Market Risk Report
September 2007

Executive Summary

- August 2007 was the most dramatic month we have documented so far: volatility levels on the S&P reached new 5-year highs, 2-month US bond yields fell from nearly 5% to below 3% and spreads widened dramatically. Although volatility and spreads remained very high, by the end of the month most assets were largely unchanged in price.
- Equity markets saw very high volatility levels not seen since 2002: North America reached over 24% and Japan 32%. Prices were largely unchanged on the month though. The VIX is implying volatility levels will remain at these higher levels of 20-30% over the next month.
- Fixed income yields fell sharply again over fears that real economies would be hit from the fall-out from the sub-prime crisis, and possibly from a shift of money out of more risky assets. Volatilities stayed high during August. Spreads widened significantly once again, with Argentinean debt trading at 6.5% over US Treasuries.
- FX volatility rose as well, with Yen volatility making fresh 12-month highs of over 14%.
- Option volatility generally will have risen significantly during August as equity prices fell, bond prices rose and the volatility of implied volatility rose strongly.
- Commodities' prices were the exception to the pattern: the oil price fell slightly and volatility was only average.
- Real Estate prices were flat on the month, however volatility rose again making new 12-month highs.

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Key News (Major Volatility-Driving Events)

August: prices unchanged but highly volatile

You wouldn't think it from reading the papers, but equity prices were largely unchanged during August, and barely down from their all-time highs. Developed country bond prices were up, and commodities largely flat. The only significant moves were a strengthening of the Yen and a continuing widening of fixed income spreads.

Volatilities by contrast were up dramatically. In particular equity volatilities were exceptionally high by recent standards: the S&P reached its highest levels since 2002 for instance.

Fed to the Rescue

As an emergency measure the Fed cut the discount rate (but not the main Fed Funds Target Rate) on August 17th by 0.5%. Downside risks to economic growth had "increased appreciably". The Target Rate remains unchanged at 5.25%, but 3-month T-bills traded down to just over 3% and Fed Futures suggest in 2 months the Fed rate will be just 4.75%. Recent (albeit small) rises in US unemployment also give the Fed reasons to cut.

The Bank of Japan kept rates unchanged.

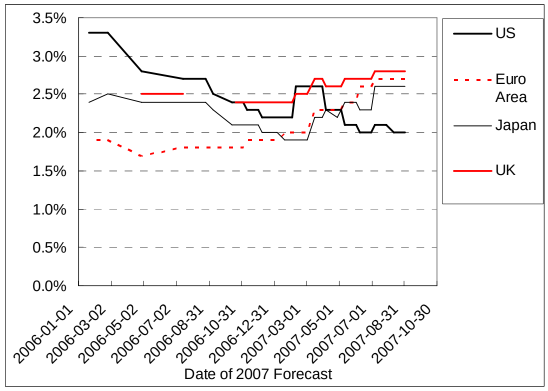
Economic indicators suggest the real economy remains strong

So far the real economy remains strong. US GDP growth was 3.4% in Q2, and 3.0% in the UK. Euro area industrial production rose 9.1% in May from a year earlier and Japan's jobless rate hit a 9-year low of 3.7%. The only real negative came from the German IFO survey falling slightly to 105.8 in August from 106.4 in July, although this is still a high absolute level.

However, the US housing market continued to show weakness with the S&P/Case-Shiller index of national home prices falling by 3.2% in the year to the second quarter.

GDP estimates for the US and UK have been revised downwards fractionally and the US is forecast to lag the other three major regions this year with just 2.0% growth. US forecasts remain very high for 2008 at 2.6%. And perhaps unrealistically so: don't rule out more downward revisions.

2007 GDP growth estimates for the US and UK were revised down in August. However, global growth continues to be very strong



The Dollar stabilised, the Yen strengthened

The Dollar stabilised after a big fall in July, reaching \$2.02/£ and \$1.36/€. However, the Yen carry trade continued to unwind, pushing the Yen up from 119 to ¥115/\$. High-yielding currencies such as the New Zealand Dollar weakened.

Oil prices down

Oil prices fell on the fears that market woes would hit the real economy. Futures prices fell from \$78 to \$74 despite several large storms in the Caribbean.

Equities

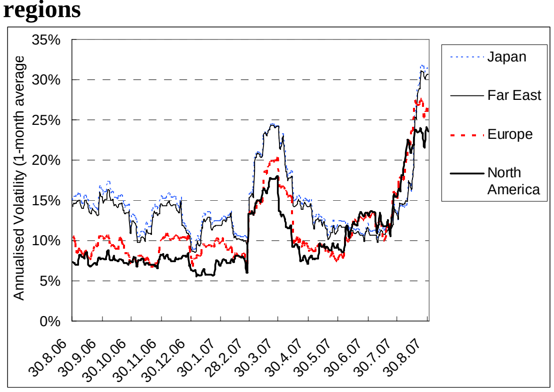
Prices

Perhaps surprisingly, prices were largely unchanged during August. Most major indices are barely down on their all-time highs (mostly set during July 2007). The Dow Jones is down less than 5%, the Eurostoxx50 5%, FTSE 6% and the Nikkei just 9% from July highs. Amazingly, the Chinese market in Hong Kong roared ahead and had just 3 down days in the month.

Volatility: Regions

During August volatilities rose sharply once again across all regions, with all hitting 12-month highs: Europe 27.7%, North America 24.1%, and Japan 31.8%.

Volatility blasted through 12-month highs in all regions

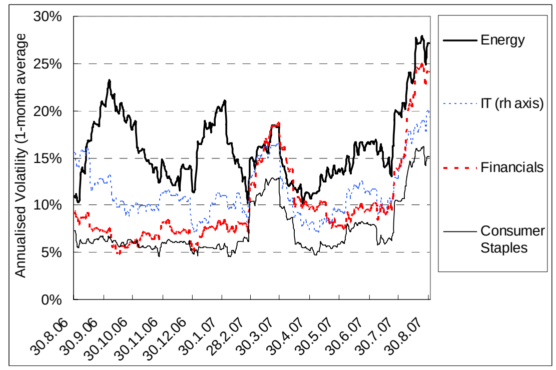


Note: based on MSCI regional indices

Volatility: Sectors

Likewise, sector volatilities rose again across the board, and all hit 12-month highs: Energy to 27.9%, Consumer Staples 16.2%, Financials 25.0% and IT 20.0%.

Volatility blasted through 12-month highs in all sectors



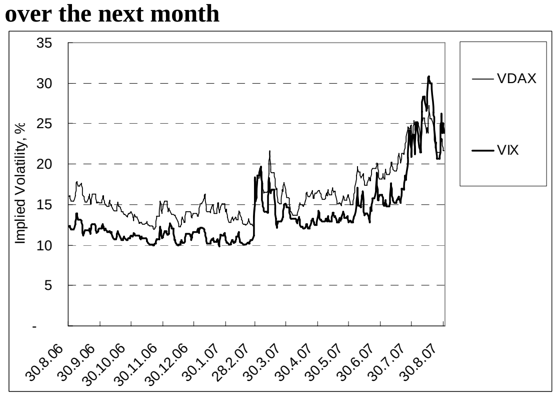
Implied Volatility (Market-Implied Near Term Outlook)

The VIX and VDAX indices show the implied (expected) volatility of the S&P500 and DAX respectively over the next 30 days based on options' prices.

Two months ago we suggested we had reached a new, higher, base level of around 13% for the VIX. This has remained true. In fact both the VIX and VDAX continued to romp up well above this, with the VIX reaching a new 12-month high of 30.8% and the VDAX a new high of 27.2%.

The current level of around 24% for the VIX is now equal to the 30-day historic level of the S&P500, implying that the market is forecasting equity market volatility to remain similar over the next 30 days.

The VIX (US) and VDAX (Germany) are both implying that equity volatility will remain high over the next month



Fixed Income (10 Year Government Bonds)

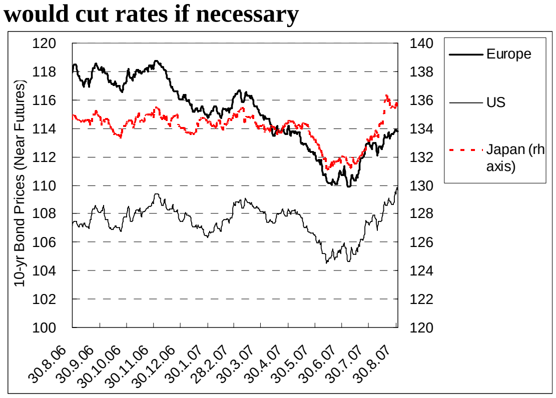
Prices

Short-duration bonds benefited strongly from the worries over sub-prime debt as institutions, worried about credit risk, parked money in (safe) treasuries instead. 2-year US government yields dropped to just over 4% and 2-months to under 3% at one point.

Longer-duration bonds also benefited as the Fed made it clear it would step in to support the real economy by cutting rates.

The rise in bond prices was uniform across regions.

10-Year bond prices rose as the Fed indicated it would cut rates if necessary



Interest Rate Expectations

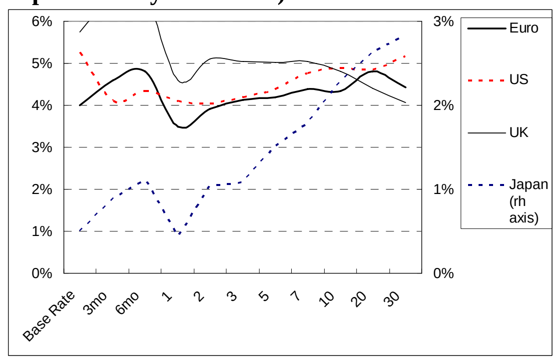
US markets are now suggesting rates could drop from the current 5.25% to as low as 4% over the next year. The market still believes in the "Greenspan put" (the belief that if the stockmarket falls the Fed will step in to support it, effectively putting a floor under the stockmarket).

In the UK the market no longer expects rates to rise, and now yield curves would suggest a reduction in rates from 5.75% to 5% over the next 2 years. However, we suspect that some of this might be due to short-term technical issues, and rate expectations implied by yield curves are likely to rise in the near term.

In Europe the yield curve has flattened as the short term rate has been raised to 4% and the long end has fallen to a similar level. The yield curve still suggests a rise before cuts though, backed up by good economic data recently.

Only Japan still shows an upward sloping yield curve, but rates are implied to rise to just 2% over the next 1-3 years.

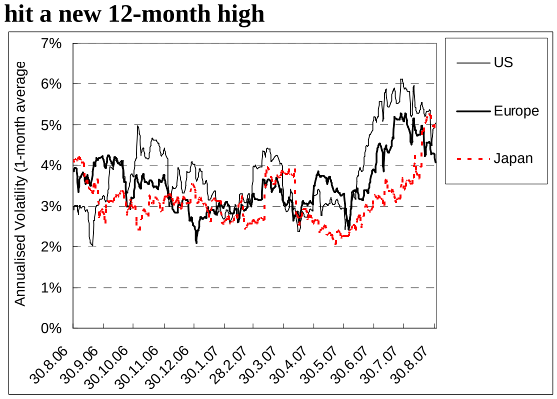
US rates are expected to fall, European and UK rates to rise first before being cut again. (Note these are not yield curves, but are future short term rates implied from yield curves)



Volatility

Bond price volatility remained high during August, with Japan hitting a new 12-month high of 5.3%.

10-Year bond price volatility remained high, Japan hit a new 12-month high



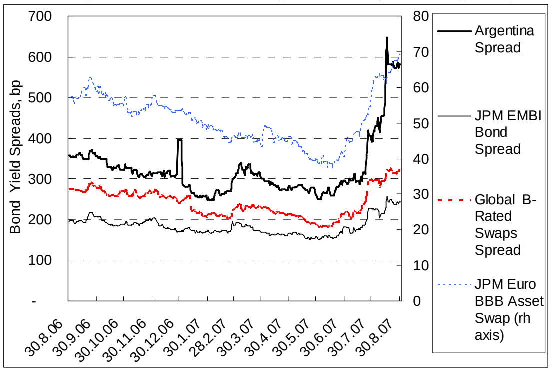
Spreads

Spreads continued to rise sharply during August as complacency disappeared to be replaced entirely by fear.

All the spreads we follow made new 12-month highs: Emerging Market bonds over Developed (JPMorgan EMBI index) rose from a recent low of just 151bp to 257bp, Argentinean spreads from 259bp to 648bp. Similar rises occurred for single B and BBB corporate swaps spreads.

Finally some risk is being priced in!

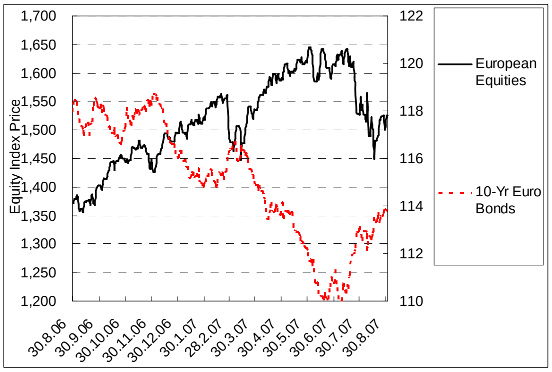
Credit spreads widened significantly during August



Correlation with Equities remains negative

Bonds and equity prices remain negatively correlated since the start of this year when fears over a growth slowdown intensified. The recent sell-off in equities while bond prices rose (yields fell) continues that trend.

Bonds prices have been negatively correlated with equities since the start of 2007



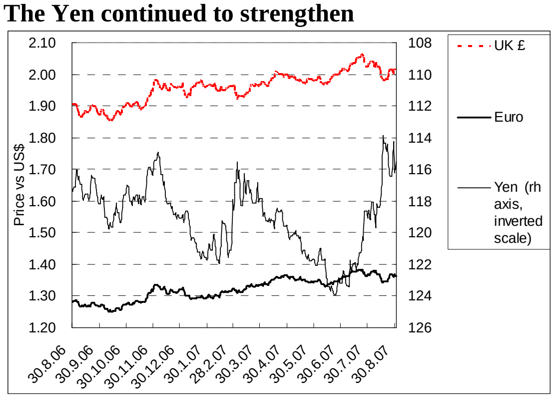
FX

Prices

The big directional move of the month was the Yen, which strengthened against the Dollar from ¥119 to ¥115 during August, after reaching a low of ¥124 in June. This large move is attributed to the unwinding of the carry trade, which has also seen high yielding currencies such as the Australian Dollar and New Zealand Dollar weaken. Effectively, the appetite for yield at any price continues to lessen.

The apparent willingness of the Fed to reduce rates will not have helped the Dollar.

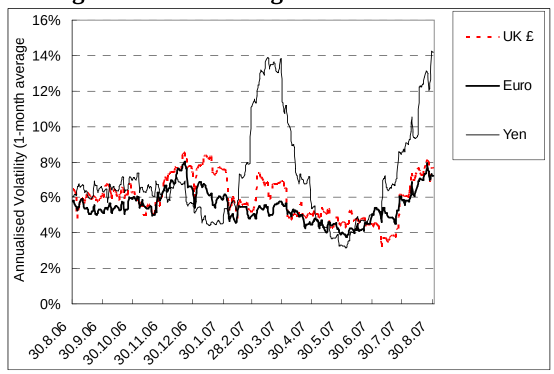
The Yen continued to strengthen



Volatility

The Yen's rise was far from smooth: volatility continued to rise and made a new 12-month high of 14.3%. Although there was little direction to the Euro and Pound's movements, volatility also rose to 7.2% and 7.6% respectively.

Currency volatility rose again, with the Yen making new 12-month highs



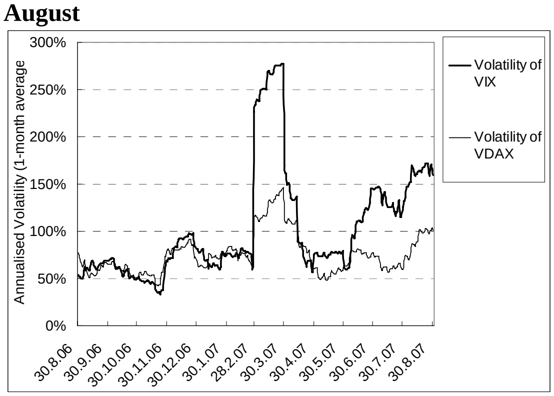
(Equity) Options

Volatility of Implied Volatility

Perhaps unsurprisingly, the chart of volatility of implied volatility looks similar to the VIX and VDAX, showing a peak in late June 2006 and a big spike in volatility in March 2007.

Volatility of volatility rose again in August in both the US and Germany, although unsurprisingly volatility of volatility remains higher in the US as recent troubles have been centred there.

Volatility of volatility spiked to 12-month highs in March, but fell sharply back in April and remained flat in May. Volatility of volatility rose again in August



These volatility of volatilities will have meant options prices would have been considerably more volatile during August.

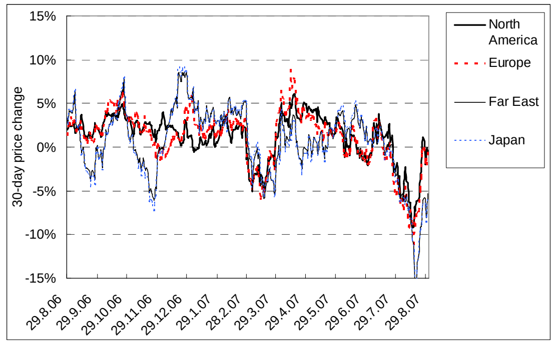
(Equity) Price Swings

During mid-August 30 day equity price movements were strongly negative in all regions. In Japan the market was down 17% over 30 days at one point, and the figure for the US was -9%.

This suggests that (equity) option deltas would have strongly decreased for calls and strongly increased for puts.

Portfolios containing options could have seen quite large changes in both value and risk during the month.

30-day equity price changes were strongly negative mid-August in all regions (but recovered by month end)



Note on Treatment

Options show more complex behaviour than the other instruments we look at in this report, so we make some simplifying assumptions. As Calls and Puts are in effect polar opposites and in and out of the money options behave very differently, it is hard to generalise all options' behaviour. However, we look at the two key drivers: volatility of implied volatility and major price movements of the underlying security.

Implied volatility (via the option Vega) drives option prices, so a big indicator of option price volatility is the "volatility of implied volatility".

Of course the biggest driver of individual option prices is the movement of the underlying (via the option Delta): a move in either direction will cause the option to go in or out of the money (and a corresponding change in the option Delta and price volatility). As a proxy for this, we look at the 30-day price swing of equity market indices; options on bonds or FX could of course behave differently. Calls and Puts will respond in opposite fashions: calls becoming more volatile as prices rise.

Note on Convertibles

Convertibles are in effect a combination of a bond and a call option, with the bond portion usually making little contribution to the instrument volatility unless the option is out of the money. As such, convertible portfolios' volatilities will normally behave similarly to call option portfolios, and this commentary can be applied to convertibles as well as options.

Commodities

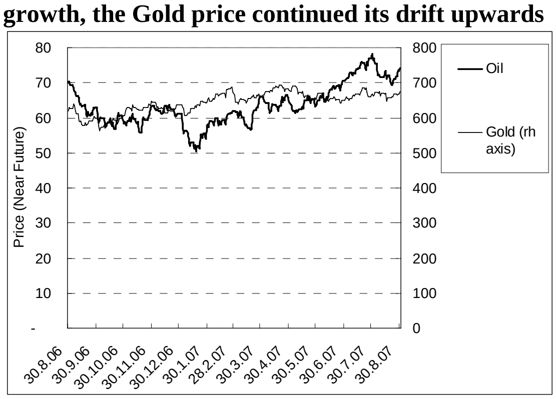
Prices

Although global economic growth remains very strong, the concerns over a slowdown in the real economy as a result of the sub-prime crisis pushed down the price of Oil futures during August from $78 to $74.

The equity and bond markets' focus still does not appear to be on Oil, and the impact of its recent rise in price has not been felt elsewhere. The hurricane season has so far failed to cause any major oil-infrastructure damage despite the intensity and number of storms so far, and the political situation in oil-producing countries has been more stable over the last few months.

Gold is still behaving like a safe-haven asset, and prices crept in August again to finish at $676, up 8% on a year ago.

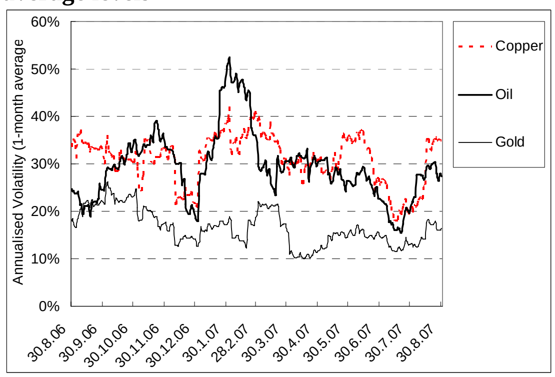
Oil prices fell on concerns of a slowdown in global growth, the Gold price continued its drift upwards



Volatility

Last month the turbulence in other markets almost seemed to suck the volatility out of commodities. During August they returned to more normal levels.

Volatility levels for major commodities returned to average levels



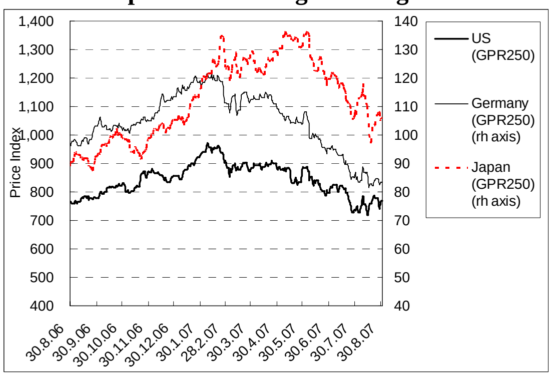
Real Estate (Real Estate Share Prices)

Prices

Perhaps surprisingly, property shares were basically flat on the month.

Interestingly, the UK domestic residential market remained relatively buoyant (despite recent interest rate rises): mortgage application numbers exceeded expectations and house prices rose again in August, although the rate of increase has continued to slow.

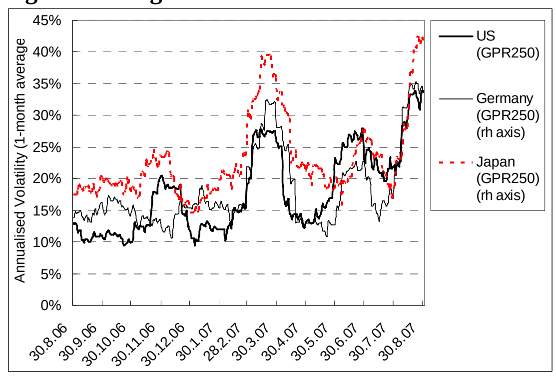
Real Estate prices are falling in all regions



Volatility

Although prices were largely unchanged, volatility rose even further during August. US, Germany and Japan all made new 12-month highs of 33.8%, 35.3% and 42.4% respectively.

Real Estate volatility levels made new 12-month highs in all regions



Note

Note that for property we just look at indices of the share prices of property companies, and not the underlying property directly, for which little good data is available. This is usually consistent with funds which tend to invest in property indirectly, e.g. via REIT's.

As REIT's can be more focussed on commercial property, residential housing may also follow a slightly different pattern.

Notes

Definitions

To avoid repetitions, the term volatility refers to annualised, 30-day average realised volatility in local currency unless otherwise specified. As such it may be lower than, and lag, shorter-term market volatility in times of high market volatility.

Charts show data up until 1st September 2007 and the commentary was written on or before 4th September 2007.

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