



**Systematic credit selection:
The Dynamic Indicator of Equity Momentum (DIEM) model**

Quantitative Credit Strategy, October 2008

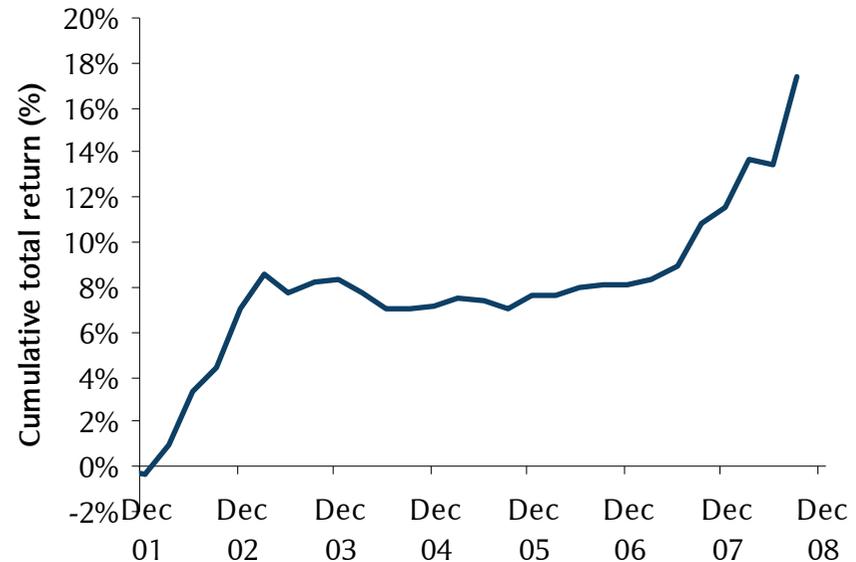
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The Dynamic Indicator of Equity Momentum (DIEM)

- The DIEM strategy is a relative value strategy based on equity market signals to go long/short portfolios of single name CDS.
- DIEM operates on the premise that the equity markets are better at differentiating firms than the credit markets.
- DIEM was first published in June 2006 and has run out-of-sample since then. Back-testing extends to 2001.
- **Strong historical performance:** average annual return of 2.54% post transaction costs, Sharpe ratio 1.6.
- **Custom formats:** DIEM can be run as a pure market neutral strategy, with equal weight between long credit and short credit portfolios, or as a long- or short-biased strategy using unequal weights.

DIEM: Average annual return 2.49%, Sharpe ratio 1.1



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A +3.5 sigma performance
Equity-based-credit relative value strategies hit all-time highs

Quantitative Credit Strategy 20 March 2008

Ulf Erlendsson
ulf.erlendsson@barclays.com
+44 (0)20 7773 8363

Grithen Revell
grithen.revell@barclays.com
+44 (0)20 7773 8544

www.barclays.com

Our DIEM50 and QRV credit long-short strategies have, over the past quarter, delivered returns of 3.5 standard deviations above the historical norms measured from 2001-01-07. Both strategies use equity information to select portfolios of long and short positions in global single-name CDS, in a market-neutral fashion. The difference in average return between our long and short risk portfolios is +1.8%/-2.2% (QRV/DIEM), respectively on portfolios selected on the 27 December 2007 single-name rol, and marking to market at spread levels on 18 March 2008, including transaction costs.

The DIEM50 strategy uses equity momentum to differentiate credits, while the QRV strategy takes a balance sheet/liquid balance approach. Our DIEM50 strategy continues to show average quarterly returns close to an excess of 2% over each of the three past quarterly single-name rol periods. This surge in performance is highly correlated with the up-tick in credit volatility, and matches a similar boost to performance observed in 2001-2002.

With volatility likely to stay, and an anticipated increase in name-specific volatility associated with economic slowdowns, we believe these name-selection strategies should continue to be attractive. Additionally, their highly diversified nature and minimal market-direction exposure are appealing risk-management characteristics.



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Alpha-generation in volatile times
The DIEM50 market neutral strategy

Quantitative Credit Strategy 23 January 2008

Ulf Erlendsson
ulf.erlendsson@barclays.com
+44 (0)20 7773 8363

Grithen Revell
grithen.revell@barclays.com
+44 (0)20 7773 8544

Angus Chubb
angus.chubb@barclays.com
+44 (0)20 7773 4275

www.barclays.com

Seize the moment(um)

With credit market turmoil and recession fears now combining to drive name-specific credit volatility, we believe systematic approaches to credit selection incorporating equity price action may be profitable. Equity markets better differentiate between companies' prospects than do credit markets. This is the conclusion from our research presented in this article. With a dramatically more diverse and more granular investor base, as well as lower transaction costs and greater transparency, it is possible that equity markets price an relative information more rapidly.

In this note, we revisit and update our Dynamic Indicator of Equity Momentum (DIEM) model which has featured in a large number of Quantitative Credit Strategy trade ideas. The model selects long and short CDS candidates using equity price, equity volatility and credit spreads in a system that draws its power and from complexity but from the capacity to synthesize large amounts of current data.

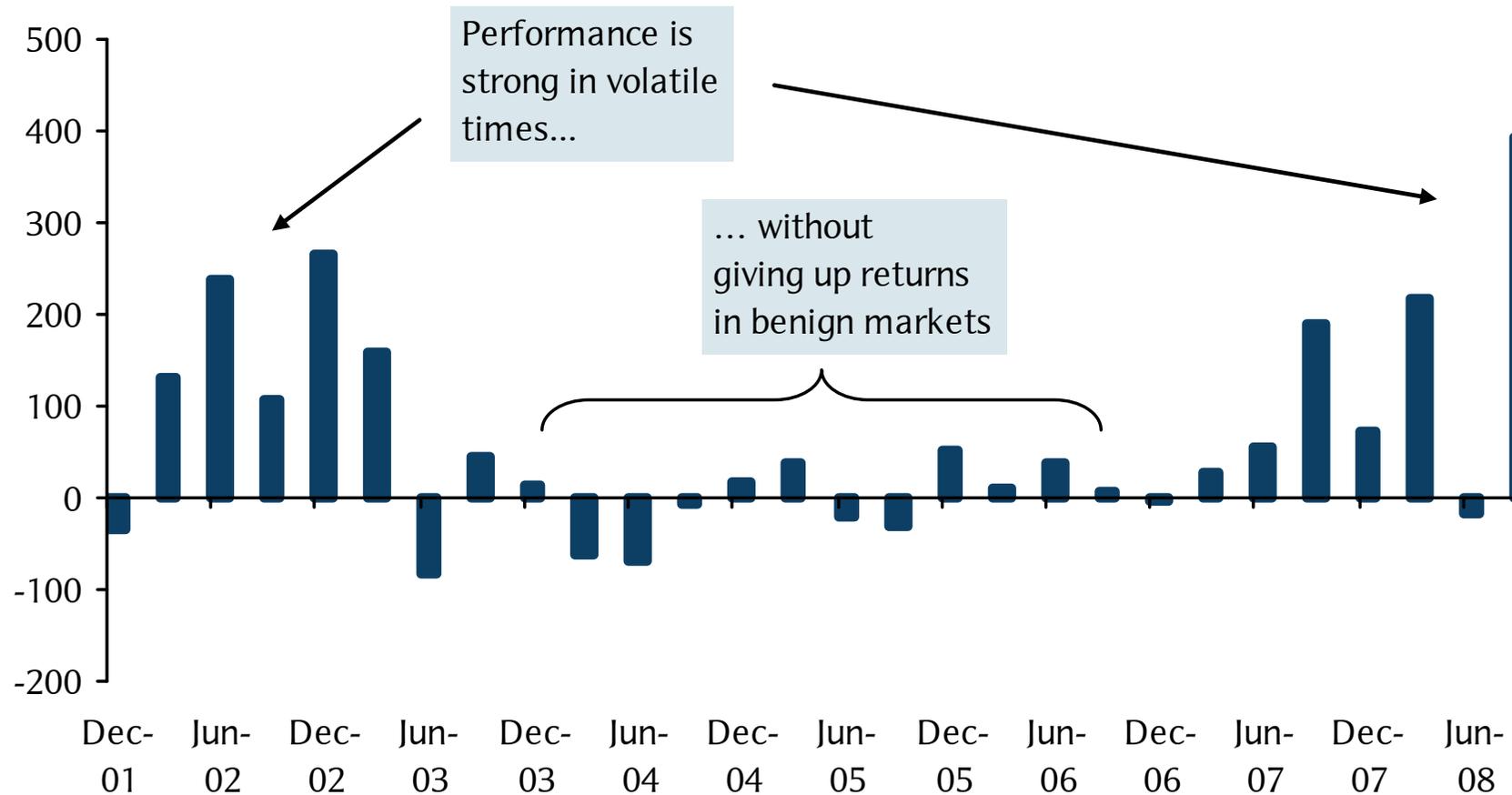
Our preferred implementation, the DIEM50 strategy, goes long risk in a set of 50 names and short in a further 50 names in a carry/market neutral set-up. The strategy exhibits encouraging historical performance (see Figure 1) with an average unlevered return of 2.5% per year and Sharpe ratio of 1.6. Performance is notably stronger in volatile periods. In this guide we conduct and report a large set of stability tests on the strategy.



Sources: Markit, Barclays Capital

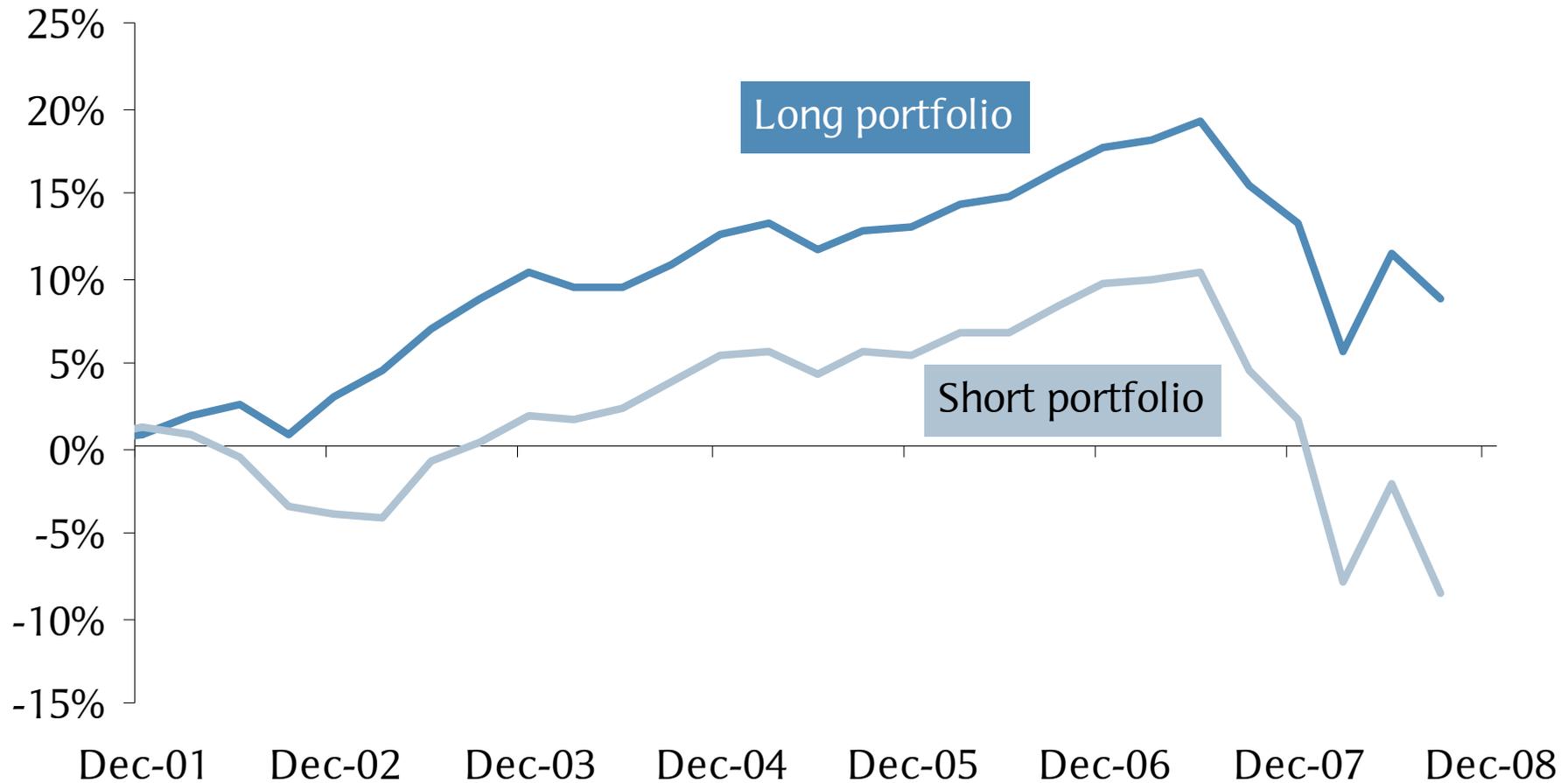
Quarter-by-quarter performance: DIEM has outperformed in volatile conditions*

- Average annual return of 2.49% pa post-transaction costs since June 2001
- Returns are on an **unfunded** basis
- Transaction costs are set at **conservative** levels for single-names which vary by spread level

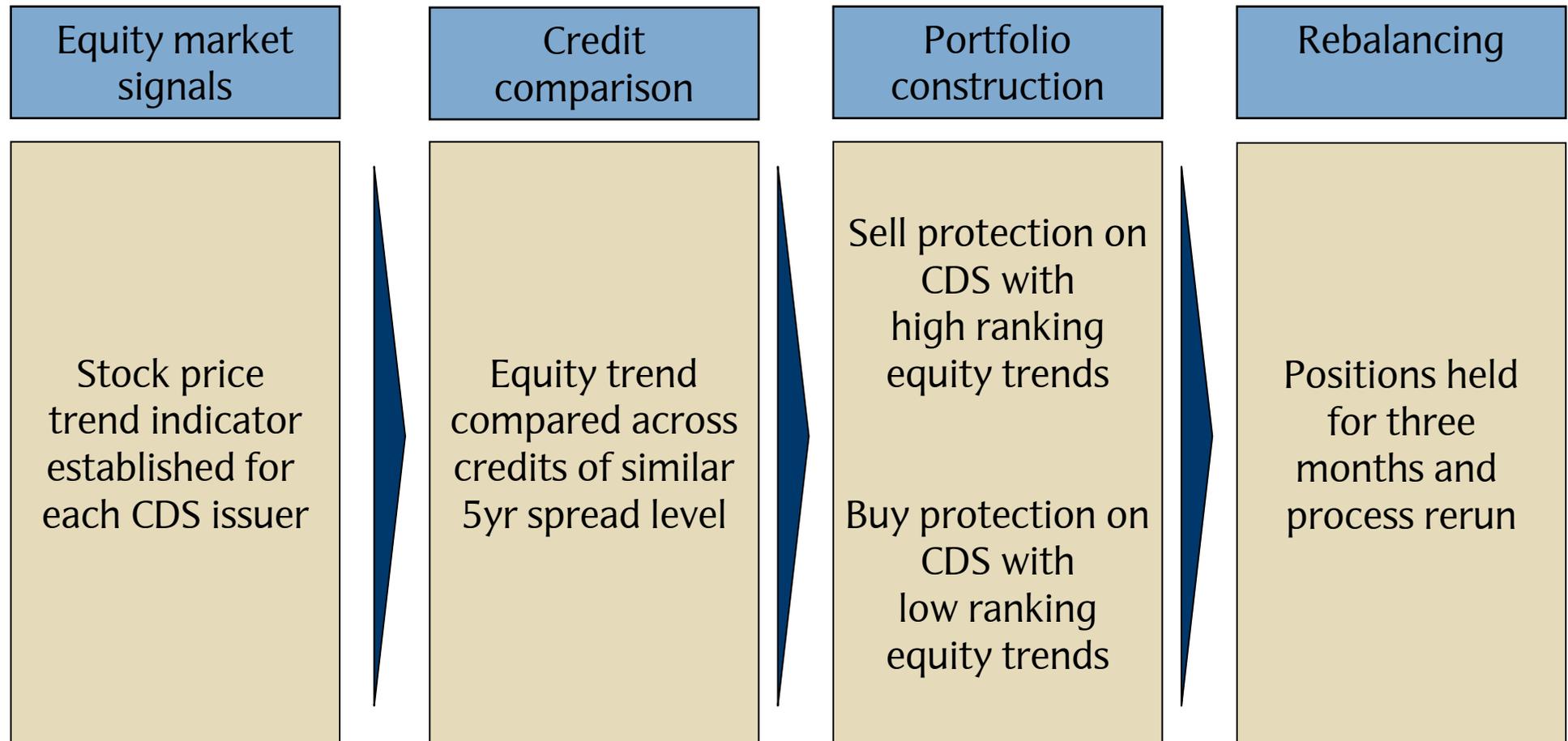


Cumulative performance of the long and short portfolios separately

- DIEM can also be run with unequal weights between the long and short portfolios to express a market directional view



DIEM – The selection process - overview

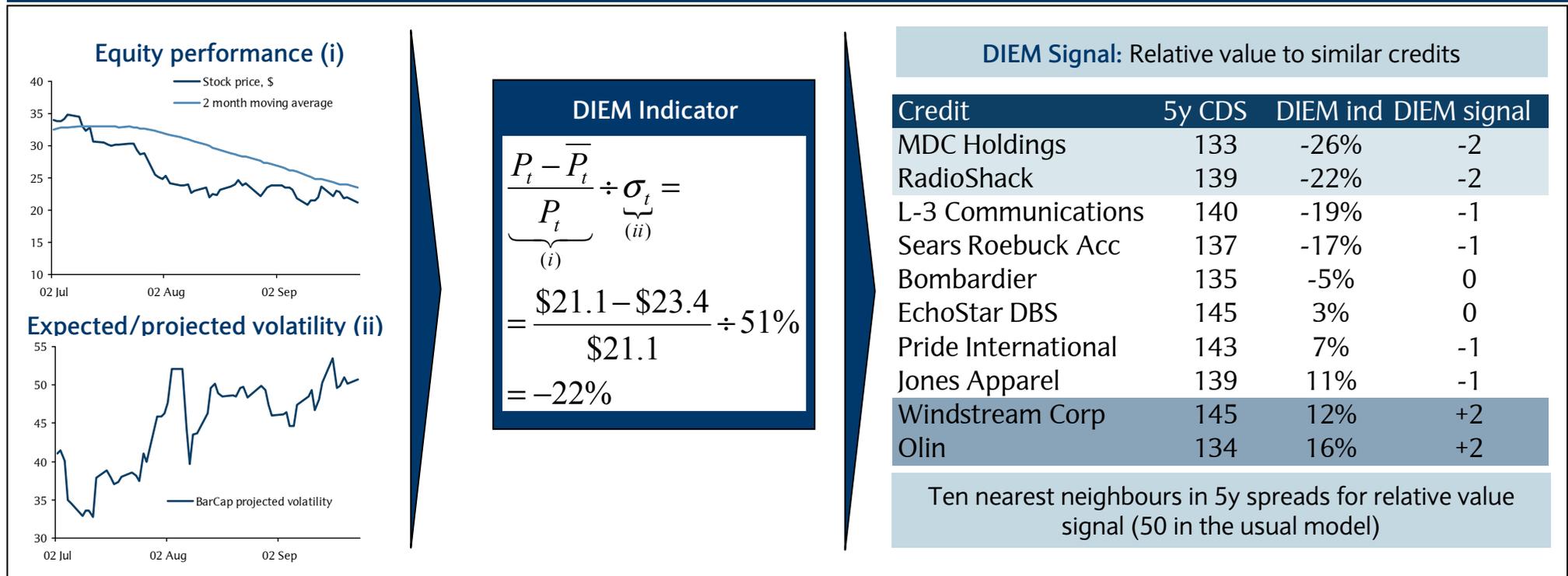


DIEM – The selection process - details

DIEM Signal measures direction and strength of equity trends from a credit perspective to create long and short signals to be implemented in the 5yr CDS

- DIEM Indicator is calculated for each credit in the universe based on current equity price, two-month moving average and a projected measure of expected equity volatility
- Each credit is compared to the 50 credits that are closest to it in terms of spread: the top 20% DIEM indicators are assigned a +2 Signal, and the bottom 20% DIEM indicators are assigned a -2 Signal

DIEM Methodology: Example on RadioShack (RSH US) as of 24 September 2007

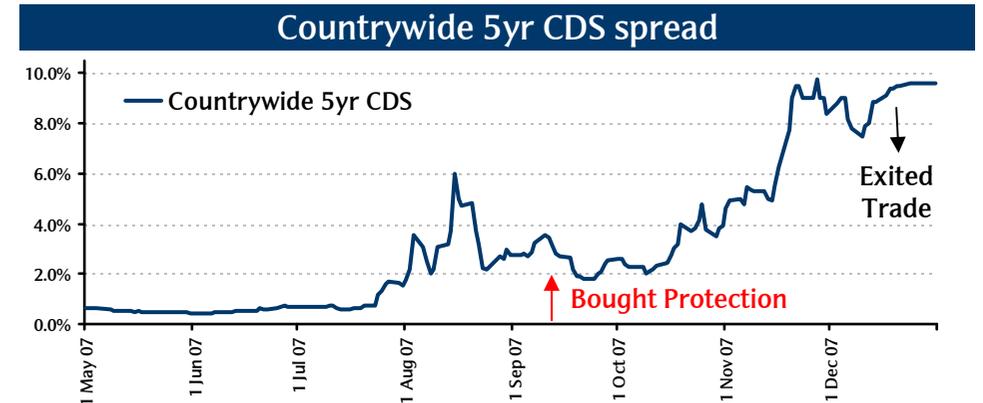


Historical Analysis: Individual Credits

- The DIEM model made the following selections in September 2007:

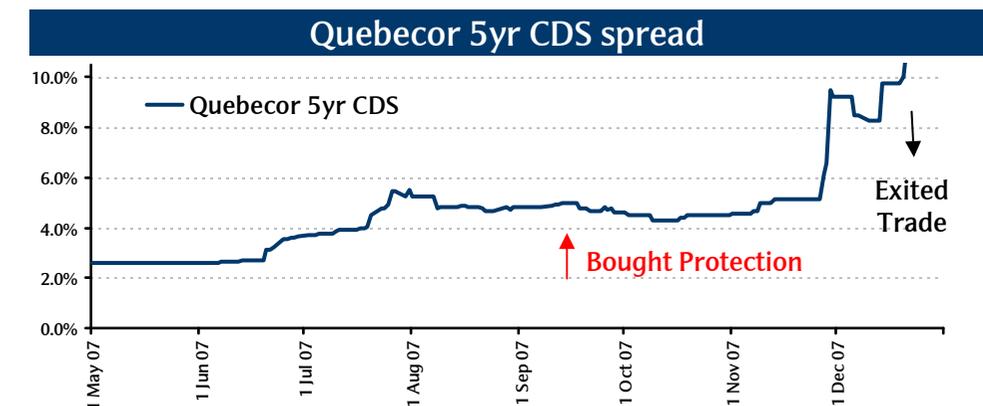
Countrywide Financial Corp

- Countrywide Financial's CDS spread had not widened to levels implied by its equity price
 - ▶ Action: **Short**
 - ▶ Initial price: 184bp
 - ▶ Final price: 922bp
 - ▶ MtM gain: 0.74%



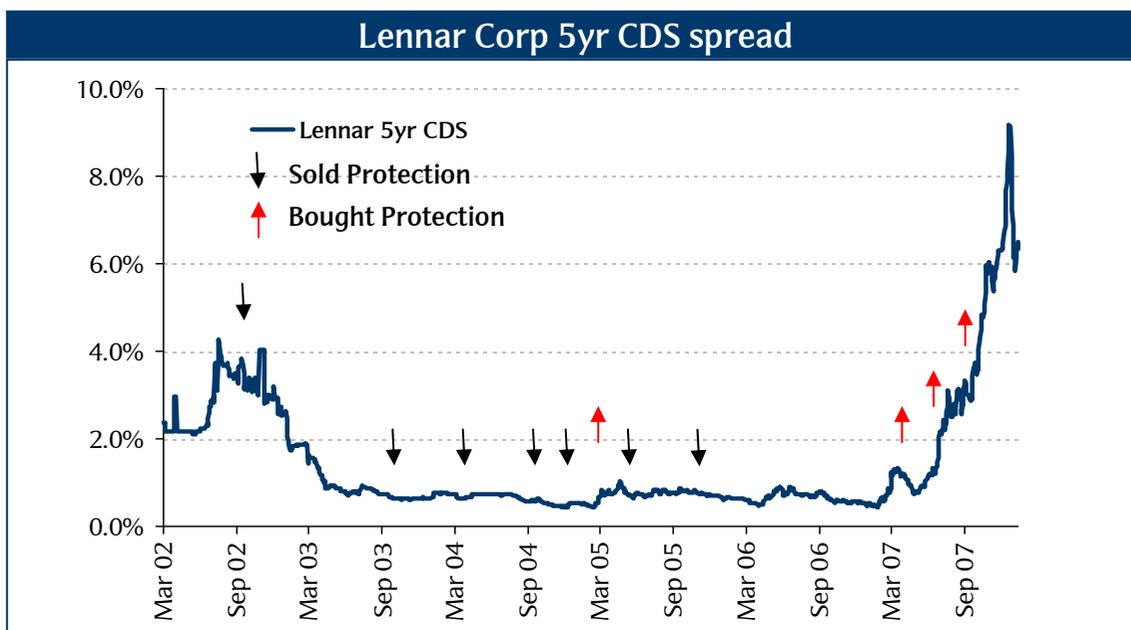
Quebecor World Inc

- Deterioration in both Quebecor's financial position and in the broad North American paper industry
 - ▶ Action: **Short**
 - ▶ Initial price: 472bp
 - ▶ Final price: 985bp
 - ▶ MtM gain: 0.51%



Historical analysis: Individual credits

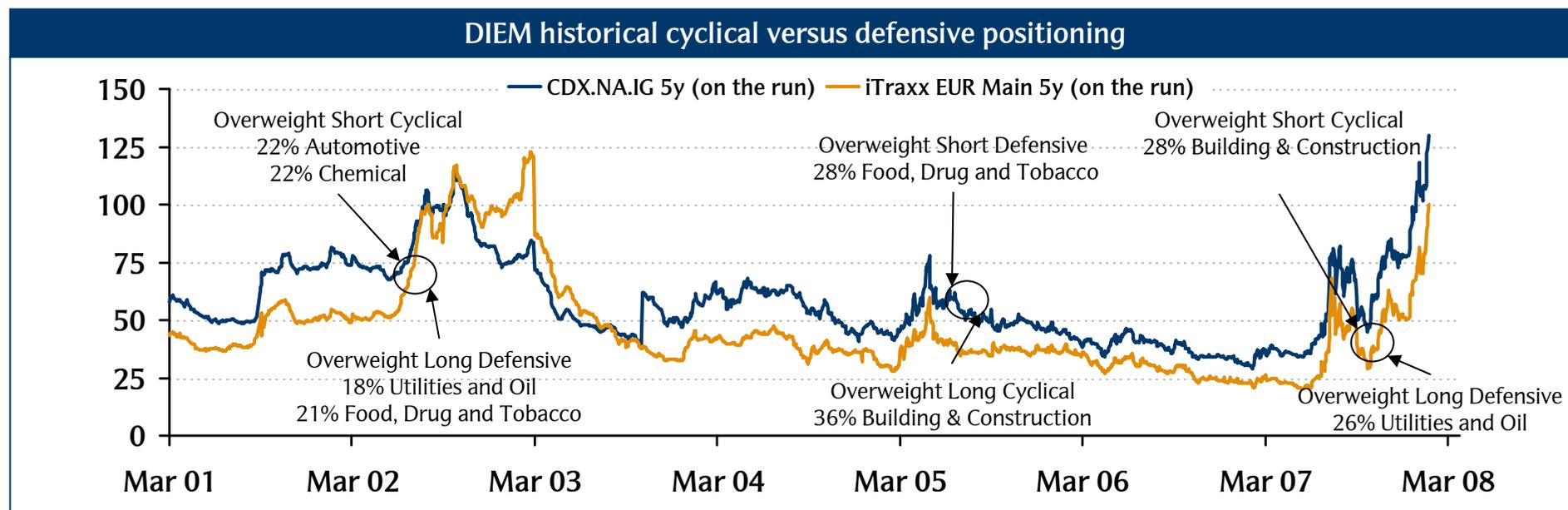
- The following analysis illustrates the adaptability of the DIEM model to select long and short credits appropriate with prevailing market conditions. Model selections evolve with changes in:
 - ▶ Business cycle
 - ▶ Industry-specific performance
 - ▶ Financial viability of individual credits
- As a result, the DIEM ranking for a single credit can change significantly through time
 - ▶ Since 2001 the DIEM model would have selected Lennar Corporation 11 times;
 - seven times as a Long/four times as a Short
 - The DIEM model has anticipated Lennar Corp performance over the period



Lennar Corporation returns breakdown			
	Carry	MtM	Total
Long exposure (Sold protection)	0.03%	0.08%	0.11%
Short exposure (Bought protection)	-0.02%	0.52%	0.50%
Total	0.01%	0.60%	0.61%

Historical analysis: Cyclical versus defensive positioning

- As illustrated in the figure below, the DIEM model has withstood pitfalls in the credit cycle by positioning between cyclical and defensive industries
 - ▶ Cyclical industries: An industry which is sensitive to business cycles
 - Autos and Luxury Goods
 - Housing, Construction, and Steel
 - Raw Materials & Chemicals
 - Paper
 - ▶ Defensive industries: Tend to remain stable under difficult economic conditions while lagging behind the rest of the market during economic expansion
 - Utilities and Oil
 - Food Drug, and Tobacco

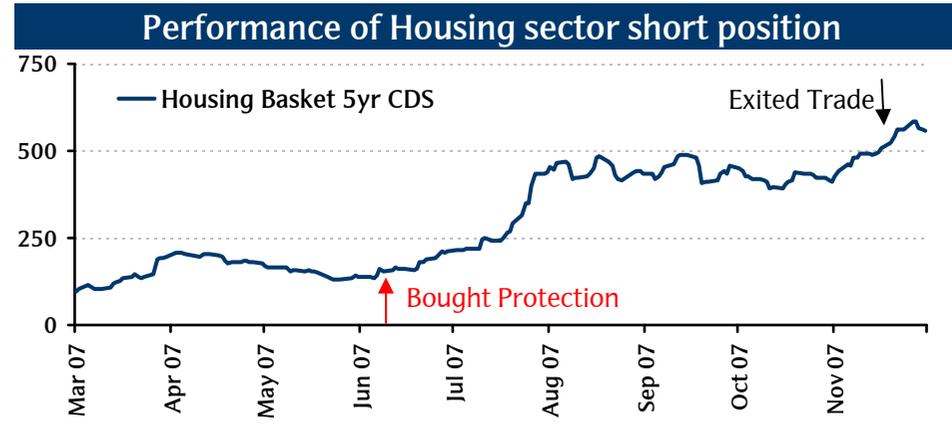


Historical analysis: Strategic industry allocation

- The DIEM model outperforms partly because of its ability to strategically overweight/underweight industries
 - ▶ Two strategic **Shorts** are detailed below

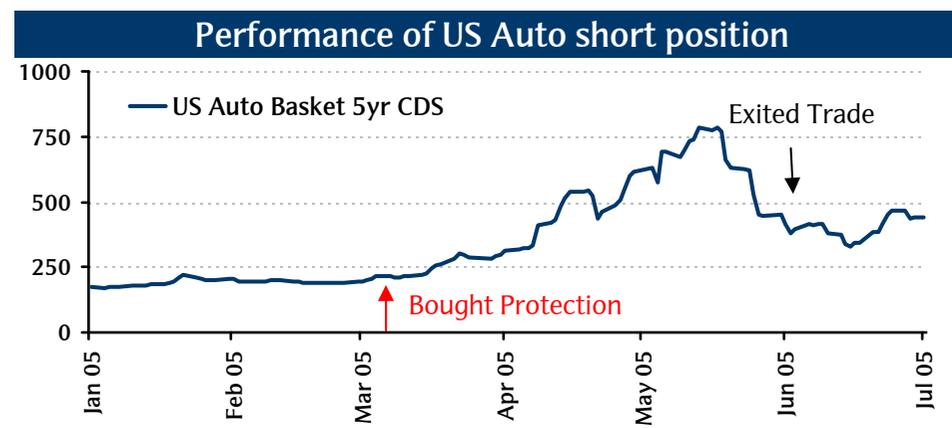
Housing sector June 2007

- Short US housing market in June 2007:
 - ▶ Credits shorted: Beazer Homes, DR Horton, Pulte Homes, Lennar, Centex, Toll Brothers, KB Home
 - ▶ The housing market sustained a significant downturn and succumbed to large spread widening



US Auto sector March 2005

- Short US auto sector in March 2005
 - ▶ Credits shorted: Ford, Ford Motor Credit, Dana, ArvinMeritor, Lear, Visteon
 - ▶ US automotive companies experienced large problems, exemplified by;
 - the downgrade of GM and Ford
 - the default of Dana and Delphi



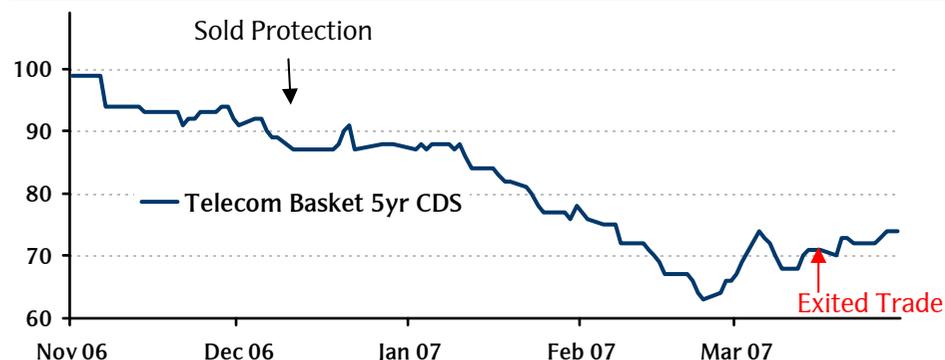
Historical Analysis: Strategic Industry Allocation

- The DIEM model outperforms partly because of its ability to strategically overweight/underweight industries
 - ▶ Two strategic **Longs** are detailed below

Telecom sector
December
2006

- Long Telecom sector end of 2006:
 - ▶ Credits: Century Tel, Elisa Oyj, Embarq, British Telecom, TeliaSonera AB, Nortel Networks, IAC InterActive
 - ▶ The telecom industry outperformed the broad credit market in Q1 07

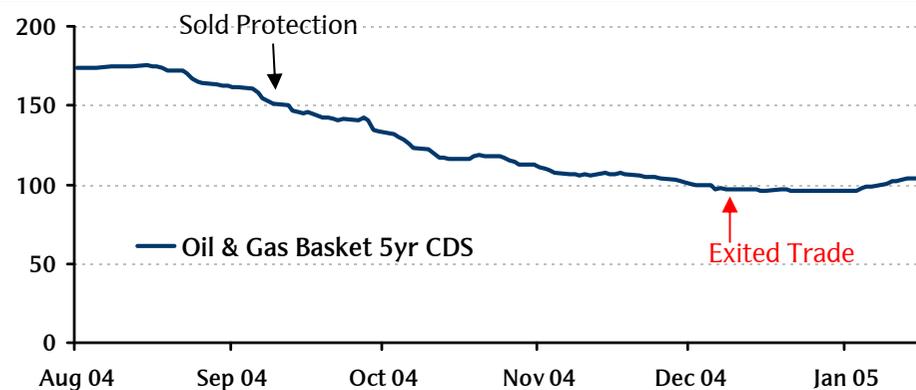
Performance of Telecom sector long position



Oil & Gas sector
September
2004

- Strategic long allocation to the Oil & Gas sector in September 2004
 - ▶ Credits: El Paso, Chesapeake Energy, Kerr-Mcgee, Devon Energy, Halliburton, Valero Energy, XTO Energy, Pride International
 - ▶ Significant outperformance as:
 - Energy firms surged behind global expansion
 - Rising oil costs

Performance of Oil & Gas long position



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