

Analyzing STACR® Transactions Using a Bloomberg Terminal

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Introduction

This booklet showcases functionality on Bloomberg Terminal for analyzing a STACR security with accurate up-to-date data and analytics.

The Bloomberg Transition Model (BTM) is a sophisticated loan-level transition model that assesses various variables such as the loan attributes, macroeconomic variables, zip code-level home price appreciation and other key drivers to determine the probability of a loan transitioning from one state to another.

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Super Yield Table (SYT)

SYT <GO> provides scenario-based valuation and risk analysis for STACR securities so you can determine whether the security meets your investment criteria. To access the function as shown below first load a STACR bond: STACR 2019-DNA4 M2 <MTGE> enter, then run <SYT> enter.

The screenshot shows the SYT interface for the STACR 2019-DNA4 M2 Mtge. The interface includes a toolbar at the top with buttons for 'Enter all values and hit <GO>', 'Scenarios', 'Stratify', 'Actions', 'Settings', and 'Yield Table'. Below the toolbar, the 'Security Description' section displays bond details such as 'US UNINSURED-AGENCY', '4.905(350)10', 'CUSIP 35565AAH3', and 'Repines'. The 'Scenario Inputs' section on the left allows users to set parameters like 'Settle', 'Deal Level Controls', 'Index Rates', and 'All Loans'. The 'Report Display' section shows a table of 'Price-to-Discount Margin' with columns for 'PX', 'CF', and 'CF' across various scenarios. The 'Benchmark Curve' section at the bottom displays a table of 'Yield' and 'Disc' values for different maturities. The interface also includes a 'Suggested Functions' section at the bottom with options like 'CFT Assess projected & historic' and 'SXT Capture non-electronic mortgage sales'.

Toolbar and Setting

- The *toolbar* allows you to manage your saved YT/SYT worksheets and scenarios and also makes it easy to export your analysis to a Microsoft® Excel spreadsheet. You can select defaults affecting the function's layout and calculations and create collateral stratifications to analyze the STACR bond's layered risk.

Super Yield Table (SYT)

Security Description

- The *security description* section allows you to quickly reference key descriptive and performance information for the loaded STACR bond to add context to your analysis.

Scenario Inputs

- The *scenario inputs* section displays the individual assumptions you can input to perform "what if" analysis on a STACR bond. Your inputs in this section affect the calculations and analytical results in the report display section of the screen.

Report Display

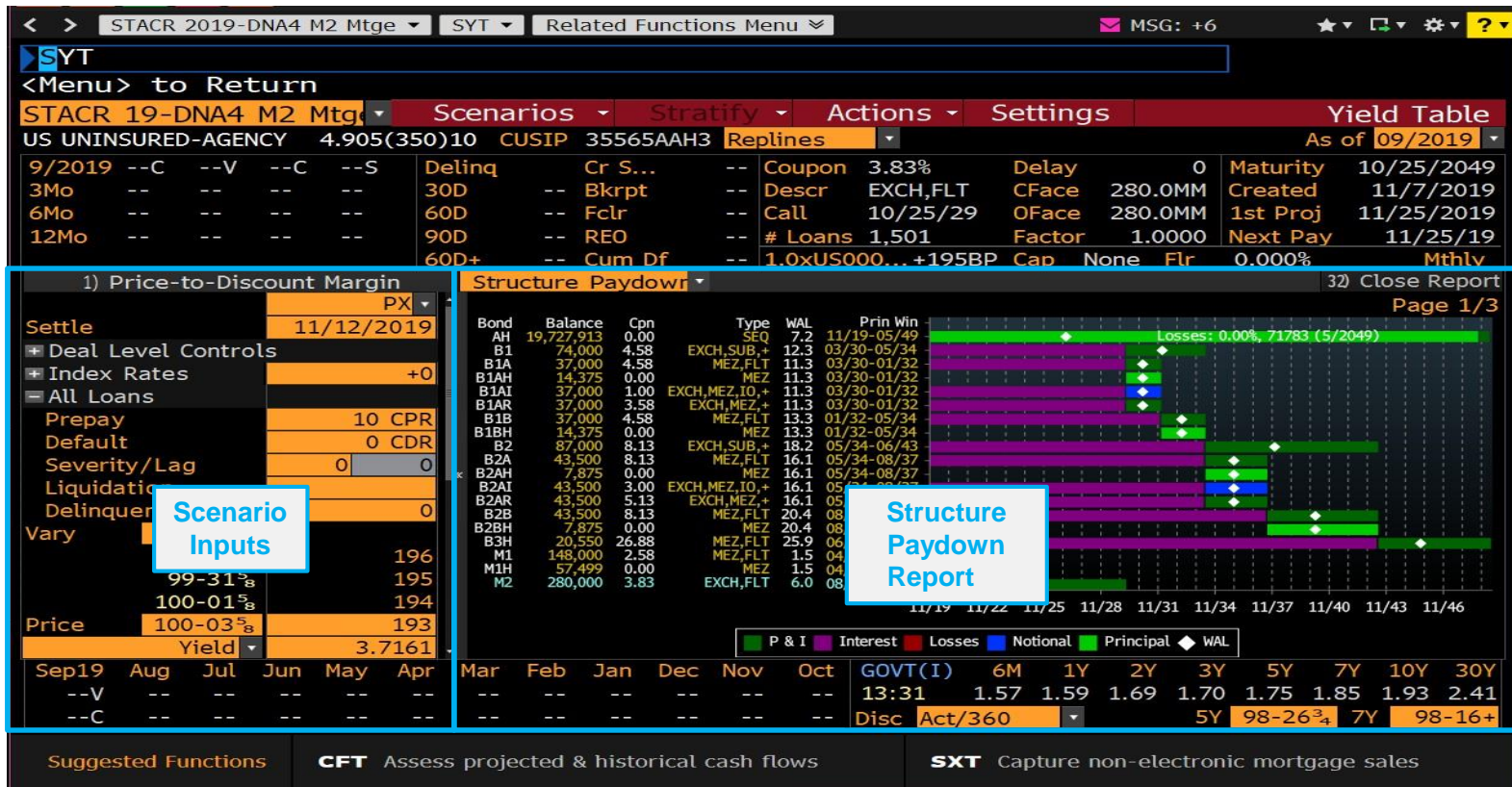
- The *report display* section consolidates seven mortgage analysis functions, including four of the primary STACR bond analytical functions (YT, CFT, SPA, and MTCS) into one fluid workflow.
- Enter your scenario assumptions once, then seamlessly transition between interactive Yield Table (YT), Cash Flow (CFT), Structure Paydown (SPA), and Credit Support (MTCS) reports.
- The base case for STACR securities is 10 CPR, 0 CDR, 0 SEV; You can also run the BTM model or change various inputs in this section. Any field that is highlighted in yellow can be edited. For a step-by-step guide on how to use the function press the <HELP> key once; if you need further assistance press the <HELP> key twice to reach Bloomberg customer support.

Benchmark Curve

- The *benchmark curve* section provides transparency into the benchmark rates (treasury/swap/Eurodollar) driving spreads and other calculations. In some cases, you can enter your own rates for the points on the curve used to interpolate a benchmark rate that matches the STACR bond's average life.

Super Yield Table (SYT)

- Once you click through you will see the left half of the screen with the scenario you are running and the right half with the analytics you choose to show from the dropdown, e.g., CFT, SPA, MTCS, HZ1.



Bloomberg's Credit Model BTM (SYT BTM)

Enhance Your Credit Risk Transfer Bond Valuation

- The *Bloomberg Transition STACR Model (BTM)* helps investors evaluate the Credit Risk Transfer (CRT) securities issued by Freddie Mac. BTM, a simulated loan-level transition model, takes each loan state into account along with: origination and dynamic loan-level attributes, macroeconomic variables, CBSA-level HPA (home price appreciation), and other variables to determine the probability of transitioning from one state to another. The BTM model tracks a loan's status throughout its entire life, capturing borrower behavior.

Accessing BTM on SYT<GO>

- To incorporate the new Bloomberg Transition Model into your analysis, first load a STACR bond in SYT: STACR 2013-DN1 M2 <MTGE> Enter "BTM" as the Prepay input to access BTM. Going forward, you can use the shortcut SYT BTM <GO> to load the model right into SYT.
 - Type BTM into the *prepay input* box to invoke the BTM model.
 - BTM can be run in its *base scenario* with the single input in prepay as shown in column 1, or can be stressed to see both a *bear* and *bull* case as seen in columns 2 and 3.
 - BTM *cashflow button* highlights that BTM is driving the scenario.

Dynamic BTM on CRT for CMP Subscribers

- BTM on SYT <GO> for STACR securities will use vectors generated during our overnight batch run each night. In order to use current market environments or BTM Transition Dials, you must be a CMP subscriber.

The screenshot displays the Bloomberg SYT BTM interface. At the top, there's a header bar with 'STACR 2019-DNA4 M2 Mtge' and 'SYT' tabs. Below this, a search bar contains 'SYT BTM' and a prompt 'Enter all values and hit <GO>'. The main area is divided into several sections:

- STACR 19-DNA4 M2 Mtge**: A table showing bond details like 'US UNINSURED-AGENCY', 'CUSIP 35565AAH3', and 'Replines'.
- Yield Table**: A table with columns for 'Maturity', 'Created', '1st Proj', and 'Next Pay'.
- Custom**: A section with dropdowns for 'BTM', 'CF', and 'CFE'.
- BTM Transition Dials**: A section with checkboxes for 'BTM Severity Shift', 'BTM Dial/Calib. Fade', and 'BTM Model Version'.
- All Loans**: A table with columns for 'Prepay', 'Default', 'Severity/Lag', 'Liquidation', and 'Delinquency'.
- Yield**: A table with columns for 'Yield', '3.6900', '-16.4969', '3.6892', '3.7234', '3.7161', '3.7084', and '3.6998'.
- Suggested Functions**: A section with buttons for 'CFT Assess projected & historical cash flows' and 'SXT Capture non-electronic mortgage sales'.

Bloomberg's Credit Model BTM (SYT BTM)

View BTM Projected Vectors

- BTM forecasts loan level prepayment speeds, delinquency rates and liquidation rates which can all be viewed on the Classic Speeds tab. The severity vector is based on the fixed severity approach defined for Credit Events on the Reference Pool. Enter STACR 2019-DNA4 M2 <Mtge> SYT BTM <GO> and then click on 1) BTM and toggle to Vectors to view vector projections of the Bloomberg Credit Model.

- The vectors dropdown allows the user to see the BTM generated vectors.
- The BTM can be shown in graphical or table format.



Bloomberg's Credit Model BTM (OAS1 New)

Analytics/Market Environment Tabs

- The *performance tab* provides ZV/Static Analytics, Weighted Average Model Projections, and Key Rate Durations.
- OAS analytics and Advanced Durations are blank as the Terminal provides single path risk analytics only. We do provide multi-path risk analytics (via LMM) through our premium product CMP. For more information on single/multi-path risk analytics, see our the "MBS Risk Flipbook" located on BPS<GO> >> MBS & Cash Str Products >> Predictive Models.
- Market Environment tab provides interest/mortgage rates and volatility info used in the analytics.

STACR 2019-DNA4 M2 Mtge

OAS1

Related Functions Menu

News Alert

★

📄

⚙️

🔍

STACR 2019-DNA4 M2 100.020714 / 100.111

Disc Mrgn 194.3/192.7

BVN3

As of 06 Nov Prepay 10CPR

WAL 6

Collateral 100.0% WH30 4.9%

STACR 2019-DNA4 M2 Mtc

Settings

Option-Adjusted Spread Analysis

US UNINSURED-AGENCY 4.905(350)10

CUSIP 35565AAH3

Factor Date 09/2019

C

Quote 100-03%

Price

Prepay 100

BTM

No Overrides

🔗

Rate Env

NY 3PM Close

11/06/2019

Settle Date 11/08/2019

Bond & Collateral Info

Basic

Balance280,000,000

Factor1.000000000

Coupon3.82750%

Class DescriptionEXCH, FLT

Pricing Speed WAL6.16Yrs@ 10 CPR

Collateral Summary1501 Rep Lines, Fixed

Cum Loss \$--

HPI LTV71.74

% Mod Loans0.00

Top GeoCA 16.3

Ltd Doc %0.00

Credit Score748

Owner Occupied83.9

GroupAll Collateral

Analytics

Market Environment

OAS Analytics

OAS--

OAD--

OAC--

OASD--

OASC--

Opt Cost--

+10bp Px--

-10bp Px--

ZV Analytics

Spread181.7

Duration-0.01

Convexity0.46

Sprd Dur2.49

Yield3.418

WAL2.63

+10bp Px100.116

-10bp Px100.115

Static Analytics

C

Price100-03%

Yield3.690

WAL2.64

Mod Dur2.48

I-Sprd--

N-Sprd206.8

Projections

WAVG VPR22.58

WAVG DQ0.68

WAVG CDR0.20

WAVG SEV27.11

Advanced Durations

Prepay--

PSA--

Elbow Shift--

Mtg Rate--

Curr Cpn--

Dirty Vega--

Pure Vega--

Key Rate Durations

6M0.04

2Y0.02

5Y-0.02

10Y-0.02

20Y-0.02

30Y-0.01

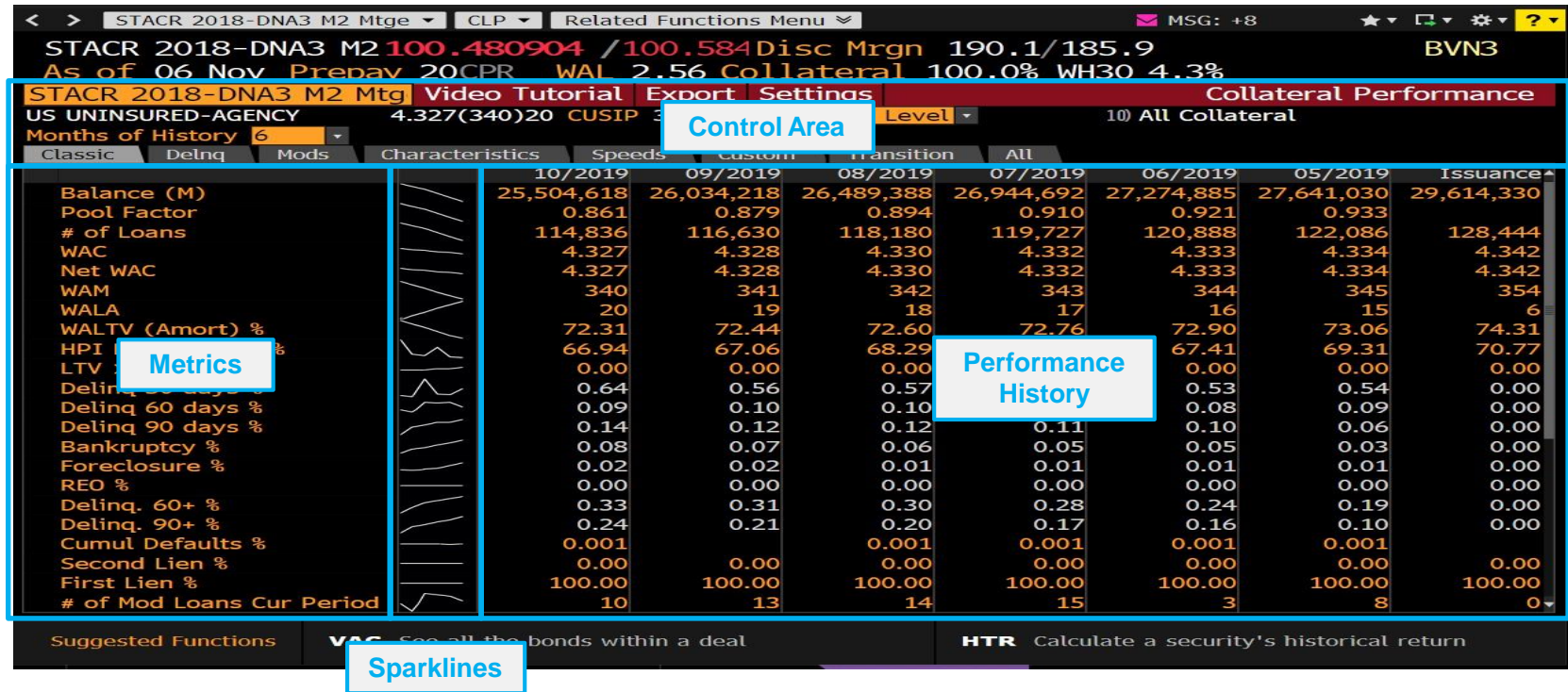
Suggested Functions

CLCAnalyze the collateral behind a deal

YTRPrice a security by varying CPR

Collateral Performance (CLP)

CLP <GO> displays current and historical collateral statistics from monthly servicer or trustee reports, so you can follow changes in the underlying collateral to determine the riskiness of a potential investment. To access the function first load a STACR bond: STACR 2018-DNA3 M2 <MTGE> enter, then run <CLP> enter.



Control Area

- The *control area* displays a series of tabs you can use to navigate different types of collateral performance data. The top right of the control area shows the selected collateral group and, for securities supported by more than one collateral group, allows you to change the collateral group under analysis. You can also export data to Microsoft Excel.

Collateral Performance (CLP)

CLP Tabs

- CLP organizes collateral performance statistics into a series of tabs, making it easy to find the information you need.

Tab Name	Purpose
Classic	Displays a general overview of collateral performance metrics for your loaded STACR security. The yellow and white fonts that appear on this tab highlight frequently referenced delinquency metrics.
Delinq	Displays data related to the delinquency status of the loans.
Mods	Displays collateral metrics related to modified loans.
Characteristics	Displays collateral metrics that provide insight into the descriptive characteristics of the collateral.
Speeds	Displays collateral performance metrics related to historical prepayment and default speeds.
Custom	Allows you to customize the collateral performance metrics that appear on the tab.
Transition	Displays collateral performance data related to the collateral's transition between different delinquency statuses.
All	Consolidates all collateral performance metrics from the previous tabs onto one screen.

Metrics

- The *metrics* section displays the names of collateral performance metrics that you can track historically.

Sparklines

- The column of *sparklines* provides a visual representation of collateral performance history, so you can understand the overall direction of a performance metric at a glance.

Performance History

- The *performance history* section on each tab displays monthly performance statistics for the selected collateral group, so you can identify how the collateral group has performed historically.
- The yellow and white fonts that appear in some rows highlight frequently referenced delinquency metrics.

Paydown Information (PDI)

PDI <GO> allows you to analyze historical period-by-period payment details for STACR securities. Data points may include interest payments, principal payments, ending balance factors, coupons, and losses. To access the function first load a STACR bond: STACR 2018-DNA3 M2 <MTGE> enter, then run <PDI> enter.

Control Area

- The *control area* is organized into a toolbar and a series of tabs and displays descriptive information for the loaded STACR security for quick reference.

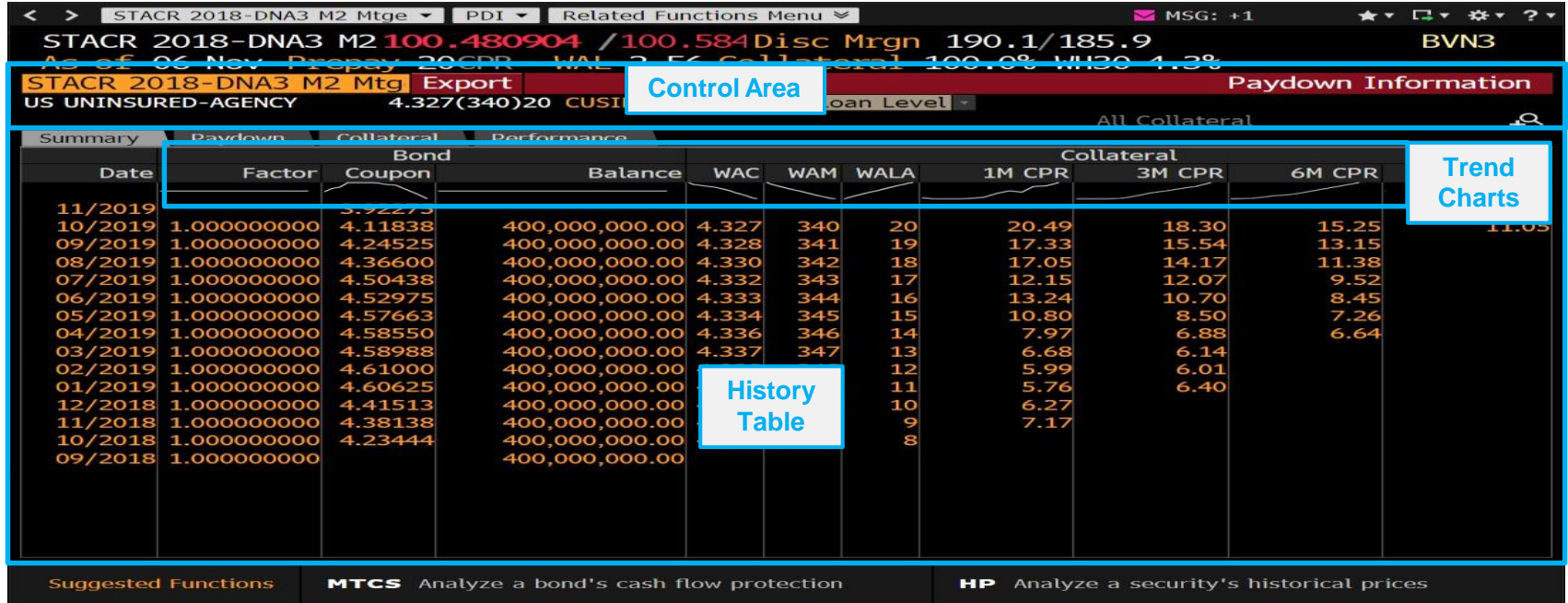


- The toolbar displays the ticker for the STACR security under analysis and allows you to export data to a Microsoft Excel spreadsheet.
- Tabs allow you to select the type of historical data you want to display.
- Security Description provides descriptive information for the loaded STACR security. For STACR bonds, the Group field displays data for the collateral group associated with the loaded security/bond/tranche. The collateral group field gives you the flexibility to select a different collateral group from within the deal for analysis on the Collateral and Performance tabs.

Paydown Information (PDI)

Summary Tab

- The *summary tab* highlights key historical paydown data points and is divided into a series of sections:



- Control area* allows you to change securities, export data to Microsoft Excel, view basic descriptive data for the loaded STACR security, or display a different tab of analysis.
- Trend charts* display data from the corresponding columns of the history table in chart format, so you can quickly understand the overall direction of the metric over the life of the collateral.
- History table* displays a period-by-period history of the STACR bond and the collateral so you can assess historical performance and trends. The data is organized under Bond and Collateral headings.

Paydown Information (PDI)

Paydown Tab

- The *paydown tab* provides period-by-period factor, coupon, and cash flow information for the loaded STACR bond and is divided into the following sections:



- Control area* allows you change securities, export data to Microsoft Excel, view basic descriptive data for the loaded security, or display a different tab of analysis.
- Security details* displays descriptive information for the loaded STACR bond and allows you to customize the cash flows based on your original balance.
- History table* displays a period-by-period history of the STACR bond so you can assess historical performance and trends.
- The historical pay down data is calculated based on the reported factor and coupon rather than the actual historical payment amount. The historical amount actually paid is based on events, including deferred interest and losses, and can be viewed in the Class Payment (PAID) function.
- Trend charts* display data from the corresponding columns of the history table in chart format, so you can quickly understand the overall direction of the metric over the life of the STACR bond.

Paydown Information (PDI)

Collateral Tab

- The *collateral tab* provides period-by-period data for the collateral group associated with the selected STACR bond, and is divided into the following sections:

The screenshot displays the STACR 2018-DNA3 M2 Mtge PDI interface. The top section shows bond details: STACR 2018-DNA3 M2 100.480904 / 100.584 Disc Mrgn 190.1/185.9, As of 06 Nov Prepay 20CPR WAL 2.56 Collateral 100.0% WH30 4.3%, BVN3. Below this is the 'Control Area' with tabs for Summary, Paydowns, Collateral, and Performance. The 'Collateral' tab is active, showing a table with columns: Curr Collat, Orig Collat, Pool Factor, Net WAC, Collateral Description, Balance, Principal, Net Interest, and Total. The 'History Table' section shows a list of dates from 10/2019 to 08/2018 with corresponding WAC, WAM, WALA, and Balance values. The 'Trend Charts' section displays line charts for the metrics. The bottom section shows 'Suggested Functions' with MTCS and HP options.

Date	WAC	WAM	WALA	Balance	Principal	Net Interest	Total
1) 10/2019	4.327	340	20	25,504,617,647.71	520,504,305	0	1,100
2) 09/2019	4.328	341	19	26,034,218,024	455,183,170	0	39,122
3) 08/2019	4.330	342	18	26,489,387,787	455,304,531	0	151
4) 07/2019	4.332	343	17	26,944,692,318	330,177,602	0	37,285
5) 06/2019	4.333	344	16	27,274,884,536	366,141,975	0	3,783
6) 05/2019	4.334	345	15	27,641,030,293	304,397,294	0	13,427
7) 04/2019	4.336	346	14	27,945,437,206	234,692,515	0	1,218
8) 03/2019	4.337	347	13	28,100,138,404	203,545,720	0	0
9) 02/2019	4.338	348	12	28,100,138,404	187,078,030	0	0
10) 01/2019	4.338	349	11	28,100,138,404	181,173,940	0	3
11) 12/2018	4.339	350	10	28,100,138,404	196,082,925	0	0
12) 11/2018	4.340	351	9	28,100,138,404	221,092,391	0	0
13) 10/2018	4.340	352	8	29,169,472,410	434,755,948	0	0
14) 08/2018	4.342	354	6	29,614,329,720		0	0

- Control area* allows you change securities, export data to Microsoft Excel, view basic descriptive data for the loaded security, or display a different tab of analysis.
- Collateral description* displays a descriptive information for the loaded STACR bond and associated collateral group.
- History table* displays a period-by-period history of collateral data so you can assess historical performance and trends.
- Trend charts* display data from the corresponding columns of the history table in chart format, so you can quickly understand the overall direction of the metric over the life of the collateral.

Paydown Information (PDI)

Performance Tab

- The *performance tab* provides period-by-period prepayment and/or loss data for the security and is divided into the following sections:



- Control area* allows you change securities, export data to Microsoft Excel, view basic descriptive data for the loaded STACR security, or display a different tab of analysis.
- Security details* displays a descriptive information for the loaded STACR bond and associated collateral group.
- History table* displays a period-by-period history of collateral data so you can assess historical performance and trends.
- Trend charts* display data from the corresponding columns of the history table in chart format, so you can quickly understand the overall direction of the metric over the life of the collateral.

BTM Excel API and Core Mortgage Premium

XLTP XRSA <GO> BTM Excel API

- Basic Excel API features are included as part of the Bloomberg Terminal subscription, including the ability to run BTM using STACR cashflows from the prior day (i.e., no model dials, scenario analysis, etc.)
- Type XLTP XRSA <GO> to download an Excel template to get started.

Bloomberg

Fill Data

Security ID		Pricing / Stress Model Outputs															
Cusip	NAME	Prepayment			Price	Yield	I Spread	WAL	Duration	Principal Window	Bond Loss	Collat Loss	Collat Liquidated	Weighted Avg VPR Proj	Weighted Avg CDR Proj	Severity Proj	Weighted Avg 60+ Delinq Proj
		Speed	Type	Vector													
	NAME	PREDAY S/G	PREDAY 1X	SPEED_V	PX_ASK	YLD_ytm_ASK	I_SPRD_ASK	MTG WAL	MTG STATIC MOD DUR	mtg princ win	RITEDWN	RTEDWN	POT_AS_A_%	WAVG_VPR_PROJ	WAVG_CDR_PROJ	SEVERITY_PROJEC	WAVG_60+ DELIN
65536HCS5	NHELI 2006-HE1 M1	100	BTM		96.21	4.8170	250.00	2.31	2.16	04/18-04/23	0.00%	12.43%	26.29%	6.55%	3.88%	46.92%	11.02%
74923JAL1	RALI 2007-QS5 A11	100	BTM		74.55	4.6310	202.11	5.29	4.20	04/18-09/56	21.73%	10.23%	22.47%	11.34%	3.87%	48.24%	9.15%
32053LAK8	FHAMS 2007-FA2 1A10	100	BTM		53.06	4.6020	228.00	2.35	3.51	04/18-06/26	62.07%	6.73%	15.36%	11.64%	2.88%	43.39%	6.25%
05951GAC6	BAFC 2007-2 TA2	100	BTM		85.12	5.1240	254.50	4.86	3.97	04/18-02/58	6.02%	13.27%	25.81%	11.10%	5.25%	51.87%	13.04%
74924WAD9	RASC 2007-KS2 A14	100	BTM		87.83	4.7480	200.00	8.49	7.20	07/22-03/33	0.00%	15.78%	31.24%	7.98%	4.60%	51.72%	12.01%
466247B85	JPMMT 2005-S3 AP	100	BTM		61.85	4.4410	200.00	3.39	2.90	05/18-11/35	28.92%	0.10%	0.42%	20.58%	0.10%	7.92%	0.60%
12669RAC1	CWL 2007-S1 A3	100	BTM		100.85	3.9540	200.00	0.67	0.64	05/18-07/19	0.00%	4.89%	4.90%	13.18%	1.35%	100.32%	1.53%
75406AAC3	RASC 2006-EMX2 A3	100	BTM		98.60	4.2340	217.28	0.99	0.96	04/18-04/20	0.00%	25.43%	36.39%	9.17%	7.17%	78.94%	14.27%
126673S86	CWL 2005-AB2 2A3	100	BTM		99.87	3.4130	170.85	0.18	0.17	04/18-07/18	0.00%	19.30%	36.72%	7.60%	6.42%	49.10%	15.58%
86358EE77	SAIL 2006-2 A4	100	BTM		49.14	4.2160	140.12	13.00	9.21	02/23-03/58	43.96%	12.31%	25.63%	6.42%	3.51%	46.51%	9.77%
760985E72	RAMP 2003-SL1 A41	100	BTM		107.36	4.8800	250.00	2.78	2.43	05/18-08/54	0.00%	8.50%	17.70%	21.88%	6.70%	57.40%	13.87%
61755FAC9	MSST 2007-1 A3	100	BTM		84.03	5.1920	250.00	6.64	5.38	12/18-06/35	0.00%	11.84%	21.43%	6.58%	2.84%	51.68%	7.53%

Core Mortgage Premium: Features

Premium Analytics for the STACR Market

- Use a programmatic API to access all of the features of Bloomberg's cashflow and analytics system, including the BTM model for STACR bonds.
- Includes all Terminal features and more: Enhanced BTM dials, Custom HPA input, Dynamic BTM mode in SYT BTM <GO>.

STACR Scenario Analysis with BTM

- Perform scenario analysis, including horizon analysis, by shifting rates, HPA, or Unemployment.

Full User Input Customization including BTM Model Dials

- Dial BTM's Sub-Model Components and Transitions using scalars or time-series based vectors.
- Mix and match user inputs and BTM to fully customize the analytics for your STACR.

Intra-day STACR Analytics with DAPI

- Use Bloomberg's powerful Desktop API technology to run CMP programmatically using Python, C#, Java or C++.
- Bring this technology into Excel formulas with an Excel Wrapper.

End of day STACR Enterprise Analytics

- Run positions and scenarios overnight using an Enterprise batch system.
- Get results using a RESTful Web API to power downstream systems.

For More Information on the BTM Model:

Run the following functions on the Terminal:

- **BMMI <GO> for BTM/LMM Model Whitepapers and Error Reports:**
 - BMMI <GO> >> Whitepapers >> BTM - Bloomberg Loan Transition Model Documents
 - BMMI <GO> >> Whitepapers >> LMM - Bloomberg LIBOR Market Model Documents
 - BMMI <GO> >> Model Projections >> BTM Model Error Reports
- **BPS <GO> for “How To” Cheat Sheets/Videos/Flipbooks:**
 - BPS <GO> >> MBS & Cash Str Products >> Predictive Models
- **CMP <GO> for information regarding CMP**
- **MTGH <GO> for general mortgage help and information**