

Flows & Liquidity

Distortions from share buybacks

- It is not only announced share buybacks that picked up this year.
- The number of companies listed on US exchanges announcing a dividend increase rose this year to the highest level since 2004.
- The total yield, the sum of dividends and announced share buybacks divided by equity market value, currently stands at 4.4% for US equities vs. 3.7% for Global equities.
- Around 2.5% of the \$15tr universe of US non-financial equities is currently withdrawn per year due to share buybacks, boosting EPS and other equity ratios.
- Share buybacks mask weak credit growth in the US economy. The US credit creation picture does not look significantly better than that of Europe and Japan if one removes the debt issued for share buybacks.
- Distributions to shareholders, dividends and share buybacks, are high relative to capex raising questions about long term growth potential.
- The Japanese repo market suffers from heightened JGB volatility. Repo fails rose sharply in April.
- Euro area excess cash falls well below the €300bn mark. The best tool the ECB has to reverse at least some of the decline in liquidity is to cut reserve requirements to zero. This will unlock €100bn of cash in the Euro area banking system.
- EM \$ Corporates, Euro HY and US HY are the fastest growing credit markets this year.
- Physical gold demand is also starting to wane.

- The pick up in dividend and share buyback announcements in the first half of this year is boosting equity markets. **The number of companies listed on US exchanges announcing a dividend increase jumped to 233 per month in the first four months of this year.** Figure 1 shows that this is the highest average monthly pace recorded since 2004 at least. **Share buyback announcements have also picked up vs. last year.** YTD, announced share buybacks total \$250bn, pointing to an annualized pace of \$600bn, only modestly below the \$640bn seen in 2011. The pace over the first five months of the year is 20% above that seen in 2012, but well below the pace of the first five months of 2011. For example, during the first five months of 2011 share buybacks had totaled \$350bn, matching the 2007 peak (Figure 2).

Global Asset Allocation

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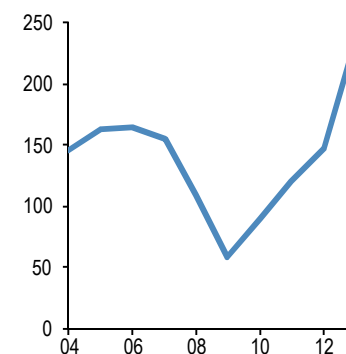
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Figure 1: Announced dividend increases

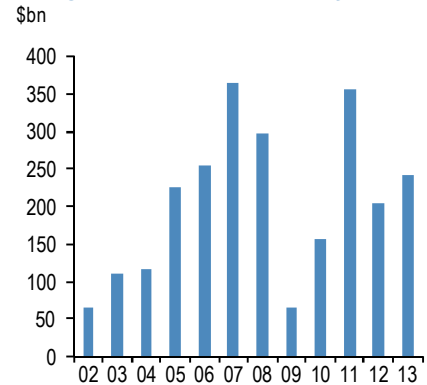
Number of companies listed on the ASE, NYSE, NGM, NNM and NSC, announcing a dividend increase every month. Figure shows yearly averages. 2013 average includes first four months only.



Source: S&P, J.P. Morgan

- The bulk, 80%, of these buybacks was announced by non-financial companies, in line with the historic average. A similar 80% share was announced by US companies also in line with the historic average.
- The prominence of share buybacks by US companies is boosting the yield they provide to shareholders. **While US companies typically have lower dividend yields, their total yield, i.e. the sum of all distributions to shareholders including both dividends and share buybacks divided by the market value, is higher than that of non-US companies.** This is shown in Figure 3. The total yield in Figure 3 is based on the 12-month rolling sum of dividends and announced share buybacks. This yield currently stands at 4.4% for US equities vs. 3.7% for Global equities. The historical averages since 2000 have been 4.0% and 3.6% respectively. So both yields are slightly higher than the historical averages. They are both significantly higher than the 3% yield lows seen at the end of 2009. Effectively the increase in the amount of dividends and share buybacks is currently cushioning the decline in dividend and share buyback yields caused by equity appreciation. Global equities are up by 27% since June 2012.
- **Share buybacks in particular can have a powerful impact on equity markets by withdrawing shares from the public.** The caveat with announced share buybacks though is that they do not necessarily reflect actual buybacks as there is typically a lag between announcements and actual stock purchases. The other problem is that while share buybacks reduce the share count of a company, they do not capture the equity withdrawal impact of M&A (to the extent that the acquirer uses cash or debt) or LBO activities. Similarly share buybacks do not capture offsetting corporate activities such as share offerings, exchange of common stock for debentures, conversion of preferred stock or convertible securities, as well as stock options and employee stock programs.
- Indeed, the academic literature has found that beyond the traditional motives of share repurchases such as distributing excess cash flow, signaling that management perceives the stock as undervalued, or releveraging to take advantage of the low cost of debt vs. the cost of equity, companies buy back their shares to also offset the diluting impact of employee stock options and programs. It is not accidental that stock repurchase programs started becoming popular in the late 1990s when employee stock options increased.
- Because of these different corporate activities, **share buybacks differ from other measures of equity withdrawal such as “net equity issuance” reported in the Flow of Funds or the “share count” behind equity indices.**
- The net equity issuance reported quarterly in the Flow of Funds captures the combined net equity withdrawal impact of actual share buybacks, M&A and LBO activities offset by share offerings. Figure 4 shows this net equity issuance (positive sign in the figure denotes equity withdrawal or negative equity issuance) along with announced share buybacks for US non financial corporates. The two series move broadly in line. Net equity issuance exceeded share buybacks in periods of strong M&A activity such as in 2006 and 2007. In contrast, net equity issuance was lower than share buybacks or even positive in periods of large share offerings such as in 2009 or in periods of large employee stock program exercises. Both series point to an equity withdrawal pace of around \$100bn per quarter for US non-financial companies. **This means that around 2.5% of the \$15tr universe of US non-financial equities is withdrawn every year.** This is a lot larger than YTD flows into US equity funds of around \$60bn.
- Another way of measuring equity withdrawal is via the share count of major

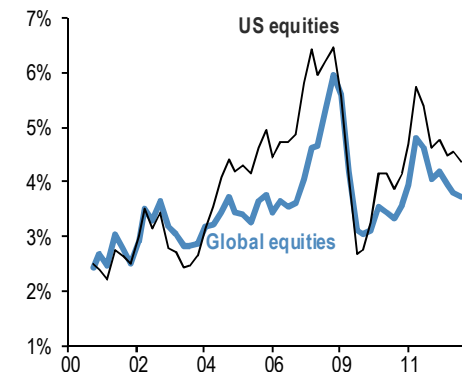
Figure 2: Announced global share buybacks during the first five months of the year



Source: Reuters, J.P. Morgan

Figure 3: Total yield, i.e. dividends plus share buybacks divided by market value

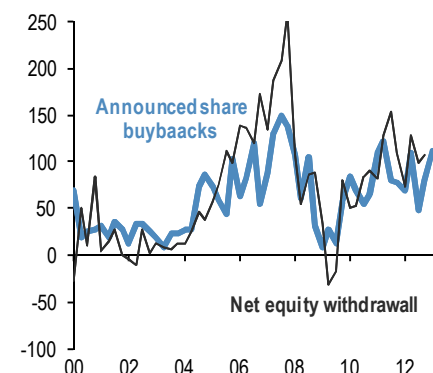
Based on the 12-month rolling sum of dividends and announced share buybacks



Source: Reuters, Datastream, J.P. Morgan

Figure 4: Announced share buybacks vs. Net equity withdrawal of US non-financial corporates

\$bn per quarter



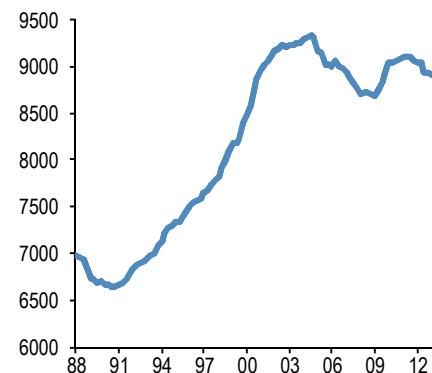
Source: Reuters, Fed, J.P. Morgan

equity indices. This share count is reflected in the so called “Divisor” of an equity index which roughly speaking is equal to the market value of the index divided by the price of the index. Divisor changes reflect changes in outstanding shares due to share buybacks or other corporate actions such as the ones mentioned above. But they also reflect addition or deletion of stocks to the index. If the S&P 500 closes at 1650 and one stock is replaced by another, after the market close, the index should open at 1650 the next morning if all of the opening prices are the same as the previous day’s closing prices. This is achieved with an adjustment to the divisor.

- The Divisor of the S&P500 Index is shown in Figure 5. This Divisor experienced a massive increase in the 1990s but started falling in 2004 due to strong buyback activity. Between 2004 and 2008 it fell by 7% or almost 2% per annual decline pace. It rose after Lehman due to large share issuance especially by financials and a drying up of share buyback activity. It started declining again in 2011 as share buybacks picked up. Since September 2011 the S&P500 Index Divisor is down by more than 2%.
- **The fall in the S&P500 Index Divisor has helped the earnings picture in the US.** Had the Divisor remained constant since Q3 2011, the 4-quarter rolling S&P500 Operating Earnings-Per-Share would have only risen by \$1.50 instead of the reported \$3.70 increase. The S&P500 Operating EPS has risen from \$94.60 in Q3 2011 to \$98.30 in Q1 2013. Indeed studies have found that managers tend to increase share buybacks in periods of slow earnings growth to boost EPS via shrinking the denominator, i.e. the number of shares.
- But this is not the only distortion share buybacks create. **Share buybacks mask weak credit growth in the economy.** And this is especially true for the US as 80% of global share buybacks are typically announced by US companies. And these share buybacks are typically financed by debt issuance as even those US companies with large cash holdings appear to be reluctant to repatriate their cash holdings and instead prefer to issue debt to fund share purchases.
- We have highlighted in the past that US credit growth is tracking a pace that is significantly better than the rest of the G4, i.e. Euro area, UK and Japan. This is not true though if one removes the impact of share buybacks. Figure 6 shows total credit creation i.e. the growth of both household and non financial corporate debt adjusted for share buybacks. In particular at each quarter we subtract the announced share buybacks from gross debt issuance of non financial corporates. Subtraction is capped by total gross debt issuance in each quarter. Figure 6 shows the credit creation in the US and in the G4 x US over time adjusted for share buybacks. US credit creation suffered by more than the rest of the G4 post Lehman due to intense US deleveraging at the time, but it has been rebounding since 2010. But the level of credit creation excluding share buybacks is not significantly better in the US than in the rest of the G4. The 4-quarter rolling sum of total credit creation was \$160bn in the US at the end of the first quarter vs. \$60bn in the rest of the G4. So **the pace of credit creation is only modestly above zero in both the US and the rest of the G4** and well below 2007 peaks. In 2007 the annual pace of total credit creation exceeded \$1tr in both the US and the rest of the G4 (excluding share buybacks).
- The other side effect of elevated dividends and share buybacks is that these distributions to shareholders may reduce the long term potential of the company to grow relative to the alternative of capital spending. Indeed, when we compare the current distributions to shareholders of almost \$1.4tr (annual pace over the past four quarters in developed equity markets) with capex of

Figure 5: S&P500 Index Divisor

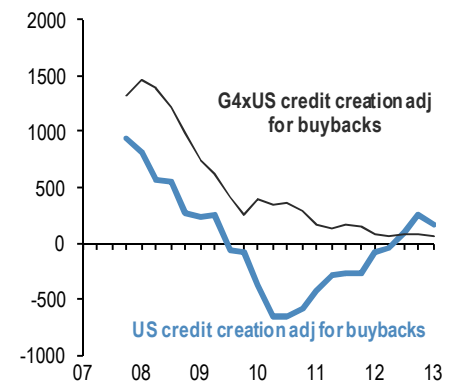
bn of shares, quarterly data, last obs is Q1 2013



Source: S&P

Figure 6: Overall credit creation adjusted for share buybacks

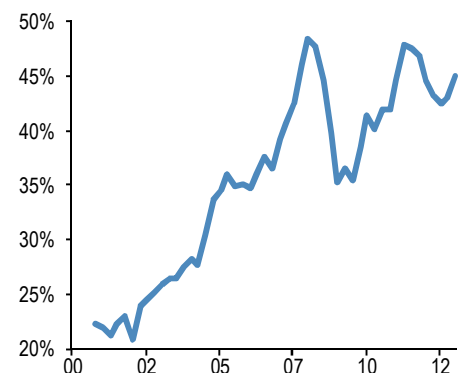
\$bn per annum, 4-quarter moving average. Gross share buybacks of non-financial corporates are subtracted from gross debt issuance. Subtraction is capped by total gross debt issuance. Overall credit creation includes both households and non financial corporate debt changes.



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

Figure 7: Distributions to shareholders divided by capex for non-financial corporates

Distributions to shareholders reflect the annual pace over the past four quarters in developed markets. Capex is nominal spending across the G4.



Source: Reuters, Fed, ECB, BoJ, BoE, Datastream, JPM

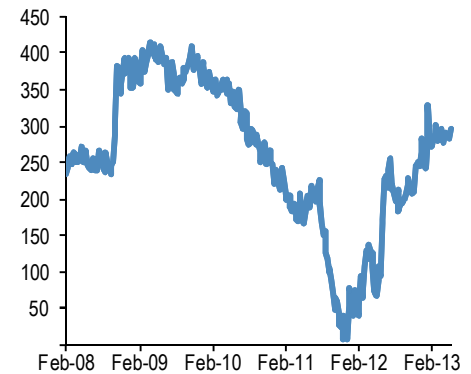
around \$3tr across the G4, we get a ratio of 45%. This level is at the upper end of its historical range and is more than double the ratio seen in early 2000s (Figure 7).

Euro area excess cash falls well below the €300bn mark

- The excess cash in the Euro area banking system has fallen sharply by €55bn over the past two weeks to €267bn currently. At the same time another wave of early 3y LTRO repayments (as published by the ECB this morning a €8.1bn is to be repaid next week on May 29th) is set to push the excess cash even closer to the so called “inflection point” of €200bn. This is the level beyond which the sensitivity of EONIA rates to excess cash starts rising sharply. Lower excess cash exerts upward pressure on EONIA rates and implies a lower refi-EONIA spread.
- This excess cash measures the amount Euro area banks borrow from the Eurosystem in excess of their liquidity needs. These liquidity needs are captured by reserve requirements and autonomous factors, a measure of banking system’s natural need for cash.
- **What explains this €55bn decline in excess cash over the past two weeks?**
While outstanding long term operations fell by €14bn over the past two weeks, liquidity needs related to autonomous factors rose, by around €41bn. As a result, the excess cash in the Euro area banking system fell by €14bn+€41bn = €55bn.
- We commented before (see *Flows & Liquidity* “The wildcard of autonomous liquidity factors”, Feb 15th) on the drivers behind autonomous factors. Autonomous factors are those items of the central bank balance sheet which affect banking sector liquidity but are generally not related to monetary policy operations or instruments. They typically include banknotes in circulation, government deposits and foreign or domestic investment assets. These autonomous factors are normally not under the control of the central bank.
- We do not yet have data for the Eurosystem’s balance sheet for the week ending May 27th. But by looking at the previous week, **the factor which appears to have changed is government deposits** which rose by €14bn between May 10th and May 17th. Government deposits with national central banks absorb liquidity from the system. These deposits change significantly and are affected by tax collection, government expenditure and amounts issued in government bond auctions. These government deposits exhibit seasonality on monthly, quarterly or annual frequencies driven by tax collection dates in specific countries. The treasuries contributing the most to the volatility of government deposits with the Eurosystem are those of Italy, France and Greece.
- We believe it is the rise in Italian government deposits which is driving the rise in autonomous factors over the past two weeks. It is not accidental that it was the Italian repo market that suffered the most this week (lower volumes and higher repo rates) due to local liquidity drainage from tax collection. Next Tuesdays’ data on Eurosystem’s balance sheet for the week ending May 24th should confirm this. If it is true that government deposits have indeed been driving the rise in autonomous factors, then, given the seasonality in tax collection, a significant part of the rise in autonomous factors over the past two weeks should be unwound in the coming weeks.
- But this does not mean that autonomous factors cannot rise further from here causing further liquidity reduction. Figure 8 shows that autonomous liquidity factors have been rising since the beginning of 2012 and as we explained in *F&L*, Feb 15th a significant part of this rising trend is due to “other liquidity

Figure 8: ECB's autonomous liquidity factors

€bn, as published by the ECB



Source: ECB

factors” which are difficult to explain. If the uptrend in “other liquidity factors” resumes, then it won’t be long before the excess cash falls below €200bn.

- **The best tool the ECB has to reverse or at least delay the decline in excess cash is to cut its reserve requirements to zero.** This measure will unlock around €100bn of cash in the Euro area banking system.

The Japanese repo market suffers from heightened JGB volatility

- The sharp rise in JGB volatility has not left the JGB repo market unaffected. The ¥80tr large Japanese repo market accounts for 40% of the total size of Japanese money market (which it also includes CDs/CPs, currency swaps, BoJ money market operations, and Call transactions) and it is an important lubricant of the JGB market. This is because repos with JGBs as collateral, account for more than 99% of domestic repo transactions. The haircuts are typically very low in the JGB repo market ranging from zero to 2%. This is because market participants are comfortable or accustomed to control risks through margin calls without often setting a haircut upfront.
- But these margin calls or haircuts where applicable, tend to rise when volatility rises. **And the rise in margin calls or haircuts has caused a rise in “fails”** (Figure 9). 175 fails in the month of April represents a sharp increase from March but it is still much lower from the >1000 figures seen immediately post Lehman. A fail is a situation where a recipient of JGBs in a transaction does not receive the JGBs from the delivering party on the scheduled settlement date.
- Typically the number of fails in Japan is quite small, partly because market participants try to avoid fails in advance, and because some market participants have never experienced fails. According to the BoJ, the situation is quite different from that prevailing in US repo markets, where fails occur much more frequently than in Japan and where market participants take action in accordance with the fails practice on a daily basis.
- **The retrenchment in Japanese repo market is then fed into the JGB market propagating the initial volatility (VaR) shock.** The repo market is used by market participants for funding or short selling and its functioning is important in maintaining a two-way market for JGBs.

EM \$ Corporates, Euro HY and US HY are the fastest growing credit markets this year

- It is worth providing a recap of YTD growth trends in global credit markets. We also look more generally at what to take into account when comparing reported estimates of the size of these markets.
- Our starting point is to compare the market values of benchmark credit indices across major currencies and regions. The credit universe we define is: **US HG** (ex-EM), **US HY** (bonds+leveraged loans), **Euro HG** (corps+covered/secutized), **Euro HY** (bonds+leveraged loans), **EM \$ Corporates**, **EM \$ Sovereigns** and **GBP credit** (HG, HY and covered/secutized). At current exchange rates, this defines a \$10.5tr universe of indexed corporate debt, distributed across markets as shown in Figure 10. US HG is the biggest credit sector globally, with \$3.7tr of bonds in JULI ex-EM, followed by EU HG (\$3tr in iBoxx) and US HY (\$1.4tr in JPM’s indices).
- However, bond indices apply eligibility and inclusion criteria, which typically relate to a bond’s issue size, its remaining life and its contractual features, and

Figure 9: Japanese repo market number of fails
Number of fails per month

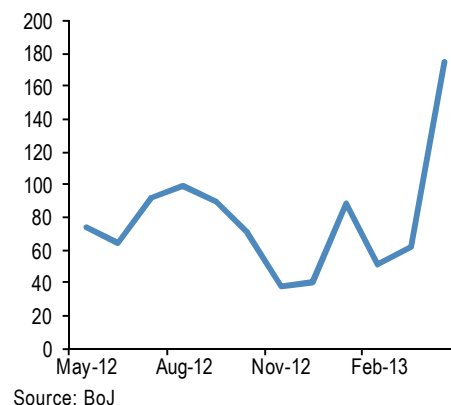
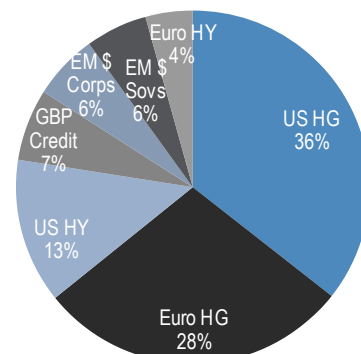


Figure 10: Market shares of the \$10tr indexed in major credit indices

Current market values and \$ exchange rates as of May 20, 2013. US HG is JPM JULI ex-EM, Euro HG is the iBoxx € Corporate + € Collateralized, US HY is JPM Domestic cash index + leveraged loan index, GBP credit is iBoxx £ Corporate + £ Collateralized, EM \$ Corporates is JPM CEMBI Broad, EM \$ Sovereigns is EMBIG, Euro HY is iBoxx unconstrained cum crossover + S&P European Leveraged Loan index.



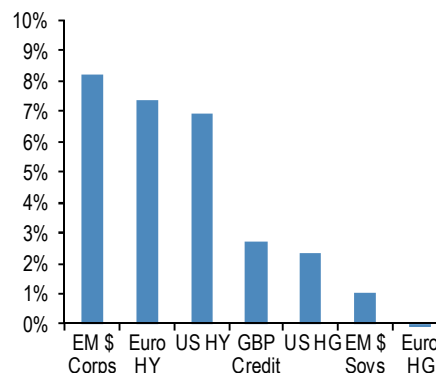
Source: J.P. Morgan, Bloomberg, Markit, S&P.

their stringency varies between indices. Whilst aggregate benchmarks such as the ones we use here aim to be representative of an overall market, and contain a broad cross-section of bonds from it, this means the total universes are in some cases considerably larger than what is captured by an index. Still, assuming these indices are generally representative of the overall market, the growth in their market values, which takes into account both net issuance as well as price changes, should provide a sensible proxy for the overall market's growth. **Figure 11 shows that the fastest growing indices/markets this year are EM \$ corporates (+8%), Euro HY (+7%) and US HY (+7%) particularly US HY loans at 9% vs. 5% for US HY bonds.** Overall, the total universe defined by these indices has grown by around 2.8% YTD.

- The record pace of issuance in these markets has certainly caught a lot of attention. But given the lack of publicly available information on their total sizes, we asked JPM strategists for their best estimates. This also helps us gauge the coverage of the indices used in this analysis. However, whilst a bond market's size is best thought of in terms of current market values, when expanding to the full universe there is less publically available pricing data and we revert to comparing par amounts outstanding, which are more easily obtained. So what are our strategists saying?
- Our **EM corporate strategists calculate that the total par amount outstanding of the EM \$ corporate market is around \$1.1tr vs \$620bn in CEMBI Broad**, i.e. around twice the size. Factors that go into this large discrepancy relate to the treatment of quasi sovereigns, i.e. corporations that are either wholly or majority state owned. CEMBI excludes 100% state owned corporates whereas our strategists include them in their overall market size calculations. Also, minimum maturity and issue size requirements play a role. **Our strategists estimate that the actual growth in the EM \$ corporate universe has been up to 15% YTD.**
- Similarly, **our US HY strategists put the par amount of domestic \$ bond outstanding at \$1.2tr vs \$750bn in the JPM index.** Here, the fact that our indices constrain bonds in the index to only two per issuer is the main factor in this discrepancy. Again, maturity and size considerations also play a role. **By their calculations using par values and the overall universes they track, our HY strategists estimate of YTD market growth are around 5%, which is closer to our index based calculation.**

Figure 11: YTD Growth in the market values of major credit indices

In local currencies. Market values as of Dec 31, 2012 and May 20, 2013. US HG is JPM JULI ex-EM, Euro HG is the iBoxx € Corporate + € Collateralized, US HY is JPM Domestic cash index + leveraged loan index, GBP credit is iBoxx £ Corporate + £ Collateralized, EM \$ Corporates is JPM CEMBI Broad, EM \$ Sovereigns is EMBIG, Euro HY is iBoxx unconstrained cum crossover + S&P European Leveraged Loan index.



Source: J.P. Morgan, Bloomberg Markit, S&P

Physical gold demand is also starting to wane

- In *F&L*, 26 Apr, we wrote that the sharp outflows from gold ETFs were being offset by very strong physical demand from retail and emerging markets. Since then ETF outflows have continued but physical demand has started to wane. The charts on page 16 show that ETF holdings of physical gold have fallen to their lowest level since May 2011 and CFTC net managed money positions in gold futures have remained rangebound at the lowest levels since early 2009. April's huge rise in demand for American eagle gold coins from the US Mint has not continued into May, with the MTD pace on track to reach around half of the April total. Volumes on the Shanghai gold exchange have also fallen sharply and remain subdued. With no end seemingly in sight for outflows from gold ETFs, and weaker physical demand, the flow picture paints a decidedly bearish outlook for gold.

Table A1: Weekly flow monitor

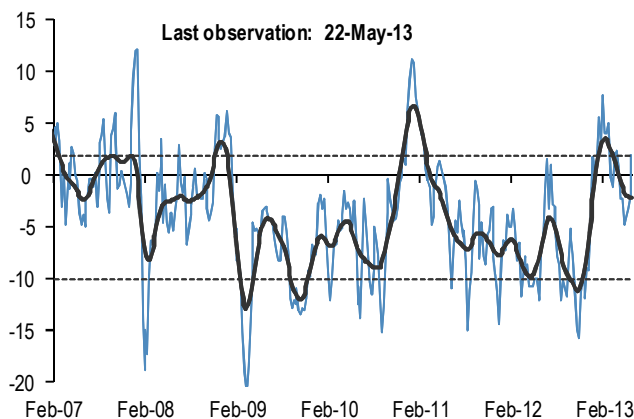
\$bn, Includes US domiciled Mutual Fund flows from ICI with a one week lag and globally domiciled ETF flows from Bloomberg. Current week data only includes ETF flows.

MF & ETF Flows	22-May	4 wk avg	13 wk avg	2012 avg
All Equity	5.0	6.8	4.9	-0.3
All Bond	0.3	4.8	5.4	6.9
US Equity	3.6	4.8	2.8	-1.5
Intl. Equity	1.3	3.0	2.2	1.4
Tax able Bonds	0.3	4.7	5.4	5.9
Municipal Bonds	0.0	0.1	0.0	1.0

Source: Bloomberg, ICI, J.P. Morgan

Chart A1: Fund flow indicator

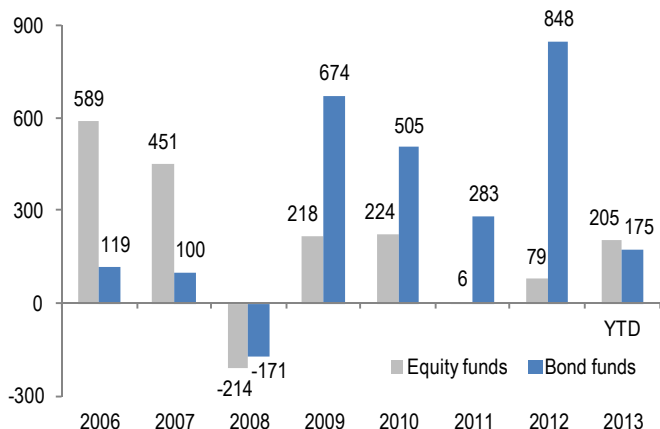
Difference between flows into Equity and Bond funds: \$bn per week. Flow includes US domiciled Mutual Fund and globally domiciled ETF flows. Current week data only includes ETF flows. The thin blue line shows the 4-week average of this difference. The thick black line shows a smoothed version of the 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	24-May	4 wk avg	13 wk avg	y/y chng
Global IPOs	0.6	2.0	2.3	46%
Secondary Offerings	7.4	7.6	7.2	23%
Gross corporate bond issuance				
United States	17.5	31.7	30.8	8%
Western Europe (€bn)	20.2	18.5	18.3	-3%
Corporate announcements				
M&A - Global	26.7	30.1	34.6	-24%
- US Target	16.8	12.4	14.7	8%
- Non-US Target	9.9	17.7	19.9	-37%
US buybacks	0.1	6.6	11.0	35%
Non-US buybacks	0.5	4.3	3.7	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.

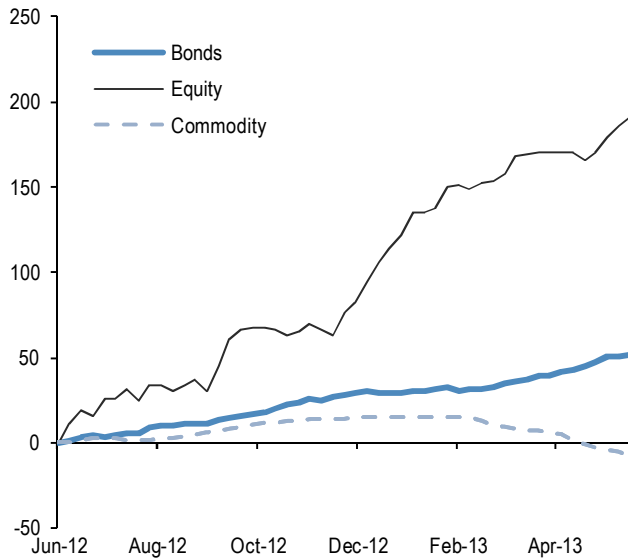
Equities	MIN	MAX	3m avg to Apr-2013 (tr)	y/y chng
EM Equity			\$1.10	-10%
DM Equity			\$8.19	-19%
Govt Bonds				
USTs			\$2.38	0%
JGBs			¥697	-16%
Bunds			€2.45	11%
Credit				
US HG			\$0.26	-1%
US HY			\$0.12	6%
US Convertibles			\$0.02	7%
Commodities				
Gold			\$0.69	5%
Oil			\$1.86	-40%
Copper			\$0.47	-30%

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

ETF Flow Monitor (data as of May 22)

Chart A3: Global Cross Asset ETF Flows

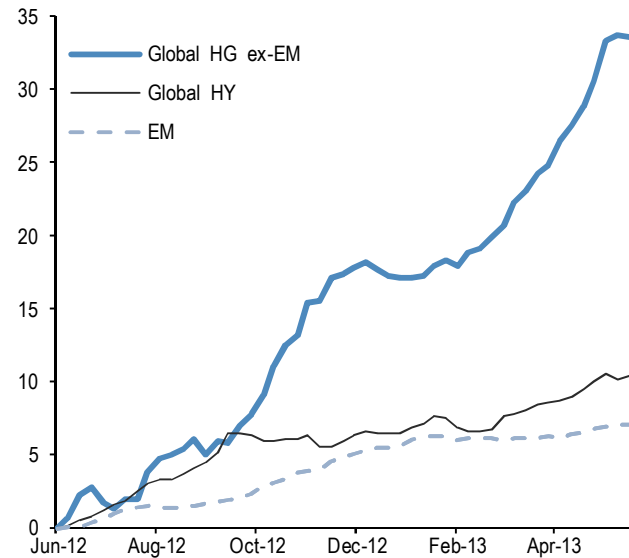
Cumulative flow into ETFs in \$bn



Source: J.P. Morgan. Bloomberg

Chart A4: Bond ETF Flows

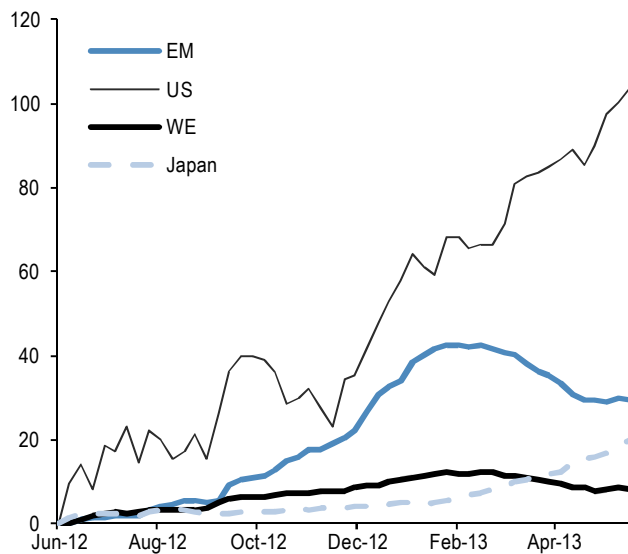
Cumulative flow into bond ETFs in \$bn



Source: J.P. Morgan. Bloomberg

Chart A5: Global Equity ETF Flows

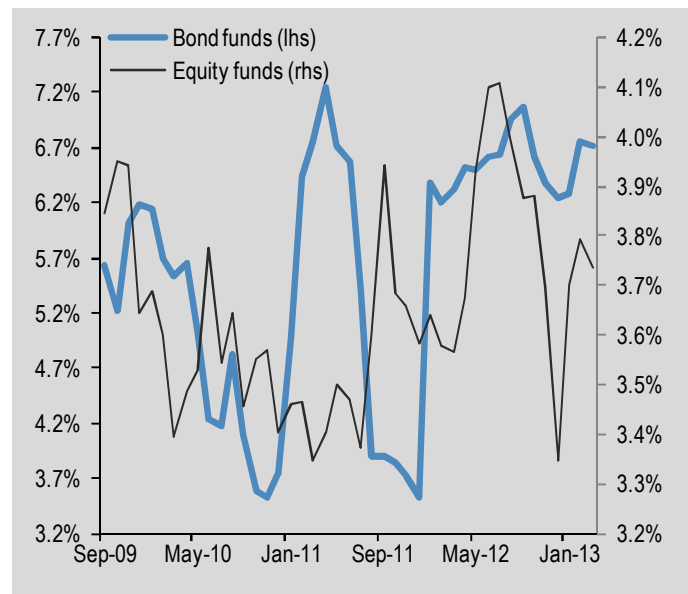
Cumulative flow into global equity ETFs in \$bn.



Source: J.P. Morgan. Bloomberg

Chart A6: Mutual Fund Cash Positions

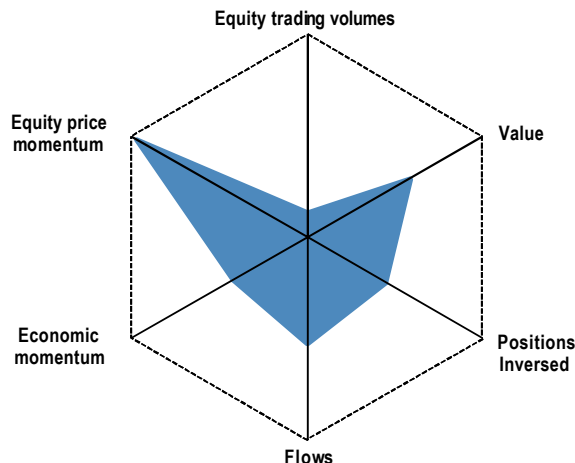
Sum of US and Euro area domiciled mutual funds. Aggregate cash balances in USD at constant exchange rates as a proportion of total assets. As of Mar 2013.



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

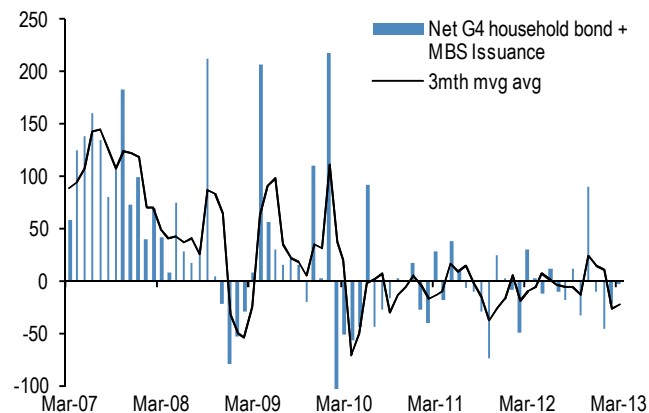
Economic momentum: The 2-month change in the global manufacturing PMI. (See REVISITING: Using the Global PMI as trading signal, Nikolaos Panigirtzoglou, Jan 2012).

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

Credit growth

Chart A8: G4 bank lending to households

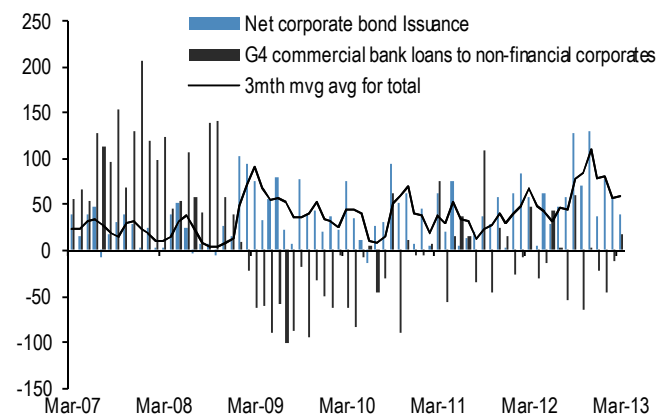
Quarterly changes in outstanding commercial bank loans to households, adjusted for changes in exchange rates and MBS net issuance. As of Mar 2013.



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 Mar 2013.

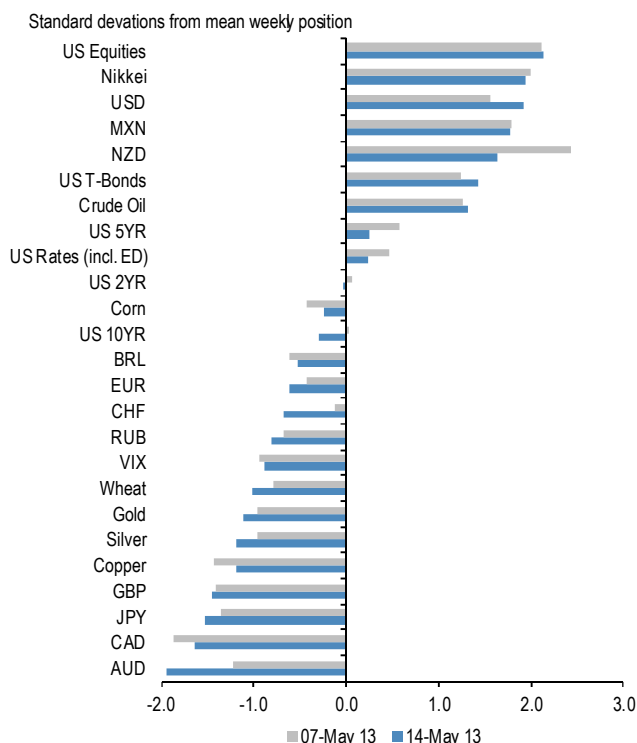


Source: ECB, BoJ, BoE, Federal Reserve, Bloomberg, Dealogic, J.P. Morgan

Spec position monitors

Chart A10: Weekly Spec Position Monitor

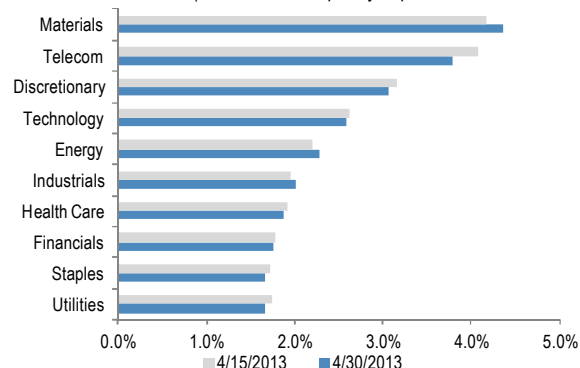
Net spec positions are the number of long contracts minus the number of short using CFTC futures only data. This net position is then converted to a USD amount by multiplying by the contract size and then the corresponding futures price. To proxy for speculative investors, commodity positions use the 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 overweighted 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)

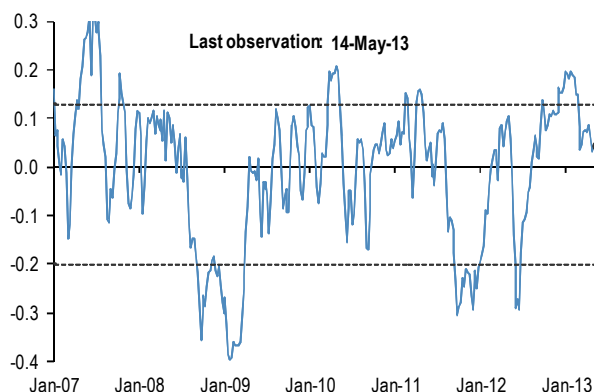


Source: NYSE, J.P. Morgan

Chart A11: Spec position indicator

Difference between net spec positions on risky & safe haven assets

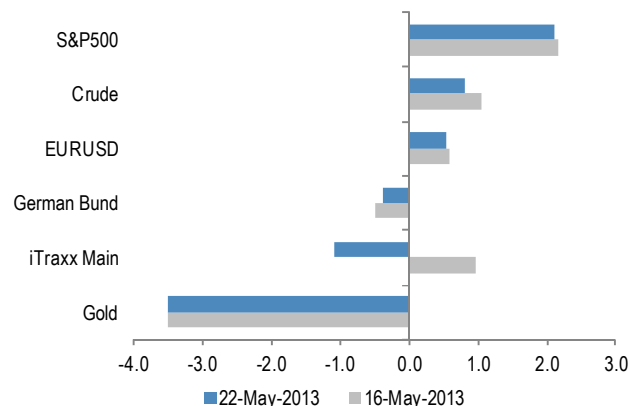
Net spec position is calculated in USD across 7 "risky" and 7 "safe" assets. These positions are then scaled by open interest and we take an average of "risky" and "safe" assets to create two series. The chart is then simply the difference between the "risky" and "safe" series. The final series shown 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.

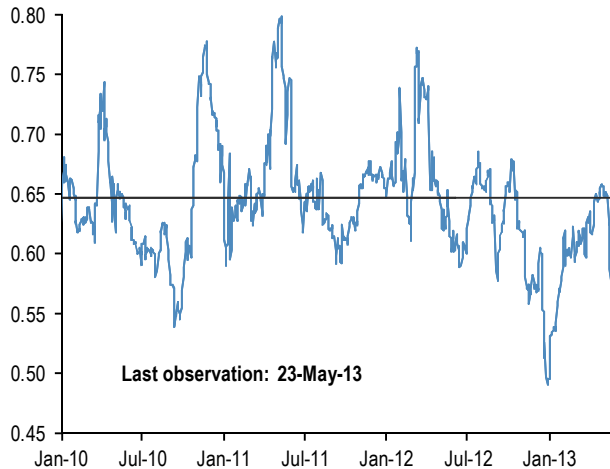


Source: Bloomberg, J.P. Morgan

Mutual fund and hedge fund betas

Chart A14: Balanced fund equity exposure

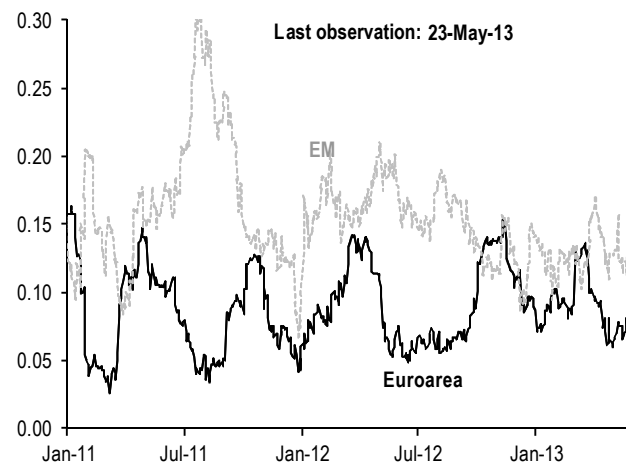
Rolling 21-day beta of balanced MF returns to returns on the S&P500. Balanced funds are top 20 US based funds by assets that have existed since 2006. It excludes tracker funds and funds with a low tracking error. The thin black line is the average during expansion since 2006.



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.

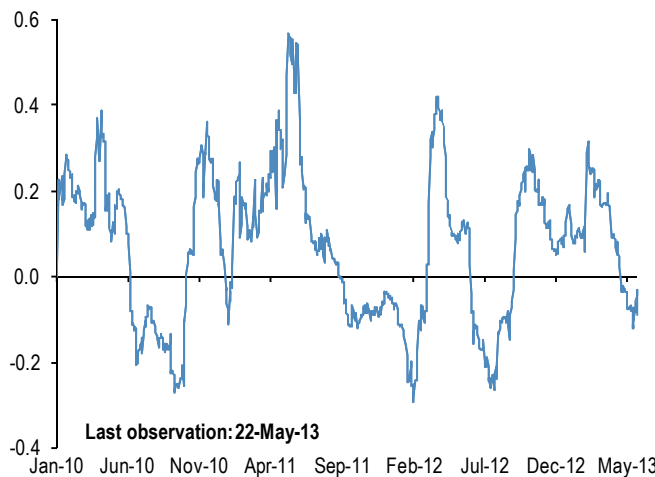


Source: Bloomberg J.P. Morgan

Chart A16: Macro hedge fund monitor

Macro hedge fund equity exposure

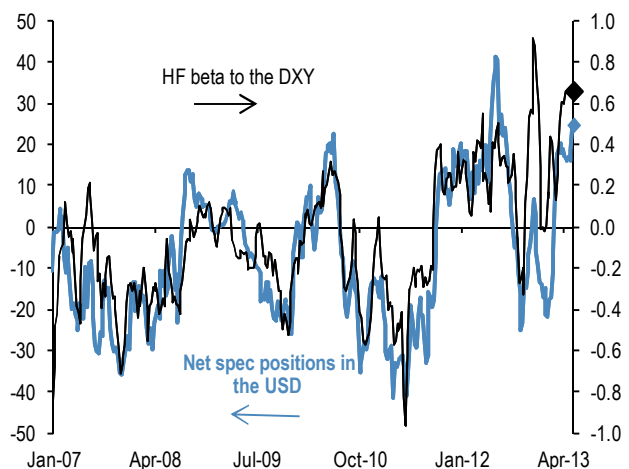
Rolling 21-day beta of macro fund returns to returns on the S&P500. The beta represents the average exposure of macro hedge funds to equities over the previous 21-days.



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 May 14, 2013.

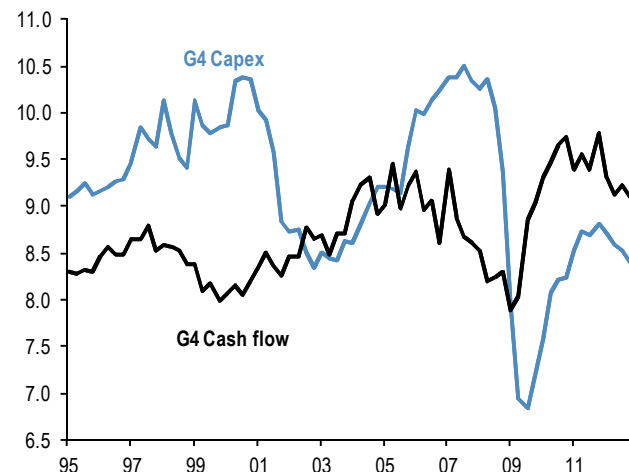


Source: CFTC, Datastream, Barclay Group, Bloomberg, J.P. Morgan

Corporate activity

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

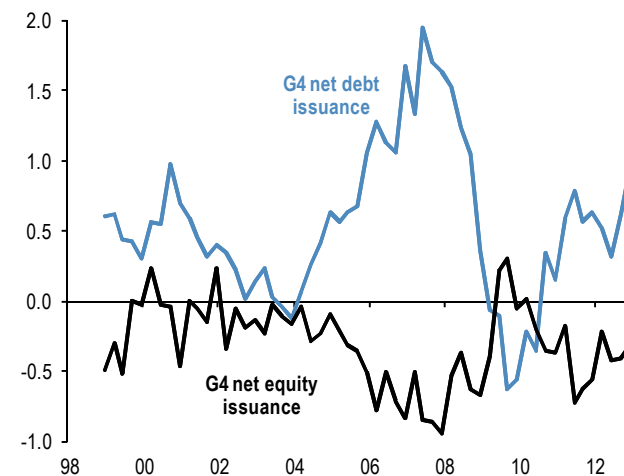
% of GDP, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q4 2012.



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

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

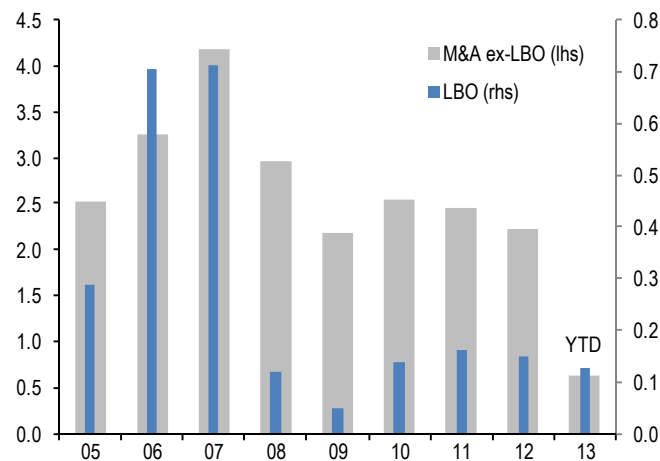
\$tr per quarter, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q4 2012.



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

Chart A20: Global M&A and LBO

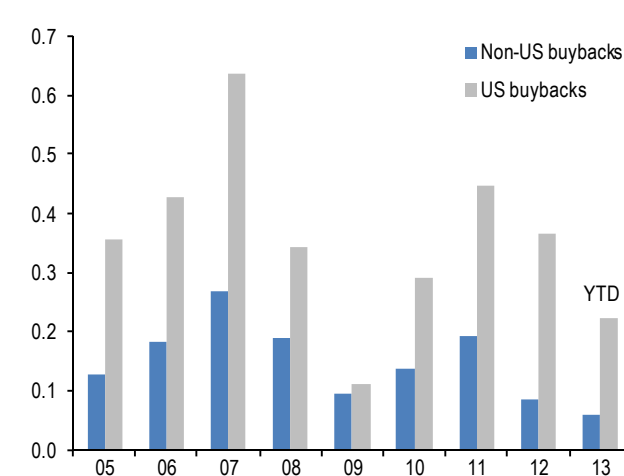
\$tr. YTD 2013 as of May 24, 2013. M&A and LBO's are announced.



Source: Reuters Thomson One, J.P. Morgan

Chart A21: US and non-US share buybacks

\$tr. YTD 2013 as of May 24, 2013. Buybacks are announced.

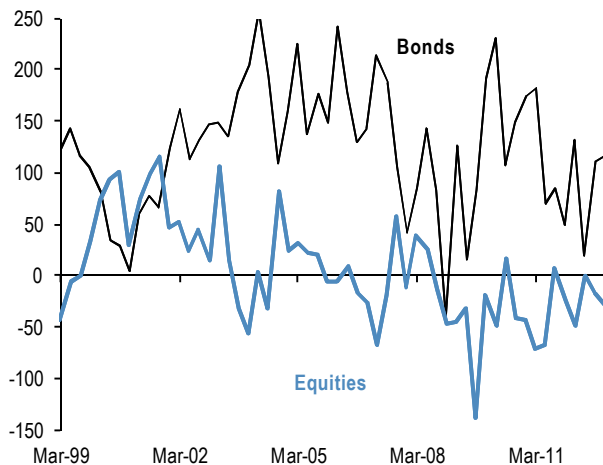


Source: Reuters Thompson One, J.P. Morgan

Pension fund and insurance company flows

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

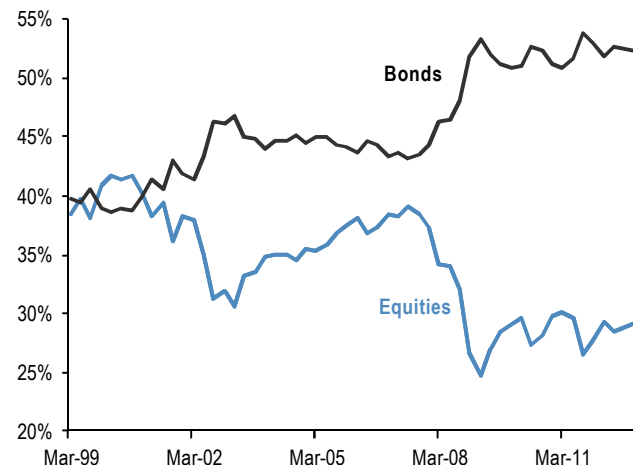
Equity and bond buying in \$bn per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q4 2012



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

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

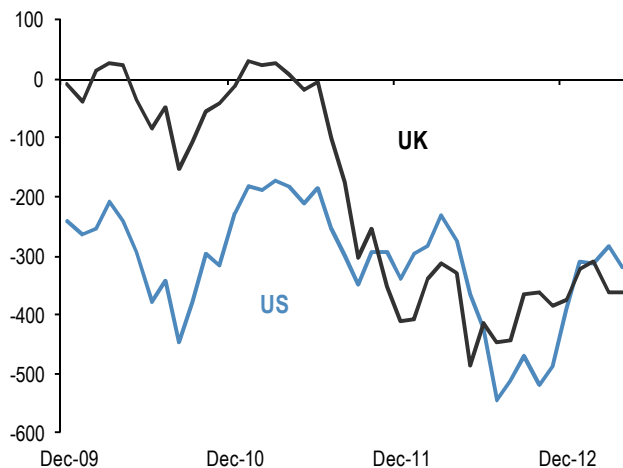
Equity and bond as % of total assets per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q4 2012.



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

Chart A24: Pension fund deficits

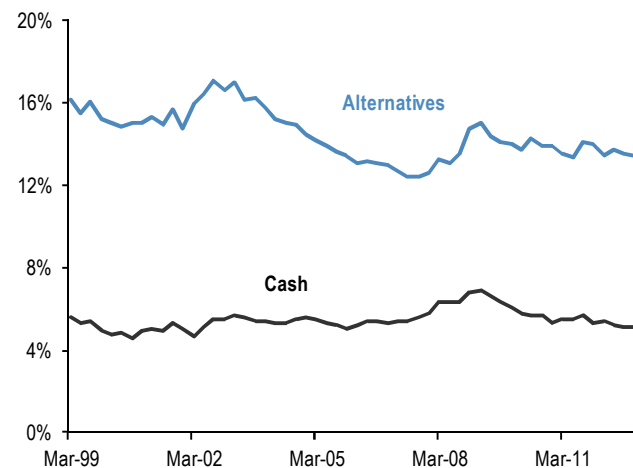
US\$bn. For US, funded status of the 100 largest corporate defined benefit pension plans, from Milliman. For UK, funded status of the defined benefit schemes eligible for entry to the Pension Protection Fund, converted to US\$ at current exchange rates. Last observation is Apr 2013.



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 Q4 2012.



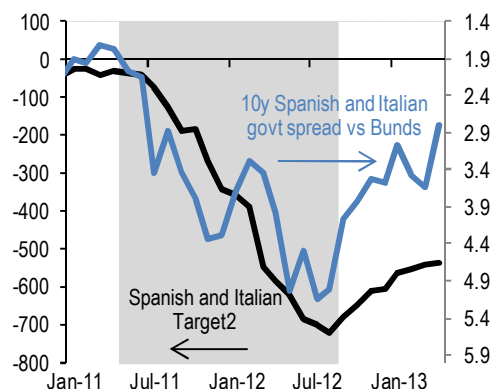
Source: ECB, BOJ, BOE, Federal Reserve flow of funds

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 Mar 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	-37	2	7	0.8%	1.2%
Belgium	-16	23	15	1.8%	6.2%
Cyprus	-9	0	0	-7.7%	-7.9%
Finland	34	-27	4	-1.0%	1.8%
France	-46	-44	123	0.5%	5.1%
Germany	608	-111	15	-0.4%	2.8%
Greece	-74	35	61	3.0%	0.9%
Ireland	-86	21	53	-2.5%	2.6%
Italy	-242	24	266	1.1%	6.5%
Luxembourg	103	-10	3	1.5%	5.0%
Netherlands	83	-37	15	1.8%	4.7%
Portugal	-66	3	50	0.0%	-3.3%
Spain	-297	84	265	1.8%	2.4%

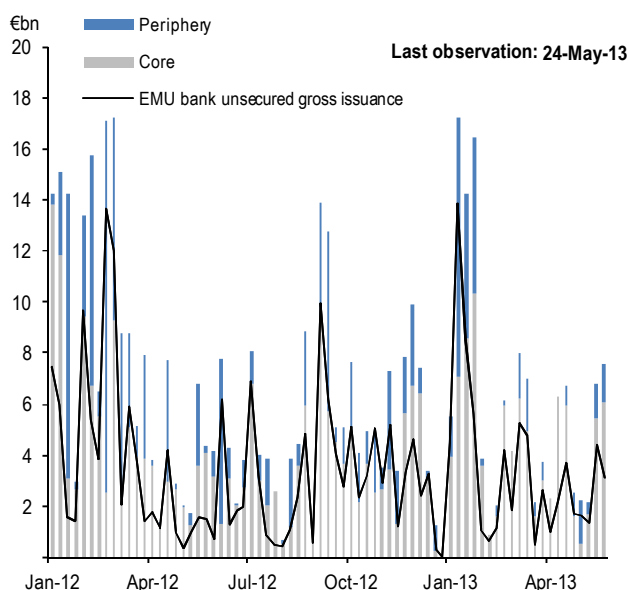


Source: Bloomberg, ECB, National Central Banks, J.P. Morgan

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

Chart A26: Euro area gross bank debt issuance

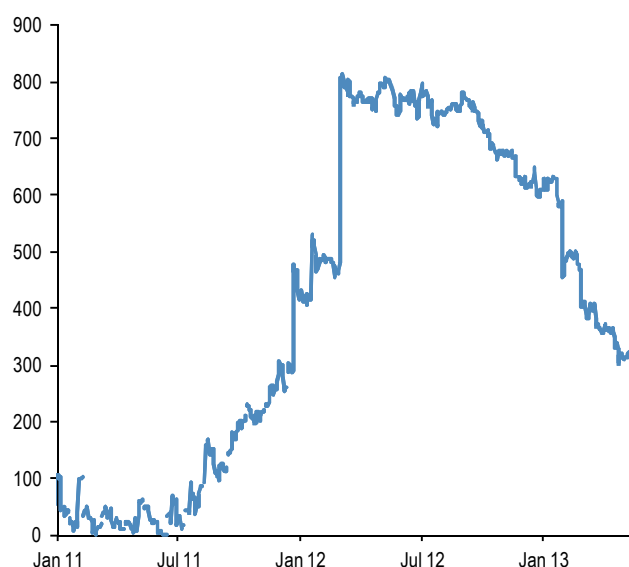
Includes secured, unsecured and securitized issuance in any currency. Excludes short-term debt (maturity less than 1-year) and self funded issuance (where the issuing bank is the only book runner).



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 May 23, 2013.

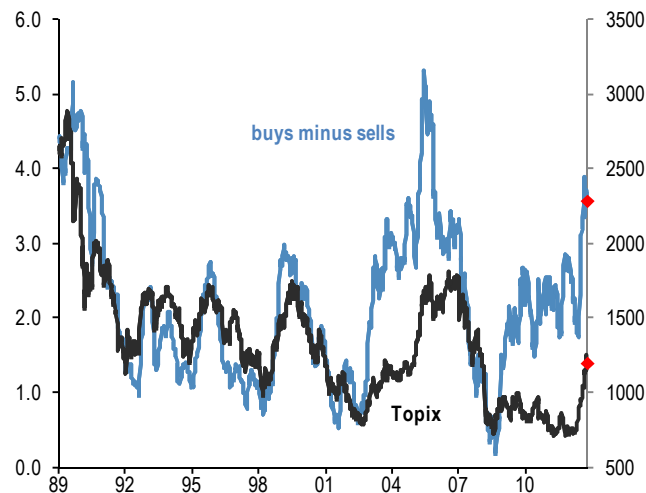


Source: ECB, J.P. Morgan

Japanese flows and positions

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

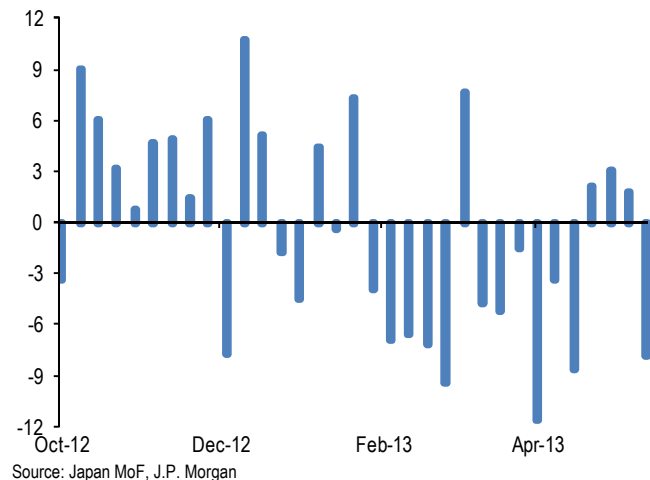
in mn of shares. Last observation is May 17, 2013



Source: Tokyo Stock Exchange, J.P. Morgan

Chart A29: Japanese investors' buying of foreign bonds

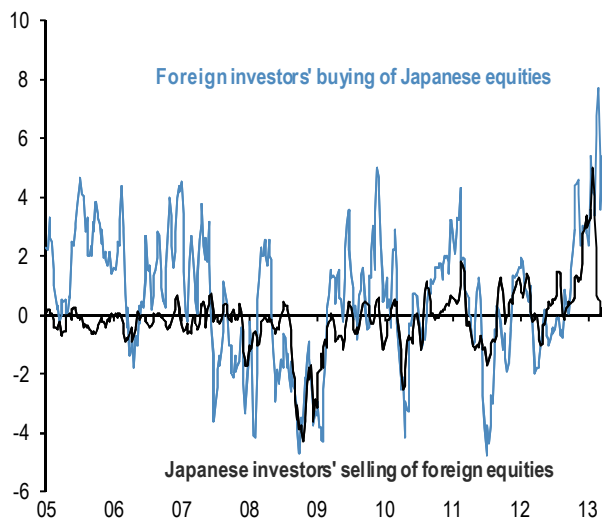
\$bn per week. Last observation is May 17, 2013.



Source: Japan MoF, J.P. Morgan

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

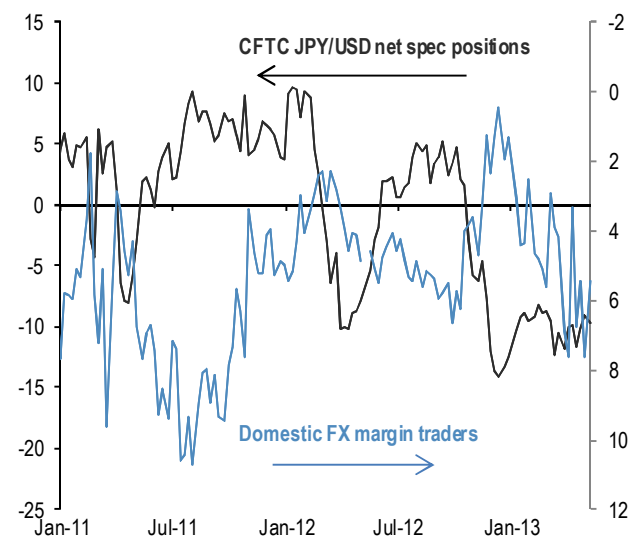
\$bn, 4 week moving average. Last observation is May 17, 2013



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 May 15, 2013

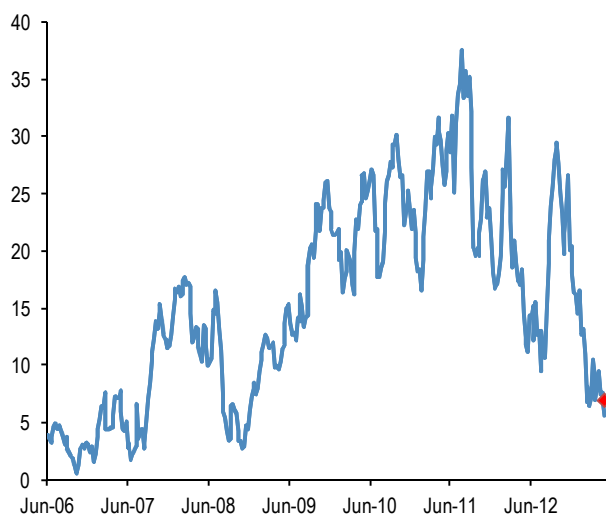


Source: Bloomberg, MoF, CFTC, Nikkei Veritas, J.P. Morgan.

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 May 14, 2013

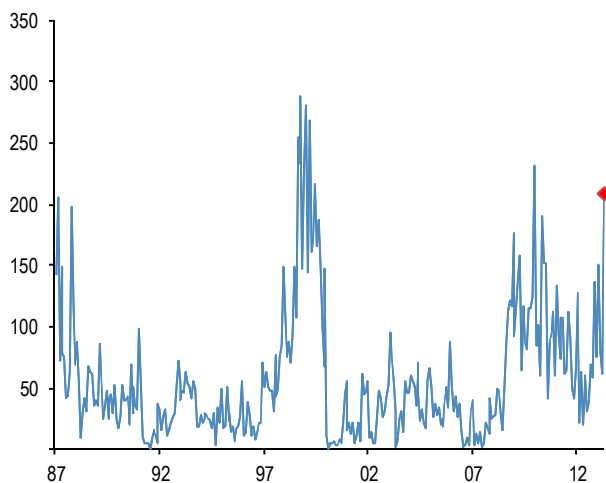


Source: CFTC, Bloomberg, J.P. Morgan

Chart A34: Gold coin sales

Last observation is Apr 2013

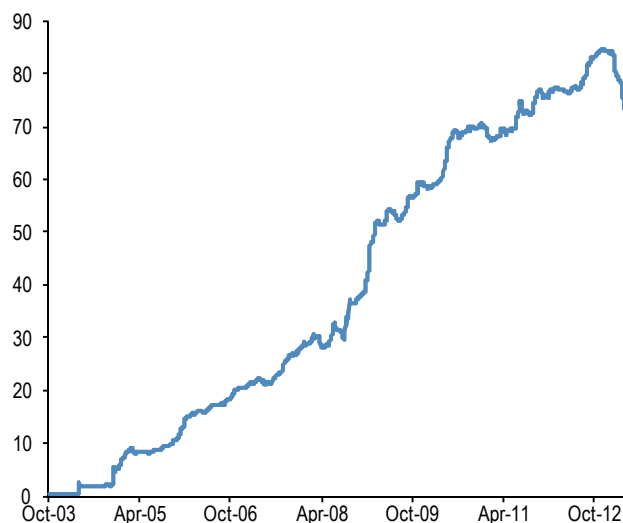
Thousand troy ounces



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

Chart A33: Gold ETFs

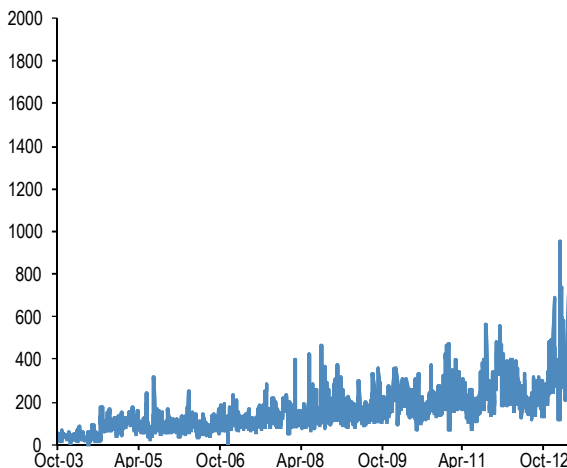
Mn troy oz. Physical gold held by all gold ETFs globally. Last observation is May 23, 2013.



Source: Bloomberg, J.P. Morgan

Chart A35: Shanghai exchange gold volumes

Thousand troy ounces. Last observation is May 23, 2013



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

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Global Asset Allocation
Flows & Liquidity
28 May 2013

J.P.Morgan

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Global Asset Allocation
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Corrected Note: Replaced Figures 2 & 4 (on page 2) to correct errors.

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