Flows & Liquidity

What has changed over the past five years?

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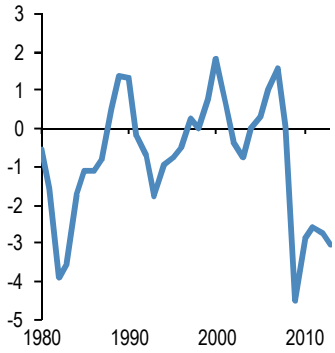
- **Household saving rates rose sharply post Lehman but have reversed all of their decline. In contrast, corporate saving rates are still far from normal levels.**
- **Household deleveraging appears to be continuing. While debt writedowns helped the US household debt to income ratio to retrace so far half of its previous increase between early 2000s and 2008, household debt to income ratios appear to be still very elevated outside the US.**
- **Household credit growth has been rather weak since the Lehman crisis across the G4 with no signs of improvement yet.**
- **Non-financial corporate sector credit growth has been improving somewhat due to share buyback related issuance.**
- **These share buybacks have been improving since 2009 and are currently running at a $500bn per annum pace across G4 non-financial corporates, half of the $1tr peak pace seen at the end of 2007.**
- **The G4 financial sector has stopped reducing its debt liabilities but has yet to turn expansionary.**
- **TIC flows favoring foreign over US equities.**
- **Western European equity ETFs have not seen any weekly outflow since the beginning of June.**

- Five years have passed since the Lehman crisis. The economic and financial costs of the crisis have been dire. It took almost five years for US equities to recapture the losses incurred during the Great Recession while DM and world equities are still below their 2007 peak. While developed market GDP has recaptured its 2007 level, the gap that opened between actual and potential GDP remains high. Figure 1 shows how little progress advanced economies have made in closing the output gap of the 2008/2009 recession relative to previous recessions. In fact, the downshift in the pace of growth vs. the pre Lehman period is increasingly prompting economists to lower their estimates of trend growth going forward.

- Analyzing the economic environment of the past five years is beyond the scope of this publication. We rather focus on the behavior of important flows, such as savings, leverage, credit, liquidity and investor flows.

Figure 1: DM economies' output gap as % of potential GDP
% of potential GDP, annual data for advanced economies according to IMF's definitions



Source: IMF

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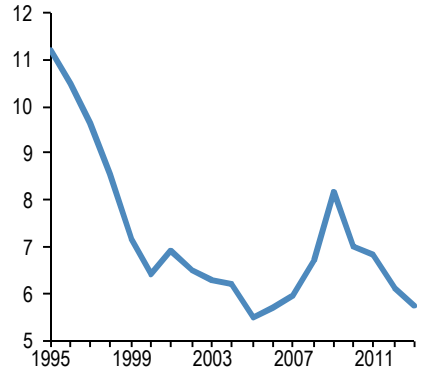
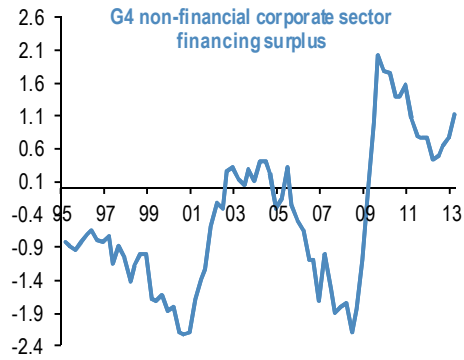
- The private sector increased its saving rate sharply after the Lehman crisis driven by households and banks as well as non-financial corporations. Figure 2 shows the average household saving rate of major developed economies. This saving rate jumped in 2009 to almost 3% above its pre Lehman low, but reversed all of these declines after 2009. It currently stands at a level similar to that seen in 2007. This reversal has allowed consumer spending to recover materially since 2009.
- **In contrast to household saving rates, corporate saving rates are still far from normal levels.** The financing surplus, i.e. the gap between cash flows and capex, rose by a massive 4% of GDP in 2008 and the first half of 2009 and has declined since then (Figure 3). But it rose again in 2012 and, at 1.1% of GDP, it stands three percentage points above its 2007 level. More importantly capex was falling from the end of 2011 up until the first quarter of this year. The capex to GDP ratio, at 8.1% is rather low by historical standards and as shown in Chart A18 it is below the 8.4% low seen during the previous recession in 2001/2002. We note this disappointing capex performance is one of the things pointing to lower potential GDP growth going forward.
- How has the appetite to take more debt been evolving since the Lehman crisis? Is deleveraging continuing? We proxy leverage by debt to income. We prefer this metric as it is not affected by changes in interest rates (currently at ultra low levels) or changes in wealth that might not be sustained in the future. In addition, income is better measured than wealth or net worth.
- **Household debt to disposable income has been declining since 2009 but mostly in the US**. Figure 4 shows that little improvement has been made outside the US in terms of household deleveraging. However, the majority of the decline in US household debt since the Lehman crisis appears to have been driven by mortgage debt charge offs and writedowns, something that happened to a lesser extent outside the US. Research and data by the Fed shows that charge-offs on mortgage debt totaled around $1.3tr between 2007 and 2011. While this $1.3tr represents gross rather than net charge offs (as it does not capture the amount of a charged-off mortgage balance recovered by the bank through the resale of the asset), it does imply that a big part, perhaps the majority of the $1.5tr decline in US household debt since the Lehman crisis has been due to debt writedowns.
- This has helped the US household debt to income ratio to retrace so far half of its previous increase between early the 2000s and 2008. In contrast, the household debt to income ratio appears to be still very elevated outside the US as shown in Figure 4.
- Elevated debt levels can become a drag on economic growth if they reduce the appetite of economic agents to take on more debt. Indeed **household credit growth has been rather weak since the Lehman crisis and Chart A8 at the back shows no signs of improvement.** This lends support to the idea that the deleveraging process behind Figure 4 has further to go.
- Where credit growth has improved somewhat is in the non-financial corporate space as shown in Chart A9. But even there, as we argued before, **the picture becomes a lot weaker if one excludes corporate debt issued to finance share buybacks**. These share buybacks have been improving steadily since 2009 and are currently running at a $500bn per annum pace across G4 non-financial corporates, half of the $1tr peak pace seen at the end of 2007 (Chart A19).
- What about banks? Has bank deleveraging finished? Figure 5 shows that the G4 financial corporate sector stopped reducing its debt liabilities in Q1 2013

Figure 2: DM household saving rate
% of disposable household income, yearly averages of major Euro area economies as well as the UK, US, Japan, Canada and Australia.



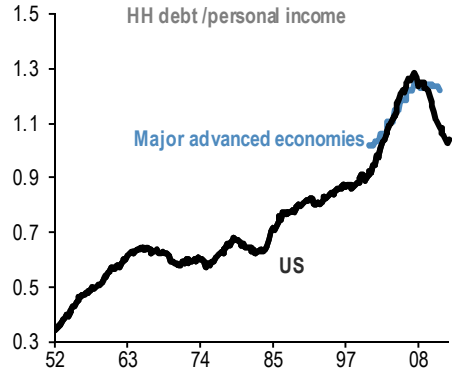
Source: OECD

Figure 3: Financing surplus of G4 non-financial corporate s
% of GDP, Euro area, UK, US and Japan



Source: Flow of Funds

Figure 4: Household debt as % of disposable income
US ratios (black line) are based on saar quarterly data from US Flow of Funds up to Q1 2013. Blue line is based on a simple average of the HH debt to income ratios of 7 major economies: Canada/France/Germany /Italy/Japan/UK/US (OECD data). Last annual obs is for 2011.



Source: US Flow of Funds, OECD, J.P. Morgan

for the first time since the Lehman crisis. G4 financial corporates had been reducing their debt steadily since the fourth quarter of 2008. The average annual pace of debt reduction between Q4 2008 and Q4 2012 had been $1.5tr per year. That is, in these four years, G4 financial corporations had reduced their debt liabilities by a staggering $6tr. This 4-year long deleveraging trend appears to have ended in Q1, sending an encouraging signal that financial sector deleveraging is no longer a headwind for G4 economies. **But we note this does not make the financial sector expansionary. Zero debt issuance is far from normal.** As shown in Figure 5, zero debt issuance was last observed during the depths of the previous recession in 2001/2002.

- **What about the public sector?** The public sector, i.e. central banks and governments, were forced to bloat their balance sheets after the Lehman crisis to offset private sector deleveraging. This process is still ongoing with G4 central bank balance sheets continuing to rise due to Fed and BoJ purchases. They have surpassed the $9tr mark this year vs. a combined balance sheet size of less than $4tr in 2007. Government net debt to revenue ratios are still rising among advanced economies, with the IMF data showing a ratio of 210% in 2013 vs. 122% in 2007.

- Public sector leveraging has helped to boost liquidity in the system. As we argued before (*F&L,* April 26th), it is useful to distinguish between narrow and broad liquidity. Narrow liquidity is created by the injection of zero-yielding excess reserves into the banking system, which in turn acts as a support for government bonds in periods of low volatility when there is appetite for carry trades by banks. **While narrow liquidity is currently rising as the Fed and the BoJ continue to inject zero-yielding reserves into the banking system, low appetite for carry trades by banks as a result of Fed tapering prevents that excess liquidity from being transmitted into government bonds at the moment.**

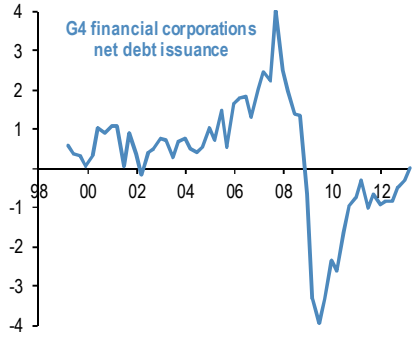
- Broad liquidity or money supply is the amount of cash held by the non-bank sectors of the economy such as households, non-financial corporations and financial intermediaries such as asset managers, pension funds and insurance companies. These two components of liquidity are interrelated but are not necessarily mechanically linked and are thus distinct. Broad liquidity is viewed as a more important component of monetary liquidity as it can impact other assets classes beyond government bonds, such as corporate bonds, equities, real estate, etc.

- Broad liquidity is typically measured via money supply aggregates. These money supply aggregates measure the amount of cash, mostly bank deposits and money market funds, held by households, non-financial corporations and non-bank financial intermediaries such as asset managers, pension funds and insurance companies. Figure 6 compares broad liquidity to the stock of publicly traded equities and bonds in the world. We proxy the equity universe via the market value of Datastream's global equity market index. We proxy the bond universe via the market value of Barcap's Multiverse bond index, minus QE bond purchases by G4 central banks since 2008. The ratio of M2 to the stock of global bonds and equities is at 69% currently, only slightly below its long term average of 70% since 1990.

- **What about investor behavior?** 2013 witnessed the biggest change in investor behavior since the Lehman crisis. Chart A2 shows that the love affair of retail investors with bond funds waned sharply this year vs. the previous year, a swing of $700bn. In contrast, retail investors became more attracted to equity funds, buying $264bn YTD, the most since 2007. This represents a swing of $180bn vs. the previous year. Sovereign Wealth funds have been

Figure 5: G4 financial corporate net debt issuance

$tr per annum



Source: ECB, Fed, BoE and BoJ

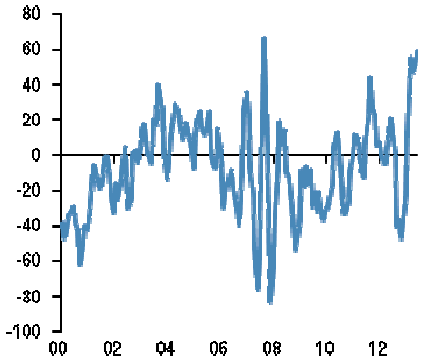
Figure 6: M2 money supply as % global bonds and global equities

We proxy the equity universe via the market value of Datastream's global equity index. We proxy the bond universe via the market value of Barcap's Multiverse index minus QE bond purchases by G4 central banks since 2008

Source: Datastream and J.P. Morgan.

Figure 7: US flows into foreign stocks, less foreign flows into US stocks

$bn, 3-month rolling total



Source: US Treasury, J.P.Morgan

anecdotally strong buyers of equities this year but admittedly the only hard evidence we have is from the quarterly reports of the Norwegian Petroleum Fund.

- Pension funds in aggregate did not embrace the Great Rotation, at least not up until Q1. Chart A23 shows that there has been little change in bond and equity allocations of G4 pension funds and insurance companies since 2009. This masks however some divergence between US pension funds and insurance companies, who did embrace the Great Rotation, and their G4 counterparts who have been fading it.

TIC flows favoring foreign over US equities

- The slowdown in foreign demand for US bonds this year has been much in focus, as illustrated by the declining trend in New York Fed custody holdings of Treasuries and Agencies, which have fallen by almost $40bn in the past three months, and are up only $40bn YTD.

- In a sense, the Fed's asset purchases had a double impact on US bond markets, both through the direct impact of Fed buying, and because they drove flows into EM, and so foreign official buying of US bonds to offset the currency impact of these flows. Equally, the weakening in EM currencies associated with the onset of tapering means that EM reserve growth has ground to a halt, and reserves are being depleted by some countries to defend their currencies, with the consequent impact on foreign official demand for US bonds.

- Just as with bonds, the US TIC data point to a significant shift in the relative demand for US vs foreign stocks. The TIC data report net US buying of both US and foreign stocks, with July data out next Tuesday. The more usual pattern has been for stronger foreign buying of US stocks, than US buying of foreign stocks. But this pattern was reversed in H1, with strong US buying of foreign stocks ($100bn), coupled with foreign selling of US stocks (-$14bn). The net effect is that the difference between US flows into foreign stocks and foreign flows into US stocks in both Q1 and Q2 was close to the largest on record (Figure 7).

- Where have US flows into foreign stocks been directed? The TIC data provides a breakdown of transactions split by the country of the counterparty rather than the issuer: for example, net buying of all non-US stocks from UK counterparties, though these stocks need not be UK stocks. On that basis, Figure 8 shows the breakdown of US stock flows in the first half of this year. Half of the buying was from UK counterparties, with a third from Asia and around a sixth from the Euro area. Clearly, because of the degree of financial intermediation in London, it would be a stretch to interpret buying of stocks from UK counterparties narrowly as buying of UK stocks, or even European stocks.

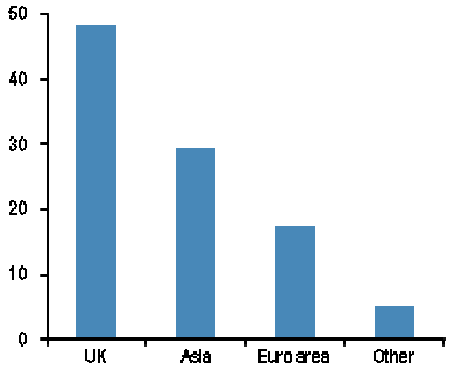
- Of the $30bn of stock flows into Asia, two thirds went to Japan, reflecting the Abenomics trade, although the more timely weekly Japanese data on cross-border transactions show a cooling of foreign investors' ardor for Japanese stocks over the past two months.

Spec shorts in US rates are extreme

- Net spec positions in UST futures are at their most short since May 2010 and are close to two standard deviations below their average since 2006. Figure 9 shows a duration weighted composite of the net spec positions on the 10YR, 5YR, 2YR, the T-bond, the Ultra long bond and the Eurodollar futures.

Figure 8: US flows into foreign stocks in 13H1, by country of counterparty

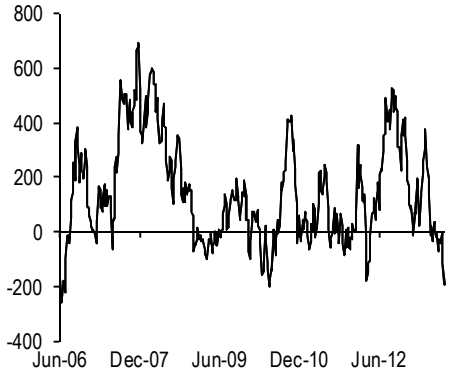
$bn



Source: US Treasury, J.P.Morgan

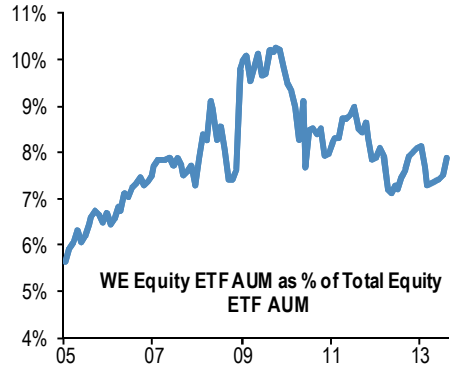
Figure 9: Net spec positions in UST futures

$bn, A duration-weighted composite of the individual UST series plus the Eurodollar contract.



Source: Bloomberg

Figure 10: Share of Western European equity and bond ETFs AUM as % of total equity and bond ETFs AUM



Source: J.P.Morgan, Bloomberg.

Positions peaked almost exactly a year ago and have been falling steadily since, turning negative at the end of May. The most recent US Treasury client survey also showed investors are net short USTs, although positions are not extreme and remain less short than during the May/June rate selloff. (*Treasury Client Survey*, Alex Roever et al., Sep 13).

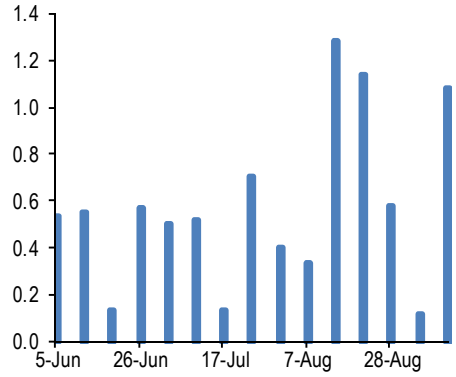
- Outside bonds, the most extreme positions are longs in crude oil and shorts in the AUD and the VIX.
- In credit, our European HG investor survey showed investors have marginally increased their credit OWs over the past three months, particularly in lower-rated credits. In addition, cash balances have fallen from above average to average levels. Overall inclination to add risk has been relatively stable but this masks an increase in the divergence in the number of investors looking to add risk and those looking to reduce risk. Clients expect Euro HY will be the best performing credit market over the next six months while US HG will be the worst (*European High Grade Credit Investor Survey*, Tina Zhang, Sep 10).

Strong equity ETF inflows this week

- Equity ETFs saw strong inflows this week after a subdued August. Week-to-date, inflows into equity ETFs globally totaled $16bn, mainly driven by ETFs which invest in US and EM equities. The US saw most of these inflows with $9.5bn (1.2% of AUM), while EM saw $4.2bn (2.2% of AUM). Western Europe and Japan also saw inflows into equity ETFs this week, but to a much lesser extent.
- Bond ETFs saw inflows of $766mn week-to-date, driven by US HY ETFs while EM bond ETFs continued to see outflows, losing a further $259mn. Commodity ETFs saw a small outflow of $230mn this week, which was the first outflow for five weeks.
- Western European equity ETFs on a weekly basis has not seen any outflow since beginning of June. The cumulative ETF inflow since then is $8.5bn. This inflow is at 7.7% of Western European ETFs AUM. More recently we saw the flows have been intensifying (Figure 11). Chart A5 shows that among equity ETFs, they are those that invest in European equities that showed the biggest cumulative improvement over the past three months.

Figure 11: Western European weekly equity ETF flows

$bn, Weekly data, last data point is week ending 11 Sep



Source: J.P.Morgan, Bloomberg.

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Table A1: Weekly flow monitor

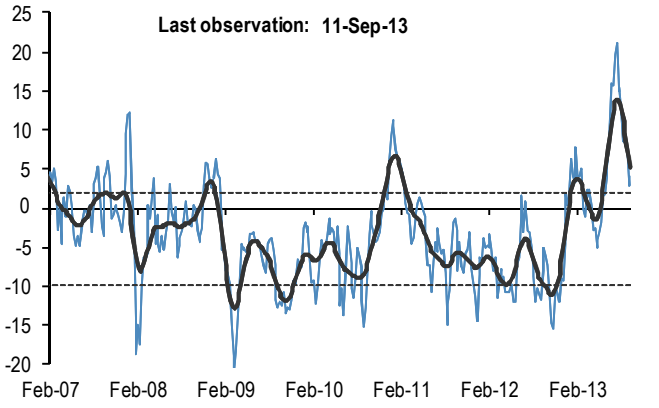
$bn, Includes US domiciled Mutual Fund flows from ICI with a one week lag and globally domiciled ETF flows from Bloomberg. Current week data only includes ETF flows.

MF & ETF Flows	11-Sep	4 wk avg	13 wk avg	2013 avg
All Equity	10.7	-2.9	4.4	5.2
All Bond	0.4	-7.1	-7.3	0.0
US Equity	5.0	-4.7	1.5	2.2
Intl. Equity	5.8	2.0	2.9	3.2
Taxable Bonds	0.5	-4.8	-4.5	0.9
Municipal Bonds	-0.1	-2.3	-2.8	-0.9

Source: Bloomberg, ICI, J.P. Morgan

Chart A1: Fund flow indicator

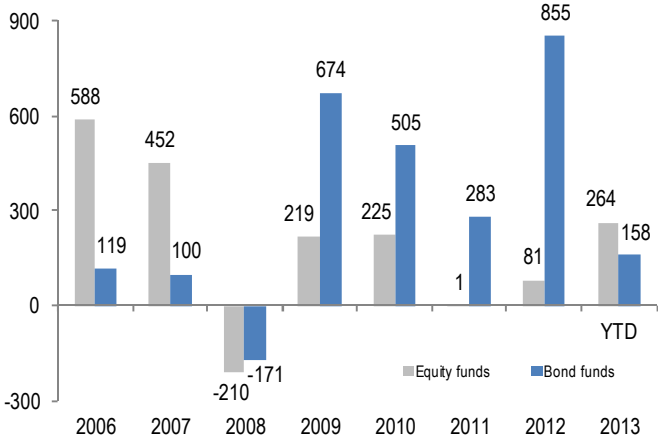
Difference between flows into Equity and Bond funds: $bn per week. Flow includes US domiciled Mutual Fund and globally domiciled ETF flows. Current week data only includes ETF flows. The thin blue line shows the 4-week average of this difference. The thick black line shows a smoothed version of the same series. The smoothing is done using a Hodrick-Prescott filter with a Lambda parameter of 100.



Source: Bloomberg, ICI, J.P. Morgan

Chart A2: Global equity & bond fund flows

$bn per year. Flows include global MF and ETF flows. MF flows are from ICI (global flows up to Q1'13 is from ICI and data since then up to now is combination of EFAMA and ICI). ETF flows are from Bloomberg.



Source: Bloomberg, ICI, EFAMA, J.P. Morgan

Table A2: Weekly corporate flows

$bn, Gross bond issuance includes all corporates incl. financials. United States issuance is all issuance globally by US companies and W. European issuance is all issuance globally by W. European companies. M&A is announced deal value and Buybacks are announced transactions. Y/Y change is change in 13 week average over the same period last year. Equity supply is based on announced deals, not completed.

Equity Supply	13-Sep	4 wk avg	13 wk avg	y/y chng
Global IPOs	3.8	2.5	3.4	64%
Secondary Offerings	12.6	9.1	8.4	32%
Gross corporate bond issuance				
United States	68.0	26.8	25.8	-8%
Western Europe (€bn)	10.7	16.5	12.0	-30%
Japan	3.9	5.4	3.3	-8%
EM	9.3	10.7	11.9	-40%
Corporate announcements				
M&A - Global	30.6	60.4	48.1	3%
- US Target	19.2	43.4	25.3	47%
- Non-US Target	11.4	17.0	22.7	-23%
US buybacks	0.0	0.2	3.8	-21%
Non-US buybacks	0.0	0.2	1.2	3%

Source: Bloomberg, Dealogic, Thomson Reuters, J.P. Morgan

Table A3: Monthly trading volume monitor

3 month avg. USTs are primary dealer transactions in all US government securities. JGBs are OTC volumes in all Japanese government securities. Bunds, Gold, Oil and Copper are futures. Gold includes Gold ETF's. Min-Max chart is based on Y/Y changes. The diamond is the current observation. The thin blue line marks the distance between the min and max for the complete time series. Y/Y change is change over the same3m average period last year.

Equities	MIN	MAX	3m avg to Aug-2013 (tr)	y/y chng
EM Equity*			$1.22	25%
DM Equity*			$10.98	5%
Govt Bonds				
USTs			$2.16	-7%
JGBs*			¥786	9%
Bunds			€2.19	-5%
Credit				
US HG			$0.24	7%
US HY			$0.10	13%
US Convertibles			$0.02	-11%
Commodities				
Gold			$0.54	-4%
Oil			$2.07	-24%
Copper			$0.62	13%

Source: Bloomberg, Federal Reserve, Trace, Japan Securities Dealer Association, WFE, J.P. Morgan. * Data with one month lag

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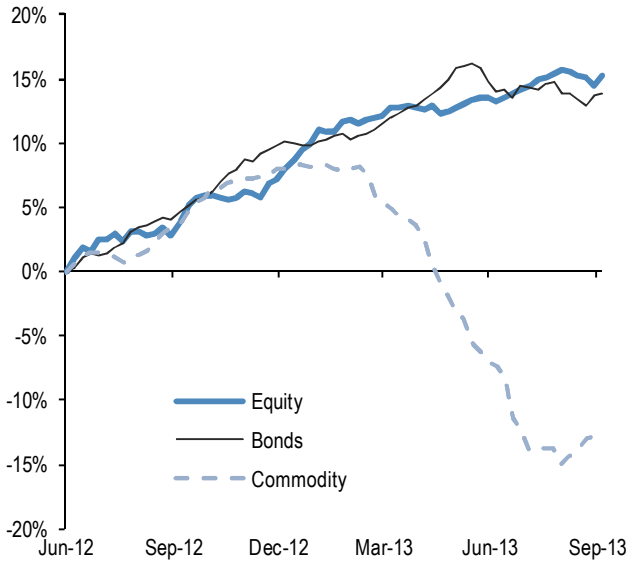
ETF Flow Monitor (data as of Sep 11)

Chart A3: Global Cross Asset ETF Flows

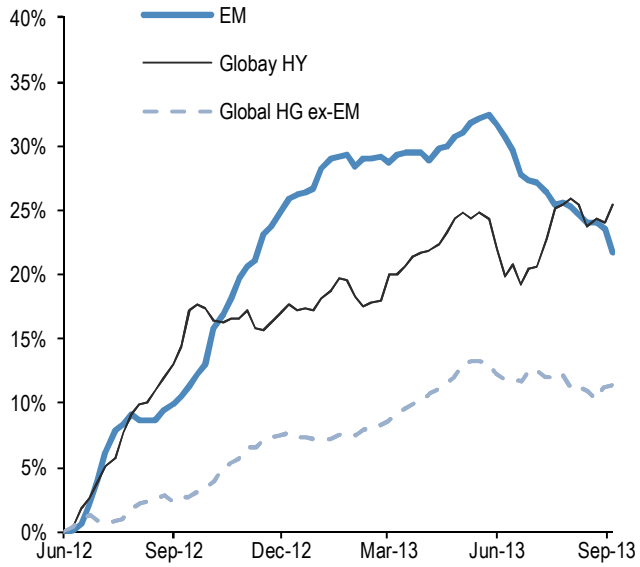
Cumulative flow into ETFs as a % of AUM.



Source: J.P. Morgan. Bloomberg

Chart A4: Bond ETF Flows

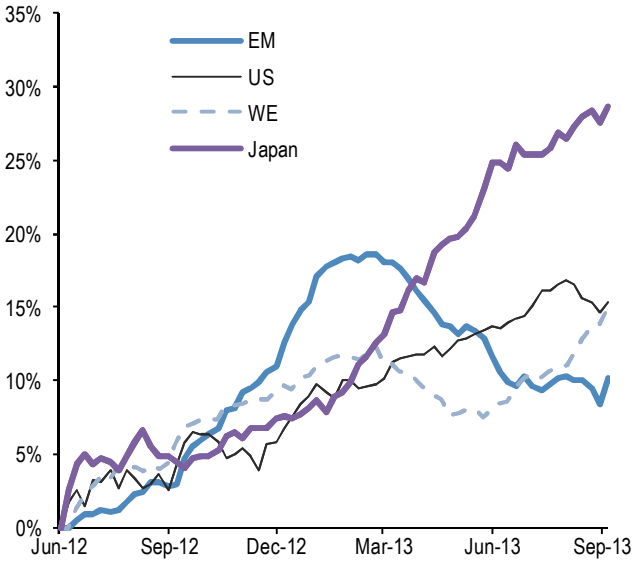
Cumulative flow into bond ETFs as a % of AUM.



Source: J.P. Morgan. Bloomberg

Chart A5: Global Equity ETF Flows

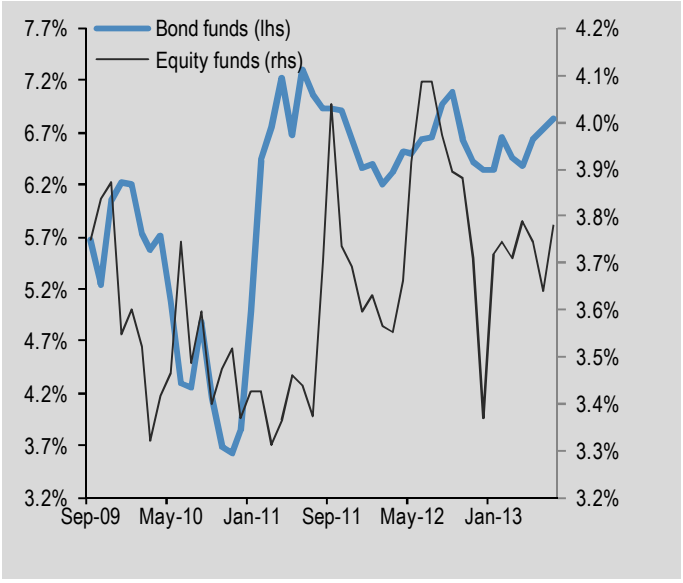
Cumulative flow into global equity ETFs as a % of AUM.



Source: J.P. Morgan. Bloomberg

Chart A6: Mutual Fund Cash Positions

Sum of US and Euro area domiciled mutual funds. Aggregate cash balances in USD at constant exchange rates as a proportion of total assets. As of Jul 2013.



Source: J.P. Morgan, ECB, ICI

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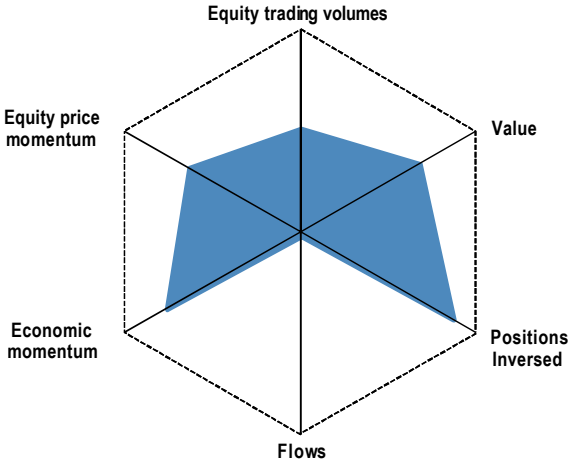
Chart A7: Market health map

Each of the six axes corresponds to a key indicator for markets. The position of the blue line on each axis shows how far the current observation is from the extremes at either end of the scale. The dotted line shows the same but at the beginning of 2012 for comparison. For example, a reading at the centre for value would mean that risky assets are the most expensive they have ever been while a reading at the other end of the axis would mean they are the cheapest they have ever been. See explanation on the right for each indicator. Overall, the larger the blue area within the hexagon, the better for risky markets.



Explanation of indicators

All variables are expressed as the percentile of the distribution that the observation falls into. I.e. a reading in the middle of the axis means that the observation falls exactly at the median of all historical observations.

Equity trading volumes: The Y/Y change in the average daily trading volume of stocks on the NYSE.

Value: The slope of the risk-return tradeoff line calculated across USTs, US HG and HY corporate bonds and US equities (see GMOS p. 6, Loeys et al, Jul 6 2011 for more details).

Positions: Difference between net spec positions on risky & safe haven assets. See Chart A11.

Flow momentum: The difference between flows into equity funds (incl. ETFs) and flows into bond funds. Chart A1. We then smooth this using a Hodrick-Prescott filter with a lambda parameter of 100. We then take the weekly change in this smoothed series as shown in Chart A1

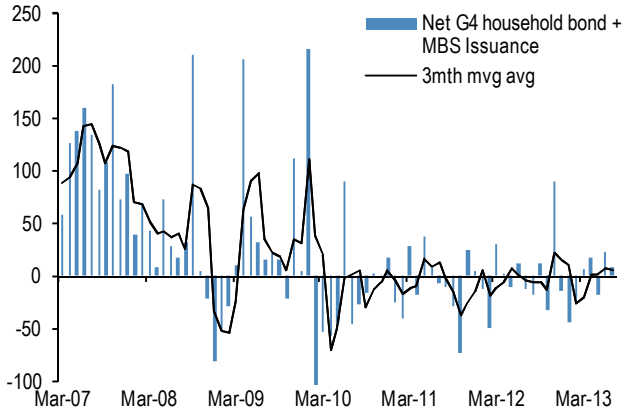
Economic momentum: The 2-month change in the global manufacturing PMI. (See REVISITING: Using the Global PMI as trading signal, Nikolaos Panigirtzoglou, Jan 2012).

Equity price momentum: The 6-month change in the S&P500 equity index.

Credit growth

Chart A8: G4 bank lending to households

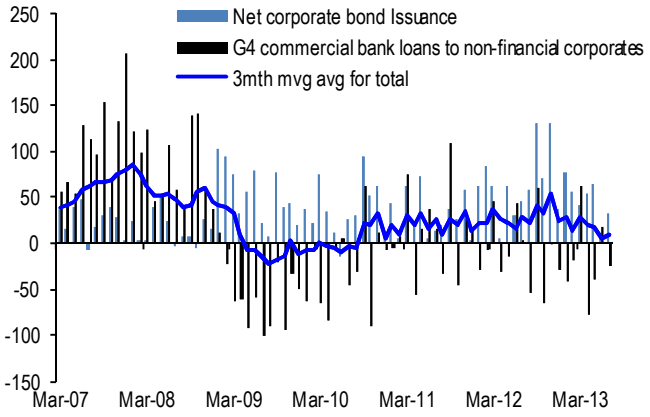
Quarterly changes in outstanding commercial bank loans to households, adjusted for changes in exchange rates and MBS net issuance. As of Jul 2013.



Source: ECB, BoJ, BoE, Federal Reserve, Bloomberg and J.P. Morgan

Chart A9: G4 non-financial corporate debt issuance

Bank lending to and net issuance of secured, unsecured and securitized bonds by US, Japanese and European non-financial corporates. Bank lending is adjusted for changes in exchange rates, net bond issuance is currency unadjusted. As of Jul 2013.



Source: ECB, BoJ, BoE, Federal Reserve, Bloomberg, Dealogic, J.P. Morgan

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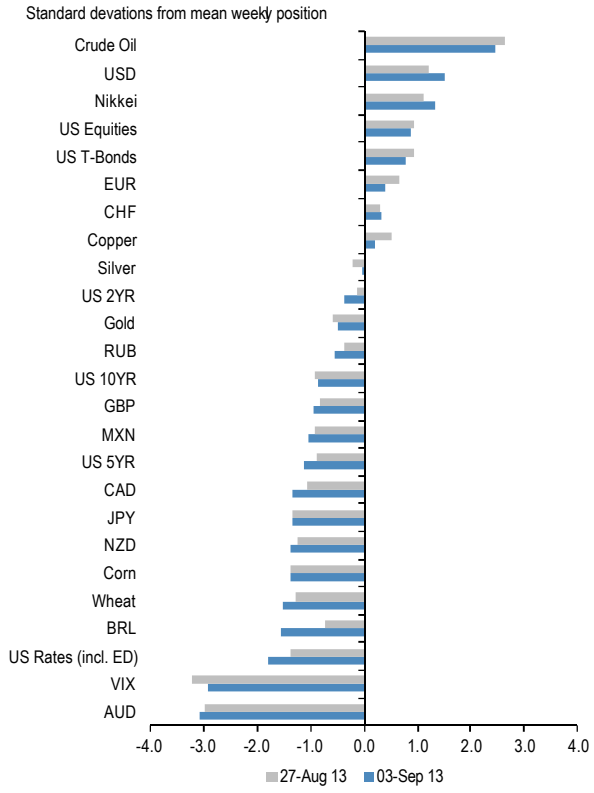
Spec position monitors

Chart A10: Weekly Spec Position Monitor

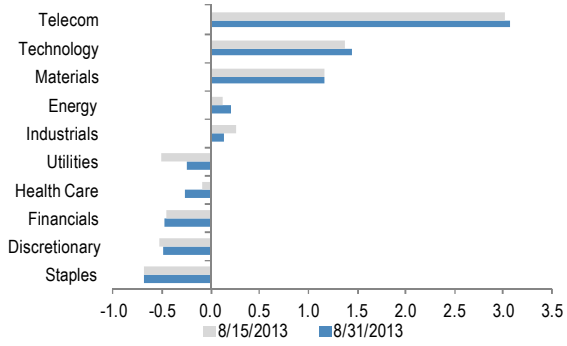
Net spec positions are the number of long contracts minus the number of short using CFTC futures only data. This net position is then converted to a USD amount by multiplying by the contract size and then the corresponding futures price. To proxy for speculative investors, commodity positions use the managed money category, while the other assets use the non-commercial category. The chart shows the z-score of these net positions, i.e. the current net position minus the average over the whole sample divided by the standard deviation of the weekly positions over the whole sample. US rates is a duration-weighted composite of the individual UST series plus the Eurodollar contract. The sample starts on the 13th of June 2006.



Source: Bloomberg, CFTC, J.P. Morgan

Chart A12: S&P500 sector short interest

Short interest as a % of shares outstanding based on z-scores. A strategy which overweights the S&P500 sectors with the highest short interest z-score (as % of shares o/s) vs. those with the lowest, produced an information ratio of 0.7 with a success rate of 56% (see *F&L*, Jun 28, 2013 for more details)

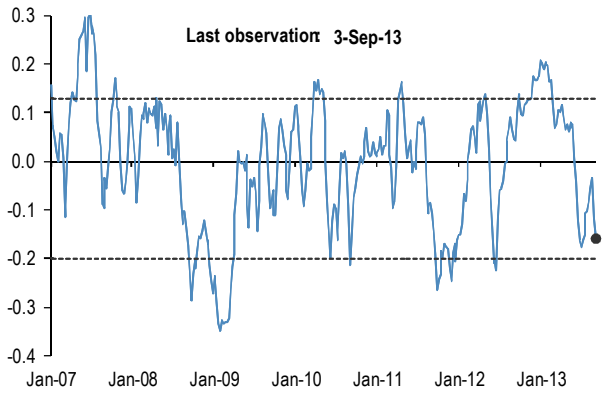


Source: NYSE, J.P. Morgan

Chart A11: Spec position indicator

Difference between net spec positions on risky & safe haven assets

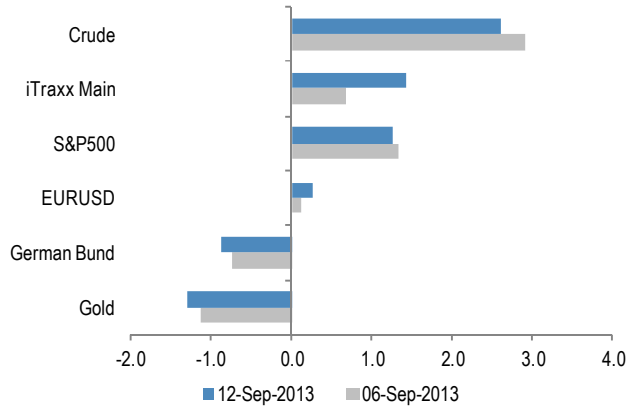
Net spec position is calculated in USD across 7 "risky" and 7 "safe" assets. These positions are then scaled by open interest and we take an average of "risky" and "safe" assets to create two series. The chart is then simply the difference between the "risky" and "safe" series. The final series shown in the chart below is demeaned using data since 2006. The risky assets are: Copper, AUD, NZD, CAD, RUB, MXN and equities (an aggregate of the S&P500, Dow Jones, NASDAQ & Nikkei). The safe assets are: Gold, VIX, JPY, CHF, Silver, an aggregate of the UST and Eurodollar futures & an aggregate USD index. The USD series is the inverse of the sum of positions in EUR, JPY, GBP, CHF, AUD, NZD, CAD, RUB and MXN futures. The UST series is a duration weighted aggregate of the Eurodollar, UST2YR, UST5YR, UST10YR, UST long bond & the UST Ultra long bond futures.



Source: CFTC, J.P. Morgan

Chart A13: Option skew monitor

Skew is the difference between the implied volatility of out-of-the-money (OTM) call options and put options. A positive skew implies more demand for calls than puts and a negative skew, higher demand for puts than calls. It can therefore be seen as an indicator of risk perception in that a highly negative skew in equities is indicative of a bearish view. The chart below shows a z-score of the skew, i.e. the skew minus a rolling two-year average skew divided by a rolling two-year standard deviation of the skew. A positive skew on iTraxx Main means investors favor buying protection, i.e. a short risk position. A positive skew for the Bund reflects a long duration view, also a short risk position.



Source: Bloomberg, J.P. Morgan

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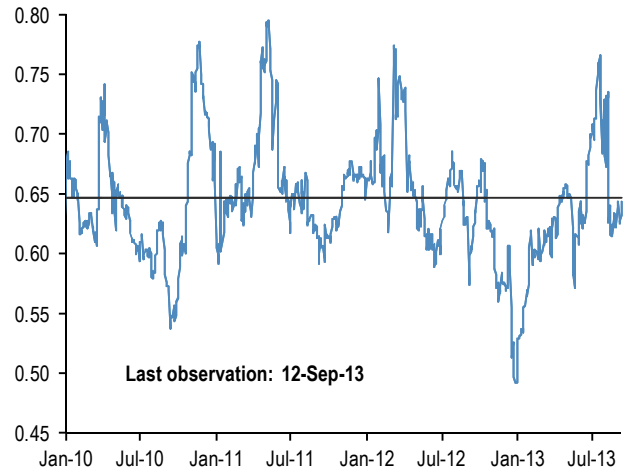
Mutual fund and hedge fund betas

Chart A14: Balanced fund equity exposure

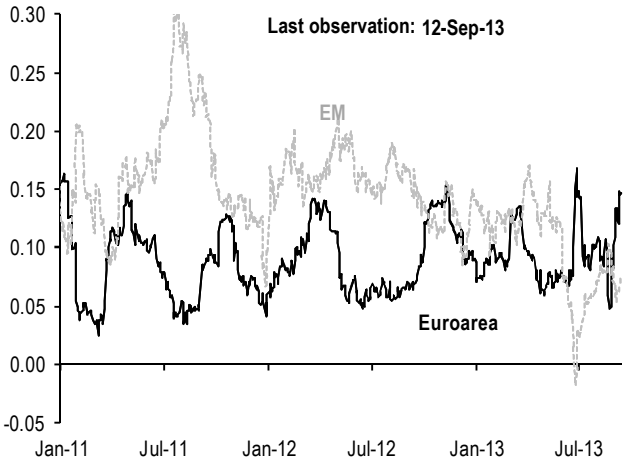
Rolling 21-day beta of balanced MF returns to returns on the S&P500. Balanced funds are top 20 US based funds by assets that have existed since 2006. It excludes tracker funds and funds with a low tracking error. The thin black line is the average during expansion since 2006.



Source: Bloomberg J.P. Morgan

Chart A15: Equity mutual fund beta to Euro vs. US and EM vs. US equities relative performance

41-business-day rolling beta of the average daily returns of 20 biggest US-domiciled active equity funds against the daily relative return of Euro area vs. US equities and emerging markets vs. US equities. The betas are based on multiple regressions of the relative performance of the Eurostoxx50 vs. the S&P500, MSCI EM vs. the S&P500 and the S&P500 outright performance.

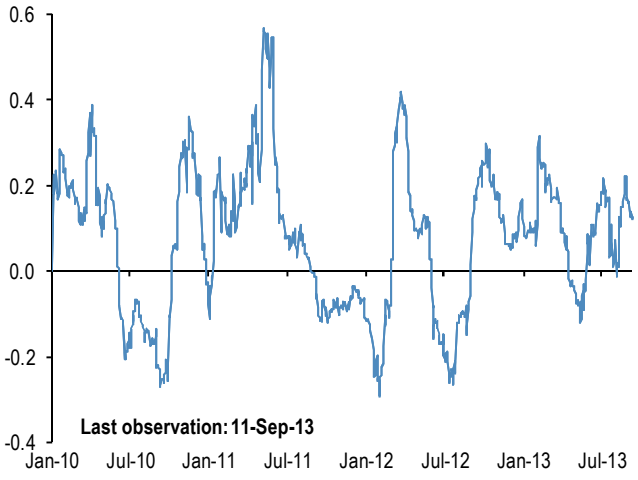


Source: Bloomberg J.P. Morgan

Chart A16: Macro hedge fund monitor

Macro hedge fund equity exposure

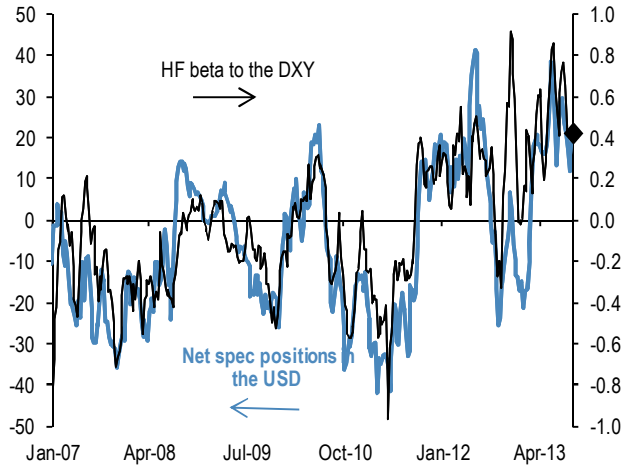
Rolling 21-day beta of macro fund returns to returns on the S&P500. The beta represents the average exposure of macro hedge funds to equities over the previous 21-days.



Source: Datastream, Bloomberg, J.P. Morgan

Chart A17: Currency hedge fund USD exposure

The rolling 21-day beta of the Barclay Hedge FX index with the DXY vs. the net spec position in the USD as reported by the CFTC. Spec is the non-commercial category from the CFTC. Last observation is Sep 3, 2013.



Source: CFTC, Datastream, Barclay Group, Bloomberg, J.P. Morgan

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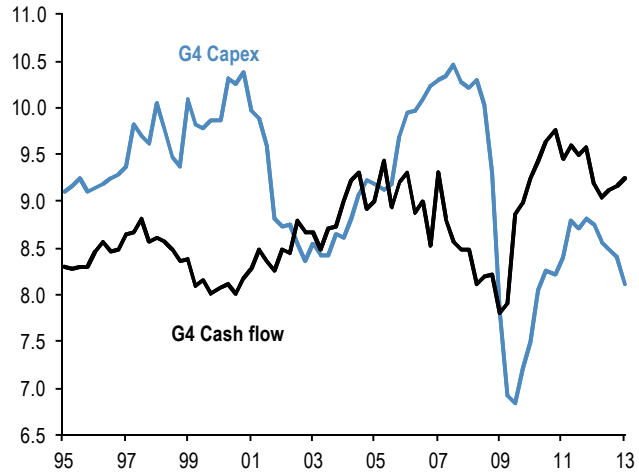
Corporate activity

Chart A18: G4 non-financial corporate capex and cash flow as % of GDP

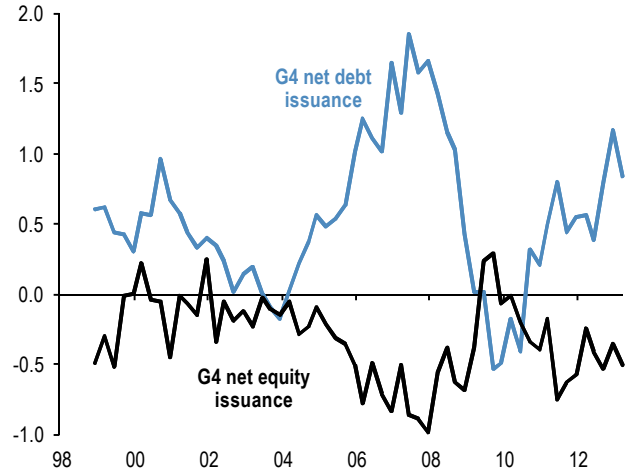
% of GDP, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q1 2013.



Source: ECB, BOJ, BOE, Federal Reserve flow of funds

Chart A19: G4 non-financial corporate sector net debt and equity issuance

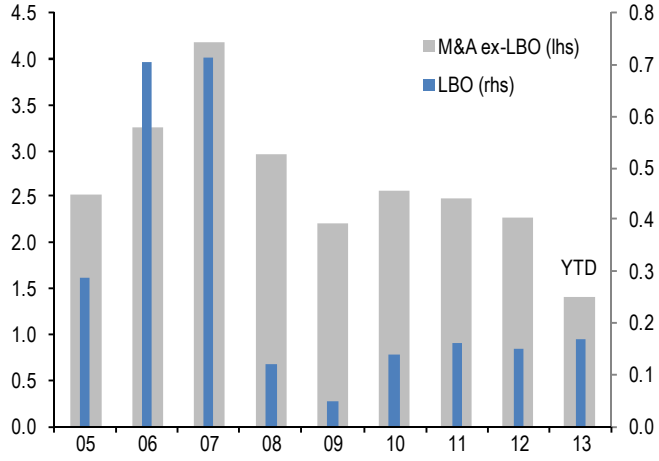
$tr per quarter, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q1 2013.



Source: ECB, BOJ, BOE, Federal Reserve flow of funds

Chart A20: Global M&A and LBO

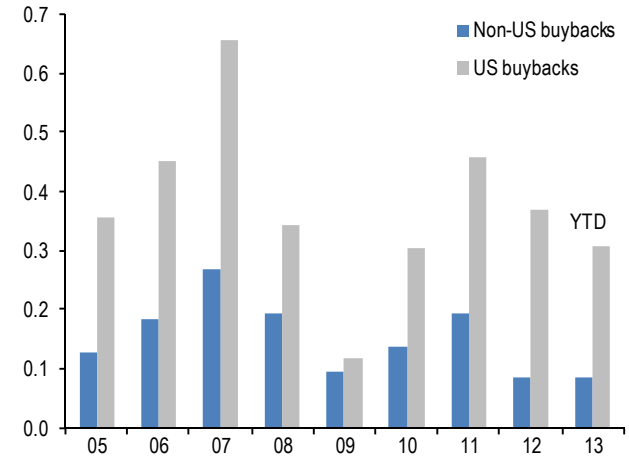
$tr. YTD 2013 as of Sep 13, 2013. M&A and LBO's are announced.



Source: Reuters Thomson One, J.P. Morgan

Chart A21: US and non-US share buybacks

$tr, YTD 2013 as of Sep 13, 2013. Buybacks are announced.



Source: Reuters Thompson One, J.P. Morgan

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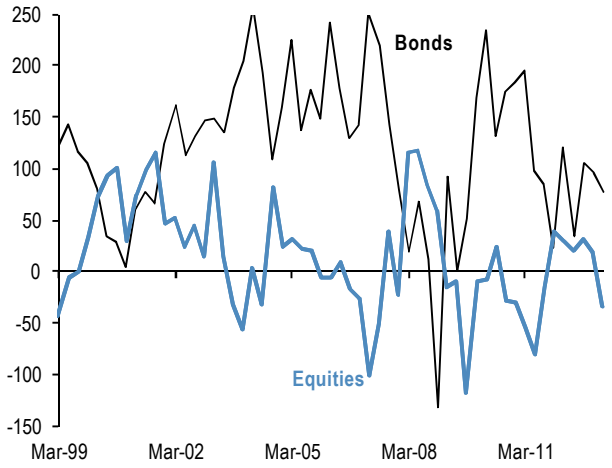
Pension fund and insurance company flows

Chart A22: G4 pension funds and insurance companies equity and bond flows

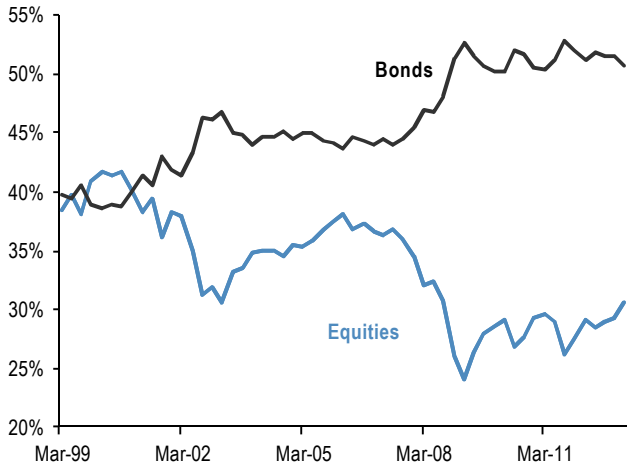
Equity and bond buying in $bn per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q1 2013



Source: ECB, BOJ, BOE, Federal Reserve flow of funds

Chart A23: G4 pension funds and insurance companies equity and bond levels

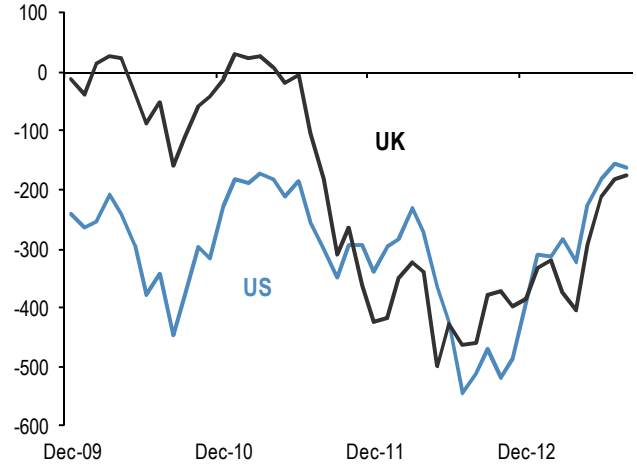
Equity and bond as % of total assets per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q1 2013.



Source: ECB, BOJ, BOE, Federal Reserve flow of funds

Chart A24: Pension fund deficits

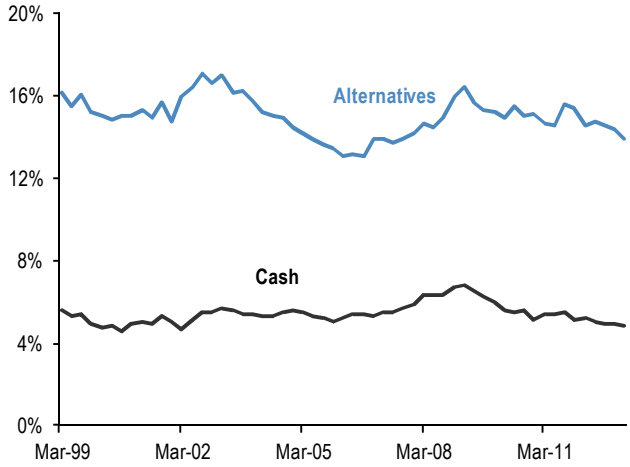
US$bn. For US, funded status of the 100 largest corporate defined benefit pension plans, from Milliman. For UK, funded status of the defined benefit schemes eligible for entry to the Pension Protection Fund, converted to US$ at current exchange rates. Last observation is Aug 2013.



Source: Milliman, UK Pension Protection Fund, J.P. Morgan

Chart A25: G4 pension funds and insurance companies cash and alternatives levels

Equity and bond as % of total assets per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q1 2013.



Source: ECB, BOJ, BOE, Federal Reserve flow of funds

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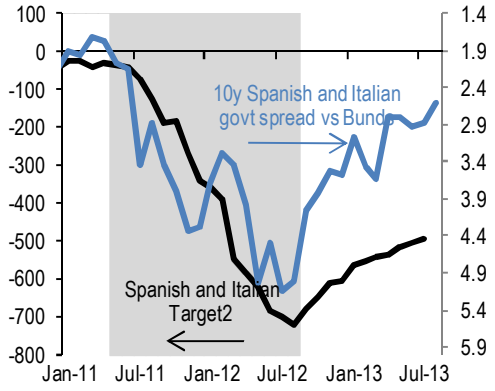
European Funding market monitor

Table A4: Bank deposits and ECB reliance

Deposits are non-seasonally adjusted Euro area non-bank, non-government deposits as of Jul 2013. We take total deposits (item 2.2.3. in MFI balance sheets minus "deposits from other financial institutions", which includes deposits from securitized vehicles and financial holding corporations among others. We also subtract repos (item 2.2.3.4) from the total figures to give a cleaner picture of deposits outside interbank borrowing. ECB borrowing and Target 2 balances are latest available. ECB borrowing is gross borrowing from regular MROs and LTROs. The Chart shows the evolution of Target 2 balance for Spain and Italy along with government bond spreads. The shaded area denotes the period between May 2011 and Aug 2012 when convertibility risk premia were elevated due to Greece exit fears.

€bn	Target 2 bal.	Target 6m chng	ECB borrowing	Depo 3m chng	Depo 12m chng
Austria	-40	0	7	-0.3%	1.2%
Belgium	-15	2	14	1.3%	6.3%
Cyprus	-7	0	0	-9.8%	-24.4%
Finland	27	-17	3	1.2%	0.1%
France	-56	30	93	0.8%	4.3%
Germany	574	-39	12	0.3%	0.7%
Greece	-53	34	62	-0.1%	6.4%
Ireland	-73	21	44	-2.5%	2.6%
Italy	-234	23	242	-0.7%	6.7%
Luxembourg	101	1	3	2.4%	4.3%
Netherlands	62	-63	15	-0.2%	1.1%
Portugal	-65	-2	52	1.6%	-1.6%
Spain	-281	55	256	1.4%	7.1%

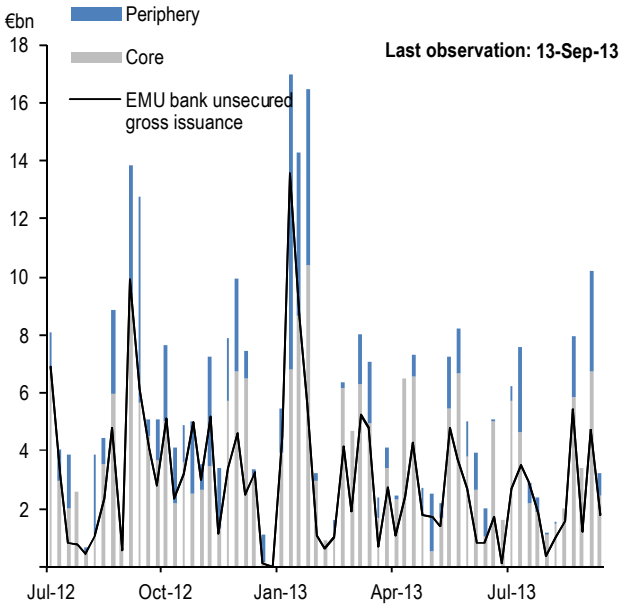
Source: Bloomberg, ECB, National Central Banks, J.P. Morgan



Source: Bloomberg, National Central Banks, J.P. Morgan

Chart A26: Euro area gross bank debt issuance

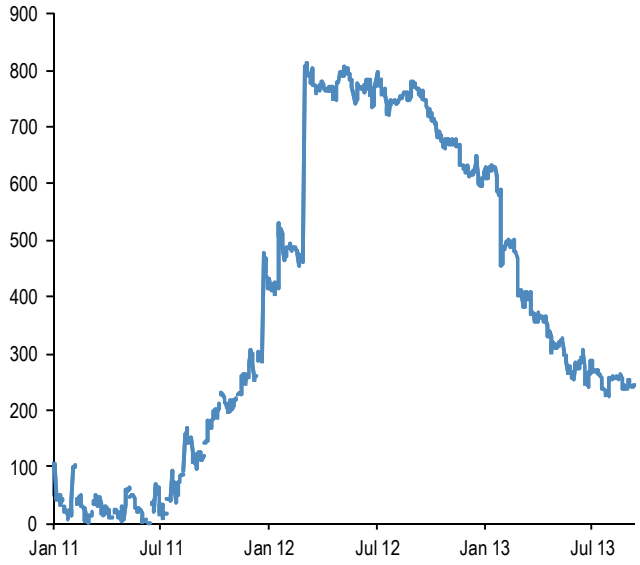
Includes secured, unsecured and securitized issuance in any currency. Excludes short-term debt (maturity less than 1-year) and self funded issuance (where the issuing bank is the only book runner).



Source: Dealogic, J.P. Morgan

Chart A27: Excess cash in the Euro area banking system

€bn, Measured as the difference between the amount in the ECB deposit facility minus that in the lending facility, plus the difference between the current account reserves that banks hold with the ECB minus required reserves. Last observation is Sep 12, 2013.



Source: ECB, J.P. Morgan

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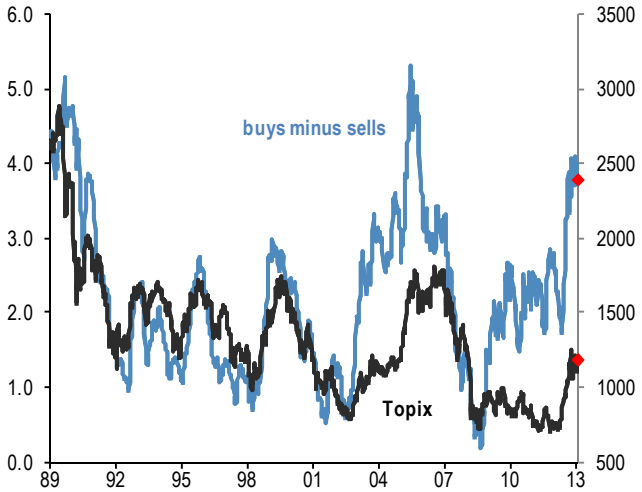
Japanese flows and positions

Chart A28: Tokyo Stock Exchange Margin trading: total buys minus total sells

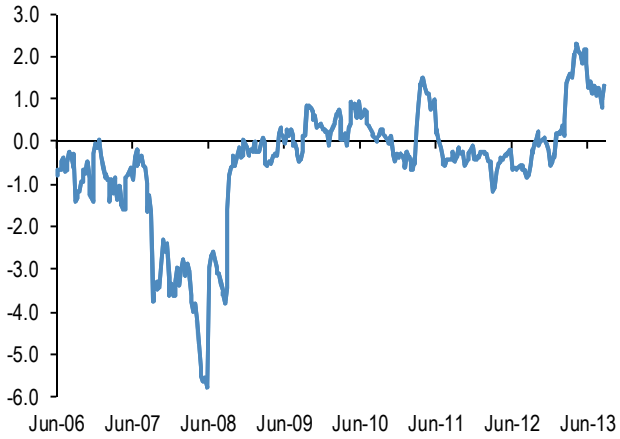
in mn of shares. Last observation is Sep 6, 2013



Source: Tokyo Stock Exchange, J.P. Morgan

Chart A29: Spec positions on Nikkei

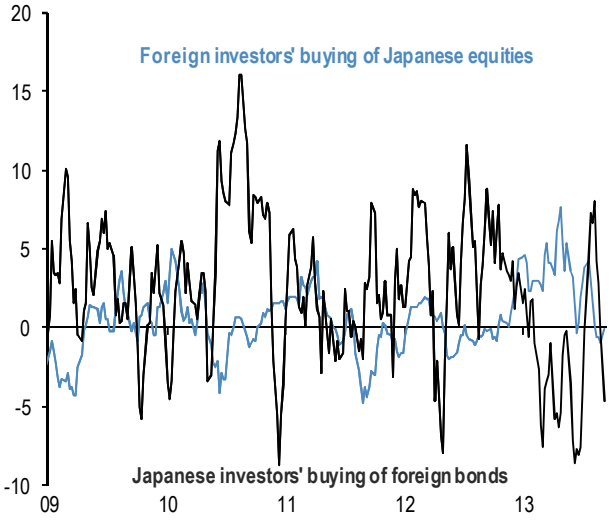
$bn. Last observation is Sep 3, 2013



Source: CFTC, J.P. Morgan

Chart A30: Japanese equity buying by foreign investors. Japanese investors' buying of foreign bonds

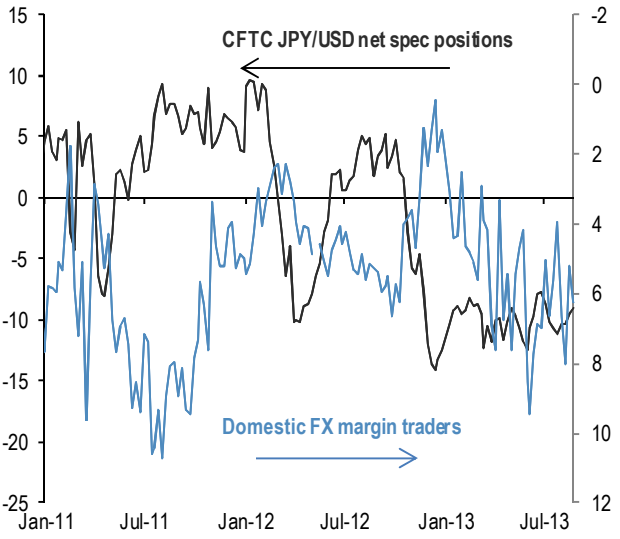
$bn, 4 week moving average. Last observation is Sep 6, 2013



Source: Japan MoF, J.P. Morgan

Chart A31: JPY positions

CFTC positions are in $bn, FX margin trader positions are in JPY tr. FX margin trader positions are in reverse order and the net short position. A higher number means a larger short and vice versa. Last observation is Aug 21, 2013



Source: Bloomberg, MoF, CFTC, Nikkei Veritas, J.P. Morgan.

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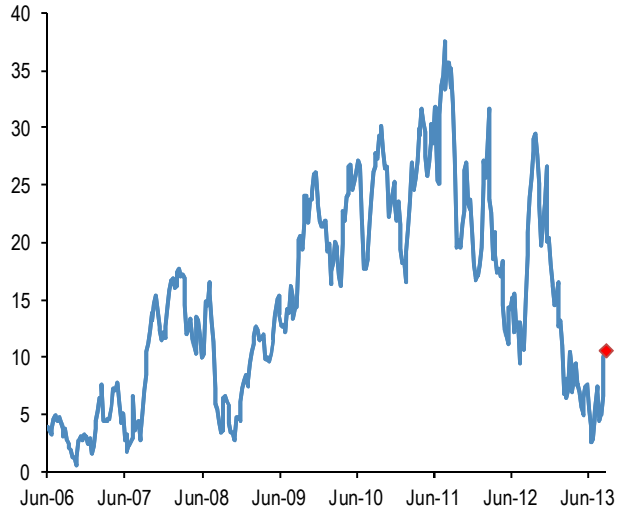
Gold flows and positions

Chart A32: Spec positions

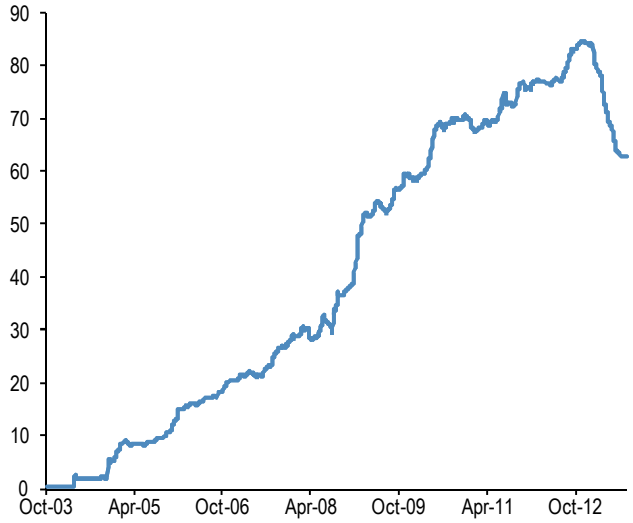
$bn. CFTC net long minus short position in futures for the Managed Money Category. Last observation is Sep 3, 2013



Source: CFTC, Bloomberg, J.P. Morgan

Chart A33: Gold ETFs

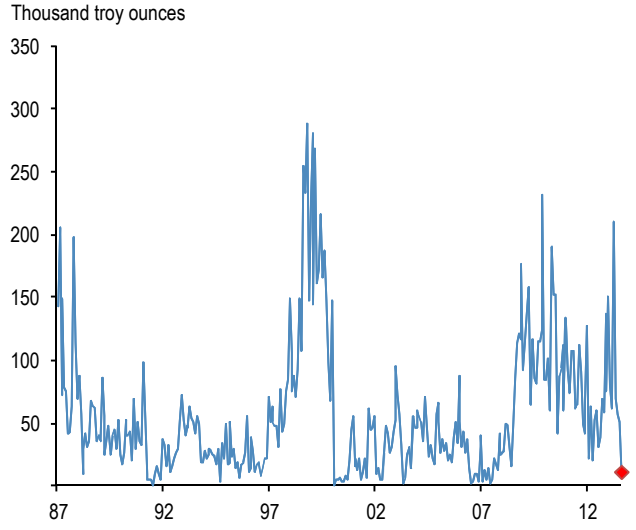
Mn troy oz. Physical gold held by all gold ETFs globally. Last observation is Sep 12, 2013.



Source: Bloomberg, J.P. Morgan

Chart A34: Gold coin sales

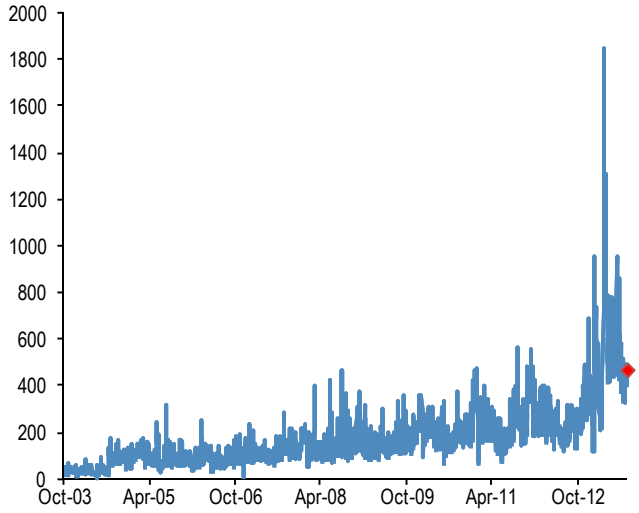
Last observation is Aug 2013



Source: US Mint, Bloomberg, J.P. Morgan

Chart A35: Shanghai exchange gold volumes

Thousand troy ounces. Last observation is Sep 12, 2013



Source: Shanghai Gold Exchange, Bloomberg, J.P. Morgan.

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