June 2013

Compass

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Market outlook: a good time sober

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The global economy is growing, the euro crisis seems contained and risk appetite is edging higher. The uncertainties facing investors are resolving into a single question: is all this just the result of central bank support, or is there some substance behind the stock market's rally? We think the latter. When monetary conditions normalize we expect a tactical setback, not a strategic one. Short-term noise aside, we doubt that is imminent.

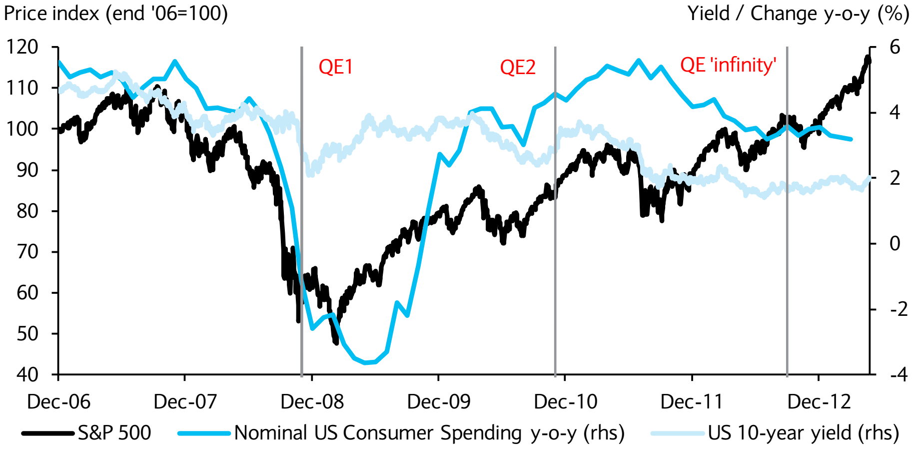
A sobering thought: a party without a punchbowl?

According to William McChesney Martin, the longest-serving (1951-1970) Chairman of the Federal Reserve, it is central banks' job to "take away the punchbowl just as the party gets going". The current party has been a pretty subdued affair, and that punchbowl has had to have some unconventional contents, but at some stage, as usual, investors are going to have to face the future clear-headed.

Recovery has coincided with QE, but is not necessarily the result of it. Correlation does not imply causation

That stage is probably still some months away. The eurozone economy is still best described as flatlining. The UK economy has only just escaped its possible 'triple dip' (whether it would have been a meaningful dip is another matter). China has yet to convince that its structural deceleration is behind us, and Japan to demonstrate that a structural acceleration lies ahead. Meanwhile, the US economy faces a second quarter slowdown, with unemployment still a percentage point above the level at which the Fed has said it will start to take a more hawkish line.

Figure 1: The trend in US consumer spending may have little to do with QE



Source: Datastream, Barclays

But as we see it, the economic debate is slowly moving on. The euro crisis has failed to flare up again (we'd thought it wouldn't) in the face of setbacks in Italy and Cyprus, and the latest eurozone business surveys show activity stabilising (albeit at low levels). The short-term data at least in both China and Japan have been encouragingly resilient. The last month's news has shown that the US consumer – still customer number one for global business – is clearly capable not just of "life after debt" but also of "life after Reinhart and Rogoff", and in the meantime the US government's deficit has been shrinking far faster than the pessimists had imagined, loosening another potential brake on growth in the cycle ahead. Even the Governor of the Bank of England has been sounding relatively cheerful of late, though he may of course be demob happy.

This should be good news for businesses and people, if bad news for bonds. But not all pundits see things quite this way. Many argue that the progress made to date is entirely down to the special measures – negligible interest rates and bags of quantitative easing (QE) – taken by the major central banks, and that if these are withdrawn, we'll rapidly return to the brink of the abyss we escaped in early 2009.

We think this is too pessimistic. To extend the party analogy, we think it is possible for investors to have a decent time sober. The resumed post-crisis growth in economies and profits has coincided with ongoing QE, but has not necessarily been caused by it. In some instances, very visibly it can't have been. For example, the bulk of the rebound in US corporate profits has simply reflected the arithmetic contribution from the ending of financial sector write-downs, which had nothing directly to do with QE. The surge in Japan's GDP in the first quarter of this year, we would suggest, is unlikely to have been driven by the admittedly impressive wave of pending QE announced in early April. More generally, the trend traced by the level of nominal US consumer spending has been virtually indistinguishable to the naked eye from that traced immediately ahead of the monetary seizure triggered by the collapse of Lehman in 2008.

The perma bears may have overlooked an important fact of economic life. Growth is the norm, not the exception, and in the long term is driven by real magnitudes – the labour, resources, technology and organizational know-how at our disposal – and not by financial balance sheets (which in any case are not as fragile as feared).

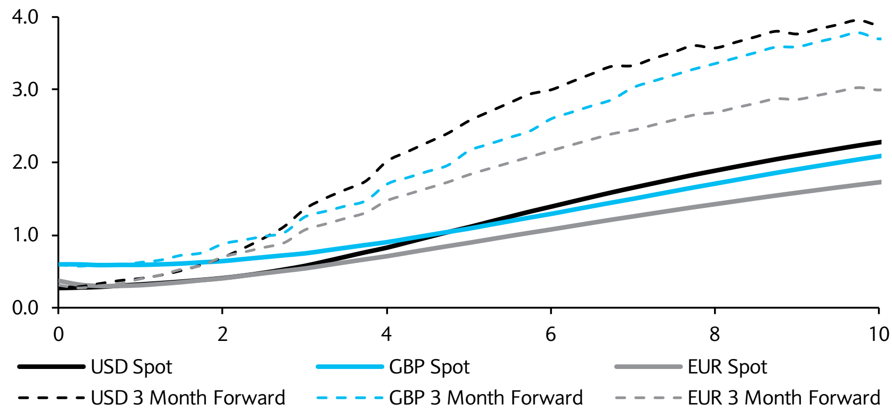
For sure, QE – and lower interest rates – helped to save the financial world back in the crisis: if central banks hadn't acted as they did, monetary collapse and Depression might well have loomed. But to attribute all of the recovery since then to their continued support is a little like saying that the crash barriers that prevent you from leaving the road are responsible for you making headway along it. At the risk of stretching the metaphor beyond breaking point, central banks' stance currently is not quite economic life support, and the patient will be capable of surviving it being switched off.

This theory is probably not going to be put to the test soon: we see interest rates staying on hold for many months yet, and US and Japanese QE continuing into H2 (indeed, the bank of Japan has of course really only just begun its new, revamped QE). When the support is withdrawn, however, some market volatility is likely – sufficient for us to anticipate trying tactically to reorient investor portfolios ahead of it.

There is quite a bit of normalization already priced into money markets – it needn't come as a massive shock

Figure 2: Money market futures show rates starting to rise in a year's time

Swap yield curves with implied 3-month Libor forwards curves (%)



Source: Bloomberg, Barclays

We do not expect the sort of dramatic, prolonged reversal that followed the last two stock market surges, which peaked in 2000 and 2007. As noted, QE is only partly responsible for stocks' rally. Valuations are lower now, and there are surely fewer excesses in the system. Moreover, if we disentangle current yield curves, we can see that some normalization is of course already firmly priced-in to money markets: forward curves in the US, the UK and even the more sluggish, disinflationary eurozone show forward interest rates starting to rise in around a year's time.

Nonetheless, it will likely be a bumpy ride, particularly if central banks act sooner than the money markets currently expect. This will add to the already striking parallels with the mid 1990s. Then, a tightening of policy by the Federal reserve had a potent tactical impact on both bond and stock markets, before investors settled down to the realization that the global economy could indeed continue to grow. Around the same time, as now, we saw developed markets and the dollar assume cyclical leadership from the emerging world and commodities – trends that are already reflected in our current investment advice.

Meanwhile, beyond the probability of a short-term chart-driven pull back, our advice is again unchanged this month. Developed equities remain inexpensive, and until central banks take that punchbowl away a more meaningful tactical setback still feels unlikely. Being tactically overweight stocks, remember, doesn't mean we expect them to continue to rise apace – simply that we think their risk-adjusted 3-6 month returns will exceed those on other assets. Since equity yields are higher than on most other assets, this can happen even if prices do little more than mark time in the rest of 2013 – particularly if, as we expect, some fixed income assets actually fall in value.

Barclays' key macroeconomic projections

Figure 3: Real GDP and Consumer Prices (% y-o-y)

	Real GDP				Consumer prices			
	2011	2012	2013	2014	2011	2012	2013	2014
Global	3.9	3.1	3.2	4.0	3.8	2.9	2.7	3.1
Advanced	1.4	1.2	1.1	2.0	2.5	1.8	1.4	1.9
Emerging	6.6	5.0	5.3	6.0	6.3	4.7	4.9	4.9
United States	1.8	2.2	1.8	2.3	3.2	2.1	1.6	2.2
Euro area	1.5	-0.5	-0.4	1.4	2.7	2.5	1.5	1.3
Japan	-0.6	2.0	1.9	2.2	-0.3	-0.1	-0.1	2.2
United Kingdom	1.0	0.3	0.9	1.9	4.5	2.8	2.8	2.6
China	9.3	7.8	7.9	8.1	5.4	2.6	3.0	3.5
Brazil	2.7	0.9	3.0	3.5	6.6	5.4	6.4	5.7
India	7.4	↑ 5.0	5.3	↓ 6.9	9.5	7.5	5.6	↓ 5.5
Russia	4.3	3.4	3.0	3.5	8.6	5.1	6.6	5.6

Note: Arrows indicate if current forecasts differ from previously by 0.2pp or more. . GDP weights reflect IMF PPP-based GDP. Consumer price weights reflect IMF nominal GDP. Source: Barclays Research, *Global Economics Weekly*, 24 May 2013

Figure 4: Central Bank Policy Rates (%)

Official rate	Forecasts as at end of				
% per annum (unless stated)	Current	Q2 13	Q3 13	Q4 13	Q1 14
Fed funds rate	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25
ECB main refinancing rate	0.50	0.50	0.50	0.50	0.50
BoJ overnight rate	0.10	0-0.10	0-0.10	0-0.10	0-0.10
BOE bank rate	0.50	0.50	0.50	0.50	0.50
China: 1y bench. lending rate	6.00	6.00	6.00	6.00	6.00
Brazil: SELIC rate	7.50	7.75	8.25	8.25	8.25
India: Repo rate	7.25	7.00	6.75	6.50	6.50
Russia: Overnight repo rate	5.50	5.50	5.25	5.25	5.00

Note: Rates as of COB 23 May 2013. Source: Barclays Research, *Global Economics Weekly*, 24 May 2013

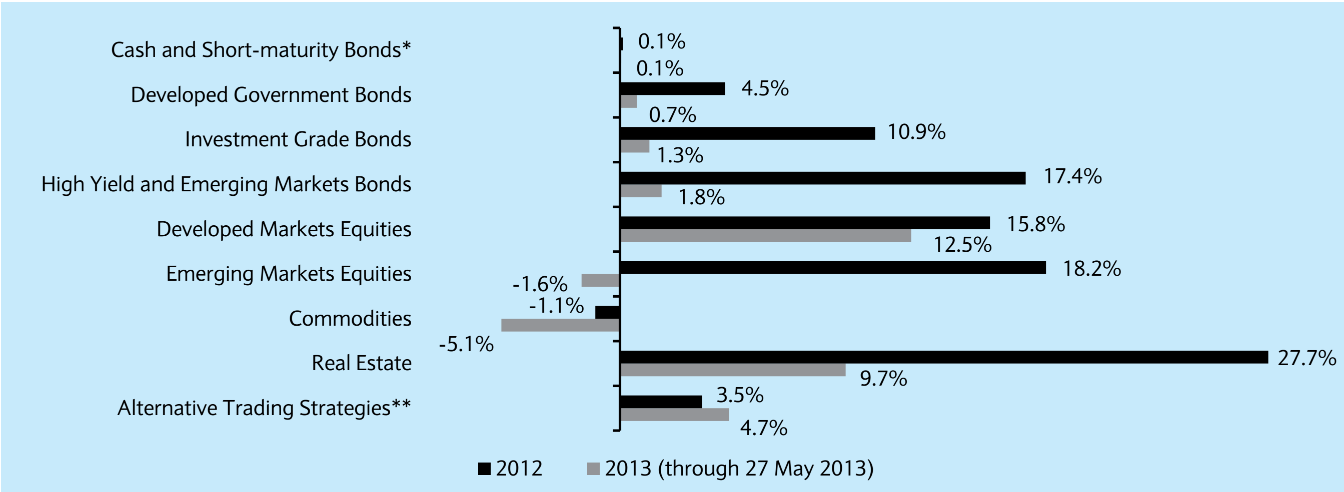
TAA: stocks' ascent is still not outlandish

As noted above, the most obvious tactical bump in the road ahead is the prospective normalization of monetary conditions, but we doubt it is imminent. A shorter-term setback for stocks meanwhile still feels overdue, but we continue to doubt it will be big enough to warrant a tactical repositioning of portfolios. We stay overweight developed equities: markets are still not expensive, in marked contrast to most fixed income assets, where we advise a *strategically* small position in government bonds and a tactical underweight in investment grade credit (and cash). We remain neutral on emerging equities and on diversifying assets.†

Figure 1: Tactical Asset Allocation tilts and Strategic Asset Allocation Benchmark (moderate risk profile)

We are simplifying how we report our asset allocation views. We now use qualitative descriptions of our Tactical positions relative to their Strategic benchmarks, ranging from 'strongly underweight' to 'strongly overweight'. This is a shift away from the percentage-based reporting method we used in the past. Our **Strategic Asset Allocation (SAA)** models offer a mix of assets that over a five-year period will in our view provide the most desirable mix of return and risk at a given level of Risk Tolerance. They are updated annually to reflect new information and our evolving outlook. Our **Tactical Asset Allocation (TAA)** tilts these five-year SAA views to reflect our shorter-term cyclical views. For more detail, please see our *Asset Allocation at Barclays* white paper and the February 2013 edition of *Compass*. Source: Barclays

Figure 2: Total returns across key global asset classes



* As of 24 May 2013; ** As of 23 May 2013 † Diversification does not guarantee against losses.

Note: Past performance is not an indication of future performance. Index Total Returns are represented by the following: Cash and Short-maturity Bonds by Barclays US Treasury Bills; Developed Government Bonds by Barclays Global Treasury; Investment Grade Bonds by Barclays Global Aggregate – Corporates; High-Yield and Emerging Markets Bonds by Barclays Global High Yield, Barclays EM Hard Currency Aggregate & Barclays EM Local Currency Government; Developed Markets Equities by MSCI World Index; Emerging Markets Equities by MSCI EM; Commodities by DJ UBS Commodity TR Index; Real Estate by FTSE EPRA/NAREIT Developed; Alternative Trading Strategies by HFRX Global Hedge Fund. The benchmark indices are used for comparison purposes only and this comparison should not be understood to mean that there will necessarily be a correlation between actual returns and these benchmarks. It is not possible to invest in these indices and the indices are not subject to any fees or expenses. It should not be assumed that investment will be made in any specific securities that comprise the indices. The volatility of the indices may be materially different than that of the hypothetical portfolio.

Global bond update

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Fixed income assets have again delivered positive returns year-to-date, albeit at a lower level than investors have become used to. We update our views and provide a checklist to help navigate returns. We are wary, but more strategically than tactically.

Government bonds: too soon to call the breakout in yields

Government bonds to remain broadly rangebound

We do not think government bond yields are about to break dramatically higher. The bellwether US 10-year yield has pushed above 2% (again), but we are not convinced that it has much further to rise just yet. Inflation as measured by the core personal consumption deflator – the Fed's preferred indicator – is trading close to 1% and expectations have fallen. With growth likely to slow in the second quarter, we doubt the Fed will taper its QE imminently, and higher short rates are still many months away.

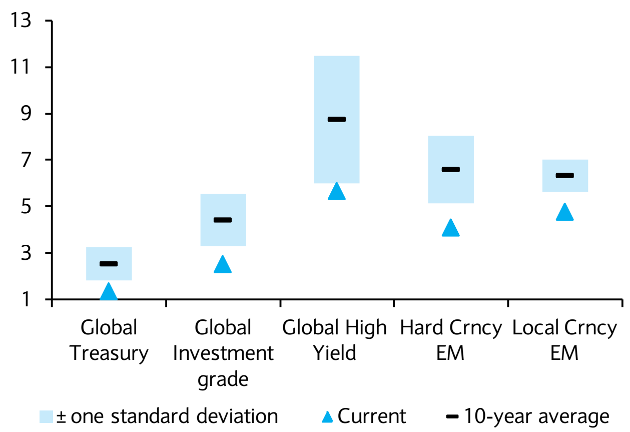
In Europe, core yields have remained fairly stable year-to-date, compared to their US counterparts. As expected, Spanish and Italian bonds have helped the wider indices outperform, because they trade as 'risk-on' assets. Their yields are back down at around 4% and could even move lower still if investors believe strongly enough in the 'Draghi put', i.e. that the European Central Bank will ride to the rescue of the bond market should the region's crisis worsen. We prefer to take peripheral eurozone exposure through corporate bonds (see below). Meanwhile, the Bank of England is sounding less downbeat about growth, as noted above, but the data needs to firm up more before UK yields trade sustainably higher. Overall, rangebound trading for global government bond markets is likely for now. Further ahead of course we continue to expect a structural rise in yields on a multi-year view, as the global economy and markets slowly normalise.

Investment grade: ticking along at expensive levels

Careful credit selection is paramount for investment grade credit

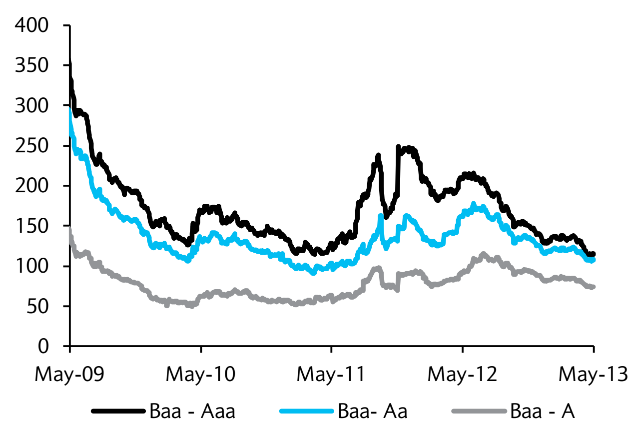
Financials have led investment grade returns, particularly in the subordinated space. The changing regulatory environment makes it one of the most dynamic fixed income sectors. We remain overweight lower tier 2 debt of selected banks but have reduced our allocation to insurers which have rallied to fair value, in our view.

Figure 1: Global valuation metrics for our fixed income asset classes



Source: Factset, Datastream, Barclays Wealth and Investment Management

Figure 2: Investment grade spread differential by rating bucket



Source: Barclays Research, Barclays Wealth and Investment Management

The six-notch downgrade of the UK's Co-operative Bank in May reminds us that credit selection is crucial. BBB-rated issuer spreads have compressed but there is still value, particularly in industrials and utilities which have lagged the recent rally (Figure 2). We advocate a barbell approach with higher-rated corporates: the incremental loss of yield is now relatively small. We expect total returns of 2-3% this year, below what is needed to compensate for risk, and remain tactically as well as strategically underweight.

High yield: carry on

Focus on coupons for return generation

Fundamentals here are still robust. Global default rates are currently 2.6%; Moody's forecasts them to remain below 3% this year. An increase in issuance in 'covenant-lite' and payment-in-kind notes hints at a deterioration in credit quality but, to date, volumes are small and unsurprising. The majority of debt issuance is still for refinancing. Average credit quality remains high and leverage low relative to historic levels. With the majority of the index trading above its call price, there is little room for further capital appreciation and it is probably too late for new allocations to this asset class. The carry still looks attractive, but our expected total returns in the region of 5.5-6.5% for 2013 imply some fall in price from here. Europe continues to look more favourable than the US, albeit by a smaller margin. Credit selection is key: we favour funds, or UK retailers and peripheral industrials that have demonstrated solid cash flow.

Emerging markets: spread picking

Be mindful of FX volatility; EM corporates look attractive

Emerging market (EM) fundamentals look appealing: growth is subdued and inflation is under control – yields could move lower. Flows into EM should continue to remain positive as investors hunt for yield, though the pace is likely to ease. The majority of our hard currency benchmark is government related (74%), which underperformed throughout April: we prefer corporates. With a stronger dollar and some central banks trying to weaken their currencies, enthusiasm for local currency bonds has waned. Interest rates in this space may be appealing but investors need to be aware of FX risk.

Figure 3: Fixed income checklist – allocations in a balanced (multi-asset) portfolio

Asset Class	Yield	YTD return		Comment
Government bonds	1.4%	0.7%	✓	Creditworthiness is generally good
Neutral			✓	Offers diversification
			×	Yields are low
			×	High interest rate sensitivity
Investment grade	2.5%	1.3%	✓	Fundamentals are strong
Underweight			✓	Good selection is crucial
			×	Spreads and yields are at historic lows
			×	Moderate interest rate sensitivity
High yield	5.7%	4.3%	✓	High coupon income
Neutral			✓	Low duration
			×	Creditworthiness modestly declining
			×	Little room for capital appreciation
EM (hard currency)	4.1%	-0.2%	✓	Credit quality has improved
Neutral			✓	Prefer corporates to governments
			×	Vulnerable to EM shocks
EM (local currency)	4.8%	0.2%	✓	Yield pick-up
Neutral			✓	Credit quality is improving
			×	FX volatility

Source: Barclays Research, Barclays Wealth and Investment Management Data as of 27 May 2013

AUD: not so wizard in Oz

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As the cyclical attractions of the US dollar are rising, those of the Australian dollar (AUD) are fading. An expensive valuation and shaky fundamentals make it vulnerable over the medium term. Other Australian assets may also underperform from here.

The Australian dollar has been a star performer among the world's ten big currencies (G10) over the past decade. Since 2003, it has risen around 71% against USD and 49% in trade-weighted terms. However, we believe its fortunes are likely to change. We see a weak AUD as the flipside to a strong USD: while the USD may gain pro-cyclical attributes and benefit from positive local economic news, the reverse should be true for AUD, which could lose its status as a "go-to" cyclical currency as markets become more concerned about the Australian economy. Figure 1 shows that AUD's historically stretched correlation with global equity markets has already started to normalise. Australian assets generally may decouple from the ongoing increase in risk appetite.

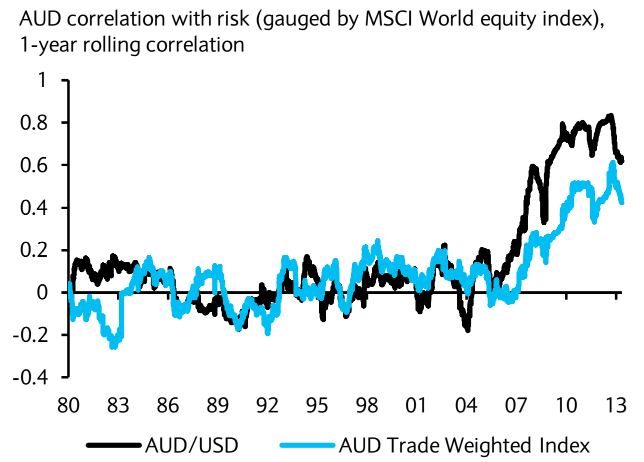
Fundamentals? What fundamentals?

Despite benefiting from China's strong growth, Australia runs a large and persistent current account deficit

In our view, fundamentals suggest that the AUD is living on borrowed time. Investment in the country's mining sector is likely to peak soon (and decline thereafter), while public demand is likely to slow due to planned fiscal consolidation and the exact path to a rebalanced economy remains uncertain. Our economists expect the economy to grow by 3% and 2.3% this year and next. While these rates are respectable compared to some G10 countries, they are not particularly high historically. The growth differential with the US is likely to fall to zero by 2014, below its 20-year average (Figure 2), calling to mind the late 1990s, when robust US relative economic performance drove the USD to outperform AUD (and most other G10 currencies). Probably the most striking part of Australia's outlook is its persistent current-account deficit. Despite being the beneficiary of China's strong growth this last decade, Australia still manages to import more than it exports. The deficit has averaged 4.3% of GDP since 2000.

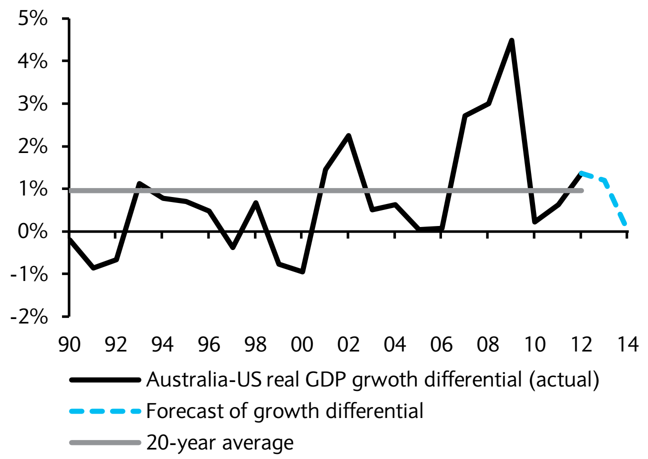
As a result, Australia has become a net debtor to the rest of the world. Its net liabilities, at 58% of GDP, are the second largest in the G10 FX space, after New Zealand at 67%.

Figure 1: AUD correlation with risk has been normalising



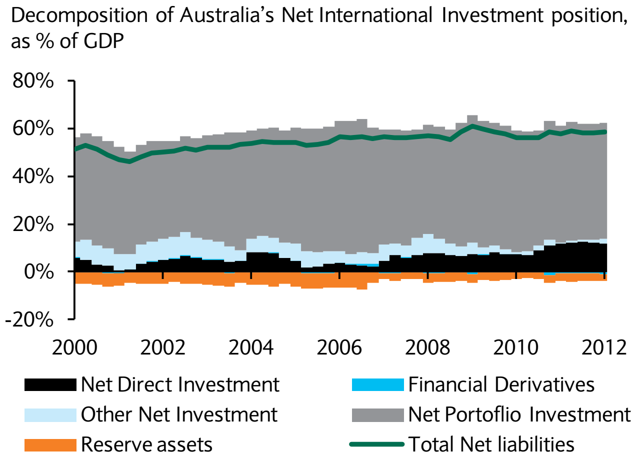
Source: Barclays, EcoWin

Figure 2: Australia-US growth differential to fall to zero



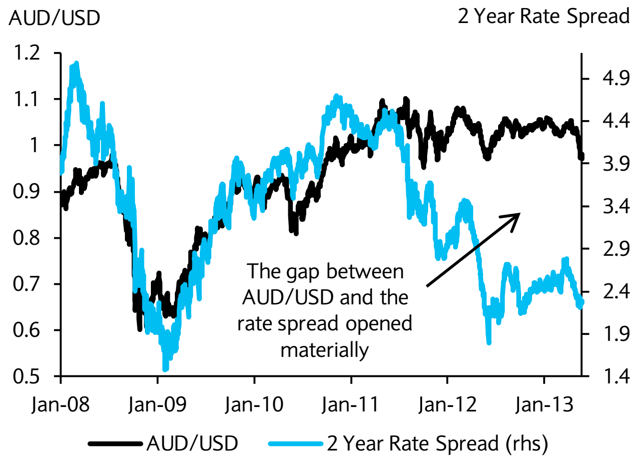
Source: Barclays, EcoWin

Figure 3: Portfolio flows form a bulk of foreign liabilities



Source: Barclays, EcoWin

Figure 4: 2-year rate spread suggests weaker AUD/USD



Source: Barclays, EcoWin

Admittedly, the third worst is the US, but its net liabilities are just 27%, and the USD is of course the world's reserve currency (and will be for the foreseeable future).

Furthermore, the bulk of Australia's net foreign liabilities (Figure 3) have been accumulated via portfolio flows (specifically debt), which tend to be more volatile and less sticky than other types of financing such as direct investment (which forms only a small part of its Net International Investment position). Foreign investors own around 70% of all government securities.[1] This dependence on potentially volatile flows poses a risk to AUD over the medium to long term. Should investors turn bearish on AUD, a fall in the currency could be further magnified if these existing positions are liquidated.

What would change market views on AUD?

The AUD may be running out of support

Most market participants appear well aware of AUD's shaky fundamentals, but selling AUD has proved to be one of the 'pain trades' of recent years. Attractive rates, flows chasing remaining AAA assets (Australia still has its rating), underpinned commodity prices, and central-bank liquidity have all supported the currency. However, three of these four factors now look exhausted.

First, as Figure 4 shows, AUD/USD has massively decoupled from levels suggested by the relative rate spread. Second, foreign investors as noted may now be heavily exposed to AUD bonds, making any material increase in positions less likely. Third, we now see AUD decoupling from commodity prices, the outlook for which is in any case now less optimistic. The fourth factor, central bank liquidity, is the only one likely to remain intact.

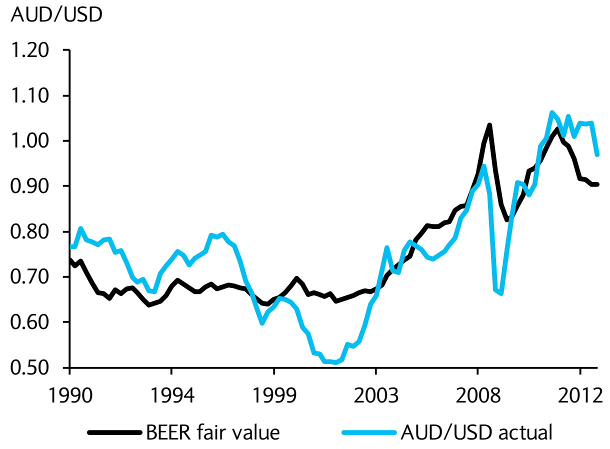
Global liquidity, however, on its own is not enough to support assets/currencies that look fundamentally unattractive. The experience of the South African rand (ZAR) – formally a high beta currency – is a prime example. It is, therefore, not surprising that AUD correlation with risk has started to fall from overstretched levels.

Where does AUD fair value lie? And what drives it?

Our bilateral AUD/USD Behavioural Equilibrium Exchange Rate model (BEER) suggests a medium-term fair value of around AUD/USD 0.90 (Figure 5), a 7% overvaluation from current levels. Moreover, the details show that fair value has been, by and large, driven by an increase in Australia's terms of trade, the ratio of export to import prices, relative

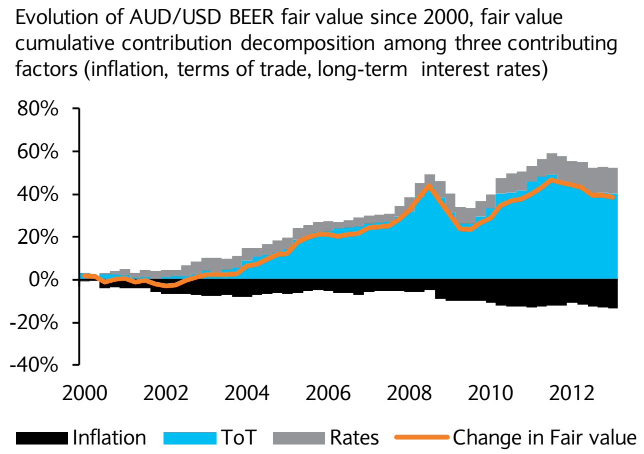
[1] The Reserve Bank of Australia, *Statement on Monetary Policy, 10 May 2013*

Figure 5: AUD/USD trading above its BEER fair value



Source: Barclays

Figure 6: Commodities by and large caused AUD's rise



Source: Barclays

to the US.[2] This is depicted by the blue-shaded area in Figure 6. Australia's exports are heavily skewed to commodities, and to commodities that we are not particularly upbeat on (see below). Hence, its terms of trade are likely to deteriorate, pushing estimated fair value down further, below its current AUD/USD 0.90, making AUD even less attractive.

Looking at even longer-term valuations based on inflation differentials only (such as purchasing power parity), AUD looks even more overstretched. Most valuation measures suggest downside risks. The OECD estimates AUD/USD fair value around 0.66.

Outlook for iron ore and China demand

Iron ore is Australia's key commodity, accounting for more than 20% of its total exports. With China being the world's biggest iron-ore importer (and Australia's main export market), the outlook for Chinese demand remains pivotal for iron ore supply-demand dynamics (Figure 7). While we expect demand growth from China to remain healthy, we do not believe that it will be able to exceed the rate of supply growth in the market, which has recently increased in response to the higher prices that have followed decades of underinvestment in the sector.

Prices for iron ore, Australia's key commodity export, are likely to soften

The ongoing industrialisation and urbanisation process in China will continue to support demand for iron ore, but the government's shift of focus from investment in infrastructure and fixed assets to domestic consumption should translate into a more moderate rate of demand growth for raw materials, including iron ore. The expectation that robust supply growth will not be completely absorbed by moderating demand growth suggests a more challenging outlook for prices. We expect that the market will remain oversupplied and prices are likely to trend lower, from the current value of about $120/tonne to perhaps around $100/tonne in coming years. With the outlook for Australia's most important commodity doubtful, the key factor that has supported AUD over the past decade is likely to diminish, leaving AUD vulnerable, we think.

[2] We do not include a relative productivity variable in the model (which we do for other currencies) as it lacks any explanatory power. This is because Australia's labour productivity was virtually stagnant between 2003 and 2011, lagging the rise of AUD. This reflects a number of factors: investment in mining and utilities takes time to feed through to increasing output; the extraction of lower grade mineral deposits increases the difficulty of mining; environmental targets need to be met. In this respect Australia's poor productivity performance differs from "Dutch disease," because it was widespread, and included the mining sector itself.

Australian stocks and bonds also look relatively unattractive

Equity and bond markets

The Australian stock market is up by about 10% in local currency terms this year, almost as much as the other developed markets, but it has underperformed markedly in dollars, in which terms its price relative is currently at the lowest level since mid 2009. Although the resource sector accounts for a relatively large portion of the index compared to other stock markets, the sector's recent underperformance (due to falling commodity prices) has been muted by a strong rise in financials, which form around half of the index. While the overall index valuation does not look overstretched (it is mildly expensive on a price-to-earnings basis, but mildly undervalued on a price-to-book basis – Figure 8), this large financial sector (it accounts for "only" 21% of the MSCI World index, and 17% of the S&P500), banking in particular, adds to our wariness of the equity market. Our equity views are unhedged, and so the likely fall in the AUD also counts against it. Property prices have looked frothy for a long time, and with other countries coming out of the other side of a real estate crisis we think there are more attractive returns to be had from banking sectors elsewhere – for example, in the US.

Australian bonds look historically expensive. The 10-year yield, at 3.3%, is higher than in the US or Europe, and is actually positive in real terms, but the spread to US bonds is the lowest since 2007. As noted above the investor base is largely international, and a fragile currency could hit demand. We do often hedge bond positions, but Australia's higher interest rates make that expensive, effectively cancelling the yield attraction.

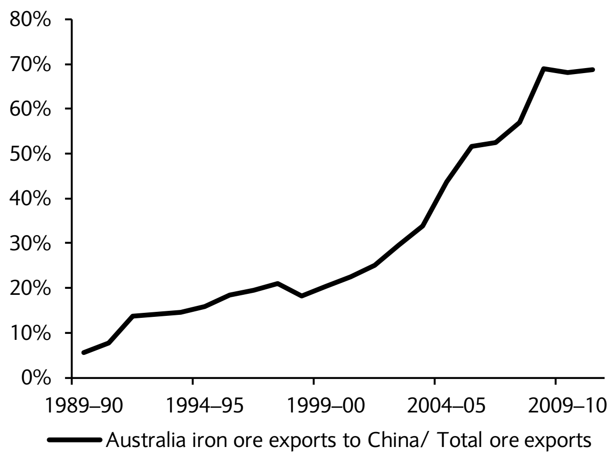
Conclusion: investment implications

We expect the decade-long AUD bull trend to come to an end. AUD materially overshot its fundamentals and with the last supporting factors easing the clock is ticking. We expect AUD/USD to fall towards the 0.90s levels on a one- to two-year time horizon.

But we recognize that it is expensive to short AUD against USD (it has the highest interest rates in the G10 FX space). Rather, we prefer doing so against the Canadian dollar (CAD). CAD's higher rates make long positions less expensive. Moreover, for clients wishing to express the view via options, implied volatility on AUD/CAD is lower than on AUD/USD, and that implementation is cheaper too. We retain a constructive view on CAD and expect the currency to benefit from its exposure to the US economy and underpinned oil prices.

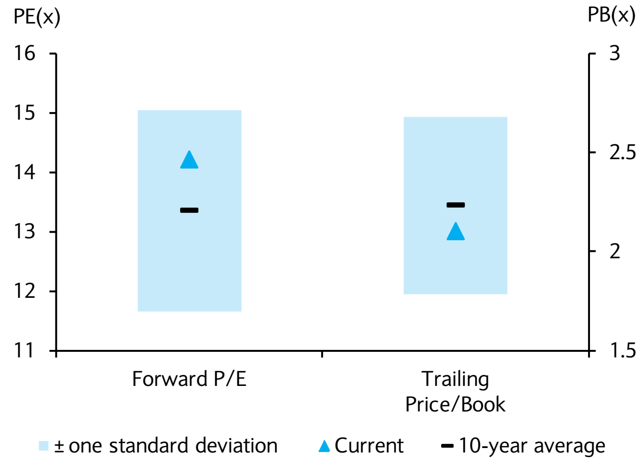
Generally, we would be underweight Australia relative to benchmarks in investment portfolios generally.

Figure 7: Australia's ore exports to China



Source: Barclays, Bureau of Resources and Energy Economics

Figure 8: Local stock market: not a valuation call



Source: Barclays, Factset

What is risk?

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Risk. An important but misunderstood word in finance. Important, because investors should try to avoid it unless they are well paid for taking it, so we need to be clear about what exactly 'it' is. Misunderstood, because this clarity is seldom the case.

Volatility is merely a turbulent journey

Frequently, we are told, risk is *volatility*, a measure of the amount that investments fluctuate along the journey at short horizons. But if this is what we expend effort avoiding, we're focussing on the wrong thing. A good analogy might be an urgent sea voyage where every minute counts. Going full engine into waves creates turbulence along the way that is unpleasant, but is not *risky* unless this turbulence increases the risk of a slow journey.[3] If your aim is a pleasant journey, then by all means take it slow; but if your chief aim is a getting there on time, then you are better advised to invest in tablets for seasickness.

Investment volatility is distressing. But it is not risk. Unless we need the money along the journey[4] then the fluttering of sentiment along the way is not what matters at all. What matters is the chance our portfolio is not worth much *when we need it*. The potential for low values in the long-term increases the risk, while the potential for high values decreases risk… *regardless of the volatility of the journey*.

Risk *is the essence of what investors should try to avoid, but is often confused with* volatility.

The three dotted lines in Figure 1 each show possible paths of investment returns. The bottom two are perfectly smooth, with no volatility, but end up with average, or negative returns respectively. The higher path offers high returns at the end of the investor's time horizon, but is extremely volatile. Investors who represent 'risk' as volatility often weed out portfolios with good returns to avoid the temporary discomfort of turbulence. To get the best risk adjusted returns we need to focus on the outcome, not a smooth ride.

Risk is the chance of a poor final outcome

Imagine all possible future paths a portfolio may take over the next five years. *Risk* is about how many of all those possible future paths end up with low values. If we mistake volatility for risk and seek to avoid it, we will weed out portfolios with rough journeys regardless of the outcome, good or bad. We have mistaken comfort for success.[5]

We should not take on risk unless it increases the average portfolio return sufficiently to compensate us for the chance of bad outcomes. To do this we need a precise way to measure the likelihood of bad outcomes. Armed with this, we can choose the portfolio that offers the best returns, after compensating us for the risk we are prepared to take.

The traditional way of measuring volatility is to calculate the *standard deviation* of fluctuations along the path. This looks at the return each period and compares it to the average returns. Deviations away from the average count as risky. The further away from the average, the more this adds to the standard deviation.

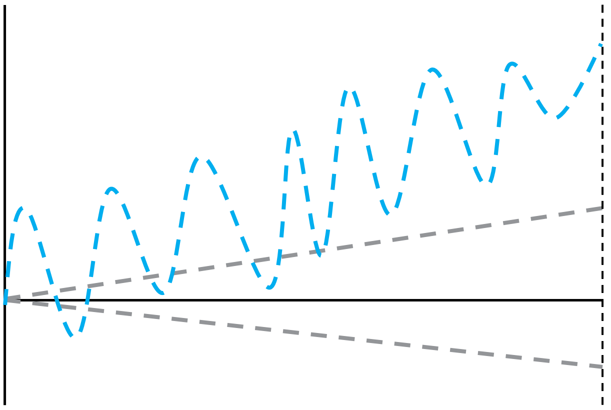
[3] Or, of course the ship sinks altogether, which could happen if your ship is badly constructed and unsuited to the voyage. In a portfolio context this can happen when your portfolio is insufficiently diversified or highly concentrated: any one investment can be sunk by events along the journey. A diversified portfolio merely experiences turbulence.
[4] In which case this is the destination, not the journey…and we should have minimised the chance of such unexpected needs through insurance and careful planning.
[5] This is not to say that comfort is unimportant: a crossing could be so unpleasant that we despair and turn back or, worse, jump overboard. But this is about controlling our behavioural responses to the journey: volatility only matters insofar as we respond to it.

Calculating *risk* of bad final outcomes frequently uses the same computation except that, instead of looking at deviations from the average path over time, the standard deviation is computed by looking at where the various paths can end up. Paths that end up at the average outcome, like the mid path in Figure 1, do not add to risk, but paths, like the upper and lower paths in the figure, that end away from the average outcome do. The further the deviation from the average, the more this possible path adds to the 'risk' of the portfolio.

So by choosing a portfolio with a low standard deviation of outcomes, we're weeding out portfolios that have a high dispersion of possible future values, in favour of those that are likely to end up with a value close to the average. At first glance, this seems sensible.

Better than expected outcomes are not 'risky' – risk is the chance of something undesirable happening

Figure 1: Distinguishing between volatility and risk



Source: Barclays

Don't weed out the flowers

Traditional risk measurement filters out portfolios with high variation in outcome, penalizing the good, along with the bad.

However, when looking at the possible paths that we exclude by minimising standard deviation, we notice something less reasonable. We're filtering out portfolios that offer a chance of ending up on a really good path as well as those that have bad outcomes. Standard deviation doesn't distinguish between good and bad outcomes, it just penalises variation. According to this view, both the top and bottom path in Figure 1 *add* to risk, and should be avoided! This is like telling an investor that you're "really sorry, but there may a terrible chance you'll earn 5% more than expected next year. But not to worry, using our risk measure, we are minimising the chance of this undesirable outcome for you."

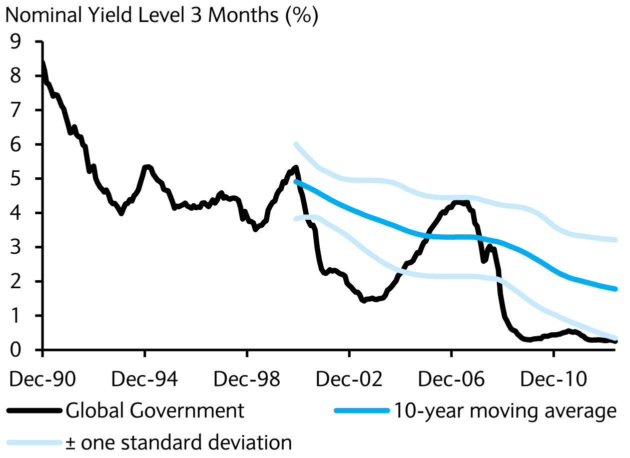
The possibility of good outcomes is simply not risk: and we certainly shouldn't be minimising it by filtering out portfolios with good upside outcomes along with those which have high potential for bad outcomes. Instead we need a risk measure that increases when there are lots of bad outcomes, but ensures that good outcomes have the effect of *reducing* risk. The possibility of encountering the lower path increases the risk of a portfolio, but the existence of the upper path should actually *decrease* risk.

Minimising such a measure means we weed out portfolios with lots of worse than expected outcomes, but doesn't have the counterintuitive implication that we throw away portfolios just because they have *variability* in outcomes. At Barclays we have developed just such a risk measure, *Behavioural Risk*, which is grounded in the extensive evidence from the field of Behavioural Finance about how investors should actually think about risk when making risk-return trade-offs in their portfolio.

It enables us to build portfolios that focus on what really matters to investors: not volatility along the journey, but the value of our wealth at the destination; and not mitigating the dispersion of possible outcomes, but reducing the chance of bad ones.

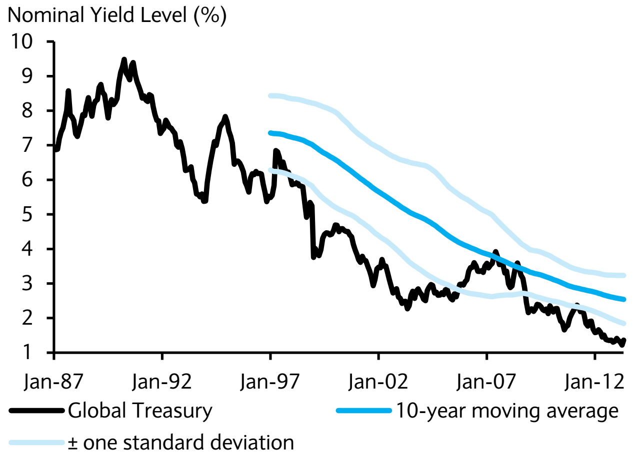
Interest rates, bond yields, and commodity and equity prices in context*

Figure 1: Short-term interest rates (global)



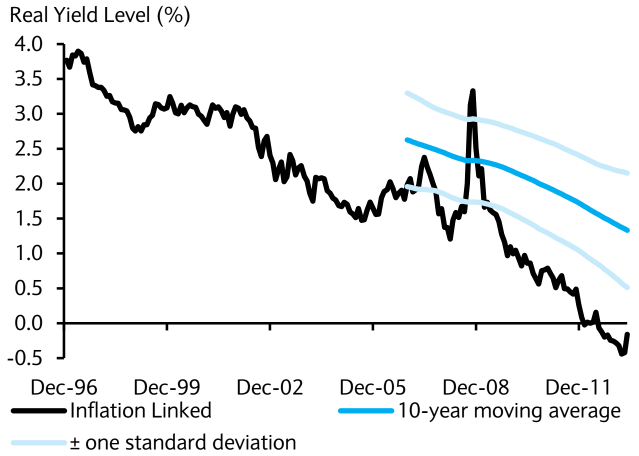
Source: FactSet, Barclays

Figure 2: Government bond yields (global)



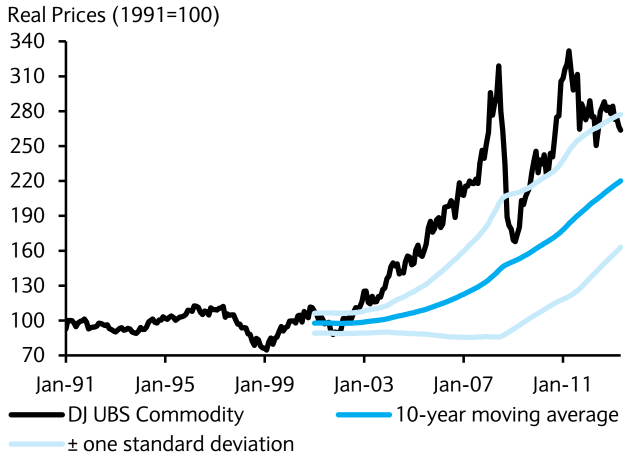
Source: FactSet, Barclays

Figure 3: Inflation-linked real bond yields (global)



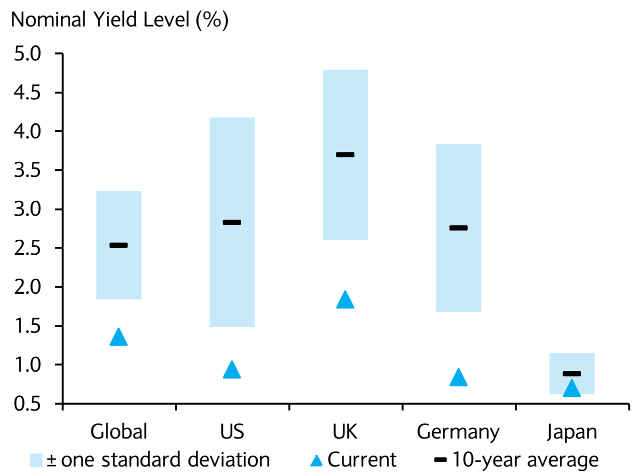
Source: Bank of America Merrill Lynch, Datastream, FactSet, Barclays

Figure 4: Inflation-adjusted spot commodity prices



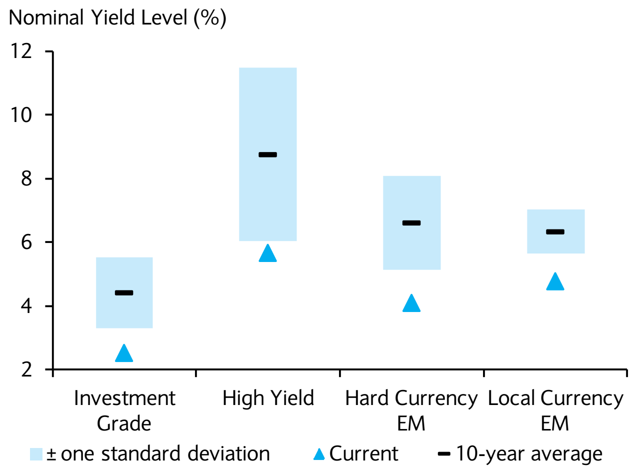
Source: Datastream, Barclays

Figure 5: Government bond yields: selected markets



Source: FactSet, Barclays

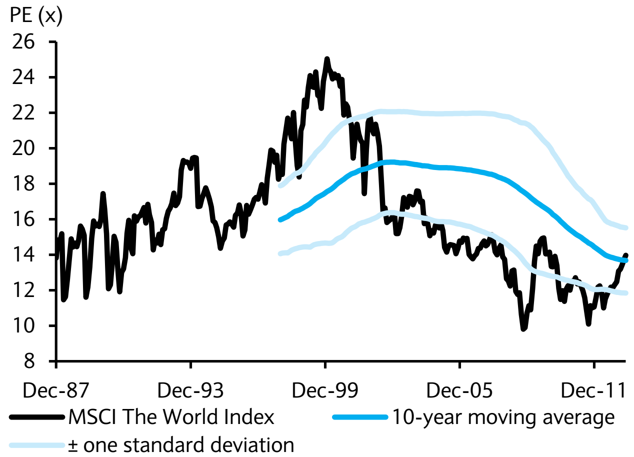
Figure 6: Global credit and emerging market yields



Source: FactSet, Barclays

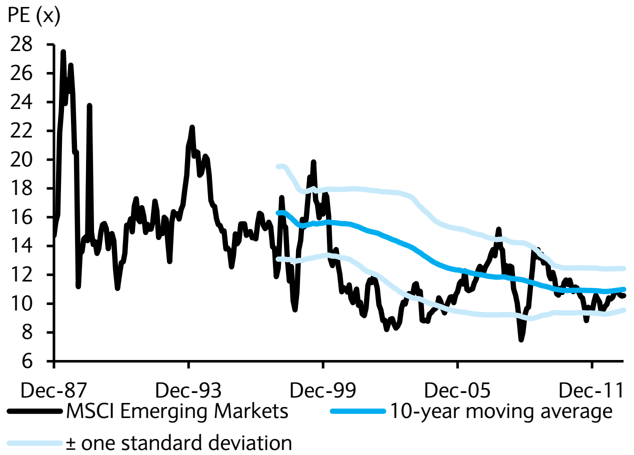
*Monthly data with final data point as of COB 27 May 2013.

Figure 7: Developed stock market, forward PE ratio



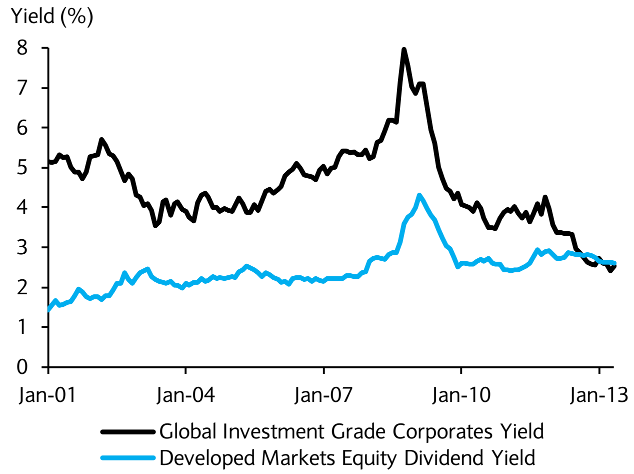
Source: MSCI, IBES, FactSet, Datastream, Barclays

Figure 8: Emerging stock market, forward PE ratio



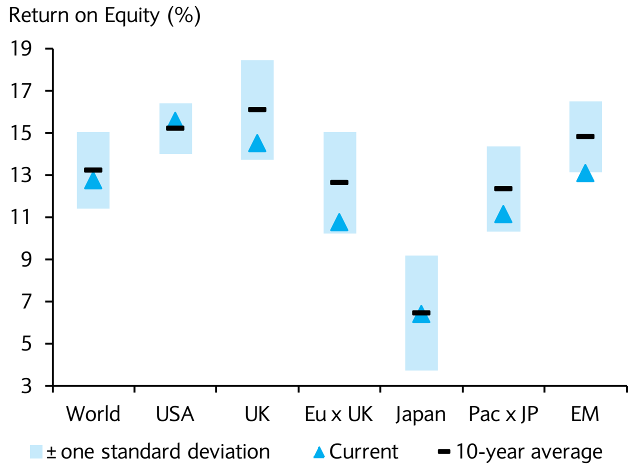
Source: MSCI, IBES, FactSet, Datastream, Barclays

Figure 9: Developed world dividend and credit yields



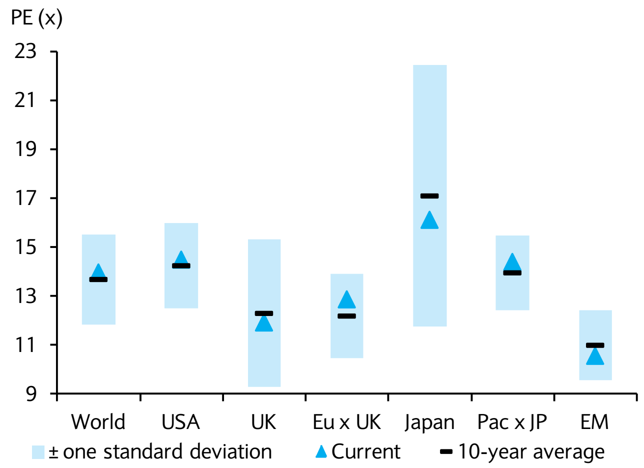
Source: MSCI, IBES, FactSet, Datastream, Barclays

Figure 10: Regional quoted-sector profitability



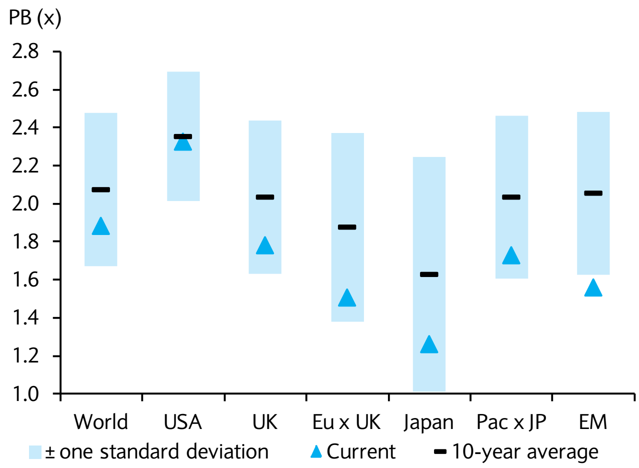
Source: MSCI, IBES, FactSet, Datastream, Barclays

Figure 11: Global stock markets: forward PE ratios



Source: MSCI, IBES, FactSet, Datastream, Barclays

Figure 12: Global stock markets: price/book value ratios



Source: MSCI, IBES, FactSet, Datastream, Barclays

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