

# Enhancing the Credit Risk Assessment to Provide Greater Certainty in Lending

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FANNIE MAE



## Introduction & Overview of Desktop Underwriter Version 12.0

Fannie Mae recently announced Version 12.0 of Desktop Underwriter® (DU®). DU V. 12.0 reflects Fannie Mae's normal business practice of regular updates to DU to consider changing market conditions and updated loan performance data. As part of these updates to DU's Risk Assessment, this release includes (i) updates to the risk factors evaluated by DU, (ii) enhancements in support of increasing access to credit for populations such as those with limited or no credit histories or borrowers that could benefit from DU's positive rent payment history and Cashflow assessment capabilities, and (iii) technical updates that will enable the potential for more frequent adjustments to the DU Risk Assessment in response to changing market conditions in the future. Collectively, these updates will result in some DU loan casefiles now receiving an Approve/Eligible<sup>i</sup> recommendation, while other loan casefiles may now receive an Approve/Ineligible<sup>ii</sup> or Refer with Caution<sup>iii</sup> recommendation, when compared to the current version of DU.

### Updates to the DU Risk Assessment

The DU Risk Assessment reflects a comprehensive examination of the risk factors from the loan application and from the borrower(s)' credit report. The evaluation considers the borrower(s)' financial profile and credit history, the financial terms of the proposed loan, information about the subject property, and other relevant risk factors. No one risk factor determines the DU underwriting recommendation, as DU examines multiple risk factors that may exist on the loan casefile to arrive at the underwriting recommendation. When several high-risk factors are present on a loan casefile without sufficient offsetting factors, the likelihood of a potential credit event increases, and DU may issue an Approve/Ineligible or Refer with Caution underwriting recommendation versus an Approve/Eligible recommendation where sufficient offsetting factors are present.

As part of Fannie Mae's normal business operations, we regularly review and update the DU Risk Assessment. We consider multiple performance metrics when reviewing the performance of the DU Risk Assessment. These metrics generally fall into two categories: (i) measures of the ability of the DU Risk Assessment to rate loans which might ultimately have a credit event more adversely than loans which are more likely to perform ("rank-order performance") and (ii) the ability of the DU Risk Assessment to predict credit event levels for a given set of loans ("accuracy"). When we evaluated the performance of DU V. 12.0 compared to the current version of DU, we see a relative performance gain of 14% on our primary rank order metric and a relative increase in the primary accuracy metric by approximately 4.5x. The performance improvements were not only the result of improvements in the underlying DU Risk Assessment framework, but also reflect the addition of a significant amount of loan performance and trended credit data into our model development population, including loans acquired by Fannie Mae that were impacted by the COVID pandemic.

In addition to the updates to the underlying DU Risk Assessment framework, DU V. 12.0 also includes technical system updates that will allow us to more dynamically respond to evolving market conditions, loan performance data, macro-economic factors, trends in the housing market, or in response to changes in



regulatory requirements. Beginning in 2025, this could result in as many as four updates annually to the DU Risk Assessment, compared to the one or two updates we have averaged each year historically.

## Updates to the DU Risk Factors

With DU V. 12.0, we have updated the risk factors evaluated by DU from the loan application and the borrower(s)' credit report. DU V. 12.0 continues to evaluate many of the same risk factors historically used by DU (see [these](#) sections of the Selling Guide for more detail). These risk factors are determined through sophisticated modeling research and analysis focusing on risk factors that are impactful and reliable across time and economic environments.

Changes to risk factors updated in DU V. 12.0 include:

- 1. Removing certain features from the Debt-to-Income ratio risk factor.** While correlated with credit performance, these features are not impactful enough to include as part of the DU Risk Assessment when considering all other risk factors we evaluate. Removing these features allows us to simplify the overall DU Risk Assessment while maintaining a comprehensive evaluation of mortgage delinquency risk. Specifically, we no longer:
  - consider the composition, or proportion, of revolving debts within the borrower(s)' total monthly expenses; or
  - evaluate a borrower(s)' variable income (e.g., bonus, overtime, commission, and miscellaneous) as a unique risk factor in the DU Risk Assessment.
- 2. Adjusting how we evaluate the consideration of debt composition for student loans first added in the DU V. 11.0 release.** Based on extensive research conducted as part of DU V. 12.0 it was observed that loan applications which were composed strictly of, for example, automobile, revolving, and mortgage expenses tended to perform *worse* on average than similar loan applications that contained student loans, automobile, revolving, and mortgage expenses and had identical debt-to-income ratios. As a result, with DU V. 12.0, borrowers who have higher proportions of student loan debt will tend to see a higher number of Approve/Eligible recommendations. Figure 1 illustrates that, once controlling for other credit characteristics<sup>1</sup>, loans which have meaningful shares of their debts composed of student loan debt perform better than similar loans with no student loan debt.

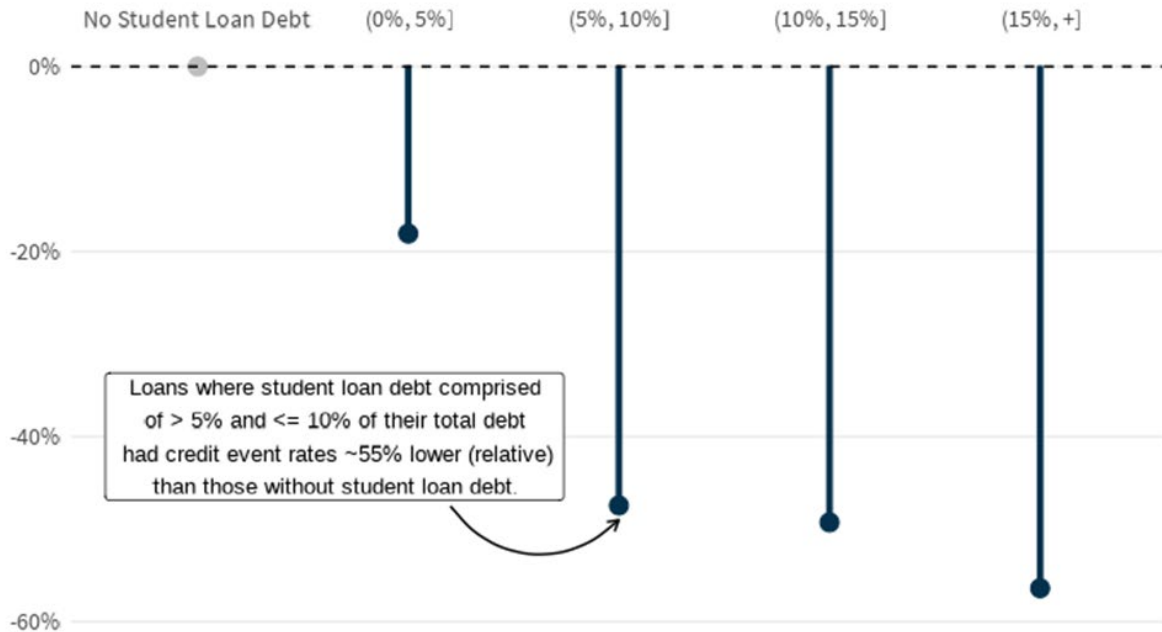
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<sup>1</sup> In Figures 1 and 2, we control for credit characteristics by restricting the loans from our model development population to include only Purchase Mortgage transactions that are 30-year with fixed rates, 1 unit, owner-occupied, with credit attributes of FICO between 720 and 760 (inclusive), LTVs between 75 and 90% (inclusive) and DTIs between 35 and 45% (inclusive). Loans of this profile are considered representative borrowers, where typically some mitigating and adverse credit factors exist in their DU application.



### Figure 1: Relative performance of loans with student loan debt vs without

When controlling for profile and compared to loans without student loan debt, we observe decreasing rates of credit events on average across the student loan debt composition range.



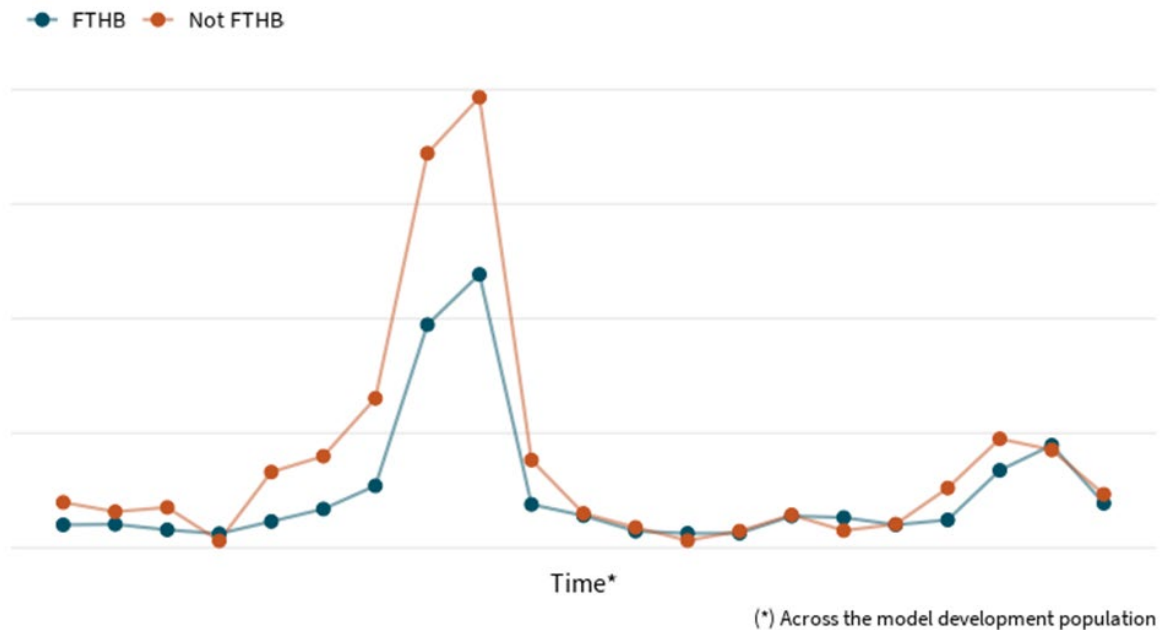
**Note:** Approximately 18% of recent loan applications submitted to DU had some level of declared student loan debt.

- Adding first-time homebuyer status (as defined in the Fannie Mae Selling Guide<sup>iv</sup>) as a mitigating factor in the overall DU Risk Assessment.** Research conducted as part of DU V. 12.0 evaluated the performance of loans where borrower(s) identified themselves as a first-time homebuyer, compared to loans which did not, and observed *better* performance with first-time homebuyer loans, once controlling for other credit characteristics. Figure 2 illustrates this by comparing the credit performance of recent loan acquisitions where the borrower(s) identified as a first-time homebuyer compared to loans with borrower(s) who previously owned a home, controlling for credit profile. As depicted in Figure 2, we see that across our model development population, the average credit performance for first-time homebuyer loans were either similar or materially better (lower) than those who were not first-time homebuyers.



## Figure 2: Credit performance of first-time homebuyer (FTHB) vs non-FTHB loans

When controlling for profile and compared to non-FTHB loans, we often observe similar or lower credit event rates for FTHB loans.



**Note:** Approximately 25% of recent loan applications submitted to DU were first-time homebuyers.

## Enhancements in support of borrowers with limited or no credit histories

In DU V. 12.0, we make two changes to further support borrowers with thin credit report histories. Specifically, we:

1. **Expand the use of rental payment history in the DU Risk Assessment, which was added to DU in the DU V. 11.0 update in September 2021<sup>v</sup>.** In addition to identification of rent payment history using the 12-month asset verification report, the DU Risk Assessment will also support rent payments identified on the borrower(s)' credit reports.

**Note:** Fannie Mae began working with our multifamily property owners to participate in positive-rent payment reporting services in 2022. We have observed an increase in the frequency of borrower credit reports that contain payment histories of rent tradelines.

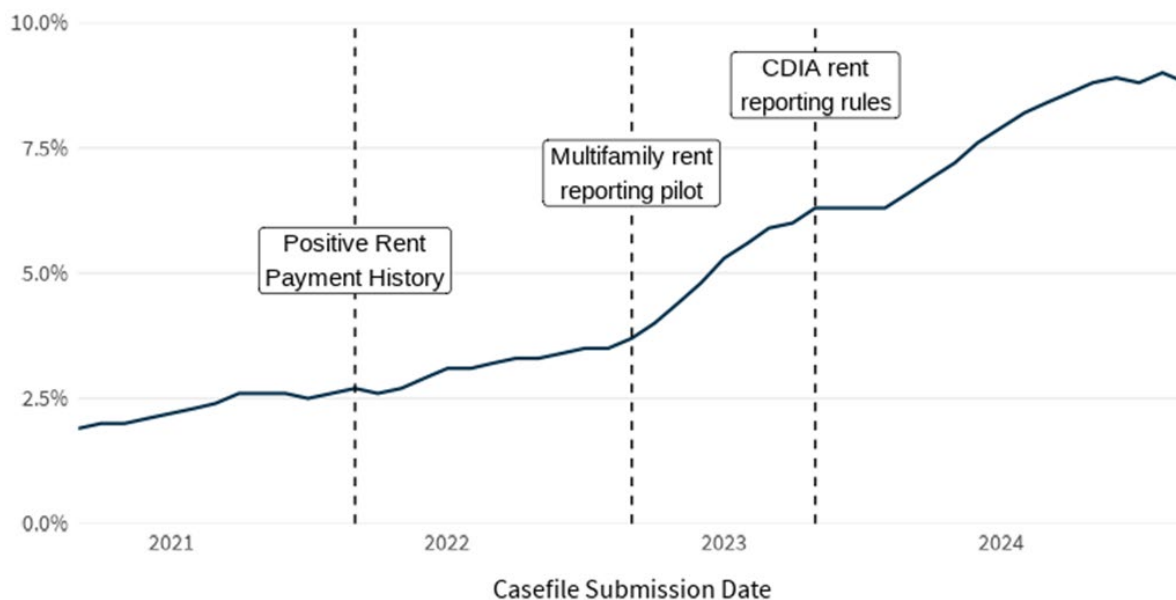
By enabling the use of rent payment history through bank statement information from 12-month asset verification reports or credit reports, we can increase the availability of positive rent payment consideration to more borrowers<sup>vi</sup>. For example, within a recent set of applications where the



borrower had no or limited credit history, approximately 2% had sufficient rent payment information on the 12-month asset verification report; however, by including the rent payment history found in credit reports we would have increased that availability to approximately 4.1% of loan applications.<sup>2</sup>

**Figure 3: Percentage of DU casefiles where rent tradelines are reported on the Credit Report and where the borrower indicated they were a renter**

We observe higher rates of increase after the launch of the Multifamily Positive Rent Payment Reporting pilot and the release of the Consumer Data Industry Association (CDIA) rent reporting guidelines.



2. **Expand the DU Cashflow assessment capability.** DU currently conducts a Cashflow assessment on loan casefiles where no borrower has a credit score. With DU V. 12.0, the positive benefits of a Cashflow assessment will no longer be limited to borrowers without a credit score.

**Note:** Fannie Mae introduced the Cashflow assessment capability in an update to DU V. 11.0 in December 2022, which was initially only made available on loan applications for borrowers without a credit score.

Fannie Mae has offered validation of income, employment, and assets based on the submission of a 12-month asset verification report since 2016 in a limited pilot capacity and more broadly since March of 2024 and therefore has been able to observe credit performance on loans with 12-month asset verification reports for some time. Figure 4 below shows the relative credit performance for loans with a positive Cashflow assessment compared to loans where the Cashflow assessment is

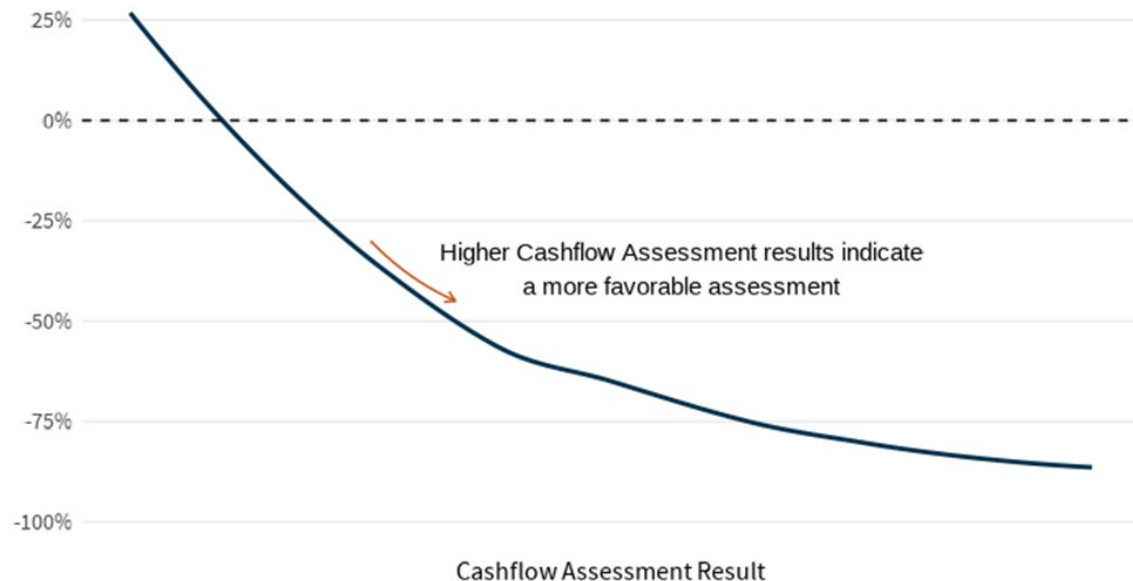
<sup>2</sup> In addition to considering rental payment reporting from credit reports, Fannie Mae is also updating loan eligibility for Positive Rent Payment History by no longer requiring that borrowers with sufficient rental payment history have a credit score and permitting its usage on additional types of mortgage transactions.



unknown, for Purchase mortgage loans acquired by Fannie Mae during similar periods. From this we can see a strong effect, where loans that have exceptional results for their Cashflow assessment perform materially better than those without Cashflow assessment.

#### Figure 4: Relative performance of loans with a positive Cashflow Assessment vs without

Compared to Purchase mortgages where the Cashflow Assessment is unknown, we observe decreasing rates of credit events on average across the Cashflow Assessment result spectrum.



**Note:** Approximately 7% of recent loan applications submitted to DU had sufficient information in the 12-month asset verification report to qualify for a Cashflow assessment.

Because of the improvements in the underlying DU Risk Assessment framework, we can now retire the separate DU Risk Assessment conducted for borrowers with no credit score that was relied on since DU V. 10.0<sup>vii</sup> and recently with the DU V. 11.0 update in December 2022<sup>viii</sup>. The DU Risk Assessment for these borrowers will now leverage the same underlying DU Risk Assessment performed for borrowers with a credit score.

**Note:** Approximately 0.50% of recent loan applications submitted to DU were determined to be for borrowers with non-traditional credit or no credit score.



## Placing DU V. 12.0 in Context

Over the last several years, we have adjusted the DU Risk Assessment as part of our normal business practice. For example:

- In April 2020, due to the economic uncertainty from the evolving COVID pandemic, we updated the DU Risk Assessment for the overall loan application population in general and, to a greater extent, for loan casefiles where borrower credit histories were weaker.
- The DU V. 11.0 original release in early 2021 included material updates to the DU Risk Assessment similar in scope to the changes in DU V. 12.0, and we largely maintained the overall DU Risk Assessment's underwriting recommendation determination to remain on par with the version of DU that was in production at the time (DU V. 10.3).
- In mid-2022, in reaction to the observed loan portfolio deterioration resulting from the end of the COVID pandemic refinance boom, and concerns over the potential ability of the housing market to sustain property value levels<sup>ix</sup>, we updated the overall DU Risk Assessment underwriting recommendation determination, and, to a greater extent, on loan applications where borrowers were looking to extract equity through refinances.
- In early 2023, we released DU V. 11.1, further adjusting the overall DU Risk Assessment underwriting recommendation determination in anticipation of continued cooling observed in the housing market and the general economy<sup>x</sup>.
- And finally, in late 2023, we made changes to the DU Risk Assessment related to Sole Borrowers and 2-4 Unit eligibility<sup>xi</sup>.

Given the notable improvements in performance observed with DU V. 12.0, we are removing some of the restrictions that were applied in the recent updates noted above, while keeping consistent our view of borrower credit performance and considering current and near-term projected mortgage market and macro-economic factors<sup>xii</sup>.





## Closing Thoughts

Fannie Mae has maintained a focus on continuously improving the DU Risk Assessment over DU's 29-year history. DU is not only an important risk management capability for Fannie Mae, but as the leading automated underwriting system in the U.S. mortgage market, we recognize that it is relied upon by our partners to ensure that we collectively manage mortgage credit risk effectively through all market cycles. DU V. 12.0 represents another major step forward in DU's ability to analyze mortgage delinquency risk, with significant improvements in the underlying DU Risk Assessment, that enables us to continue to provide a steady and stable source of mortgage financing to borrowers across the U.S. and facilitates Fannie Mae and our partners to continue to work toward a more equitable and accessible mortgage finance system.

*This article contains forward-looking statements about the expected impact of the upcoming changes to our underwriting policies on our business, the credit risk profile of our single-family acquisitions, our capital requirements, and other matters. These forward-looking statements are based on the authors' current expectations and are subject to significant uncertainties and changes in circumstances. Future results may differ materially from those reflected in these forward-looking statements due to a variety of factors, including those discussed in "Forward-Looking Statements" and "Risk Factors" in our annual report on Form 10-K for the year ended December 31, 2023 and our quarterly report on Form 10-Q for the quarter ended September 30, 2024.*

## Endnotes

<sup>i</sup> Selling Guide – B3-2-05, Approve/Eligible Recommendations (November 2024):

<https://selling-guide.fanniemae.com/sel/b3-2-05/approveeligible-recommendations>

<sup>ii</sup> Selling Guide – B3-2-06, Approve/Ineligible Recommendations (November 2024):

<https://selling-guide.fanniemae.com/sel/b3-2-06/approveineligible-recommendations>

<sup>iii</sup> Selling Guide – B3-2-07, Refer with Caution Recommendations (November 2024):

<https://selling-guide.fanniemae.com/sel/b3-2-07/refer-caution-recommendations>

<sup>iv</sup> Selling Guide – E-3-06, Acronyms and Glossary of Defined Terms: F, Fannie Mae (November 2024):

<https://selling-guide.fanniemae.com/sel/e-3-06/acronyms-and-glossary-defined-terms-f>

<sup>v</sup> DU 11 Update Release Notes, Fannie Mae (September 2021):

<https://singlefamily.fanniemae.com/media/document/pdf/du-v-11-release-sept-18-2021>

<sup>vi</sup> Rental Pay History Should be Used to Assess the Creditworthiness of Mortgage Borrowers. Goodman & Zhu (April 2018):

<https://www.urban.org/urban-wire/rental-pay-history-should-be-used-assess-creditworthiness-mortgage-borrowers>

<sup>vii</sup> DU 10.0 Update Release Notes (February 2016):

<https://singlefamily.fanniemae.com/media/document/pdf/desktop-originatordesktop-underwriter-release-notes-du-version-100>

<sup>viii</sup> DU 11.0 Update Release notes, Fannie Mae (December 2022):

<https://singlefamily.fanniemae.com/media/document/pdf/du-v-110-release-december-10-2022>

<sup>ix</sup> Home Sales Generally Trending Downward as Industrial Production Shows Early Signs of Slowing. Fannie Mae (June 2022):

<https://www.fanniemae.com/research-and-insights/forecast/home-sales-generally-trending-downward-industrial-production-shows-early-signs-slowng>

<sup>x</sup> December Data Shows Economic and Housing Activity Slowing. Fannie Mae (January 2023):

<https://www.fanniemae.com/research-and-insights/forecast/december-data-shows-economic-and-housing-activity-slowng>

<sup>xi</sup> Responsibly Increasing Affordable Housing Supply and Access to Credit. Fannie Mae (October 2023):

<https://singlefamily.fanniemae.com/news-events/white-paper-responsibly-increasing-affordable-housing-supply-access-credit>

<sup>xii</sup> Economic Forecast. Fannie Mae (October 2024): <https://www.fanniemae.com/media/53416/display>