

## Franc-ly, My Dear, I Don't Give A Carry

Last month we looked at the dollar carry trade (see “Get Used to the Dollar Carry Trade”), a concept designed to raise some eyebrows. We are supposed to associate carry trades first and foremost with the Japanese yen (see “Looking at the Carry Trade,” June 2007) and then secondarily at the Swiss franc.

As we have yet to explore the Swiss franc (CHF) carry trade, let's open up the error account and toss in onto the pile. The CHF has the lowest interest rates of any major European currency, a legacy both of Switzerland's reputation for maintaining a relatively solid form of paper currency and of its desire to forestall a surge in its money supply from flight capital. These are the people who imposed negative interest rates on savings accounts in 1979 as money was fleeing inflation elsewhere.

Switzerland is an inland island in a Euro sea (say that ten times quickly). The Alpine confederation (CHF stands for “Confederation Helvetica,” Helvetia being the Latin name for Switzerland) pays a fairly high price for its independence and for its neutrality. And just as in the 1979 case, the price results from its attractiveness as a haven for flight capital; some cynics might even call it the world's most law-abiding state based on money laundering, banking, hedge funds, luxury goods and pharmaceuticals (this would make for a nice junior high school social studies report, wouldn't it?). It seems everyone in the small state knows at least four languages, the cost of living borders somewhere between outrageous and absurd, and while the rest of Europe has freed itself from the money-changers, the Swiss are faced continuously with the need to convert currencies and pay the spread.

Let's take a look at the Swiss franc carry trade in greater detail using a structure parallel to our examinations of the yen and dollar carry trades. As before, the parallels between the three carry trades are so strong that some sections of the previous texts will be repeated verbatim as a highlighting tool.

### **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

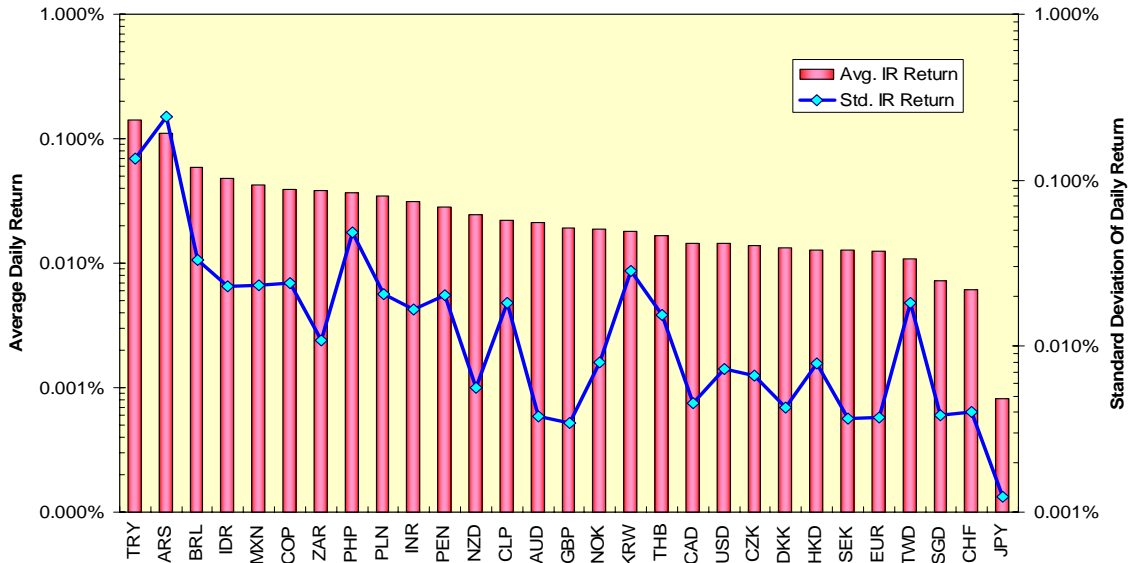
The carry trade returns calculated below are based on borrowing at the three-month LIBOR rate of the lower-yielding currency ( $LY_3$ ) and lending at the three-month LIBOR rate of the higher-yielding currency ( $HY_3$ ). The returns on the higher-yielding currency are adjusted for the daily changes 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 average interest rate carry return on the CHF, the second lowest, has been 7.5 times as great as that for the JPY. 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. The high standard deviations of interest rate carry returns for these Asian currencies may reflect the currency board-like pegging of currencies via interest rate volatility.

**Three-Month Interest Rate Returns On Selected Currencies  
January 1999 Onwards**



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.

The CHF's correlation of interest rate returns is positive against those for all other countries with the exception of Brazil. This is reflected in a high standard deviation of returns for the CHF's interest rate carry against the BRL.

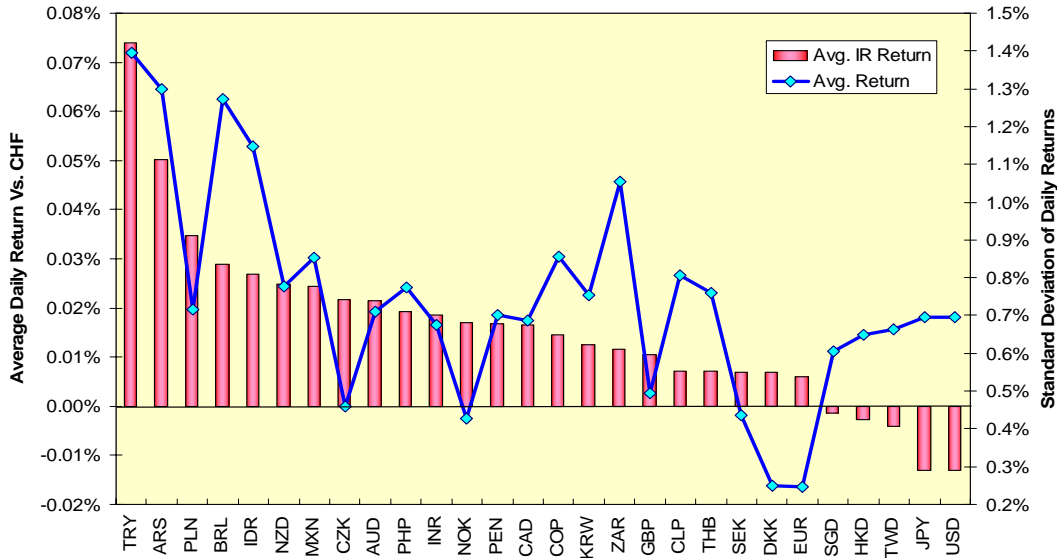
**Correlation Of Three-Month Interest Rate Total Returns Since January 1999**

	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	-0.319	1.000																												
BRL	0.168	0.023	1.000																											
CAD	-0.313	0.451	0.080	1.000																										
CHF	0.009	0.434	-0.068	0.697	1.000																									
CLP	0.015	0.275	0.687	0.642	0.402	1.000																								
COP	0.015	0.117	0.590	0.545	0.241	0.808	1.000																							
CZK	0.130	0.038	0.354	0.639	0.503	0.744	0.844	1.000																						
DKK	0.084	0.443	0.009	0.733	0.924	0.489	0.369	0.609	1.000																					
EUR	0.059	0.446	-0.169	0.634	0.941	0.318	0.188	0.451	0.941	1.000																				
GBP	-0.287	0.719	0.060	0.798	0.715	0.566	0.446	0.539	0.701	0.635	1.000																			
HKD	-0.184	0.306	0.135	0.898	0.607	0.691	0.546	0.648	0.605	0.492	0.721	1.000																		
IDR	0.236	-0.303	0.264	0.283	0.094	0.462	0.618	0.676	0.234	0.096	0.067	0.388	1.000																	
INR	0.109	0.284	0.363	0.722	0.635	0.795	0.702	0.822	0.733	0.576	0.648	0.762	0.553	1.000																
JPY	-0.148	0.756	-0.095	0.498	0.577	0.285	0.246	0.245	0.594	0.654	0.677	0.364	-0.048	0.397	1.000															
KRW	0.052	0.324	0.643	0.304	0.105	0.656	0.586	0.407	0.258	0.074	0.320	0.305	0.273	0.541	0.197	1.000														
MXN	-0.105	-0.074	0.330	0.633	0.289	0.719	0.790	0.861	0.366	0.197	0.475	0.708	0.667	0.709	0.051	0.332	1.000													
NOK	0.304	-0.007	0.050	0.527	0.615	0.468	0.501	0.772	0.779	0.700	0.349	0.462	0.553	0.702	0.286	0.223	0.545	1.000												
NZD	-0.219	0.883	0.092	0.277	0.345	0.215	-0.036	-0.148	0.335	0.356	0.554	0.206	-0.337	0.221	0.670	0.334	-0.262	-0.122	1.000											
PEN	-0.161	-0.010	0.194	0.746	0.451	0.685	0.722	0.851	0.502	0.371	0.535	0.750	0.634	0.717	0.132	0.265	0.903	0.610	-0.224	1.000										
PHP	0.041	0.277	0.608	0.349	0.197	0.637	0.579	0.460	0.342	0.165	0.312	0.320	0.303	0.577	0.179	0.947	0.382	0.317	0.251	0.333	1.000									
PLN	-0.113	-0.088	0.336	0.595	0.561	0.653	0.610	0.830	0.624	0.461	0.442	0.581	0.465	0.714	-0.018	0.322	0.778	0.712	-0.264	0.801	0.447	1.000								
SEK	0.285	0.273	-0.020	0.437	0.637	0.322	0.327	0.551	0.799	0.775	0.396	0.257	0.222	0.523	0.478	0.225	0.212	0.871	0.150	0.328	0.279	0.486	1.000							
SGD	-0.243	0.491	0.162	0.679	0.480	0.511	0.271	0.245	0.421	0.350	0.620	0.760	0.084	0.526	0.426	0.306	0.274	0.039	0.542	0.334	0.259	0.173	-0.012	1.000						
THB	-0.064	0.468	0.500	0.686	0.430	0.790	0.670	0.595	0.516	0.335	0.634	0.714	0.313	0.786	0.387	0.763	0.518	0.352	0.427	0.520	0.740	0.492	0.291	0.674	1.000					
TRY	0.186	-0.311	-0.051	0.151	0.055	0.078	0.307	0.460	0.149	0.062	###	0.182	0.466	0.284	-0.124	0.043	0.374	0.439	-0.379	0.380	0.107	0.368	0.251	-0.095	0.129	1.000				
TWD	-0.011	0.018	0.288	0.426	0.401	0.532	0.441	0.482	0.419	0.363	0.346	0.407	0.452	0.467	0.118	0.384	0.552	0.437	-0.058	0.524	0.436	0.543	0.282	0.118	0.280	0.070	1.000			
USD	-0.304	0.283	-0.196	0.800	0.652	0.391	0.203	0.370	0.526	0.535	0.677	0.845	0.133	0.485	0.362	-0.084	0.488	0.253	0.174	0.589	-0.052	0.391	0.103	0.690	0.364	0.013	0.378	1.000		
ZAR	0.117	0.166	0.440	0.380	0.134	0.623	0.707	0.649	0.404	0.250	0.260	0.301	0.525	0.603	0.299	0.611	0.500	0.661	0.098	0.466	0.600	0.415	0.613	0.032	0.552	0.326	0.293	-0.112	1.000	

**The Swiss Franc Carry**

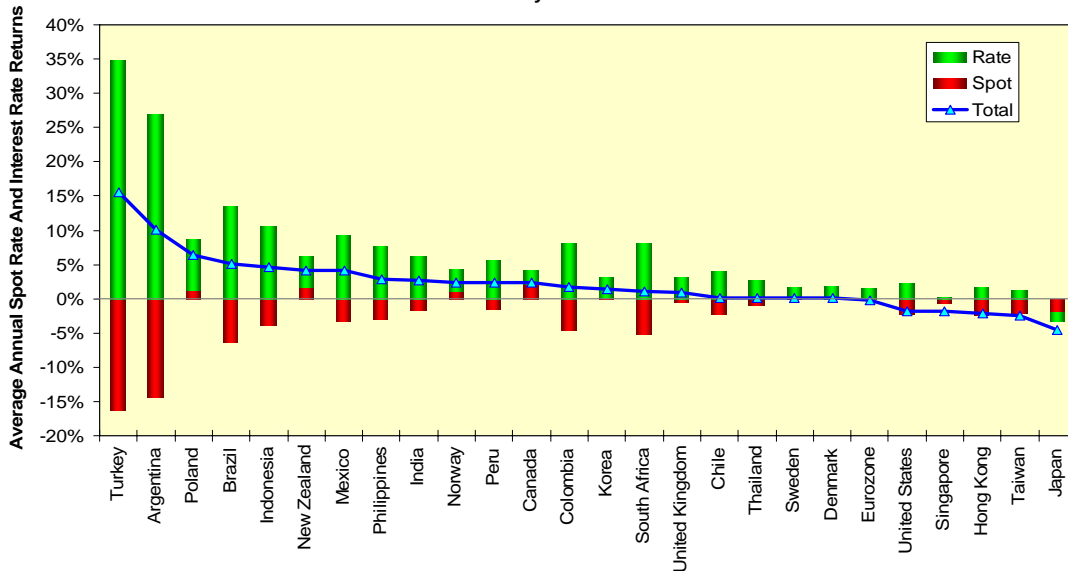
Now let's examine the total return from the carry trade of borrowing three-month CHF and lending the proceeds in three-month LIBOR of the other 28 currencies. As before, Turkey and Argentina stand out on both the total return and the standard deviation thereof. Australia once again stands out for its high standard deviation, as do South Africa and Brazil. 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 CHF  
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 1.5%, while the COP's was a robber, pulling the average annual return down by 4.9%. 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 19.2% and 16.9%, respectively.

**Decomposing The Swiss Franc Carry Trade  
January 1999 Onwards**



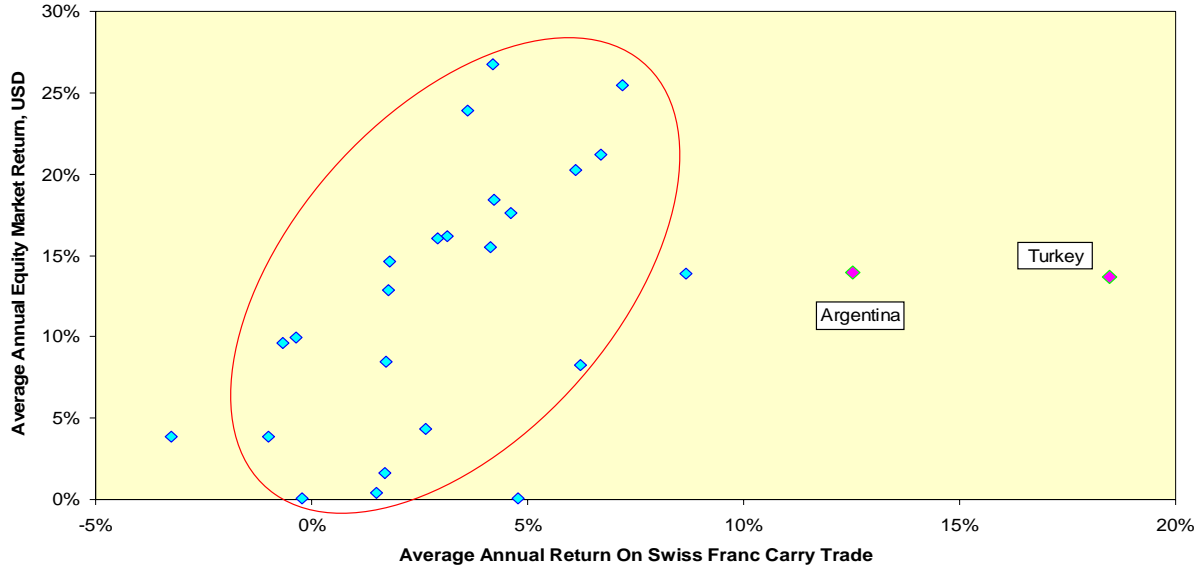
The message here is clear and unequivocal: Persistently high interest rates can lead to a profitable carry trade even for the most dreadfully mismanaged economies. This is simply an observation, not a policy recommendation.

**The Logical Rejoinder**

If high interest rates reward risk-seeking investors who borrow CHF 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 Swiss franc carry trade and its components.

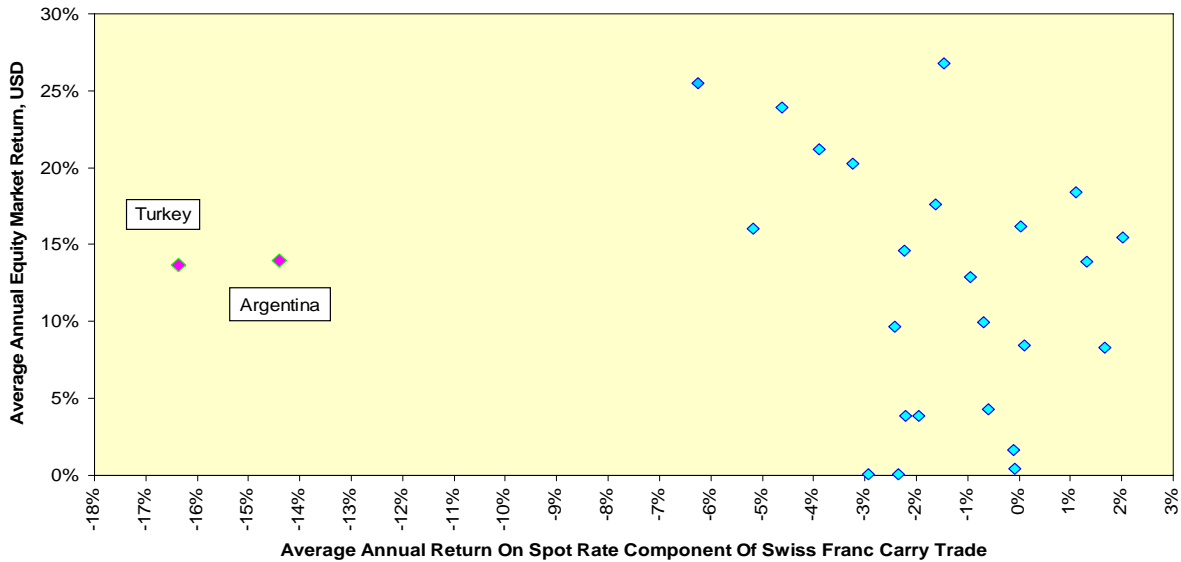
First, let's map the returns against the entire carry trade. Even if we isolate the obvious outliers of Turkey and Argentina, the positive relationship between stock market returns in USD terms and total return on the Swiss franc carry trade is both visually apparent and statistically demonstrable; the regression beta is 1.618.

### Positive Correlation Between Swiss Franc Carry And Equities



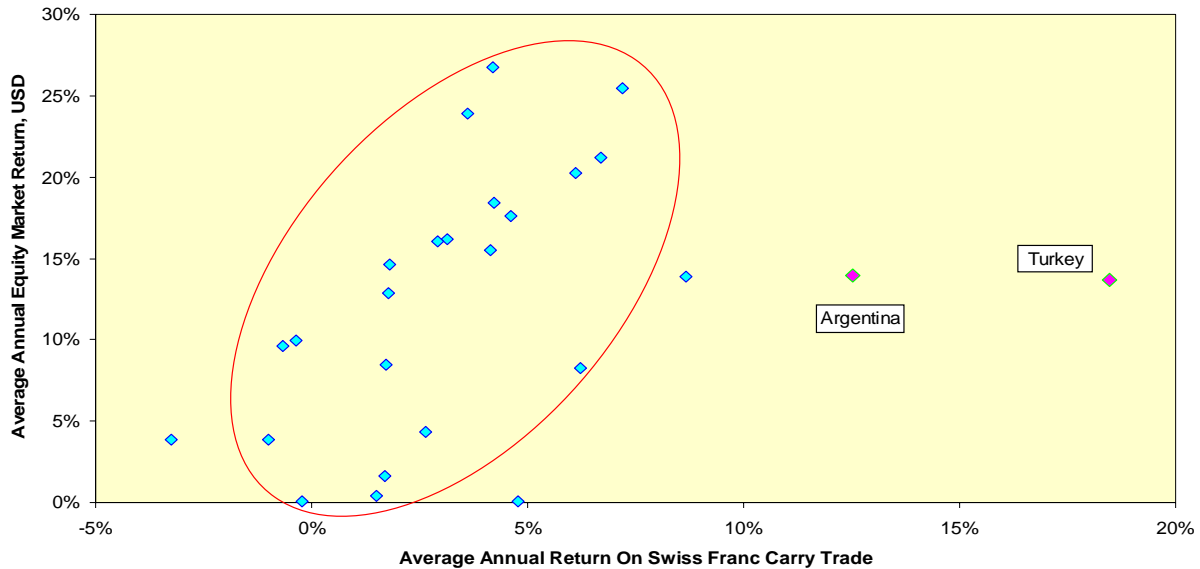
Is this positive correlation the result of the interest rate spread component or the spot rate component of the Swiss franc carry trade? First, let's map stock market returns against the spot rate component of the Swiss franc carry trade.

### No Correlation Between Spot Component of Swiss Franc Carry And Equities



It is obviously quite random. If we isolate Turkey and Argentina, we wind up with what appears to be a non-deterministic relationship. Here the regression beta is  $-0.011$ . This should lead us to suspect it is the interest rate spread component which drives the relationship between stock market returns and the Swiss franc carry trade. Here the regression beta is  $1.011$ .

### Positive Correlation Between Swiss Franc Carry And Equities

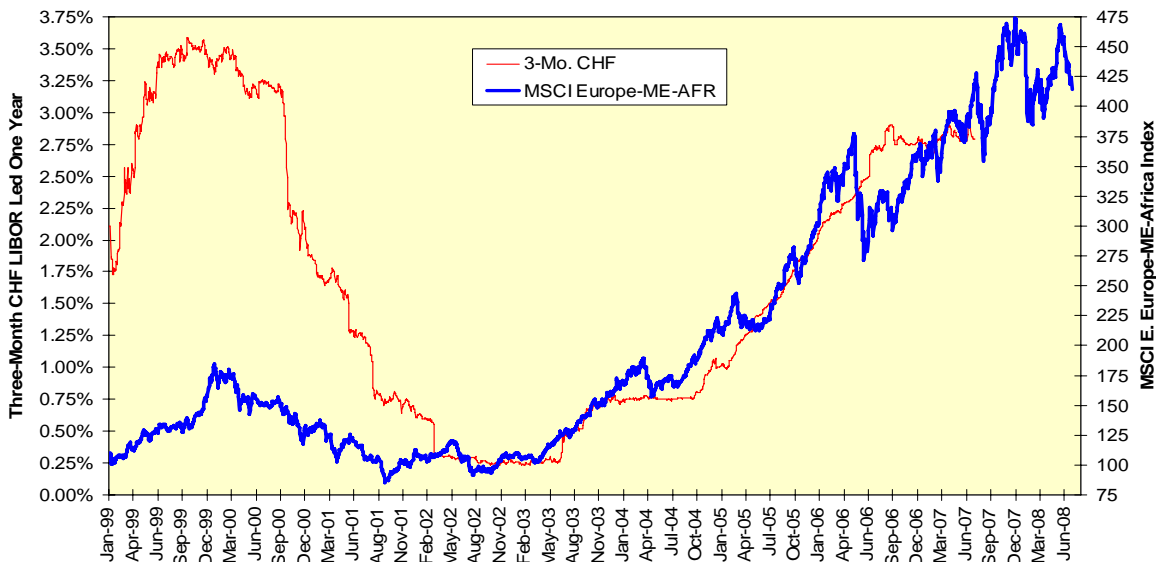


### Implications

The question always arises in discussions of any carry trade, “Who is doing it?” This is somewhat amusing; the presumption is the answer matters. It does not; just as an electric force field between cloud and ground induces lightning somewhere, the financial force field between high- and low-interest rate currencies induces a carry trade somewhere. We avoid going outside during electrical thunderstorms even though we have no idea where the lightning can strike; we should afford carry trades the same respect. Who knew a year ago the subprime mortgage debacle would extend eventually into the auction-rate preferred securities issued by municipalities?

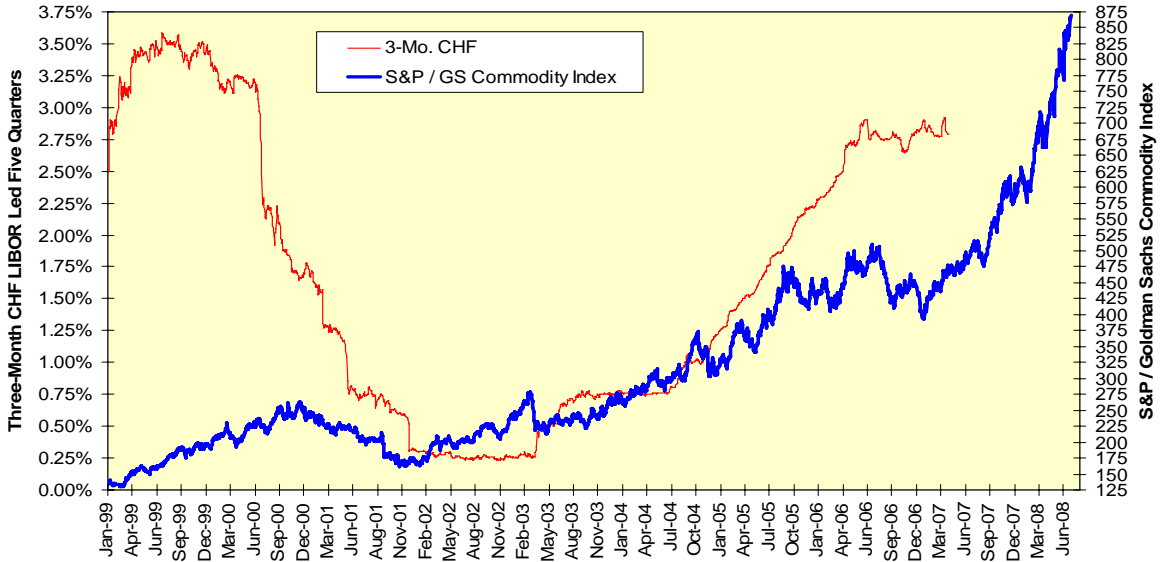
We do know anecdotally many borrowers in Eastern Europe, the Middle East and North Africa have been borrowing in francs; a walk down the lakeshore in Geneva takes you past the Arab Bank of Switzerland, and that should tell you something about international financial flows. As a result, the Morgan Stanley Capital International index for Eastern Europe, Middle East and Africa has led three-month CHF LIBOR since the bottom of the 2002 bear market by one year on average. The strong economic growth in those markets has created demand for CHF.

### Eastern European/Middle East/Africa Equities Affect Swiss Short-Term Rates



If the growth in those economies has been based on rising commodity prices, especially those for energy, then the CHF has been, in a most roundabout way, a commodity currency. The energy-heavy S&P / Goldman Sachs Commodity index has led CHF LIBOR by five quarters since the global bear market ended in 2002.

### Commodity Prices Affect Swiss Short-Term Rates



If and when commodity prices break, we should see the demand for CHF break, CHF LIBOR decline and a wider interest rate carry spread open in the Swiss franc carry trade. All else held equal, the oh-so-neutral Swiss are just one more play on global energy prices thanks to the wondrous mechanism of global financial carry trades. Lightning strikes in strange ways.