MOODY'S
INVESTORS SERVICE

RATING METHODOLOGY

Moody's Approach to Rating Securities Backed by FFELP Student Loans

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This rating methodology replaces *Moody's Approach to Rating Securities Backed by FFELP Student Loans* published in May 2020. In the update, we made limited text edits to clarify that specific references to Libor include alternative benchmark reference rates where relevant. The updates do not change the substantive approach of the methodology.

Scope

In this methodology,[1] we describe our approach to rating securities backed by student loans made under the Federal Family Education Loan Program (FFELP) in the United States.[2] The US Department of Education (DOE) guarantees FFELP loans for at least 97% of defaulted principal and accrued interest.[3]

Executive Summary

Our methodology in rating asset-backed securities (ABS) backed by FFELP student loans is based on both quantitative and qualitative analyses. The analyses focus on the ability of a FFELP securitization to withstand credit risk – the risk that, in light of the structural features of the securitization and the characteristics of the underlying FFELP loans, the loan cash flows and the securitization's available credit enhancement and liquidity support may be insufficient to pay investors by the pre-determined date, i.e., the final maturity date of the securities.

The primary components of credit risk in FFELP securitizations are:

» The credit risk and fiscal conditions of the US government, given that the US government supports FFELP loans by reimbursing defaulted loans and guaranteeing a minimum yield on the loans

[1] This methodology also covers pools backed by a mix of FFELP and Private Student Loans (PSL).

[2] In Appendix 8, we describe our approach to rating securities backed by pools of both FFELP and PSL.

[3] Under FFELP, students and their parents could obtain low-cost education loans to help pay for higher education. FFELP was authorized by Title IV, part B of the Higher Education Act of 1965 (the Act), as amended, and includes the Federal Stafford, PLUS and Consolidation Loan programs. Those programs were funded by lenders, guaranteed by guarantors and reinsured by the federal government. The program was discontinued as of 30 June 2010 and was replaced with the Direct Loan Program, under which the US government lends directly to students using US Treasury funds.

- Potential legislative or regulatory changes that help FFELP borrowers avoid default, but that further reduce pool amortization rates, thus jeopardizing the ability of the securities to pay off in full by the final maturity dates of the securitizations. Non-payment by the maturity dates, which is an event of default (EOD) in most FFELP securitizations, may change the priority of payments among various classes of securities (e.g., from sequential to pro rata), thereby adversely affecting the credit quality of some classes, even those that may not have caused the EOD.
- The risk that slow pool amortization rates caused by low prepayment rates and extensive use by borrowers of student loan payment plans, such as deferment, forbearance and Income Based Repayment (IBR),[4] for extended periods will prevent a security from paying off in full by the final maturity date
- The risk of insufficient credit enhancement, including over-collateralization and excess spread, to protect noteholders against losses on the underlying loans as a result of high default and net claim reject rates
- The risk that excess spread, a major form of credit enhancement in FFELP securitizations, declines as a result of:
  - High levels of prepayments and defaults
  - Interest rate mismatches between the assets and liabilities (basis risk)
  - The overall level of interest rates
  - Loan incentives (borrower benefits) typically in the form of reductions in the loan interest rate that lenders offer to eligible borrowers.

Our quantitative analysis is primarily based on an expected loss approach, which mainly depends on: (1) scenario-based cash flows, with each scenario having a discrete combination of assumptions affecting the potential losses on the securities; and (2) the probability assigned to each of those scenarios. The expected loss for each security is the sum of the losses, weighted by the probability of each scenario. We obtain the model output by comparing the security's expected loss with the expected loss benchmarks from our idealized loss tables.[5] These expected loss benchmarks vary with a security's weighted-average life (WAL), which we calculate using the security's WAL in each scenario.[6] The rising expected loss rates associated with securities with longer WALs reflect greater uncertainty of outcomes relative to securities with shorter WALs.

We will also consider losses that highly rated securities incur in each scenario. Specifically, if the expected loss is consistent with a Aaa or a Aa model output, but in one or more of the 28 scenarios the security incurs losses commensurate with a model output that is lower than Baa3, that security's model output will be set to Aa1 and A1, respectively.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

The model output is one of the considerations of a rating committee before it assigns a rating. The rating assigned by a rating committee also incorporates our qualitative assessments of the operational and legal risks, and other factors such as the demonstrated willingness and ability of the sponsors to support the transactions in order to avoid any potential events of default. Therefore, the actual ratings assigned to a securitization can differ from the model output.

[4] The main intent of IBR, which has been in existence since 2009, is to help student loan borrowers meet their debt payment obligations. The program limits payments on student loans for borrowers with Partial Financial Hardship (PFH) to 15% of the borrower's discretionary income, defined as 150% of the US federal poverty income guidelines. Borrowers have to qualify for IBR on an annual basis by providing detailed information about their finances. The US government will forgive any outstanding amount of the loan to a borrower who used IBR during the term of the loan after 25 years, and will reimburse the owner of the loan, whether a securitization or a private lender, for the unpaid amount. In this methodology, the IBR assumptions are applicable to the balance of loans in IBR PFH.

[5] For more information, see the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions*. A link can be found in the "Moody's Related Publications" section and in the "Loss Benchmarks" section.

[6] The weights that we apply are our assumed probabilities of each scenario, described in the section "Applying the Expected Loss Approach to ABS Backed by FFELP Loans."

Applying the Expected Loss Approach to ABS Backed by FFELP Loans

The Scenarios

We use 28 scenarios to broadly represent a range of possible combinations of asset and liability variables that could affect losses on the securities. Our loss calculations reflect non-payment of timely interest on the securities or principal on their final maturity dates. Although we do not expect a non-payment of interest, because both interest and principal collections on the loans are available to make interest payments on the securities, the securities could default on the payment of principal because of either a slowdown in loan repayment rates or non-payment resulting from insufficient credit enhancement in the transaction. The scenarios are based on combinations of the key risk factors outlined in the Executive Summary. We describe the ways in which each of these factors can affect a securitization's cash flows in the Analyzing Credit Risk section below.

The Probabilities of the Scenarios

We base our model output conclusion for each security on our assessment of the security's expected loss, which is the calculated weighted-average loss that the security would incur across the 28 scenarios. The scenarios are not specific for each rating level but rather apply to all securities, regardless of the rating being sought. We assigned a probability of occurrence (the weight) to each scenario based on our judgment regarding historical performance of the asset variables, current trends and future risks. In general, scenarios that occur infrequently and only under some extreme conditions have lower weights, and the more typical scenarios that occur relatively more frequently have higher weights.

Because our approach considers a discrete set of 28 scenarios, each scenario in effect represents a combination of a range of possible outcomes. Consequently, the probability that we attach to a specific scenario should be considered as the probability of all the outcomes within that range as a group, not the probability of that specific scenario.

The 28 scenarios cover various combinations of three main categories of risk factors. As Exhibit 1 shows, the categories include (1) the degree to which each risk factor either conforms to or deviates from our expectations, with the Most Likely scenario representing our expectations, and the Likely, Unlikely and Very Unlikely scenarios representing their likelihood of occurrence; (2) three levels of overall interest rates; and (3) three combinations of prepayments, defaults, deferment, forbearance and IBR that form the High Default, Low Excess Spread and Slow Repayment groups of scenarios. Appendix 6 shows a complete list of scenarios and their weights.

EXHIBIT 1

Main Categories of Scenarios and Their Weights

Scenario Categories	Description	Weights
Degrees of Likelihood	Most Likely Scenario	60.0%
	Likely Scenario	36.5%
	Unlikely Scenario	3.0%
	Very Unlikely Scenario	0.5%
	Total Likelihood Weights	100.0%
Interest Rates		
Three Levels of Interest Rates	1%	25%
	5%	50%
	9%	25%
	Total Interest Rate Weights	100%
Loan Repayment Behavior		
Three Combinations of Prepayments, Defaults, Deferment, Forbearance and IBR	High Default: tests the ability of a securitization to withstand high net losses	33.33%
	Low Excess Spread: tests the ability of a securitization to withstand high net losses even with a severely reduced amount of excess spread	33.33%
	Slow Repayment: tests the ability of each tranche to be paid off by its final maturity date when the loan pool's weighted-average life is significantly extended	33.33%
	Total Loan Repayment Behavior Weights	100.0%

Source: Moody's Investors Service

The first scenario is the Most Likely scenario, based on our assumptions in Appendix 1. We created the remaining 27 scenarios by mixing all possible combinations of values within each of the three categories above: three degrees of likelihood (Likely, Unlikely and Very Unlikely), three levels of interest rates and three combinations of prepayments, defaults, deferment, forbearance and IBR.

The weight of a specific scenario is the product of the weights based on degree of likelihood, interest rate level and a combination of prepayments, defaults, deferment, forbearance and IBR. For example, the weight of the scenario that combines a 9% interest rate with the Unlikely scenario and the High Default scenario is 25%*3%*33.3% [probability attached to 9% interest rate scenario * probability attached to Unlikely scenario * probability attached to High Default scenario] = 0.2475%. (For a complete list of scenarios and their probabilities (weights), see Appendices 1 and 6).

Analyzing Risks of FFELP ABS

Our analysis examines the extent to which the credit enhancement, liquidity support and other structural features of FFELP securitizations ensure payment of interest and full repayment of principal on the securities by the final maturity date in a wide range of scenarios. The scenarios encompass combinations and different levels of the variables that can affect the cash flows that the underlying assets in the securitizations generate. We describe the typical values of these variables (cash flow assumptions) in Appendix 1. However, if we receive data from a transaction sponsor that indicates different performance of one or more variables, we may adjust our standard assumptions accordingly.

The main drivers of credit risk in FFELP securitizations are listed below in the order of their impact on FFELP ABS:

Credit Quality of the US Government

Given that the US government guarantees at least 97% of the defaulted principal and accrued interest on FFELP loans and a minimum yield, i.e., Special Allowance Payments, or SAP, the credit-worthiness of the US government has the largest impact on the credit quality of FFELP securitizations. In this methodology, we do not use the rating of the US government as a direct model input because the current rating of the US government is Aaa. Should the rating of the US government be put on review for downgrade or downgraded, we may also put the Aaa ratings of FFELP securitizations on review for downgrade or downgrade the ratings of the securitizations.

Student Loan Payment Plans

Payment plans that suspend or reduce payments for borrowers who experience financial difficulties or go back to school can significantly extend loan repayment periods and jeopardize repayment of the securities by their final maturity dates. These plans include deferment, forbearance and, more recently, IBR and similar plans.[7]

In general, high levels of deferment, forbearance and IBR increase the excess spread that a FFELP securitization generates over its life, because accrued and unpaid interest while borrowers are in these plans will be added to the pool's principal balance and will generate additional excess spread.

We model both high and low usage of deferment, forbearance and IBR. In the High Default scenarios, we assume high usage levels to test the ability of the securitization to withstand high collateral losses even if a high proportion of the borrowers does not make any payments or makes only small payments on the loans. In the Slow Repayment scenarios, we test the ability of the securitization to repay the securities by their final maturity dates. Conversely, in the Low Excess Spread scenarios, we assume low levels of deferment, forbearance and IBR to test the ability of the securitization to withstand high collateral losses even with the severely reduced amount of lifetime excess spread, the major type of credit enhancement in FFELP ABS.

Modeling deferment, forbearance and IBR

We apply deferment, forbearance and IBR assumptions to the balance of loans in repayment, i.e., the total pool balance less the balance of loans to borrowers who are in school or in a grace period before their repayments begin. Because only some borrowers enrolled in IBR are making payments (and therefore, only some of the loans are amortizing), we model one portion of loans in IBR as in forbearance (45% of loans in IBR for consolidation loan pools and 55% of loans in IBR for non-consolidation loan pools), and the remaining portion as making full principal and interest payments. In this way, we approximate the actual amortization profile of IBR loans in aggregate.

To determine the appropriate deferment, forbearance and IBR assumptions for a given loan pool, we will compare the pool's combined percentage of loans in deferment and forbearance and the percentage of loans in IBR that we model as forbearance (together, defined as "Non-payment DFI") with the industry average Non-payment DFI. When the combined usage level is consistent with the industry average, we will adopt the assumptions shown in Appendix 1.

However, if the combined usage level of Non-payment DFI deviates from the industry average Non-payment DFI by more than a tolerance level of 4% on a consistent and long-term basis, we will adjust our long-term assumptions up or down from those shown in Appendix 1. This adjustment will apply for all scenarios except for the Low Excess Spread scenarios, in which only the downward adjustment will apply. The Non-payment DFI downward adjustment will not exceed 10%. To calculate the industry average Non-

[7] Other popular plans include (1) the Graduated Repayment plan that slows down the loan amortization rate, but does not extend the term of the loan and (2) the Extended Repayment plan that can extend the loan term up to 25 years.

payment DFI, we will use as a proxy the levels of deferment, forbearance and IBR in FFELP securitizations that we rate.

We will adjust the long-term Non-payment DFI up or down by the percentage by which it exceeds the industry average minus the 4% tolerance level in either direction. In the event that a sponsor is unable to provide long-term and consistent data on the deferment, forbearance or IBR usage rates in the loan pool that point to a specific trend, we will adopt the more conservative of the actual combined usage rates or the assumptions shown in Appendix 1.

Prepayments

Prepayments accelerate the amortization of a FFELP loan pool, reducing the excess spread that a FFELP securitization generates over its lifetime. However, if the securitization has a prepayment rate that is significantly lower than expected, the amortization of the underlying loan pool will decline, exposing the securities to the risk of failing to pay down by their final legal maturities.

Prepayments can result from three root causes: (1) voluntary prepayments owing to extra principal payments by the borrower or loan refinancing (2) loan repayment by the DOE upon the death or disability of the borrower; and (3) loan forgiveness for borrowers who use IBR. Although prepayments can also result from sponsor repurchases of a portion of the FFELP loan pool, future repurchases are optional and we do not model them in our cash flow analyses.

1. Voluntary Prepayments

Voluntary prepayments are payments by borrowers that exceed the required payments, or full payoffs that result from the refinancing of FFELP loans through federal Direct consolidation loans or through PSL. We include both low voluntary prepayment rates and high voluntary prepayment rates in our analyses.

Because voluntary prepayments accelerate the amortization of a loan pool, a high voluntary prepayment rate will reduce excess spread and therefore erode the credit protection of a securitization. To account for this risk, we include scenarios in our analyses in which we apply prepayment assumptions that are higher than what we expect over the long term.

On the other hand, low voluntary prepayment rates slow the amortization of a loan pool and the related securitization, thus increasing the likelihood that the securities will not pay off by their final maturity dates. Low prepayment rates also amplify the credit risk for securitizations with negative excess spread (i.e., the assets generate lower interest income than the sum of the trust expenses and interest expense on the liabilities) because the slow amortization will prolong the securitization's exposure to the negative excess spread. Such prolonged exposure will erode credit protection to bondholders. To account for the risk that low prepayment rates pose, our analyses include scenarios with prepayment assumptions that are lower than what we expect over the long term.

Modeling voluntary prepayments

We model prepayment rates in each scenario as a percentage of loans in "active repayment;" i.e., the total pool balance less loans to borrowers who are in school, grace, deferment or forbearance and including a portion of loans in IBR. (See the Student Loan Payment Plans section above for more details on how we model loans in IBR.)

2. DOE Loan Repayment upon Borrower Death or Disability

Payments that the DOE is obligated to make to pay off FFELP loans of deceased borrowers and of borrowers who become totally and permanently disabled accelerate the amortization of a FFELP loan pool but reduce excess spread over the life of a FFELP ABS transaction. (See Appendix 2 for our death and disability assumptions.)

Modeling for borrower death or disability

In our cash flow model, we include DOE payments on FFELP loans following the death or disability of borrowers. We add the probabilities of borrower death or disability[8] to our prepayment assumption. We tie death and disability probabilities to the pool-specific, weighted-average age of the borrowers. We lag the prepayments resulting from borrower death or disability by 12 months to account for administrative delays in DOE payments.[9] We also assume the proportion of male and female FFELP loan borrowers to be 40% and 60%, respectively.[10]

We reduce death and disability probabilities in the cash flow model by the percentages shown in Exhibit 2 to account for the potential reduction in the probabilities of death and disability in the future:

EXHIBIT 2

Annual Reductions in Death and Disability Rates

Degree of Likelihood	Most Likely	Likely	Unlikely	Very Unlikely
Reduction in Death / Disability Rates per Year	1.5%	2%	3%	5%

Source: Moody's Investors Service

We gross up the resulting death and disability probabilities by dividing them by 1 minus the percentage of loans in school, grace, deferment and forbearance, before adding them to prepayments to account for the fact that we calculate prepayments as a percentage of loans in active repayment (i.e., the total loan balance minus the balance of loans in school, grace, deferment and forbearance, including a portion of loans in IBR modeled as forbearance[11]).

3. Loan Forgiveness for Borrowers Who Use IBR

Loan forgiveness, a feature of IBR, also accelerates the amortization of the FFELP loan pool. The DOE will forgive and pay off any remaining outstanding balances of loans to borrowers who use IBR at any time during the life of the loan and who make 300 qualifying payments.[12] The earliest date that a loan can be forgiven under IBR is July 2034.

Our analysis of loan repayment data indicates that borrowers struggle to make qualifying payments on a continuing basis and therefore the proportion of borrowers who finish making the requisite 300 qualifying payments will likely be quite small in any given year. Based on available data to date, we project that only

[8] We use mortality tables published by the American Academy of Actuaries and the disability tables published by the Social Security Administration. The disability tables end at age 67, and we therefore assume a decreasing rate of 10 basis points per annum.

[9] To model the 12-month delay in the DOE's payments caused by some borrowers' death and disability, we should calculate the dollar amount of prepayment by multiplying the current probability of death and disability by the current pool balance and adding the cash payment to the cash flow 12 months later. We simplify the modeling of this assumption by using the current probability of death and disability, multiplying it by the pool balance 12 months later, expressing the resulting amount as a percentage of the pool balance less the balance of loans in school, grace, deferment and forbearance 12 months later, and adding the resulting percentage to the voluntary prepayment rate 12 months later.

[10] The National Center for Educational Statistics reports that during the 2009-10 academic year, 60%-62% of students who earned post-secondary degrees were females.

[11] Because no new FFELP loans have been originated since July 2010, the balance of loans to borrowers that are in school or grace in FFELP collateral pools is generally very small and is declining. Therefore, for the purposes of this calculation we assume that the balance of loans to borrowers who are in school or grace periods is zero.

[12] Qualifying payments include periods in IBR, periods in regular repayment prior to IBR but after 1 July 2009 and periods in deferment owing to economic hardship.

about 1.5% of the loans whose borrowers use IBR at any time during the life of the loan will be forgiven per year starting in 2034.

Modeling loan forgiveness

We model IBR forgiveness by increasing our prepayment rate assumption annually starting in 2034, the first year in which loans can be forgiven. This increase is based on the percentage of loans whose borrowers have used IBR at any point. Please see Appendix 7 for further details on modeling loan forgiveness.

Defaults and Net Claim Reject Rates

The net loss rate of FFELP loans depends on the default rate, the non-guaranteed portion of the loans included in the loan pool (up to 3%) and the percentage of defaulted loans that are denied the guarantee because of mistakes in loan origination or servicing (net claim reject rates).[13] Net losses (defaults minus payments pursuant to the federal guarantee) reduce the pool balance that backs a securitization and can jeopardize the repayment of the securities.

Although FFELP loans have a federal guarantee of at least 97% of the defaulted principal and accrued interest, there could be a significant delay in the guarantee payments. Such a delay could contribute to liquidity risk in FFELP securitizations. The magnitude of the liquidity risk will increase if a securitization has high default rates at the same time that a large portion of the underlying borrowers in the loan pool are in deferment, forbearance or IBR and are not making any payments or are making only partial payments.

We assess the risk of defaults and net losses by examining the effects of a range of annual default rates for each of the loan types (consolidation, Stafford/Grad-Plus, PLUS/SLS and rehabilitated FFELP loans) and net claim reject rates.

Modeling defaults and net claim reject rates

We model defaults as an annual default rate on the outstanding FFELP loans in repayment. In the absence of issuer-specific historical performance data, the default rates that we include in our scenarios range between 3% for consolidation loans and 30% for rehabilitated loans in the Most Likely scenario. We also assign a range of 0.5% to 3% of net claim reject rates, with the high end applied to the Very Unlikely scenarios.

Basis Risk

FFELP securitizations have basis risk because the securitizations can contain several combinations of asset and liability interest rate indices. Our basis risk assumptions test the ability of a securitization to withstand interest rates on the securities that are high relative to loan interest rates.

On the asset side, as prescribed by law, FFELP loans earn either the stated borrower interest rates or the interest rates specified under the SAP. The stated borrower rates on the loans are either variable, based on the 91-day T-Bill rate, or fixed. The SAP rate can be based on the average of the bond-equivalent rates for the 90-day financial commercial paper (90-day CP), the 91-day T-Bill rate or the average bond-equivalent rates of the one-month USD London Interbank Offered Rate (Libor[14]).[15]

On the liability side, the interest rates on most bonds are pegged to either one-month or three-month Libor. In addition, auction-rate securities use a variety of other interest rate indices, such as 90-day CP, the

[13] FFELP guarantee agencies guarantee the loans against default, borrower bankruptcy, death or disability. The US Department of Education reinsures the guarantee agencies.

[14] References to Libor in this document include alternative benchmark reference rates where relevant.

[15] For a period between 23 December 2011 and 1 April 2012, lenders had the option to switch the interest rate index of SAP to the average bond-equivalent rates of the one-month Libor from the average of the bond equivalent rates for the 90-day CP.

91-day T-Bill rate, the one-year average of the 91-day T-Bill rate (which, we will subsequently refer to as "one-year average T-Bill") and the Securities Industry and Financial Markets Association (SIFMA) index.

Modeling for basis risk

In modeling the spreads between the asset and the liability interest rates, we project an assumed future spread that includes periodic spikes representing short-term disruptions in the financial markets. We model three spikes that occur during months six through 12 of the first and fifth years from the time we perform the cash flow modeling. (We show a list of illustrative interest rate spread and spike assumptions in Appendices 3, 4 and 5, respectively.) For transactions where assets and/or liabilities are indexed to alternative benchmark reference rates, we consider rate-specific information including available spread data and volatility for our rate assumptions.

The Level of Interest Rates

In addition to basis risk, the absolute level of interest rates can also affect the amount of excess spread that FFELP securitizations generate. For a particular securitization, the effect of the interest rate level on excess spread depends on a number of factors, including the collateralization level of the securitization, the portion of the underlying collateral pool that has "floor income loans,"[16] the amount of cash in the trust accounts (see the Investment Rate on Cash Accounts section, below), and the percentage of fixed-rate bonds in the securitization's capital structure.

The level of interest rates has different effects on over-collateralized and under-collateralized securitizations. For a trust that is over-collateralized, i.e., the total assets of the trust exceed the total trust liabilities, a high interest rate environment results in more excess spread because the additional collateral will contribute more excess spread via generating more interest income than in a low interest rate environment. In contrast, for a securitization that is under-collateralized, i.e., the total assets of the trust fall short of the total trust liabilities, a high interest rate environment results in a reduction in excess spread.

Similarly, the interest rate environment changes the impact of floor income loans for a given loan pool. If a loan was disbursed before 1 July 2006, its interest rate is the maximum of (1) the SAP rate and (2) the borrower's stated loan rate. When the SAP rate on a floor income loan falls below the stated rate, the loan generates more income than it would if the loan were not a floor income loan.[17] However, in a high interest rate environment, the trust will not realize the benefit of floor income because the SAP rate will likely be higher than the stated rate on the floor income loans.

For the limited number of securitizations that contain fixed-rate securities, the overall level of interest rates can be a key risk driver owing to the mismatch between the floating-rate assets and the fixed-rate liabilities. When market interest rates fall, excess spread will decline because either the SAP rate or the floating loan rates on the loans will fall while the fixed rate on the securities will remain unchanged. The magnitude of the negative effect of the mismatch on excess spread depends on the portion of the securities that are fixed rate and the proportion of loans that are floor income loans with fixed, stated interest rates. We address this risk by including scenarios in which we assume a 1% interest rate for the life of the securitization.

Modeling interest rates

To account for these various risks, we examine scenarios with three levels of the 91-day Treasury bill rates, which is the index upon which we anchor our other interest rate assumptions: 1%, 5% and 9%. For the Most Likely scenario, we use a forward Libor curve.

[16] Floor income is the excess of the stated loan income over the SAP rate that the lenders can keep on the loan origination that occurred before 1 April 2006.

[17] The interest rate on loans that are not floor income loans is always the SAP rate, because the lender is required to remit any excess of the loan rate over the SAP rate to the DOE.

Borrower Benefits

Most securitizations contain loans with borrower benefits, which are reductions in the stated loan interest rates or, in some cases, small principal reductions that eligible student loan borrowers receive. The interest rate reductions can occur either if borrowers authorize loan servicers to deduct loan payments automatically from their bank accounts (the Automated Clearing House (ACH) benefit) or make a specified number of consecutive timely loan payments (the on-time payment benefit).

Most borrower benefits reduce interest income and, therefore, excess spread that the securitizations generate. The negative effect of borrower benefits on excess spread depends on the proportion of underlying borrowers in the loan pool who are both eligible and qualify to receive the benefits, as well as the rate at which borrowers are disqualified from receiving borrower benefits, which depends on specific features of a borrower benefits program.

The ACH benefit, the most common borrower benefit program, typically offers an interest rate reduction of 0.25%. We base our assumed percentages of the underlying borrowers in a loan pool who use the ACH benefit on the historical experience of FFELP securitization. For the on-time payment benefit, we assume that an increasing number of borrowers become disqualified from receiving benefits over time owing to delinquency.

Modeling borrower benefits

Because the loan pools backing FFELP ABS are highly seasoned, we assume that once the borrowers qualify for the on-time payment borrower benefit, they will not be disqualified from that benefit for the life of the loans. For the ACH benefit, we do not make a seasoning adjustment because ACH use typically does not change over time.

Servicing Fees

If servicing fees on FFELP loans increase over time, excess spread that the securitization generates will decline. Therefore, in our cash flow analysis, we test whether the securitization can withstand reduced excess spread resulting from the increased servicing fees.

Modeling servicing fees

If a loan servicer charges a specified servicing fee per borrower or per account, we increase the servicing fee by applying an inflation rate, which increases as the degree of likelihood of the scenarios increases to Very Unlikely from Most Likely.

Investment Rate on Cash Accounts

If the interest rate earned on cash deposited in an account of a FFELP securitization is lower than the interest rate paid on the securities, the securitization is at risk of negative carry. Some FFELP securitizations, especially those sponsored by state agencies and not-for-profits, have large cash balances. The securitizations typically direct the indenture trustee to hold the cash balances in certain eligible investments[18] that earn a very low rate of return. (Please see our assumptions in Appendix 1)

Modeling large cash balances

If a securitization with large cash balances relies on the sponsor's discretion about when to make principal payments on the securities rather than on specific rules stipulated in deal documents, we test whether the securitization can withstand prolonged periods of exposure to negative carry, because the interest rate on the cash balances is lower than the interest rate on the securities. We assume that the sponsor makes no principal payments for three years during which the transaction has exposure to negative carry risk. After

[18] For more information, see our cross-sector methodology for assessing counterparty risks in structured finance including account banks and investments. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

the three-year period, we assume that the sponsor resumes making principal payments with the accumulated cash in addition to the new cash collections on the underlying loan pool at that time.

Remarketing Risk

In some FFELP securitizations, the interest rate of the liabilities resets either on a periodic basis or on a pre-determined date through an auction or remarketing process and is therefore subject to remarketing risk. If the securities are not remarketed, the coupon rate on the securities will increase.

Modeling remarketing risk

We address this risk through our reset-rate assumptions for the auction-rate securities and reset-rate notes.

Note Amortization Priority

In some cases, the amortization priority of the securities is at the discretion of the sponsor, which creates uncertainty over payment priorities on the securities. Transaction documents typically specify the order of payment among all classes of securities in a transaction. However, in a limited number of securitizations issued prior to 2008, the amortization priority of the securities within a class of a given seniority is at the sponsor's discretion. If the sponsor elects to make principal payments among various classes of securities within the same class of a given seniority pro rata rather than sequentially, one or more classes of the securities may not pay off by their final maturity dates, thus causing an EOD for the securitization.

Modeling note amortization priority

In cases in which the amortization priority of the securities is at the sponsor's discretion, we assume a pro-rata distribution of principal payments to the securities within the same class of notes, which allows us to test whether all classes of notes will be repaid by their respective final maturity dates.

Prefunding and Recycling

Prefunding and recycling periods allow for additional student loans to be added to the securitization trust after the closing date of the transaction, an allowance that introduces risks that (1) the added loans could reduce the overall credit quality of the loan pool; and (2) the excess spread in the securitization could be reduced because the trust could hold cash that earns a minimal rate of return for an extended period (i.e., negative carry).

Modeling prefunding and recycling

In analyzing FFELP securitizations with prefunding and recycling features, we stress both the characteristics of loans that can be added over time and the timing of the loan additions. Our prefunding and recycling assumptions are case-specific, based largely on the issuer's historical portfolio mix and consistency in originations. We also consider the terms of the securitization documents on concentration limits, such as limits on loan type, school type, guarantee percentage and SAP rate, for the loans that can be added. We apply the characteristics in a manner that is most disadvantageous from a credit perspective. In cases in which an issuer has identified a specific pool of loans to be acquired, our assumptions reflect the characteristics of the identified loan pool.

To assess the negative effects on excess spread of holding cash for an extended period, we assume that the loans are acquired near the end of the prefunding or recycling period. In some cases, we also run "non-origination" scenarios in which the securitization holds acquisition proceeds in acquisition accounts and prohibits use of the proceeds to acquire any new loans during the prefunding or recycling periods. Instead, the securitization uses the proceeds to pay down outstanding securities on the last day of the prefunding or recycling periods.

Operational Risk

Like other types of structured finance transactions, FFELP ABS are subject to the risk of non-performance of key transaction parties, which include the master servicer/administrator, the primary servicer(s) and the trustee. The strength of a FFELP ABS depends therefore not only on the credit quality of the underlying portfolio but also on the effective performance of the roles these transaction parties assume. The master servicer is typically responsible for both servicing the FFELP loans and the administration of the trust. In some cases, FFELP ABS separate the servicing and administration functions by having one entity, typically the transaction sponsor, as the administrator and primary servicer(s) that is/are different from the administrator.

We consider administration and servicing of FFELP loans highly transferrable because of (1) the easy transferability of the administration functions; (2) wide availability of established servicers with standardized servicing platforms and servicing guidelines prescribed by the Higher Education Act; and (3) the history of numerous successful transfers of administration and servicing without the loss of the government guarantee on FFELP loans.

In a situation in which an entity that has a higher probability of becoming non-performing serves as the key transaction party in a FFELP ABS, certain factors can mitigate the operational risks and help the ABS surpass the indicative ratings limitations. These factors include the presence of a back-up servicer and/or a back-up administrator or trustee language to the effect that, in the event of a servicer/administrator termination, the trustee will either name a successor servicer/administrator, take over the duties itself, or – if unable or unwilling to do so – petition a court of competent jurisdiction to name a successor servicer/administrator.

In addition, a specific consideration is the fact that key roles in FFELP ABS are sometimes assumed by state agencies, public instrumentalities of a state or not-for-profit organizations. We assess the risk associated with these entities within the respective legal and regulatory framework, where applicable.

We assess these and other operational risks as part of our analysis and factor the results into our determination of the ratings that a rating committee assigns to securities backed by a portfolio of FFELP loans.[19]

Legal Risks

Our legal analysis focuses on two major sources of risk posed by potential bankruptcies of the following securitization parties:

» The securitization sponsor and any affiliated entities in the chain of the security interest of the assets transferred to the securitization vehicle, including the originator and seller if either is a separate legal entity from the sponsor (collectively, such entities are referred to in this section as the "sponsor"), and

» The special purpose entity (SPE).

In both cases, the risk to investors arises either from the possibility that creditors outside the securitization might make a claim on the securitization assets or that the payments on the securities will be suspended upon the start of bankruptcy proceedings that could impede payments on the securities.

[19] For more information, see our cross-sector methodology for assessing counterparty risks in structured finance including operational risks. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Bankruptcy of the Sponsor

Our legal analysis of the potential bankruptcy of the sponsor is an assessment of three key factors:

» whether the receivables have been sold

» whether the owner of the assets (the securitization trust) would be substantively consolidated with the sponsor in the event of the sponsor's bankruptcy; and

» whether the securitization trustee can enforce its ownership or security interest in the collateral once the sponsor has filed for bankruptcy protection.

Therefore, we assess the likelihood that the bankruptcy proceeding of a sponsor – whether voluntary or involuntary – would delay or reduce the payments on the notes. The degree to which the securitization has protection against these risks determines the extent to which its ratings can be higher than those of the sponsor's own rating.

Risk of Sponsor Bankruptcy Differs by Type of Sponsor

The risk of a sponsor bankruptcy varies depending on whether the sponsor of the FFELP securitization is a state agency, a not-for-profit corporation, or a for-profit corporation.

State Agencies

As governmental units, state agency sponsors are not subject to involuntary bankruptcy under either Chapter 7 or Chapter 11 of the US Bankruptcy Code. Under certain circumstances, state agencies can file for voluntary bankruptcy under Chapter 9. We review the legal opinion provided by the state agency's legal counsel to determine that the state agency is a "governmental unit" under the Bankruptcy Code and whether the state agency is authorized to file a voluntary bankruptcy petition.

Not-for-Profit Corporations

Our bankruptcy risk analysis of a transaction sponsored by a not-for-profit corporation focuses on the status of the corporation under the Bankruptcy Code. Not-for-profit corporations are generally not subject to involuntary petitions by creditors under the Bankruptcy Code.

Our assessment of the risk is typically informed by a reasoned opinion from the not-for-profit's counsel that the issuer would not be subject to an involuntary bankruptcy petition.

Unlike state agencies, not-for-profit issuers can seek the protection of a bankruptcy court by filing a voluntary petition. However, there is a significant reduction in the risk of a voluntary bankruptcy filing if the not-for-profit issuers have limited the scope of their activities to the specified functions of securitizing student loans, have no additional flexibility to engage in other activities and have several independent directors or independent managers (or a similar governance mechanism).

For-Profit Sponsors

For-profit securitization sponsors are subject to both voluntary and involuntary bankruptcies. As part of our analysis, we review legal opinions to obtain assurance regarding the key legal risks in a transaction. Our analysis of the potential bankruptcy of the originator takes into consideration the following factors:

» operational risk: the risk of disruption of the transaction's cash flows that could result from non-performance of the key transaction parties

» whether the originator has sold the FFELP student loans, known as "true sale"

- whether, in the event of a sponsor's bankruptcy, a court would consolidate the securitization trust with the sponsor, known as "substantive consolidation"
- whether the securitization trustee can enforce its ownership or security interest in the collateral once the originator has filed for bankruptcy protection ("perfection")
- Demonstrated willingness and ability of the sponsor to support the transaction.

Bankruptcy of the SPE

A bankruptcy filing may be either involuntary or voluntary. In our analysis of the bankruptcy risk of the SPE, we assess characteristics of the legal structure of the SPE that mitigate the risk. [20]

Determining the Rating through the Rating Committee Process

The output indicated by our quantitative modeling is an important input in our rating committee process. However, the ratings assigned by the rating committee incorporate numerous other factors, such as the following:

- operational risk: the risk of disruption in the transaction's cash flows that could result from a disruption in the operations of a key third party
- counterparty risk
- the transaction's legal structure
- any support provided by the sponsor to ensure payment by the final maturity date.

Monitoring

We generally apply the key components of the approach described in this report when monitoring FFELP securitizations, except for those elements of the methodology that could be less relevant over time, such as a review of the legal structure. We also receive updated data on a regular basis on transaction-specific performance that we use to monitor FFELP securitizations.

In monitoring performance of the outstanding FFELP securitizations, we regularly review key performance trends across rated transactions, including over-collateralization and excess spread levels, usage rates of deferment, forbearance and IBR, prepayment rates, pool amortization rates and funding costs. We use quantitative tools to monitor variances in these parameters and perform cash flow analyses on a periodic basis using updated collateral and bond information to identify transactions and tranches whose performance diverge from our expectations. [21] We also monitor any changes in the servicing and trust administration functions.

We undertake further in-depth review of any transactions that deviate from our expectations. In the process of that review, we may perform detailed cash flow analyses to assess whether the ratings of each tranche appropriately represent their credit quality over time. We assess the impact of any operational changes and discuss metrics outside of the expected range and any operational concerns with transaction sponsors.

[20] For more information, see our methodology for assessing bankruptcy remoteness for special purpose entities in structured finance transactions. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

[21] For example, in methodologies where models are used, modeling is not relevant when it is determined that (1) a transaction is still revolving and performance has not changed from expectations, or (2) all tranches are at the highest achievable ratings and performance is at or better than expected performance, or (3) key model inputs are viewed as not having materially changed to the extent it would change outputs since the previous time a model was run, or (4) no new relevant information is available such that a model cannot be run in order to inform the rating, or (5) our analysis is limited to asset coverage ratios for transactions with undercollateralized tranches, or (6) a transaction has few remaining performing assets.

Loss Benchmarks

In evaluating the model output for FFELP ABS, we select loss benchmarks referencing the Idealized Expected Loss table[22] using the Standard Asymmetric Range, in which the lower-bound of loss consistent with a given rating category is computed as an 80/20 weighted average on a logarithmic scale of the Idealized Expected Loss of the next higher rating category and the Idealized Expected Loss of the given rating category, respectively. For initial ratings and upgrade rating actions, the upper-bound of loss consistent with a given rating category is computed as an 80/20 weighted average on a logarithmic scale of the Idealized Expected Loss of the given rating category and the Idealized Expected Loss of the next lower rating category, respectively. When monitoring a rating for downgrade, the upper-bound of loss is computed as a 50/50 weighted average on a logarithmic scale. That is, the benchmark boundaries of loss appropriate for evaluating rating category R are given by:

$$[1]\ Rating\ Lower\ Bound_R = exp\{0.8 \cdot \log(Idealized\ Expected\ Loss_{R-1}) + 0.2 \cdot log(Idealized\ Expected\ Loss_R)\}$$

$$[2]\ Initial\ Rating\ Upper\ Bound_R = exp\{0.8 \cdot \log(Idealized\ Expected\ Loss_R) + 0.2 \cdot log(Idealized\ Expected\ Loss_{R+1})\}$$

$$[3]\ Current\ Rating\ Upper\ Bound_R = exp\{0.5 \cdot \log(Idealized\ Expected\ Loss_R) + 0.5 \cdot log(Idealized\ Expected\ Loss_{R+1})\}$$

Where:

- $Rating\ Lower\ Bound_R$ means the lowest Idealized Expected Loss associated with rating R and the expected loss range of rating R is inclusive of the $Rating\ Lower\ Bound_R$.
- $Initial\ Rating\ Upper\ Bound_R$ means the highest Idealized Expected Loss associated with rating R that is either initially assigned or upgraded and the expected loss range of rating R is exclusive of the $Rating\ Upper\ Bound_R$.
- $Current\ Rating\ Upper\ Bound_R$ means the highest Idealized Expected Loss associated with rating R that is currently outstanding and the expected loss range of rating R is exclusive of the $Rating\ Upper\ Bound_R$.
- $R\text{-}1$ means the rating just above R.
- $R+1$ means the rating just below R.
- The Rating Lower Bound for Aaa is 0% and the Rating Upper Bound for C is 100%. These are not derived using the formula.

[22] For more information, see the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions*. A link can be found in the "Moody's Related Publications" section.

Appendix 1: Cash Flow Scenarios and Weights

The tables below summarize the 28 scenarios.

Assumptions and Weights in the Most Likely and Likely Cash Flow Scenarios

		Most Likely	Likely Scenarios									
			Low Excess Spread			High Default			Slow Repayment			
Assumption	Description	1	2	3	4	5	6	7	8	9	10	Comments
Weights		60.00%	3.04%	6.08%	3.04%	3.04%	6.08%	3.04%	3.04%	6.08%	3.04%	
Interest Rate (T-Bill) Level		Use Forward Libor[23] Curve -TED spread (from Appendix 3)	1%	5%	9%	1%	5%	9%	1%	5%	9%	
Annualized Default Rates	FFELP Consolidation Loans	3% CDR for life	4% CDR for life						3% CDR for life			
	FFELP Non-Consolidation Loans	STAF/G-PLUS: 8% CDR for life PLUS/SLS: 4% CDR for life	STAF/G-PLUS: 10% CDR for life PLUS/SLS: 5% CDR for life						STAF/G-PLUS: 8% CDR for life PLUS/SLS: 4% CDR for life			
	FFELP Rehabilitated Loans	14% CDR for life 30% CDR spike on first half of year 1	16% CDR for life 30% CDR spike on first half of year 1						14% CDR for life 30% CDR spike on first half of year 1			
Annual Voluntary Prepayment Rates (CPR)	FFELP Consolidation loans and Rehabilitated Loans	Current to 4% over 6 years, 4% thereafter	Current to 7% over 4 years, 7% thereafter			Current to 3% over 4 years, 3% thereafter						Dollars of voluntary prepayments as a percent of the balance of total loans in active repayment outstanding at the beginning of each period
	FFELP Non-Consolidation Loans	Current to 6.5% over 6 years, 6.5% thereafter	Current to 12% over 4 years, 12% thereafter			Current to 5.5% over 4 years, 5.5% thereafter						
Death/Disability		Multiply the probability of D&D from Appendix 2 by (1 - 1.5%) each year. Add to the CPR assumption with a 12-month lag	» Multiply the probability by (1 - 2%) each year » Add the resulting % to the voluntary prepayment assumption with a 12-month lag									Start with the probability of D&D (Appendix 2) that corresponds to the weighted average age of the borrowers in the pool; every 12 months use the probability for the next age

[23] References to Libor in Appendices 1, 3, 4, 5 and 6 include alternative benchmark reference rates where relevant.

Assumptions and Weights in the Most Likely and Likely Cash Flow Scenarios

		Most Likely	Likely Scenarios									
			Low Excess Spread			High Default			Slow Repayment			
Assumption	Description	1	2	3	4	5	6	7	8	9	10	Comments
Loan Forgiveness		Starting with 2034, assume that 1.5% of balance of loans ever in IBR will be forgiven each year (see Appendix 7 for details)	» Starting with 2034, assume that 1.25% of balance of loans ever in IBR will be forgiven each year (see Appendix 7 for details)									
Interest Rate Spread		Spread in the Most Likely scenario from Appendices 3 and 5	Spread in the Likely scenario from Appendices 3 and 5									
Investment Rate	Taxable	T-Bill										If there is a GIC, use the actual contracted rate
	Tax-Exempt (TE)	Lower of T-bill or TE bond rate										
Interest Rate Spikes		Most Likely spread from Appendices 4 and 5	Spread under the Likely scenario from Appendices 4 and 5									
Net Claim Reject Rates		0.25%-0.50%	0.50% - 1.00%									Apply the net reject rate to the relevant default percentage. Rejected loans should have 100% severity of losses.
Payment Lags	Default Reimbursement	390 days	450 days									Number of days cash receipts are delayed after a specified event
	ISP/SAP	30 days										
Forbearance Rates	FFELP Consolidation Loans and Rehabilitated Loans	Current to 7% over 4 years, 7% thereafter	5%			Current to 9.5% over 4 years, 9.5% thereafter						Deferment and forbearance are provided as a percentage of the loan balance in active repayment,
	FFELP Non-Consolidation Loans	Current to 12% over 4 years, 12% thereafter	5%			Current 13.5% over 4 years, 13.5% thereafter						

Assumptions and Weights in the Most Likely and Likely Cash Flow Scenarios

		Most Likely	Likely Scenarios									
			Low Excess Spread			High Default			Slow Repayment			
Assumption	Description	1	2	3	4	5	6	7	8	9	10	Comments
Deferment Rates	FFELP Consolidation Loans and Rehabilitated Loans	Current to 4% over 4 years, 4% thereafter	5%			Current to 6% over 4 years, 6% thereafter						forbearance, and deferment status of the current loan balance
	FFELP Non-Consolidation Loans	Current to 7% over 4 years, 7% thereafter	5%			Current 9.5% over 4 years, 9.5% thereafter						
IBR	FFELP Consolidation Loans and Rehabilitated Loans	Current to 17% over 4 years, 17% thereafter	10%			Current to 19% over 4 years, 19% thereafter						
		Run 45% of these levels as forbearance, 55% as full repayment										
	FFELP Non-Consolidation Loans	Current to 25% over 4 years, 25% thereafter	10%			Current to 27% over 4 years, 27% thereafter						
		Run 55% of these levels as forbearance, 45% as full repayment										
Borrower Benefits	0.25% ACH after 0 months	20%	30%									Percent of outstanding balance of all eligible loans
On-Time Payment	Utilization Rates	100%	100%									
Servicing Fee Inflation		Run according to servicing agreement	2.5% per annum									Increase in servicing fee per year as a percent of the servicing fee at the beginning of each period
Auction Rate Securities		Failed auction rate for life										
Rate Reset Notes		Penalty rate for life										

Assumptions and Weights in the Unlikely Cash Flow Scenarios

		Unlikely Scenarios									
		Low Excess Spread			High Default			Slow Repay			
Assumption	Description	11	12	13	14	15	16	17	18	19	Comments
Weights		0.25%	0.50%	0.25%	0.25%	0.50%	0.25%	0.25%	0.50%	0.25%	
Interest Rate (T-Bill) Level		1%	5%	9%	1%	5%	9%	1%	5%	9%	
Annualized Default Rates	FFELP Consolidation Loans	4.5% CDR for life						3% CDR for life			
	FFELP Non-Consolidation Loans	STAF/G-PLUS: 11.5% CDR for life PLUS/SLS: 6% CDR for life						STAF/G-PLUS: 8% CDR for life PLUS/SLS: 4% CDR for life			
	FFELP Rehabilitated Loans	18.5% CDR for life 30% CDR spike on first half of year 1						14% CDR for life 30% CDR spike on first half of year 1			
Annual Voluntary Prepayment Rates (CPR)	FFELP Consolidation loans and Rehabilitated Loans	Current to 7.5% over 3 years, 7.5% thereafter			Current to 2.5% over 3 years, 2.5% thereafter						Dollars of voluntary prepayments as a percent of the balance of total loans in active repayment outstanding at the beginning of each period
	FFELP Non-Consolidation Loans	Current to 13% over 3 years, 13% thereafter			Current to 4.5% over 3 years, 4.5% thereafter						
Death/Disability		» Start with the probability of D&D from Appendix 2 that corresponds to the weighted average age of the underlying borrowers in the loan pool; every 12 months use the probability for the next age » Multiply the probability by (1 - 3%) each year » Add the resulting % to the voluntary prepayment assumption with a 12-month lag									
Loan Forgiveness		» Starting with 2034, assume that 1.0% of balance of loans ever in IBR will be forgiven each year (see Appendix 7 for details)									
Interest Rate Spread		Spread under the Unlikely scenario from Appendices 3 and 5									
Investment Rate	Taxable	T-Bill									If there is a GIC, use the actual contracted rate
	Tax-Exempt (TE)	Lower of T-bill or TE bond rate									
Interest Rate Spikes		Spread under the Unlikely scenario from Appendices 4 and 5									
Net Claim Reject Rates		1.50% - 2.00%									Apply the net reject rate to the relevant default percentage. Rejected loans should have 100% severity of losses.
Payment Lags	Default Reimbursement	450 days									Number of days cash receipts are delayed after a specified event
	ISP/SAP	30 days									

Assumptions and Weights in the Unlikely Cash Flow Scenarios

		Unlikely Scenarios									
		Low Excess Spread			High Default			Slow Repay			
Assumption	Description	11	12	13	14	15	16	17	18	19	Comments
Forbearance Rates	FFELP Consolidation Loans and Rehabilitated Loans	5%			Current 11% over 4 years, 11% thereafter						Deferment and forbearance are provided as a percentage of the loan balance in active repayment, forbearance, and deferment status of the current loan balance
	FFELP Non-Consolidation Loans	5%			Current to 15% over 4 years, 15% thereafter						
Deferment Rates	FFELP Consolidation Loans and Rehabilitated Loans	5%			Current to 7.5% over 4 years, 7.5% thereafter						
	FFELP Non-Consolidation Loans	5%			Current to 12% over 4 years, 12% thereafter						
IBR	FFELP Consolidation Loans and Rehabilitated Loans	10%			Current to 20.5% over 4 years, 20.5% thereafter						
		Run 45% of these levels as forbearance, 55% as full repayment									
	FFELP Non-Consolidation Loans	10%			Current to 28.5% over 4 years, 28.5% thereafter						
		Run 55% of these levels as forbearance, 45% as full repayment									
Borrower Benefits	ACH after 0 months	35%									Percent of outstanding balance of all eligible loans
On-time payment	Utilization Rate	100%									
Servicing Fee Inflation		2.5% per annum									Increase in servicing fee per year as a percent of the servicing fee at the beginning of each period
Auction Rate Securities		Failed auction rate for life									
Rate Reset Notes		Penalty rate for life									

Assumptions and Weights in the Very Unlikely Cash Flow Scenarios

Assumption	Description	Very Unlikely Scenarios									Comments
		Low Excess Spread			High Default			Slow Repay			
		20	21	22	23	24	25	26	27	28	
Weights		0.04%	0.08%	0.04%	0.04%	0.08%	0.04%	0.04%	0.08%	0.04%	
Interest Rate (T-Bill) Level		1%	5%	9%	1%	5%	9%	1%	5%	9%	
Annualized Default Rates	FFELP Consolidation Loans	5% CDR for life						3% CDR for life			
	FFELP Non-Consolidation Loans	STAF/G-PLUS: 13% CDR for life PLUS/SLS: 7% CDR for life						STAF/G-PLUS: 8% CDR for life PLUS/SLS: 4% CDR for life			
	FFELP Rehabilitated Loans	21% CDR for life 30% CDR spike on first half of year 1						14% CDR for life 30% CDR spike on first half of year 1			
Annual Voluntary Prepayment Rates (CPR)	FFELP Consolidation loans and Rehabilitated Loans	Current to 8% over 1 year, 8% thereafter			Current to 2% over 1 year, 2% thereafter						Dollars of voluntary prepayments as a percent of the balance of total loans in repayment outstanding at the beginning of each period
	FFELP Non-Consolidation Loans	Current to 15% over 1 year, 15% thereafter			Current to 3.5% over 1 year, 3.5% thereafter						
Death/Disability		» Start with the probability of D&D from Appendix 2 that corresponds to the average age of the underlying borrowers in the pool; every 12 months use the use the probability for the next age » Multiply the probability by (1 - 5%) each year » Add the resulting % to the voluntary prepayment assumption with a 12-month lag									
Loan Forgiveness		» Starting with 2034, assume that 0.75% of balance of loans ever in IBR will be forgiven each year (see Appendix 7 for details)									
Interest Rate Spread		Spread under the Very Unlikely scenarios from Appendices 3 and 5									
Investment Rate	Taxable	T-Bill									If there is a GIC, use the actual contracted rate.
	Tax-Exempt (TE)	Lower of T-bill or TE bond rate									
Interest Rate Spikes		Spread under the Very Unlikely scenarios from Appendices 4 and 5									
Net Claim Reject Rates		2.00% - 3.00%									Apply the net reject rate to the relevant default percentage. Rejected loans should have 100% severity of losses
Payment Lags	Default Reimbursement	450 days									Number of days cash receipts are delayed after a specified event
	ISP/SAP	60 days									

Assumptions and Weights in the Very Unlikely Cash Flow Scenarios

		Very Unlikely Scenarios									
		Low Excess Spread			High Default			Slow Repay			
Assumption	Description	20	21	22	23	24	25	26	27	28	Comments
Weights		0.04%	0.08%	0.04%	0.04%	0.08%	0.04%	0.04%	0.08%	0.04%	
Forbearance Rates	FFELP Consolidation Loans and Rehabilitated Loans	5%			Current to 14% over 4 years, 14% thereafter						Deferment and forbearance are provided as a percentage of the loan balance in active repayment, forbearance, and deferment status of the current loan balance
	FFELP Non-Consolidation Loans	5%			Current to 17% over 4 years, 17% thereafter						
Deferment Rates	FFELP Consolidation Loans and Rehabilitated Loans	5%			Current to 10% over 4 years, 10% thereafter						
	FFELP Non-Consolidation Loans	5%			Current to 15% over 4 years, 15% thereafter						
IBR	FFELP Consolidation Loans and Rehabilitated Loans	10%			Current to 23% over 4 years, 23% thereafter						
		Run 45% of these levels as forbearance, 55% as full repayment									
	FFELP Non-Consolidation Loans	10%			Current to 31% over 4 years, 31% thereafter						
		Run 55% of these levels as forbearance, 45% as full repayment									
Borrower Benefits	ACH after 0 months	50%									Percent of outstanding balance of all eligible loans
On-time payment	Utilization Rates	100%									
Servicing Fee Inflation		4.0% per annum									Increase in servicing fee per year as a percent of the servicing fee at the beginning of each period
Auction Rate Securities		Failed auction rate for life									
Rate Reset Notes		Penalty rate for life									

Source: Moody's Investors Service

Appendix 2: Probability of Death and Disability

Average Age of Borrowers In the Loan Pool	Probability of Death	Probability of Disability	Probability of Death and Disability *
21	0.0353%	0.1400%	0.175%
22	0.0370%	0.2400%	0.277%
23	0.0391%	0.2000%	0.239%
24	0.0411%	0.2400%	0.281%
25	0.0434%	0.2400%	0.283%
26	0.0462%	0.1400%	0.186%
27	0.0480%	0.2000%	0.248%
28	0.0496%	0.1400%	0.189%
29	0.0511%	0.2000%	0.251%
30	0.0529%	0.2000%	0.253%
31	0.0548%	0.2000%	0.255%
32	0.0560%	0.2000%	0.256%
33	0.0565%	0.2000%	0.256%
34	0.0566%	0.3000%	0.356%
35	0.0570%	0.2600%	0.317%
36	0.0581%	0.3000%	0.358%
37	0.0606%	0.3000%	0.360%
38	0.0643%	0.3000%	0.364%
39	0.0692%	0.3600%	0.429%
40	0.0750%	0.3000%	0.375%
41	0.0916%	0.4000%	0.491%
42	0.0878%	0.4000%	0.487%
43	0.0940%	0.4600%	0.554%
44	0.1001%	0.4000%	0.500%
45	0.1062%	0.5000%	0.606%
46	0.1136%	0.4600%	0.573%
47	0.1246%	0.5600%	0.683%
48	0.1366%	0.5400%	0.676%
49	0.1514%	0.5600%	0.711%
50	0.1688%	0.6600%	0.828%
51	0.1895%	0.7000%	0.888%
52	0.2104%	0.8600%	1.069%
53	0.2310%	0.8000%	1.029%
54	0.2521%	0.8600%	1.110%

Average Age of Borrowers In the Loan Pool	Probability of Death	Probability of Disability	Probability of Death and Disability *
55	0.2746%	0.9000%	1.172%
56	0.3005%	1.0000%	1.297%
57	0.3308%	1.1400%	1.467%
58	0.3672%	1.2000%	1.563%
59	0.4049%	1.1800%	1.585%
60	0.4571%	1.2400%	1.691%
61	0.5106%	1.2400%	1.744%
62	0.5681%	1.3200%	1.881%
63	0.6293%	1.3200%	1.941%
64	0.6959%	1.2200%	1.907%
65	0.7700%	1.0800%	1.842%
66	0.8166%	0.8000%	1.610%
67	0.8727%	0.6000%	1.467%
68	0.9400%	0.5000%	1.435%
69	1.0190%	0.4000%	1.415%
70	1.1097%	0.3000%	1.406%
71	1.2126%	0.2000%	1.410%
72	1.3296%	0.1000%	1.428%
73	1.4626%	0.0000%	1.463%
74	1.6142%	0.0000%	1.614%
75	1.7883%	0.0000%	1.788%
76	1.9880%	0.0000%	1.988%
77	2.2162%	0.0000%	2.216%
78	2.4777%	0.0000%	2.478%
79	2.7790%	0.0000%	2.779%
80	3.1318%	0.0000%	3.132%
81	3.5582%	0.0000%	3.558%
82	4.0456%	0.0000%	4.046%
83	4.5971%	0.0000%	4.597%
84	5.2213%	0.0000%	5.221%
85	5.9267%	0.0000%	5.927%
86	6.7189%	0.0000%	6.719%
87	7.6022%	0.0000%	7.602%
88	8.5773%	0.0000%	8.577%
89	9.6394%	0.0000%	9.639%
90	10.7804%	0.0000%	10.780%
91	11.9713%	0.0000%	11.971%

Average Age of Borrowers In the Loan Pool	Probability of Death	Probability of Disability	Probability of Death and Disability *
92	13.2476%	0.0000%	13.248%
93	14.6432%	0.0000%	14.643%
94	16.2065%	0.0000%	16.207%
95	17.9971%	0.0000%	17.997%
96	19.6971%	0.0000%	19.697%
97	21.5241%	0.0000%	21.524%
98	23.4104%	0.0000%	23.410%
99	25.3388%	0.0000%	25.339%
100	27.3195%	0.0000%	27.320%

* Add Probability of Death and Disability to the prepayment assumption with a 1-year lag.

Source: Social Security Administration, American Academy of Actuaries, Moody's Investors Service

Appendix 3: Illustrative Interest Rate Spread Assumptions

The table below provides a list of illustrative interest rate spread assumptions that we may use to model the spreads between the asset and the liability interest rates.

For securitizations with Libor-based liabilities only*

If loans are based on three-month CP

If > 5% of loans have T-bill based SAP payments, use the following assumptions:

Interest Rate Spreads	Most Likely	Likely	Unlikely	Very Unlikely
CP Rate loans	T-Bill + 60bps	T-Bill + 85 bps	T-Bill + 110 bps	T-Bill +125 bps
Three-month Libor liabilities	T-Bill + 70bps	T-Bill + 100 bps	T-Bill + 130 bps	T-Bill + 150 bps
One-month Libor (monthly reset liabilities)	T-Bill + 60bps	T-Bill + 88bps	T-Bill + 117bps	T-Bill + 135bps

If < 5% of loans have T-bill based SAP payments, use the following assumptions:

Interest Rate Spreads	Most Likely	Likely	Unlikely	Very Unlikely
CP Rate loans	T-Bill + 45 bps	T-Bill + 53 bps	T-Bill + 53 bps	T-Bill +75 bps
Three-month Libor liabilities	T-Bill + 55 bps	T-Bill + 68 bps	T-Bill + 73 bps	T-Bill + 100 bps
One-month Libor (monthly reset liabilities)	T-Bill + 45 bps	T-Bill + 56 bps	T-Bill + 60 bps	T-Bill + 85 bps

If loans are based on one-month Libor

If > 5% of loans have T-bill based SAP payments, use the following assumptions:

Interest Rate Spreads	Most Likely	Likely	Unlikely	Very Unlikely
One-month Libor loans	T-Bill + 63 bps	T-Bill + 88 bps	T-Bill + 114 bps	T-Bill +130 bps
Three-month Libor liabilities	T-Bill + 70bps	T-Bill + 100 bps	T-Bill + 130 bps	T-Bill + 150 bps
One-month Libor (monthly reset liabilities)	T-Bill + 63bps	T-Bill + 88bps	T-Bill + 116bps	T-Bill + 133bps

If < 5% of loans have T-bill based SAP payments, use the following assumptions:

Interest Rate Spreads	Most Likely	Likely	Unlikely	Very Unlikely
One-month Libor loans	T-Bill + 48 bps	T-Bill + 56 bps	T-Bill + 57 bps	T-Bill +80 bps
Three-month Libor liabilities	T-Bill + 55 bps	T-Bill + 68 bps	T-Bill + 73 bps	T-Bill + 100 bps
One-month Libor (monthly reset liabilities)	T-Bill + 48 bps	T-Bill + 56 bps	T-Bill + 59 bps	T-Bill + 83 bps

* For securitizations with other (or multiple) liability indices, we will apply the relevant spreads and spikes in Appendix 5

Source: Moody's Investors Service

Appendix 4: Illustrative Interest Rate Spike Assumptions

The table below provides a list of illustrative interest rate spike assumptions that we may use to model the spreads between the asset and the liability interest rates.

For securitizations with Libor-based liabilities only*

	If loans are based on three-month CP			
Interest Rate Spikes	**Most Likely**		**Likely**	
	Spread to T-Bill	**Timing**	**Spread to T-Bill**	**Timing**
CP Rate loans	115 bps	1st and 2nd quarters of year 1	130 bps	3rd and 4th quarter of year 1, 3rd and 4th quarter of year 5, and for 2 quarters at 10% pool factor
Three-month Libor liabilities	190 bps	1st and 2nd quarters of year 1	230 bps	3rd and 4th quarter of year 1, 3rd and 4th quarter of year 5, and for 2 quarters at 10% pool factor
One-month Libor (monthly reset liabilities)	165 bps	1st and 2nd quarters of year 1	190 bps	3rd and 4th quarter of year 1, 3rd and 4th quarter of year 5, and for 2 quarters at 10% pool factor
Interest Rate Spikes	**Unlikely**		**Very Unlikely**	
	Spread to T-Bill	**Timing**	**Spread to T-Bill**	**Timing**
CP Rate loans	130 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor	180 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor
Three-month Libor liabilities	260 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor	330 bps	3rd and 4th quarter of year 1, 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor
One-month Libor (monthly reset liabilities)	210 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor	280 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor

If loans are based on one-month Libor				
Interest Rate Spikes	**Most Likely**		**Likely**	
	Spread to T-Bill	**Timing**	**Spread to T-Bill**	**Timing**
One-month Libor loans	125 bps	1st and 2nd quarters of year 1	145 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor
Three-month Libor liabilities	190 bps	1st and 2nd quarters of year 1	230 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor
One-month Libor (monthly reset liabilities)	145 bps	1st and 2nd quarters of year 1	175 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor
Interest Rate Spikes	**Unlikely**		**Very Unlikely**	
	Spread to T-Bill	**Timing**	**Spread to T-Bill**	**Timing**
One-month Libor loans	160 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor	210 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor
Three-month Libor liabilities	260 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor	330 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor
One-month Libor (monthly reset liabilities)	200 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor	260 bps	3rd and 4th quarter of year 1; 3rd and 4th quarter of year 5; for 2 quarters at 10% pool factor

* For securitizations with other (or multiple) liability indices, we will apply the relevant spreads and spikes in Appendix 5

Source: Moody's Investors Service

Appendix 5: Illustrative Interest Rate Spread and Spike Assumptions Where Liabilities Based on Other Indices

The table below provides a list of illustrative interest rate spread and spike assumptions that we may use to model the spreads between the asset and the liability interest rates, for securitization with other (or multiple) liability indices.

EXHIBIT 1

Three-month Libor-Based Liabilities with 91-day T-Bill-Based Assets

Spread Assumptions	Most Likely	Likely	Unlikely	Very Unlikely
Three-month Libor minus 91-day T-bill	70 bps	100 bps	130 bps	150 bps
Spike Assumptions*				
Three-month Libor minus 91-day T-bill	190 bps	230 bps	260 bps	330 bps

* In the Most Likely scenario, the spike occurs in the first six months of the first year. For the Likely, Unlikely and Very Unlikely scenarios, the spikes occur in months 6-12 of the first and fifth year and for the first six months after the 10% pool factor.

Source: Moody's Investors Service

EXHIBIT 2

One-month Libor-Based Liabilities with 91-day T-Bill-Based Assets

Spread Assumptions	Most Likely	Likely	Unlikely	Very Unlikely
One-month Libor minus 91-day T-bill	60 bps	88 bps	117 bps	135 bps
Spike Assumptions*				
One-month Libor minus 91-day T-bill	165 bps	190 bps	210 bps	280 bps

* In the Most Likely scenario, the spike occurs in the first six months of the first year. For the Likely, Unlikely and Very Unlikely Scenarios, the spikes occur in months 6-12 of the first and fifth year and for the first six months after the 10% pool factor.

Source: Moody's Investors Service

EXHIBIT 3

One-year Average of T-Bill-Based Liabilities with 90-day CP-Based Assets

Spread Assumptions	Most Likely	Likely	Unlikely	Very Unlikely
One-year average of T-bill minus 90-day CP	-60 bps	-10 bps	-5 bps	0 bps
Spike Assumptions*				
One-year average of T-bill minus 90-day CP	60 bps	70 bps	80 bps	100 bps

* The spikes are applied in the first six months of the first year for all scenarios.

Source: Moody's Investors Service

EXHIBIT 4

91-day T-Bill-Based Liabilities with 90-day CP-Based Assets

Spread Assumptions	Most Likely	Likely	Unlikely	Very Unlikely
91-day T-bill minus 90-day CP	-65 bps	-15 bps	-10 bps	0 bps
Spike Assumptions				
91-day T-bill minus 90-day CP	None	None	None	None

Source: Moody's Investors Service

EXHIBIT 5

One-year Average of T-Bill-Based Liabilities with One-Month Libor-Based Assets

Spread Assumptions	Most Likely	Likely	Unlikely	Very Unlikely
One-year average of T-bill minus one-month Libor	-60 bps	-10 bps	-5 bps	0 bps
Spike Assumptions*				
One-year average of T-bill minus one-month Libor	60 bps	70 bps	80 bps	100 bps

* The spikes are applied in the first six months of the first year for all scenarios.

Source: Moody's Investors Service

EXHIBIT 6

91-day T-Bill-Based Liabilities with One-Month Libor-Based Assets

Spread Assumptions	Most Likely	Likely	Unlikely	Very Unlikely
91-day T-bill minus one-month Libor	-65 bps	-15 bps	-10 bps	0 bps
Spike Assumptions				
91-day T-bill minus one-month Libor	None	None	None	None

Source: Moody's Investors Service

EXHIBIT 7

SIFMA-Based Liabilities with 90-day CP-Based Assets or 91-day T-Bill Based Assets

	Most Likely	Likely	Unlikely	Very Unlikely
SIFMA Index (as a percentage of three-month Libor)*	70% of 3-month Libor	70% of 3-month Libor	75% of 3-month Libor	85% of 3-month Libor

* Our assumptions for the SIFMA index also apply to the J.J. Kenny/S&P High Grade Weekly index, which is comparable to SIFMA.

Source: Moody's Investors Service

Appendix 6: Scenario Weights

Degree of Likelihood	Interest Rate Level	Stress Type	Weight
Very Unlikely	1%	High Default	0.042%
Very Unlikely	5%	High Default	0.083%
Very Unlikely	9%	High Default	0.042%
Very Unlikely	1%	Low Excess Spread	0.042%
Very Unlikely	5%	Low Excess Spread	0.083%
Very Unlikely	9%	Low Excess Spread	0.042%
Very Unlikely	1%	Slow Repay	0.042%
Very Unlikely	5%	Slow Repay	0.083%
Very Unlikely	9%	Slow Repay	0.042%
Unlikely	1%	High Default	0.250%
Unlikely	5%	High Default	0.500%
Unlikely	9%	High Default	0.250%
Unlikely	1%	Low Excess Spread	0.250%
Unlikely	5%	Low Excess Spread	0.500%
Unlikely	9%	Low Excess Spread	0.250%
Unlikely	1%	Slow Repay	0.250%
Unlikely	5%	Slow Repay	0.500%
Unlikely	9%	Slow Repay	0.250%
Likely	1%	High Default	3.042%
Likely	5%	High Default	6.083%
Likely	9%	High Default	3.042%
Likely	1%	Low Excess Spread	3.042%
Likely	5%	Low Excess Spread	6.083%
Likely	9%	Low Excess Spread	3.042%
Likely	1%	Slow Repay	3.042%
Likely	5%	Slow Repay	6.083%
Likely	9%	Slow Repay	3.042%
Most Likely	Forward Libor	Most Likely	60.00%
		Total	100.00%

Source: Moody's Investors Service

Appendix 7: Modeling Loan Forgiveness

Starting with 2034, add forgiveness percentage to prepayments. To calculate the forgiveness percentage:

1. Multiply the amount of loans in IBR at that time by 1.5%, 1.25%, 1.0% and 0.75% for the Most Likely, Likely, Unlikely and Very Unlikely scenarios, respectively. Because loans in IBR are modeled partially as forbearance and partially as full repayment, gross up the balance of loans in IBR that are modeled as forbearance by dividing that balance by 45% for consolidation and rehabilitated loans and 55% for non-consolidation loans, respectively, to derive the total balance of loans in IBR.
2. Gross up the resulting percentage again by the amount of loans in school, grace, deferment, forbearance to account for the fact that we model prepayments as a percentage of loans in active repayment (i.e., total loan balance minus the balance of loans in school, grace, deferment and forbearance), while IBR is calculated as percentage of loans repayment (i.e., total loan balance minus the balance of loans in school and grace). To accomplish that, divide the percentage derived in step 1 by (1- percent of loans in deferment and forbearance (including loans in IBR modeled as forbearance)).
3. Multiply the resulting percentage by 1.5 times to account for the loans that have been in IBR at any time (i.e., not just at the present time).

Appendix 8: Approach to Rating Securities Backed by Pools of Both FFELP and Private Student Loans

In this appendix, we describe our analytical approach to rating student loan ABS backed by pools consisting of both student loans made under FFELP and PSLs, i.e., loans that do not benefit from US government guarantee (mixed pool securitizations). This appendix does not cover transactions that are backed by pools of exclusively FFELP loans or transactions backed by pools of exclusively PSLs. For such transactions, we will apply our existing approaches for rating securitizations backed by FFELP loans and PSLs, [24] respectively. Our approach to assessing counterparty, operational, and legal risks for mixed pools follows that for FFELP pools. [25]

1. Application of the Approach to Rating Securities Backed by Mixed Pools of Student Loans

The approach combines the two distinct rating approaches that we use to rate FFELP and PSL ABS. The approach to rating PSL ABS includes cash flow modeling using rating-level-specific cash flow scenarios, and the approach to rating FFELP ABS includes the calculation of the expected loss of a security under 28 different scenarios that we use for each security regardless of the rating being sought. We analyze transactions backed by mixed pools of student loans as though they were two separate transactions: one backed by FFELP loans and the other by PSLs.

We analyze the FFELP and PSL pools separately and then give benefit to any cross-collateralization [26] between the pools as follows:

1. Split the mixed pool securitization into two distinct ABS: For the purpose of the modeling, we divide the assets (i.e., the pools of student loans, cash accounts, etc.) and the liabilities (i.e., the securities) of the mixed pool securitization into two separate ABS structures: one FFELP ABS and one PSL ABS, based on the proportion of FFELP loans and PSLs in the mixed pool at the time of the analysis. For the purpose of the modeling, both structures will have identical capital structures and proportionate balances of the outstanding securities, credit enhancement and trust expenses, such as servicing, administration and other fees.
2. Model each of the two ABS separately: We run cash flows for the distinct FFELP-backed ABS and the distinct PSL-backed ABS separately, using our FFELP and PSL ABS methodologies, respectively.
3. Calculate the cash amounts released to the residual holder: First, we calculate the weighted-average amount of cash that the FFELP ABS releases to the residual holder, both at the end of each payment period and after the balance of all of the FFELP securities pays off, using the scenario weights from our FFELP ABS methodology. Second, we calculate the amount of cash that the PSL ABS releases to the residual holder, both at the end of each payment period and after the balance of all the PSL securities pays off. For the PSL calculation, we only track the amount of cash released to the residual holder in the most stressful scenario in which the securities in the PSL ABS pay off. [27]
4. Model cross-collateralization: We replicate the cross-collateralization between FFELP loans and PSLs by reallocating any released amounts calculated in Step 3 from one ABS to the other. More specifically, in the cash flow model we assume that at every period the weighted-average amount of the residual

[24] For more information on our PSL methodology, a link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

[25] For more information, see sections "Operational Risks" and "Legal Risks."

[26] Cross-collateralization occurs when both FFELP loans and PSLs support the same securities.

[27] In most cases, the distinct FFELP ABS will produce excess cash released to the residual holder. In some rare instances, however, the distinct PSL ABS could also generate such cash releases.

cash from the FFELP ABS is deposited to a cash account of the PSL ABS, and the residual cash from the PSL ABS to a cash account of the FFELP ABS.

5. **Rerun the cash flows**: We rerun the cash flow models for both the FFELP and PSL ABS, this time factoring in the cash deposits from Step 4, to determine the model output of the FFELP and PSL ABS.
6. **Calculate weighted-average expected loss for each combined security**: We translate the model output (Step 5) for the FFELP and the PSL ABS into 10-year Idealized Expected Loss Rates. We then take the weighted average of the 10-year Idealized Expected Loss Rates of the PSL and FFELP bonds[28] based on the proportion of FFELP loans and PSLs in the mixed collateral pool.
7. **Determine the model-output for the combined security**: We then map the weighted average expected loss for each security back to a model output using the loss benchmarks referencing the Idealized Expected Loss table using the Standard Asymmetric Range, as described above in the "Loss Benchmarks" section.

2. Determining the Rating through the Rating Committee Process

The output indicated by our quantitative modeling is an important input in our rating committee process. However, the ratings assigned by the rating committee incorporate numerous other factors, such as the following:

- operational risk: the risk of disruption in the transaction's cash flows that could result from a disruption in the operations of a key third party
- counterparty risk
- the legal risk
- transaction structure and whether there is any flexibility with respect to the priority of payments
- any support provided by the sponsor to ensure payment by the final maturity date.

3. Monitoring

We generally apply the key components of the approach described in this report when monitoring mixed pool securitizations, except for those elements of the methodology that are not likely to be changed after closing, such as the legal structure.

In monitoring performance of the outstanding mixed pool securitizations, we regularly review key performance trends of both FFELP and PSL sub-pools based on the updated performance data that we receive on a regular basis, including overcollateralization and excess spread levels. For the PSL sub-pool we review historical delinquency, default and recovery rates, deferment and forbearance percentages. For the FFELP sub-pool we review the deferment, forbearance and IBR usage rates, as well as prepayments, claim reject rates and amortization rates of the underlying pools. We also monitor any changes in the servicing and trust administration functions. We filter out transactions whose performance deviated from our expectations and undertake further in-depth review.

[28] For more information, see the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions*. A link can be found in the "Moody's Related Publications" section.

When undertaking further in-depth review, we perform detailed cash flow analyses to assess whether the ratings of each tranche appropriately represent their credit quality over time.[29] We assess the impact of any operational changes and discuss metrics outside of the expected range and any operational concerns with transaction sponsors.

[29] For example, in methodologies where models are used, modeling is not relevant when it is determined that (1) a transaction is still revolving and performance has not changed from expectations, or (2) all tranches are at the highest achievable ratings and performance is at or better than expected performance, or (3) key model inputs are viewed as not having materially changed to the extent it would change outputs since the previous time a model was run, or (4) no new relevant information is available such that a model cannot be run in order to inform the rating, or (5) our analysis is limited to asset coverage ratios for transactions with undercollateralized tranches, or (6) a transaction has few remaining performing assets.

Moody's Related Publications

Credit ratings are primarily determined through the application of sector credit rating methodologies. Certain broad methodological considerations (described in one or more cross-sector rating methodologies) may also be relevant to the determination of credit ratings of issuers and instruments. A list of sector and cross-sector credit rating methodologies can be found here.

For data summarizing the historical robustness and predictive power of credit ratings, please click here.

For further information, please refer to *Rating Symbols and Definitions*, which includes a discussion of Moody's Idealized Probabilities of Default and Expected Losses, and which is available here.

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