Presale:

Toyota Auto Receivables 2023-D Owner Trust

November 2, 2023

PRIMARY CREDIT ANALYST

Van Thomas
Englewood
+1 3037214211
van.thomas
@spglobal.com

SECONDARY CONTACT

Jennie P Lam
New York
+ 1 (212) 438 2524
jennie.lam
@spglobal.com

Preliminary ratings

Class	Preliminary rating	Type	Interest rate	Preliminary amount (mil. $)	Upsized preliminary amount (mil. $)(i)	Expected legal final maturity date
A-1	A-1+ (sf)	Senior	Fixed	233.0	310.0	Nov. 15, 2024
A-2a/A-2b(ii)	AAA (sf)	Senior	Fixed/floating	468.4	624.6	Nov. 16, 2026
A-3	AAA (sf)	Senior	Fixed	415.8	554.4	Aug. 15, 2028
A-4	AAA (sf)	Senior	Fixed	52.8	71.0	March 15, 2029
B(iii)	NR	Subordinate	Fixed	30.0	40.0	June 17, 2030

Note: This preliminary rating report is based on information as of Nov. 2, 2023. The ratings shown are preliminary. This report does not constitute a recommendation to buy, hold, or sell securities. Subsequent information may result in the assignment of final ratings that differ from the preliminary ratings. (i)The anticipated size of the notes if the aggregate initial principal balance of the notes is $1.6 billion. (ii)The class A-2a and A-2b notes will be issued as fixed- and floating-rate notes, respectively. The initial principal balance allocation between the class A-2a and A-2b notes will be determined on the pricing date. The depositor does not expect the class A-2b initial principal balance to exceed $234.20 million ($312.30 million, if upsized). The class A-2b notes will accrue interest at a floating rate indexed to a compounded SOFR (30-day average) plus a spread. (iii)The class B notes will initially be retained by the depositor and will have a 0% interest rate. NR-–Not rated.

Profile

Expected closing date	Nov. 14, 2023.
Collateral	Prime auto loan receivables.
Originator, sponsor, administrator, and servicer	Toyota Motor Credit Corp. (A+/Stable/A-1+).
Depositor	Toyota Auto Finance Receivables LLC.
Issuer	Toyota Auto Receivables 2023-D Owner Trust.
Indenture trustee	Citibank N.A. (A+/Stable/A-1).
Owner trustee	Wilmington Trust N.A.
Bank account provider	Citibank N.A. (A+/Stable/A-1).

Rationale

S&P Global Ratings' preliminary ratings assigned to Toyota Auto Receivables 2023-D Owner Trust's (TAOT 2023-D) asset-backed notes reflect:

- The availability of approximately 7.9% credit support (hard credit enhancement and excess spread) for the class A notes (A-1, A-2a/A-2b, A-3, and A-4, collectively) based on stressed cash flow scenarios. These credit support levels provide more than our 4.00% minimum credit enhancement level for a 'AAA' rating, as outlined in our global auto criteria (see the Credit Enhancement And Collateral and the Cash Flow Modeling Assumptions And Results sections below).
- The expectation that under a moderate ('BBB') stress scenario (2.0x our expected loss level), all else being equal, our preliminary 'AAA (sf)' ratings on the class A notes will be within the credit stability limits (see the Cash Flow Modeling Assumptions And Results section).
- The timely payment of interest and principal by designated legal final maturity dates under our stressed cash flow modeling scenarios, which we believe are appropriate for the assigned preliminary ratings.
- The collateral characteristics of the securitized pool of prime automobile loans, and our updated macroeconomic forecast and forward-looking view of the auto finance sector (see the Credit Enhancement And Collateral and the Macroeconomic And Auto Finance Sector Outlook sections below).
- The series' bank account at Citibank N.A. (A+/Stable/A-1), which does not constrain the preliminary ratings.
- Our operational risk assessment of Toyota Motor Credit Corp. (Toyota) as servicer and our view of the company's underwriting.
- Our assessment of the transaction's potential exposure to environmental, social, and governance (ESG) credit factors, which are in line with our sector benchmark.
- The transaction's legal and payment structures.

Our expected cumulative net loss (ECNL) for TAOT 2023-D is 0.60%, unchanged from TAOT 2023-C, the last TAOT transaction we rated. It reflects:

- Our view that TAOT 2023-D's collateral characteristics are generally consistent with that of TAOT 2023-C;
- Toyota's outstanding series, which continue to perform in line with or better than our initial expectations; and
- Our forward-looking view of the auto finance sector.

Environmental, Social, And Governance

Our rating analysis considers a transaction's potential exposure to ESG credit factors. For the auto ABS sector, we view the exposure to environmental credit factors as above average, to social credit factors as average, and to governance credit factors as below average (see "ESG Industry Report Card: Auto Asset-Backed Securities," published March 31, 2021).

The exposure to ESG credit factors in this transaction is in line with our sector benchmark. Exposure to environmental credit factors is generally viewed as above average, given that the collateral pool primarily comprises vehicles with internal combustion engines (ICEs), which emit pollutants that contribute to climate transition risks. While the adoption of electric vehicles and future regulation could in time lower ICE vehicle values, we believe that our current approach to evaluating recovery and residual values adequately accounts for vehicle values over the transaction's relatively short expected life. As a result, we have not separately identified this as a material ESG credit factor in our analysis.

Credit Enhancement And Collateral

Structural changes from TAOT 2023-C

Notable changes to credit enhancement compared to TAOT 2023-C include:

- The required yield supplement overcollateralization amount (YSOA) rate increased to 10.00% from 9.65%.
- The initial YSOA as a percentage of the initial adjusted pool balance decreased to 10.87% (10.89% if upsized) from 11.35%.

Table 1 shows the credit enhancement changes from recent transactions.

Table 1

Credit enhancement summary

	TAOT			
	2023-D	2023-C	2023-B(i)	2023-A
Subordination (%)(ii)				
Class A	2.50	2.50	2.50	2.50
Class B	0.00	0.00	0.00	0.00
Overcollateralization (%)(ii)				
Initial	0.00	0.00	0.00	0.00
Target	0.85	0.85	0.85	0.85
Floor	0.85	0.85	0.85	0.85
Reserve (%)(ii)				
Initial	0.25	0.25	0.25	0.25
Target	0.25	0.25	0.25	0.25
Floor	0.25	0.25	0.25	0.25
Total initial hard credit enhancement (%)(ii)				
Class A	2.75	2.75	2.75	2.75
Class B	0.25	0.25	0.25	0.25
YSOA (%)(ii)(iv)	10.87	11.35	12.25	13.35
Estimated annual excess spread (%)(iii)(iv)	3.28	3.28	3.49	3.47
Initial aggregate gross principal balance ($)(iv)	1,330,458,598	1,336,385,979	1,795,999,450	1,813,667,858
YSOA ($)(iv)	130,453,234	136,383,831	195,999,431	213,667,857
Initial adjusted receivables balance ($)(iv)	1,200,005,364	1,200,002,148	1,600,000,020	1,600,000,000
Initial overcollateralization ($)	5,364	2,148	20	0

Table 1

Credit enhancement summary (cont.)

	TAOT			
	2023-D	2023-C	2023-B(i)	2023-A
Total securities issued ($)	1,200,000,000	1,200,000,000	1,600,000,000	1,600,000,000

(i)Not rated by S&P Global Ratings. (ii)Percentage of the initial adjusted pool balance. (iii)Includes the 1.00% servicing fee. Annual excess spread is adjusted for yield supplement overcollateralization. For comparison purposes, the estimated annual excess spread shown here is pre-pricing. (iv)If the issued TAOT 2023-D notes' aggregate initial principal amount is $1.6 billion, the YSOA percentage of the initial adjusted pool balance will be 10.89%, the estimated annual excess spread will be 3.28%, the initial aggregate receivables pool balance will be $1,774,239,151, the initial YSOA will be $174,236,247, and the initial adjusted pool balance will be $1,600,002,904. TAOT--Toyota Auto Receivables Owner Trust. YSOA--Yield supplement overcollateralization amount.

Collateral changes from TAOT 2023-C

Notable changes to collateral composition compared with TAOT 2023-C include:

- The weighted average annual percentage rate (APR) increased to 5.11% (5.10% if upsized) from 4.64%.
- The percentage of loans with an original term of 61-72 months decreased slightly to 62.64% (62.61% if upsized) from 63.31%.
- The weighted average seasoning of the pool increased to 11.06 months (11.07 months is upsized) from 10.63 months.
- The percentage of loans backed by new vehicles increased to 82.51% (82.62% if upsized) from 81.25%.

Overall, we believe the series TAOT 2023-D and TAOT 2023-C collateral pools are generally comparable (see table 2).

Table 2

Collateral comparison(i)

	TAOT					
	2023-D	2023-D (if upsized)	2023-C	2023-B(ii)	2023-A	2022-D(ii)
Receivables balance (mil. $)	1,330.46	1,774.24	1,781.68	1,796.00	1,813.67	1,807.59
No. of receivables	49,059	65,406	65,736	67,500	69,360	68,972
Avg. loan balance ($)	27,120	27,127	27,104	26,607	26,149	26,208
WA APR (%)	5.11	5.10	4.64	4.05	3.64	3.44
WA original term (mos.)	65.78	65.78	66.03	66.01	66.50	67.15
WA remaining term (mos.)	54.72	54.72	55.40	55.38	56.20	56.75
WA seasoning (mos.)	11.06	11.07	10.63	10.63	10.30	10.40
WA FICO score	767	767	766	765	766	765
Borrowers with FICO score greater than 700 (%)	83.85	83.72	83.65	83.49	83.53	83.14
Original term 61-72 mos. (%)	62.64	62.61	63.31	62.35	63.10	65.50
New vehicles (%)	82.51	82.62	81.25	81.28	79.06	78.44

Table 2

Collateral comparison(i) (cont.)

	TAOT					
	2023-D	2023-D (if upsized)	2023-C	2023-B(ii)	2023-A	2022-D(ii)
Used vehicles (%)	17.49	17.38	18.75	18.72	20.94	21.56
Top five state concentrations (%)						
	CA=21.21	CA=21.26	CA=23.59	CA=25.24	CA=26.46	CA=27.29
	TX=15.31	TX=15.28	TX=14.89	TX=14.61	TX=13.30	TX=13.09
	PA=4.16	PA=4.12	PA=4.03	IL=4.15	PA=4.35	PA=4.09
	IL=4.04	IL=4.05	IL=3.91	PA=4.12	IL=4.00	IL=3.83
	MD=3.79	MD=3.79	NJ=3.62	MD=3.62	NJ=3.81	VA=3.57

(i)All percentages are of the initial receivables balance. (ii)Not rated by S&P Global Ratings. TAOT--Toyota Auto Receivables Owner Trust. WA--Weighted average. APR--Annual percentage rate.

We also compared the TAOT 2023-D collateral pool with other recent peer transactions within the prime auto loan sector that have similar ECNL ranges (see table 3).

Table 3

Collateral peer comparison(i)

	TAOT 2023-D	TAOT 2023-D (if upsized)	BMWOT 2023-A	HAROT 2023-3
Receivables balance (mil. $)	1,330.46	1,774.24	1,670.09	1889.36
No. of receivables	49,059	65,406	45,857	84,946
Avg. principal balance ($)	27,120	27,127	36,420	22,242
Avg. APR (%)	5.11	5.10	4.37	4.00
Avg. original term (mos.)	65.78	65.78	64.56	61.62
Avg. remaining term (mos.)	54.72	54.72	51.78	49.25
Avg. seasoning (mos.)	11.06	11.07	12.78	12.36
Loans with original term greater than 60 mos. (%)	62.64	62.61	45.66	39.12
Maximum original loan term (mos.)	72	72	72	72
New vehicles (%)	82.51	82.62	80.52	85.71
Used vehicles (%)	17.49	17.38	19.48	14.29
Weighted avg. FICO score	767	767	787	769
Minimum FICO score	620	620	601	--
Top three state concentrations (%)				
	CA=21.21	CA=21.26	CA=18.14	CA=17.29
	TX=15.31	TX=15.28	TX=12.21	TX=9.88
	PA=4.16	PA=4.12	FL=10.54	PA=7.44

Table 3

Collateral peer comparison(i) (cont.)

	TAOT 2023-D	TAOT 2023-D (if upsized)	BMWOT 2023-A	HAROT 2023-3
Initial ECNL (%)	0.60	0.60	0.55	0.55

(i)All percentages are of the initial gross receivables balance. TAOT--Toyota Auto Receivables Owner Trust. BMWOT--BMW Vehicle Owner Trust. HAROT--Honda Auto Receivables Owner Trust. APR--Annual percentage rate. ECNL--Expected cumulative net loss.

The TAOT 2023-D pool has strong collateral characteristics, in our view. Compared to the Honda Auto Receivables 2023-3 Owner Trust pool and BMW Vehicle Owner Trust 2023-A, TAOT 2023-D has a higher percentage of loans with original terms greater than 60 months.

Macroeconomic And Auto Finance Sector Outlook

In our analysis, we considered the economic data and forecasts outlined in table 4, and their baseline effect on collateral credit quality in determining our base-case expected loss level. Historically, changes in the unemployment rate have been a key determinant of charge-offs in the auto finance industry.

U.S. economic data has been coming in stronger than expected, thus suggesting that an ever-elusive soft landing is still possible. Better-than-expected growth has led us to revise our U.S. GDP forecast for 2023 upwards by 0.5 percentage points to 2.3%. However, we believe the current momentum is unsustainable as the 10-year Treasury yield and the 30-year mortgage rate have recently risen to levels not seen since before the Great Financial Crisis (GFC) of 2008, and COVID-19 pandemic-related excess savings have been largely depleted. With higher interest rates, increases in house prices, and higher prices for new and used automobiles, recent and new debt origination, coupled with the resumption of student-loan payments, will put upward pressure on debt service ratios and negatively affect consumer spending. As such, we see growth slowing to 1.3% in 2024 and 1.4% in 2025, before converging to trend-like growth of 1.8% in 2026 (after multiple rate cuts in 2025 and 2026).

Given the usual lags between GDP growth and unemployment levels, we don't expect a significant deterioration in labor markets until 2024. With growth expected to slow below trend after 2023, we forecast the unemployment rate rising to an average of 4.1% in 2024 and 4.7% in 2025 (see "Economic Outlook U.S. Q4 2023: Slowdown Delayed, Not Averted," published Sept. 25, 2023).

Separately, inflation and the expected increase--albeit slow--in the broader consumer financial obligations' payment ratio as a percent of disposable income, with the resumption of student loan payments in October 2023, are potential headwinds. While the CPI has declined significantly since 2022, energy prices have jumped recently and have had a disproportion impact on those with lower incomes. In addition, it is estimated that 24 million borrowers whose student loan payments were suspended at the onset of the pandemic will resume payments in October with an average monthly payment of approximately $300. According to TransUnion, approximately one-third of consumers with student loan debt took on new auto loan debt during the pandemic. The added student debt payment will be burdensome for consumers who are financially stressed, which could negatively impact auto loan ABS performance. However, we believe, based on past economic cycles, that consumers for whom the vehicle is essential for work will continue to prioritize their auto loan and lease payments before their other consumer and student loan payments.

In the auto market, as new vehicle supply imbalances continue to ease and borrowing rates continue to rise, we would expect used vehicle values to normalize to historical levels.

Table 4

U.S. economic factors

	Actual	Forecast			
	2022	2023	2024	2025	2026
Real GDP (% year-over-year growth)	2.1	2.3	1.3	1.4	1.8
Unemployment rate (annual average, %)	3.6	3.6	4.1	4.7	4.8
Consumer Price Index (annual average, %)	8.0	4.1	2.4	1.9	2.3

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, and S&P Global Ratings Economics forecasts.

S&P Global Ratings' Expected Loss: 0.60%

We determined our expected loss for TAOT 2023-D by analyzing:

- The transaction's collateral characteristics relative to those of outstanding series (see table 2 above);
- The managed portfolio performance and origination static pool data and their relative performances (see table 5 below); and,
- The outstanding series' performance (see table 6 and charts 1 and 2).

Given Toyota's established performance track record as a consistent issuer, we placed more emphasis on the outstanding series' performance when determining the expected loss for this series. We complemented this analysis with our forward-looking view of the economy and the auto finance sector (see the Macroeconomic And Auto Finance Sector Outlook section above).

Overall, we expect TAOT 2023-D to experience lifetime cumulative net losses (CNLs) of 0.60%, which is in line with our initial ECNL expectation of 0.60% for TAOT 2023-C.

Managed Portfolio

As of June 30, 2023, Toyota's retail managed portfolio increased to approximately $74.21 billion from $68.97 billion in 2022 (see table 5). We believe Toyota's current managed portfolio exhibits slightly worse performance than pre-pandemic levels. Total delinquencies increased to 2.46% as of June 30, 2023, from 1.97% a year earlier. Toyota attributed increasing delinquencies to the overall rise in the monthly payments due to higher vehicle prices and increased borrowing costs.

Net losses as a percentage of the average principal loan balance outstanding as of June 30, 2023, increased to 0.54% from 0.41% a year earlier. Repossessions as a percentage of the average number of contracts outstanding increased to 1.38% as of June 30, 2023, from 0.89% a year earlier. Toyota attributed the rise in the net losses to an increase in used vehicle financing and higher average amounts financed.

Toyota's securitizations since 2010, including TAOT 2023-D, generally consist of higher-quality loans than those of the overall managed portfolio. The TAOT securitizations are characterized by a minimum FICO score of 620 and exclude any loans with an original term greater than 72 months.

Table 5

Managed portfolio

	As of June 30		Fiscal year ended March 31				
	2023	2022	2023	2022	2021	2020	2019
Principal amount outstanding (bil. $)	74.206	68.974	72.573	67.146	62.833	56.266	53.236
No. of contracts outstanding	3,410,113	3,306,800	3,382,927	3,267,466	3,237,181	3,142,143	3,097,464
Avg. principal amount outstanding (bil. $)	73.390	68.060	69.860	64.990	59.549	54.751	52.998
Avg. no. of contracts outstanding	3,396,520	3,287,133	3,325,197	3,252,324	3,189,662	3,119,804	3,127,920
Delinquencies (% of contracts outstanding)							
30-59 days	1.54	1.27	1.50	1.25	0.85	1.28	1.24
60-89 days	0.51	0.39	0.45	0.33	0.22	0.37	0.31
More than 89 days	0.41	0.30	0.42	0.32	0.26	0.39	0.27
Total 30-plus days	2.46	1.97	2.37	1.89	1.33	2.04	1.82
Repossessions (% of the avg. no. of contracts outstanding)	1.38	0.89	1.08	0.87	0.89	1.12	1.14
Recoveries ($000s)	26,208	13,431	58,752	54,989	47,917	49,191	48,871
Net losses (% of avg. principal amount outstanding)	0.54	0.41	0.63	0.26	0.39	0.55	0.52

Origination Static Pool Analysis

To derive the base-case expected loss for TAOT 2023-D, we reviewed Toyota's origination static pool data, as well as the performance of Toyota's securitized pools. We also reviewed Toyota's managed pool performance and the deal-level collateral characteristics. We then compared our expected loss level for the TAOT 2023-D pool with our projections for Toyota's peers to verify that the loss range remained appropriate, given the relevant differences across the issuers and their pools.

TAOT Transaction Performance

Toyota has completed over 40 TAOT securitizations. S&P Global Ratings currently rates 11 of the 15 outstanding TAOT transactions. The paid-off 2016–2019 TAOT transactions experienced lifetime CNLs of 0.23%-0.45%.

On Dec. 12, 2022, we revised and lowered our CNL expectations for 11 TAOT transactions (2019-A, 2019-B, 2019-C, 2019-D, 2020-A, 2020-B, 2020-C, 2020-D, 2021-B, 2021-C, and 2021-D) due to stronger-than-expected performance (see "Ratings Affirmed On 29 Classes From 12 Toyota Auto Receivables Owner Trust Transactions").

On July 28, 2023, we maintained our CNL expectations for TAOT 2022-B and 2022-C (see "Ratings Affirmed On Eight Classes From Two Toyota Auto Receivables Owner Trust Transactions," published July 28, 2023). Although these transactions' performance is trending worse than those of earlier outstanding series, it remains in line with our original CNL expectations (see table 6).

We believe the rated classes all currently have adequate credit enhancement at their current rating levels. We will continue to monitor the outstanding transactions' performance to ensure that the credit enhancement remains sufficient, in our view, to cover our revised CNL expectations under our stress scenarios for each rated class.

Chart 1

TAOT 2010-2019 paid-off securitized pools--cumulative net losses

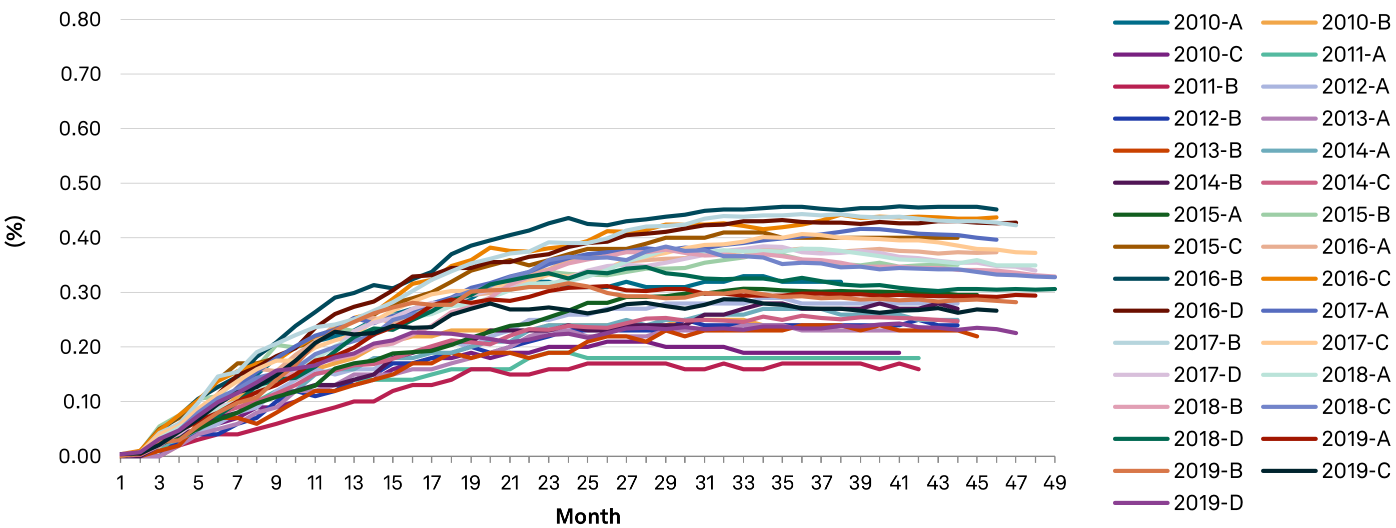
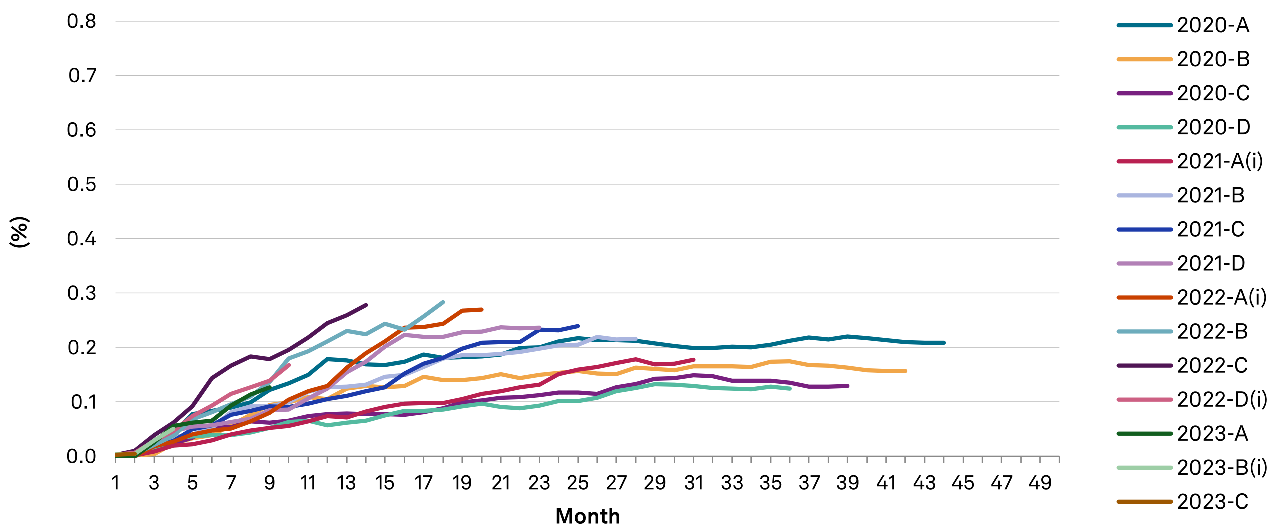


Chart 2

TAOT 2020-2023 outstanding securitized pools--cumulative net losses



(i)Not rated by S&P Global Ratings

Chart 3

TAOT 2010-2019 paid-off securitized pools--cumulative recovery rates

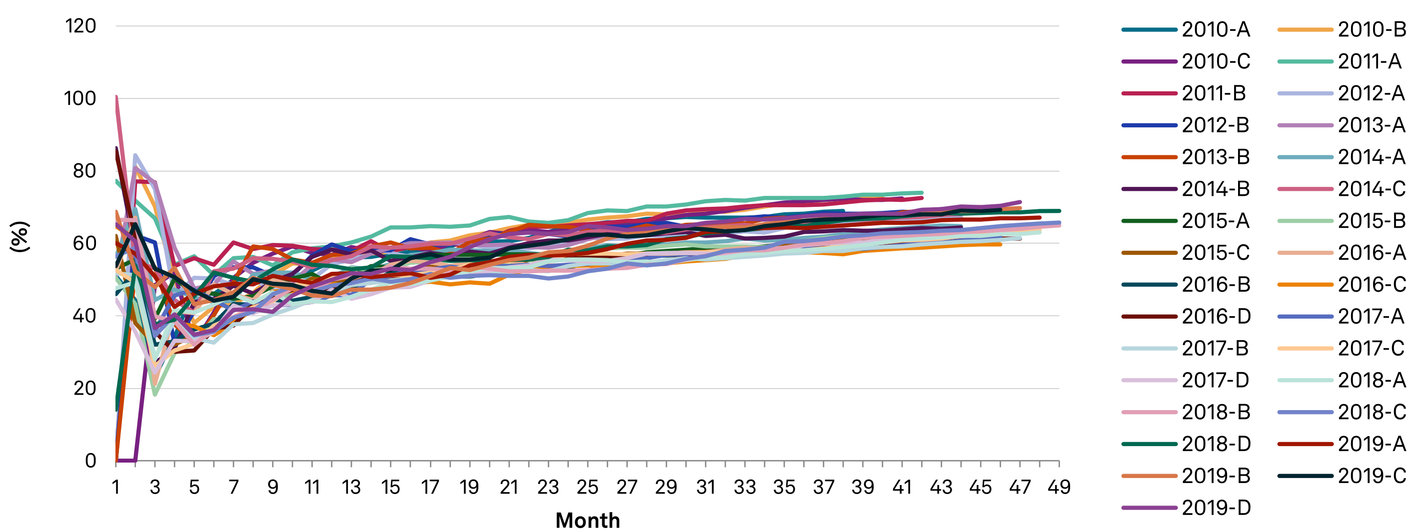
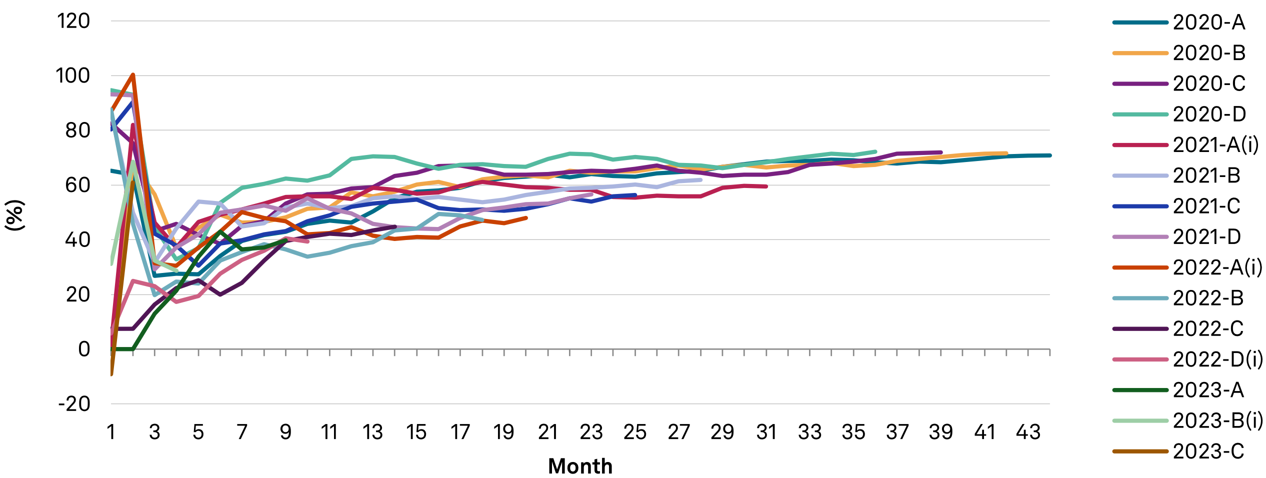


Chart 4

TAOT 2020-2023 outstanding securitized pools--cumulative recovery rates



(i)Not rated by S&P Global Ratings

Table 6

Collateral performance(i)

Series	Month	Pool factor (%)	Current CNL (%)	60-plus-day delinquency (%)	Original lifetime expected CNL (%)	Revised lifetime expected CNL (%)(ii)
2020-A	44	6.54	0.21	0.61	0.55-0.65	0.30
2020-B	42	8.56	0.16	0.64	0.90-1.10	0.30
2020-C	39	10.95	0.13	0.48	0.90-1.10	0.30
2020-D	36	13.57	0.12	0.43	0.90-1.10	0.30
2021-A(iii)	31	22.38	0.18	0.31	N/A	N/A
2021-B	28	28.60	0.22	0.42	0.70-0.80	0.50
2021-C	25	35.04	0.24	0.36	0.60-0.70	0.50
2021-D	23	39.49	0.24	0.38	0.60-0.70	0.50
2022-A(iii)	20	45.67	0.27	0.40	N/A	N/A
2022-B	18	50.37	0.28	0.40	0.55-0.65	0.60
2022-C	14	60.90	0.28	0.40	0.55-0.65	0.60
2022-D(iii)	10	70.72	0.17	0.34	N/A	N/A
2023-A	9	73.04	0.13	0.31	0.60	N/A
2023-B(iii)	4	85.49	0.05	0.18	N/A	N/A
2023-C	2	91.31	0.00	0.16	0.60	N/A

(i)Performance data for outstanding TAOT transactions as of the October 2023 distribution date. (ii)Net losses for TAOT 2019-D through 2021-D revised in December 2022. Net losses for TAOT 2022-B and 2022-C revised in July 2023. (iii)Not rated by S&P Global Ratings. CNL--Cumulative net loss. N/A--Not applicable.

Legal Overview And Transaction Structure

Legal overview

In rating this transaction, S&P Global Ratings will review the legal matters it believes are relevant to its analysis, as outlined in its criteria.

The TAOT 2023-D transaction is structured as a true sale of the receivables from Toyota (the originator and sponsor) to Toyota Auto Finance Receivables LLC (the depositor), which in turn will sell the receivables as a true sale to TAOT 2023-D, the issuer. TAOT 2023-D will then pledge the rights to the receivables to the indenture trustee for the noteholders' benefit. TAOT 2023-D will issue approximately $1.17 billion of class A notes and $30.00 million of class B notes. If the initial notes' aggregate balance is upsized to $1.60 billion, TAOT 2023-D will issue approximately $1.56 billion of class A notes and $40.0 million of class B notes.

Transaction structure

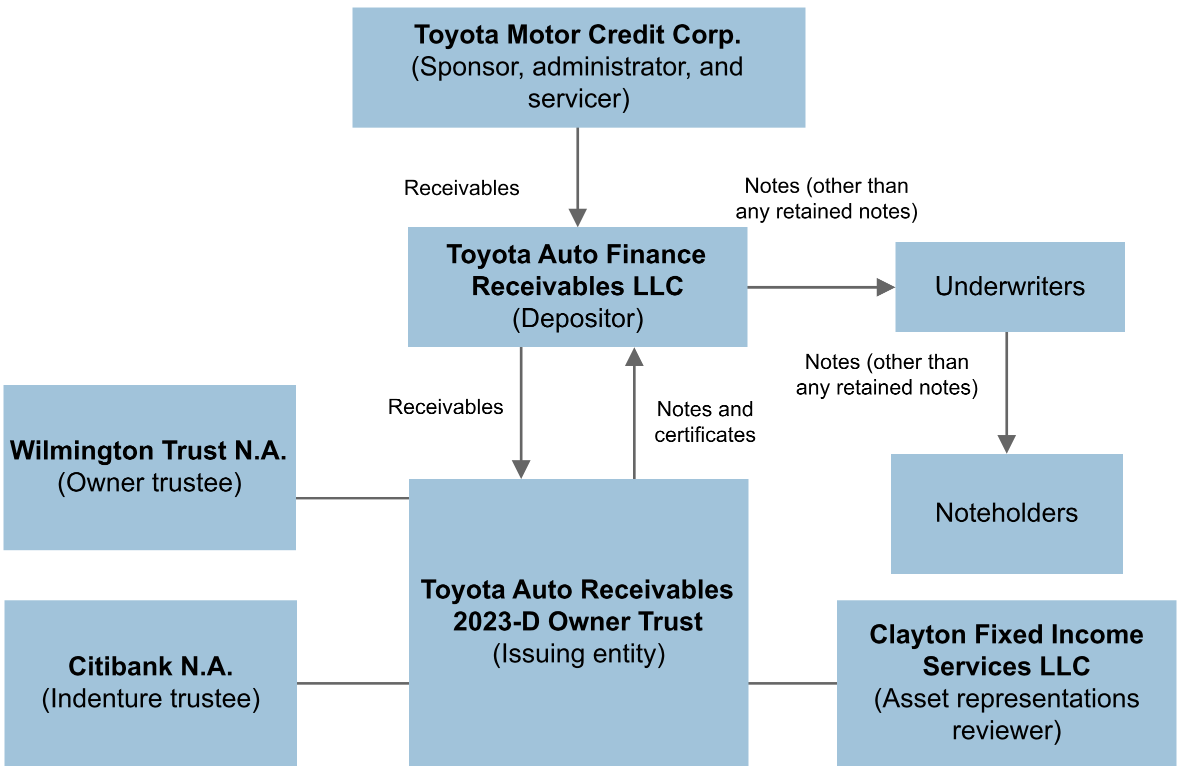
The TAOT 2023-D transaction incorporates certain structural features:

- A sequential-pay mechanism that results in increased credit enhancement for the senior notes as the pool amortizes.
- A 0% interest rate on the class B notes.
- Overcollateralization (net of YSOA) that initially equals zero, which we expect to grow to a target of 0.85% of the initial adjusted pool balance and remain at this level.
- A fully funded nonamortizing reserve fund that will equal 0.25% of the initial adjusted pool balance.
- A dynamic YSOA that initially comprises approximately 10.87% (10.89% if upsized) of the adjusted pool balance and will be calculated each month as the pool amortizes, based on the difference between the aggregate receivables balance outstanding and the present value of the receivables balance, discounted at the greater of 10.00% per year or the receivables' actual APR. The YSOA is sized so that the yield on the contracts with APRs below the 10.00% YSOA-required rate is raised to the required rate.
- Excess spread, to the extent available after covering net losses, which pays principal on the outstanding notes to build credit enhancement to the target level.

Toyota will issue $1.2 billion ($1.6 billion if upsized) of class A and B sequential-pay notes. The class A notes, which will total approximately $1.17 billion ($1.56 billion if upsized), will receive principal sequentially. Class B will initially be retained. We expect the principal and interest payments on the TAOT 2023-D notes to begin on Dec. 15, 2023, with subsequent payments on the 15th day or the next succeeding business day of each month. The class A notes will be paid a fixed rate of interest, except for the class A-2b notes, which will receive a floating spread tied to the 30-day average compounded SOFR.

Chart 5

Transaction structure



Payment Priority

Interest and principal are scheduled to be paid on the rated notes on each monthly distribution date, beginning Dec. 15, 2023. The funds in the reserve account are intended to cover interest shortfalls, make priority principal payments, and make principal payments at the notes' final maturity dates. Distributions will be made from available funds in the priority shown in table 7.

Table 7

Payment waterfall

Priority	Payment
1	Servicing fee to the servicer.
2	Transaction fees and expenses to the indenture trustee, the owner trustee, and the asset representations reviewer in an aggregate amount that does not exceed $300,000 in any calendar year.
3	Accrued and unpaid interest, pro rata, to the class A noteholders.

Table 7

Payment waterfall (cont.)

Priority	Payment
4	Principal payments sequentially in the amount of the first-priority principal distribution, which is the excess of the class A notes' outstanding principal over the receivables principal balance minus the YSOA (the adjusted pool balance) to the class A noteholders.
5	Accrued and unpaid interest to the class B noteholders(i).
6	Principal payments sequentially in the amount of the second-priority principal distribution, which is the excess of the class A and B notes' outstanding principal over the receivables principal balance minus the YSOA (the adjusted pool balance) minus the first-priority principal distribution amount to the class A and B noteholders.
7	Reserve account payments until the specified reserve account balance is reached.
8	Principal payments sequentially in the amount of the regular principal distribution, which is the excess of the outstanding principal note balances over the adjusted receivables principal balance minus the target overcollateralization amount minus the sum of the first- and second-priority principal distribution amounts to the class A and B noteholders.
9	Any unpaid fees, expenses, and indemnification amounts due to the indenture trustee, the owner trustee, and the asset representations reviewer.
10	Any remaining amounts to the certificateholder.

(i)The class B notes interest rate is 0.00%. YSOA--Yield supplement overcollateralization amount.

Cash Flow Modeling Assumptions And Results

In our cash flow analysis, we assess the availability of asset cash flows to meet the transaction's promised obligations under a variety of stress assumptions, while considering the transaction structure and available credit support. We also use our cash flow analysis in other aspects of our ratings analysis, including the testing of credit stability (sensitivity analysis) and legal final analysis.

In a stressed scenario, liquidity risk could arise due to interest shortfalls from the yield on the loans being lower than the yield on the bonds (negative carry risk). This could occur because the bonds pay sequentially, leading to higher-coupon debt remaining outstanding at the tail end of the transaction. In this transaction, negative carry risk is being addressed through the YSOA.

Break-even analysis

For the TAOT 2023-D transaction structure, we used a bifurcated-pool method and applied the assumptions outlined in table 8 in our cash flow analysis to simulate stress scenarios that we believe are appropriate for the assigned preliminary ratings. To assign a rating to a class, we consider the class's lower break-even level (the maximum net losses the class can withstand without defaulting) and generally expect it to be equal to or greater than the rating stressed scenario break-even requirement.

Under this approach, we bifurcated the pool between low-APR loans (underwater) and high-APR loans (above-water) using an APR of 5%, and applied different prepayment and default assumptions between the two pools. For above-water loans (those with APRs of 5% and greater), we ran faster voluntary prepayments, disproportionately higher losses, and faster loss timing than for the underwater loans (those with APRs of less than 5%). Conversely, we ran a slower voluntary prepay speed, disproportionately lower losses, and slower loss timing on the low-APR loans.

These combined assumptions caused the weighted average APR of the pool to decrease faster over time and increases the likelihood that the YSOA will be used for yield enhancement rather than credit enhancement, thus decreasing the break-even levels.

For the class A-2b floating-rate tranche, we applied our stressed interest rates for one-month SOFR, as described in our criteria and corresponding guidance "Methodology To Derive Stressed Interest Rates In Structured Finance," published Oct. 18, 2019. We modeled the maximum potential size of the class A-2b note balance (up to 75.00% of the class A-2 notes) indexed to SOFR.

Our criteria establish rating-specific minimum credit enhancement levels based on our view that there are limits on the predictability of auto receivable performance. For 'AAA' ratings, the minimum level is 4.0%, of which 2.5% must be in the form of hard credit support. In our stressed cash flow scenarios for the transaction, we assessed the level of available credit enhancement relative to the minimum required.

Based on our stressed cash flows, the break-even net loss results show that the class A notes are credit-enhanced to the degree appropriate for the assigned preliminary ratings (see table 9).

Table 8

Break-even cash flow assumptions

Servicing fee (%)	1.00
Recovery rate (%)	50.00
Charge-off and recovery lag (mos.)	4
Bifurcated pool (%)	
Underwater APR(i)	61
Above-water APR(i)	39
Loss allocation (% of total losses)	
Underwater APR	50.00
Above-water APR	50.00
Voluntary ABS (%)	
Underwater APR	0.25
Above-water APR	1.50
CNL timing mos. (12/24/36/48/60) (%)	
Underwater APR	35/70/85/100
Above-water APR	55/90/100

(i)For cash flow modeling purposes, we applied a low-APR/high-APR cutoff of 5.00%. APR--Annual percentage rate. ABS--Absolute prepayment speed. CNL--Cumulative net loss.

Table 9

Break-even cash flow results

Class	A-1/A-2a/A-2b/A-3/A-4
Preliminary rating	A-1+/AAA (sf)
CNL timing mos. (12/24/36/48/60)(%)	
Aggregate	46/82/94/100

Table 9

Break-even cash flow results (cont.)

Underwater APR(i)	37/73/88/100
Above-water APR(i)	55/90/100
Approx. break-even CNL rate (%)(ii)	7.9

(i)The low-APR/high-APR cutoff is 5.0%. (ii)The maximum cumulative net losses on the pool that the transaction can withstand without triggering a payment default on the class A notes. CNL--Cumulative net loss. APR--Annual percentage rate.

Sensitivity analysis

In addition to running break-even cash flows, we undertook sensitivity analyses using the assumptions in table 8 above. We believe that under a moderate ('BBB') stress scenario (2.0x our minimum 'B' credit enhancement level, based on 0.80% ECNL) and with 100% credit to any excess spread, all else being equal, our preliminary ratings will be within the credit stability limits specified in section A.4 of the Appendix in "S&P Global Ratings Definitions," published June 9, 2023 (see table 8 and chart 4 above). The 0.80% implied ECNL is based on our 4.00% minimum credit enhancement level for a 'AAA' rating, as outlined in our auto criteria (see "Global Auto ABS Methodology And Assumptions," published March 31, 2022).

Table 10

Credit stability as a limiting factor on ratings

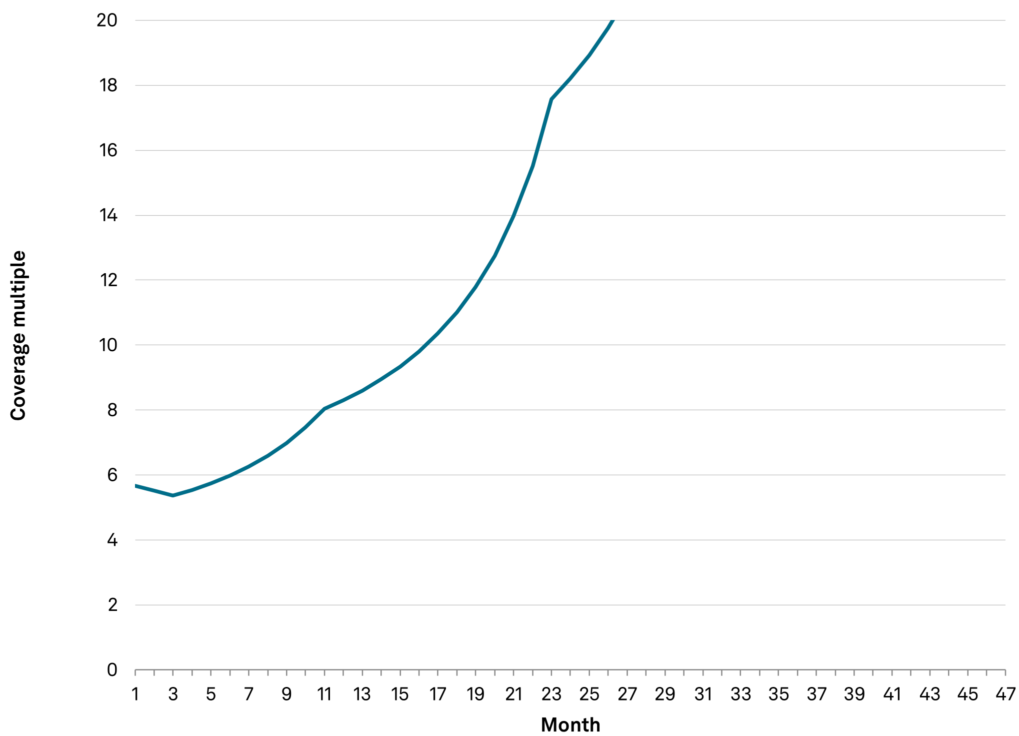
Maximum projected deterioration(i) associated with rating levels for one-year and three-year horizons under moderate stress conditions

	AAA	AA	A	BBB	BB	B
One year	AA	A	BB	B	CCC	D
Three years	BBB	BB	B	CCC	D	D

(i)These credit-quality transitions do not reflect our view of the expected degree of deterioration that rated issuers or obligations could experience over the specified time horizons, nor do they reflect the typical historical levels of deterioration among rated issuers and securities.

Chart 6

'BBB' sensitivity loss coverage multiples



Money Market Tranche Sizing

The proposed legal final maturity date for the money market tranche (class A-1) is Nov. 15, 2024. To test whether the money market tranche can be repaid by the proposed legal final maturity date, we ran cash flows using assumptions to delay the principal collections during that time period. We assumed zero defaults, and we saw that the money market tranche would be paid off in full before the legal final maturity date, assuming a zero absolute prepayment speed for the underwater collateral and 0.50% absolute prepayment speed for the above-water collateral.

Legal Final Maturity

To test the legal final maturity dates proposed for the class A-1, A-2a, A-2b, A-3, and A-4 notes, we determined the dates on which the respective notes were fully amortized in a zero-loss, zero-prepayment scenario, and then added three months to the result. For the longest-dated security (class B), at least 12 months were added to the tenor of the longest receivable in the pool to accommodate potential extensions on the receivables. Furthermore, in our break-even cash flow scenario for each respective preliminary rating level, we confirmed that there was sufficient credit enhancement to both cover losses and repay the related notes in full by the legal final maturity date.

Toyota

Toyota Motor Credit Corp. was incorporated in California in 1982 and began operating in 1983. It is owned by Toyota Financial Services International Corp., a California corporation that is a wholly owned subsidiary of Toyota Financial Services Corp., a Japanese corporation that is a wholly owned subsidiary of Toyota Motor Corp., another Japanese corporation. Toyota Financial Services manages Toyota Motor Corp.'s worldwide finance operations.

Related Criteria

- Criteria | Structured Finance | ABS: Global Auto ABS Methodology And Assumptions, March 31, 2022
- General Criteria: Environmental, Social, And Governance Principles In Credit Ratings, Oct. 10, 2021
- Criteria | Structured Finance | General: Global Framework For Payment Structure And Cash Flow Analysis Of Structured Finance Securities, Dec. 22, 2020
- Criteria | Structured Finance | General: Methodology To Derive Stressed Interest Rates In Structured Finance, Oct. 18, 2019
- Criteria | Structured Finance | Legal: U.S. Structured Finance Asset Isolation And Special-Purpose Entity Criteria, May 15, 2019
- Criteria | Structured Finance | General: Counterparty Risk Framework: Methodology And Assumptions, March 8, 2019
- Criteria | Structured Finance | General: Incorporating Sovereign Risk In Rating Structured Finance Securities: Methodology And Assumptions, Jan. 30, 2019
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- Criteria | Structured Finance | General: Global Framework For Assessing Operational Risk In Structured Finance Transactions, Oct. 9, 2014
- General Criteria: Global Investment Criteria For Temporary Investments In Transaction Accounts, May 31, 2012
- General Criteria: Principles Of Credit Ratings, Feb. 16, 2011
- Criteria | Structured Finance | General: Methodology For Servicer Risk Assessment, May 28, 2009

Related Research

- U.S. Auto Loan ABS Tracker: August 2023 Performance, Oct. 12, 2023
- Economic Outlook U.S. Q4 2023: Slowdown Delayed, Not Averted, Sept. 25, 2023
- Credit Conditions North America Q4 2023: Shift To Low Gear, Sept. 26, 2023
- Ratings Affirmed On Eight Classes From Two Toyota Auto Receivables Owner Trust Transactions, July 28, 2023

- Toyota Motor Corp., April 3, 2023
- Ratings Affirmed On 29 Classes From 12 Toyota Auto Receivables Owner Trust Transactions, Dec. 12, 2022