

# User Guide

# MBS Cohort Analyzer

Data Dynamics®

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# MBS Cohort Analyzer

Dashboard available in the [MBS section](#) of Data Dynamics

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## **S-Curves, WALA Ramp, and now, Time Series Analysis**

Analyze historical prepayment sensitivity at varying refi incentives, at differing levels of seasoning, **and now, over time** on user-defined loan population cohorts in agency MBS collateral.

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## **Extensive Customization Capabilities**

Users can define loan or pool cohorts and isolate targeted populations to perform comparative analysis across multiple dimensions and filters.

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## **Insights**

This fully customizable capability allows users to analyze the relationship between various loan and/or pool attributes and their impact on prepayment sensitivity.

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## **Access**

Accessible through the MBS tile in Data Dynamics, click on [MBS Cohort Analyzer](#) to access the tool and new functionality.

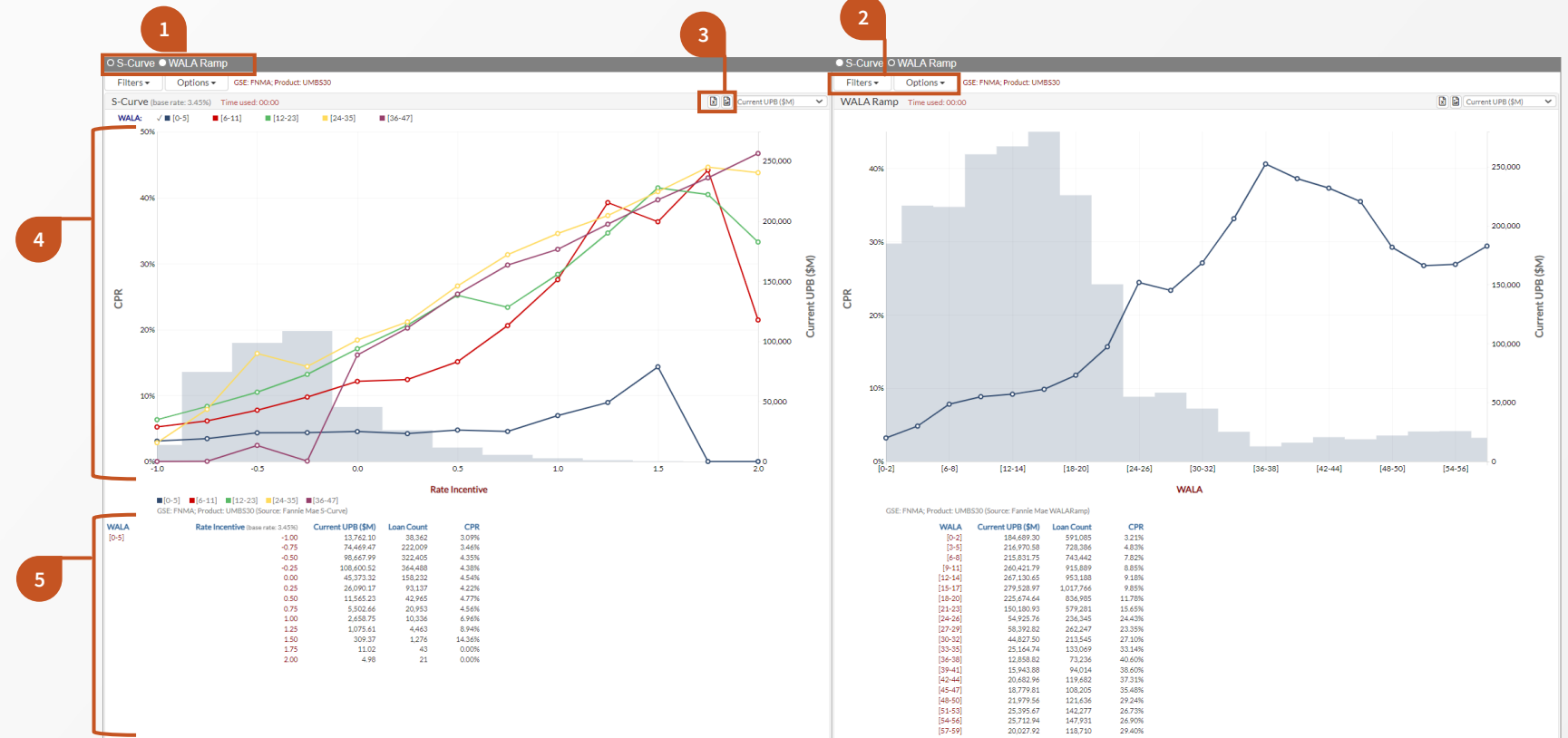


# Dashboard Layout

The dashboard includes two panels with each panel allowing the user to employ it for S-Curve, WALA Ramp, or Time Series analysis.

## Getting Started

- The default view is set to display the Fannie Mae UMBS 30-year cohort with the industry standard S-Curve analysis on the left and WALA ramp analysis on the right.
- This layout is customizable. Users can tailor the view via the drop-down filters and options to choose the population, by 30-year or 15-year, As-of Date, vintage, and so on.
- For the S-curve and WALA Ramp views, note that data displayed in both the bar chart and data table corresponds to the selected Series bucket, which can be changed by clicking on the chosen bucket at the top of the respective chart.
- For the Time Series view, note that the data table features replines corresponding to the series displayed in the line chart.



## Default Dashboard View

- 1 Toggle View**  
Switch between S-Curve, WALA ramp, and Time Series for each of the two panels.
- 2 Filtering**  
Employ any combination of filters to define the population for the desired cohort. Note the filters for each panel only impact that respective panel.
- 3 Download Buttons**  
Download rates data, S-Curve, WALA Ramp, and Time Series datasets and charts.

- 4 Bar Chart**  
Each panel within the S-Curve and WALA Ramp selections also displays a bar chart using either **Current UPB** or **Loan Count** as chosen in the top right-hand corner drop-down.
- 5 Data Tables**  
Below each panel, a data table lists details such as Rate Incentive (for S-Curves), WALA (for WALA Ramps), Current UPB, Loan Count, and CPR. Note only one Series bucket is shown at a time. Replines are shown for the Time Series analysis.



## S-Curve Analysis

The S-Curve view provides two menus that help in defining the cohorts and the layout of the analysis: Filters and Options.

Comparative analysis is available across two dimensions: Series and Sub-Cohorts.

### Series, Sub-Cohorts, and Filters

- The **Series** parameter allows users to choose from a list of loan characteristics by which the underlying cohort can be grouped. Each selection comes with a default set of buckets represented by separate lines.
- The **Sub-Cohort** parameter represents the second order classification of the underlying population. If a characteristic is chosen, the view will split into multiple panes as defined by the buckets for the chosen characteristic. **Note that the default value for the Sub-Cohort is “None”.**
- The tool also provides several other filtering capabilities to define the desired cohort. A filter can be used by checking the box and defining the range for the loan attribute. The syntax for range definition is shown by default to assist the user.



### Considerations when Filtering

- Filter by GSE**  
Filters the chart to display data for either the selected GSE or both GSEs. Note that if “GSE” is selected in either the **Series** or **Sub-Cohort** parameters, the chart will display data for both Fannie and Freddie.
- Selecting the Activity Window**  
The dropdown allows user to choose the number of months of historical prepayments going back from the As of Date. The choices are 1, 3, 6 and 12 months. For example, the selection shown would include 3 months of activity taken from Aug, Sep and Nov factors.
- Filter by Pool Prefix**  
Pool Prefix Glossary available [here](#).
- Vintage and Issue Date**  
Toggle between VTG and Issue DT. Vintage is defined as the MBS issue date for the loans minus the WALA of the pool. Issue DT includes BCPR1, 3 or 6 as Issue DT ranges.
- Apply Selected Filters**  
Click here for any changes to take effect.



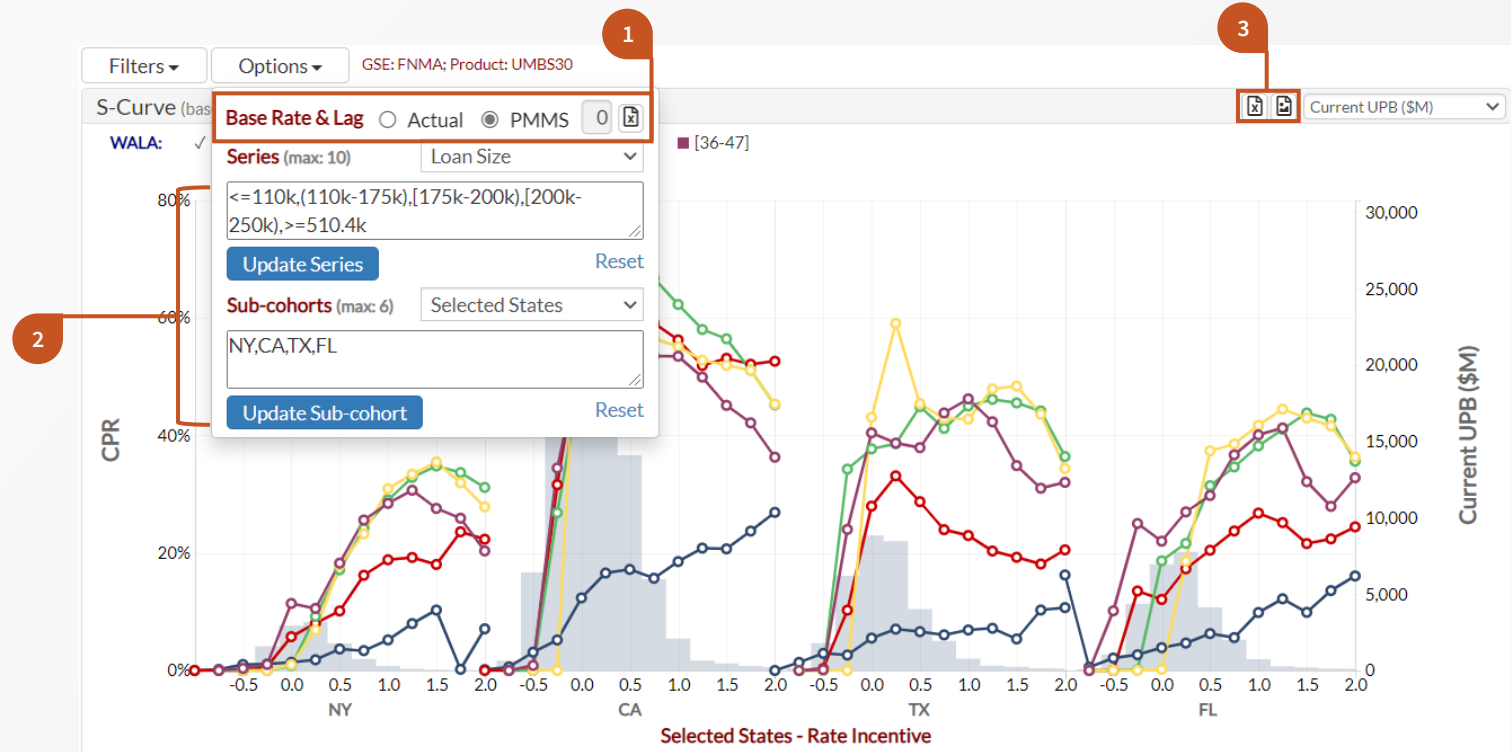
## S-Curve Analysis

The S-Curve view provides two menus that help in defining the cohorts and the layout of the analysis: Filters and Options.

Comparative analysis is available across two dimensions: Series and Sub-Cohorts.

### Further Customizing using Options

- **Series** can be customized with a maximum of 10 buckets at a time. Note that not all Series choices are available for custom bucketing. The list is currently limited to States, Loan Size, FICO, LTV and DTI.
- **Sub-Cohort** can be customized with a maximum of 6 buckets at a time. The available choices for custom bucketing are the same as those in Series above.
- Note that for any changes made to the Options drop-down, the user must navigate to the Filters drop-down and select “Update” for the changes to take effect.



### Considerations when using Options

#### 1 Used to Calculate the Rate Incentive (x-axis)

**Actual:** Average rate observed on loans with LTV $\leq$ 80 and FICO  $\geq$  660 for the chosen product and GSE that were issued one month after the performance period chosen.

**PMMS:** Survey rate published by Freddie Mac two months prior to the performance period chosen.

**Download** S-Curve rates data.

#### 2 Syntax for Custom Buckets

Buckets can be customized using a list of single values, boundary conditions such as “<”, or ranges using brackets or parentheses.

Note that using a parenthesis, “(”, excludes the boundary value from within the range and using a square bracket, “[”, includes the boundary value within the range.

#### 3 Download Buttons

Download S-Curve datasets and charts.



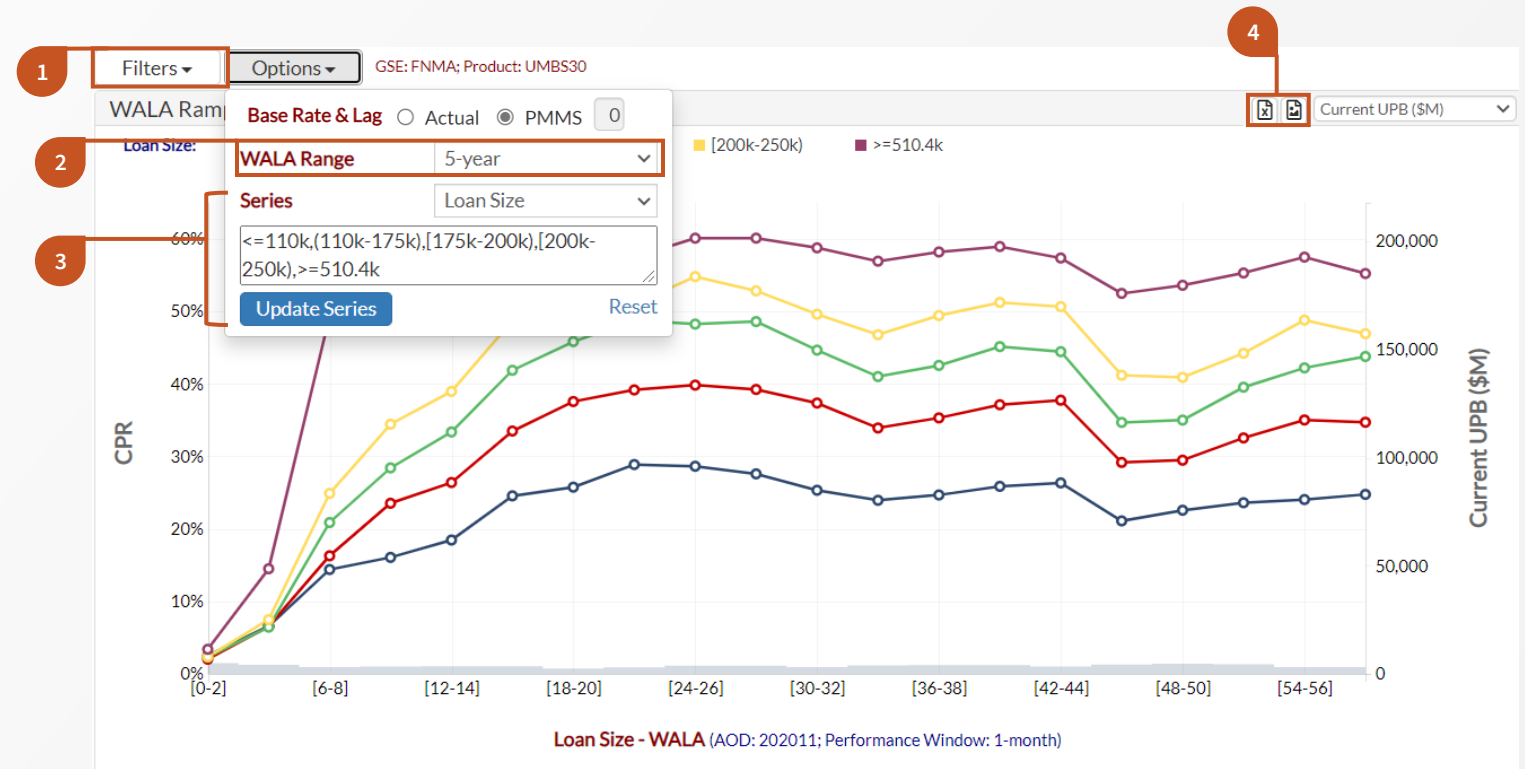
## WALA Ramp Analysis

The WALA Ramp view provides two menus that help in defining the cohorts and the layout of the analysis: Filters and Options.

Comparative analysis is available using the Series filter.

### Customizing with Filters and Options

- **Series** can be customized with a maximum of 10 buckets at a time. Note that not all Series choices are available for custom bucketing. The list is currently limited to States, Loan Size, FICO, LTV and DTI.
- Note that for any changes made to the Options drop-down, the user must navigate to the Filters drop-down and select “Update” for the changes to take effect.



### Considerations when using Options

- Comparing Filters to S-Curve**  
 The same filtering capabilities are available for WALA ramps with one exception: the **Sub-Cohort** filter/option is only available for the S-Curve.
- Customizable WALA Buckets**  
 3-, 4-, 5-, or 10-year range can be chosen, which will drive the x-axis.
- Syntax for Custom Buckets**  
 The **Series** syntax is the same as described for the S-Curves.
- Download Buttons**  
 Download WALA Ramp datasets and charts.

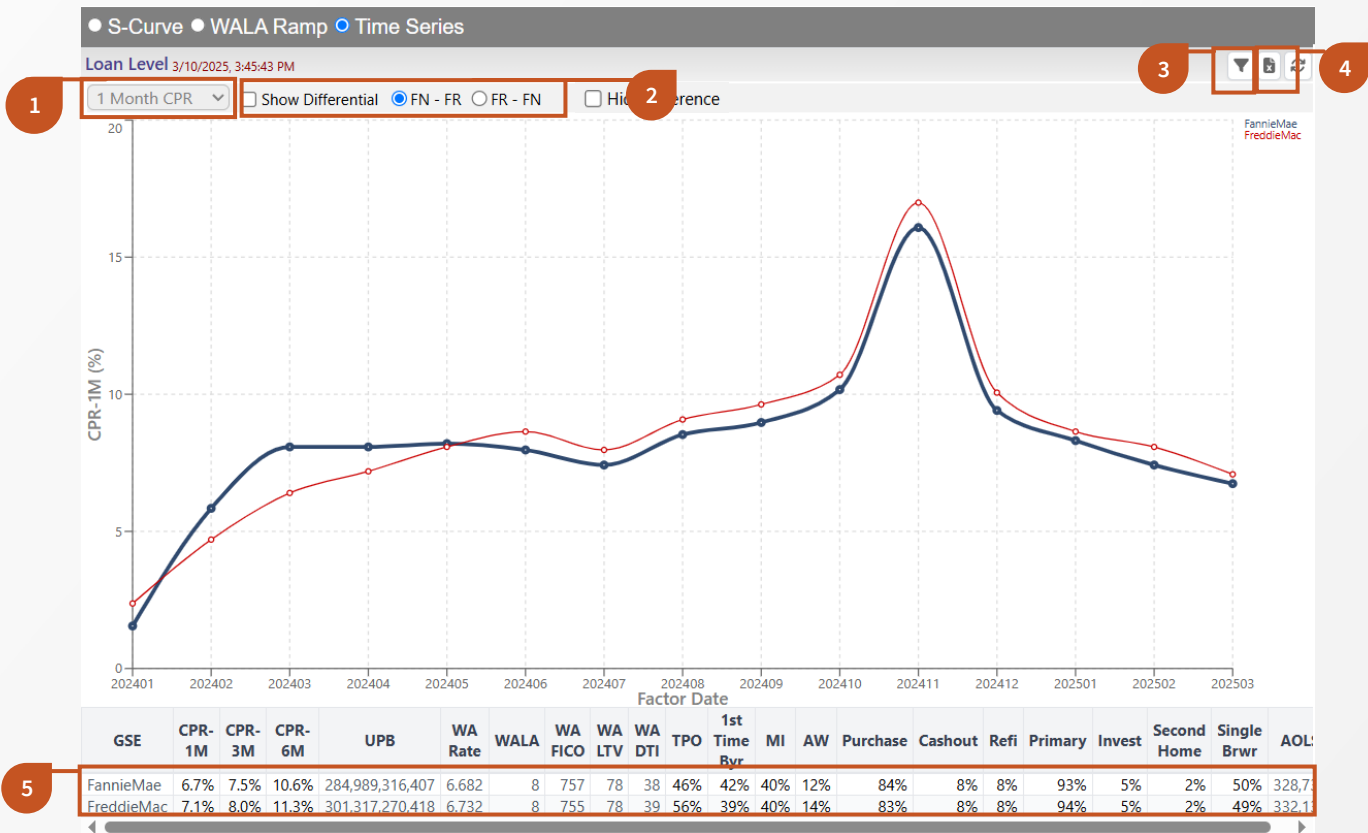


## Time Series Analysis

The Time Series view provides a variety of options and a menu of filters to help users customize their analysis of prepayments over time.

### Options in the Time Series View

- Users can choose from a selection of metrics in the dropdown menu for their Time Series analysis: 1 Month, 3 Month, 6 Month, 12 Month, and Lifetime CPR, Curtailment %, and Loan Count. Curtailment % is the curtailment share of total prepayments in that period.
- The default view shows absolute levels of the selected metric. When Group By GSE is selected from the filtering menu, users can choose to plot the differential in the selected metric instead of the absolute level. The differential option is unavailable for other cohorts.
- Additional customization can be achieved by clicking on the filter icon in the top right-hand corner of the dashboard.



### Considerations for Time Series Analysis

#### 1 Select the Metric to Display

Users can select from 1 Month, 3 Month, 6 Month, 12 Month, and Lifetime CPR, Curtailment %, and Loan Count.

#### 2 Absolute or Relative Analysis

When Group By GSE is selected from the filtering menu, users can choose to display the differential in prepay speeds by checking the Show Differential box.

#### 3 Filter to Custom Cohorts

Users have extensive flexibility to customize the population they would like to analyze.

#### 4 Download the Data

Users can download the underlying chart data into Excel.

#### 5 Analyze Replines for Selected Cohorts

Users can download the underlying chart data into Excel.



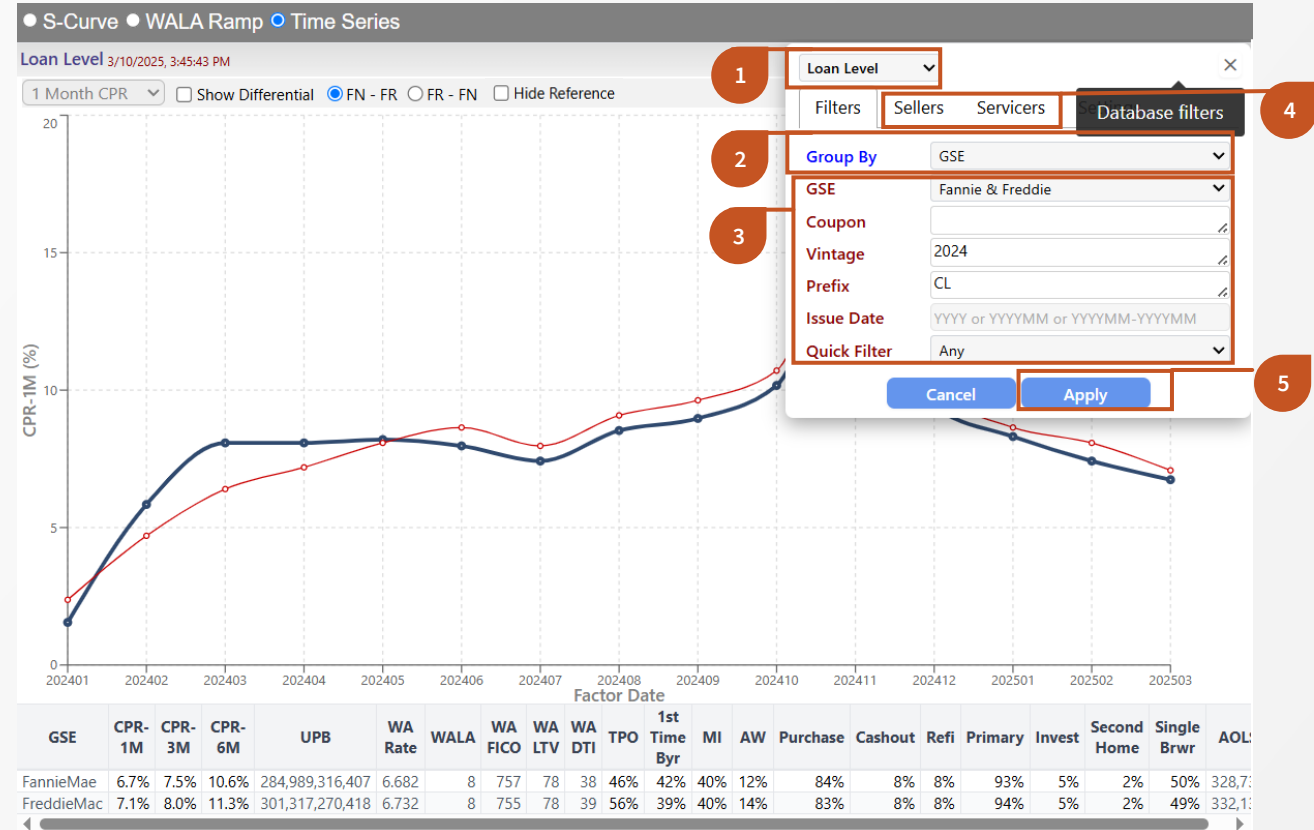


## Time Series Analysis

The Time Series view provides a variety of options and a menu of filters to help users customize their analysis of prepayments over time.

### Customizing the Time Series Analysis

- Users can choose between Loan Level and Pool Level analysis to determine how the underlying population is segmented.
- Pool Level analysis allows users to observe prepayments for pools that meet the desired pool-level criteria. Selecting the Pool Level view may provide insight into populations that cannot be identified at the loan level (e.g., Social Bond Indicator).
- Additional customization options are available in the Settings menu. Users can choose the number of cohorts to display and the length of the prepayment observation window.
- To use the coupon, vintage, prefix, seller, and servicer filters, desired selections must be entered individually and preceded by a space in the dialogue box. Begin typing to be prompted with autofill options.



### Considerations for Time Series Analysis

- Choose Between Loan Level and Pool Level Analysis**  
 Determine how the underlying population is segmented.
- Define the Cohorts for Analysis**  
 Select the attribute by which the population is cohorted and displayed. This selection determines the replines below the chart.
- Filter to Selected Populations**  
 Isolate analysis to selected GSE, coupon, vintage, prefix, and issue date categories.
- Specify Sellers or Servicers to Analyze**  
 Note that seller/servicer names need to be preceded by a space in the dialogue box. Begin typing to be prompted with autofill options. Specified seller/servicer names will only apply when Group By Seller or Servicer is selected.
- Apply Selected Filters**  
 Note that for any selections made in the filters call-out box, the user must select “Apply” for the changes to take effect.





## Time Series Analysis

The Time Series view provides a variety of options and a menu of filters to help users customize their analysis of prepayments over time.

### Using the “As Reference” Feature

- “As Reference” is a display option that is available in the Group By filter for both loan-level and pool-level analysis.
- It allows users to define a custom reference population to serve as a benchmark and simultaneously plot prepayments for a completely different custom population in the same chart.

## Case Study: How have 2024 FN 6% High MDS pools prepaid compared to the Major?

### 1 Define the “As Reference” Population

- Select the “Pool Level” view.
- Select “As Reference” from the Group By filter.
- Select “Fannie” from the GSE filter and specify the Coupon, Vintage, and Prefix of interest.
- Select “High MDS” from the Quick Filter dropdown.

### 2 Apply the “As Reference” Selection

Click the “Apply” button.

### 3 Define the Comparison Population

- Select “Story” from the Group By filter.
- Select “FN-Major/FR-Multi” from the Quick Filter dropdown.

### 4 Apply the Comparison Selection

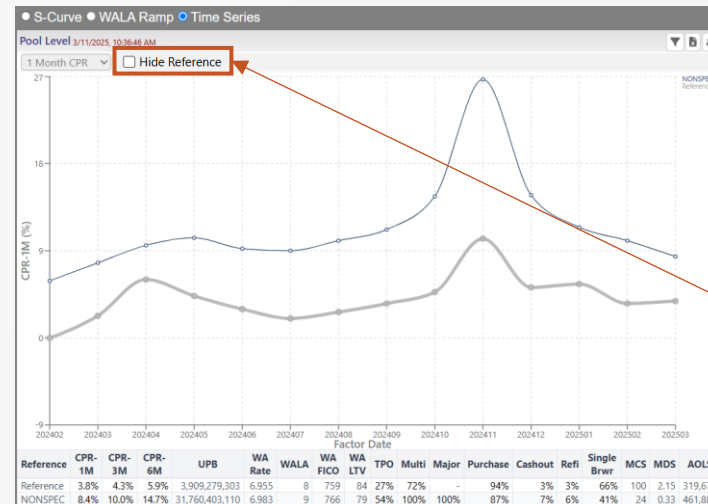
Click the “Apply” button.

### 5 Analyze Prepayments for Both Populations at the Same Time

The resulting chart shows a time series of prepayments for 2024 FN 6% High MDS pools and 2024 FN 6% Majors. The table below the chart provides a repline summary of both populations.

### 6 Check “Hide Reference” when Complete

When done with comparative analysis, check the “Hide Reference” box to remove the “As Reference” population. The “As Reference” population can be redefined by simply re-following the instructions above.





# Resources

- ◆ **MBS Cohort Analyzer Video Tutorial**  
Click [here](#) to watch the video
- ◆ **Access Data Dynamics:**  
<https://datadynamics.fanniemae.com>
- ◆ **Sign up for Fannie Mae communications:**  
[www.fanniemae.com/CMsignup](http://www.fanniemae.com/CMsignup)
- ◆ **Contact us with questions:**  
1-800-232-6643, Option 3 or by [e-mail](#)

