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Market Risk Report
July 2007

Executive Summary

- Our subtitle last month was “Sell in May and go away”. So far this saying has only turned out to be a good strategy for bonds: equities were flat or slightly down during June. Volatilities did rise in just about every asset class.
- June was characterised by a major bond sell-off, but in the end the news was dominated by the US sub-prime market and the implosion of two Bear Stearns hedge funds.
- Equity markets were flat to down, and volatility levels rose, especially in the US which moved from least to most volatile region. The VIX is implying levels will rise further.
- Fixed income yields rose sharply again over fears that Asian buying was slowing and inflation was rising. Volatility spiked sharply upwards, with the US hitting a new 12-month high of 5.2%. Spreads widened, but on this measure fear levels are still very low. The strong negative correlation between equities and bonds has broken down.
- FX volatility remained very low at just 4-5%. Sterling continued to rise against the Dollar and the Yen continued to slide against the Dollar.
- Option volatility would have spiked during June on US underlying assets, but would have been flat on European and Asian assets as indicated by the low level of volatility of implied volatility.
- Commodities’ prices were basically flat on the month (although Oil crept up) and volatility fell again to well below 12-month averages.
- Real Estate prices continued to fall sharply although Japan showed some resilience: volatility hit a 12-month high in the US of 27.9%.

In this month’s issue: The Dangers of Repackaged Debt

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Key News (Major Volatility-Driving Events)

Sub-prime steals the show

The news for June was of course dominated by events in the US sub-prime market towards the end of the month. Although there had been concerns in the market for some time, it was the Bear Stearns hedge funds crisis which triggered broader market impact. Markets were also jolted on June 27th when a $650m high yield offering was postponed, throwing into question the idea that private equity will continue to support equity markets. Suddenly everyone is becoming an expert on MBS, CDS and CDO's. See our special article below.

US bond yields continued to romp up over fears of the end of Asian buying and higher inflation. US rates were kept on hold.

The ECB raised rates to 4%, and the yield curve suggests two more rises over the next year.

The Bank of England meets this week. UK rates are implied to rise from 5.5% to 6-6.25% over the next 6 months

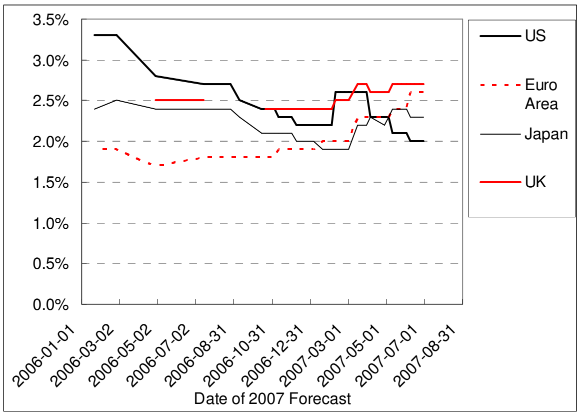
Chinese stockmarkets remained volatile, but didn't crash as some had feared.

Economic news remains good

The European economy in particular remains strong and even US surveys are still showing growth in new orders. US manufacturing data implied a GDP growth rate currently at a respectably high 3.4%.

GDP growth estimates for 2007 were unchanged during June. The US is still forecast to lag the other three major regions this year with just 2% growth. US forecasts remain very high (and perhaps unrealistically so?) for 2008 at 2.7%.

2007 GDP growth estimates were unchanged. The US is expected to see just 2% GDP growth this year



The Yen stays under pressure: Sterling and Euro rise

The Yen continued to fall against the Dollar and got through the technical ¥122 level, last seen in 2002. Volatility remained very low though.

Sterling rose to well over $2, and the Euro and New Zealand Dollar hit 26-year highs against the Dollar.

Oil prices creep up

Oil snuck back up through $70, but the noise in the sub-prime markets meant that again it is still not the focus of attention. Further rises could of course change this.

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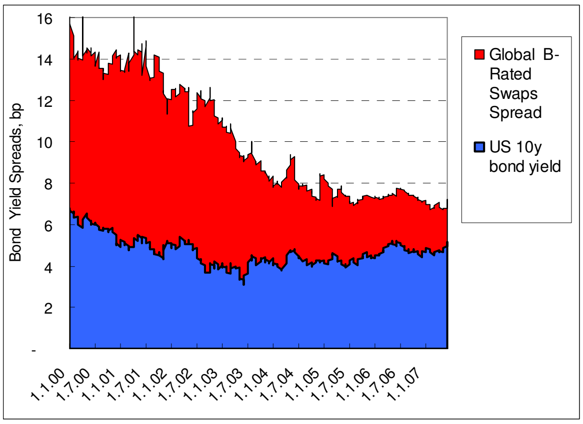
The Dangers of Repackaged Debt

The Equity Market Pyramid Scheme?

There's a theory that says the equity markets have been driven by the last few years mainly off the back of increased M&A and even more so by private equity purchases of listed companies. This in turn has been driven primarily by cheap debt: a combination of ever lower bond yields, and just as significantly, ever lower credit spreads as well as covenant-light loans driven by investors' apparently increasing lack of concern over the possibility of default.

Bond yields have fallen, and spreads have fallen even faster. Borrowing costs have dropped from around 14% to below 7% since 2000 on B-rated assets

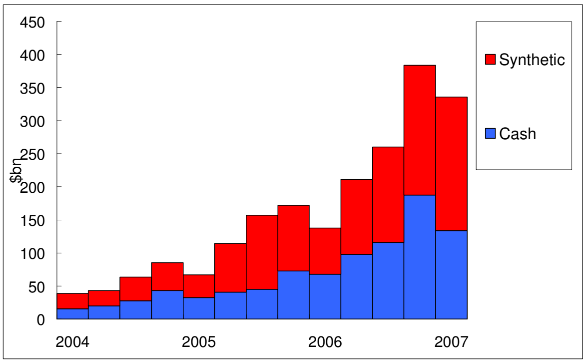


Of course this theory does ignore other, real, positive impacts on higher valuations: corporate profitability is close to all-time highs and has remained excellent for several years now. Inflation is restrained, the stability of economic growth has been unusually high, and the growth and perhaps more importantly globalisation of emerging economies, particularly China, has helped keep inflation low and global growth high. Although almost all stockmarkets are hitting all-time highs, P/E ratios are still relatively low. (Of course, bears would argue that low ratios are exactly what you would expect at the top of a cyclical peak.)

It looks as if the theory might be tested soon. The collapse of the sub-prime mortgage market in the US is having knock-on effects far beyond its size. Most recently, the near-collapse of two Bear Stearns hedge funds (one only launched 10 months ago) is testing the market's ability to avoid systemic effects. The size of the Bear Stearns issue should be put into context though: losses have not yet been fully disclosed, and possibly not yet fully calculated (see below), but seem to be of the order of magnitude of $1-2bn. It's worth remembering that relatively recently Amaranth lost $6.5bn without almost any other market impact. And LTCM lost $4.6bn albeit with significant knock-on effects, but arguably LTCM would have had much less impact in current markets: it followed just a year after the Asian crisis and months after the Russian default.

However, it's possible that we haven't yet seen the full impact of the fall-out. The problem relates to the large-scale repackaging of debt that has grown so fast over the last 3 years. One instrument that is only now attracting much attention is the CDO.

Global CDO Issuance



A CDO repackages debt (e.g. bonds, loans or mortgages) to produce different tranches. The so-called senior tranche of these offers yield-hungry markets an apparent free lunch: high yields, but usually with a AAA rating. The higher yield is generated by having a very low probability of a relatively high loss. This "tail risk" is shared by other instruments and strategies including selling out-of-the-money calls, discount certificates and writing insurance policies. In most or all of these examples the tail risk is well-recognised and well-documented: most market participants are aware of real-life examples. However, the tail risk has not yet been tested in the CDO market.

To compound this, hedge fund managers and traders are often incentivised not to take tail risk into account. Being paid annual bonuses based on only upside performance biases a manager towards higher-risk strategies. If you were guaranteed on average 9 excellent years and 1 disaster year, you could at least collect a few good bonuses before getting sacked. And history shows that even sacked managers find new jobs relatively easily.

Liquidity, or the lack of it

The other risk posed by CDO's is their almost total lack of liquidity due to the near-absence of a secondary market: they are valued as mark-to-model, rather than mark-to-market. The fire-sale by Merrill Lynch of assets seized from the Bear Stearns hedge funds demonstrated how sensitive prices are to an imbalance of buyers and sellers in a very illiquid market, and perhaps also how sensitive the models are to changing input parameters. Losses related to sub-prime debt may come more from adjustments of models to more conservative levels than from any actual market movements caused by trading.

In our view liquidity may be the key factor in the months to come. In a "perfect storm" scenario, a relatively major triggering event would cause a sudden collapse in liquidity. The postponing of a private-equity-related $650m high yield bond issue on June 27th could be an example: equity markets were spooked. The list of other possibilities could get quite long, just for example:

- the total collapse of a large hedge fund
- a major bank calling enough enough on lending followed by a general tightening of bank credit
- central banks increasing interest rates once too often for the market to be comfortable borrowing so much
- inflation falling, causing real interest rates to rise
- a significant slowdown in corporate profits growth
- oil prices rising to the point where they are considered inflationary again

The consequences could be quite severe, and would probably include:

- an immediate and significant widening of credit spreads
- a clamp-down on bank lending
- cessation of private equity purchases
- a potentially large fall in equity markets
- potentially a hiatus in M&A activity (and also IPO's)
- a very large increase in market volatility
- an unwinding of the Yen carry trade, pushing up the Yen
- interest rate cuts if required

To some extent some of this scenario is already priced into the market: VIX futures have risen sharply from around 13% to around 16%, bond yields at the long end have stayed low despite higher inflation, and equity market P/E's do appear to be relatively low. However, a mechanism for a relatively serious market correction is there. The only thing we don't know is if, and when, it will happen.

History of Major Trading Losses

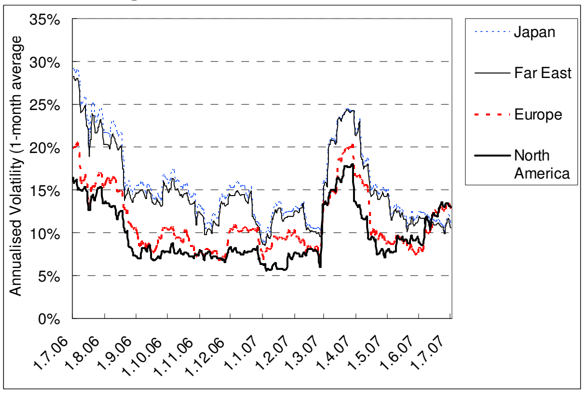
Company	Key Name	Year	Loss, $bn	Market
Bear Stearns Hedge Funds		2007	2?	Sub-prime mortgages
Dillon Read Capital Management (UBS)		2007	0.124	Sub-prime mortgages
Bank of Montreal	David Lee	2007	0.6	Natural gas options
Amaranth	Brian Hunter	2006	6.5	Natural gas futures
State Reserves Bureau	Liu Qibing	2006	0.2	Copper futures
China Aviation Oil	Chen Juilin	2004	0.6	Oil futures and options
National Australia Bank	Luke Duffy	2004	0.3	Currency
Allied Irish Bank	John Rusnak	2002	0.7	Currency
Dexia Bank		2001	0.4	Corporate bonds
LTCM		1998	4.6	Convergence trades (bonds and equity volatility mainly)
Morgan Grenfell	Peter Young	1997	0.7	Shares
Sumitomo Corporation	Yasuo Hamanaka	1996	2.6	Copper futures
Barings Bank	Nick Leeson	1995	1.4	Nikkei futures
Daiwa Bank	Toshihide Iguchi	1995	1.1	Bonds
Orange County	Robert Citron	1994	1.7	Interest rate derivatives
Kidder Peabody	Joseph Jett	1994	0.4	Government bonds
Procter & Gamble	Raymond Mains	1994	0.2	Interest rate derivatives

Equities

Volatility: Regions

During June volatilities rose again, but remained near 12-month averages. The US, normally the least volatile region, saw higher volatilities than any other region during June as a result of the sub-prime crisis.

Volatility rose in all regions. The US went from lowest to highest

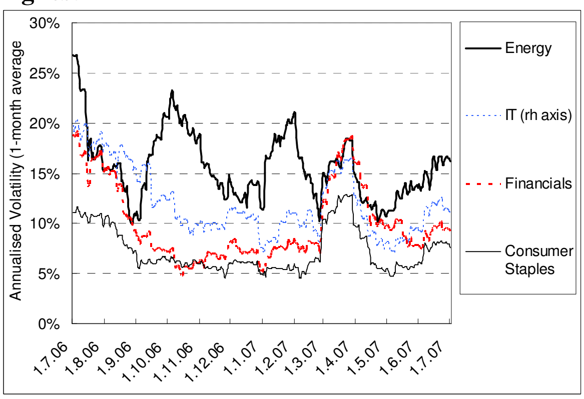


Note: based on MSCI regional indices

Volatility: Sectors

Sector volatilities rose across all sectors in June to just above 12-month averages, with Energy remaining the highest as Oil prices marched upwards through $70 again.

All sector volatilities rose: Energy remained highest



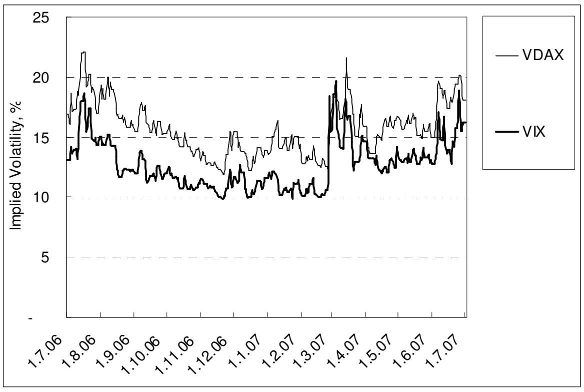
Implied Volatility (Market-Implied Near Term Outlook)

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

As discussed last month, we appear to have reached a new, higher, base level than before, of around 13% for the VIX, and during June it traded briefly as high as 18.9%. The VDAX has followed a similar pattern.

The current levels (of around 16% for the VIX) imply that the market is forecasting a equity market volatility (currently 12% realised) to rise over the next 30 days.

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

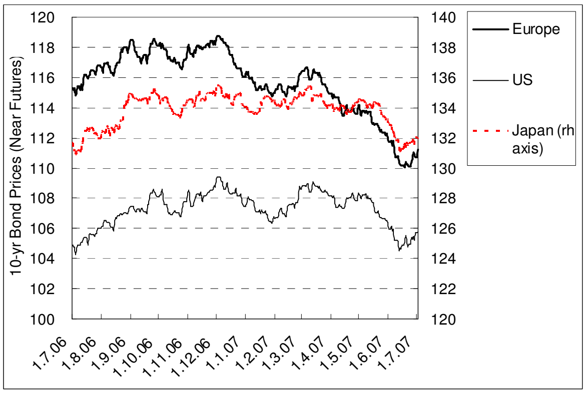


Fixed Income (10 Year Government Bonds)

Prices

The fall in bond prices accelerated sharply during June. The fall was attributed to a rumoured cessation of purchasing of US bonds by Asian investors, and a continuing relatively upbeat view on the US economy despite the worries in the housing market. All this changed in the last week, when worries over sub-prime debt halted the decline as the markets anticipated a possibility of rate cuts to bolster the US economy.

10-Year bond prices fell as economic conditions appeared to improve, then reversed at the end of the month



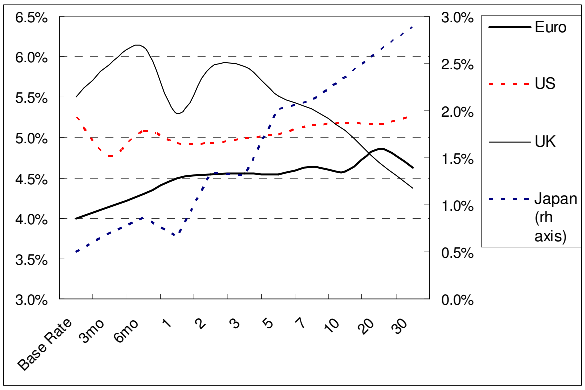
Interest Rate Expectations

US markets continue to have a view of no rate changes: the yield curve remains very flat.

In the UK the market now expects rates to reach over 6% within 6 months. There even appears to be as much as a 50% chance of rates reaching 6.25%.

In Europe the yield curve looks more "normal" (upward sloping) as the economies continue to show good growth, and rate rise expectations remain with rates expected to rise from 4% to 4.5% within just one year.

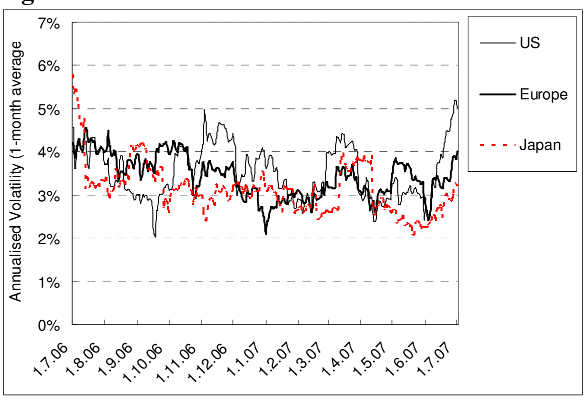
Euro and UK expected future rates are higher than today's (note these are not yield curves, but are future short term rates implied from yield curves)



Volatility

Bond price volatility spiked sharply upwards in June, particularly in the US where it reached a new year high of 5.2%.

10-Year bond price volatility spiked sharply upwards, especially in the US where it hit a new high

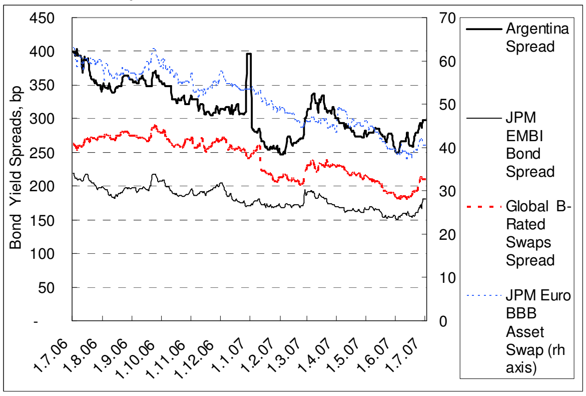


Spreads

Fear continued to evaporate during June and spreads continued their slide. Emerging Market bonds over Developed (JPMorgan EMBI index) fell to just 151bp. Argentinean spreads fell below 250bp. However, all spreads spiked up in the final days of June in response to the sub-prime market concerns and the news of the Bear Stearns hedge funds' problems.

We have included lines showing single B and BBB swaps spreads for the first time to show corporate spreads as well as governments. They follow a very similar pattern to the government curves with a strong fall over the last 12 months followed by a spike in the final days of June.

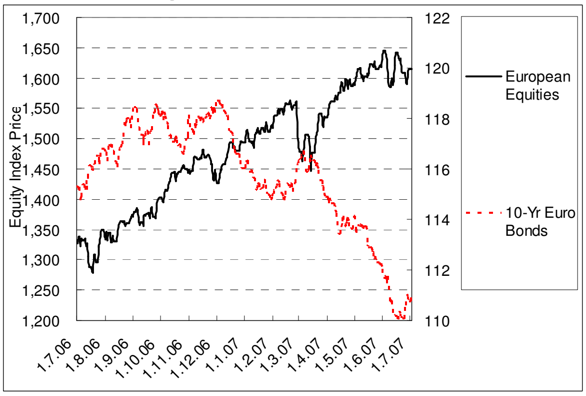
Credit spreads continued to fall, but spiked up in the final days of June



Correlation with Equities Breaks Down

Bonds and equity prices remain negatively correlated since the start of this year (when fears over a growth slowdown intensified), although this relationship appears to have decoupled as the r^2 averaged over the 6 months has dropped from 28% to 12% in the last month.

Bonds prices have been negatively correlated with equities since the start of 2007, but this relationship is now breaking down



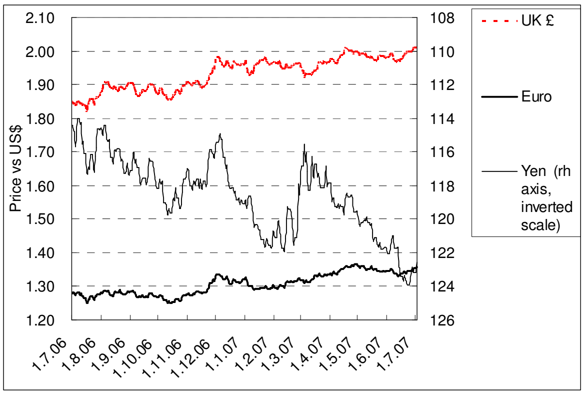
FX

Prices

Sterling continued its upward march against the Dollar. The Bank of England is likely to continue to raise rates, from 5.5% currently to between 6 and 6.25% according to the fixed income markets, pushing sterling higher against the dollar. Sterling has now had 5 days in a row where it remained above 2 to the dollar.

Reasonable US economic data helped the Yen to continue its slide, passing through the technical level of ¥122 to the Dollar (the weakest level since 2002) at one point reaching ¥124. There was also speculation that better markets during June led to higher risk appetite, increasing the demand for the Yen carry trade, which would also push down the Yen. Like most other market effects, this partially unwound at the end of the month.

Sterling strengthened. The Yen continued to weaken

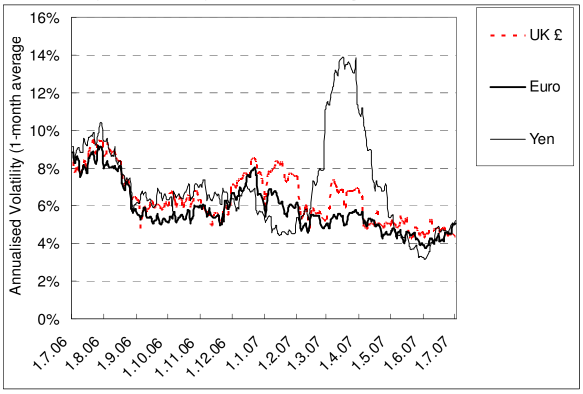


Volatility

FX volatility remained low in June, with all three major currencies against the dollar sitting just above their 12-month lows (all hit during late May/early June).

Yen volatility has dropped sharply from a peak of 13.9% to just 5.2%.

Currency volatility has all but gone!



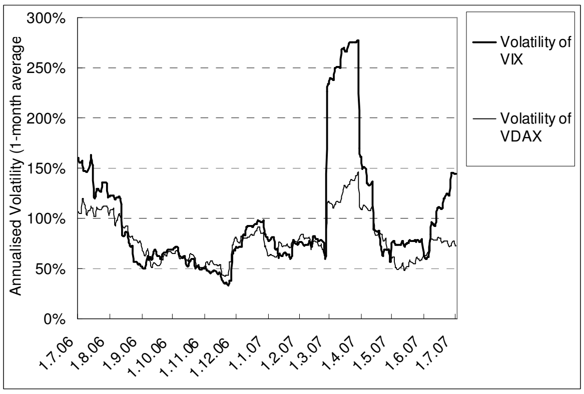
(Equity) Options

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.

During June the volatility of volatility rose strongly in the US, but remained flat in Germany, reflecting the US-centred nature of current market turbulence related to the sub-prime market.

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



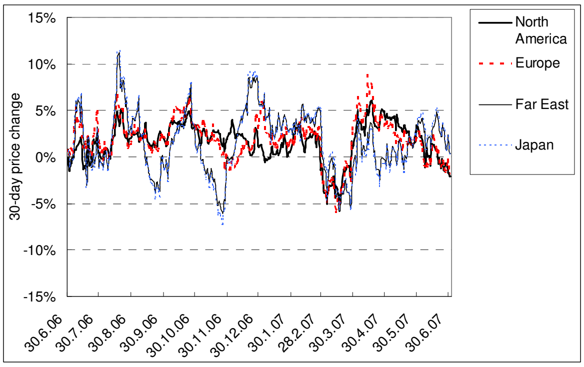
These volatility of volatilities will have meant options prices were relatively stable on European equities but volatile on US equities.

(Equity) Price Swings

During June equity price movements were in general positive in Asian markets but negative in Europe and North America.

This suggests that (equity) option deltas would have decreased for calls and increased for puts on European and US equities, with the opposite happening for Asian equities.

Equity prices rose during June in Asian markets, but fell in Western ones



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.

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Commodities

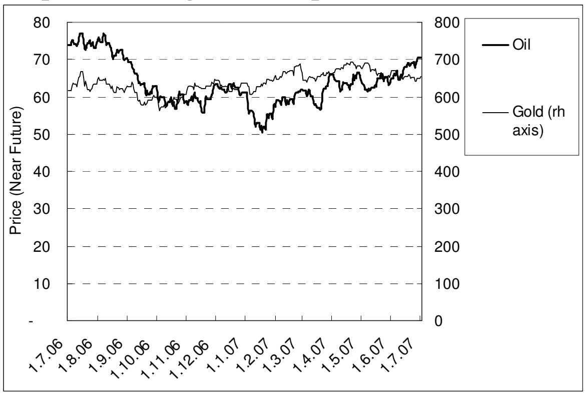
Prices

Strong economic growth in China and Europe, and relatively good data in the US pushed oil prices up again during June, and they crossed up through $70.

However, the equity and bond markets' focus no longer appears to be on Oil, and the impact of its recent rise in price was not felt elsewhere.

Gold is still behaving like a safe-haven asset, but prices fell slightly during June to finish at $654.

Oil prices rose again; Gold prices stabilised

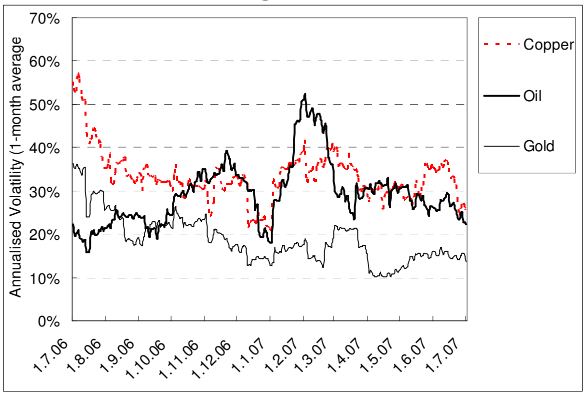


Volatility

The volatility of commodities remained low during June, with all remaining well below 12-month averages.

Copper and Oil price volatility fell. Gold volatility remained especially low at just 13.7%.

Volatility levels for major commodities are well below 12-month average levels



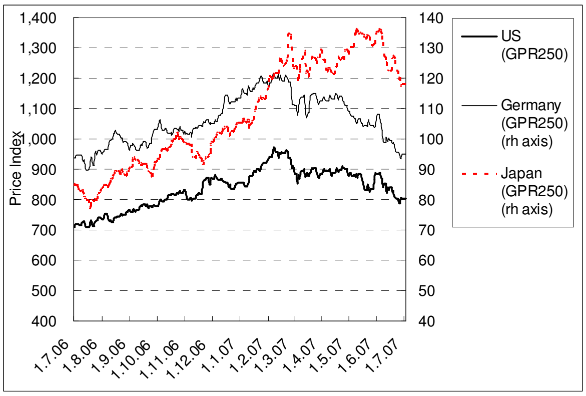
Real Estate (Real Estate Share Prices)

Prices

Property shares continued their slump during June, with fallout from the sub-prime market accelerating the process in the US and Germany. The market remains very regional: Japanese prices were relatively unaffected.

While US domestic house prices have fallen 2% over the last year, they have risen 11% in the UK. Combine this with FX movements and it has led to a 26% outperformance of UK property over US property in common currency terms over the last twelve months, according to the FT.

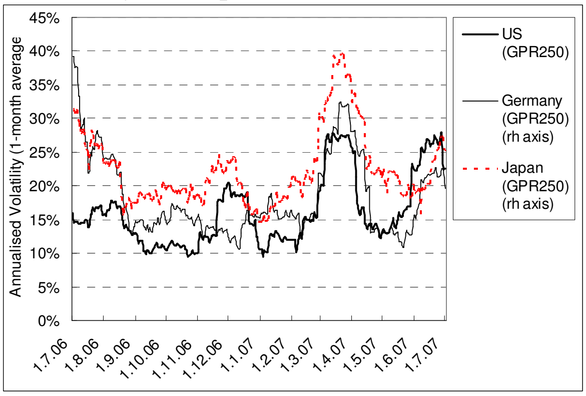
Real Estate prices have fallen in the US and Germany, but risen slightly in Japan



Volatility

Volatility suggests that we are seeing a process more like a sell-off than a crash: US volatility did hit a new 12-month high of 27.9% (just), but Germany and Japan are only fractionally above 12-month averages.

Real Estate volatility levels hit a new 12-month high in the US, but were close to 12-month averages in Germany and Japan



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.

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 or 2nd July 2007 and the commentary was written on or before 2nd July 2007.

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