

Resuscitating FX overlay



Global Currency Strategy +44 20 7996 2561
MLPF&S (UK)
gcg_strategy@ml.com
[See Team Page for Full List of Contributors](#)

FX Spotlight

Page 6

The USD is trading near levels rarely seen before. Currency overlay managers are most likely stuck between a rock and a hard place. In this note we show that currency exposure is not a matter of 1 or 0. Persistent equity and EUR-USD behaviour may have put European investors in a “long-only” mode. In fixed income, the highest information ratios are for hedged portfolios in USD and EUR.

Global Overview

Page 2

Neither the foreign private investors or reserve managers want to buy USD, but someone has to finance US external imbalances. The outcome appears to be that the official sector still ends up financing the higher EUR-USD, but ends up holding more EUR as well, pushing EUR-USD higher.

Forecasts and Risk Adjusted Returns

Page 10

We update our forecasts for USD-SGD in this edition.

Merrill Lynch Leveraged Trading Portfolios

Page 15

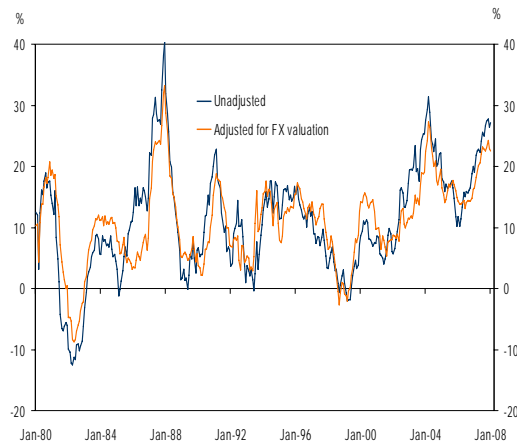
On a marked-to-market basis, the Discretionary portfolio returned 42.0% over the past year with an average leverage ratio of 4.1 and 14.2% over the past month with an average leverage ratio of 4.8. The Systematic portfolio returned 4.7% over the past year with an average leverage ratio of 2.2 and -4.0% over the past month with an average leverage ratio of 1.7.

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in FX markets and the financial resources to absorb any losses arising from applying these ideas or strategies.

Merrill Lynch does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 17. Analyst Certification on page 16.

Chart 1: Global reserves on upswing



Note: We adjust yoy reserves growth by assuming a 35% share of EUR in global reserves portfolios and incorporating changes in the EUR's value into the dollar value of global reserves moves.

Source: IMF, Ecwin, Merrill Lynch

Global overview - Can everyone sell USD?

We have frequently pointed to central bank reserve accumulation as an indicator of USD weakness. The idea is that they are accumulating the USD involuntarily when the private sector is selling in order to prevent excess appreciation of their domestic currencies. The central banks then try and diversify out of these USD, bidding up other G10 currencies against the dollar in the process. The weaker USD within G10 provokes another round of USD selling against EM, leading to another round of USD buying and the another round of diversification – kind of *Groundhog Day* for central banks.

Global reserves up 27% yoy

The outcome is that central banks are carrying increasing amounts of USD and non-USD assets on their reserves books. Global reserves are expanding at a rate of 27% per year (Chart 1). Even adjusting for the weakness of the USD over the last year, the pace of accumulation is slightly above 22%. This is not a record in percentage terms, but applied to a base of more than USD5tn means that USD1.2tn is accumulated after currency valuation adjustments are put in place. This total well exceeds the US current account deficit and is consistent with the view that more is going on than a simple round of buying USD and diversifying. In addition, there is no sign that the other G10 deficit countries with external deficits are having any problem with financing, with the UK the exception.

If all central banks did was finance the US current account deficit, the incremental annual financial risk on their portfolios would be of the order of an USD700bn per year. In the current situation there is scant evidence that the low USD valuation is attracting the foreign private sector to the USD. If anything, the rapid run-up in Fed custody holdings suggests that USD weakness may be encouraging the foreign private sector to pair back its USD holdings.

The 65-35 solution

The following limiting case resembles the path of reserves accumulation quite closely. Assume that the foreign private sector does not want to hold additional USD. Also assume that the objective of foreign central banks is to maintain the USD share at about 65% in their portfolios. Their efforts at diversification are bound to be unsuccessful initially because the private sector does not want the USD. Given the reserve managers' portfolio objectives, they will have to go through successive rounds of attempted diversification and subsequent reacquisition of the same USD until they have bulked up the non-USD side of their portfolio to achieve the desired proportions.

This new equilibrium has the property that the USD ends up weaker against the non-USD currencies that enter into the reserves portfolio (the central banks are adding to global demand for non-USD because of their desire to keep their reserve portfolios in the desired ratio.) The second characteristic is that the size of global reserves portfolios will be higher than if the central banks just financed the USD deficit and held on to the position (which is what Japan did after its 2004 round of intervention). The final characteristic of this outcome is that the overall size of the global reserves portfolio will increase in proportion to the desired share of non-USD currencies in these portfolios. The more they lower the desired USD target, the faster global reserves will grow, which is itself a long-term problem for EM since their G10 reserve portfolios are very likely to decline in terms of their local currencies, as EM currencies approach equilibrium.

We open a long one-month 10.65 USD call MXN put with expiry 14 May 2008 (open 0.57% of USD, now 0.16% of USD)

We close a long one-month 10.90 USD call MXN put with expiry 15 April 2008 (open 0.58% of USD, close 0.0% of USD)

We hold a short CAD-NOK, with target of CAD-NOK 4.80 and stop of CAD-NOK 5.00 (open CAD-NOK 5.1676, now CAD-NOK 4.9233)

We hold an equal-weighted basket of long one-year NOK, RUB and ILS versus short GBP, TWD and INR forwards with expiry 4 January 2009 (open USD-NOK 5.4046, USD-RUB 24.48, USD-ILS 3.9335, GBP-USD 2.0565, USD-TWD 32.28, USD-INR 39.79, now 3.10%)

Regions

Americas - Fed once again in focus

In the US, the 30 Apr FOMC meeting will be the major focus in both currency and fixed income markets. The trough in rates in the FOMC futures market is 1.75%, with the cuts essentially divided over the next two meetings. There will be a number of Fed speakers over the next few days, including Yellen, Plosser and Mishkin (16 Apr), and Kohn, Fisher and Lacker (17 Apr). There will be few major speeches before FOMC and the late month data are largely second tier.

A variety of housing-related data are released on 22 Apr, 24 Apr and 29 Apr, but the threshold for shocking the market has risen lately. The biggest data risks are weekly initial claims, which have tracked payroll weakness well, and durable goods (24 Apr) as a read on how pervasive economic weakness has become. On the day of the 30 Apr FOMC meeting, Q1 GDP, ADP employment, the ECI and Chicago PMI are released, so it could be quite a whippy day. Barring a major sequence of surprises in one direction or another, these data will likely be more consistent with USD staying in a range than breaking out.

In Canada, core CPI (17 Apr) will be the most interesting release on the road to the BoC policy decisions (22 Apr). Almost unique globally, Canadian CPI is well below target and carries some risk that policy will react, taking CAD with it, if surprises are to the downside. Nearer-term shipments (16 Apr) will help guide CAD. CAD is susceptible to indications of broadening economic weakness, so retail sales (24 Apr) and GDP (30 Apr) are significant.

Emerging Americas - watching central banks

In Brazil, USD-BRL reached 1.76 by the end of March due to the introduction of IOF tax for foreign investments in local fixed income, but has declined since then. Technicals remain supportive for further BRL appreciation. In the short term, the odds probably favor the currency trading through this year's lows (1.66). Over the next two weeks, markets will watch the IGP-10 (18 Apr), Copom minutes (23 Apr), IPCA-15 (25 Apr) and IGP-M (29 Apr) for a better indication on the duration of the tightening cycle. Investors will also focus on the current account (28 Apr), monitoring the deterioration pace.

In Mexico, Banxico is unanimously expected to keep rates on hold in its upcoming meeting (18 Apr). The key focus will be on the language of the statement, with investors trying to guess when the bank will be able to cut rates. On the data front, markets will watch IP (17 Apr), retail sales (22 Apr), trade balance (23 Apr), bi-weekly CPI (24 Apr) and global economic indicator (29 Apr). On the political front, markets are focusing on the negotiations for the Energy Reform approval.

In Argentina, investors will continue to watch the political noise regarding the farmers' strike and also economic activity (17 Apr) and IP data (23 Apr). In Chile, markets are still digesting the Central Bank intervention program announcement. We expect USD-CLP to accommodate within the 450-460 range in the near term. On the data front, the key release will be IP (30 Apr). Finally in Colombia, consensus is looking for Banrep to keep rates on hold at 9.75% at its next monetary policy meeting (25 Apr). Before that, markets will watch IP and retail sales data (18 Apr).

We open an equal-weighted basket of long one-year SKK, PLN and HUF versus short IDR, TRY and THB forwards with expiry 10 April 2009 (open 1y fwd USD-SKK 20.925, USD-PLN 2.2792, USD-HUF 171.22, USD-TRY 1.4730, 1y NDFs USD-IDR 9740, USD-THB 31.86, now 1.28%)

We hold a long one-year 1.40 EUR put USD call with expiry 13 March 2009 (open 1.23% of USD, now 0.89% of USD)

We hold a short GBP-CHF, with target of GBP-CHF 1.90 and stop of GBP-CHF 2.025 (open GBP-CHF 2.0594, now GBP-CHF 1.9965)

We hold a long one-year 24.65 USD put RUB call with expiry 17 September 2008 (open 0.98% of USD, now 4.53% of USD)

We hold a long six-month equal weighted forwards basket of KWD and AED vs. USD, with expiry 21 May 2008, with target 103 and stop 98.5 (open 100, now 100.02)

EMEA - inflation focus

In the Euro zone, economic data and policy reactions to the data are likely to be much more market-moving than usual. The biggest drivers are likely to be PMI (23 Apr) and Ifo (24 Apr), particularly if they follow ZEW in showing a slowing of activity. There is two-way EUR risk as these numbers have surprised on the upside recently. Higher inflation would limit ECB's room to cut. Key Euro zone indicators are CPI for March (16 Apr) and German CPI for April (26-28 CPI). If ECB speakers deviate from recent hawkish tone, EUR could fall sharply. Speakers to watch are Trichet (24, 28 Apr), Papademos (29 Apr), Weber and Stark (24 Apr), although there are speakers from one national central bank or another almost every day.

In the UK, the weakness in the housing sector and potentially in the consumer are driving GBP weakness. The key releases for the consumer are retail sales (24 Apr), CBI distributive trade (29 Apr), consumer credit (29 Apr) and home price data (released sometime between 24 and 30 Apr). BoE Minutes may signal further cutting intentions and how comfortable the MPC continues to be with GBP weakness.

In Switzerland, the key CHF drivers are global risk aversion and Swiss bank balance sheets. That said, ZEW (17 Apr) and KOF (30 Apr) are the key output indicators. Roth (17, 25 Apr) and Jordan (28 Apr) speeches may give SNB orientation on CHF.

In Sweden, the market seems to be pricing in about a 50% chance of a cut at the policy meeting (23 Apr), despite underlying inflation running at 2.3%. Merrill Lynch expects flat policy rates, which could give a bit of a boost to the SEK

In Norway, we expect the Norges Bank to hike (23 Apr), leaving it unique among G10 central banks in their hiking orientation. Otherwise, Gjedrem comments are probably most relevant.

Emerging EMEA - Watching central banks

In South Africa, the key focus will be on inflation (23 Apr). According to the central bank, the inflation outlook has worsened considerably. With the central bank switching to a much more hawkish stance, evidence of further inflation risks will be supportive of the currency, in our view. Even so, the ZAR may remain vulnerable to the deterioration in the global risk picture.

In Turkey, the main focus will be on the central bank's policy meeting (17 Apr). The market expects the central bank to stay on hold, given the recent currency weakness and the challenging risk environment. We expect TRY to remain under severe pressure in the period ahead, owing to the risk of more political noise.

In Poland, the main event will also be on the central bank's policy meeting (30 Apr). Some MPC members have indicated their bias in favour of another hike this month, following the policy rate increases over the past few months. The PLN would continue to gain support from evidence of further monetary tightening.

In Hungary, the highlight will also be on the central bank (28 Apr). The central bank recently surprised the market with a 50bp hike, but the currency market response was measured. The forint would likely gain support from another policy rate move, but we expect the currency to remain vulnerable, given the challenging global environment.

We open a short three-month NZD-BRL NDFs, with expiry 10 July 2008, target of NZD-BRL 1.20 and stop of NZD-BRL 1.40 (open 1.3448, now 1.3241)

We close a short NZD versus basket of USD and EUR, with target of 5.0% and stop of -2.0% (open 100, close 98.31)

We hold a long eight-week AUD put JPY call spread, ie buy a 90 AUD put JPY call and sell a 83.5 AUD put JPY call with expiry 14 May 2008 (open 0.84% of AUD, now 0.66% of AUD)

We hold a long three-month USD put JPY call spread, ie buy a 101 USD put JPY call and sell a 97 USD put JPY call with expiry 2 June 2008 (open 0.84% of USD, now 1.13% of USD)

We hold a short one-year USD-SGD fwd, with expiry 26 November 2008, with target of 6.5% and stop of 4.0% (open 1.4171, now 1.3492)

We hold a short one year USD-MYR NDFs, with expiry 26 November 2008, with target of 8.5% and stop of 4.0% (open USD-MYR 3.3300, now USD-MYR 3.1580)

Asia Pacific - JPY lost in the shuffle

In Japan, the JPY has largely been driven by global risk aversion. The BoJ policy decision (29 Apr) is unlikely to surprise. There is some speculation in the market that the policy stance may soften, so IP (17, 29 Apr), retail trade (27 April) and labor data (29 Apr) and housing starts (30 Apr) will be watched, but it would take a strong data run in one direction to have much impact on JPY. The CPI (24 Apr) has diminished in JPY importance recently.

In Australia, policy is expected to remain on hold, but there is emerging concern on the domestic economy. The CPI (23 Apr) will determine the RBA's room to maneuver; surprise weakness could hurt the AUD. AUD will be sensitive to weak new home sales (29 Apr) and building approvals (1 May).

In New Zealand, the domestic economy is printing very weak indications. Little important data will be released before the RBNZ meeting (23 Apr), but weak building permits and business confidence (1 May) would pressure NZD.

Emerging Asia - inflation concerns, MAS leads the way

In Singapore, MAS endorsed a one-off move of around 1.7% in the SGD NEER. This could make other central banks more comfortable with currency strength given inflation pressures. It should also sustain short USD-Asia positioning bias. Inflation remains a key concern and growth data has not disappointed so far.

The forward path of the SGD NEER basket implies no appreciation. Given the MAS' tightening bias, we expect further gains despite the one-off move. Our revised forecasts reflect the re-centering of the band (Table 1). NODX (17 Apr) should show 4% yoy recovery in exports, while IP (25 Apr) and bank loans (30 Apr) should show that growth is intact. CPI (23 Apr) is likely to hold near multi-year highs.

In Hong Kong, the MAS move could be seen as increasing the pressure on the HKMA given high inflation (CPI on 22 Apr) and low real rates. Increasing political uncertainty in Malaysia could keep USD-MYR from tracking USD-SGD as it normally would. Manufacturing sales (18 Apr) should be firm, CPI (23 Apr) marginally higher than the 2.7% recorded in Feb, but Bank Negara is likely to stay pat (29 Apr) at their next policy meeting. Macro tightening and the snowstorm effect should bias upcoming Chinese data and might dampen positioning interest in USD-CNY. Q1 GDP (17 Apr) is expected to decrease to 10.1% yoy from 11.2%, but IP should be stronger at 16.1% from last year's 15.4%. Our economists expect inflation to slow as CPI (17 Apr) comes in at 8.2% yoy from 8.7% in Feb.

In Taiwan, news of increasing ties with China should bias USD-TWD lower. Export orders and IP (23 Apr) should support the positive view on the economy. Inflation pressures in both Philippines and Indonesia would test central bank credibility as markets get nervous. The BSP is expected to leave rates unchanged (24 Apr), but force liquidity into markets by restricting access to special deposits. Trade data should remain supportive for the peso.

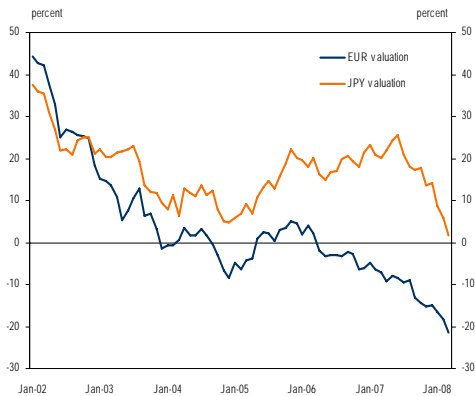
In Korea, Q1 GDP (25 Apr) and IP (30 Apr) should reaffirm the growth outlook, but the current account data (28 Apr) should keep near-term sentiment on the KRW weak. Equity outflows, a moderation of bond inflows and an interventionist BoK should keep the KRW from gaining. However, the exchange rate will likely bear the burden of containing inflation given the apparent aversion to hiking rates. In India, RBI is likely to announce measures to contain inflation. Our economist expects a reserve ratio hike at the policy meeting (29 Apr). However, contrary to expectations, the exchange rate is not likely to be used to contain inflation.

Table 1: New USD-SGD forecasts

		Jun-08	Sep-08	Dec-08	
USD-SGD	New	1.33	1.32	1.33	
	Old	1.36	1.37	1.36	
		Mar-09	Jun-09	Sep-09	Dec-09
USD-SGD	New	1.33	1.34	1.35	1.36
	Old	1.37	1.38	1.39	1.4

Source: Merrill Lynch

Chart 2: COMPASS valuation



Note: The chart shows USD over (+) and under (-) valuation against the JPY and the EUR

Source: Merrill Lynch and Bloomberg

FX Spotlight - Resuscitating FX overlay

Just over five years ago we wrote our first Global FX Paper (“On Currency Overlay: Call the MLCOPs!,” *Global FX Paper #1*, 26 November 2002). In that paper we outlined why FX should be treated as an asset class. We showed that after a significant period of USD strength, portfolio managers should consider a different approach to their FX exposure. We then went on to discuss what portion of the exposure should be hedged.

According to COMPASS, the USD entered undervalued territory on a trade-weighted basis in 2007. Investors might now be raising similar questions to those presented back in 2000-02 (Chart 2). We discuss these topics in this report and update some of the hedging ideas raised back in 2002 and later in 2006 (“On Corporate Hedging – Introducing ML CHIPS,” *Global FX Paper #6*, 18 April 2006).

FX as an asset class

The main claim against FX as an asset class is that expected returns from investing in currencies should be zero. Currencies are relative prices; what one agent earns, another loses. We disagree with this claim. The fact that currency investors exist is proof that there are excess returns to be made in FX. Table 2 provides the returns of various FX benchmarks and shows that returns in FX can be positive over long periods of time.

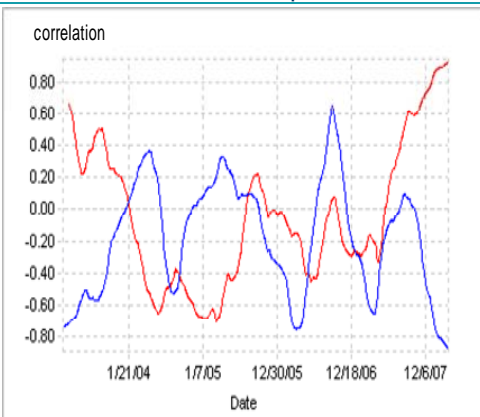
Currencies reflect relative value between assets and returns. Similar to commodities, equities and fixed income, there is a stream of fundamental theories to estimate currency direction. The main evidence supporting this school of thought is frequent correlation breakdown between currencies, equities and fixed income.

The correlation of one-year changes between USD-JPY, US equities and US fixed income ranged between -0.8 and +0.8 (Chart 3). Regardless of market direction, a JPY-based investor holding long exposure in US equities and US fixed income could have added value by allocating a portion of their risk to currency hedging.

The correlation between USD-JPY against both US equities and fixed income switched from being positive to negative. An investor could have enhanced returns by allocating some risk in currency hedging. By definition, a portfolio of 50% equities, 50% fixed income and a 50% hedge ratio (50% allocations in long USD-JPY and 50% allocations in short USD-JPY) would have outperformed a portfolio of long only or short only currency exposure.

Equity market performance remains mixed. Leverage reduction and low bond yields make significant returns in fixed income more unlikely. Single-digit managed currency returns may suddenly seem quite appealing. Investors may again start hunting for alpha, or uncorrelated investment strategies. Consistent correlation breakdown with other asset classes is an important characteristic of currencies.

Chart 3: JPY correlations vs. equities and bonds



Note: The chart shows 1y correlations of 1y daily returns between USD-JPY and the SPX (red line) and USD-JPY and UST (blue line).

Source: MAPS, Merrill Lynch Analytical Plotting System.

Table 2: Returns and volatility of FX overlay managers

	Parker FX index	Barclays Currency Traders index	DXY	Fed broad trade-weighted dollar index
Annualized monthly returns (%)	13.0	10.12	-2.4	1.7
Std dev of returns (%)	12.8	24.7	8.6	4.2
Information ratio	1.0	0.41	-0.3	0.4

Note: The numbers are for long positions in the indices from Jan 1986 to Feb 2008. The Parker FX index and Barclay Currency Traders index are total return indices and include carry while the DXY and the Fed trade-weighted broad dollar index are spot indices and do not include carry.

Source: Bloomberg, Barclay Group, Parker Global, Merrill Lynch

Chart 4: Excess returns, DAX/SPX and EUR-USD



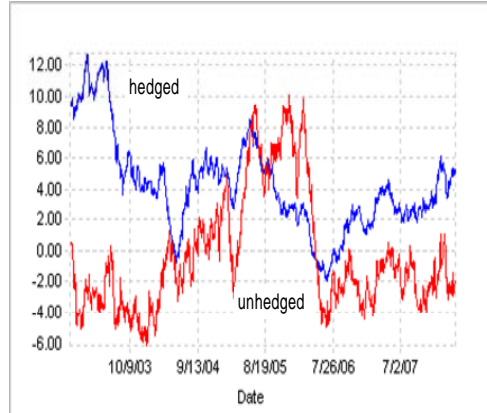
Note: Chart shows yoy performance of DAX against the SPX index and EUR-USD.
Source: MAPS, Merrill Lynch Analytical Plotting System.

The USD is now undervalued

According to COMPASS, our FX valuation model, the USD is now 6.8% undervalued on a trade-weighted basis. Fair values for USD-JPY and EUR-USD stand at 98 and 1.24, respectively. This means that since January 2006 the USD has been undervalued against the EUR. Against the JPY, the USD reached fair value a month ago.

Since January 2003, the DAX has outperformed the S&P 500 by 10% to 20% annually (Chart 4). The average year-on-year return of long EUR-USD has been 8.3% dating back to 2003. Meanwhile, the DAX has outperformed the SPX by 3.3% annually. The persistence and length of this trend may have raised complacency amongst EU investors in a similar way that US investors turned complacent between 1992 and 2001. The US equity market outperformed the MSCI world index by 25.7% in that period. The USD appreciated 27% on a trade-weighted basis.

Chart 5: One-year rolling returns



Note: The chart shows a rolling 122-month performance of hedged and unhedged Merrill Lynch Global Bond Plus Index.
Source: MAPS, Merrill Lynch Analytical Plotting System.

Fixed income hedged portfolios

The impact of currency exposure on fixed income portfolios over the past few years was also quite remarkable. We show this by looking at the performance of Merrill Lynch Global Bond Market Plus Index (GBMP) in hedged and unhedged forms. Given that this index is mostly USD-denominated, EU investors would have done well by hedging FX exposure. Since 2002, the average annual performance of the GBMP index in EUR was -0.4%; if one would have hedged EUR exposure, performance would have increased to +4.2%. Moreover, the standard deviation of hedged positions was 3%, against 3.8% for the unhedged portfolio (Chart 5).

Performance in international fixed income has not been closely related to FX hedging over the past few years. In 2006 the EUR appreciated considerably, erasing all gains to EU-based investors in fixed income portfolios. Hedging currency exposure would have protected investors. This is a practical application of the correlation exercise presented in Chart 3 (previous page).

We attempted the following exercise to search for information ratios (IR), or the ratio of returns to volatility, in various currencies. Using one-year returns in JPY, EUR and USD, we estimate hedged and unhedged returns to these corresponding investors in the GBPM (Table 3). The most striking result is that hedging currency exposure would have raised USD-based investors' IR from 1.3 to 2.0. The not-so-surprising result is that EUR-based investors would face the lowest IR after hedging FX exposure, given recent EUR strength. Since 2002, the highest annual return would be in unhedged, USD-based fixed income investors. The lowest return would be for EUR investors hedging FX exposure. All portfolios exhibiting FX exposure would be more volatile than their hedged counterparts.

The highest IRs are in hedged portfolios in USD and EUR. The lowest IRs are in EUR-hedged and in JPY-hedged. In other words, hedging or not hedging might be compared to a flip of a coin for a completely uninformed agent. This seems plausible, as some claim that the optimal hedge ratio, the one with the highest IR, would be 50-50¹.

Table 3: Return and volatility (2002-2008)

	Avg	St Dev	IR
USD - hedged	4.6	2.4	2.0
USD - unhedged	7.5	5.7	1.3
JPY - hedged	1.5	2.9	0.5
JPY - unhedged	5.6	4.4	1.3
EUR - hedged	4.2	3.0	1.4
EUR - unhedged	-0.3	3.8	-0.1

Note: The chart shows annual returns of the Merrill Lynch Global Bond Market Plus Index (GBMP) given full or hedged currency exposure.
Source: MAPS - Merrill Lynch Analytical Mapping System

Picking hedge ratios

Picking the hedge ratio (ie, the amount of FX exposure to hedge) is a difficult task. The solution obviously lies somewhere between the two ends of the spectrum: being fully hedged (100% hedge ratio) or completely unhedged (0% hedge ratio).

¹ Gardner, G. and T. Wuilloud, 1995, "Currency Risk in International Portfolios: How Satisfying is Optimal Hedging?," *Journal of Portfolio Management*.

For the typical investor, being fully hedged (100%) is usually the preferred strategy because it completely eliminates the volatility in future cash flows. However, where performance is often measured against market-based benchmarks in the financial industry, being completely hedged could mean underperforming the benchmark, and is thus a sub-optimal solution.

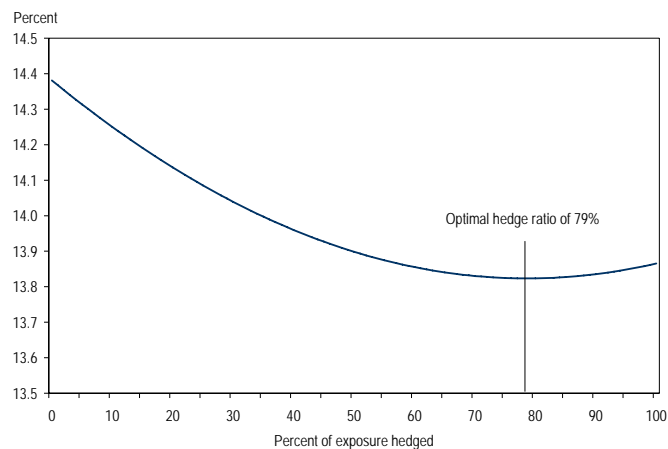
There are two primary issues against a completely unhedged position. First, it can add volatility to the performance that few investors can withstand, especially in the short term. Second, it makes it necessary for the decision maker to have a specific view on the future expected returns of the underlying currency exposure. The consequence of an unfavorable outcome, especially in periods of sustained trends in FX markets, could cause participants to be out of business quickly. Thus, the solution of a 0% hedge is also sub-optimal.

In practice, the solution lies somewhere between a hedge ratio of 0% and 100%. The optimal hedge ratio is typically a function of several variables: expected future returns, risk tolerance, performance metrics and barriers to investing, to name a few.

Hedging is often considered to be a volatility-reducing exercise. In that light, one common method of calculating hedge ratios is that of minimizing the variance of performance. In Charts 6 and 7 we plot the variance of the performance of a USD-based investor with exposure to the MSCI World Equity index. Chart 6 covers the 1988 to 2001 time period, one where the USD remained range-bound in the early part and then saw a rally. Chart 7 covers 2002 to the present, one where the USD has steadily weakened on a trade-weighted basis.

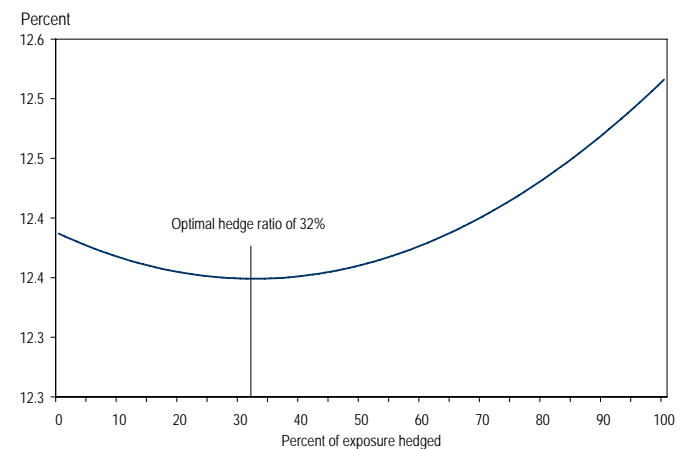
In both cases it is clear that the optimal (minimum variance) hedge ratio would have been between 0% and 100%. The optimal hedge ratio is 79% in the first instance and 32% in the second. Although the optimal hedge ratio for the two time periods differs significantly, it is important to note that a corner solution is rarely an optimal solution.

Chart 6: Variance at different hedge ratios for a USD-based MSCI World index investor (Jan 1988 to Dec 2001)



Note: The chart plots the standard deviation of the returns on investing in the MSCI World Equity index for various different hedge ratios.
Source: Bloomberg, Merrill Lynch

Chart 7: Variance at different hedge ratios for a USD-based MSCI World index investor (Jan 2002 to Feb 2008)



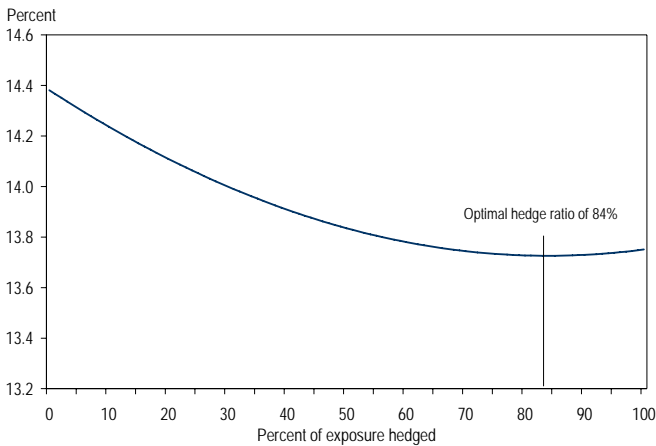
Note: The chart plots the standard deviation of the returns on investing in the MSCI World Equity index for various different hedge ratios.
Source: Bloomberg, Merrill Lynch

Repeating the above exercise for JPY-based and EUR-based investors shows similar results (Charts 8 to 11). For a JPY-based investor, the minimum variance hedge ratio would have been 84% from 1988 to 2001 and 43% from 2002 to the present. For a EUR-based investor, we have the rare case where the minimum variance hedge ratio is 100% for the short 1999 to 2001 period. For the longer 2002 to current period, the optimal solution is 69%.

Conclusion and strategy

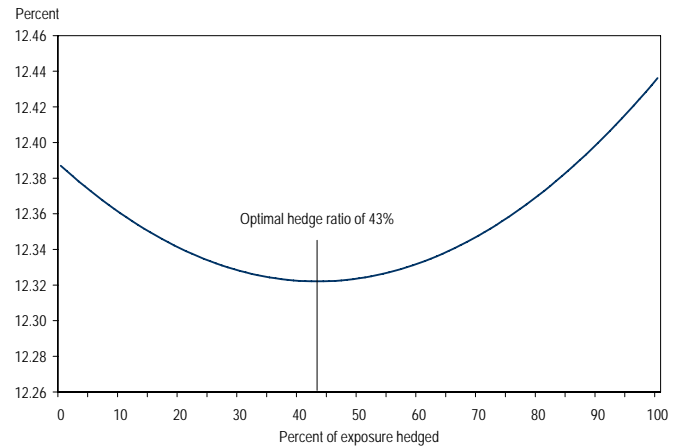
We show that investors should look for appropriate hedge ratios in various currencies. The corner solutions of being fully hedged or unhedged are rarely optimal solutions. We find that for a USD-, EUR- and JPY-based investors, the optimal hedge ratio would have been between 30% and 100%. We also show that the hedge ratios differ for different time periods.

Chart 8: Variance at different hedge ratios for a JPY-based MSCI World index investor (Jan 1988 to Dec 2001)



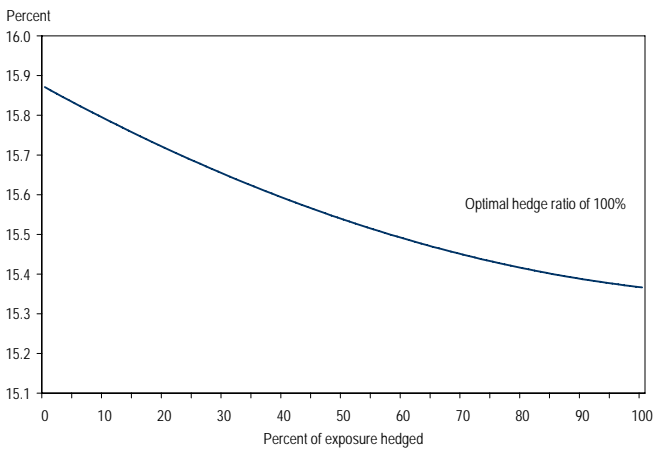
Note: The chart plots the standard deviation of the returns on investing in the MSCI World Equity index for various different hedge ratios.
Source: Bloomberg, Merrill Lynch

Chart 9: Variance at different hedge ratios for a JPY-based MSCI World index investor (Jan 2002 to Feb 2008)



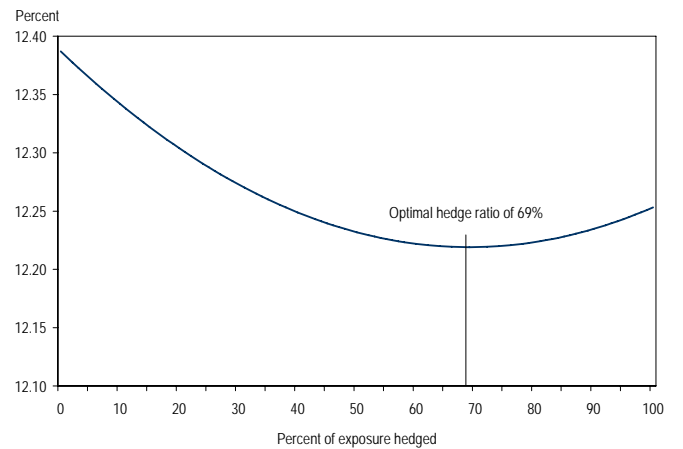
Note: The chart plots the standard deviation of the returns on investing in the MSCI World Equity index for various different hedge ratios.
Source: Bloomberg, Merrill Lynch

Chart 10: Variance at different hedge ratios for a EUR-based MSCI World index investor (Jan 1999 to Dec 2001)



Note: The chart plots the standard deviation of the returns on investing in the MSCI World Equity index for various different hedge ratios.
Source: Bloomberg, Merrill Lynch

Chart 11: Variance at different hedge ratios for a EUR-based MSCI World index investor (Jan 2002 to Feb 2008)



Note: The chart plots the standard deviation of the returns on investing in the MSCI World Equity index for various different hedge ratios.
Source: Bloomberg, Merrill Lynch

16 April 2008

Forecast currency returns – G10 currencies

	Spot	3m	Rank	6m	Rank	12m	Rank
G3							
EUR-USD	1.58						
Forecast Total Return		(5.8)		(6.9)		(9.8)	
Implied Volatility		10.2		10.2		10.0	
Absolute Risk-Adjusted Return		0.6	10	0.7	4	1.0	7
USD-JPY	101						
Forecast Total Return		4.7		3.1		0.3	
Implied Volatility		13.7		12.7		11.7	
Absolute Risk-Adjusted Return		0.3	11	0.2	10	0.0	14
EUR-JPY	160						
Forecast Total Return		(1.3)		(4.0)		(9.4)	
Implied Volatility		12.3		11.9		11.3	
Absolute Risk-Adjusted Return		0.1	12	0.3	7	0.8	3
Dollar Bloc							
USD-CAD	1.02						
Forecast Total Return		0.2		3.7		5.4	
Implied Volatility		11.0		10.9		10.7	
Absolute Risk-Adjusted Return		0.0	14	0.3	6	0.5	10
AUD-USD	0.92						
Forecast Total Return		12.1		1.8		(9.0)	
Implied Volatility		12.7		12.7		12.9	
Absolute Risk-Adjusted Return		1.0	4	0.1	12	0.7	5
NZD-USD	0.78						
Forecast Total Return		9.5		(2.7)		(7.9)	
Implied Volatility		14.2		14.5		14.6	
Absolute Risk-Adjusted Return		0.7	7	0.2	11	0.5	9
European Bloc							
EUR-GBP	0.81						
Forecast Total Return		(12.8)		(4.5)		(3.8)	
Implied Volatility		10.0		9.5		9.2	
Absolute Risk-Adjusted Return		1.3	2	0.5	5	0.4	12
GBP-USD	1.96						
Forecast Total Return		8.0		(2.5)		(6.2)	
Implied Volatility		9.0		9.0		9.0	
Absolute Risk-Adjusted Return		0.9	5	0.3	8	0.7	6
EUR-CHF	1.58						
Forecast Total Return		3.7		1.4		(0.5)	
Implied Volatility		6.3		5.7		5.2	
Absolute Risk-Adjusted Return		0.6	9	0.3	9	0.1	13
USD-CHF	1.00						
Forecast Total Return		10.0		9.0		10.3	
Implied Volatility		12.5		11.9		10.9	
Absolute Risk-Adjusted Return		0.8	6	0.8	3	0.9	2
EUR-SEK	9.41						
Forecast Total Return		(12.7)		(7.2)		(3.8)	
Implied Volatility		5.1		5.2		5.2	
Absolute Risk-Adjusted Return		2.5	7	1.4	7	0.7	4
USD-SEK	5.95						
Forecast Total Return		(7.4)		(0.3)		6.6	
Implied Volatility		12.4		12.2		12.0	
Absolute Risk-Adjusted Return		0.6	8	0.0	13	0.6	8
EUR-NOK	7.91						
Forecast Total Return		(7.0)		(6.8)		(4.3)	
Implied Volatility		7.2		7.2		7.1	
Absolute Risk-Adjusted Return		1.0	3	0.9	2	0.6	7
USD-NOK	5.01						
Forecast Total Return		(1.3)		0.2		6.1	
Implied Volatility		13.3		13.2		13.1	
Absolute Risk-Adjusted Return		0.1	13	0.0	14	0.5	11

Note: Risk-adjusted return is the total annualized return per unit of volatility at the same tenor, where volatility is the at-the-money option. Returns are calculated assuming a long position in the left currency pair against a short in the right currency. Forecast as of 16 April 2008. Spot exchange rate at previous London close.

Source: Merrill Lynch

16 April 2008

Forecast currency returns – E10 currencies

	Spot	3m	Rank	6m	Rank	12m	Rank
Latin America							
USD-BRL	1.68						
Forecast Total Return		(4.3)		5.1		0.7	
Volatility		12.6		12.6		12.7	
Absolute Risk-Adjusted Return		0.3	13	0.4	10	0.1	13
USD-MXN	10.49						
Forecast Total Return		11.7		9.0		1.7	
Volatility		6.6		6.8		7.3	
Absolute Risk-Adjusted Return		1.8	4	1.3	3	0.2	10
Emerging Europe							
USD-ZAR	7.96						
Forecast Total Return		(19.8)		(11.2)		(7.7)	
Volatility		19.3		19.3		19.3	
Absolute Risk-Adjusted Return		1.0	8	0.6	9	0.4	8
USD-PLN	2.16						
Forecast Total Return		11.3		7.9		7.2	
Volatility*		12.4		11.1		9.7	
Absolute Risk-Adjusted Return		0.9	9	0.7	7	0.7	4
EUR-PLN	3.41						
Forecast Total Return		4.7		0.4		(3.3)	
Volatility*		5.6		5.5		5.1	
Absolute Risk-Adjusted Return		0.8	11	0.1	13	0.6	6
USD-TRY	1.31						
Forecast Total Return		(42.9)		(26.4)		(17.1)	
Volatility*		16.9		15.1		15.3	
Absolute Risk-Adjusted Return		2.5	1	1.8	1	1.1	2
USD-HUF	159						
Forecast Total Return		16.3		9.5		8.0	
Volatility*		15.2		13.2		12.4	
Absolute Risk-Adjusted Return		1.1	7	0.7	6	0.6	5
EUR-HUF	252						
Forecast Total Return		9.5		1.9		(2.6)	
Volatility*		11.4		8.9		10.1	
Absolute Risk-Adjusted Return		0.8	12	0.2	12	0.3	9
Asian Bloc							
USD-KRW	987						
Forecast Total Return		(13.9)		(9.1)		(6.7)	
Volatility		7.3		6.8		6.6	
Absolute Risk-Adjusted Return		1.9	3	1.3	2	1.0	3
JPY-KRW	9.74						
Forecast Total Return		(17.7)		(11.8)		(7.0)	
Volatility*		20.3		17.3		14.2	
Absolute Risk-Adjusted Return		0.9	10	0.7	8	0.5	7
USD-TWD	30.26						
Forecast Total Return		19.2		9.5		8.0	
Volatility		7.7		7.3		7.0	
Absolute Risk-Adjusted Return		2.5	2	1.3	4	1.1	1
USD-SGD	1.36						
Forecast Total Return		(6.9)		(4.5)		(1.1)	
Volatility		5.9		6.0		6.0	
Absolute Risk-Adjusted Return		1.2	6	0.8	5	0.2	11
USD-HKD	7.79						
Forecast Total Return		(1.3)		(0.3)		0.2	
Volatility		1.0		1.1		1.7	
Absolute Risk-Adjusted Return		1.3	5	0.3	11	0.1	12

Note: Risk-adjusted return is the total annualized return per unit of volatility at the same tenor, where volatility is either implied by at-the-money option or historical (denoted by *).

Returns are calculated assuming a long position in the left currency pair against a short in the right currency. The ranking is based on the *absolute* risk-adjusted total return. A high-ranking negative-return currency pair implies that investors should be short the left of the pair and long the right to maximise returns. Forecast as of 16 April 2008. Spot exchange rate at previous London close.

Source: Merrill Lynch

16 April 2008

Forecast versus forwards – G10 currencies

	Spot	3m	6m	12m
G3				
EUR-USD	1.58	1.55 (1.57)	1.51 (1.57)	1.40 (1.55)
USD-JPY	101	102 (101)	102 (100)	100 (100)
EUR-JPY	160	158 (159)	154 (157)	140 (155)
Dollar Bloc				
USD-CAD	1.02	1.02 (1.02)	1.04 (1.02)	1.08 (1.02)
AUD-USD	0.92	0.94 (0.91)	0.91 (0.90)	0.80 (0.88)
NZD-USD	0.78	0.79 (0.77)	0.75 (0.76)	0.68 (0.74)
European Bloc				
EUR-GBP	0.81	0.78 (0.81)	0.79 (0.81)	0.78 (0.81)
GBP-USD	1.96	1.99 (1.95)	1.91 (1.94)	1.79 (1.91)
EUR-CHF	1.58	1.59 (1.58)	1.58 (1.57)	1.55 (1.56)
USD-CHF	1.00	1.03 (1.00)	1.05 (1.00)	1.11 (1.00)
EUR-SEK	9.41	9.10 (9.41)	9.07 (9.42)	9.07 (9.43)
USD-SEK	5.95	5.87 (5.98)	6.01 (6.02)	6.48 (6.08)
EUR-NOK	7.91	7.80 (7.94)	7.70 (7.98)	7.70 (8.04)
USD-NOK	5.01	5.03 (5.05)	5.10 (5.10)	5.50 (5.18)

Note: Forecast as of 16 April 2008. Spot exchange rate at previous London close. Forwards in parentheses. The left of the currency pair is the denominator of the exchange rate.

Source: Merrill Lynch

Quarterly forecasts – G10 currencies

	Spot	Jun '08	Sep '08	Dec '08	Mar '09	Jun '09	Sep '09	Dec '09
G3								
EUR-USD	1.58	1.55	1.51	1.48	1.40	1.33	1.30	1.28
USD-JPY	101	102	102	102	100	98	98	98
EUR-JPY	160	158	154	151	140	130	127	125
Dollar Bloc								
USD-CAD	1.02	1.02	1.04	1.06	1.08	1.11	1.12	1.12
AUD-USD	0.92	0.94	0.91	0.84	0.80	0.74	0.72	0.70
NZD-USD	0.78	0.79	0.75	0.68	0.68	0.62	0.62	0.62
European Bloc								
EUR-GBP	0.81	0.78	0.79	0.79	0.78	0.77	0.76	0.76
GBP-USD	1.96	1.99	1.91	1.87	1.79	1.73	1.71	1.68
EUR-CHF	1.58	1.59	1.58	1.58	1.55	1.54	1.54	1.54
USD-CHF	1.00	1.03	1.05	1.07	1.11	1.16	1.18	1.20
EUR-SEK	9.41	9.10	9.07	9.07	9.07	9.07	9.07	9.07
USD-SEK	5.95	5.87	6.01	6.13	6.48	6.82	6.98	7.09
EUR-NOK	7.91	7.80	7.70	7.60	7.70	7.80	7.90	8.10
USD-NOK	5.01	5.03	5.10	5.14	5.50	5.86	6.08	6.33

Note: Forecast as of 16 April 2008. Spot exchange rate as of previous London close. The left of the currency pair is the denominator of the exchange rate.

Source: Merrill Lynch

16 April 2008

Forecasts versus forwards – E10 currencies

	Spot	3m	6m	12m
Latin America				
USD-BRL	1.68	1.70 (1.72)	1.80 (1.76)	1.85 (1.84)
USD-MXN	10.49	10.90 (10.60)	11.20 (10.73)	11.15 (10.97)
Emerging Europe				
EUR-PLN	3.41	3.46 (3.42)	3.44 (3.43)	3.35 (3.46)
EUR-HUF	252	260 (254)	259 (257)	255 (262)
USD-TRY	1.31	1.19 (1.37)	1.21 (1.41)	1.25 (1.51)
USD-ZAR	7.96	7.70 (8.14)	7.85 (8.33)	8.05 (8.72)
Asian Bloc				
USD-KRW	987	955 (991)	945 (991)	925 (991)
USD-TWD	30.26	31.00 (29.67)	30.75 (29.38)	31.25 (28.94)
USD-SGD	1.36	1.33 (1.35)	1.32 (1.35)	1.33 (1.34)
USD-HKD	7.79	7.75 (7.77)	7.75 (7.76)	7.75 (7.74)

Note: Forecast as of 16 April 2008. Spot exchange rate at previous London close. Forwards in parentheses. The left of the currency pair is the denominator of the exchange rate.

Source: Merrill Lynch

Quarterly forecasts – EM currencies

	Spot	Jun '08	Sep '08	Dec '08	Mar '09	Jun '09	Sep '09	Dec '09
Latin America								
USD-BRL	1.68	1.70	1.80	1.80	1.85	1.85	1.90	1.90
USD-MXN	10.49	10.90	11.20	11.00	11.15	11.20	11.40	11.20
USD-CLP	454	470	480	490	510	515	525	530
USD-COP	1,800	2,000	2,100	2,200	2,250	2,300	2,350	2,350
USD-ARS	3.16	3.15	3.20	3.25	3.30	3.30	3.40	3.40
USD-VEF	2.15	2.15	2.15	2.15	2.70	2.70	2.70	2.70
USD-PEN	2.71	2.80	2.90	2.95	3.00	3.05	3.10	3.10
Emerging Europe								
EUR-PLN	3.41	3.46	3.44	3.40	3.35	3.30	3.25	3.20
EUR-HUF	252	260	259	259	255	250	245	240
EUR-CZK	24.78	24.65	24.50	24.25	24.00	24.00	24.00	24.00
EUR-SKK	32.31	32.00	31.75	31.50	31.50	31.50	31.50	31.50
USD-RUB	23.47	22.85	22.77	22.75	22.00	21.00	20.00	20.00
USD-ZAR	7.96	7.70	7.85	8.05	8.05	8.10	8.15	8.20
USD-TRY	1.31	1.19	1.21	1.22	1.25	1.28	1.32	1.35
EUR-RON	3.62	3.67	3.63	3.62	3.55	3.45	3.40	3.30
USD-EGP	5.43	5.40	5.35	5.30	5.25	5.15	5.05	4.95
USD-ILS	3.51	3.60	3.60	3.60	3.55	3.45	3.35	3.30
USD-AED	3.673	3.491	3.404	3.336	3.286	3.236	3.188	3.140
USD-KWD	0.266	0.263	0.256	0.251	0.247	0.243	0.240	0.236
USD-SAR	3.750	3.546	3.493	3.441	3.440	3.440	3.440	3.440
USD-QAR	3.639	3.460	3.375	3.309	3.277	3.244	3.212	3.180
Asian Bloc								
USD-KRW	987	955	945	930	925	920	920	915
USD-TWD	30.26	31.00	30.75	31.00	31.25	31.75	32.00	32.25
USD-SGD	1.36	1.33	1.32	1.33	1.33	1.34	1.35	1.36
USD-THB	31.62	31.00	32.25	32.50	32.50	32.75	33.00	33.50
USD-HKD	7.79	7.75	7.75	7.75	7.75	7.75	7.75	7.75
USD-CNY	6.99	6.85	6.70	6.60	6.55	6.60	6.50	6.50
USD-IDR	9,197	9,000	8,900	8,800	8,900	9,000	9,000	9,000
USD-PHP	41.96	39.50	40.00	40.50	40.00	41.00	41.00	42.00
USD-MYR	3.17	3.10	3.05	3.00	3.05	3.10	3.10	3.10
USD-INR	39.97	39.00	39.50	39.75	39.00	40.00	40.00	40.00

Note: Forecast as of 16 April 2008. Spot exchange rate as of previous London close.

Source: Merrill Lynch

16 April 2008

3 Month forecast currency returns – G10 countries

	USD	EUR	JPY	CAD	AUD	NZD	GBP	CHF	SEK	NOK
USD	--	-5.8 (8.5)	4.7 (14.6)	0.2 (11.0)	12.1 (13.3)	9.5 (14.8)	8.0 (9.1)	10.0 (9.7)	-7.4 (11.9)	-1.3 (12.5)
EUR	0.7 (26)	--	-1.3 (12.5)	-5.6 (11.1)	-16.0 (12.3)	-14.0 (12.8)	-12.8 (7.9)	3.7 (4.5)	-12.7 (6.5)	-7.0 (8.4)
JPY	0.3 (34)	0.1 (43)	--	4.5 (17.6)	17.4 (19.4)	14.7 (18.0)	13.1 (13.8)	-4.8 (10.1)	13.0 (14.7)	6.0 (15.9)
CAD	0.0 (44)	0.5 (31)	0.3 (38)	--	12.3 (12.2)	9.8 (14.0)	8.2 (11.4)	9.8 (12.2)	-7.5 (12.7)	-1.5 (13.2)
AUD	0.9 (13)	1.3 (7)	0.9 (14)	1.0 (11)	--	2.4 (7.7)	-3.7 (12.5)	23.4 (14.3)	3.9 (13.8)	10.7 (14.2)
NZD	0.6 (27)	1.1 (8)	0.8 (19)	0.7 (25)	0.3 (35)	--	-1.4 (13.3)	20.5 (14.7)	1.5 (14.2)	8.1 (15.2)
GBP	0.9 (16)	1.6 (5)	0.9 (12)	0.7 (22)	0.3 (36)	0.1 (40)	--	18.9 (9.9)	0.1 (8.6)	6.6 (9.4)
CHF	1.0 (10)	0.8 (18)	0.5 (32)	0.8 (20)	1.6 (4)	1.4 (6)	1.9 (3)	--	-15.8 (8.2)	-10.3 (9.7)
SEK	0.6 (28)	2.0 (1)	0.9 (15)	0.6 (29)	0.3 (37)	0.1 (41)	0.0 (45)	1.9 (2)	--	-6.2 (8.8)
NOK	0.1 (42)	0.8 (17)	0.4 (33)	0.1 (39)	0.8 (21)	0.5 (30)	0.7 (23)	1.1 (9)	0.7 (24)	--

Refer to notes below.

6 Month forecast currency returns – G10 countries

	USD	EUR	JPY	CAD	AUD	NZD	GBP	CHF	SEK	NOK
USD	--	-6.9 (8.2)	3.1 (13.2)	3.7 (10.8)	1.8 (13.0)	-2.7 (14.8)	-2.5 (9.0)	9.0 (9.1)	-0.3 (11.3)	0.2 (12.0)
EUR	0.8 (6)	--	-4.0 (11.6)	-3.5 (10.7)	-8.6 (11.7)	-4.4 (12.2)	-4.5 (7.5)	1.4 (4.3)	-7.2 (6.2)	-6.8 (7.6)
JPY	0.2 (29)	0.3 (20)	--	-0.6 (16.1)	5.0 (18.9)	0.4 (17.3)	0.6 (12.9)	-5.4 (9.6)	3.5 (13.8)	3.0 (15.1)
CAD	0.3 (18)	0.3 (22)	0.0 (41)	--	5.6 (11.7)	0.9 (13.4)	1.1 (11.0)	5.1 (11.7)	-3.9 (12.3)	-3.4 (12.5)
AUD	0.1 (35)	0.7 (8)	0.3 (27)	0.5 (13)	--	4.6 (7.8)	-4.2 (12.0)	11.0 (13.6)	1.5 (13.2)	2.0 (13.3)
NZD	0.2 (32)	0.4 (16)	0.0 (43)	0.1 (38)	0.6 (11)	--	0.2 (12.8)	6.1 (14.1)	-3.0 (13.6)	-2.5 (14.4)
GBP	0.3 (24)	0.6 (10)	0.0 (40)	0.1 (37)	0.4 (17)	0.0 (44)	--	6.3 (9.3)	-2.8 (8.1)	-2.3 (8.7)
CHF	1.0 (3)	0.3 (21)	0.6 (12)	0.4 (14)	0.8 (7)	0.4 (15)	0.7 (9)	--	-8.6 (7.7)	-8.1 (8.8)
SEK	0.0 (42)	1.2 (1)	0.3 (28)	0.3 (23)	0.1 (36)	0.2 (30)	0.3 (19)	1.1 (2)	--	-0.5 (8.2)
NOK	0.0 (45)	0.9 (5)	0.2 (31)	0.3 (25)	0.1 (34)	0.2 (33)	0.3 (26)	0.9 (4)	0.1 (39)	--

Refer to notes below.

12 Month forecast currency returns – G10 countries

	USD	EUR	JPY	CAD	AUD	NZD	GBP	CHF	SEK	NOK
USD	--	-9.8 (8.0)	0.3 (11.9)	5.4 (10.5)	-9.0 (12.8)	-7.9 (14.8)	-6.2 (8.9)	10.3 (8.7)	6.6 (10.9)	6.1 (11.5)
EUR	1.2 (1)	--	-9.4 (11.0)	-4.9 (10.6)	-0.8 (11.0)	-2.0 (11.7)	-3.8 (7.4)	-0.5 (4.2)	-3.8 (6.0)	-4.3 (7.1)
JPY	0.0 (43)	0.9 (4)	--	-4.8 (15.3)	-8.7 (18.4)	-7.6 (16.6)	-5.9 (12.4)	-9.0 (9.4)	-5.9 (13.3)	-5.4 (14.7)
CAD	0.5 (13)	0.5 (18)	0.3 (25)	--	-4.1 (11.2)	-3.0 (13.0)	-1.1 (10.9)	4.7 (11.4)	1.2 (12.1)	0.7 (12.2)
AUD	0.7 (5)	0.1 (39)	0.5 (15)	0.4 (24)	--	-1.2 (8.0)	3.1 (11.4)	0.3 (12.9)	-3.0 (12.4)	-3.5 (12.5)
NZD	0.5 (10)	0.2 (30)	0.5 (19)	0.2 (29)	0.2 (33)	--	1.9 (12.4)	1.6 (13.8)	-1.8 (13.1)	-2.3 (13.7)
GBP	0.7 (6)	0.5 (12)	0.5 (16)	0.1 (37)	0.3 (27)	0.2 (32)	--	3.5 (8.9)	0.0 (7.8)	-0.4 (8.2)
CHF	1.2 (2)	0.1 (35)	1.0 (3)	0.4 (21)	0.0 (44)	0.1 (36)	0.4 (22)	--	-3.3 (7.0)	-3.8 (8.1)
SEK	0.6 (8)	0.6 (7)	0.4 (20)	0.1 (38)	0.2 (28)	0.1 (34)	0.0 (45)	0.5 (14)	--	0.5 (7.8)
NOK	0.5 (11)	0.6 (9)	0.4 (23)	0.1 (41)	0.3 (26)	0.2 (31)	0.1 (42)	0.5 (17)	0.1 (40)	--

Note: The upper triangle contains the Forecast Total Annualized Return (Implied Volatility) for the market-convention currency pair.

The lower triangle contains the Absolute Risk-Adjusted Return (Rank) for the market-convention currency pair. See below for market-convention and examples.

Absolute Risk-Adjusted Return is the total annualized return per unit of volatility at the same tenor, where volatility is implied by the at-the-money option. Returns are calculated assuming a long position in the left currency of the default pair against a short in the right currency. Forecasts as of 16 April 2008.

Market convention for currency pairs: EUR-USD, USD-JPY, USD-CAD, AUD-USD, NZD-USD, GBP-USD, USD-CHF, USD-SEK, USD-NOK, EUR-JPY, EUR-CAD, EUR-AUD, EUR-NZD, EUR-GBP, EUR-CHF, EUR-SEK, EUR-NOK, CAD-JPY, AUD-JPY, NZD-JPY, GBP-JPY, CHF-JPY, SEK-JPY, NOK-JPY, AUD-CAD, NZD-CAD, GBP-CAD, CAD-CHF, CAD-SEK, CAD-NOK, AUD-NZD, GBP-AUD, AUD-CHF, AUD-SEK, AUD-NOK, GBP-NZD, NZD-CHF, NZD-SEK, NZD-NOK, GBP-CHF, GBP-SEK, GBP-NOK, CHF-SEK, CHF-NOK, SEK-NOK.

Source: Merrill Lynch

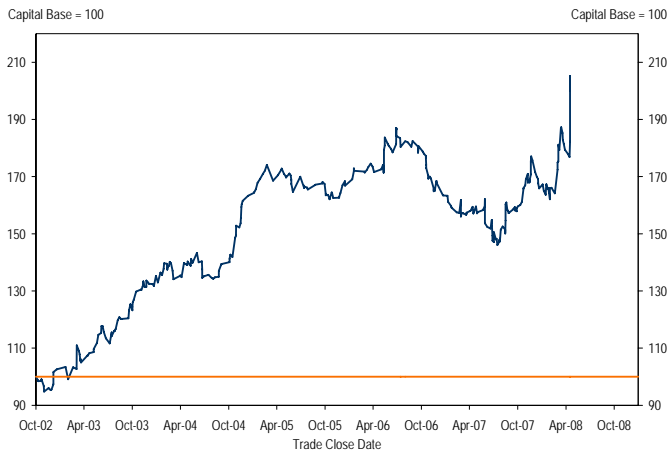
Two examples on how to read the above tables:

1. In the 3-month Forecast Currency Returns table and the upper triangle of the table we see that AUD-NZD (market convention) has a forecasted total annualized return of 2.4%. The corresponding implied volatility in the cross is 7.7%. In the lower triangle, we see that the absolute annualized risk adjusted return is 0.3%, rendering it our 35th strongest 3-month forecast position (rank = 35 out of 45).
2. In the 6-month Forecast Currency Returns table and the upper triangle of the table we see that GBP-AUD (market convention) has a forecasted total annualized return of -4.2%. The corresponding implied volatility in the cross is 12.0%. In the lower triangle, we see that the absolute annualized risk adjusted return is 0.4%, rendering it our 17th strongest 6-month forecast position (rank = 17 out of 45).

ML leveraged trading portfolio

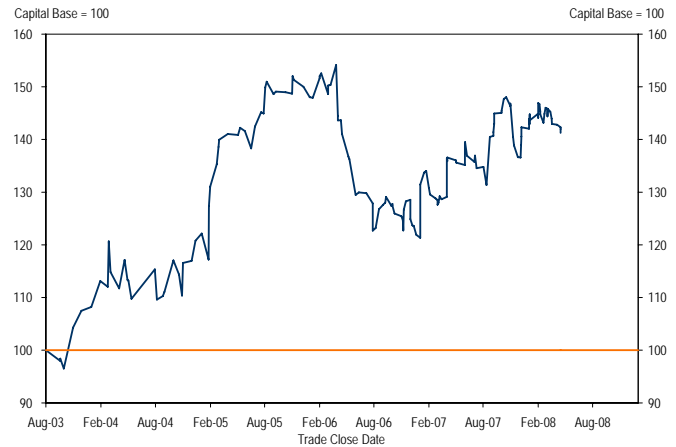
On a marked-to-market basis, the Discretionary portfolio returned 42.0% over the past year with an average leverage ratio of 4.1 and 14.2% over the past month with an average leverage ratio of 4.8. The Systematic portfolio returned 4.7% over the past year with an average leverage ratio of 2.2 and -4.0% over the past month with an average leverage ratio of 1.7.

Discretionary trades – total return



Source: Merrill Lynch

Systematic trades – total return



Source: Merrill Lynch

Traders corner – historical performance

	Past Year						Past Month					
	Total Return	Standard Deviation	Modified Sharpe	Leverage Ratio	Return Per Trade	Biggest Loss	Total Return	Standard Deviation	Modified Sharpe	Leverage Ratio	Return Per Trade	Biggest Loss
Discretionary Trades	42.0	15.0	2.8	4.1	0.4	-5.3	14.2	9.8	1.4	4.8	0.7	-3.6
Systematic Trades	4.7	4.0	1.2	2.2	0.1	-6.4	-4.0	0.8	-5.1	1.7	-0.4	-1.3
AUTO SPEC	11.1	4.1	2.7	--	0.4	-3.4	-2.0	0.9	-2.2	--	-0.7	-1.0
AUTO CARRY	-3.9	2.4	-1.6	--	-1.0	-6.4	0.0	NA	NA	--	NA	--
PATRIC	4.4	3.8	1.2	--	0.3	-0.9	-0.7	0.4	-1.8	--	-0.2	-0.4
VOLT	-6.9	4.4	-1.6	--	-0.5	-1.7	-1.3	1.4	-0.9	--	-0.6	-1.3

Note: Discretionary and systematic trades began on 1 October 2002 and 1 August 2003 respectively. Performance includes open positions that are marked to market the previous day at 15.00ET. The modified Sharpe ratio is the return scaled by the standard deviation of the return series over the sample period. We consider it a modified Sharpe ratio because the standard deviation is computed on a trade-close date rather than on a daily mark to market. The standard deviation is lower than would otherwise be the case, raising the implied Sharpe ratio. The one-month Sharpe ratio should be scaled by the square root of 12 to arrive at a figure comparable to the one-year ratio.

Source: Merrill Lynch

Historical performance of leveraged trades – explanatory box

Our leveraged trades are based on recommendations from the Traders Corner in the daily *Cause & FX*, introduced 1 October 2002. Several parameters are used to arrive at the performance statistics. We assume a capital base of \$100 in our discretionary trades. In the G10 currency regions, each spot and forward exchange rate trade is \$100 while the notional value of an option trade is \$300. Emerging market trades are one-half the size of the G10 currency regions. Trades that deviate from these benchmarks are specified accordingly. In our portfolio of systematic trading rules, capital is allocated based on the expected frequency of the trades in the AUTO SPEC, AUTO CARRY and PATRIC rules. The capital base for the portfolio of AUTO trading rules is \$100. We allocate \$300 to AUTO SPEC trades and \$200 to AUTO CARRY. With a maximum of four PATRIC trades open at any given time, the total capital base for each PATRIC trade is \$60. Depending on the USD monthly rank, they may be three or four legs in the monthly PATRIC trade, each allocated \$20 and \$15, respectively. As the longest PATRIC monthly set of trades could last for three months, the maximum capital allocated to this trading rule any given day will be \$240 (4x\$60). We compute the leverage ratios daily based on the total amount of capital allocated to trades divided by the capital base, which rises or falls with trading performance. The leverage ratio is the average of the daily observations.

A complete performance record is available upon request. The performance does not reflect tax withholdings and investors should note that their costs may vary. Past performance does not guarantee future returns.

Analyst Certification

I, Daniel Tenengauzer, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Important Disclosures

Due to the nature of strategic analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.

The analyst(s) responsible for covering the securities in this report receive compensation based upon, among other factors, the overall profitability of Merrill Lynch, including profits derived from investment banking revenues.

Other Important Disclosures

Merrill Lynch fixed income analysts regularly interact with Merrill Lynch sales and trading desk personnel in connection with their research, including to ascertain pricing and liquidity in the fixed income markets.

Information relating to Non-U.S. affiliates of Merrill Lynch, Pierce, Fenner & Smith Incorporated (MLPF&S):

MLPF&S distributes research reports of the following non-US affiliates in the US (short name: legal name): Merrill Lynch (France): Merrill Lynch Capital Markets (France) SAS; Merrill Lynch (Frankfurt): Merrill Lynch International Bank Ltd, Frankfurt Branch; Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd; Merrill Lynch (Milan): Merrill Lynch International Bank Limited; MLPF&S (UK): Merrill Lynch, Pierce, Fenner & Smith Limited; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited; Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd; Merrill Lynch (Canada): Merrill Lynch Canada Inc; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa; Merrill Lynch (Argentina): Merrill Lynch Argentina SA; Merrill Lynch (Japan): Merrill Lynch Japan Securities Co, Ltd; Merrill Lynch (Seoul): Merrill Lynch International Incorporated (Seoul Branch); Merrill Lynch (Taiwan): Merrill Lynch Global (Taiwan) Limited; DSP Merrill Lynch (India): DSP Merrill Lynch Limited; PT Merrill Lynch (Indonesia): PT Merrill Lynch Indonesia; Merrill Lynch (KL) Sdn. Bhd.: Merrill Lynch (Malaysia); Merrill Lynch (Israel): Merrill Lynch Israel Limited; Merrill Lynch (Russia): Merrill Lynch CIS Limited, Moscow; Merrill Lynch (Turkey): Merrill Lynch Yatirim Bankasi A.S.; Merrill Lynch (Dubai): Merrill Lynch International Bank Ltd, Dubai Branch; MLPF&S (Zürich rep. office): MLPF&S Incorporated Zürich representative office.

This research report has been prepared and issued by MLPF&S and/or one or more of its non-U.S. affiliates. MLPF&S is the distributor of this research report in the U.S. and accepts full responsibility for research reports of its non-U.S. affiliates distributed in the U.S. Any U.S. person receiving this research report and wishing to effect any transaction in any security discussed in the report should do so through MLPF&S and not such foreign affiliates.

This research report has been approved for publication in the United Kingdom by Merrill Lynch, Pierce, Fenner & Smith Limited, which is authorized and regulated by the Financial Services Authority; has been considered and distributed in Japan by Merrill Lynch Japan Securities Co, Ltd, a registered securities dealer under the Securities and Exchange Law in Japan; is distributed in Hong Kong by Merrill Lynch (Asia Pacific) Limited, which is regulated by the Hong Kong SFC; is issued and distributed in Taiwan by Merrill Lynch Global (Taiwan) Ltd or Merrill Lynch, Pierce, Fenner & Smith Limited (Taiwan Branch); is issued and distributed in Malaysia by Merrill Lynch (KL) Sdn. Bhd., a licensed investment adviser regulated by the Malaysian Securities Commission; is issued and distributed in India by DSP Merrill Lynch Limited; and is issued and distributed in Singapore by Merrill Lynch International Bank Limited (Merchant Bank) and Merrill Lynch (Singapore) Pte Ltd (Company Registration No. 's F 06872E and 198602883D respectively). Merrill Lynch International Bank Limited (Merchant Bank) and Merrill Lynch (Singapore) Pte Ltd. are regulated by the Monetary Authority of Singapore. Merrill Lynch Equities (Australia) Limited, (ABN 65 006 276 795), AFS License 235132, provides this report in Australia. No approval is required for publication or distribution of this report in Brazil.

Merrill Lynch (Frankfurt) distributes this report in Germany. Merrill Lynch (Frankfurt) is regulated by BaFin.

Copyright, User Agreement and other general information related to this report:

Copyright 2008 Merrill Lynch, Pierce, Fenner & Smith Incorporated. All rights reserved. This research report is prepared for the use of Merrill Lynch clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of Merrill Lynch. Merrill Lynch research reports are distributed simultaneously to internal and client websites eligible to receive such research prior to any public dissemination by Merrill Lynch of the research report or information or opinion contained therein. Any unauthorized use or disclosure is prohibited. Receipt and review of this research report constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusions, or information contained in this report (including any investment recommendations, estimates or price targets) prior to Merrill Lynch's public disclosure of such information. The information herein (other than disclosure information relating to Merrill Lynch and its affiliates) was obtained from various sources and we do not guarantee its accuracy. Merrill Lynch makes no representations or warranties whatsoever as to the data and information provided in any third party referenced website and shall have no liability or responsibility arising out of or in connection with any such referenced website.

This research report provides general information only. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other investment or any options, futures or derivatives related to such securities or investments. It is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of any specific person who may receive this report. Investors should seek financial advice regarding the appropriateness of investing in any securities, other investment or investment strategies discussed or recommended in this report and should understand that statements regarding future prospects may not be realized. Investors should note that income from such securities or other investments, if any, may fluctuate and that price or value of such securities and investments may rise or fall. Accordingly, investors may receive back less than originally invested. Past performance is not necessarily a guide to future performance. Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The bonds of the company are traded over-the-counter. Retail sales and/or distribution of this report may be made only in states where these securities are exempt from registration or have been qualified for sale. MLPF&S usually makes a market in the bonds of this company.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or related investment mentioned in this report. In addition, investors in securities such as ADRs, whose values are influenced by the currency of the underlying security, effectively assume currency risk.

Officers of MLPF&S or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

Merrill Lynch Research policies relating to conflicts of interest are described at <http://www.ml.com/media/43347.pdf>.

Team Page

Ashish Agrawal Local Markets Strategist Merrill Lynch (Hong Kong) ashish_agrawal@ml.com	+852 2536 3965
Benoit Anne Local Markets Strategist MLPF&S (UK) b_anne@ml.com	+44 20 7995 2992
David Beker Local Markets Strategist MLPF&S david_beker@ml.com	+1 212 449 4721
Richard Cochinos FX Strategist MLPF&S richard_cochinos@ml.com	+1 212 449 3282
Steven Englander G10 FX Strategist MLPF&S steven_englander@ml.com	+1 212 449 4287
Emma Lawson FX Strategist MLPF&S (UK) emma_lawson@ml.com	+44 20 7996 6062
Parag Ramaiya FX Strategist MLPF&S parag_ramaiya@ml.com	+1 212 449 1608
Vineet Sawhney Local Markets Strategist MLPF&S (UK) vineet_sawhney@ml.com	+44 20 7996 2561
Daniel Tenengauzer Global Currencies Strategist MLPF&S daniel_tenengauzer@ml.com	+1 212 449 3415