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Where did all the money come from?

Why the tailwinds from fund flows look set to diminish

- Heavy inflows have significantly contributed to the recent strength of credit markets.
- Much of the reason for the inflows is that easy monetary policy has been driving investors out of money market funds and into almost anything else.
- The flows moved first to government bonds, then into high grade credit, but are now increasingly concentrated on high yield and equities.
- The resulting market impact has been magnified during periods of QE.
- As QE ends, and short rates begin to rise, spread support from inflows is likely to diminish.

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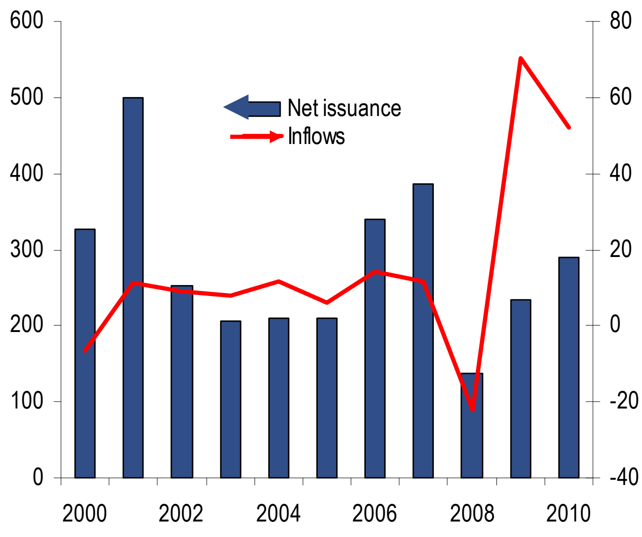
Money, money, everywhere

Over the past year or so, investors seem to have become obsessed with inflows. Much of this is with good reason: inflows to corporate credit have more than doubled since 2006-7, yet net issuance has fallen, if anything (Figure 1). Most new issues are heavily oversubscribed, and one account after the other is left feeling they have to buy the market, regardless of whether they like it.

This piece tries to get away from the frequent but vague invocation of "cash on the sidelines", and to provide a framework for analyzing these flows. We argue that they are best assessed not in isolation, but relative to money market funds. Once this is adjusted for, they correlate closely with market levels, both in credit and in equities. Not surprisingly, loose monetary policy has been the main driver, pushing investors away from cash and into almost everything else, and helping to stoke the rally in risky assets everywhere.

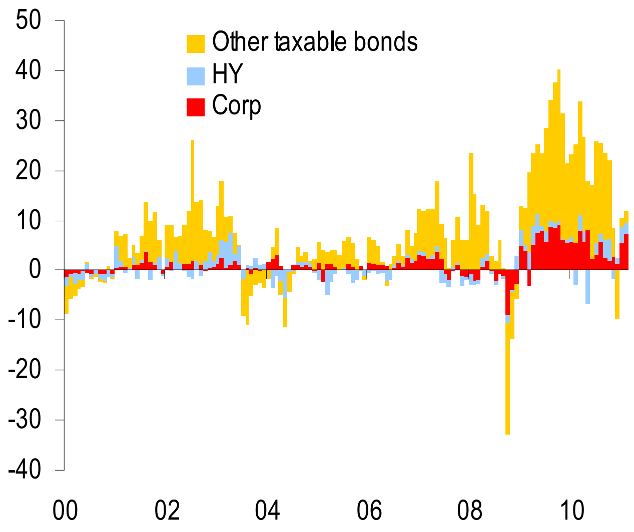
From here though, support from inflows is liable to diminish. We show how their impact has been magnified during periods of QE, which is now ending. While low interest rates will probably continue to leave investors reaching for yield, they seem increasingly likely to seek their returns in equities or high yield, rather than IG credit.

Figure 1. More money, same issuance
Corp IG inflows vs net issuance, $bn



Source: Dealogic, ICI, CIRA calculations.

Figure 2. Bond fund inflows have surged
Monthly net inflow, $bn



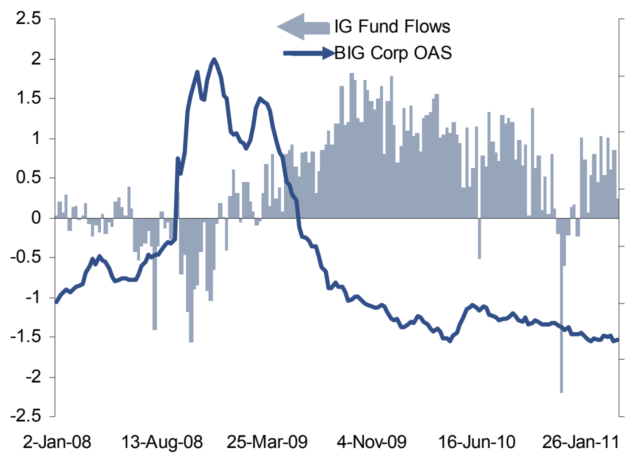
Source: ICI.

Analyzing the numbers

Why do inflows matter?

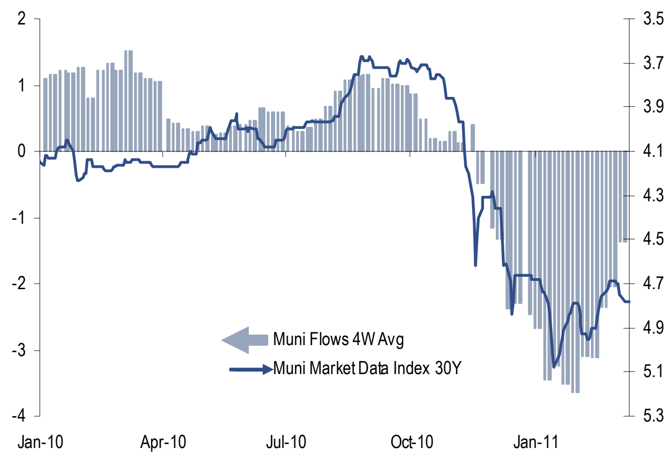
Many investors feel the obsession with fund inflows is overdone. Yes, inflows to bond funds have surged since 2009 (Figure 2). But credit remains an institutionally dominated market, and the only widely available inflow numbers cover retail mutual funds. If these make up only a small proportion of the market, why should investors care? First inspection suggests only a mild correlation with spreads (Figure 3), and individual series are typically quite noisy from one week to the next.

Figure 3. Why should we care about inflows anyway?
Corporate fund inflows ($bn) vs credit spreads (bp)



Source: EPFR, Citi Investment Research and Analysis

Figure 4. Selling causes a sell-off – well, on one occasion at least
Muni fund flows ($bn) vs muni bond yields (%)



Source: Citi Investment Research and Analysis

Besides, even in markets where retail flows are more important, they are seldom an obvious driver of spreads. Muni market yields suffered sharply with outflows in early 2011 (Figure 4), but both there and in equities, the conventional wisdom is that most of the time market performance drives flows, not the other way round. Retail investors traditionally pile into funds once the market has already rallied, and sell it the week after it has already sold off.

We think this view is too dismissive. First, the absolute amounts captured by the mutual fund numbers are not as small as all that. Even in corporate credit, the $450bn or so captured by ICI represents about 13% of IG outstandings. In munis, the proportion is 15%; in equities, as much as 28% (Figure 5).

Figure 5. Mutual funds and market caps

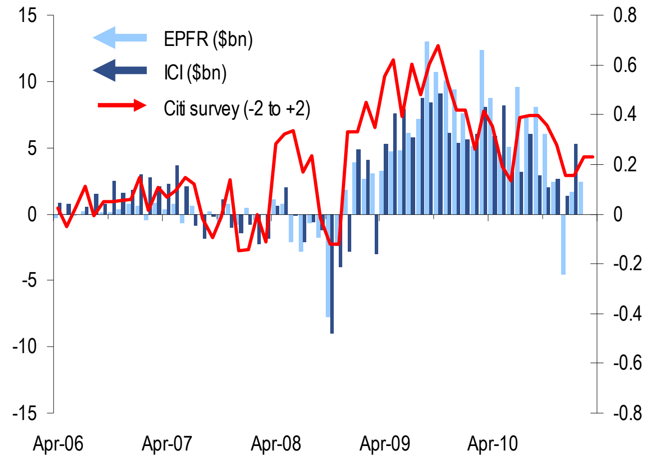
Mutual fund AUM vs market outstandings

	Fund AUM ($tn)	Market Size ($tn)	AUM vs. Outstanding
Total equity	4.41	15.7	28%
Municipals	0.46	3.1	15%
HY Corporates	0.23	1.1	21%
IG Corporates	0.46	3.4	13%

Source: ICI, SIFMA, Citi, CIRA..

Figure 6. Many series, same pattern

Credit mutual fund inflows vs Citi credit survey inflows, monthly



Source: ICI, EPFR, CIRA. Survey responses prior to 2010 are Europe-only.

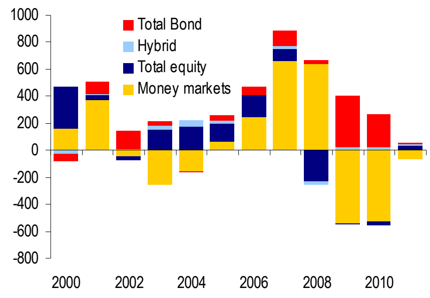
Second, even when these proportions are small, there is at least some correlation between retail inflows and institutional ones. The broad pattern of retail mutual fund inflows in recent years is strikingly similar to inflows reported in our monthly client survey (Figure 6). Although some of the respondents do run retail-oriented funds, the majority of the investors we question manage institutional money.

Third, while individual data series can be noisy, the broad trend shown by our own survey, the EPFR data and the ICI data on fund inflows is nevertheless consistent. After outflows in late 2008, during 2009 and 2010 money poured into credit funds at an unprecedented rate. Average inflows in investment grade were four or more times larger than in 2006-7. More recently, these inflows seem to have been diminishing, for investment grade in particular, and now stand around half their peak level.

Where's all the money come from?

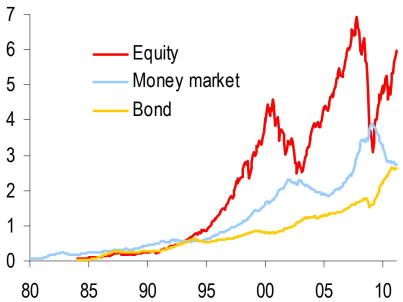
However, to really make sense of fund flows numbers, we think it is important to see the bigger picture. By far the biggest flows occur in money market funds. Much of the time, the inflow or outflow from credit or equity funds is not genuinely new money: it is a switch into or out of money markets. Although the absolute amount saved in equity funds is higher, most of this remains static, and does not flow in and out.

Figure 7. Money market flows predominate
Annual flows by asset class ($bn)



Source: ICI. 2011 figures are Jan+Feb only.

Figure 8. Total assets invested
$tn



Source: ICI.

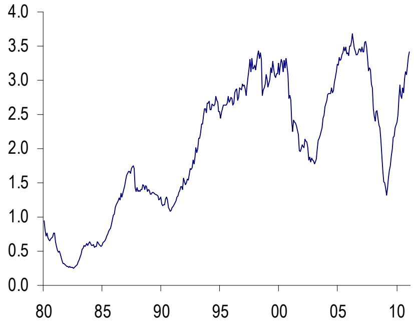
By looking at the ratio of outstanding investments in other asset classes versus the size of the money market funds, we can achieve a couple of things. First, we help to normalize the series for the steady upward trend through time. Second, we can capture investors' risk appetite for an asset class – their preference for it *relative* to something virtually risk-free – more closely than if we look at their purchases of that asset in isolation.

Fund ratios and market prices

Several things become striking once we start thinking in terms of these ratios.

First, the ratio of investors' total long-term investment holdings to their money market fund holdings seems to be largely mean reverting, at least since 1990 or so (Figure 9). There was a sharp uptrend in risk appetite between 1983 and 1994, conceivably because of the introduction and massive increase in popularity of 401(k) plans over the period, the main investment vehicle for which is mutual funds.

Figure 9. Up, down, up…
Long-term mutual fund investments / money market investments, ratio

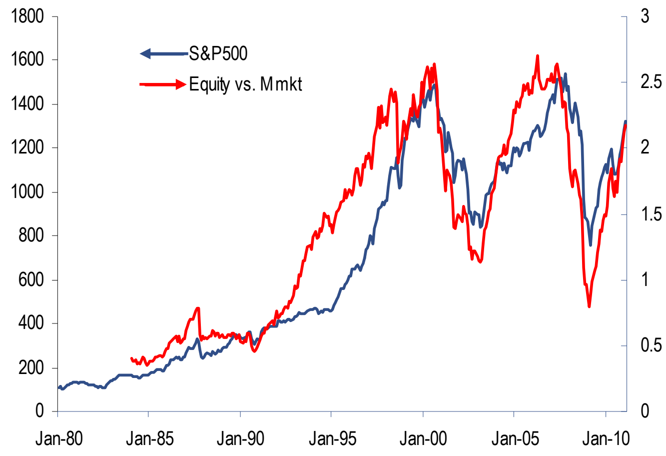


Source: Citi Investment Research and Analysis

Second, that ratio bears at least some resemblance to market movements, with a miniature peak in 1987, another in early 2000, and another in June 2007. Although we are approaching the peaks of recent cycles today, it should be noted that previous peaks have often been maintained for an extended period – between 2005 and 2007, for example.

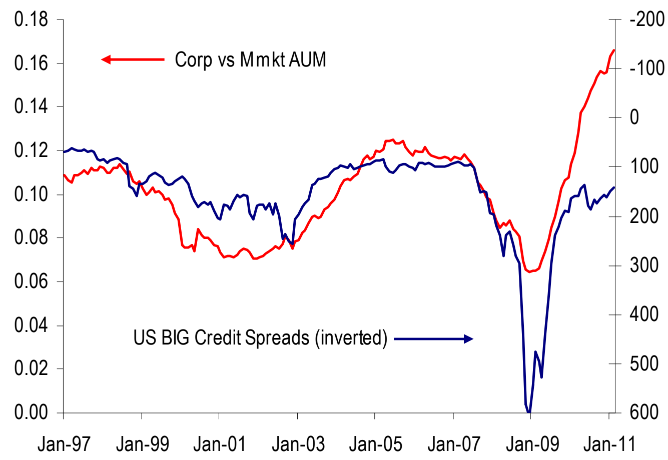
Third, this correlation actually improves if we start to look at the individual ratios for different fund types – the best is in equities. If we take equity mutual fund assets under management (AUM) and divide by money market funds' AUM, we can see that investors' relative holdings of equity funds have fairly closely followed the S&P 500 (Figure 10).

Figure 10. Equity AUM / Money market AUM (Ratio) vs S&P500



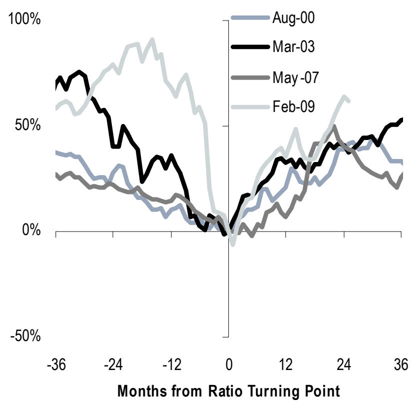
Source: ICI, Citi Investment Research and Analysis

Figure 11. Corporate AUM / Money market AUM (Ratio) vs US BIG (bp)



Source: ICI, Citi Investment Research and Analysis

Figure 12. S&P 500 response 3 years before and after turns in Equity AUM/ Mmkt AUM (ratio).



Source: Citi Investment Research and Analysis

Of course, the level of the S&P500 itself is a major driver of the value of investors' equity holdings. But this does not seem to be the source of the correlation. In the 1990s, investors' relative preference for equities increased long before the market rally really got underway. And at subsequent turning points, investors' relative preference seems to have turned around slightly before the turning points in the market (Figure 12).[1] It really looks as though in these cases, inflows and outflows have been significant contributors to price movements.

Correlations for bond funds are slightly harder to establish. The major problem is knowing what to correlate them with: bond funds frequently invest across a broad swathe of fixed income assets. Retail money makes up a lower proportion of the total fund flows into the asset class. There also seem to be some discontinuities in the data (where funds were reclassified, or additional funds entered the sample). Nevertheless, it is not difficult to see a broad correlation between investors' relative holdings of corporates and the movements in credit spreads (Figure 11). And unlike equities, very little of this correlation can be explained by fluctuations in the value of their holdings (which will be driven more by movements in overall bond yields than by credit spreads). Once again, it is hard to escape the conclusion that investor inflows have been one of the drivers of spreads.

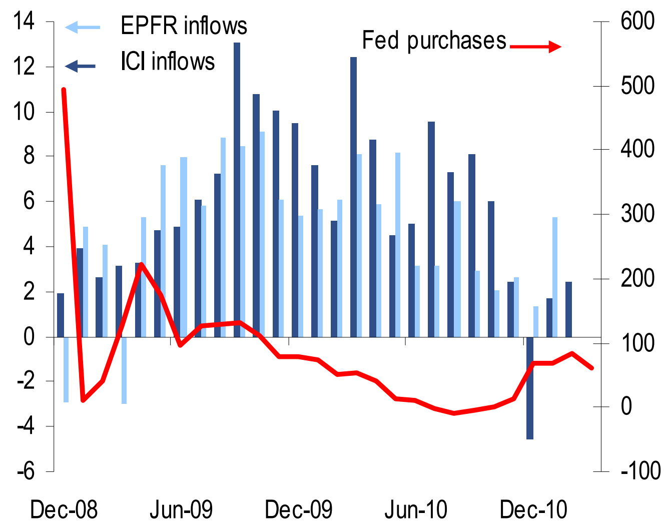
The effect of QE

These effects seem likely to have been compounded during periods of quantitative easing. This is not because of any effect on the inflows themselves: fund inflows (whether for corporates alone, or bond or equity funds more broadly) seem to correlate very little with the Fed's purchases of Treasuries and mortgages (Figure 13).

[1] Some of this may be due to the choice of the S&P500 here as a representative stock index. For example, the S&P500 did not peak until August 2000, even though the NASDAQ peaked in March 2000. It is quite possible that investors' NASDAQ holdings at the time were as large as their positions in the S&P500. However, this does not seem to be able to explain the series' tendency to lead equity markets at subsequent turning points.

Figure 13. Little link between inflows and QE

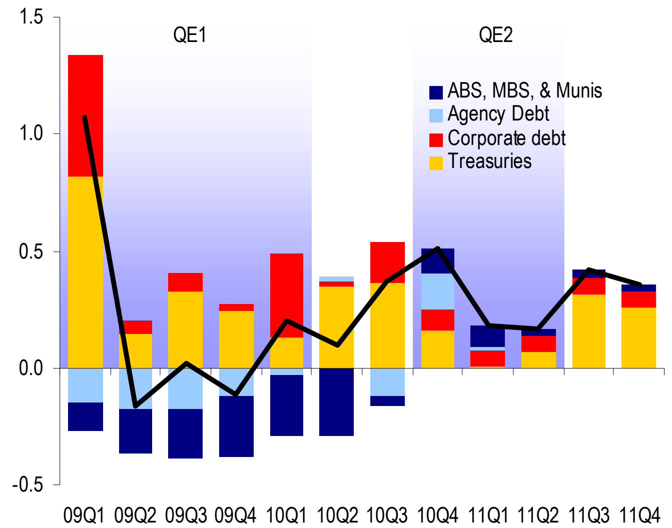
IG corporate inflows vs Fed QE purchases ($bn, monthly)



Source: ICI, EPFR, Federal Reserve.

Figure 14. QE has absorbed much of total fixed income issuance

US bond issuance net of redemptions and Fed purchases ($tn)



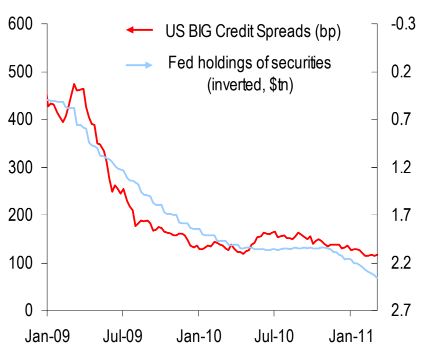
Source: Dealogic, SIFMA, Federal Reserve.

Rather, it is because of the effect QE has had on reducing the available supply of fixed income assets at a time when investors have been receiving already heavy inflows. Figure 14 shows net issuance of Treasuries, mortgages, agencies, corporates and securitized products once both normal redemptions and Fed purchases have been subtracted. The black line shows the total: the net amount of fixed income supply absorbed by private investors. The effect is very clear: during QE1, the Fed's purchases of Treasuries and MBS reduced the net supply to private investors in US fixed income to almost zero. Once QE1 ended, net issuance picked up steadily. When QE2 began in November 2010, it had a similar effect. The Fed's absorption of the majority of Treasury issuance has left significantly less paper to be bought by the private market.

We think this is the reason for the strong relationships we find between QE and market performance, which we described in a recent note (see *Do Rate Hikes Matter For Credit?*, H. Lorenzen, Citi, 23 March). Investors tend to discount the importance of QE because there is little obvious relationship with Treasury yields. There is, however, a much closer relationship with credit spreads (Figure 15) and with equity prices. If you reduce net fixed income supply to almost zero at a time when funds are enjoying record inflows, they end up buying the market whether they like it not. It is hardly surprising that this then has an effect on prices. Once QE ends in June, net supply will increase and inflows should be more easily absorbed by the market.

Figure 15. QE or not QE?

Credit spreads vs Fed purchases



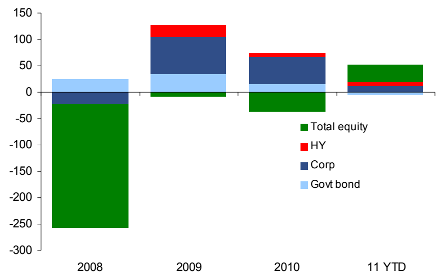
Source: Citi Investment Research and Analysis

What will investors buy next?

So far, we have considered the link between fund flows and market prices but not really analyzed what drives the fund flows themselves. What makes investors buy one asset class rather than another – or indeed any asset other than money markets?

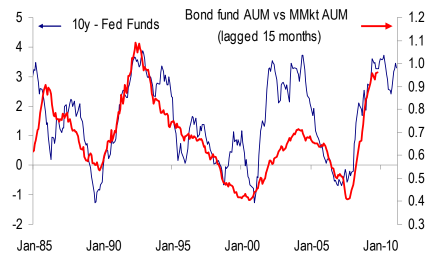
Here too, we think much of the answer lies with the Fed. Figure 16 shows net annual purchases of corporate, high yield, equity and government bond funds. (We deliberately exclude categories of bond fund which buy multiple asset classes because they are hard to interpret; we also leave off money market funds here, because they dwarf everything else.) The absolute numbers are perhaps less telling than the relative preferences. In 2008, investors bought govies. In 2009, they bought govies and investment grade. In 2010, they bought mostly investment grade, while appetite for Treasuries diminished. Thus far in 2011, they have been buying high yield and equities.[2] Appetite for investment grade has fallen, while Treasury funds have actually suffered outflows.

Figure 16. From USTs to IG to HY to equities
Net annual purchases, $bn



Source: ICI. 2011 data are not annualized.

Figure 17. Pavlov (with a lag)
Bond fund demand vs yield curve



Source: ICI, Citi Investment Research and Analysis

It looks as though investors have basically been reaching for yield. Investment grade bonds were interesting in 2009 when they still paid 7 percent. Now that they pay only 3.5, investors have turned their attention elsewhere. High yield (in relative terms) has suffered less, but even here, with yields at record lows, investors' attention is beginning to shift back to equities.

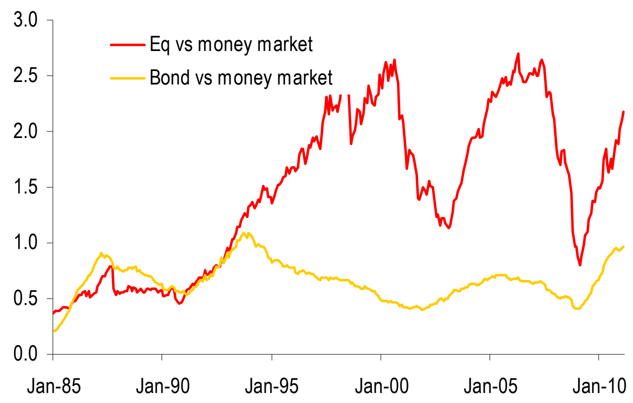
And yet the real threat to all these asset classes is probably not the competition from the others, but the competition from money market funds. As we saw back in Figure 7, the real reason for huge inflows in 2009-10 was the outflows from money market funds. Once money returns to money market funds, inflows to credit and equities are likely to diminish – or even to reverse.

Such a return is unlikely to be sparked simply by the end of QE. It is however, liable to happen gradually once money market rates start to rise. Figure 17 shows that investors' relative holdings of total bond funds seem to follow a lagged relationship with the steepness of the yield curve.

We can also hazard a guess at where investors will put their money using simple mean reversion. With the exception of the run-up in equity holdings in the 1990s, most of the series for investors' relative fund holdings seem to mean revert.

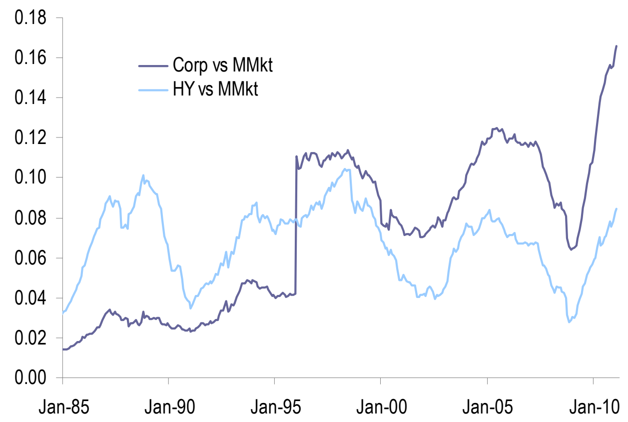
[2] Clearly the absolute purchases of high yield were higher in 2009 and 2010, but relative to the amounts put into other asset classes, appetite for HY seems to have been rising. It is difficult to show these relative preferences in flows because of the difficulty of handling the negatives.

Figure 18. Equity investments still shy of typical peaks
Equity Fund AUM vs Money Market Fund AUM (ratio)



Source: ICI.

Figure 19. Record longs in investment grade
Credit Fund AUM vs Money Market Fund AUM (ratio)



Source: ICI. There is a break in the corporate series in 1996.

Investors' relative equity holdings, although rising, are still some way off their typical peaks. Holdings of bonds, on the other hand, look closer to those peaks (Figure 18). Within bonds, high yield fund holdings seem only just above long-term averages. On the other hand, holdings of investment grade ("corporate") funds have easily overshot previous highs (Figure 19).[3]

In the near term, it therefore seems likely that funds will continue to be diverted toward high yield funds and equity funds, and away from investment grade. In the longer term, once money market rates begin to rise, many of the inflows currently supporting risky assets seem likely to first to fall, and then to flow back out. After all, Figure 9 showed that investors' risk appetite is already at historically high levels.

Conclusion

Markets are currently being supported by an unprecedented mix of record demand and yet heavily constrained supply. We think this is more closely tied to easy monetary policy (in the case of demand) and QE (in the case of supply) than many investors realize.

From here, we think the going gets tougher – in particular for investment grade credit. Low rates should sustain appetite for risky assets even after the end of QE. But demand seems likely to become increasingly concentrated on high yield and equities. Nothing here suggests an outright reversal lies immediately around the corner. But at a minimum, we think high grade investors should realize they have never had it so good. And investors everywhere would do well to delve beneath the ubiquitous references to cash waiting on the sidelines, and ask themselves where all the money is coming from, and – more importantly – whether it will keep on coming.

[3] Admittedly the break in the series in 1996 makes the risk this poses harder to interpret.

Appendix A-1

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