

Flows & Liquidity

The QE stock effect post BoJ

- **QE creates scarcity by making one form of collateral (government bonds) more expensive relative to another (zero yielding reserves).**
- **The BoJ is set to inject \$700bn of excess reserves into the banking system this year at the same time as withdrawing \$400bn of government debt securities from bond markets. Similarly, the Fed is set to inject close to \$1000bn of excess reserves into the banking system at the same as it withdraws \$260bn of government debt securities.**
- **The ratio of excess reserves at the Fed/BoJ/ECB/BoE, divided by the stock of government securities held outside these central banks, looks set to rise from 10% at the end of March to around 14% by year end.**
- **ETF flows show that investors are buying US and Japanese equities at the expense of W. European and EM equities.**
- **Spec investors appear to be retrenching. Our macro hedge fund beta to equities has turned negative for the first time since mid 2012.**
- **Meffrepo, the Spanish domestic repo market rose to a record high in March, helping Spanish banks to repay a further €11bn of their 3y LTRO borrowings.**
- **Greater access to private repo markets raises the risk of faster LTRO repayments going forward.**
- **Financial demand for gold declined along with gold prices, but no indication yet of a deterioration in physical demand.**

• Not much has changed in Japanese flows since we commented last week. The most significant change has been in domestic FX positions, with retail FX margin traders cutting their yen shorts sharply last week to ¥3.3tr vs. ¥7.6tr before the April 4th BoJ meeting. Overseas investors JPY spec shorts were little changed at close to \$10bn based on CFTC data. This is two standard deviations from the historical average but the level is below the historical peak of the \$19bn short position seen in June 2007.

• A similar reaction took place in the equity space. Domestic leveraged accounts (i.e. margin accounts) at the Tokyo Stock Exchange got less bullish last Friday, with the gap between buys and sells declining to 3.4 million shares vs. 3.6 million shares in the previous week and 3.9 million shares before the BoJ meeting. But overseas investors got even more bullish on Japanese equities with spec positions on the Nikkei reaching an all time high of \$2.1bn last week.

Global Asset Allocation

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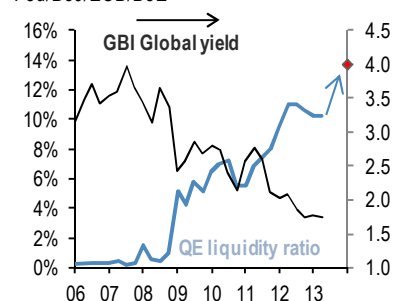
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Figure 1: QE liquidity ratio

% ratio of excess reserves divided by stock of govt debt held outside the Fed/BoJ/ECB/BoE



Source: Fed, BoJ, BoE, ECB, J.P. Morgan

See page 19 for analyst certification and important disclosures.

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- To systematically monitor the most important Japanese flows and positions we introduce an extra page at the back of *Flows & Liquidity*.
- Overall, the above evidence shows that **domestic investors reduced their exposure to the Japanese trade while overseas investors raised their exposure following the April 4th BoJ meeting**. It also suggests that the Japanese trade could be vulnerable to potential unwinding of positions by leveraged accounts.
- For example, the historical peak of the buy-sell metric in Tokyo Stock Exchange margin accounts was 5mn shares in early 1990 and early 2006. So the current level of 3.4 million shares is significantly below that peak. But the peaks in this metric are not uniform. As shown in Chart A28, previous corrections in Japanese equities in 1996 or 1999 took place when this metric was closer to 3 million shares. The fact that this metric experienced a decline for two consecutive weeks, the first two-week decline since last December, is a worrying sign, in our view. Leveraged accounts typically have tight risk limits, so a small equity correction of the order of 5% or so could trigger a sharp unwinding of by these accounts, especially given the 55% rise in the Topix index since last November.
- It is often mentioned that the locals have not participated in the Japanese equity rally or the yen depreciation, and that post May's Golden week, i.e. after the week ending May 5th, domestics will add further fuel by participating to the Japanese trade. It is possible that domestic participation will rise post Golden week, but in our view, **it is not true that local investors have not participated yet**.
- Margin accounts in the Tokyo Stock Exchange, typically domestic investors, have been raising their bullish bets steadily since the end of December. FX margin accounts, typically Japanese retail investors, had been also raising their short JPY bets since the end of December, from a low of ¥0.5tr yen shorts on Dec 12th to a high of ¥7.6tr yen shorts on April 3rd. Finally, Japanese investors have been selling foreign equities frantically since the beginning of the year well beyond the \$1bn per week upper bound seen in previous years, likely to buy domestic equities (Chart A30). All these three flows retrenched post BoJ April 4th meeting, as domestic investors took some profit on the Japanese trade, but positions are still elevated vs. year-end levels.
- **Where there is more ambiguity is with respect to Japanese equity positions of leveraged vs. real money accounts**. As explained above, leveraged accounts positions appear extreme when one looks at overseas specs on Nikkei futures. One way to gauge real money positions is via fund manager surveys. The latest Merrill Lynch Fund Manager survey showed the highest net balance of real money investors reporting a Japanese equity overweight since 2007, but this balance is still 40% away from the 2006 highs. So the message from this survey is consistent with the message we get from domestic margin accounts in Chart A28. At 3.4 million shares, this metric is also 40% away from its all time high seen at the beginning of 2006.
- We mentioned last week the displacement caused by BoJ purchases this year. The offset that central bank purchases provide to government debt issuance, represent the so called Demand or Flow Effect of QE. In fact, central bank purchases more than offset government bond supply this year. The BoJ is going to surpass government debt supply this year by buying \$720bn of government debt vs. government net supply of \$320bn, resulting in a net withdrawal of \$400bn of government debt securities from bond markets.

Assuming \$85bn per month purchases for the whole year the Fed looks set to buy \$1020bn of USTs and MBS securities this year vs. net issuance of \$760bn, so a net withdrawal of \$260bn from bond markets.

- But there is another impact caused by BoJ purchases. The stock of excess reserves is likely set to rise sharply this year roughly in line with the amount of BoJ purchases, i.e. by \$720bn, at the same time as the stock of government debt held outside the BoJ shrinks by \$400bn. Similarly, the Fed looks set to inject close to \$1000bn of excess reserves into the banking system at the same time as it withdraws \$260bn of government securities.
- This additional effect caused by the rise in central bank reserves, represents the Liquidity or Stock Effect of QE. We discussed this stock effect in a previous F&L on Dec 14th. The idea is that **QE creates scarcity** by making one form of collateral (government bonds) more expensive relative to another (zero yielding reserves). Given that the banking system cannot get rid of reserves, **these zero yielding reserves, become the “hot potato” that banks and other investors try to pass to each other** until the relative pricing is adjusted enough to remove the incentive for banks or investors to get rid of these reserves.
- And because the relative scarcity of these two forms of collateral depends on relative stocks rather than flows, the price effect would remain even in an environment where flows disappear. That is, even if central banks were to stop purchasing bonds, making the flow or demand effect of QE to go away, the liquidity or stock effect would continue to affect the relative pricing of government bonds vs. zero yielding reserves.
- **By how much is this Liquidity or Stock effect of QE affected by the BoJ policy?** The change in the relative stocks of these two forms of collateral, excess reserves vs. the government debt held outside the central banks, in the case of BoJ at $(\$720bn - (-\$400bn)) = \$1120bn$, comparable to that caused by the Fed $(\$1020bn - (-260bn)) = \$1280bn$.
- As a result, the liquidity or stock effect looks set to intensify this year. To quantify this liquidity effect across the G4 we use the ratio of excess reserves at the Fed/BoJ/ECB/BoE, divided by the stock of government securities held outside these central banks. Factoring additional QE by the Fed, BoJ, and BoE (we expect an extra £50bn of Gilt purchases by the BoE this year) and another reduction of around €200bn of excess reserves in the Euro area banking system due to further LTRO repayments, we project that this liquidity ratio will rise from 10% at the end of March to around 14% by year end. Again, under the assumption that bond buying by the Fed will continue at \$85bn per month until the end of the year.
- What does this mean for government bond yields? One simple way is to look at the changes in this liquidity ratio vs. changes in government bond yields. This is shown in Figure 1. **Figure 1 shows there were two major episodes in the evolution of the liquidity ratio in recent years.** The first major episode was in H2 2008, immediately after the Lehman crisis, when the liquidity ratio jumped from 0.5% to 5.0%. The second major episode was during 2011 and the first half of 2012. During these 6 quarters, the liquidity ratio rose from 5.5% to 11.0%.
- Figure 1 shows these two episodes saw the biggest declines in bond yields over the past five years. During the first episode the government bond yield of our GBI Global index declined by 120bp. During the second episode the GBI Global index bond yield declined by 70bp. Given that the two episodes were accompanied by a similar 5% increase in the liquidity ratio, this suggests there

are diminishing effects to QE, i.e. each further 5% increase in the liquidity ratio exerts smaller downward pressure on bond yields. It would be thus reasonable to assume that another episode of a 5% rise in the liquidity ratio for example should lower bonds yields by less than 70bp, perhaps by around 40bp or so.

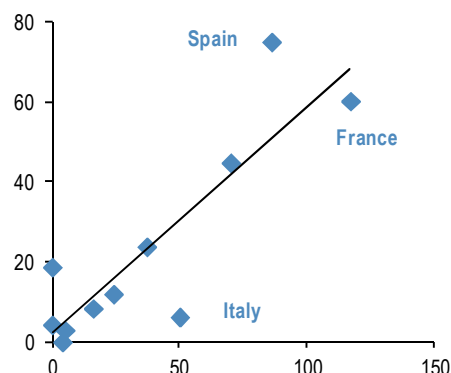
- With the caveat that it is difficult to separate the flow, stock or signaling effects of QE, mechanically this simplistic exercise suggests that a 4% increase in the liquidity ratio over the next three quarters could push bond yields lower by around 30bp (from March end levels of 1.75% for the GBI Global index yield).

Italian banks key to path of LTRO repayment

- The ECB today announced early LTRO repayment of €11bn, confirming a step up in the pace of repayment, to €37bn over the past four weeks. In total, banks have now paid back €275bn of their LTRO borrowing.
- We presented in January an analysis of Euro area banks' balance sheets, tallying some cash inflows (ECB borrowing, net debt issuance, and deposit growth) and outflows (bond buying and loan creation), with the balance of the two giving a guide to the surplus cash held by each banking sector, and so an indication of how much LTRO borrowing they might be able to repay. Figure 2 plots the amount of LTRO borrowing paid back so far by each country's banks (on the Y-axis), alongside our mechanical estimate from January of their capacity to repay (on the X-axis). The ordering of the two lines up fairly closely, but with two outliers: Spanish banks have paid back more than expected, and Italian banks less than expected.

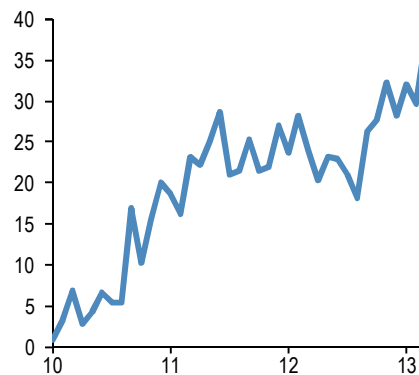
Figure 2: LTRO repayment

Y-axis is LTRO repayment so far by country, X-axis is January estimate of repayment capacity by country



Source: ECB, National central banks. J.P.Morgan

Figure 3: Outstanding amount in MeffRepo €bn



Source: MeffRepo

Table 1: Sources and uses of LTRO funds by country

		AT	BE	FI	FR	GE	GR	IR	IT	LX	NL	PT	ES
(Net increase)	Dec LTRO	8	4	2	15	34	4	4	58	2	-3	0	52
(Net increase)	Mar LTRO	6	4	1	35	27	30	-2	75	2	21	9	114
Total ECB borrowing		1	-3	4	42	4	-33	-41	129	-1	2	4	161
Nov 2011 to Feb 2013 (net increase)													
Net debt issuance	Dec11 to Feb13	-9	-10	0	7	-91	-14	-14	-9	-1	20	-13	-54
Bond purchases	Dec11 to Feb13	-14	-12	0	35	-47	-7	4	158	-12	6	7	83
Loan creation	Dec11 to Feb13	1	1	16	11	-1	-24	-12	-10	-11	63	-25	-158
Deposit inflows	Dec11 to Feb13	12	35	13	64	53	-9	1	123	6	68	-25	-161
Residual/Surplus funds in Feb		17	33	2	68	14			95	28	21		21
Total LTRO borrowing		16	37	4	164	70	2	62	257	5	24	48	302
LTROs repaid YTD		8	24	0	60	45	0	19	6	3	12	4	75
Remaining LTRO borrowing		8	13	4	104	25	2	43	251	2	12	44	227
Total deposits at the ECB in Jan		59	19	37	98	241	4	4	24	27	165	2	24

- We update the balance sheet analysis in Table 1. The path for LTRO repayment, and so for excess cash, largely depends on the three banking systems that borrowed most heavily from the LTROs: France, Spain and Italy.
- French banks have paid back their LTRO funding broadly in line with the Euro area average pace, and the balance sheet analysis in Table 1 suggests

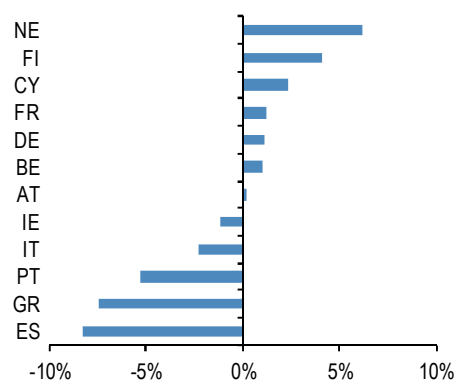
mechanically that they have sufficient surplus funds to pay back the majority of their remaining €100bn or so of 3yr LTRO.

- We associate the sizeable repayment from Spanish banks primarily with the stronger banks running down their cash holdings, consistent with the €50bn Q1 fall in deposits at the Bank of Spain, to just over €20bn. On that basis, Spanish LTRO repayment should slow from here.
- But Spanish repayment could continue if they have comfortable access to the Spanish repo market. MeffRepo, the Spanish domestic repo market saw a sharp rise in its outstanding amount during March (Figure 2). The monthly change in the outstanding amount exceeded €8bn in March, matching last September's rise. The highest monthly rise on record had taken place in September 2010, when Spanish banks started establishing/participating in central counterparty to bolster the capacity of Spanish repo markets.
- The March rise looks encouraging, suggesting that Spanish banks have comfortable access to repo markets allowing them to continue to repay 3y LTROs by replacing ECB repos with private markets repos. Indeed, in the month of March, when the big rise in outstanding Meff repos took place, Spanish banks repaid €11bn of their previous 3y LTRO borrowings.
- Italian banks are the main swing factor, in our view. They had paid back almost nothing through March, even though, as in Spain, the two largest banks, who borrowed some €60bn between them, have sufficient cash to do so. The degree of such precautionary borrowing from the ECB depends on the opportunity cost (i.e. where banks can fund in private repo markets) and perceptions of the risk of a funding squeeze, which should ease over time.

Euro area lending growth

- The dispersion in bank lending growth across countries is one indicator of the Euro area's malfunctioning monetary transmission mechanism (Figure 4). The ECB has repeatedly highlighted that bank lending depends on funding, capital and risk aversion, arguing that it can only affect the first of these.
- What is the relative importance of each of these factors in driving bank lending? To get at this question, we estimate a pooled regression, relating annual growth in household and corporate lending in the Euro area countries in Figure 4 over the past four years to (i) the previous year's lending growth; (ii) current year growth expectations, taken from the first European Commission growth forecast for the year, as a guide to riskiness of expanding lending; (iii) the previous year's Tier 1 capital ratio; and (iv) each country's sovereign spread to Germany.
- We find strong serial correlation in lending, with a **10% fall in lending one year associated with a 3% reduction the following year**. We also find a strong relationship between GDP growth and lending, with a 1% reduction in GDP growth forecasts associated with roughly a 1% fall in lending growth. In this case, the causality clearly runs both ways, with weak growth and weak lending reinforcing each other. **Past lending growth and GDP growth expectations each explain around a quarter of the variation in lending growth over this sample.**
- In this simple setup, we don't find a significant relationship between sovereign spreads or ex ante capital and lending growth, after controlling for GDP growth forecasts (there is a relationship before controlling for growth expectations). We do not take this to mean that capital does not affect lending, but rather that the relationship between the two is not captured by this very simple framework. For example, by end-2011 Irish banks had the strongest

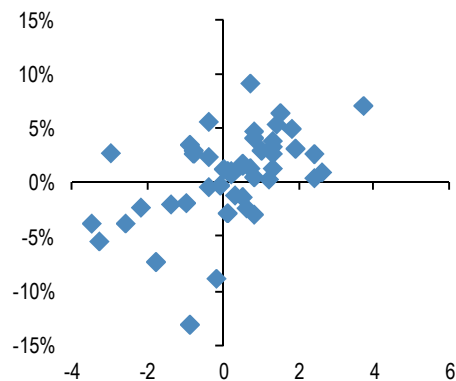
Figure 4: Growth in household and corporate lending by country
 Per cent, YoY



Source: ECB, J.P.Morgan

Figure 5: Lending growth vs GDP growth forecasts

Lending growth on Y-axis, GDP on X-axis. 12 Euro area countries, 2009-2012.



Source: European Commission, ECB, J.P.Morgan

Tier 1 ratio in the sample, but weak lending growth, likely due in part to the risks that remain on their mortgage books.

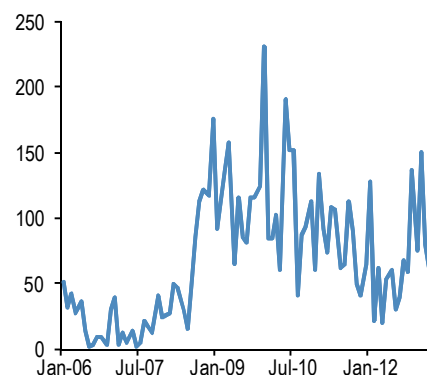
Investors favor US and Japanese equities and HY loans

- Across asset classes, flows into equity ETFs have plateaued in recent weeks, while bond funds continue to see strong inflows. Commodity fund flows have collapsed, driven by heavy gold and silver fund outflows.
- Although equity flows have slowed in aggregate, this masks considerable divergence between regions. Flows into US and Japanese equity ETFs have continued at a strong pace throughout 2013 year to date, while flows into EM and W. European equity ETFs have slowed and turned negative. As shown in Chart A5 on page 8, cumulative flows into EM and W. European equity ETFs peaked in mid February and have been moving lower since then while flows into US and Japanese equity funds remain very strong. In credit, HY ETFs continue to receive the lion's share of flows, mostly driven by HY loans.

Who sold the gold?

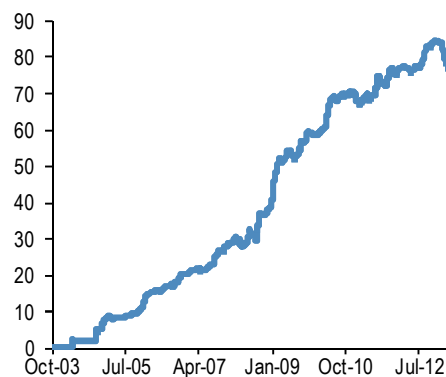
- Gold's 1 day fall of 9% on Monday was one of the largest 1-day falls in the history of the gold market, but what do we know about who was selling?
- We have three high frequency flow indicators for the gold market, CFTC futures positions, Gold ETFs and gold coin sales in the US. Of course, these only make up a portion of gold demand but the remaining physical demand is difficult to capture on a high frequency basis.
- The peak in gold ETF holdings of physical gold was actually in December 2012 and there have been reasonably steady outflows since then. In contrast, the peak in the gold price was in October 2012 and it has been falling steadily since then. Additionally, the outflows from gold ETFs have continued in the latter part of this week, even though the gold price has rebounded some 4%. Looking further back there has not been a strong correlation between ETF flows and gold prices on either a high or low frequency basis. ETFs do not seem likely to have been the culprit here, although Monday's \$1.8bn outflow undoubtedly didn't help.
- Sales of American Eagle gold coins, perhaps an indicator of retail investment demand, have actually risen sharply over the past two weeks (Figure 6). Total sales so far in April are 153,000 ounces, already the highest month since mid 2010, and we still have two weeks to go.
- That leaves CFTC managed money futures positions. Unfortunately, we only have data up until last Tuesday, the 9th of April, so not including the sell-off period itself. However, there has historically been a strong correlation between changes in these positions and changes in the gold price, so it seems likely that CFTC positions will also have fallen sharply, but we have to wait until next week to know for sure.
- In summary, of the three high frequency indicators of gold demand at our disposal, it seems likely that futures investors will turn out to be the biggest sellers over the sell-off period. Of course this doesn't tell us anything about causality, especially as we are missing a large part of the physical market. Anecdotal reports suggest that physical demand, driven by China was very strong in the days following the sell-off, so this may well be what has allowed prices to stabilize at current levels.

Figure 6: Sales of American Eagle gold coins
Thousand ounces. Last observation is the first two weeks of April.



Source: US Mint, Bloomberg

Figure 7: ETF holdings of physical gold
Thousand troy ounces.



Source: Bloomberg

Table A1: Weekly flow monitor

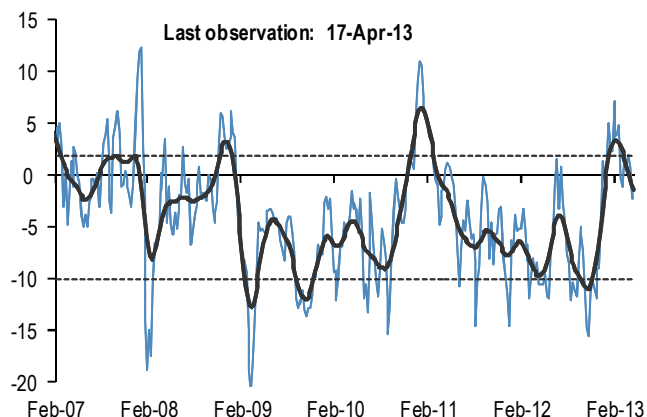
\$bn, Includes US domiciled Mutual Fund flows from ICI with a one week lag and globally domiciled ETF flows from Bloomberg. Current week data only includes ETF flows.

MF & ETF Flows	17-Apr	4 wk avg	13 wk avg	2012 avg
All Equity	0.1	1.8	6.2	-0.4
All Bond	1.2	4.1	5.2	6.7
US Equity	2.2	1.2	2.6	-1.5
Intl. Equity	-2.1	0.4	3.3	1.3
Tax able Bonds	1.2	4.3	4.8	5.7
Municipal Bonds	0.0	-0.2	0.3	1.0

Source: Bloomberg, ICI, J.P. Morgan

Chart A1: Fund flow indicator

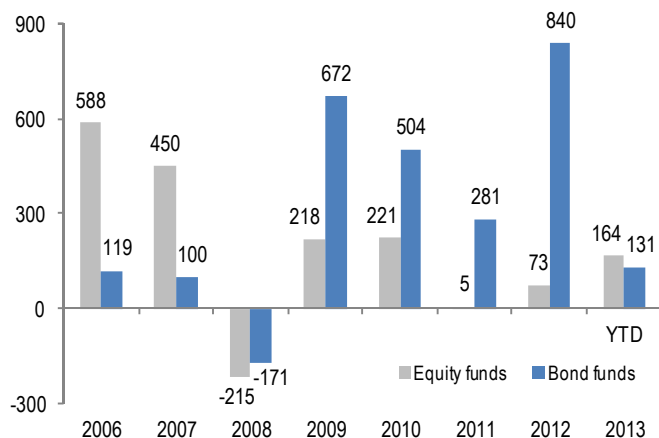
Difference between flows into Equity and Bond funds: \$bn per week. Flow includes US domiciled Mutual Fund and globally domiciled ETF flows. Current week data only includes ETF flows. The thin blue line shows the 4-week average of this difference. The thick black line shows a smoothed version of the 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 Q4'12 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	19-Apr	4 wk avg	13 wk avg	y/y chng
Global IPOs	6.2	3.5	3.0	-4%
Secondary Offerings	1.0	4.8	6.0	27%
Gross corporate bond issuance				
United States	9.6	13.2	29.4	4%
Western Europe (€bn)	12.8	13.6	17.4	-28%
Corporate announcements				
M&A - Global	44.6	36.1	40.0	-2%
- US Target	41.2	14.6	21.1	73%
- Non-US Target	3.4	21.5	19.0	-33%
US buybacks	1.3	3.7	10.6	27%
Non-US buybacks	0.1	3.2	3.0	55%

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 same 3m average period last year.

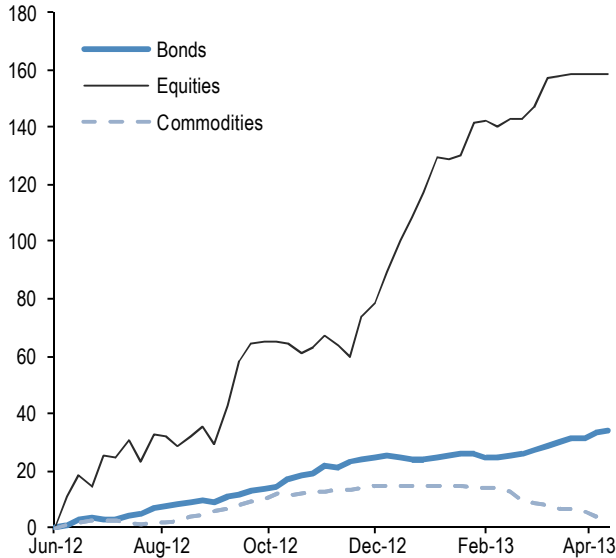
Equities	MIN	MAX	3m avg to Mar-2013 (tr)	y/y chng
EM Equity			\$1.22	4%
DM Equity			\$9.88	2%
Govt Bonds				
USTs			\$2.37	0%
JGBs			¥652	-14%
Bunds			€2.59	20%
Credit				
US HG			\$0.27	-2%
US HY			\$0.12	7%
US Convertibles			\$0.02	6%
Commodities				
Gold			\$0.66	-10%
Oil			\$1.81	-42%
Copper			\$0.40	-40%

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

ETF Flow Monitor (data as of Apr 17)

Chart A3: Global Cross Asset Flows

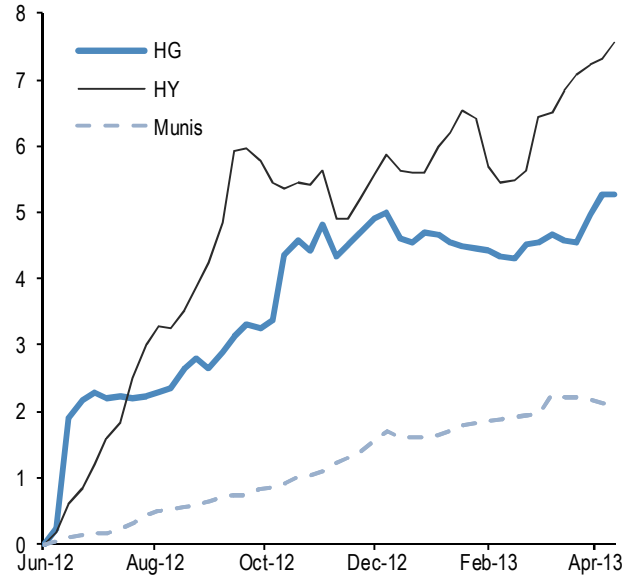
Cumulative flow into ETFs in \$bn



Source: J.P. Morgan. Bloomberg

Chart A4: Bond Flows

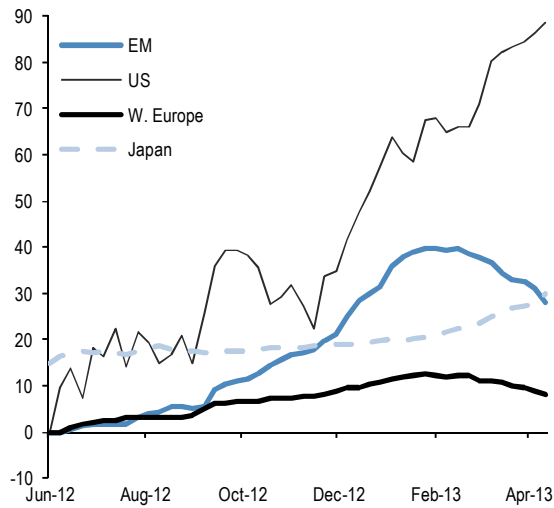
Cumulative flow into bond ETFs in \$bn



Source: J.P. Morgan. Bloomberg

Chart A5: Global Equity Flows

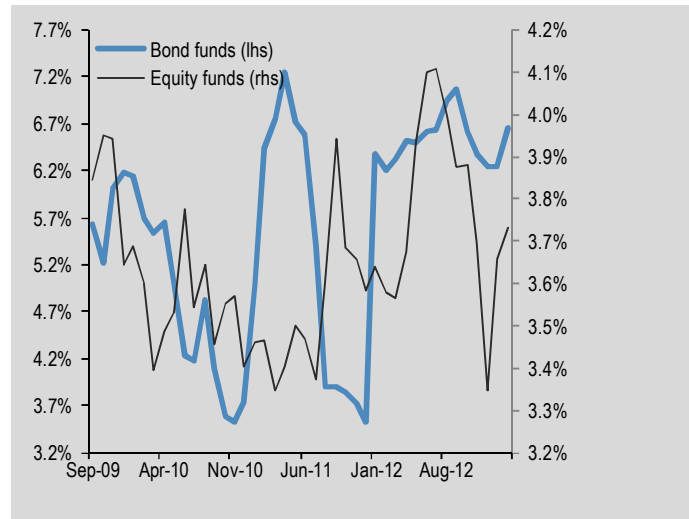
Cumulative flow into global equity ETFs in \$bn.



Source: J.P. Morgan. Bloomberg

Chart A6: Mutual Fund Cash Positions

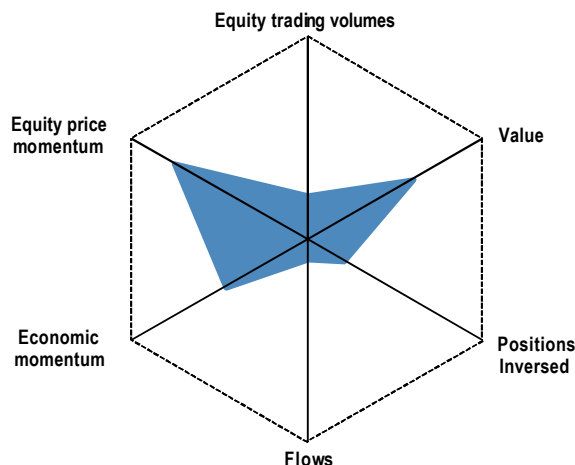
Sum of US and Euro area domiciled mutual funds. Aggregate cash balances in USD at constant exchange rates as a proportion of total assets. As of end February 2013.



Source: J.P. Morgan, ECB, ICI

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

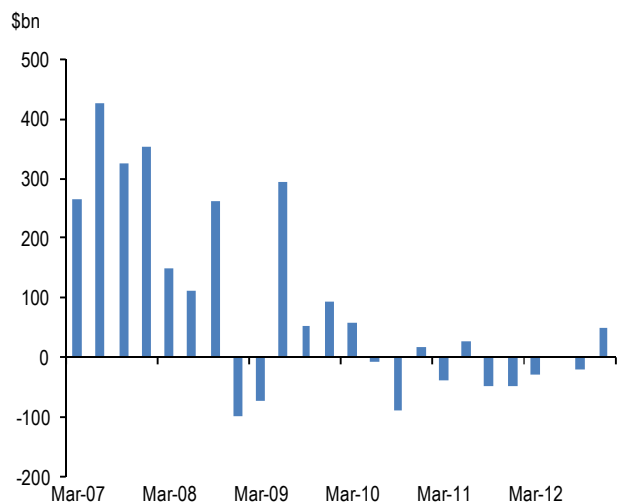
Economic momentum: The 2-month change in the global manufacturing PMI. (See REVISITING: Using the Global PMI as trading signal, Nikolaos Panigirtzoglou, Jan 2012).

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

Credit growth

Chart A8: G4 bank lending to households

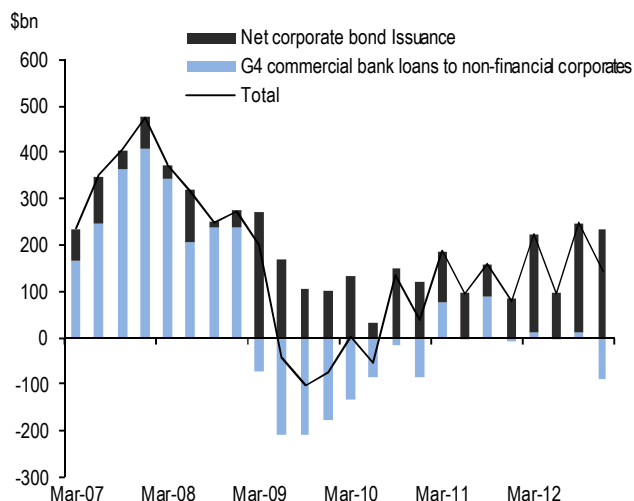
Quarterly changes in outstanding commercial bank loans to households, adjusted for changes in exchange rates and MBS net issuance. Last observation as of Q4'12.



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. Last observation as of Q4'12.

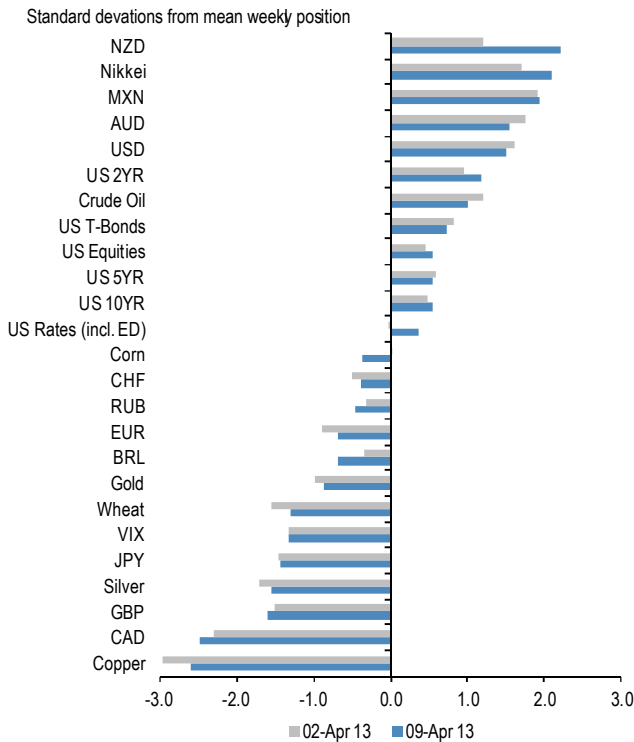


Source: ECB, BoJ, BoE, Federal Reserve, Bloomberg, Dealogic, J.P. Morgan

Spec position monitors

Chart A10: Weekly Spec Position Monitor

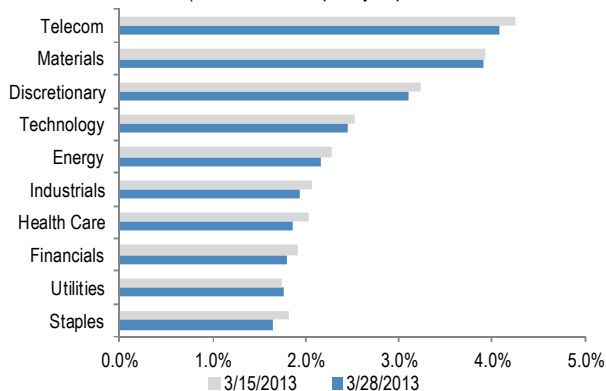
Net spec positions are the number of long contracts minus the number of short using CFTC futures only data. This net position is then converted to a USD amount by multiplying by the contract size and then the corresponding futures price. To proxy for speculative investors, commodity positions use the 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. A strategy which overweightes the S&P500 sectors with the highest short interest (as % of shares o/s) vs. those with the lowest short interest, produced an information ratio of 0.6 with a success rate of 58% (see Flows & Liquidity, Apr 8, 2011 for more details)

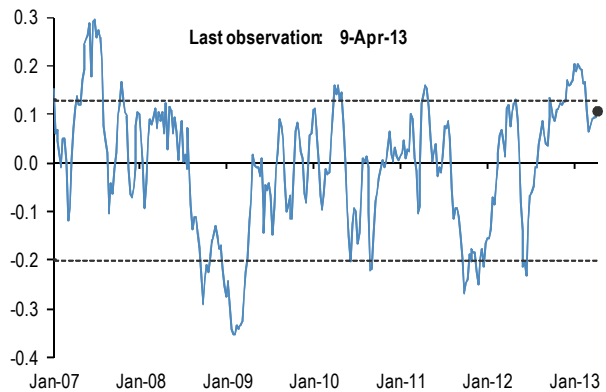


Source: NYSE, J.P. Morgan

Chart A11: Spec position indicator

Difference between net spec positions on risky & safe haven assets

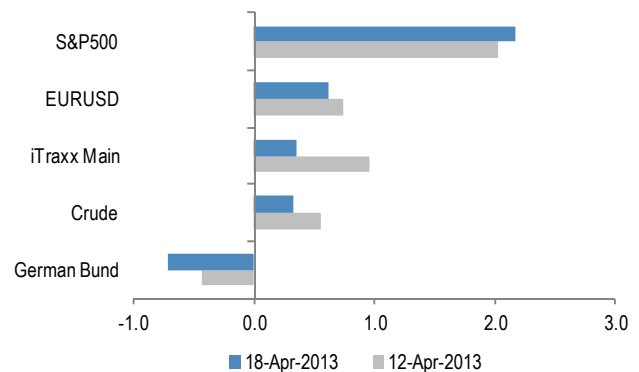
Net spec position is calculated in USD across 8 "risky" and 7 "safe" assets. These positions are then scaled by open interest and we take an average of "risky" and "safe" assets to create two series. The chart is then simply the difference between the "risky" and "safe" series. The final series shown in the chart below is demeaned using data since 2006. The risky assets are: Copper, GSCI, 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.

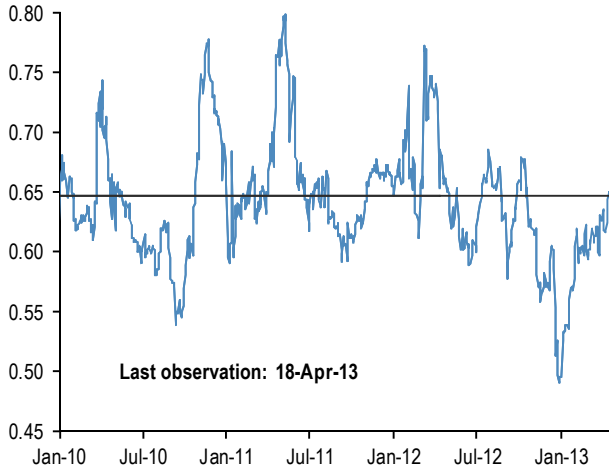


Source: Bloomberg, J.P. Morgan

Mutual fund and hedge fund betas

Chart A14: Balanced fund equity exposure

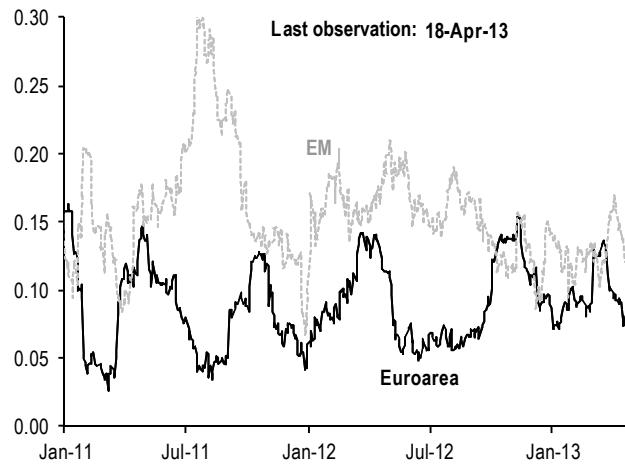
Rolling 21-day beta of balanced MF returns to returns on the S&P500. Balanced funds are top 20 US based funds by assets that have existed since 2006. It excludes tracker funds and funds with a low tracking error. The thin black line is the average during expansion since 2006.



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.

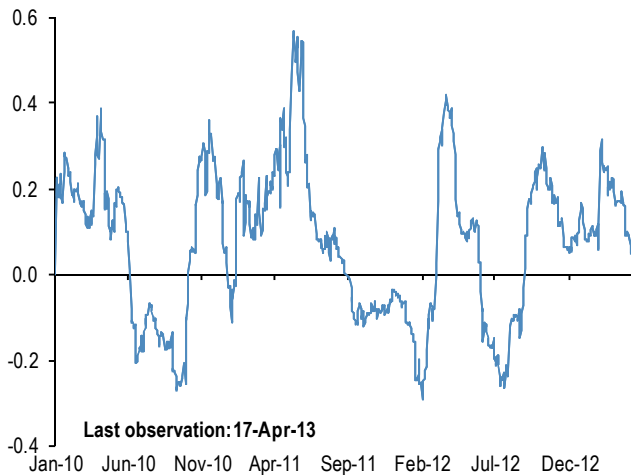


Source: Bloomberg J.P. Morgan

Chart A16: Macro hedge fund monitor

Macro hedge fund equity exposure

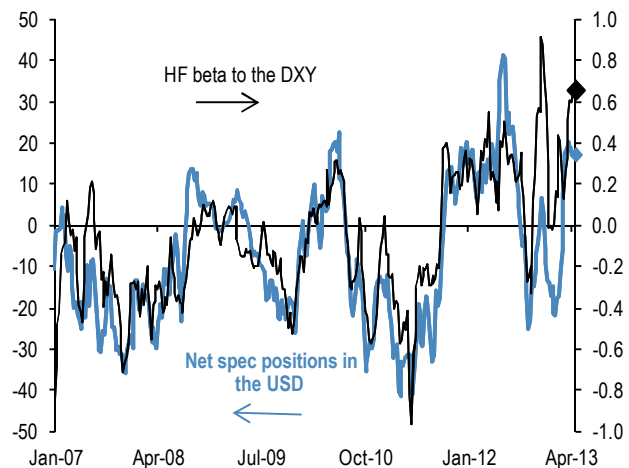
Rolling 21-day beta of macro fund returns to returns on the S&P500. The beta represents the average exposure of macro hedge funds to equities over the previous 21-days.



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 Apr 16, 2013.

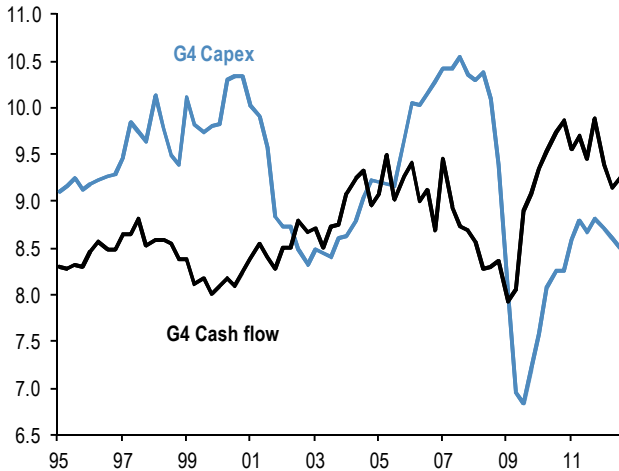


Source: CFTC, Datastream, Barclay Group, Bloomberg, J.P. Morgan

Corporate activity

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

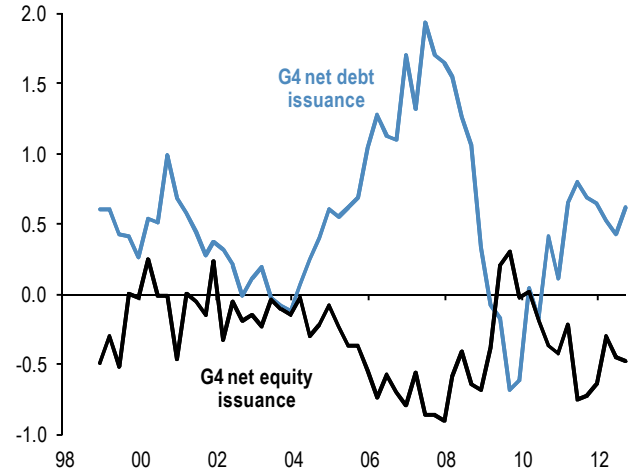
% of GDP, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q3'12.



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

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

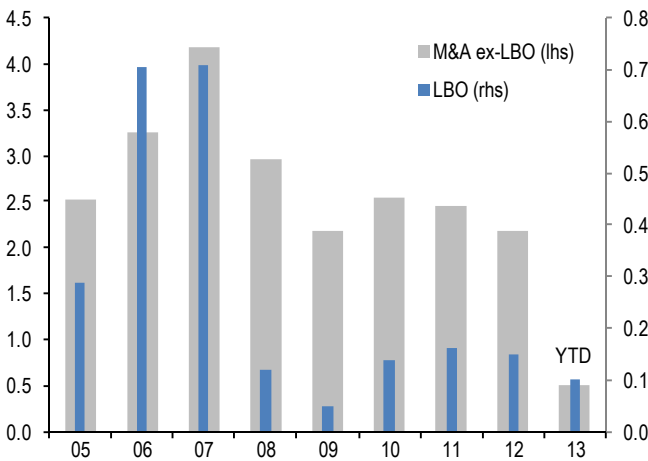
\$tr per quarter, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q3'12.



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

Chart A20: Global M&A and LBO

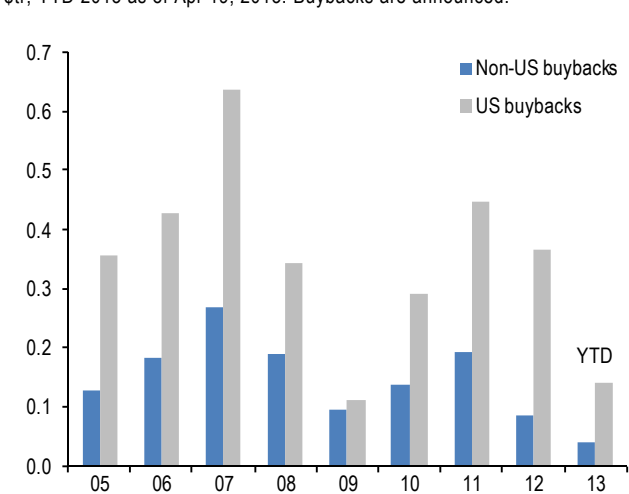
\$tr. YTD 2013 as of Apr 19, 2013. M&A and LBO's are announced.



Source: Reuters Thomson One, J.P. Morgan

Chart A21: US and non-US share buybacks

\$tr. YTD 2013 as of Apr 19, 2013. Buybacks are announced.

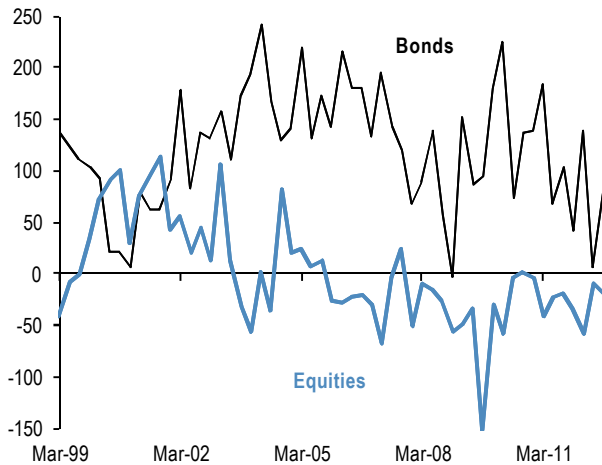


Source: Reuters Thomson One, J.P. Morgan

Pension fund and insurance company flows

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

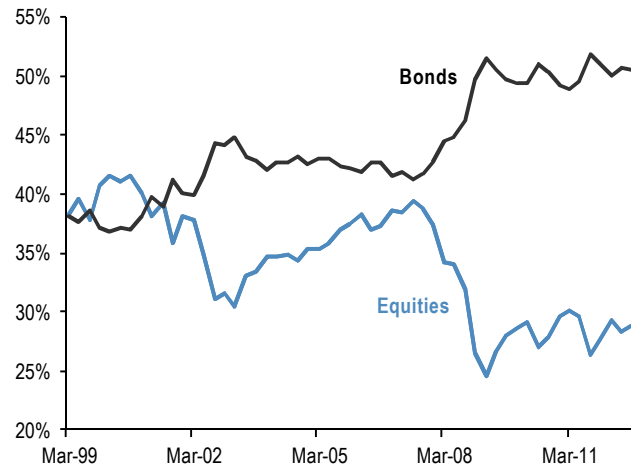
Equity and bond buying in \$bn per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q3 2012



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

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

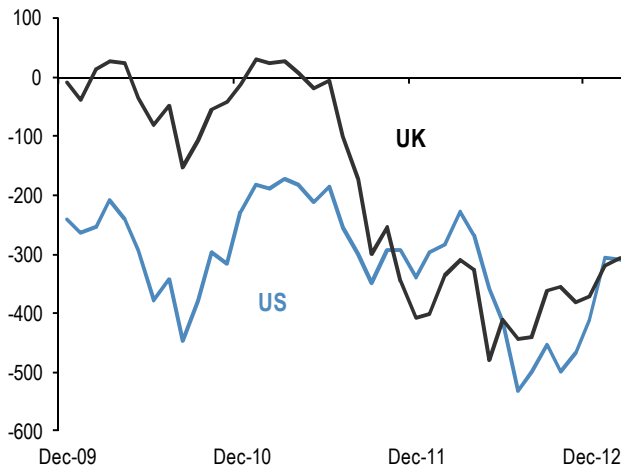
Equity and bond as % of total assets per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q3 2012.



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

Chart A24: Pension fund deficits

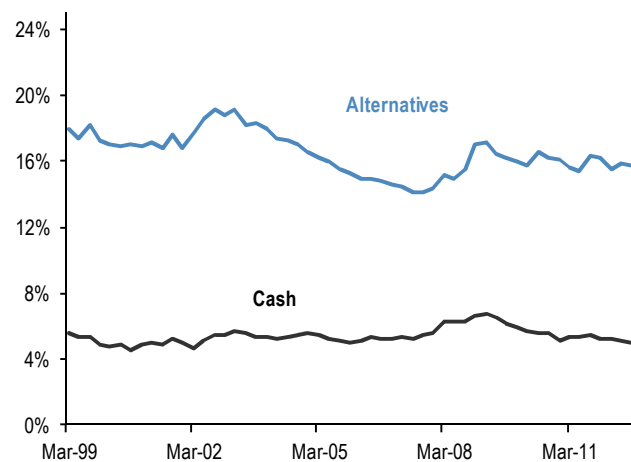
US\$bn. For US, funded status of the 100 largest corporate defined benefit pension plans, from Milliman. For UK, funded status of the defined benefit schemes eligible for entry to the Pension Protection Fund, converted to US\$ at current exchange rates. Last observation is Feb 2013.



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 Q3 2012.



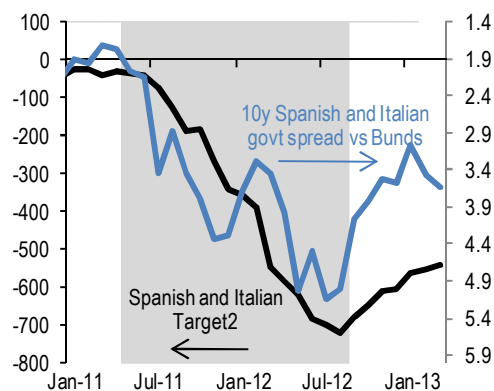
Source: ECB, BOJ, BOE, Federal Reserve flow of funds

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 Feb 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 LROs. ELA The Chart shows the change in the Target 2 balance over the past six months, with a positive number implying a capital inflow.

€bn	Target 2 bal.	Target 6m chng	ECB borrowing	Depo 3m chng	Depo 12m chng
Austria	-38	3	8	-0.1%	1.8%
Belgium	-11	18	16	1.2%	6.8%
Cyprus	-8	2	0	-5.1%	-5.1%
Finland	34	-36	4	-0.4%	2.7%
France	-79	-74	127	2.2%	5.4%
Germany	589	-107	26	-0.9%	3.0%
Greece	-78	30	71	6.0%	0.3%
Ireland	-79	26	53	-2.5%	2.6%
Italy	-243	38	268	3.8%	7.4%
Luxembourg	98	-18	3	0.7%	0.8%
Netherlands	121	-4	15	0.9%	5.3%
Portugal	-63	8	48	-1.6%	-4.0%
Spain	-297	103	267	3.0%	1.9%

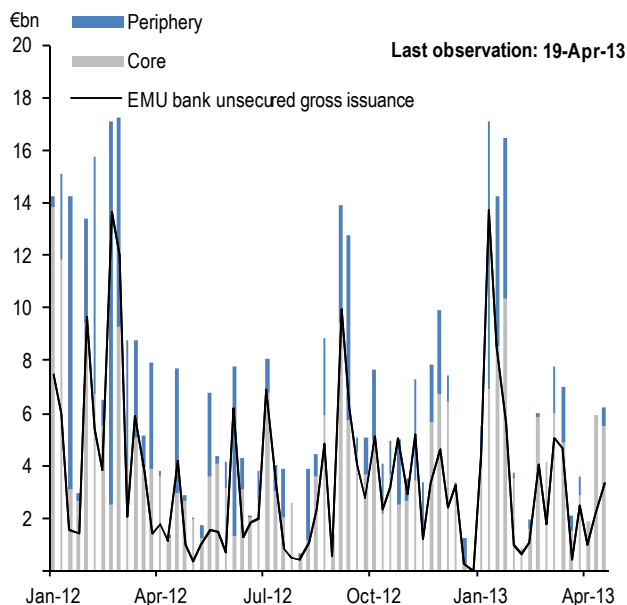


Source: Bloomberg, ECB, National Central Banks, J.P. Morgan

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

Chart A26: Euro area gross bank debt issuance

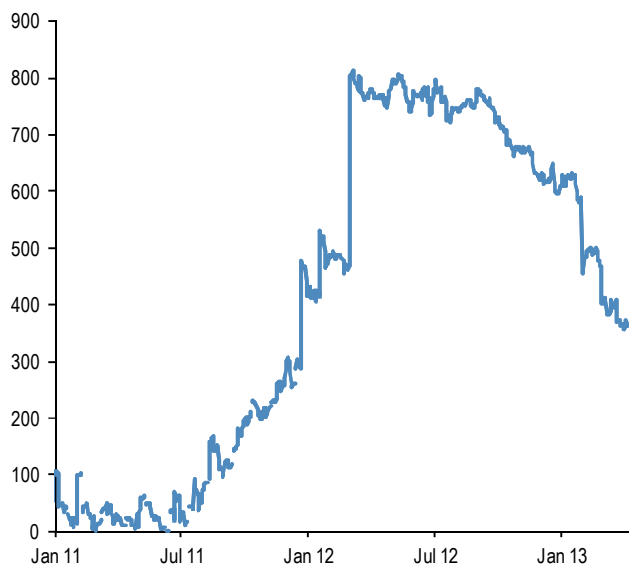
Includes secured, unsecured and securitized issuance in any currency. Excludes short-term debt (maturity less than 1-year) and self funded issuance (where the issuing bank is the only book runner).



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.

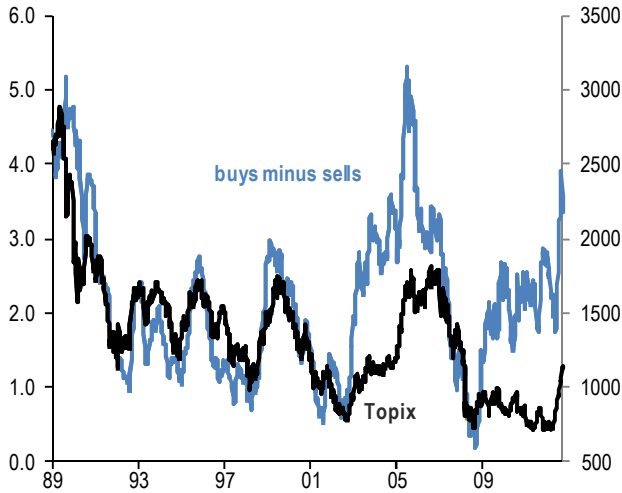


Source: ECB, J.P. Morgan

Japanese flows

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

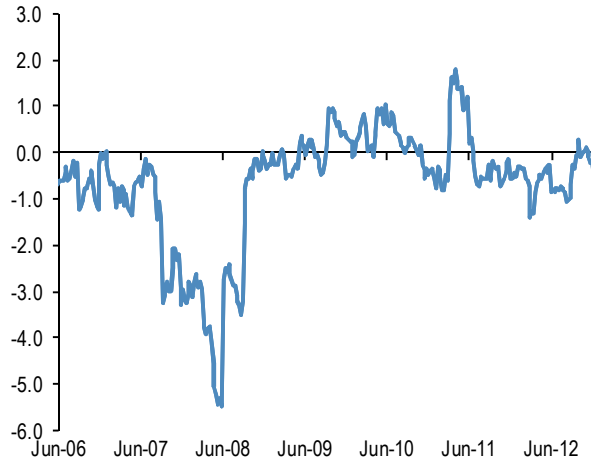
in mn of shares. Last observation is Apr 12, 2013



Source: Tokyo Stock Exchange, J.P. Morgan

Chart A29: Spec positions on Nikkei

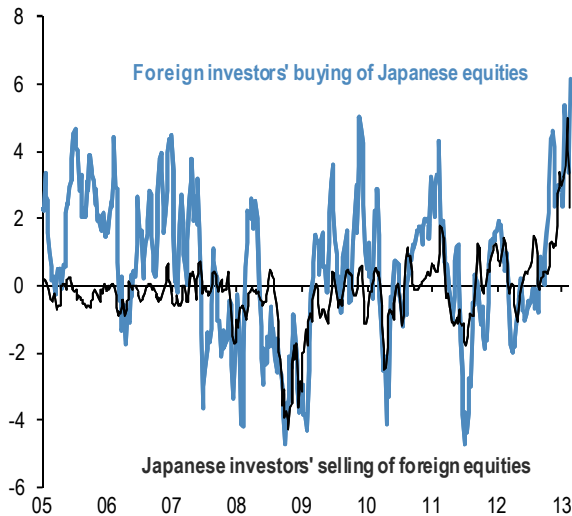
\$bn. Last observation is Apr 9, 2013.



Source: CFTC, J.P. Morgan

Chart A30: Japanese equity buying by foreign investors. Foreign equity selling by Japanese investors

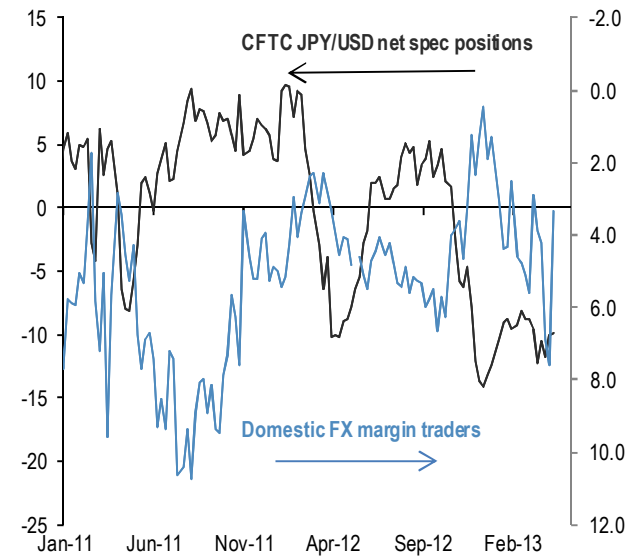
\$bn, 4 week moving average. Last observation is Apr 12, 2013



Source: MoF, J.P. Morgan

Chart A31: JPY positions

CFTC positions are in \$bns, 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.



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

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