	0.717	0.137	0.267	0.904	0.613	-0.222	1.000											
PHP	0.042	0.277	0.612	0.353	0.197	0.640	0.585	0.467	0.343	0.163	0.311	0.327	0.300	0.582	0.181	0.946	0.386	0.317	0.251	0.338	1.000										
PLN	0.112	-0.081	0.335	0.595	0.569	0.654	0.611	0.832	0.632	0.473	0.449	0.581	0.464	0.716	-0.010	0.322	0.777	0.717	-0.260	0.801	0.451	1.000									
SEK	0.291	0.253	-0.015	0.446	0.632	0.326	0.330	-0.555	0.797	0.771	0.389	0.266	0.228	-0.526	0.464	0.227	0.221	0.873	0.133	0.336	0.277	0.497	1.000								
SGD	-0.245	0.515	0.160	0.679	0.489	0.512	0.272	0.246	0.432	0.363	0.629	0.758	0.083	0.528	0.447	0.308	0.272	0.044	0.557	0.329	0.274	0.172	-0.004	1.000							
THB	-0.065	0.483	0.499	0.685	0.435	0.790	0.670	0.595	0.521	0.343	0.640	0.714	0.313	0.787	0.399	0.764	0.518	0.354	0.436	0.520	0.746	0.492	0.298	0.674	1.000						
TRY	0.185	-0.308	-0.052	0.150	0.060	0.078	0.307	0.461	0.155	0.070	###	0.181	0.465	0.285	-0.117	0.043	0.373	0.443	-0.377	0.379	0.110	0.367	0.260	-0.098	0.128	1.000					
TWD	-0.011	0.016	0.291	0.433	0.410	0.537	0.447	0.491	0.420	0.374	0.352	0.419	0.453	0.477	0.118	0.385	0.559	0.439	-0.056	0.544	0.411	0.549	0.286	0.127	0.285	0.071	1.000				
USD	-0.305	0.296	-0.197	0.799	0.659	0.391	0.202	0.370	0.532	0.547	0.684	0.845	0.133	0.486	0.374	-0.084	0.487	0.255	0.181	0.589	-0.051	0.390	0.109	0.688	0.364	0.011	0.386	1.000			
ZAR	0.118	0.156	0.443	0.383	0.128	0.624	0.708	0.648	0.399	0.243	0.255	0.305	0.529	0.602	0.290	0.614	0.505	0.659	0.089	0.469	0.602	0.419	0.611	0.033	0.556	0.330	0.304	-0.109	1.000		

Argentina, which has been a proving ground for every misguided economic policy known to mankind for the past sixty years, is truly a different drummer. Not only has its interest rate return been well above norm, it has been more volatile and more unrelated to the rest of the world as well. Its larger neighbor, Brazil, whose BRL was our topic recently (see "The Stronger Real: Don't Blame It On Rio," April 2007), has been a miniature version of Argentina in some ways, but often exhibits hope in others. Australia and New Zealand have been in the unusual position of having high levels of internal debt and surging export revenues simultaneously. Their economies are linked increasingly to the East Asian boom, and their monetary policies quite literally must ride the tiger.

## The Dollar Carry

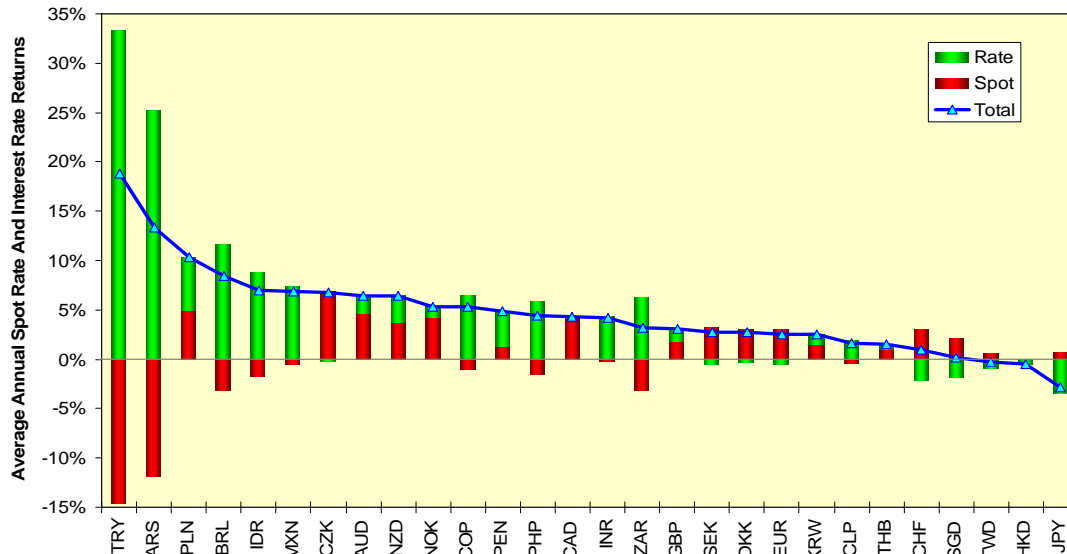
Now let's examine the total return from the carry trade of borrowing three-month USD and lending the proceeds in three-month LIBOR of the other 28 currencies. As before, Turkey and Argentina stand out on both the total return and the standard deviation thereof. Australia once again stands out for its high standard deviation, as does South Africa. A number of countries moved up or down in their total return rank from what we saw in the simple interest rate carry rank; for example, Poland moved higher while Colombia moved lower.

**Risk And Return In Three-Month Carry Against USD**  
January 1999 Onwards



These shifts in rank are produced by the impact of the spot rate in the total return mix. The PLN's spot rate contributed an average annual gain of 5.0%, while the COP's was a robber, pulling the average annual return down by 1.1%. The most significant aspect of the chart below was how Turkey and Argentina both were able to stay at the top of the total return heap in spite of average annual spot rate losses of 14.5% and 11.9%, respectively.

**Decomposing The Dollar Carry Trade**  
January 1999 Onwards



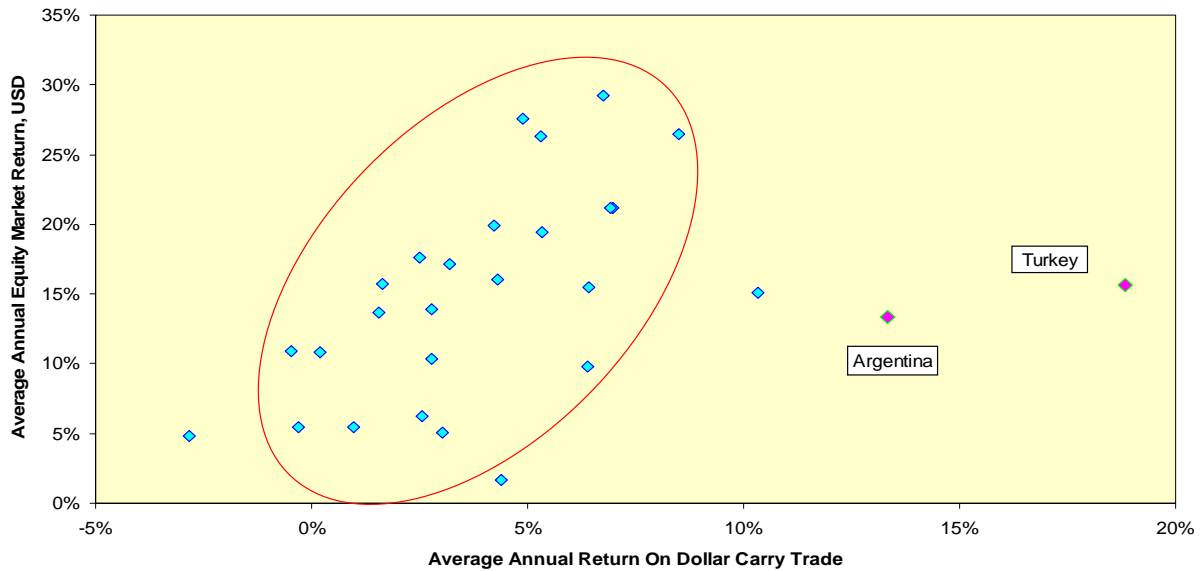
The message here is clear and unequivocal: Persistently high interest rates can lead to a profitable carry trade even for the most dreadfully mismanaged economies. This is simply an observation, not a policy recommendation.

## The Logical Rejoinder

If high interest rates reward risk-seeking investors who borrow USD and lend TRY and ARS, don't those same high interest rates devastate the stock markets of those countries? Let's map average annual stock market returns in USD terms for each country against the dollar carry trade and its components.

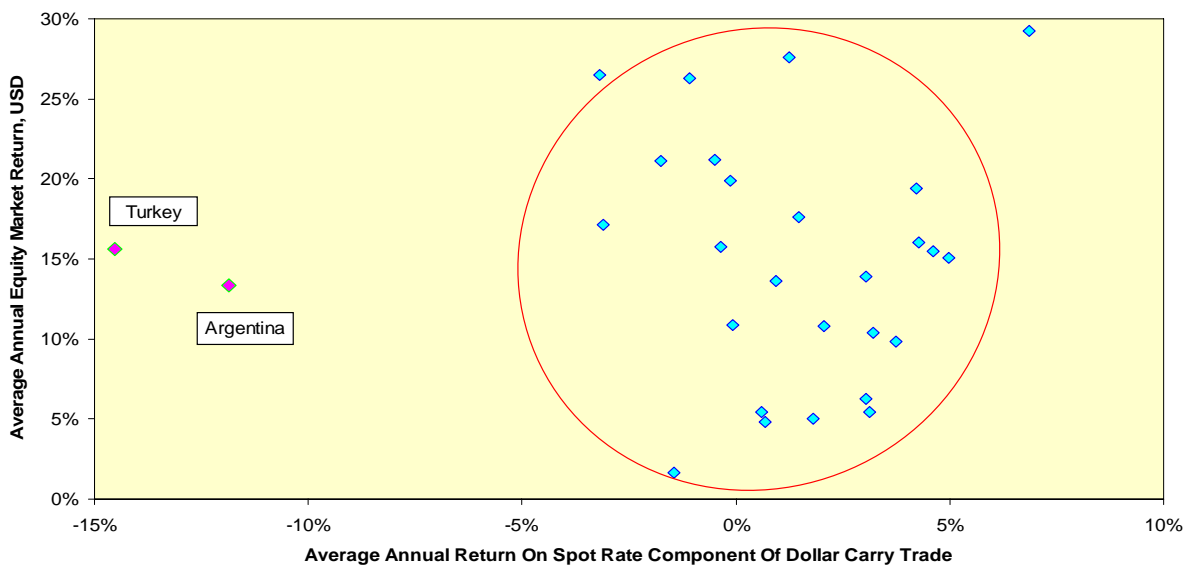
First, let's map the returns against the entire carry trade. Even if we isolate the obvious outliers of Turkey and Argentina, the positive relationship between stock market returns in USD terms and total return on the dollar carry trade is both visually apparent and statistically demonstrable; the regression beta is 1.492.

**Positive Correlation Between Dollar Carry And Equities**



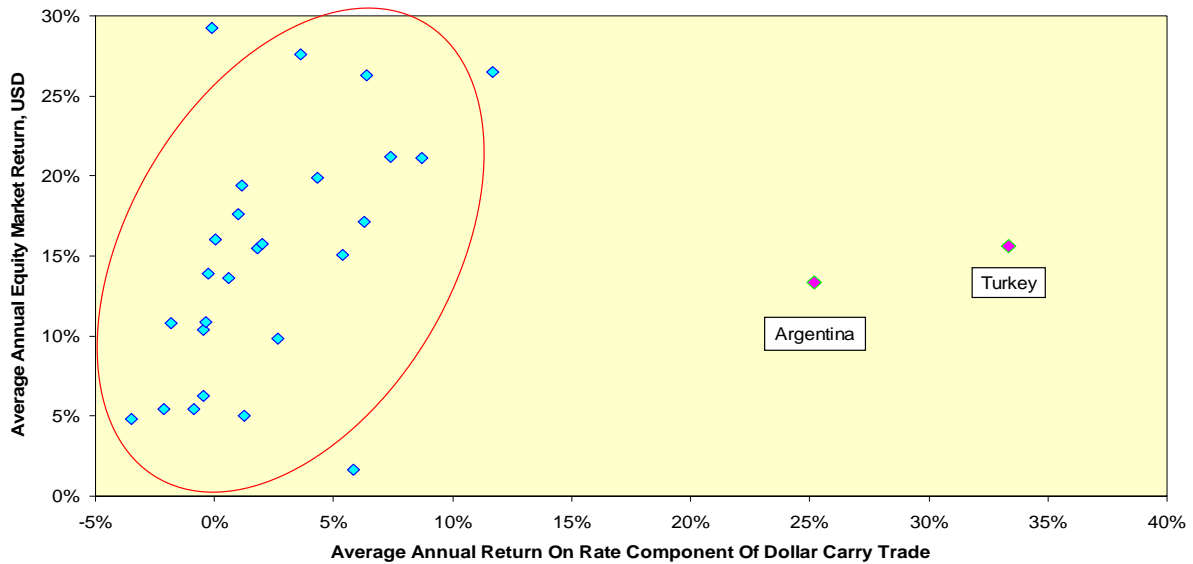
Is this positive correlation the result of the interest rate spread component or the spot rate component of the dollar carry trade? First, let's map stock market returns against the spot rate component of the dollar carry trade.

**No Correlation Between Spot Component of Dollar Carry And Equities**



If we isolate Turkey and Argentina, we wind up with what appears to be a non-deterministic relationship. Here the regression beta is a low 0.108. This should lead us to suspect it is the interest rate spread component which drives the relationship between stock market returns and the dollar carry trade. Here the regression beta is .892.

### Positive Correlation Between Rate Component of Dollar Carry And Equities



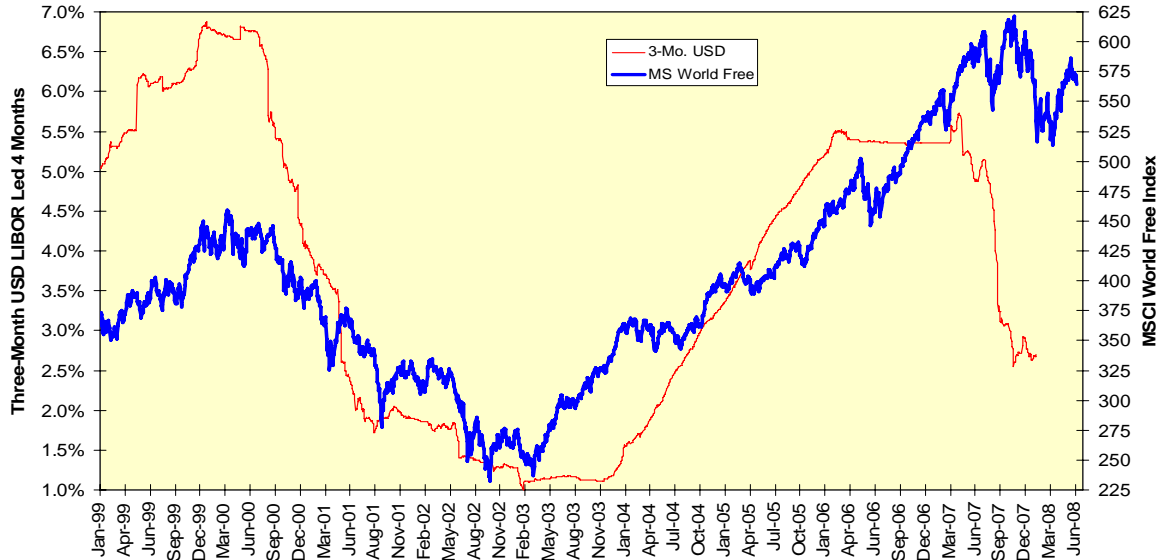
### Implications

De facto U.S. policy under Benjamin Bernanke at the Federal Reserve and Henry Paulson at the Treasury had been until early June 2008 worse than benign neglect of the dollar. It was a policy of deliberate weakness vis-à-vis the Chinese yuan and of low interest rates in response to the credit crunch domestically. Much of the return on the dollar carry trade, especially for many of the European currencies, was the result of spot rate changes as opposed to interest rate spreads. Regardless, the weak dollar policy encouraged the carry trade by convincing borrowers they will not be forced into repurchasing dollars at a higher spot rate in the future.

Moreover, the Bernanke Federal Reserve allowed its interest rate policies to be set by stock market downturns including the January 2008 Société Générale debacle and the March 2008 rescue of Bear Stearns. This can be seen by visible break in what had been a four-month leading relationship of the Morgan Stanley Capital International World Free index to three-month USD LIBOR. As global equities rose, U.S. short-term rates rose, and vice-versa. Once the weak dollar policy emerged, emerging markets stabilized on the back of financing from the dollar carry trade.

A low-interest rate/weak currency policy does not work. Japan engaged in a zero-interest rate policy until 2001, whereupon it realized zero was not low enough and embarked on quantitative easing. The Nikkei 225 is at levels first reached in 1986. The net result of the U.S. policy is an S&P 500 at 1999 levels. If financing the rest of the world via monetary largesse is successful, please bring us some failures.

### World Equities Affect U.S. Short-Term Rates



The world got a brief taste in May-June 2006 and again in February-March 2007 of what can happen to emerging market equities when short-term interest rates rise in Japan. The first shock was managed and contained in relatively short order, and emerging markets regained their highs within six months; the second shock was even more short-lived.

Emerging markets and others should not regard these quick rebounds as global applause for their policies or their high interest rates and depreciating spot currency rates, but rather as pullbacks by the Bank of Japan in its policy to raise short-term interest rates. The Bank of Japan had to overcome internal political resistance to make its February 2007 rate hike, and it has eschewed the opportunity to engage even in hawkish rhetoric. They are acting as if a Bank of Japan put option, similar to the fabled Greenspan put option, is in place.

The Greenspan put failed eventually, as the U.S. entered its worst bear market since the Great Depression in 2001. The same will happen eventually with the yen carry trade. Restated, anyone who thinks they found a perpetual motion machine in Tokyo had better think again.