

# ABX Indices

## The New US Asset Backed Credit Default Swap Benchmark Indices

January 2006



## The New US ABS CDS Benchmark - Themes



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# The New Benchmark ABX Indices



## **CDS IndexCo Introduces Its Newest Indices: ABX**

- CDS IndexCo
  - Owns and maintains the DJ CDX family of credit default swap (CDS) indices
  - Liquidity commitments on CDX from 21 dealer institutions
  - Formed from a merger of the major CDS indices (iBoxx and Trac-X) in April 2004 to form DJ CDX in North America
  - Between \$25 and \$50 billion of CDX notional volume traded daily
  - Introduction of second generation product such as index tranches and index options
- Broad market acceptance and effective management of the indices has resulted in increased:
  - Liquidity
  - Transparency
  - Market consensus (portfolio names, correlation calculations)
  - Standardization

## CDS IndexCo Creates the Benchmark for CDS of ABS

### ■ Liquidity

- Initial focus on the home equity ABS sector
  - Future indices to reference other ABS sectors
- Proven liquidity track record from the market-making group
- Multiple market-maker platform

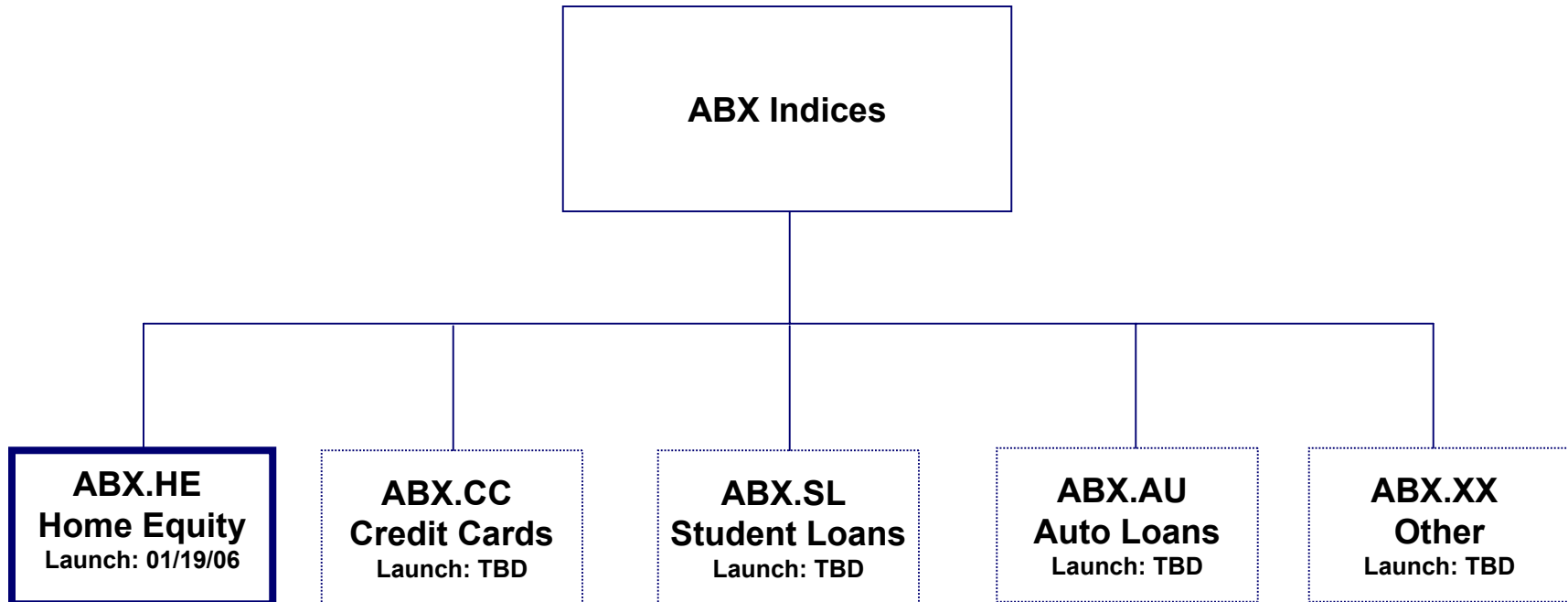
### ■ Transparency

- Objective, rules-based approach to portfolio construction
- Markit as administrator
- Daily prices available on Markit website

### ■ Standardization

- Each index will reference a standardized basket of reference obligations from the relevant ABS sector
- Standardized documentation for contracts will promote operational efficiency
- Monthly payment amounts calculated and posted by Markit
- DTCC will offer efficient trade settlement

## ABX Indices



- ABX.HE will represent a standardized basket of home equity ABS reference obligations
- Five indices based upon the rating of reference obligations: AAA, AA, A, BBB, and BBB-
- Application of defined rules will construct a portfolio representative of each sectors current market

## Key Features

Liquidity & Track Record	Transparency	Rolling
<ul style="list-style-type: none"> <li>■ Track record in CDS flow market and other credit indices</li> <li>■ The largest platform of leading market makers</li> <li>■ Inter-dealer broker participation</li> <li>■ Likely to increase trade flow in structured products</li> <li>■ Potential to impact cash spreads</li> </ul>	<ul style="list-style-type: none"> <li>■ Clear rules for portfolio construction</li> <li>■ Standardization and multi-market maker platform to ensure transparency</li> <li>■ Active participation of Markit as Administrator, Calculation, and Marketing Agent</li> </ul>	<ul style="list-style-type: none"> <li>■ Approximately every six months</li> <li>■ One roll mechanism agreed across all market makers</li> <li>■ Simple and clear roll mechanism</li> </ul>
Structure		Product Breadth
<ul style="list-style-type: none"> <li>■ ISDA Pay-As-You-Go template                             <ul style="list-style-type: none"> <li>– Fixed Cap Applicable</li> </ul> </li> <li>■ Standardized documentation</li> <li>■ No fees</li> <li>■ Static portfolio</li> <li>■ No physical settlement</li> </ul>		<ul style="list-style-type: none"> <li>■ Five separate indices at benchmark rating levels (AAA, AA, A, BBB, and BBB-)</li> <li>■ Unfunded</li> <li>■ Future Products                             <ul style="list-style-type: none"> <li>– Funded Note Program</li> <li>– Tranched Series</li> </ul> </li> </ul>



## **ABX Indices – Designed for Operational Efficiency**

- Trades will confirm over DTCC from initial launch date
  - DTCC confirms for all inter-dealer trades and trades with customers who are enabled
    - Trades can be input using DTCC’s existing corporate index template
  - Trades will be documented using two-page confirms, referencing a standard terms supplement and annex posted on Markit’s website
  - Initial factors for underlying reference obligations will be posted on Markit’s website
- Standardized settlement calculation
  - Markit will publish monthly fixed and floating payments for each contract
- Valuation analytics publicly available on [www.markit.com](http://www.markit.com)
- Licensed dealers will provide daily closes for the most recent index series and monthly pricing on previously issued outstanding series

## ABX.HE - Participants

Five indices referencing similarly rated tranches from 20 deals

- Rules-based approach to construction
- New series of ABX.HE indices issued approximately every 6 months
- Suits a variety of investors looking for diversified sub-prime home equity ABS exposure

<b>Asset Managers</b>	<b>Hedge Funds</b>	<b>Prop Trading Desks</b>	<b>Research</b>
<ul style="list-style-type: none"> <li>■ Quick credit exposure / hedging</li> <li>■ Liquidity management tool</li> </ul>	<ul style="list-style-type: none"> <li>■ Relative value trades</li> <li>■ Directional trading / macro view</li> </ul>	<ul style="list-style-type: none"> <li>■ Relative value trades</li> <li>■ Directional trading</li> </ul>	<ul style="list-style-type: none"> <li>■ Source of credit spread data</li> </ul>
<b>Asset Originators</b>	<b>Correlation Trading Desks</b>	<b>Corporate Treasury</b>	<b>Dealers</b>
<ul style="list-style-type: none"> <li>■ Quick credit exposure / hedging</li> <li>■ Credit diversification tool</li> </ul>	<ul style="list-style-type: none"> <li>■ Suitable for portfolio hedging</li> <li>■ Easy ramp-up</li> </ul>	<ul style="list-style-type: none"> <li>■ Easy access to diversified US sub-prime home-equity exposure</li> </ul>	<ul style="list-style-type: none"> <li>■ Benchmark for product innovation</li> <li>■ Flow trading</li> </ul>

## ABX.HE Index Creation Algorithm

- Index will be created from qualifying deals of 20 of the largest sub-prime home equity ABS shelf programs from the six month period preceding the roll
  - Dealers will select one of the two largest deals from the 20 shelves
  
- Diversification obtained by:
  - Limiting the same loan originator to 4 deals
  - Limiting the same master servicer to 6 deals
  - If the algorithm process results in originator or master servicer over-concentration, the deal from the shelf program with the smallest issuance (i.e., lowest priority) will be excluded. The largest qualifying deal from the issuer with the lowest ranking will be chosen, as long as concentration limits are not breached

## About Markit

- Markit is the Administration and Calculation Agent for the DJ CDX index program
- Markit Background:
  - Founded in 2001 by a team of credit market professionals to aggregate and provide clean credit data across asset classes on a single platform
  - Asset Classes include: CDS (Corporate and ABS), Bonds (corporate, financial, sovereign, convertible), Mortgage- and Asset-Backed Securities, Syndicated Loans and Index Products
  - Markit Reference Entity Database (RED) is the market standard for reference entity long legal names, reference entity-reference obligation relationships and “pair” identifiers
  - The key industry source for accurate, consensus pricing for independent price verification, risk modelling and data back testing
  - The industry source for standardized CDO and 1<sup>st</sup>-to-default valuations, OTC derivative valuations as well as corporate dividend payment and equity index constituent information

## Benchmark Liquidity and Tradability

### Market-Makers of ABX.HE

Bank of America

BNP Paribas

Deutsche Bank

Lehman Brothers

Morgan Stanley

Barclays Capital

Citigroup

Goldman Sachs

RBS Greenwich Capital

UBS

Bear Stearns

Credit Suisse

JP Morgan

Merrill Lynch

Wachovia

### Inter-Dealer Brokers

ABX Index is expected to trade in the inter-dealer broker market

### Liquidity

- Securitizations backed by home equity loans are the largest sector in the US ABS market
- Initial benchmark will reference the sub-prime home equity sector
- Increasing liquidity in the CDS of ABS market
- Valuation analytics publicly available on [www.markit.com](http://www.markit.com)

# Markit Calculator

CDS and Index Valuation
CDO Pricing Model
Structured Finance Index Calculator

Select index family ABX.HE Indices

Index ABX-HE-AA Series 5 Version 1 Coupon (bps) 135 Spread (bps) 75

Trade Date 10Jan06 Currency USD CPR (%) 25

Effective Date 13Jan06 Notional 10,000,000 Recovery Rate (%) 0

Load
Calculate PV
Email Report

**Valuation using LIBOR curves of 22Dec05**

**Results**

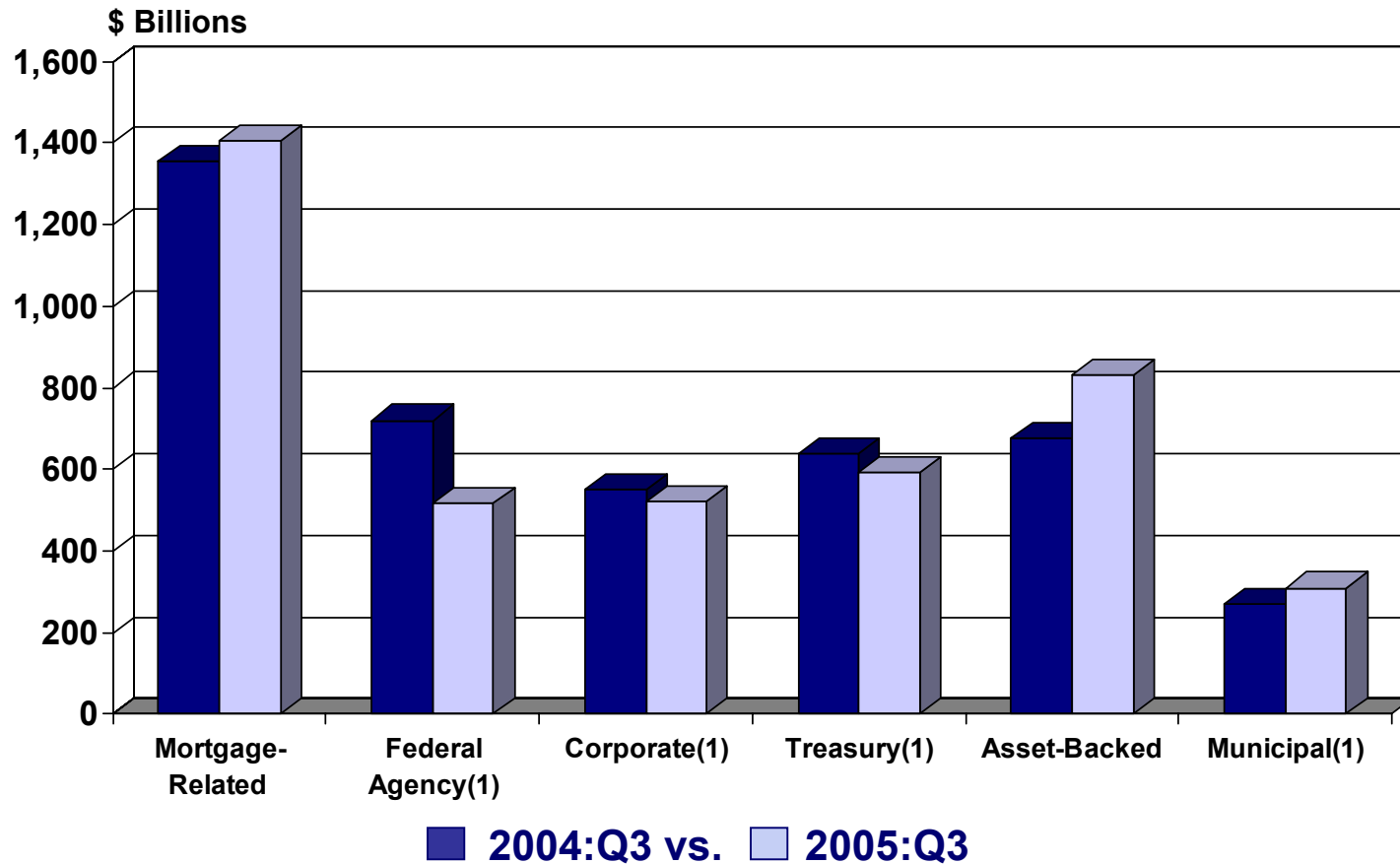
	PV	Accrued	Clean PV	Price	PV01
Total	263,351.34	375.00	262,976.34	102.62976337%	-4,184.73

**Index Constituents**

Index Constituent	CPR (%)	Spread (bps)	Enddate	Av Life (yrs)	Factor	PV	Accrued	Clean PV
Accredited Mortgage Loan Trust 2005-2 A2A USD	25	65	25Jul2035	4.88	1.00	58,445.96	75.00	58,370.96
Countrywide Asset-Backed Certificates 2005-3 2AV1 USD	25	85	25Aug2035	4.91	1.00	41,547.23	75.00	41,472.23
Fremont Home Loan Trust 2005-1 1A1 USD	25	75	25Jun2035	4.74	1.00	48,583.89	75.00	48,508.89
Mastr Asset Backed Securities Trust 2005-WMC1 A1 USD	25	55	25Mar2035	4.73	1.00	64,924.31	75.00	64,849.31
New Century Home Equity Loan Trust 2005-2 A1SS USD	25	75	25Jun2035	4.88	1.00	49,849.95	75.00	49,774.95

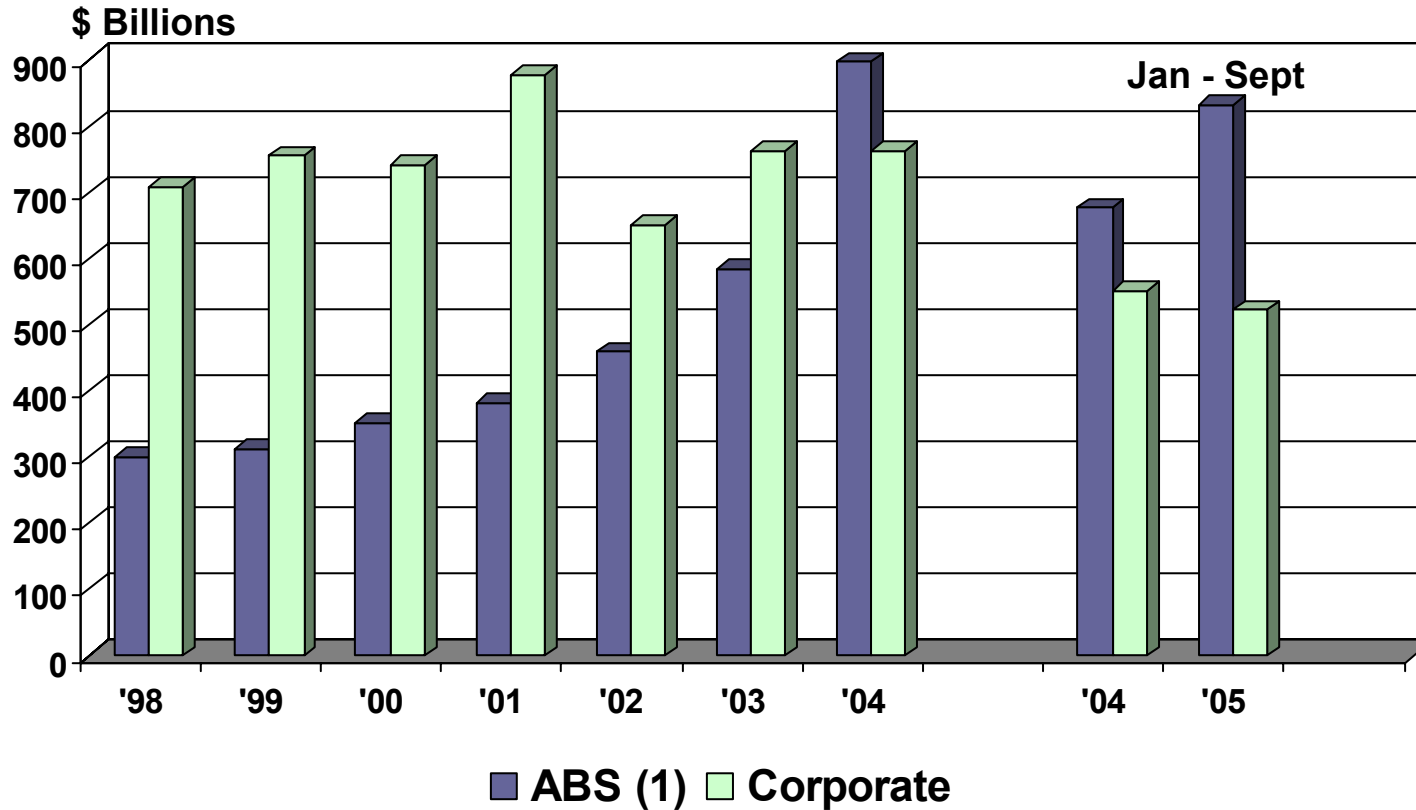
Data on page is for example purposes only

## ABS Issuance in the U.S. Bond Markets\*



\* As of September 2005, Bond Market Estimates, *Bond Market Association Research Quarterly*, November 2005 (1) Includes long term issuance only, Sources: Thomson Financial Securities Data, U.S. Treasury, U.S. Federal Agencies

## Issuance of Asset Backed Securities\*

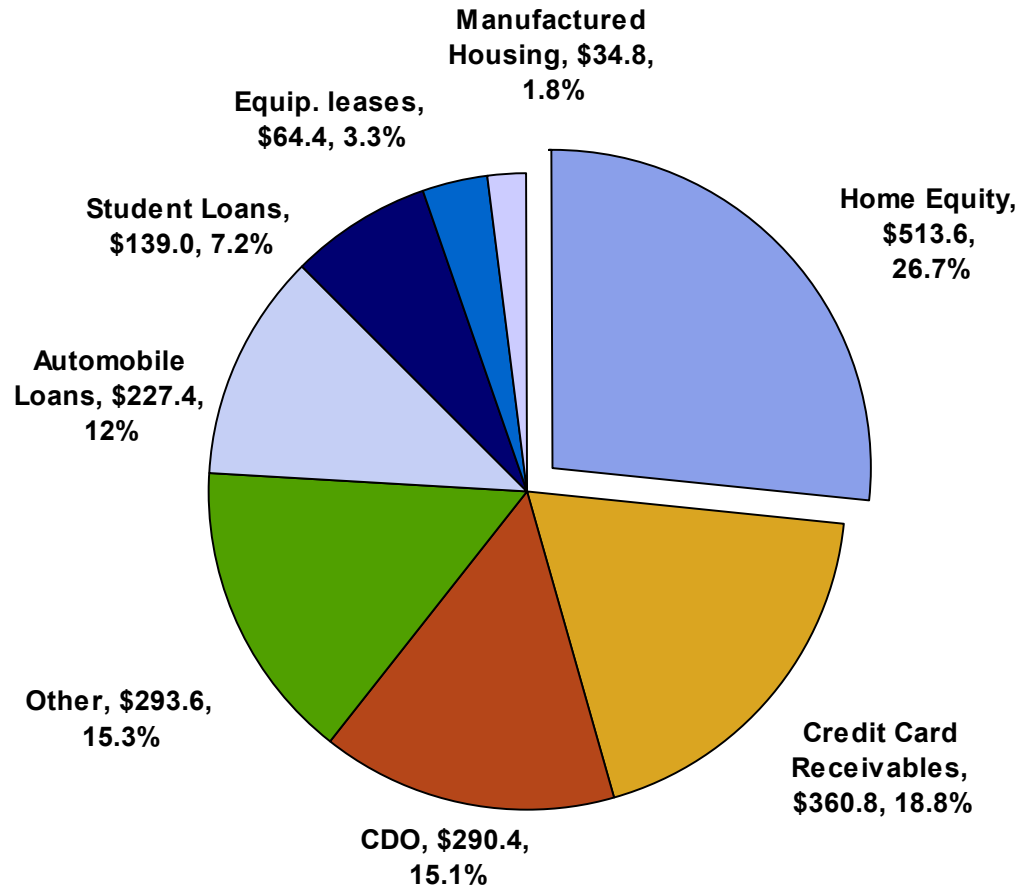


\* As of September 2005, Bond Market Estimates, *Bond Market Association Research Quarterly*, November 2005  
 (1) ABS issuances includes: Home Equity, Credit Card Receivables, CDO, Automobile Loans, Student Loans, Equip Leases, Manufactured Housing & Others,  
 Sources: Thomson Financial Securities Data



# ABS Market Overview

Outstanding Notional (\$ in Billions)



As of September 2005, Bond Market Estimates, *Bond Market Association Research Quarterly*, November 2005, Source: Federal Reserve System, Thomson Financial, The Bond Market Association

# ABX.HE Index Construction Algorithm



## ABX.HE Index Program – Index Construction Algorithm

### Reference obligations from deals issued within the six months prior to the launch/roll date

- Minimum deal size of \$500M
- No more than four deals with the same originator
- No more than six deals with the same master servicer
- Each tranche must have a weighted average life between 4-6 years as of the issuance date (except the AAA tranche which must be greater than 5 years)
- Must be rated by Moody's and S&P; the lesser of all ratings will apply

### Five indices based upon the rating of reference obligations: AAA, AA, A, BBB, and BBB-

- One bond from each deal will be referenced in each index (AAA will be comprised of the longest average life AAA tranche with an initial issuance size of at least \$15M)
- Reference obligations equally weighted by initial par amount as of roll date, subsequent weightings may change based on the prepayment and credit experience of the underlying transactions
- Based on standard ISDA Pay-As-You-Go template
- Index represents aggregate performance of the basket of credit default swaps

## ABX Index Family - Construction of the Index

- Markit will submit a list to each licensed dealer of two deals from the largest 25 issuers (by sub-prime home equity issuance), based on the following criteria:
  - (i) Must have been issued within the last six months
  - (ii) Must have an offering size of at least \$500M
  - (iii) At least 90% of the deal's assets must be 1<sup>st</sup> lien mortgages
  - (iv) Weighted average FICO credit score < 660
  - (v) Deals must pay on the 25<sup>th</sup> of the month
  - (v) Referenced tranches must bear interest at a floating rate benchmark of one-month LIBOR
  - (vi) At issuance, each deal must have tranches of the required ratings with a weighted average life greater than 4 years, except the AAA which must have an average life of longer than 5 years
- On the following day, each dealer will return to Markit a ranking of their preference of deal for each issuer
- Markit will create a master list of 20 deals so that the list meets the concentration criteria:
  - No more than four deals with loans from same originator
  - No more than six deals with the same master servicer
- Markit will notify dealers of the composition of each index at least four days prior to the creation of each new index
- Markit will publish to the public the composition of each index four days prior to the creation of each new index
- Each index will contain this same list of reference obligations until all reference obligations have been fully paid off or have matured
- On the day before the index creation date, each market maker will submit to Markit the fixed rate for each index. The average of these spreads rounded up to the nearest basis point will be the fixed rate
- The next series of indices will be constructed by an identical process

## ABX References Deals From the Universe of Sub-Prime Issuers\*

1 AMIT	AAMES MORTGAGE INVESTMENT TRUST	28 HEAT	HOME EQUITY ASSET TRUST
2 ACCR	ACCREDITED MORTGAGE LOAN TRUST	29 INABS	INDYMAC RESIDENTIAL ASSET BACKED TRUST
3 ACE	ACE SECURITIES CORP.	30 IRWHE	IRWIN HOME EQUITY
4 AABST	AEGIS ASSET BACKED SECURITIES TRUST	31 IXIS	IXIS REAL ESTATE CAPITAL TRUST
5 AMSI	AMERIQUEST MORTGAGE SECURITIES INC.	32 JPMAC	JP MORGAN MORTGAGE ACQUISITION CORP
6 ARSI	ARGENT SECURITIES INC.	33 LBMLT	LONG BEACH MORTGAGE LOAN TRUST
7 ABFC	ASSET BACKED FUNDING CERTIFICATES	34 MABS	MASTR ASSET BACKED SECURITIES TRUST
8 ABSHE	ASSET BACKED SECURITIES CORP HOME EQUITY LN TRST	35 MMLT	MERITAGE MORTGAGE LOAN TRUST
9 BAYV	BAYVIEW FINANCIAL ACQUISITION TRUST	36 MLMI	MERRILL LYNCH MORTGAGE INVESTORS, INC.
10 BSABS	BEAR STEARNS ASSET BACKED SECURITIES, IN C.	37 MSAC	MORGAN STANLEY ABS CAPITAL I
11 CARR	CARRINGTON MORTGAGE LOAN TRUST	38 NCHET	NEW CENTURY HOME EQUITY LOAN TRUST
12 CDCMC	CDC MORTGAGE CAPITAL TRUST	39 NHEL	NOVASTAR HOME EQUITY LOAN
13 CXHE	CENTEX HOME EQUITY	40 OOMLT	OPTION ONE MORTGAGE LOAN TRUST
14 CFMSI	CITIFINANCIAL MORTGAGE SECURITIES INC.	41 OWNIT	OWNIT MORTGAGE LOAN ASSET-BACKED CERTIFICATES
15 CMLTI	CITIGROUP MORTGAGE LOAN TRUST, INC.	42 PPSI	PARK PLACE SECURITIES INC
16 CWL	COUNTRYWIDE ASSET-BACKED CERTIFICATES	43 POPLR	POPULAR ABS MORTGAGE PASS-THROUGH TRUST
17 CBASS	CREDIT-BASED ASSET SERVICING AND SECURITIZATION	44 RAMC	RENAISSANCE HOME EQUITY LOAN TRUST
18 ECR	ENCORE CREDIT RECEIVABLES TRUST	45 RAMP	RESIDENTIAL ASSET MORTGAGE PRODUCTS, INC.
19 EMLT	EQUIFIRST MORTGAGE LOAN TRUST	46 RASC	RESIDENTIAL ASSET SECURITIES CORPORATION
20 EQABS	EQUITY ONE ABS, INC.	47 SAST	SAXON ASSET SECURITIES TRUST
21 FMIC	FIELDSTONE MORTGAGE INVESTMENT CORP.	48 SABR	SECURITIZED ASSET BACKED RECEIVABLES LLC TRUST
22 FINA	FINANCE AMERICA MORTGAGE LOAN TRUST	49 SVHE	SOUNDVIEW HOME EQUITY LOAN TRUST
23 FFML	FIRST FRANKLIN MTG LOAN ASSET BACKED CERTIFICATE	50 SURF	SPECIALTY UNDERWRITING & RESIDENTIAL FINANCE
24 FNLC	FIRST NLC TRUST	51 SAIL	STRUCTURED ASSET INVESTMENT LOAN TRUST
25 FHLT	FREMONT HOME LOAN TRUST	52 SASC	STRUCTURED ASSET SECURITIES CORPORATION
26 GEWMC	GE-WMC MORTGAGE SECURITIES LLC	53 TMTS	TERWIN MORTGAGE TRUST
27 GSAMP	GSAMP TRUST	54 WFHET	WELLS FARGO HOME EQUITY TRUST

\* This is a representative list of current shelf programs that issue sub-prime home equity ABS

## Reference entities for the ABX.HE 06-1 series of indices

### Date of publication: January 11, 2006

- 1 ACE SECURITIES CORP. SERIES 2005-HE7
- 2 AMERIQUEST MORTGAGE SECURITIES INC., SERIES 2005-R11
- 3 ARGENT SECURITIES INC SERIES 2005-W2
- 4 BEAR STEARNS ASSET BACKED SECURITIES 2005-HE11
- 5 CWABS ASSET-BACKED CERTIFICATES TRUST 2005-BC5
- 6 FIRST FRANKLIN MORTGAGE LOAN TRUST SERIES 2005-FF12
- 7 GSAMP TRUST 2005-HE4
- 8 HOME EQUITY ASSET TRUST 2005-8
- 9 J.P. MORGAN MORTGAGE ACQUISITION CORP. 2005-OPT1
- 10 LONG BEACH MORTGAGE LOAN TRUST 2005-WL2
- 11 MASTR ASSET BACKED SECURITIES TRUST 2005-NC2
- 12 MORGAN STANLEY ABS CAPITAL 2005-HE5
- 13 MERRILL LYNCH MORTGAGE INVESTORS TRUST, SERIES 2005-AR1
- 14 NEW CENTURY HOME EQUITY LOAN TRUST 2005-4
- 15 RASC SERIES 2005-KS11 TRUST
- 16 RESIDENTIAL ASSET MORTGAGE PRODUCTS SERIES 2005-EFC4
- 17 SECURITIZED ASSET BACKED RECEIVABLES 2005-HE1
- 18 SOUNDVIEW HOME LOAN TRUST 2005-4
- 19 STRUCTURED ASSET INVESTMENT LOAN TRUST 2005-HE3
- 20 STRUCTURED ASSET SECURITIES CORPORATION SERIES 2005-WF4

# Trading, Credit Events and Roll Mechanism



## ABX.HE: Indicative terms and conditions

- Indices:

Indices	Scheduled Termination Date	Fixed Rate	Price
ABX.HE.AAA.06-1	TBD	[ ]	100-00
ABX.HE.AA.06-1	TBD	[ ]	100-00
ABX.HE.A.06-1	TBD	[ ]	100-00
ABX.HE.BBB.06-1	TBD	[ ]	100-00
ABX.HE.BBB-.06-1	TBD	[ ]	100-00
  
- Notional: Amortization mirrors that of the underlying bonds
- Fixed Rate: Established on roll date premium. Subsequent trades require upfront exchange of premium/discount
- Floating Rate Payments: Interest Shortfall, Writedown, Principal Shortfall
- Additional Fixed Payments: Interest Shortfall Reimbursement, Writedown Reimbursement, Principal Shortfall Reimbursement
- Quotations: Dealers will quote price and exchange upfront amounts based on the difference between that price and par
- Credit Events: Principal Shortfall and Writedown (2005 ISDA PAYG Template Definitions)
- Physical Settlement: Not Applicable



## Trading - XYZ Sells Protection on \$100M ABX.HE.A.06-1

- The Fixed Rate on ABX.HE.A.06-1 Index is [70] basis points per annum, payable monthly

### Fixed Rate Payer (Protection Buyer)

- Pays [70] basis points per annum monthly to counterparty on notional amount
  - Notional amount will decline over time based on the reference obligations amortization
- Receives payments from the Floating Rate Payer in the event of the following:
  - Interest Shortfall (capped at fixed rate)
  - Principal Shortfall
  - Writedown
- Pays in the event of the following:
  - Interest Shortfall Reimbursement Amount
  - Principal Shortfall Reimbursement Amount
  - Writedown Reimbursement Amount

### Floating Rate Payer (Protection Seller)

- Receives [70] basis points per annum monthly to counterparty on notional amount
  - Notional amount will decline over time based on the reference obligation's amortization
- Pays Fixed Rate Payer in the event of the following:
  - Interest Shortfall (capped at fixed rate)
  - Principal Shortfall
  - Writedown
- Receives payment in the event of the following:
  - Interest Shortfall Reimbursement Amount
  - Principal Shortfall Reimbursement Amount
  - Writedown Reimbursement Amount

## Credit Event (Writedown) - XYZ Sells Protection on \$100M ABX.HE.A.06-1

### Credit Event - Writedown

- Reference Obligation Original Factor = 1.0; Current Factor = 0.7
- A Writedown occurs on a Reference Obligation, for example, in year 3, in the amount of 1% of its current principal balance
  - $(\text{Current Factor} * \text{Weighting} * \text{Loss}) = (0.70 * .05 * .01) = .00035 = 0.035\%$
- Protection Seller pays to Protection Buyer a floating amount  $(0.035\% \times 100\text{MM}) = \$35,000$
- Index notional amount on which premium is paid reduces by an additional 0.035%, in addition to the principal payments of the month
- Following the Credit Event, protection seller receives premium of [70] bps on the remaining index notional amount until the earlier of the next credit event or scheduled termination

## ABX.HE Trading Mechanics

	Index at 100.00	
	Assumes Market Spread Equals Index Fixed Rate	
<b>Trade Date</b>	Index at 98.00 • Implies spreads have widened	Index at 102.00 • Implies spreads have tightened
<b>Trade Initiation</b>	<ul style="list-style-type: none"> <li>• Buyer pays Seller 2% x (Notional) x (Factor)</li> <li>• Seller pays Buyer accrued premium from the end of the last accrual period until the trade effective date</li> </ul>	<ul style="list-style-type: none"> <li>• Seller pays Buyer 2% x (Notional) x (Factor)</li> <li>• Seller pays Buyer accrued premium from the end of the last accrual period until the trade effective date</li> </ul>
<b>Trade Termination</b>	<ul style="list-style-type: none"> <li>• Seller pays Buyer 2% x (Notional) x (Factor)</li> <li>• Buyer pays Seller accrued premium from the end of the last accrual period until the trade effective date</li> </ul>	<ul style="list-style-type: none"> <li>• Buyer pays Seller 2% x (Notional) x (Factor)</li> <li>• Buyer pays Seller accrued premium from the end of the last accrual period until the trade effective date</li> </ul>

## Appendix

- Credit Derivatives Physical Settlement Matrix and Confirmation
  - [www.isda.org](http://www.isda.org)
  
- ABX Confirmation
  - [www.markit.com](http://www.markit.com)

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