

APRIL 2005

## CDOS IN THE HEARTLAND: VALUE AND OUTLOOK

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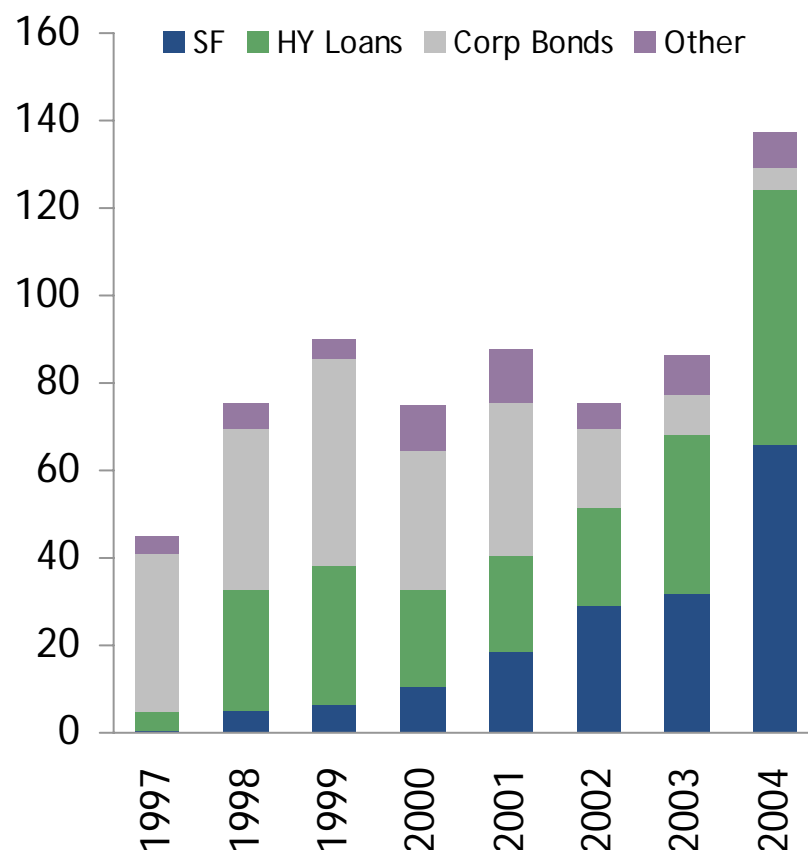
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# CDO overview & outlook

- Expect 11% growth in cash CLOs, 25% growth in synthetics. CDOs continue their transformation into a core asset class in the fixed income market.
- Despite reduced arbitrage opportunity, Cash issuance is running ahead of last year. Synthetic issuance started the year well, slowed recently, but should pick up with increased volatility.
- Secondary market:
  - Slow trading volume generally, some profit taking last two weeks
  - Increased trading of Mezzanine and Equity, distressed SF CDOs
  - Expect an increase in CLO calls in 2005 and beyond - callable debt may be overvalued
- Increasing caution for CDOs is appropriate
  - Spread premium has declined
  - Weakening underwriting standards
  - Widening in collateral markets has not been passed through to CDOs... yet
  - Lack of CDO spread tiering is irrational, rotate into quality names
- Auto exposure
  - IG synthetics have huge exposures to GM/GMAC/Ford
  - Index and Bespoke trades have widened, managed have been "sticky"
  - Distressed Auto paper may be appropriate for Synthetic CDOs

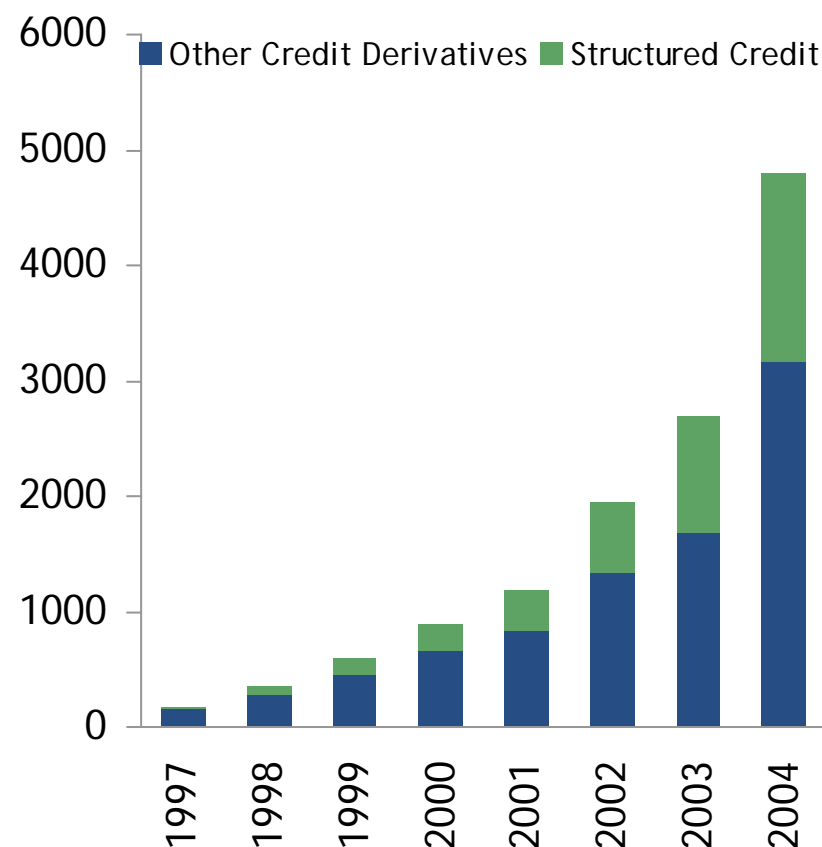
# The Structured Credit bid for assets will remain significant

Global Cash CDO issuance by sector (\$bn)



Source: JPMS, MCM, IFR Markets, Moody's, S&P, Fitch, Bloomberg

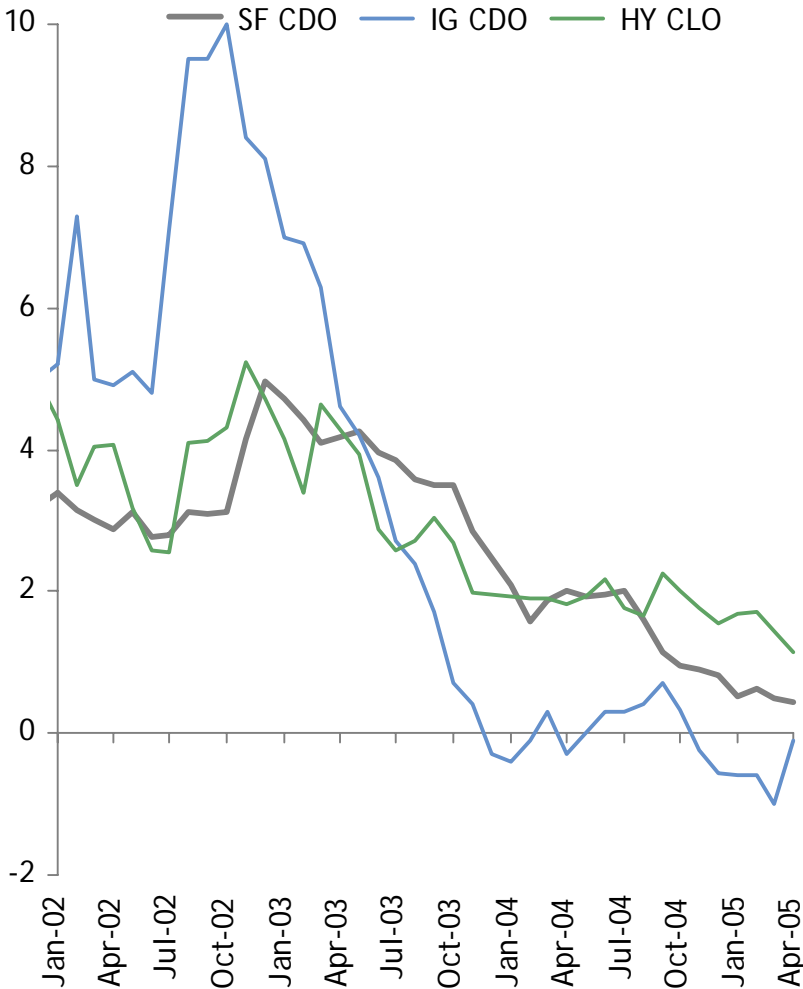
Total outstanding Global Credit Derivatives volume (\$bn)



Source: JPMS, CreditFlux, British Banker's Association, ISDA, McKinsey & Co., Bank for International Settlements

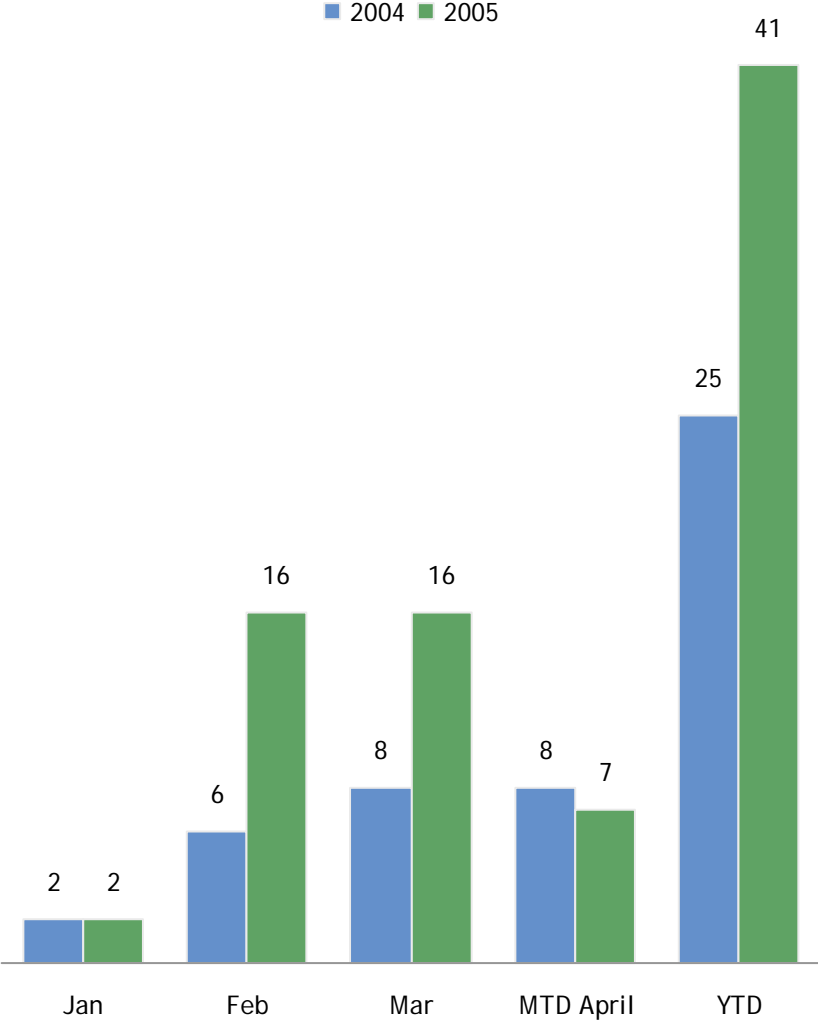
# Despite reduced arbitrage, CDO Volume is ahead of last year's pace...

## CDO Funding Gap



Source: JPMS

## Cash CDO Issuance: 2004 vs 2005 (\$bn)



Source: JPMS, MCM, Thompson/IFR, Bloomberg

...thanks in part to a recognition of strong historical CDO equity returns...

- CLO Equity outperformed public equity in almost every comparison
- CLO Equity performed roughly in line LSTA index in “low return” vintages, with significant outperformance in good years
- There is a strong vintage effect

### Annualized Total Returns by Vintage: Through March 1, 2005

Vintage	CLO Equity	DJIA	S&P 500	Nasdaq	S&P LSTA HY Loan Index (Unlevered)
1998	4.1%	2.4%	4.8%	1.6%	5.4%
1999	8.9%	0.3%	2.7%	-4.9%	5.6%
2000	4.2%	-3.5%	1.1%	-14.4%	5.5%
2001	19.8%	3.5%	5.0%	2.3%	6.4%

Source: JPMS

## ...and global distribution of US originated deals

### CLOs: By Region

	Senior	Mezz	First-Loss
North America	32%	64%	23%
Europe	65%	22%	17%
Asia	3%	13%	60%

### CLOs: By Investor Type

Investor Type	Senior	Mezz	First-Loss
Asset Manager	9.1%	29.0%	14.7%
Bank	81.1%	32.7%	61.1%
Conduit	1.9%	0.0%	0.0%
Hedge Fund	0.0%	2.3%	3.7%
Insurance	3.0%	33.0%	5.3%
Other	0.5%	1.8%	9.4%
Pension	0.2%	0.6%	2.8%
Private Bank	0.5%	0.5%	3.0%
Wrapper	3.7%	0.0%	0.0%

Source: JPMS

### SF CDOs: By Region

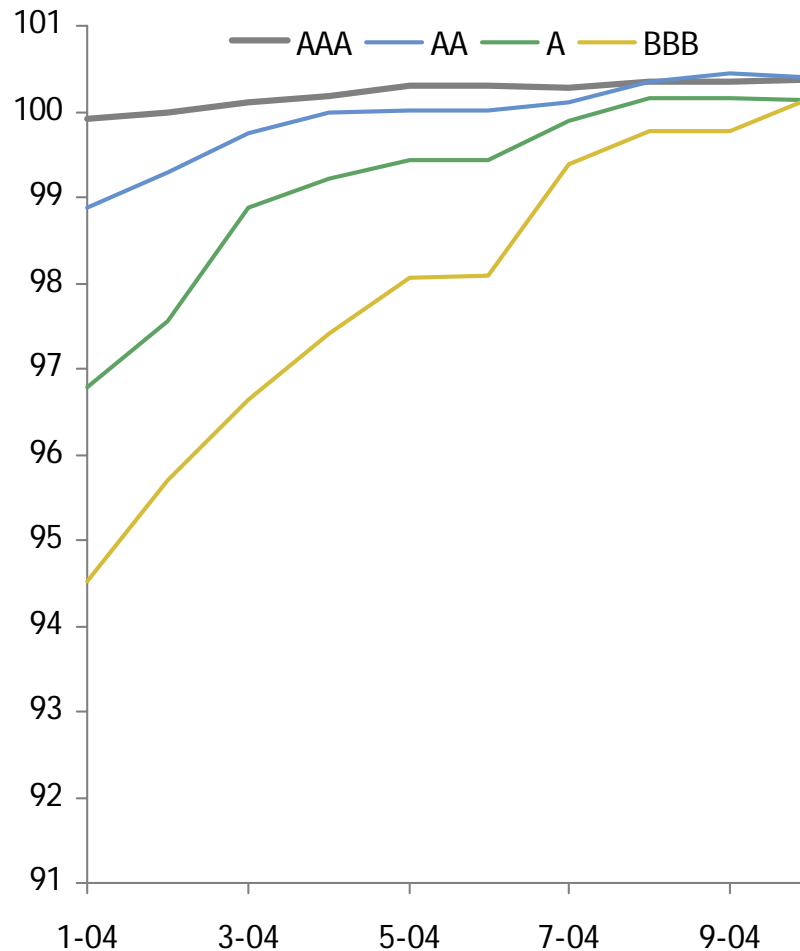
	Senior	Mezz	First-Loss
North America	65%	79%	51%
Europe	35%	17%	14%
Asia	0%	4%	35%

### SF CDOs: By Investor Type

Investor Type	Senior	Mezz	First-Loss
Asset Manager	4.2%	29.9%	34.7%
Bank	91.0%	19.4%	0.0%
Conduit	0.0%	2.7%	21.7%
Hedge Fund	3.5%	42.6%	1.5%
Insurance	0.0%	0.0%	8.3%
Other	0.7%	0.0%	7.1%
Pension	0.0%	0.0%	1.0%
Private Bank	0.6%	5.4%	25.8%
Wrapper	0.0%	0.0%	0.0%

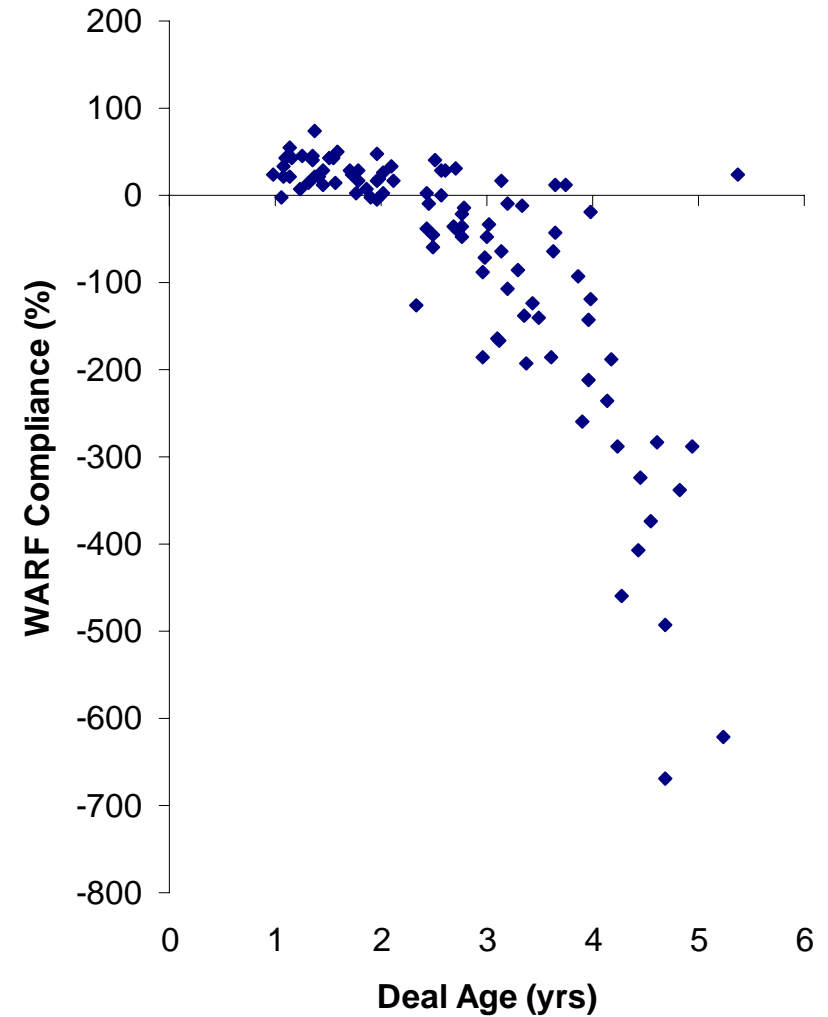
# Market rally has decreased secondary market opportunities in many sectors, but distressed SF CDOs may still offer value

Secondary Pricing for CLOs (Price in \$)



Source: JPMS

SF CDO WARF Compliance



Source: Moody's

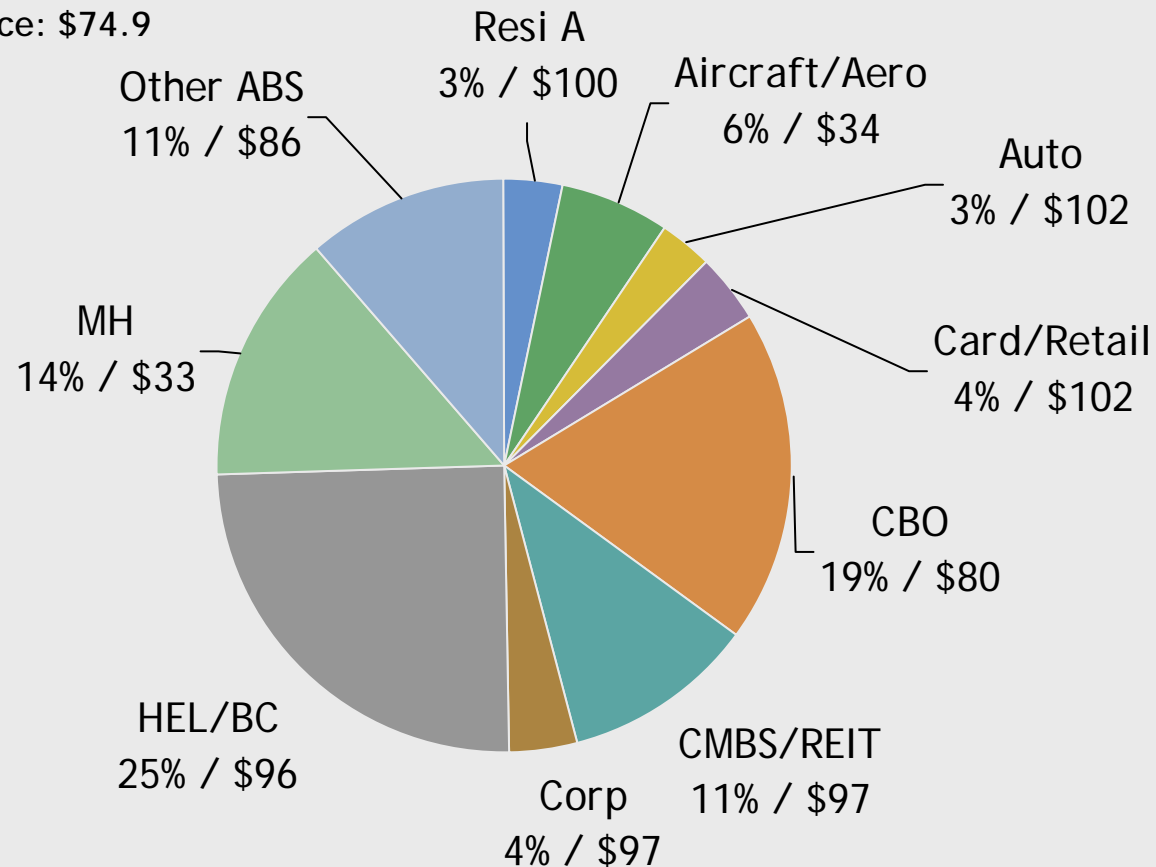


# Seasoned SF CDOs offer the best value in the secondary market

## Sample SF CDO: Collateral Average Price by Sector

(% of collateral pool / weighted average market price)

Weighted Average Price: \$74.9



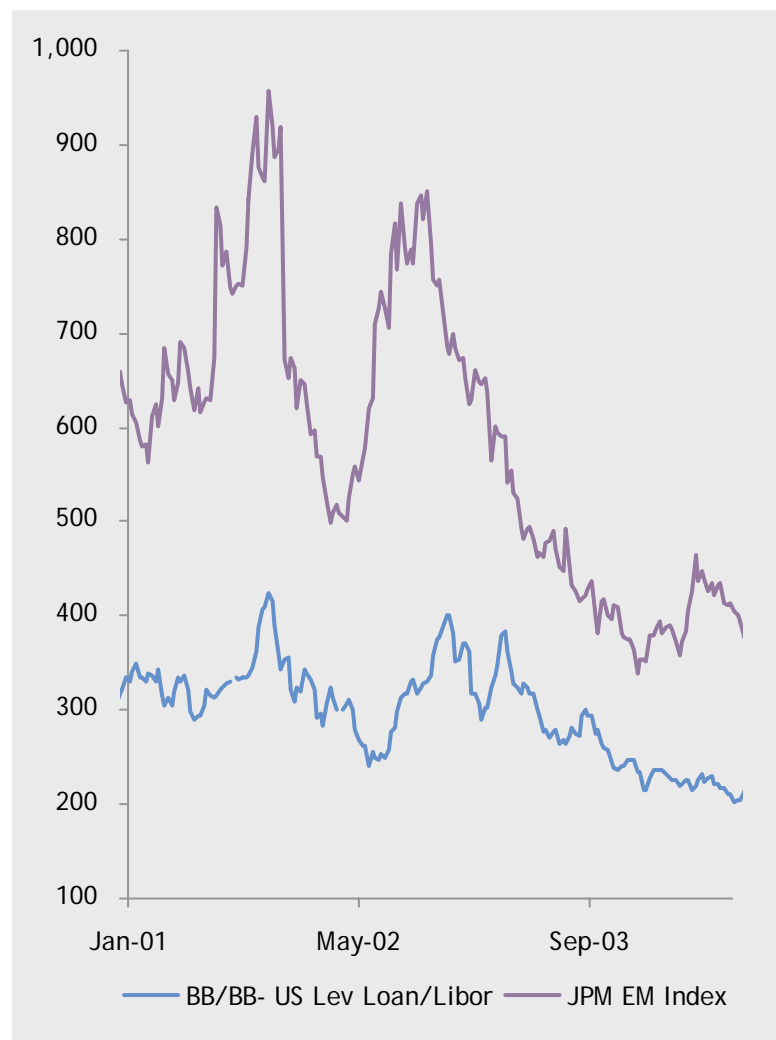
Source: JPMS, Intex

# The CDO market is underestimating call risk, overvaluing CDO debt

## Assessing Call Probability

- Decreased price volatility for loans does not imply decreased call risk
- The conditions are set for increased calls:
  - Many seasoned deals are ending their non-call period
  - Deals are de-leveraging as they exit reinvestment period
  - High cash balances and low asset spreads
  - The number of total return-oriented investors is increasing
- Good time to liquidate non-core positions
- Buy equity and BBB in the same deal as a natural hedge against a call

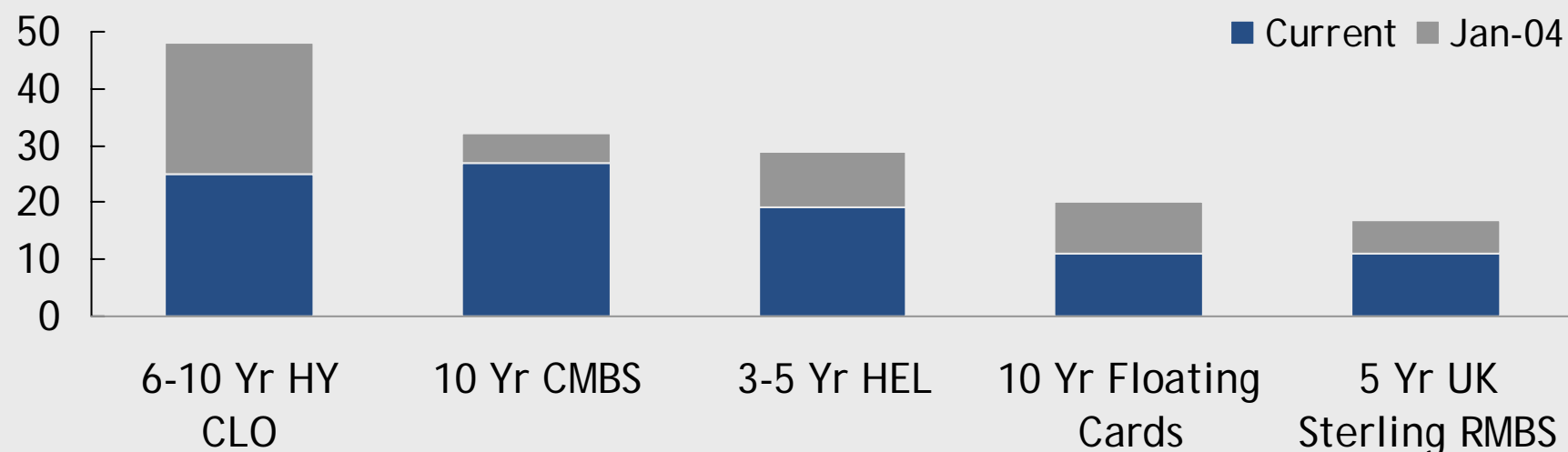
## Spreads for CDO Asset Classes



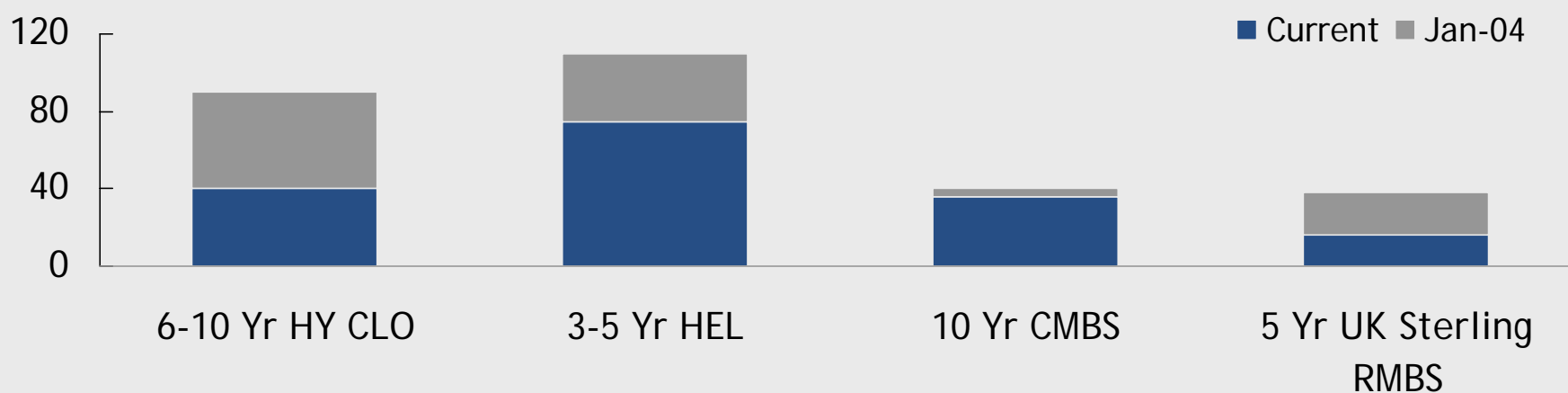
Source. JPMS, S&P/LCD

## The CDO spread premium has declined

### AAA Spreads to Swaps/Libor

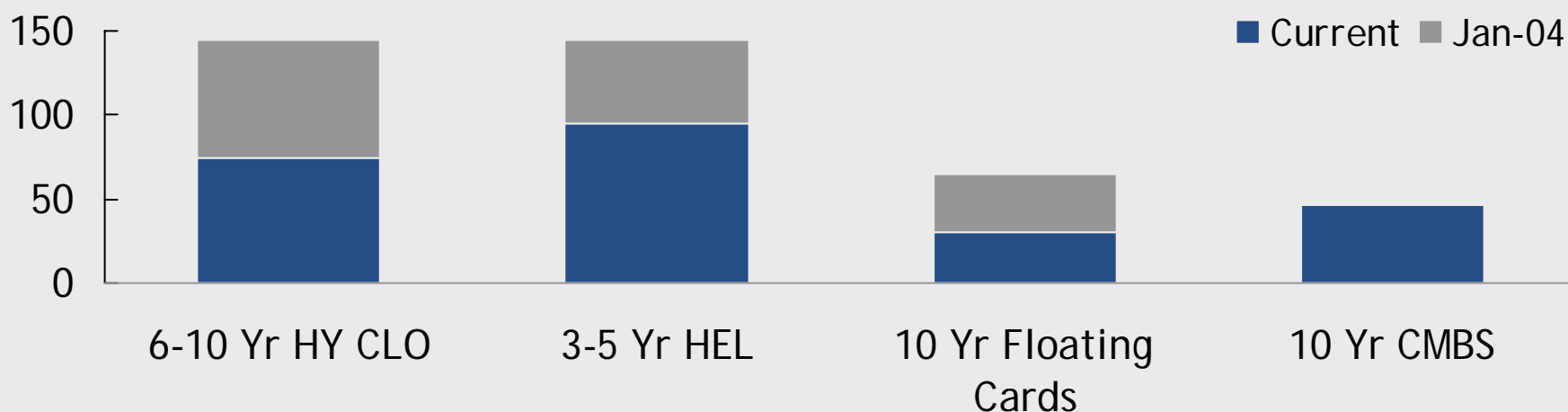


### AA Spreads to Swaps/Libor

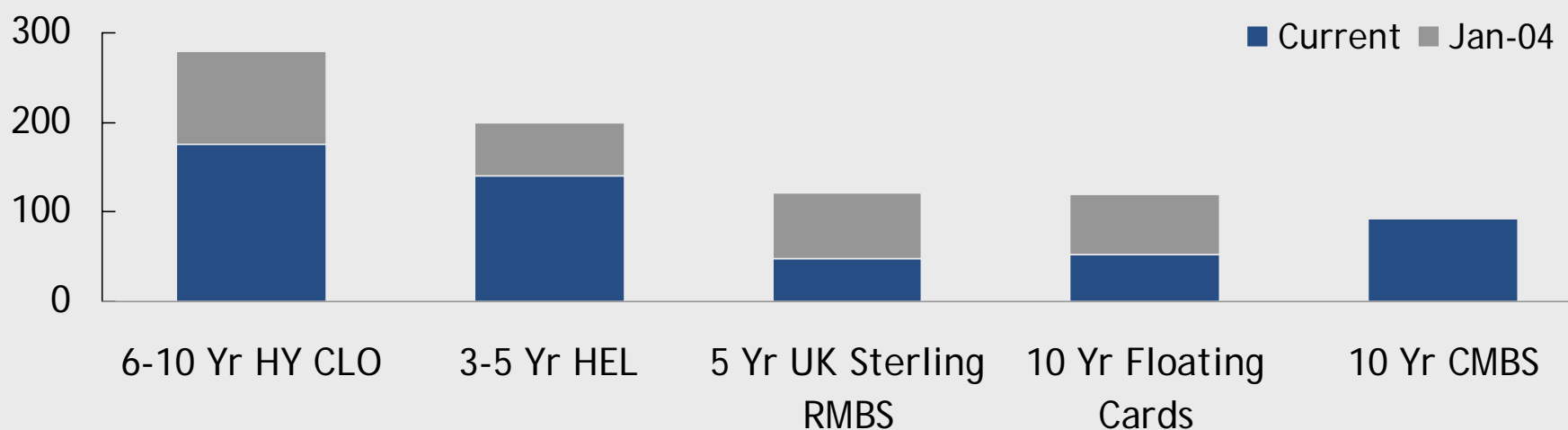


## The CDO spread premium has declined (ctd.)

### Single-A Spreads to Swaps/Libor



### BBB Spreads to Swaps/Libor



# More risk is creeping into the CDO market as underwriting standards for many collateral assets decline

## CLO

- Bank Debt/EBITDA ratios approaching levels last seen in the mid 90s
- Single-B volume is roaring in what once was a largely BB-rated market
- Managers turning to second-lien loans, middle market loans, and wider spread sectors to preserve arbitrage.

## SF CDO

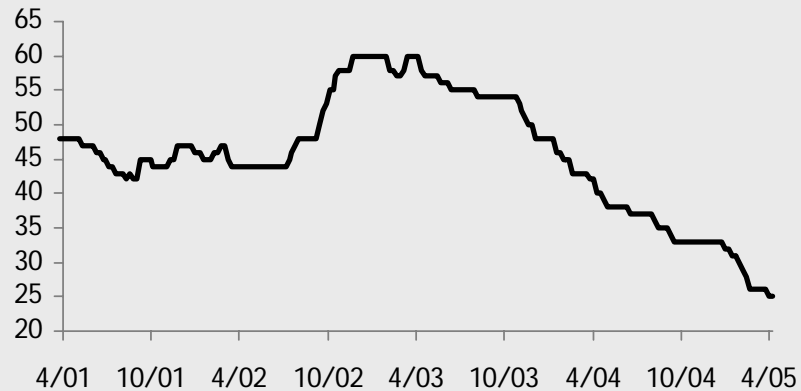
- Increased use of I/Os and silent second liens
- US housing market remains sound, but pace of housing price appreciation is unsustainable
- Increased BB buckets in Mezz deals and Single-A buckets in High Grade deals
- More deals missing a rating one of more of the rating agencies

## IG Synthetic

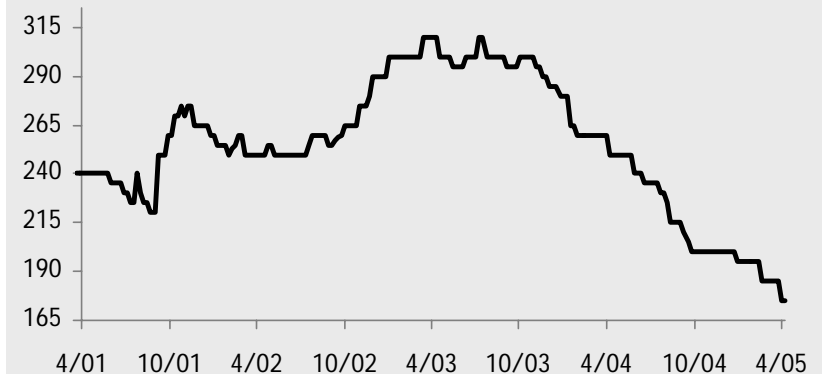
- Increased use of high yield credits in IG deals
- Additional leverage via CDO^2
- Stretching for yield in distressed sectors such as Autos and Airlines

# Cash CDO spreads have been unaffected by recent market volatility

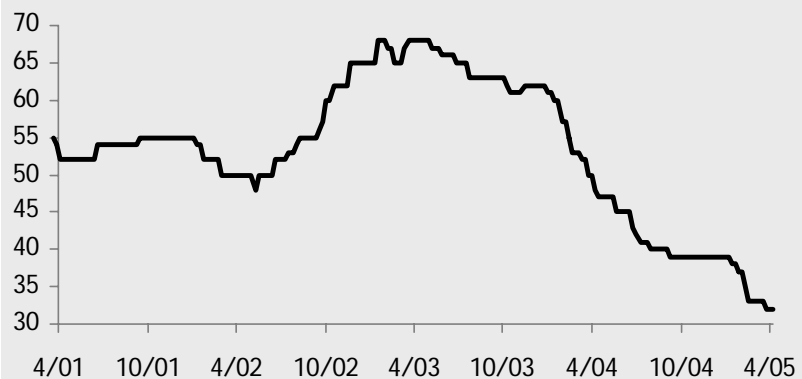
US AAA CLO Spread to LIBOR (bp)



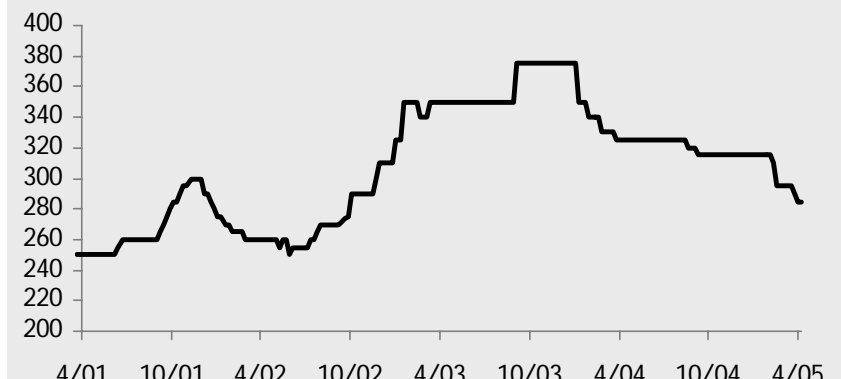
US BBB CLO Spread to LIBOR (bp)



US AAA SF CDO Spread to LIBOR (bp)



US BBB SF CDO Spread to LIBOR (bp)



Source: JPMorgan.

## Risk of spread widening has increased for CDOs

- Virtually all collateral credit spreads have widened from the historical tights of early 2005
- CDOs stand as about the only market with spreads at or near all time tights.

### Spreads for CDO Asset Classes (bp)

	<b>JPM USD HY Index/ Swap</b>	<b>JPM EM Index/ Swap</b>	<b>DJ CDX NA IG 5yr</b>	<b>SP/ LCD B/B- Leveraged Loan</b>	<b>5 Yr BBB HEL/ Swap</b>
Apr 14, 2005	333	330	57	252	140
Mar 14, 2005	277	311	44	237	150
Feb 14, 2005	286	301	45	269	150
Jan 14, 2005	312	321	48	245	150

Source: JPMS, S&P/LCD

# CDO Recommendations: Increasingly Cautious

- Recommend a *Neutral* allocation to Mezzanine Notes:
  - Collateral fundamentals are stable
  - Still significant spread pick-up
  - Demand remains strong
  
- Recommend an *Underweight* allocation to Senior Notes:
  - Spreads have already tightened dramatically
  - Demand is less firm
  - Large sizes may be more difficult to digest

## CDO Performance & Recommendations

Sector	WAL (years)	Current Spread	Change v 4/8/05	Change YTD	Recommendation
CLO					
AAA	6-8	25	0	-8	Underweight
AA	7-10	40	0	-20	Neutral
A	8-10	75	0	-30	Neutral
BBB	9-11	175	0	-25	Neutral
SF CDO					
AAA	5-8	32	0	-7	Underweight
AA	8-11	60	0	-20	Neutral
A	9-12	150	0	-5	Neutral
BBB	9-12	285	0	-30	Neutral
Managed IG Syn CDO					
AAA*	5-8	48	1	-5	Underweight
AA	5-8	95	5	-5	Neutral
A	5-8	145	5	-5	Neutral
BBB	5-8	295	5	-5	Neutral
HY CBO					
AAA	6-8	40	0	-5	Underweight
AA	7-10	70	0	-15	Neutral
A	8-10	140	0	-20	Neutral
BBB	9-11	250	0	-50	Neutral
EM CDO					
AAA	5-7	42	0	-6	Underweight
AA	7-10	90	0	-15	Neutral
A	7-10	160	0	-15	Neutral
BBB	10-12	285	0	-25	Neutral

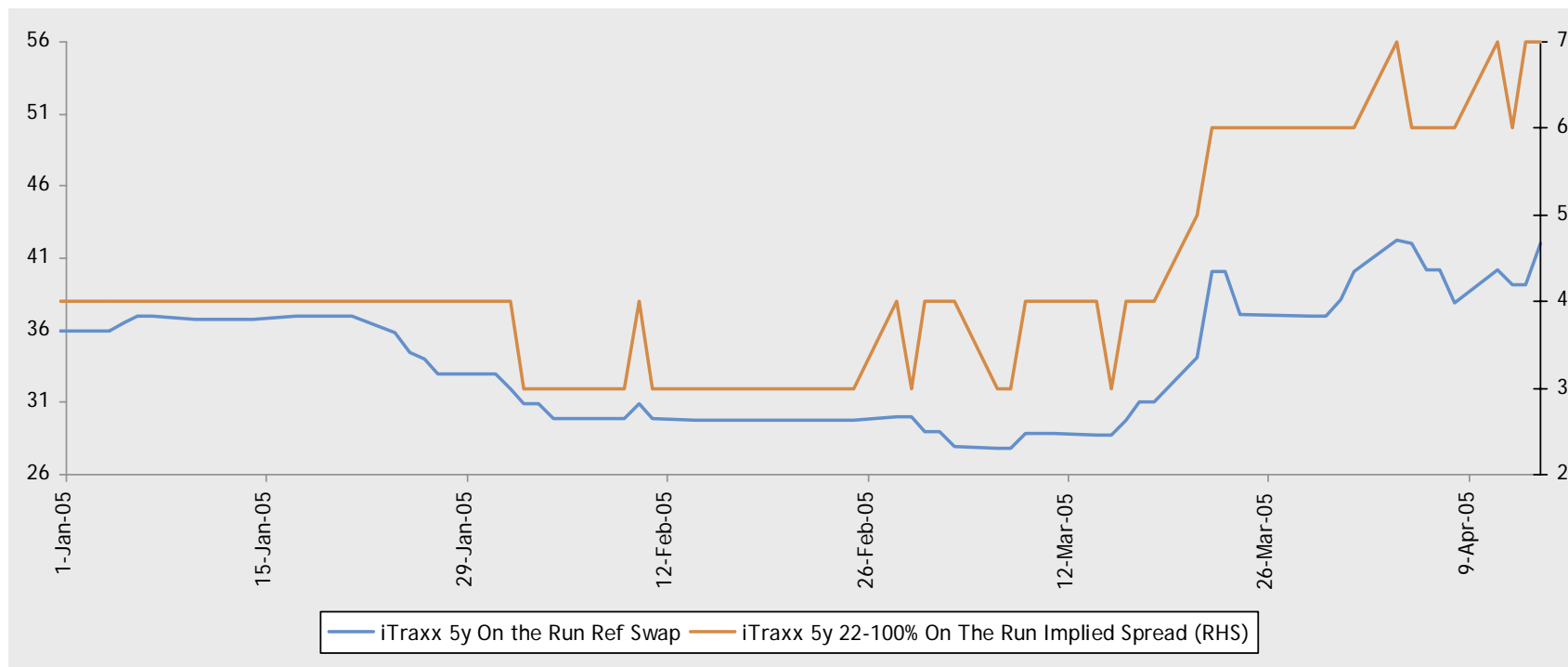
Source: JPMS \*Effectively a "second senior" tranche



# Super Senior risk premiums have been increasing for synthetic CDOs, but decreasing for cash CDOs

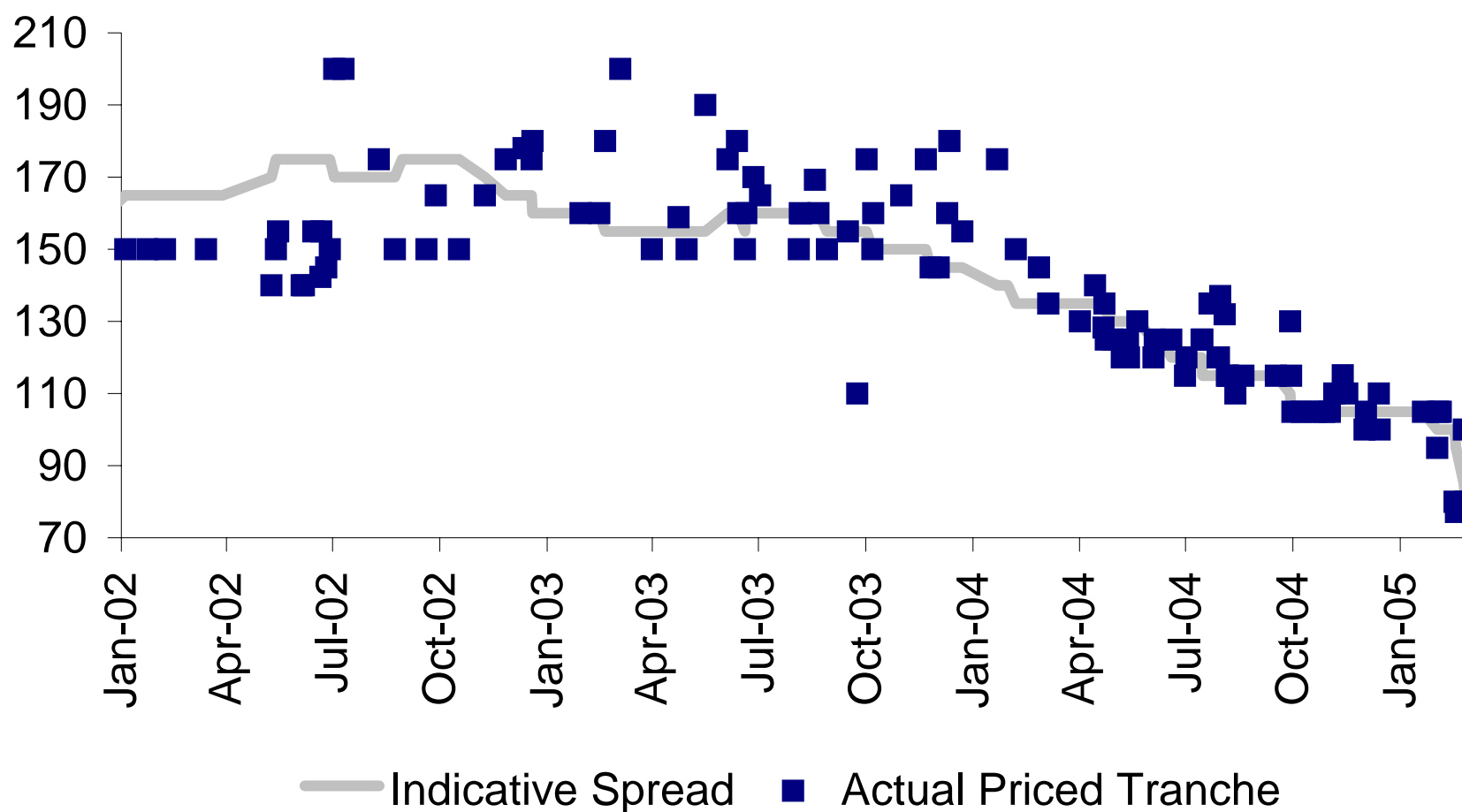
- Synthetic Super Sr. spreads have widened amid Auto weakness, LBO rumors, growth concerns, and decreased risk appetite - the market is pricing in higher systemic risk.
- Cash CDO Super Sr. spreads continue to tighten, currently down from 15bp to 10bp (and below)

## 5 Year iTraxx 22-100% tranche and Ref Swap Spread



If CDO spreads widen, expect weaker names to be hit first

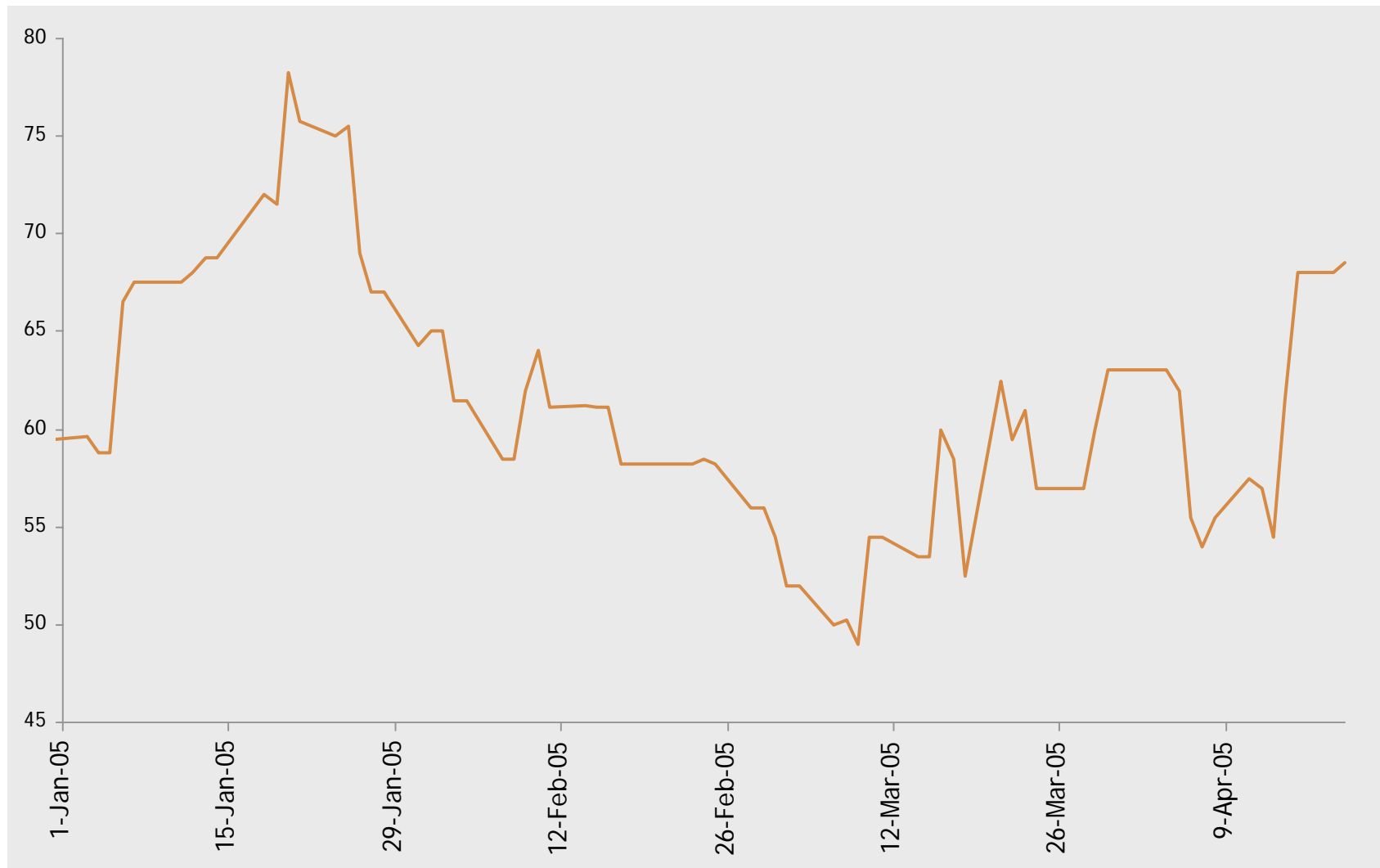
### Actual and Indicative Spreads for Single-A CLOs (bp)



Source: JPMS

# Tranched index trades have been sensitive to market volatility...

CDX 7%-10% Tranches On the run (5Yr) Spread Mid



Source: JPMS

## ... but managed synthetics may be underestimating Auto risk

- IG Syn CDOs have significant Auto exposure
  - Included in CDX index
  - Included in most Bespoke trades as a “High spread to Rating” name
  - Often included in managed deals
- Thus far, MTM volatility has been muted for managed deals, which trade on market (not model) levels

### Model MTM for Managed Synthetic CDO with 12% Auto Concentration

	CDS Spreads 1 Day Change 4/14 – 4/15	CDS Spreads 4/15 Close	CDS Spreads "Worst Case"*	"Worst Case"* +Delphi default (recover @ 20%)
Delphi Corporation	+35	935	1500	Default
General Motors Corporation	+76	795	1400	Same as worst case
Ford Motor Company	+35	600	1200	Same as worst case
General Motors Acceptance Corp	+23	600	1000	Same as worst case
Ford Motor Credit Company	+10	480	1000	Same as worst case
Arvinmeritor, Inc.	+65	437	500	Same as worst case
DaimlerChrysler AG	+82	232	300	Same as worst case
Cummins Inc.	+59	217	300	Same as worst case
Volkswagen Aktiengesellschaft	+37	115	150	Same as worst case
<b>MTM for AAA Tranche</b>		<b>-0.30%</b>	<b>-2.30%</b>	<b>-2.80%</b>

\* Based a potential “worst case” scenario seen by JPM Auto analysts  
Source: JPMS

# Autos provide opportunity for new-issue Bespoke CDOs to pick up spread

## Assessing the Impact of GM/GMAC/Ford on Mezzanine CDO Spreads

	CDS Spread as of 4/18/05 (5yr)	Avg Ba1 CDS Spread (5 yr)	Difference
Ford	560	300	260
GM	830	300	530
GMAC	670	300	370

### Impact on WAS of Removing GM/GMAC/Ford and Investing in the Average Ba1 Name (bp)

0.5% Concentrations	-5.8
1.0% Concentrations	-11.6

### IG Synthetic CDO with 15% HY Bucket and 0.5% HY Concentrations

WARF	Tranche	Delta	Approximate Impact of Removing Names (bp)
385 (Baa2/Baa3)	Mezzanine	5.0	-29

### HY CSO with 1% HY Concentrations

WARF	Tranche	Delta	Approximate Impact of Removing Names (bp)
2200 (Ba3/B1)	Mezzanine	3.0	-17

Source: JPMS

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