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John Bollinger's Forex Letter

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Squeeze!

We have written a great deal about the importance of the Squeeze as a forecast for higher volatility. This is an especially topical issue in light of current Squeezes evident on the daily, weekly and monthly charts of the euro, but what do the numbers look like?

To put a face on the numbers we collected 10-years worth of data for the following exchange rates: euro/US dollar, British pound/US dollar, US dollar/Japanese yen, Swiss franc/US dollar and US dollar/Canadian dollar. The data was cleaned and aligned. Then we calculated 20-day volatilities for each of the series and found their average, minimum and maximum values. We summarize the data in the table below.

Table 1: 10 year currency 20-day volatility characteristics

	eur/usd	gbp/usd	usd/jpy	chf/usd	usd/cad
Average	1.00%	0.80%	1.16%	1.11%	0.59%
Minimum	0.22%	0.18%	0.28%	0.23%	0.10%
Maximum	2.74%	2.18%	7.11%	3.42%	2.26%

Key: eur = EU euro
 cad = Canadian dollar
 chf = Swiss franc
 gbp = British pound
 usd = US dollar

The yen turns out to be the most volatile of the bunch, while the Canadian dollar exhibits the least volatility. Were it not for one episode in 1998, involving a one-day 10-yen jump, the yen and the Swiss franc would have very similar volatility profiles. (This suggests that the franc and the yen are the vehicles of choice for traders desiring volatility.)

Examining the volatility ranges we can see that there is a great deal of variation in volatility as expected. But should we expect high volatility in the wake of low volatility? To answer that question we looked at the dates on which a Squeeze occurred--volatility made a 125-day low--and asked what the highest volatility was over the next 125 days. In the ten-year period there were approximately 50 Squeezes on average for each currency. The Squeezes often clustered together, which means that there are typically two or three Squeeze events per year. The following table reprises our results. The average is the average of the volatility peaks in the 125 periods after each of the Squeezes. The minimum and maximum figures are the average low and high values for volatility in the post Squeeze periods:

Table 2: 10 year currency maximum 20-day volatility in the wake of 125-period minima

	eur/usd	gbp/usd	usd/jpy	chf/usd	usd/cad
Squeezes	42	64	52	43	43
Average	1.85%	1.73%	2.44%	2.27%	2.27%
Minimum	1.27%	1.16%	1.20%	1.64%	1.64%
Maximum	2.50%	2.18%	7.11%	3.00%	3.00%

You can see the picture changed dramatically in the wake of a Squeeze; the averages roughly doubled and the minimums increased dramatically. Clearly the volatility in the wake of a Squeeze is higher than what we expect on average. But is this just reversion to the mean? Are we simply sampling from the low end of the distribution and getting average results? It doesn't appear so from the dramatic increase in the minimums, but it is an issue we have to consider. It is not until you see the same table applied to the initial conditions that you realize how dramatic the change is. Here we see the average volatility values in the region of the Squeeze, along with the minimum and maximum Squeeze values.

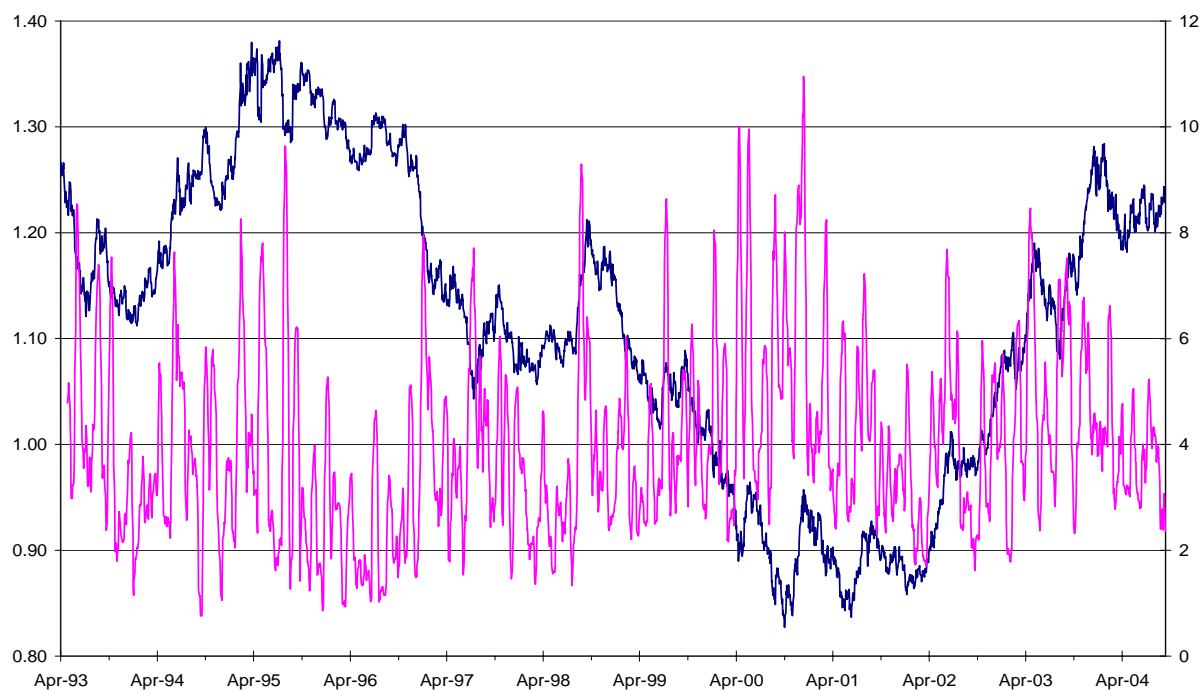
Table 3: 10 year currency 20-day volatility characteristics in the region of 125-period minima

	eur/usd	gbp/usd	usd/jpy	chf/usd	usd/cad
Squeezes	42	64	52	43	60
Average	0.49%	0.34%	0.56%	0.50%	0.27%
Minimum	0.22%	0.20%	0.28%	0.23%	0.10%
Maximum	0.78%	0.51%	1.00%	0.76%	0.50%

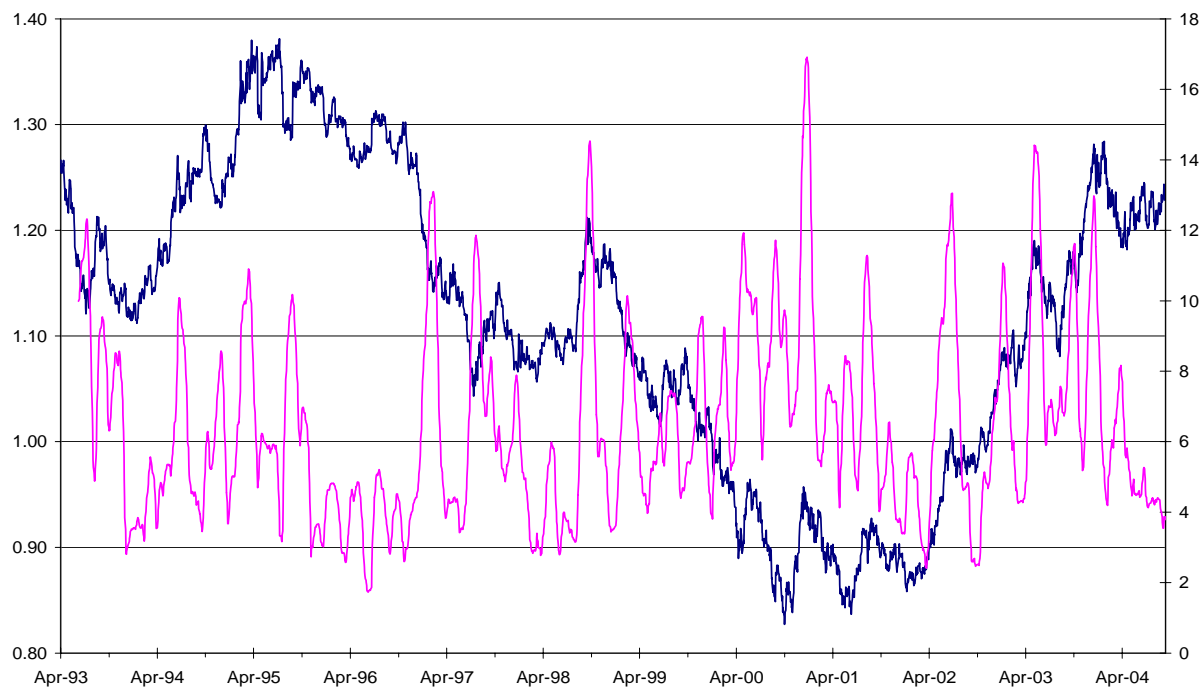
Clearly low volatility is a forecast for high volatility and in our sample the expected rise in volatility seems to be on the order of at least four times on average.

Now let's turn to the present and consider the implications of this study for the current situation. We present four charts of the euro/dollar cross, two dailies, one weekly and one monthly. Three of the charts plot the exchange rate and 20-period BandWidth. As an alternate to the weekly chart we also present a daily chart with 50-day BandWidth. When examining the charts note carefully the troughs in BandWidth and the subsequent market action. Next note the peaks in BandWidth and the subsequent market action.

Daily euro with 20-day Bollinger Bands and BandWidth

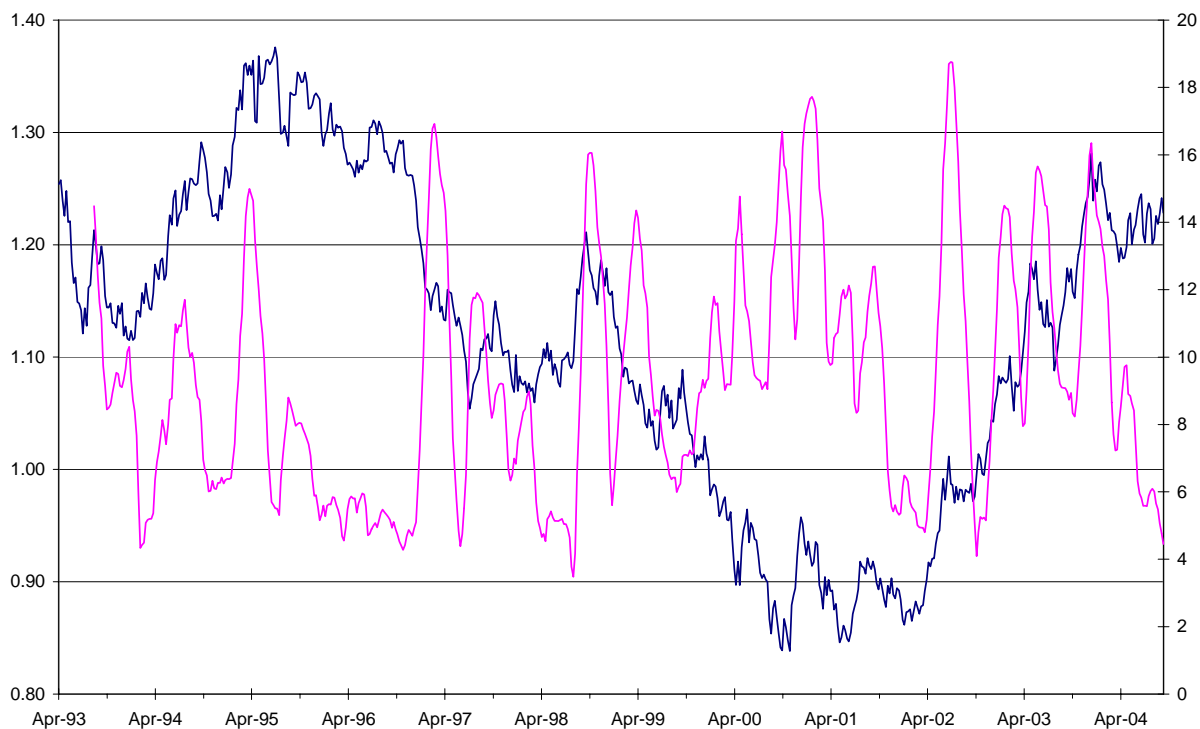


Daily euro with 50-day Bollinger Bands and BandWidth

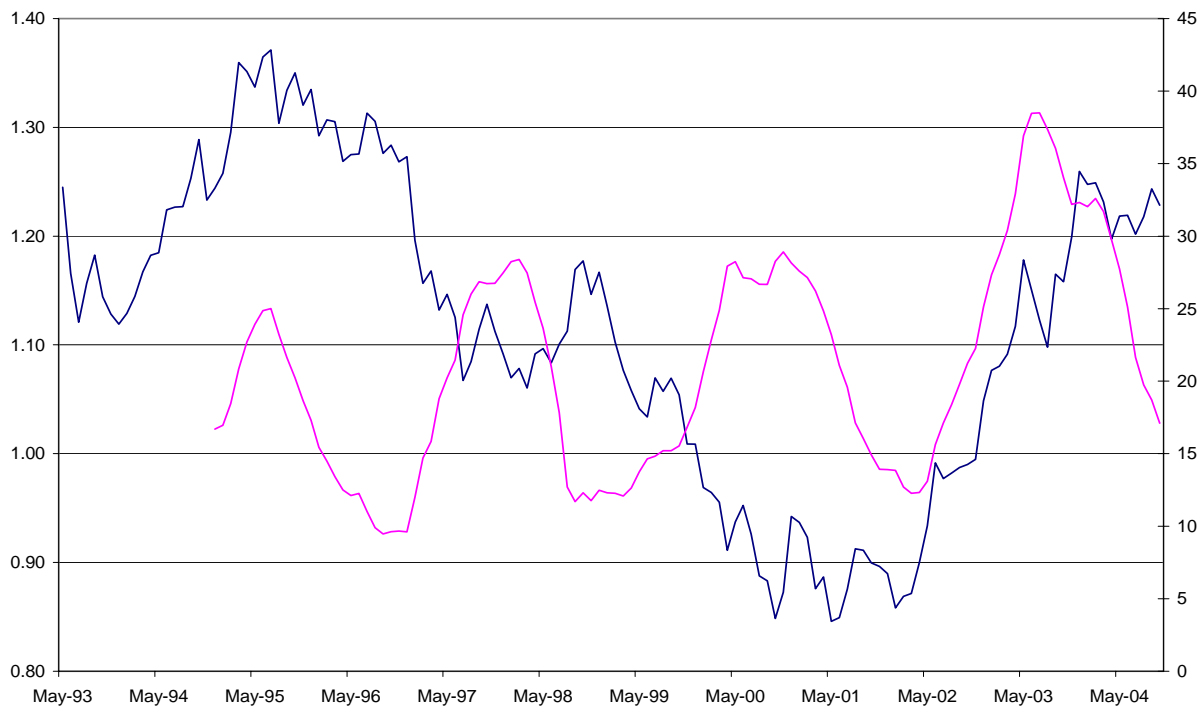


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Weekly euro with 20-week Bollinger Bands and BandWidth



: Monthly euro with 20-month Bollinger Bands and BandWidth



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Chart one has an awful lot of data, so it may be hard to pick out the signal from the noise. Note the areas in which BandWidth—fuchsia line, right hand scale on all of the charts--falls into the two percent area. These troughs in volatility most often usher in sharp changes in price. Also be sure to note that the peaks in BandWidth, which mark the end of trends. Clearly both extremes contain information of interest to the trader.

Chart two lengthens the calculation period from 20 days to 50 days and can be considered an alternate to using a weekly chart. Here it becomes very clear that the intermediate term troughs in BandWidth mark the beginning of trends and intermediate-term peaks mark the end of trends.

Chart three switches to a weekly perspective and back to 20-period BandWidth with the periods being weeks. Recall from both chart one and two that current BandWidth was at extremely low levels and note that those low levels are confirmed by the weekly series as well. At the same time note that weekly BandWidth behaves very similarly with respect to the beginning and end of trends as did daily BandWidth.

Finally on chart four we see that monthly BandWidth behaves in the same way as daily and weekly BandWidth and that we are now approaching the levels of compression—low BandWidth—that gave rise to major moves in the past. Clearly the monthly chart is not as advanced into a squeeze phase as the other charts, but we are nearing critical levels.

There can be no doubt compression is high and that we are nearing what ought to be an important intermediate term move for the euro. We expect that it will be in favor of the dollar. The recent rally by the euro ran out of steam as it tried to break out and left an island reversal behind on the charts. Then on the release of the Employment Report the euro ratcheted back to its highs, but did not manage to break out despite the support from the news. We are wondering if these failures won't lead to some meaningful euro weakness? In any case the stage is set for an important expansion in volatility and traders should be on the alert.

Good trading,

John Bollinger, CFA, CMT

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