

Credit

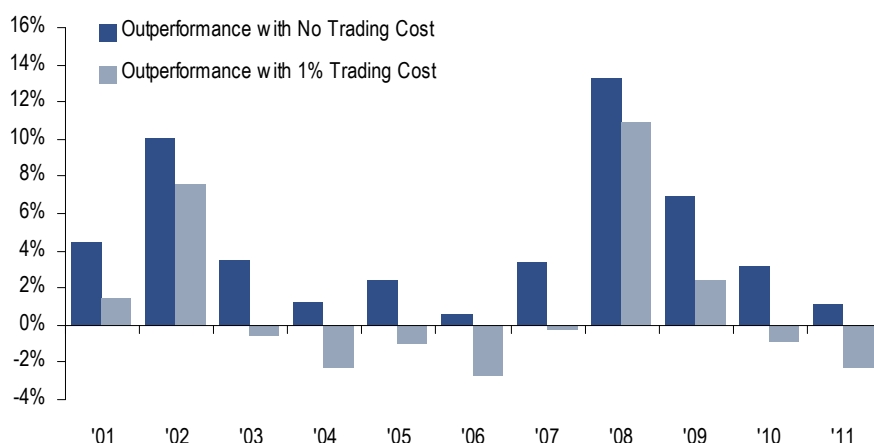
30 January 2012 | 17 pages

Why It's So, So Hard to Outperform Now...

...and what to do about it

- **The Problem:** The current market environment exhibits a fairly unique *combination* of characteristics: (1) intra-market correlations at heightened levels, (2) very soft liquidity conditions, and (3) a high cost of transferring risk.
- **The Implication:** The result is that some of the traditional alpha generation tools used by portfolio managers may not be as effective as they have been in the past. Consider a hypothetical portfolio manager that has perfect information about future sector, rating, and maturity performance. How much could she outperform her benchmark given the unique market characteristics highlighted above? Turns out, she couldn't. Actually acting on perfect information could result in underperformance, not outperformance, in the current environment!
- **Potential Solution:** So how to generate alpha? Take what the market gives, in our view. Provide liquidity, find dislocations, and reduce trading costs. Easier said than done of course, but nonetheless we outline several approaches inside.

Figure 1. Outperformance of a high-grade portfolio with and without trading costs assuming "real world" constraints and perfect information, 2001-2011



Source: CIRA

Note: In addition to "real world" constraints described on p. 6, we also assume that amount allocated to each sector is capped at 10% of the market value of the respective sector

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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Why It's So, So Hard to Outperform Now...

While the above comment may be a bit of an overstatement, it nonetheless holds at least partially true. The reason is that the current market environment exhibits a fairly unique *combination* of characteristics. In particular, intra-market correlations remain at heightened levels, liquidity conditions continue to be very soft, and the cost of transferring risk remains lofty. The **result is that some of the traditional alpha generation tools, such as sector selection and curve positioning, are not as effective as they have been in the past.**

In this article we assess this topic by first reviewing and to the extent possible quantifying select features in the marketplace that are somewhat unique. We then examine the implication of these conditions on the alpha generation process for a typical portfolio manager. Finally we consider trading strategies that may be more efficient alpha generators at this juncture.

The Problem

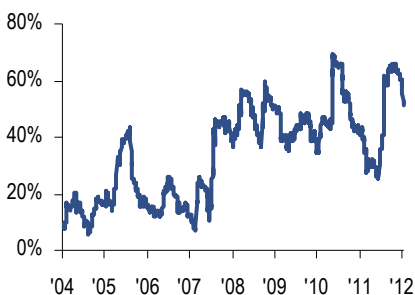
1. Correlations: Lower, but high

While the pair-wise correlation of issuer performance (ex: the correlation of IBM spread performance with spread performance of all other high-grade constituents) has been edging lower in recent trading, in general correlations remain at elevated levels. **As a rule of thumb, a highly correlated marketplace is more consistent with rewarding correct directional bets (i.e., risk on/risk off) and less consistent with rewarding correct stock picking, sector selection, etc.**

To illustrate the trend, in Figure 2 we highlight the average correlation of spread movements for each of the constituents in the CDX.IG index going back to '04. We see that at 51% the correlation of index members with each other is well above its long-term average of 34%. And we see similar trend in the high-yield space (Figure 3). The most recent observation there is also 51%, which is down from the recent high of 72%, but it is nonetheless well above the long-term average of 33%.

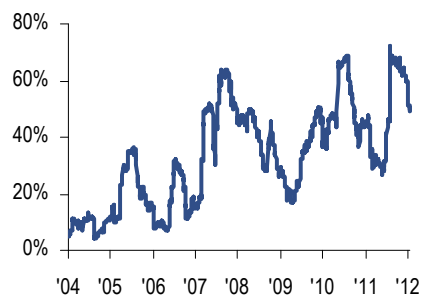
Also worth noting is that this is not just a credit market phenomenon. Figure 4 (next page) shows the correlation of S&P 100 constituents with each other over the past 30+ years. The pair-wise correlation currently stands at 62%, which is not all that far from the all-time high (73% on Black Monday) and well above the long-term average (27%).

Figure 2. Correlations within the high-grade market remain near multi-year highs



Source: CIRA
Note: As of January 17, 2011

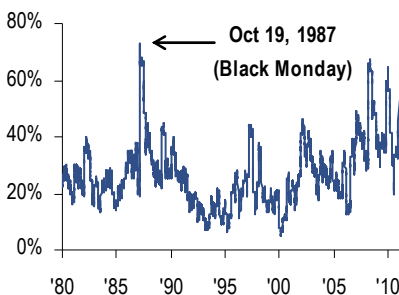
Figure 3. Correlations in the high-yield market have recently declined, but are still elevated



Source: CIRA
Note: As of January 19, 2011

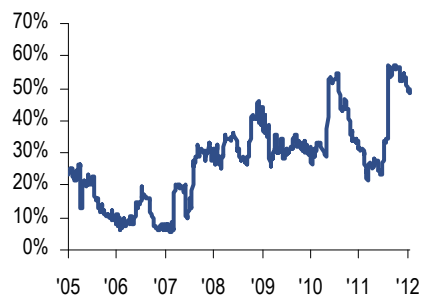
Even correlations across select asset classes are high; Figure 5 shows that the pairwise correlation between high-grade market constituents and S&P 100 members is currently about 50%, relative to an average of 28% and an all-time high of 67%.

Figure 4. Correlation in the equity market is hovering near "Black Monday" levels



Source: CIRA, Bloomberg
Note: As of January 17, 2012; based on S&P 100;

Figure 5. And correlation between credit and equity market constituents is high as well



Source: CIRA, Bloomberg
Note: As of January 19, 2012; 5-day moving average

Looking forward, we see a number of reasons why correlations may remain at higher-than-normal levels. For example, in general corporate managers appear to be balancing shareholder and bondholder interests, rather than favoring one at the expense of the other. Regulatory changes are coming, but these have been in the news for quite some time and could already be reflected in valuations.

And at this stage of the typical default cycle the variation in performance tends to be a bit muted. Figure 6 shows the difference between the best and worst performing sectors, maturity buckets, and ratings categories in the high-grade market. We see that on average the difference between the best and worst performing sectors is 3.65% and 1.16% in the typical rising and falling default rate environment, respectively, relative to only 0.70% during "status quo" markets. Although not presented we find similar results in the high-yield market as well.

Key point: Intra-market correlations are high relative to historical norms, and may remain at elevated levels going forward.

Figure 6. Differences in the best and worst performance in previous bull, status quo, and bear periods in the high-grade market

	BULL PERIOD			STATUS QUO			BEAR PERIOD		
	Feb-91 to Apr-94	Dec-02 to Jun-05	Average	May-94 to Mar-97	Jul-05 to May-07	Average	May-97 to Oct-02	Jul-07 to Feb-09	Average
LTM Default Rate Change	-3.9%	-2.8%	-3.3%	-0.1%	-0.2%	-0.1%	+3.3%	+3.0%	+3.1%
Sector Selection	1.09%	1.22%	1.16%	0.68%	0.72%	0.70%	2.33%	4.97%	3.65%
Maturity Buckets	0.37%	0.60%	0.49%	0.28%	0.44%	0.36%	0.92%	1.97%	1.45%
Rating Allocation	0.42%	0.56%	0.49%	0.20%	0.28%	0.24%	0.72%	1.98%	1.35%

Source: CIRA; Moody's
Note: Based on the credit returns; LTM default rate for all US corps

2. Liquidity remains a challenge

Liquidity conditions have improved at the margin in recent trading (of course, Q4 '11 is a very low hurdle), but nonetheless liquidity remains light. To illustrate, consider trading volume in the context of market size. Trading volume in the overall credit market has been trending lower in an absolute sense, and by some measures is down by about 12% over the past three years. But what is truly amazing is when this trend is considered in the context of notional size of both the high-grade and high-yield universes.

In Figure 7 we show the dollar volume of block trades (monthly) divided by total market size in the credit space. In early '09 this ratio stood at about 13% (\$299 bn block trades per month, \$2.3 tn market size), but since then the credit market has almost doubled (from \$2.3 tn to \$4.0 tn). As noted earlier monthly trading volumes have declined by about 12%, **which means that the ratio of trading volume to amount outstanding is now only about 6.5%!**

Another way to demonstrate the challenging liquidity conditions is by comparing the number of block trades by CUSIP last year to the prior year. In this regard we first group all CUSIPs in the high-yield space into liquidity buckets – the 50 most liquid issues in one bucket, the next 50 liquid issues in another, and so on. We then tally the number of block trades in each bucket during '10 and '11. Figure 8 shows that the number of block trades in the most liquid bucket dropped 32%, and declines among the other buckets are also significant.

(Note that the increase in block trades in the 500+ bucket is simply due to more CUSIPs in the group; the average number of block trades per CUSIP has dropped sharply in this bucket.)

Key point: While liquidity conditions have improved a bit in recent trading, by various metrics we find them at low levels.

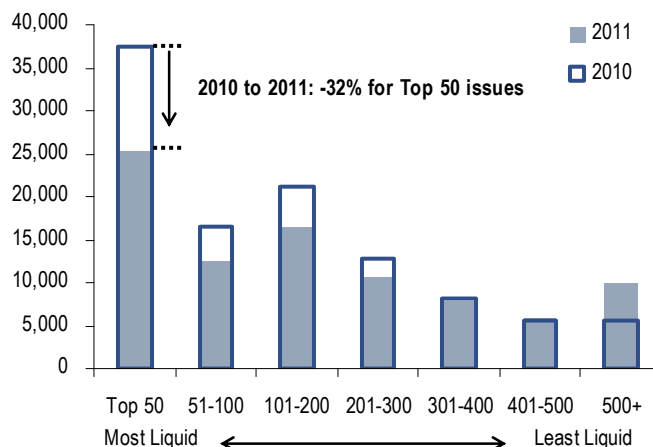
Figure 7. Ratio of total trade volume to the market size of the credit market is down sharply



Source: CIRA, TRACE

Note: As of January 20, 2012; total trade volume based on 20-observation rolling sum; market size reflects the market value of index eligible issues

Figure 8. Number of block trades by issue in 2011 versus 2010 in the high-yield market has tumbled



Source: CIRA, TRACE

Note: As of October 17, 2011; we use the same time period for 2010; includes block trades sized greater than \$1mm

3. The cost of transferring risk

The bid/ask spread is an easy way to measure the cost of trading a position, though in the real world it probably is not a very accurate measure. To illustrate, consider the Pinnacle 7.5s of '15, a bond that was quoted with about a 1.5 pt bid/ask spread back in Sep '11 (Figure 9). We look at how this bond actually traded during the Sep to Oct '11 period to get a feel for risk transfer in the real world (Figure 10).

Figure 9. Quoted bid/ask spread for PNK in early September '11

Security			Bid Px	Ask Px
ASCA	7½	21	101	-102½
MNTG	11½	19	85½	- 87½
PENGAM	10¾	17	102	-103½
PENGAM	8¾	15	101½	-103
PENN	8¾	19	106¾	-107¾
PNK	8½	17	105	-106½
PNK	8¾	20	101½	-103
PNK	7½	15	100¾	-101¾

Source: Citi Investment Research and Analysis
Note: As of September 8, 2011

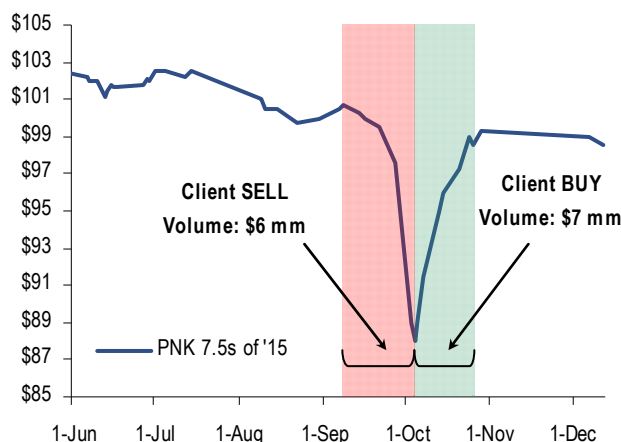
We see that the price of this issue tumbled 12 pts in mid-September, far more than what can be explained by price action in the broad market (-6.5 pt). **Why? Six million bonds traded¹!** (Worth noting is that it only took \$7 mm of buying interest to drive the price back to fair value.)

So instead of thinking about the cost of transferring risk in terms of bid/ask spread, we frame it in terms of price change between two consecutive block trades. The rationale is that the higher price volatility of a bond and the longer time between trades could mean the higher the risk to the dealer, and hence a higher cost of transferring risk. We use a simple model (R. Roll, "A Simple Implicit Measure of the Effective Bid-Ask Spread in an Efficient Market", *The Journal of Finance*, 1984)² to estimate the cost of trading in the real world (essentially the model considers the auto-covariance of the price difference between consecutive trades to estimate the cost of trading).

In Figure 11 we present how much dealers should theoretically charge based on this model for providing liquidity in the high-grade market over time. The model suggests that **investors are currently faced with almost three times the cost of trading relative to the '10 period** (time series is indexed to Jan '10). While not as severe as the post-Lehman period, the cost of transferring risk is still very high at this stage.

Key point: The combination of limited liquidity and heightened bid/ask spreads means that the true cost of risk transfer activity is very prohibitive.

Figure 10. The PNK 7.5s of '15 tumbled 12 pts last September when only \$6 mm were traded...and only \$7 mm drove the price back up



Source: CIRA, Bloomberg
Note: Based on TRACE dealer to client volume data; only includes trades greater than \$1mm; TRACE notes any trade block greater than \$1 mm as a \$1 mm-block

Figure 11. How much should dealers be charging for providing liquidity and taking on risk in the high-grade market? A lot...



Source: CIRA
Note: Data normalized by 15 bp bid/offer spread in January '10; 15-observation rolling median

¹ Based on TRACE data; TRACE notes any trade blocks greater than \$1 mm as a \$1 mm-block

² Implied bid/ask is derived from the 1st lagged auto-covar of the price changes: $2 \cdot \text{SQRT}[-\text{cov}(P_t, P_{t-1})]$

The universe is limited to \$150 bn in bonds (33% financial and 67% non-financial), and is restricted to the bonds with the highest number of \$5 mm trades. The index of bonds is rebalanced annually.

The Implications

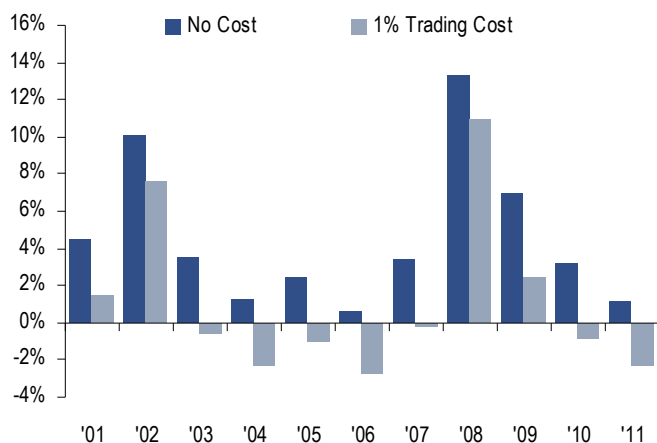
So at least some features of the trading environment may be unique, and we argue that these features impact the efficiency of some of the typical alpha generation tools in a negative way. Consider three tools in particular — sector selection, maturity allocation, and ratings preference — in the context of a hypothetical portfolio manager. We assume that our hypothetical manager works on one high-grade and one high-yield portfolio. But to make it interesting **we also assume that this PM has perfect foresight – at the beginning of each month she will know exactly how each rating, maturity, and sector bucket will perform over the coming month and invest accordingly.**

We assume several “real world” constraints. First, in any one month the manager can only reallocate 2% of assets under management to a given bucket. Second, portfolio subsectors (i.e., sector, maturity group, etc.) can only be over or underweighted by 100% of their respective weight in the benchmark index; for example, the bank sector is about 20% of the high-grade universe so the PM will have an allocation range of 0% to 40%. Lastly, the manager is not allowed to hold more than 10% of assets under management in cash.

In Figure 12 and Figure 13 we present the outperformance of our portfolio manager's high-grade and high-yield funds, respectively, assuming perfect information over the last ten years. We highlight two key findings:

- **Little benefit from rotations at this stage:** On average, perfect information/allocation in the high-grade space has yielded excess performance of 4.6% per year over the past decade. In high-yield, the figure is 23.6%. The maximum in both markets was 13.3% and 57.9%, respectively, during '08.

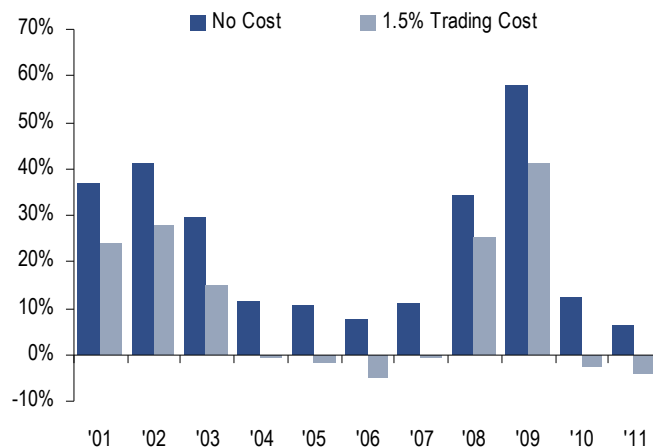
Figure 12. Outperformance of a high-grade portfolio with and without trading costs assuming “real world” constraints and perfect information, 2001-2011



Source: CIRA

Note: In addition to “real world” constraints, we also assume that amount allocated to each sector is capped at the 10% of the market value of the respective sector

Figure 13. Outperformance of a high-yield portfolio with and without trading costs assuming “real world” constraints and perfect information, 2001-2011



Source: CIRA

Note: In addition to “real world” constraints, we also assume that amount allocated to each sector is capped at the 10% of the market value of the respective sector

But the benefit of perfect allocation is far, far smaller in the current environment. We note, before taking into account trading costs outperformance of only 1.2% was possible in the high-grade market last year, and 6.2% in high-yield. We acknowledge that stock-picking at the single name level is always critical, but at a more macro level (i.e., sector allocation, maturity placement, etc.) what's the point of reallocating if everything is correlated?

- **And this is especially important when trading costs are so high...** Obviously the modest benefit of perfect allocation is further mitigated by high trading costs in the current environment. For example, if we assume a 1% transaction cost for trades in the high-grade space (i.e., bid/ask of 15 bp for the typical name) ***perfect information would have resulted in meaningfully negative performance in 2011 (-2.3%)!*** We estimate that a bid/ask of about 5 bp would result in flat performance with the benchmark index given perfect information in the current environment. Good luck with that...

And we see something very similar in the high-yield market. Again, last year outperformance of only 6.2% versus the benchmark was possible assuming perfect knowledge and no trading costs. This number is a negative 4.1% if one assumes a 1.5% trading cost for all transactions.

Key points: If an investor had perfect information the combination of highly correlated returns, limited liquidity, and high trading costs could mean that acting on that information would result in negative alpha.

Second, while current spread levels are hovering near the mid-'02 levels (high-grade 205 bp currently vs. 202 bp in May '02, high-yield 655 bp currently versus bp in 655 bp in May '02), the opportunity set via traditional alpha generation tools is far, far different.

Potential Solution

Some traditional alpha generation strategies may be less effective at this stage than they have been in the past due to limited liquidity, heightened correlations, and lofty real world trading costs. So how to generate alpha? Take what the market gives, in our view. **Provide liquidity, find dislocations, and reduce trading costs.** Easier said than done, we know, but we outline several strategies below.

1. Provide liquidity

Take advantage of high-dollar bonds

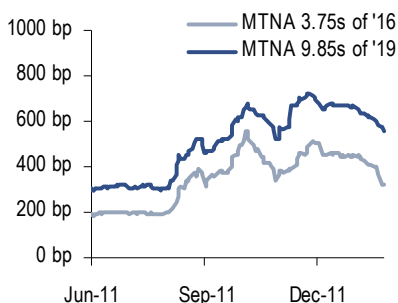
We argue that at least some real money accounts are in a good position to *selectively* provide what the market needs – liquidity. For example, high-dollar bonds are perceived to be less liquid than bonds with on-the-run coupons, and as a result can trade at meaningful discounts. But let's look at the numbers...

In this regard we use the MTNA 9.85s of '19 as an example. Currently, the MTNA 9.85s of '19 are priced at \$116.5 (as of January 25th). In comparison, the bond with an on-the-run coupon (MTNA 3.75s of '16) is trading at \$100. In spread terms the 9.85s are trading at 569 bp, while the 3.75s are at 320 bp. Two important points of comparison: (1) in spread terms, how much should one be paid for the extra \$16.5 dollars at risk, and (2) how different are the actual trading volumes of the two issuers?

■ **Dollars at risk:** The MTNA '19s have \$16.5 more at risk than the 3.75s, and *conservatively* the probability of an MTNA default based on CDS spread levels is 8.6% over one year. As such, we calculate that about 142 bp of extra spread compensation is needed (\$16.5 extra dollars at risk * 8.6% chance of default = 142 bp).

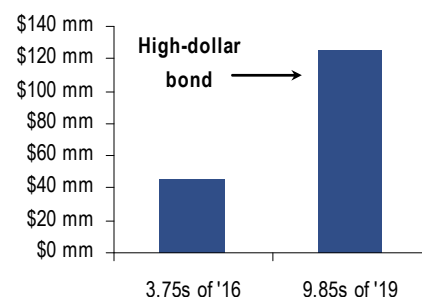
But the spread difference between the MTNA '19s and '16s is currently about 250 bp (569 bp vs. 320 bp, Figure 14), so one could argue that the MTNA 9.85s are cheap relative to 3.75s in the context of what is need to cover extra dollars at risk (142 bp needed vs. 250 bp actual).

Figure 14. Spread difference between the on- and off-the-run coupon bonds



Source: CIRA
Note As of January 25, 2012

Figure 15. Trading volume shows that the high-dollar MTNA bonds have actually traded more often since October '11



Source: CIRA, Bloomberg
Note: As of January 25, 2012; Only included trades sized \$5+ mm, but any trade block greater than \$5 mm is considered a \$5 mm block.

It is worth pointing out that the 8.6% default rate that we calculated based on CDS price is, in all likelihood, far too high. In effect, the 8.6% expectation is based on the assumption that the market is charging 0 bp for systemic risk. We note, in the current environment one could argue that high-grade spreads are mostly compensation for systemic risk.

- **Trading volume:** While high-dollar bonds are perceived to be more “illiquid,” this is not always consistent with TRACE data. For example, the high-dollar MTNA bonds have actually traded more often over the past few months. TRACE trade volume (trade blocks of \$5+ mm) shows that \$125 mm of MTNA 9.85s of '19 traded since Oct '11 versus only \$45 mm of MTNA 3.75s of '16 during the same period (Figure 15, previous page).

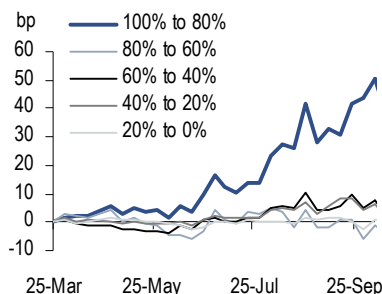
Be ready to be the bid

We also believe that getting ready to provide liquidity when the market is likely to need it can be an effective strategy. We consider the following three-pronged buy-on-dips approach in the high-grade market, but note that similar opportunities exist elsewhere (we encourage readers to refer to [US TotalCredit - A Simple Add-on-Weakness Trading Rule](#), published on December 19, 2011, for more detail).

Step #1: Define what you are looking for – Buying-on-weakness is essentially a strategy to take advantage of discounts to fair value, and we believe that predefining what is meant by fair value, what discount to fair value is enticing, etc. is a cornerstone of a this strategy. For example, one may hypothesize that during periods of heightened volatility market participants look to bolster their liquidity profiles, and one way to do this is to sell liquid bonds. As such, more liquid bonds may tend to be under disproportionate pressure versus the broad market during more volatile times.

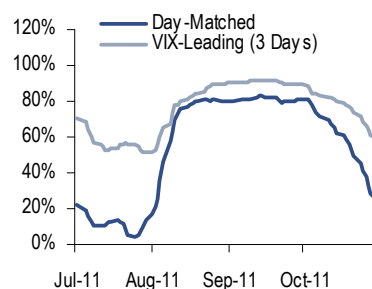
We find that this hypothesis is fairly consistent with what unfolded in the marketplace when volatility picked up last year. Figure 16 presents the beta-adjusted spread moves for five buckets of CDX.IG constituents grouped by their liquidity. We see that **the most liquid bucket was the only one under disproportionate pressure versus the market.**

Figure 16. Liquidity bucketed non-market spread moves for CDX.IG16 constituents



Source: CIRA, Bloomberg, DTCC
Note: As of October 7, 2011 based on weekly data. For more detail, refer to [High Grade Strategy Notes](#)

Figure 17. Three-month correlation of VIX versus beta-adjusted spread moves



Source: CIRA, Bloomberg
Note: As of October 31, 2011

Step #2: Double check – When valuations change quickly and dramatically it can be difficult to discern what is driving the price action. But to the extent possible verify that any deviation from fair value is due to a transitory factor. In this regard, we use DTCC data to look at the amount of risk transferred through the most liquid CDX.IG names relative to all constituents during the Aug to Sep '11 period. We find that the 25 most liquid names accounted for almost 40% of all risk transferred in this period. This is consistent with the theory that disproportionate spread widening was at least partially attributable to transitory selling pressure.

Step #3. Find the catalyst for reversal – Again to the extent possible, verify that there is a catalyst for reversal. After all, what's the point of adding on weakness if valuations do not revert back to fair value? Consider the basket of the most liquid CDX.IG constituents. We find that the VIX tends to mirror spreads for this basket fairly well, but only if we use it as a leading indicator.

Figure 17 (previous page) shows the 3-month correlation between the VIX and non-market spread moves of the liquid IG names. We see that the correlation rises from an average of 51% when the VIX and beta-adjusted spreads for the liquid CDX.IG constituents are day-matched to almost 75% if we use the VIX as a three-day leading indicator.

Be ready to be the bid trading rule

Preliminary rule: After adjusting for beta, consider adding exposure to liquid names that sharply underperform the market when volatility rises.

Revised rule: After adjusting for beta, consider adding exposure to liquid names that trade at a sharp discount to fair value when volatility picks up if that discount can be at least partially attributed to a transitory factor.

Final rule: Look to add on weakness (on Thursday, for example) if liquid credits are trading at a sharp discount to fair value after adjusting for beta in the wake of volatility and widening is at least partially due to forced selling and the VIX declines in previous trading sessions (e.g., Monday through Wednesday).

2. Dislocations do exist

We made the case earlier that intra-market correlations within many asset classes remain higher than historical norms, and we see reasons why this trend may continue to be the case in the period ahead. **But it is important to note that divergences do occur, albeit less regularly and in more unorthodox places, and investors can take advantage.**

For example, Figure 18 shows the ratio of implied vol to realized vol in the credit, equity, and rates markets since the beginning of 2011. The relationships are all over the map! Figure 19 shows the relationship between U.S. industrial stocks and the Shanghai Stock Exchange Composite index. The two tend to track fairly closely – economic growth in China should influence valuations in both markets – but this relationship has diverged sharply in recent trading. And in Figure 20 we show the correlation across various markets and regions, including the credit markets in the U.S., Europe, Japan, and Australia, equities and government bonds in the U.S., Europe, and EM, among others.

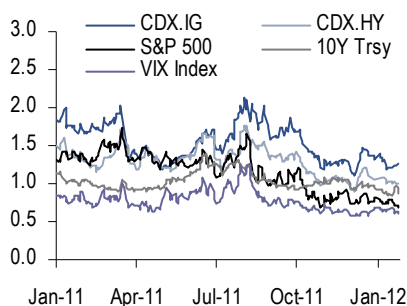
One key point is that while the inter-market correlation is higher than normal, the extent to which it is higher than normal is not all that large relative to other markets (ex: current level of 33% / long-term average of 26% = 1.3, relative to 2.3 for the S&P 100). This topic is certainly worthy of more study, and we will keep readers apprised of our findings.

Basis risk

Of course, basis risk is a significant challenge whenever one tries to take advantage of dislocations, especially less conventional ones. We believe that three generic questions can help to mitigate this risk: (1) does the trade offer an asymmetric payoff profile, (2) is the package susceptibility to exogenous influences, and (3) what is the breakeven? Consider these criteria in the case of a specific example – long MCDX 10Y (201 bp as of January 27th) vs. short CDX.IG 10Y (124 bp as of January 27th).

- **Asymmetric payoff potential?** In Figure 21 (next page) we highlight the nine-month wides and tightens for MCDX and CDX spreads vs. the current levels. We see that MCDX 10Y is still 44% away from its recent tight (139 bp) and 56% away from its recent wide (281 bp). Conversely, CDX.IG is right near its previous tight (124 bp currently vs. 122 bp), and by definition a long way from its recent wide (95%).

Figure 18. Ratio of implied vol over realized vol in various markets



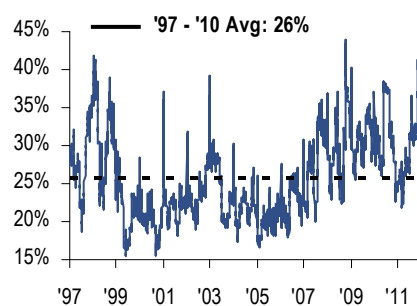
Source: CIRA, Bloomberg
Note: As of January 25, 2012

Figure 19. A recent disconnect in the stock markets



Source: CIRA, Bloomberg
Note: As of January 30, 2011; indexed to January 3, 2011

Figure 20. Inter-market correlation is above the long-term average, but less so than elsewhere



Source: CIRA, Bloomberg
Note: Included are BIG Corp (US, Eur, Jpy, Aud), HYM, US Mtge, Govt (US Trsy, US 10Y, Brazil, Eur 10Y, Japan), Equities (SPX, RTY, SX5E, UKX, IBOV, SPTSX, MEXBOL, IBA, NKY, HSI), Lev Loans

Figure 21. Nine-month spread ranges for the MCDX 10Y and CDX.IG 10Y indexes

	MCDX 10Y	CDX.IG 10Y
9-mo Wide	281 bp	165 bp
9-mo Tight	139 bp	122 bp
Current Spread	201 bp	124 bp

Source: CIRA, Bloomberg
Note: As of January 27, 2011

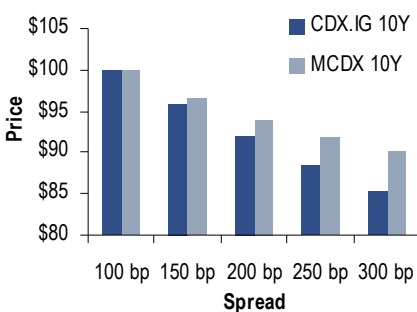
A second component of asymmetry in this case is convexity, and in this regard MCDX is well positioned. In Figure 22 we present the prices of MCDX and CDX.IG at various spread levels. We see that a 100 bp widening (from 200 bp to 300 bp) would result in a price decline of \$7 for CDX.IG but only \$4 for MCDX. Price performance in a tightening environment is virtually the same.

■ **Susceptibility to exogenous influences:** Figure 23 shows the MCDX 10Y index versus the VIX over the past year, and we see that these two are not all that highly correlated (64%). The correlation between the CDX.IG index and the VIX, for reference, is 83% during the same period. As such, MCDX may be less susceptible to the systemic risk in the current environment.

■ **Breakeven:** We calculate that the 1-year breakeven for CDX.IG 10Y is about 15 bp relative to 42 bp for MCDX. (i.e., CDX.IG spreads could widen 15 bp over a 1-year period before negative price performance would offset coupon income). In the context of this trade package (own protection on CDX.IG, carry advantage of 77 bp) this means that even if CDX.IG fully retraced its spread widening since last May and MCDX was unchanged or even slightly wider the negative price change would not offset the package's positive carry.

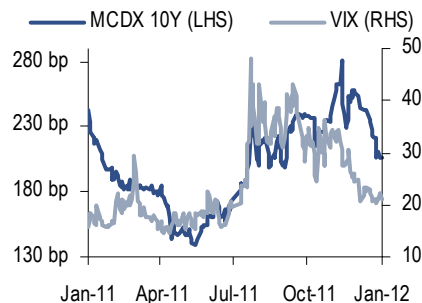
Again, basis risk is always a concern when one moves away from familiar relationships, but considering trade packages in the context of asymmetry, susceptibility to exogenous influences, and breakevens may be a good starting point to mitigate this risk, in our view.

Figure 22. MCDX has a meaningful convexity advantage relative to CDX.IG



Source: CIRA, Bloomberg

Figure 23. MCDX 10Y and the VIX has a 1-year correlation of only 64%



Source: CIRA, Bloomberg
Note: As of January 18, 2012

3. High trading costs...perhaps overlay is the way

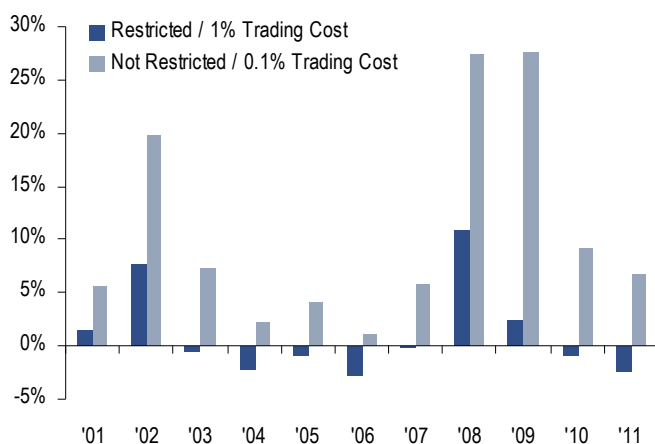
Earlier in the article we made the point that a portfolio manager that was endowed with perfect foresight but constrained by low liquidity and high trading costs was in a very difficult position. For example, we made the assumption that only 2% of AUM could be reallocated within a sector per month and transaction costs were 1% in high-grade and 1.5% in high-yield. Now let's relax the constraints. Let's assume no limits with regard to rebalancing activity and reduce our assumed transaction costs from 1% and 1.5% to 0.1% and 0.25% in high-grade and high-yield, respectively.

Not surprisingly, we find that the opportunity for outperformance skyrockets. In Figure 24 and Figure 25 we present the outperformance of the PM's high-grade and high-yield portfolios; **in high-grade we find that the outperformance versus benchmark in '11 rose from -2.3% to +6.8%, and in high-yield we see a jump from -4.1% to +9.1%.**

Of course, being nimble and paying less is no easy task, and perhaps the only way to accomplish this feat is to rely more heavily on overlay strategies (CDX.IG, VIX, etc.). For example, the U.S. risk markets in general have enjoyed a tremendous run since late November (ex: SPX +14%, CDX.HY +10 pts). Our sense is that the rally was prompted by the feeling that the U.S. markets would be "ring-fenced" from fiscal imbalances in Europe via the LTRO facility, but since then at least some markets seem suggest that the underlying problem has gone away.

But rather than simply underweighting credit given this worry we believe that select overlays may be more efficient at this stage. For example, investors could use the coupon from the credit positions to buy a call option on a Treasury future (cheap relative to credit, liquid, strong flight-to-quality bid). We encourage readers to refer to the article titled "[If I Were a Hedge Fund Manager](#)", dated January 6, 2012, for more detail.

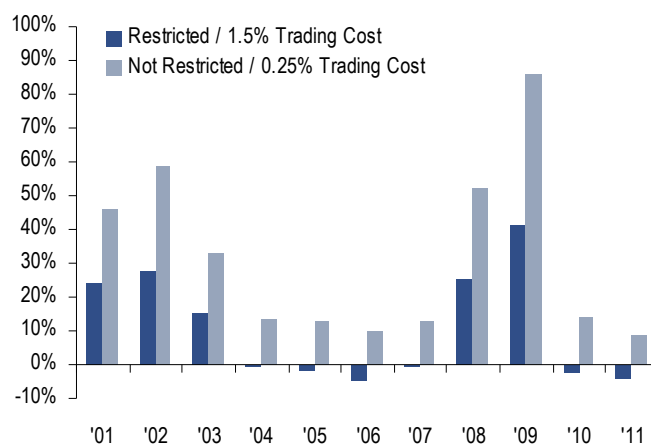
Figure 24. Outperformance of a high-grade portfolio jumps sharply with no reallocation restriction and reduced trading costs



Source: CIRA

Note: In addition to "real world" constraints on p. 6, we also assume that amount allocated to each sector is capped at the 10% of the market value of the respective sector

Figure 25. And we see the similar outcome in the high-yield market as well



Source: CIRA

Note: In addition to "real world" constraints on p. 6, we also assume that amount allocated to each sector is capped at the 10% of the market value of the respective sector

Appendix A-1

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