S&P Global
Ratings

Research

Presale:

Hyundai Auto Receivables Trust 2023-C

October 30, 2023

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Preliminary ratings

Class	Preliminary rating	Type	Interest rate	Base amount (mil. $)(i)	Upsize amount (mil. $)(i)	Legal final maturity
A-1	A-1+ (sf)	Senior	Fixed	239.00	293.00	Nov. 15, 2024
A-2-A/A-2-B(ii)	AAA (sf)	Senior	Fixed/floating(ii)	511.82	627.42	Jan. 15, 2027
A-3	AAA (sf)	Senior	Fixed	450.62	552.42	Oct. 16, 2028
A-4	AAA (sf)	Senior	Fixed	61.18	75.00	Dec. 17, 2029
B	AA+ (sf)	Subordinate	Fixed	24.52	30.06	Dec. 17, 2029
C	AA (sf)	Subordinate	Fixed	40.86	50.10	June 17, 2030

Note: This presale report is based on information as of Oct. 30, 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)Hyundai Capital America (HCA), or an affiliate thereof, may initially retain all or a portion of one or more classes of notes. (ii)At closing, the class A-2 notes may be split into a fixed-rate class A-2-A and a floating-rate class A-2-B. The sizes of these classes will be determined at pricing, although the principal balance of the class A-2-B notes, if issued, may not exceed 50.00% of the aggregate principal balance of the class A-2 notes. The class A-2-B interest rate will be a floating rate indexed to compounded SOFR plus a margin (to be determined).

Profile

Collateral	Prime auto loan receivables.
Issuer	Hyundai Auto Receivables Trust 2023-C.
Administrator, seller, sponsor, and servicer	Hyundai Capital America (BBB+/Stable/A-2).
Depositor	Hyundai ABS Funding LLC.
Indenture trustee	Citibank N.A. (A+/Stable/A-1).
Owner trustee	U.S. Bank Trust N.A.
Bank account provider	Citibank N.A. (A+/Stable/A-1).

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Rationale

S&P Global Ratings' preliminary ratings assigned to Hyundai Auto Receivables Trust 2023-C's (HART 2023-C) asset-backed notes reflect:

- The availability of approximately 11.8%, 10.3%, and 7.7% (base and upsize) credit support (hard credit enhancement and excess spread) for the class A (A-1, A-2-A/A-2-B, A-3, and A-4, collectively), B, and C notes, respectively, based on stressed cash flow scenarios. These credit support levels provide at least 5.0x, 4.5x, and 4.0x coverage of our expected cumulative net loss (ECNL) of 1.35% for the class A, B, and C notes, respectively (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)', 'AA+ (sf)', and 'AA (sf)' ratings on the class A, B, and C notes, respectively, are within our credit stability limits (see the Cash Flow Modeling Assumptions And Results section below).
- The timely payment of interest each month and principal repayment by the designated legal final maturity dates under our stressed cash flow modeling scenarios for the assigned preliminary ratings.
- The collateral characteristics of the series' prime automobile loans, our view of the credit risk of the collateral, 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 transaction's credit enhancement in the form of overcollateralization, yield supplement overcollateralization, a reserve account, and excess spread (see the Credit Enhancement and Collateral section).
- The series' bank accounts at Citibank N.A. (Citibank), which do not constrain the preliminary ratings.
- Our operational risk assessment of Hyundai Capital America (HCA) 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 payment and legal structures.

Our ECNL for HART 2023-C is 1.35%, unchanged from HART 2023-B. It reflects:

- HCA's outstanding series, which continue to perform in line with or better than our initial expectations;
- HCA's tighter underwriting standards since 2016 (based on the performance data we received from HCA); 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 asset-backed securities (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. Environmental credit factors are generally viewed as above average, given that the collateral pool primarily comprise vehicles with internal combustion engines (ICE), 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 our current approach to evaluating recovery and residual values adequately account for vehicle values over the relatively short expected life of the transaction. 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 HART 2023-B

- The yield supplement overcollateralization amount (YSOA) discount rate is 9.70%, compared to a YSOA discount rate of 9.50% for HART 2023-B. The YSOA helps protect against liquidity risk associated with the low interest rate loans that are included in the securitized pool.
- The initial YSOA as a percentage of the initial aggregate pool balance decreased to approximately 8.39% (8.38% if upsized) from 9.04%.
- The estimated per annum excess spread, adjusted for YSOA (pre-pricing) decreased to 2.49% from 3.00% (post-pricing).

Table 1 shows the credit enhancement changes from recent transactions.

Table 1

HART credit enhancement summary (%)

	2023-C (base)	2023-C (upsize)	2023-B (base)	2023-B (upsize)	2023-A	2022-C	2022-B	2022-A
Subordination(i)								
Class A	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80
Class B	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Class C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Overcollateralization(i)								
Initial	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Target	3.00	3.00	3.00	3.00	3.00	2.75	2.75	3.00
Floor	3.00	3.00	3.00	3.00	3.00	2.75	2.75	3.00
Reserve(i)								
Initial	0.25	0.25	0.25	0.25	0.25	0.50	0.50	0.25
Target	0.25	0.25	0.25	0.25	0.25	0.50	0.50	0.25
Floor	0.25	0.25	0.25	0.25	0.25	0.50	0.50	0.25

Table 1

HART credit enhancement summary (%) (cont.)

	2023-C (base)	2023-C (upsize)	2023-B (base)	2023-B (upsize)	2023-A	2022-C	2022-B	2022-A
Total initial hard credit enhancement								
Class A	7.55	7.55	7.55	7.55	7.55	7.80	7.80	7.55
Class B	5.75	5.75	5.75	5.75	5.75	6.00	6.00	5.75
Class C	2.75	2.75	2.75	2.75	2.75	3.00	3.00	2.75
Total target hard credit enhancement								
Class A	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05
Class B	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25
Class C	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
Additional enhancement								
YSOA (% of aggregate pool)	8.38	8.39	9.03	9.04	9.89	10.76	9.31	5.02
YSOA discount rate	9.70	9.70	9.50	9.50	9.10	9.10	7.90	5.40
Estimated YSOA-adjusted annual excess spread(ii)	2.49	2.49	2.75	2.75	2.88	2.50	2.68	2.63

(i)Percentage of the initial adjusted receivables balance. (ii)Estimated excess spread before pricing. The post-pricing estimated YSOA-adjusted annual excess spread was approximately 3.00%, 3.76%, 2.73%, 3.14%, and 2.61%, for series 2023-B, 2023-A, 2022-C, 2022-B, and 2022-A, respectively. HART--Hyundai Auto Receivables Trust. YSOC--Yield supplement overcollateralization amount. N/A--Not applicable.

Collateral changes from HART 2023-B

- The weighted average seasoning decreased to approximately 7.05 months (base and upsize) from 9.15 months. The 73-75 month loan bucket is also less seasoned at 11.95 months (12.03 if upsized) compared with 17.66 months.
- The percentage of loans greater than 60 months decreased a little to 64.46% (64.42% if upsized) from 64.58%; the concentration of 73-75 month loans decreased a little to 4.80% (4.84% if upsized), compared with 5.04%.
- The percentage of Hyundai-branded vehicles increased to 53.28% (53.39% if upsized) from 50.86%, while the percentage of Kia-branded vehicles increased to 41.61% (41.54% if upsized) from 43.62%. Based on the data provided, we have observed that loans on Hyundai-branded vehicles generally experience lower net credit losses than loans backed by Kia vehicles.
- The average original amount financed decreased to $29,553 ($29,531 if upsized) from $30,090.
- The percentage of crossover utility vehicles (CUVs)/SUVs increased to 65.23% (65.08% if upsized) from 64.11%, and the percentage of cars in the pool decreased to 28.20% (28.32% if upsized) compared with 30.32%.
- The percentage of loans with a FICO score of 700 or below increased to 19.16% (19.24% if upsized) from 17.08%, while loans with a FICO score greater than 750 decreased to 59.58% (59.40% if upsized) from 64.42%.

Overall, we believe the HART 2023-C collateral pool is generally comparable to HART 2023-B (see tables 2-4). The HART 2023-C transaction, like prior HART transactions, will include contracts with original terms of 73-75 months. These contracts comprise approximately 4.80% (4.84% if upsized) of the total pool and have approximately 12 months of seasoning and a weighted average FICO score of 769.

Table 2

Collateral comparison(i)

	HART						
	2023-C (base)	2023-C (upsize)	2023-B	2023-A	2022-C	2022-B	2022-A
Pool balance (mil. $)	1,486.77	1,822.50	1,865.30	1,829.75	1,706.69	1,537.13	1,583.03
No. of receivables	57,465	70,494	75,796	84,779	73,607	65,507	64,842
Avg. loan balance ($)	25,873	25,853	24,609	21,583	23,187	23,465	24,414
Avg. original amount financed ($)	29,553	29,531	30,090	28,589	27,773	29,140	28,282
WA APR (without YSOA) (%)	5.62	5.63	4.96	3.72	3.85	3.29	3.40
WA original term (mos.)	65.57	65.55	66.16	66.60	66.19	66.00	65.84
WA remaining term (mos.)	58.52	58.50	57.01	50.68	56.52	54.60	57.73
WA seasoning (mos.)	7.05	7.05	9.15	15.92	9.67	11.40	8.11
WA FICO score	768	768	767	767	764	764	764
FICO score less than 701(ii)	19.16	19.24	17.08	16.56	18.07	17.18	20.44
FICO score 701-750	21.26	21.36	18.49	19.98	26.33	25.95	23.97
FICO score greater than 750	59.58	59.40	64.43	63.46	55.61	56.86	55.59
Original term 61-72 months	59.66	59.58	59.54	60.02	54.97	54.81	54.30
Original term 73-75 months	4.80	4.84	5.04	5.06	5.00	4.98	4.94
Total greater than 60-month term	64.46	64.42	64.58	65.08	59.97	59.80	59.24
New vehicles (%)	94.32	94.31	96.47	95.58	94.92	95.05	94.76
Used vehicles (%)	5.68	5.69	3.53	4.42	5.08	4.95	5.24
Hyundai receivables (%)	53.28	53.39	50.86	55.55	50.50	51.45	51.01
Kia receivables (%)	41.61	41.54	43.62	39.64	44.52	44.54	44.69
Genesis receivables (%)	4.11	4.05	5.04	3.87	4.09	3.13	3.06
Other receivables (%)	0.99	1.02	0.49	0.95	0.89	0.88	1.24
Vehicle type (%)							
Car	28.20	28.32	30.32	33.68	34.86	29.65	33.58
CUV/SUV	65.23	65.08	64.11	62.78	60.90	65.99	62.14
Minivan	1.79	1.82	1.63	1.45	1.34	1.88	2.08

Table 2

Collateral comparison(i) (cont.)

	HART						
	2023-C (base)	2023-C (upsize)	2023-B	2023-A	2022-C	2022-B	2022-A
Truck	3.79	3.76	3.45	1.14	2.02	1.61	0.97
Other	0.99	1.02	0.49	0.95	0.89	0.88	1.24
Top five state concentrations (%)							
	TX=11.97	TX=12.00	CA=12.50	FL=12.03	CA=14.19	CA=12.20	CA=11.65
	FL=11.69	FL=11.66	TX=12.40	CA=11.94	TX=12.19	TX=11.51	TX=11.09
	CA=10.92	CA=10.96	FL=11.32	TX=11.04	FL=5.97	FL=9.99	FL=9.40
	IL=4.97	IL=4.95	IL=5.17	NY=5.71	IL=5.88	IL=5.55	IL=5.29
	GA=4.49	GA=4.55	GA=4.34	IL=5.46	GA=4.47	GA=4.26	GA=3.97

(i)All percentages are of the initial collateral pool balance. (ii)Excludes accounts for which no FICO score is available. HART--Hyundai Auto Receivables Trust. WA--Weighted average. APR--Annual percentage rate. YSOA--Yield supplement overcollateralization amount. CUV--Crossover utility vehicle.

Table 3

Collateral comparison(i)

	HART 2023-C (base)			HART 2023-C (upsize)			HART 2023-B		
	Hyundai	Kia	Total	Hyundai	Kia	Total	Hyundai	Kia	Total
Pool balance (mil. $)	792.21	618.72	1,486.77	973.03	757.13	1,822.50	948.63	813.62	1,865.30
No. of receivables	33,440	21,732	57,465	41,077	26,617	70,494	42,093	31,147	75,796
Avg. loan balance ($)	23,690	28,470	25,872	23,688	28,445	25,853	22,536.44	26,121.94	24,609.47
Avg. original amount financed ($)	27,703	31,639	29,553	27,695	31,619	29,531	28,182.48	31,468.00	30,089.52
WA APR (without YSOA) (%)	4.40	7.07	5.62	4.40	7.07	5.63	3.98	6.07	4.96
WA original term (mos.)	62.10	70.14	65.57	62.10	70.13	65.55	64.62	68.14	66.16
WA remaining term (mos.)	54.46	63.74	58.52	54.47	63.71	58.50	54.36	59.79	57.01
WA seasoning (mos.)	7.64	6.40	7.05	7.63	6.42	7.05	10.27	8.35	9.15
WA FICO score	782	752	768	782	752	768	775	757	767
New vehicles (%)	95.98	95.06	94.32	96.09	94.97	94.31	96.65	97.10	96.47
Used vehicles (%)	4.02	4.94	5.68	3.91	5.03	5.69	3.35	2.90	3.53
Hyundai receivables (%)	100.00	0.00	53.28	100.00	0.00	53.39	100.00	0.00	50.86
Kia receivables (%)	0.00	100.00	41.61	0.00	100.00	41.54	0.00	100.00	43.62

Table 3

Collateral comparison(i) (cont.)

	HART 2023-C (base)			HART 2023-C (upsize)			HART 2023-B		
	Hyundai	Kia	Total	Hyundai	Kia	Total	Hyundai	Kia	Total
Other receivables (%)(ii)	N/A	N/A	5.10	N/A	N/A	5.07	N/A	N/A	5.52

(i)All percentages are of the initial collateral pool balance. (ii)Includes Genesis receivables. HART--Hyundai Auto Receivables Trust. WA--Weighted average. APR--Annual percentage rate. YSOA--Yield supplement overcollateralization amount. N/A--Not applicable.

Table 4

Collateral characteristics by term(i)

	HART 2023-C (base)		HART 2023-C (upsize)		HART 2023-B (upsize)		HART 2023-A		HART 2022-C		HART 2022-B	
	0-72 mos.	73-75 mos.	0-72 mos.	73-75 mos.	0-72 mos.	73-75 mos.	0-72 mos.	73-75 mos.	0-72 mos.	73-75 mos.	0-72 mos.	73-75 mos.
% of total pool balance	95.20	4.80	95.16	4.84	94.96	5.04	94.94	5.06	95.00	5.00	95.02	4.98
WA seasoning (mos.)	6.80	11.95	6.80	12.03	8.70	17.66	15.64	21.24	9.84	6.42	11.61	7.35
WA FICO score	768	769	768	769	767	769	767	770	764	764	764	767
New vehicles (%)	94.04	100.00	94.02	100.00	96.29	100.00	95.34	100.00	94.65	100.00	94.79	100.00
Hyundai receivables (%)	55.35	12.25	55.44	13.14	53.26	5.60	57.03	27.71	51.94	23.24	52.74	26.90
Kia receivables (%)	39.30	87.44	39.26	86.45	40.94	94.16	37.92	71.84	42.91	75.08	43.13	71.35
Other receivables (%)(ii)	5.34	0.31	5.30	0.41	5.81	0.24	5.05	0.45	5.25	1.68	4.13	1.75

(i)All percentages are of the initial collateral pool balance. (ii)Includes Genesis receivables. HART--Hyundai Auto Receivables Trust. WA--Weighted average. Mos.--Months.

Macroeconomic And Auto Finance Sector Outlook

In our analysis, we considered the economic data and forecasts outlined in table 5, 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, in our opinion, the current momentum is unsustainable as interest rates on the 10-year Treasury note and 30-year mortgage have recently risen to rates 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 project the unemployment rate to rise to an average of 4.1% in 2024 and 4.8% for fourth-quarter 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, are potential headwinds. While the Consumer Price Index has declined significantly from last year, energy prices have jumped recently and have a disproportion impact on those with lower incomes. 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 payment of approximately $300. According to TransUnion, approximately one-third of those consumers with student loan debt took on new auto loan debt during the pandemic. The added student debt payment will be burdensome for those consumers that are financially stressed, which could negatively impact auto loan ABS performance. We believe, based on past economic cycles, that consumers for whom the vehicle is essential for work, will continue to prioritize their auto loan/lease payments before their other consumer and student loan payments.

Table 5

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.

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.

S&P Global Ratings' Expected Loss: 1.35%

We determined our expected loss for HART 2023-C by analyzing:

- The transaction's collateral characteristics relative to those of outstanding series (see tables 2-4);
- The managed portfolio performance and origination static pool data and their relative performances (see tables 6-8); and
- The outstanding series' performance (see table 9 and charts 1-4).

Based on our analysis of the HART 2023-C pool's credit quality and origination static pool, HCA's securitization performance, and our views regarding current and future macroeconomic and industry-specific conditions, we expect HART 2023-C to experience lifetime CNLs of 1.35%, which is the same as HART 2023-B.

In determining our ECNL for 2023-C, we also considered HCA's established performance track record as a frequent issuer, their origination static pool performance, and outstanding series performance. 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).

Managed portfolio

As of June 30, 2023:

- HCA managed a serviced portfolio of $31.58 billion, up approximately 9.5% year over year (see table 6).
- Total delinquencies as a percentage of the portfolio outstanding increased to 2.19% as of the three months ended March 31, 2023, from 1.59% as of the same period in 2022.
- The serviced portfolio's annualized net losses as a percentage of the average principal outstanding increased to 0.76% for the three months ended March 31, 2023, from 0.36% a year earlier.

The delinquency and net charge-off percentages for the Hyundai and Kia portions of the total pool are shown in tables 7 and 8. Both portfolios' delinquencies have increased, primarily driven by higher 30- to 60-day delinquencies. Similar to the overall portfolio, Hyundai and Kia are exhibiting slightly higher net charge-offs year over year, but remain below that of pre-pandemic net charge-offs (2019 and prior).

Table 6

Total managed portfolio

	As of June 30		Year ended Dec. 31				
	2023	2022	2022	2021	2020	2019	2018
Portfolio outstanding (mil. $)	34,303.77	29,276.68	29,955.18	28,414.46	22,211.63	16,370.04	13,397.90
Avg. principal balance outstanding (mil. $)	32,118.61	28,695.05	28,860.86	24,654.96	17,226.90	13,667.40	13,373.08
Delinquency (%)(i)							
30-60 days	1.64	1.59	1.93	1.40	1.54	2.23	2.72
61-90 days	0.45	0.48	0.55	0.37	0.44	0.59	0.81
91-120 days	0.10	0.12	0.16	0.10	0.11	0.13	0.18
Over 120 days	NM	NM	0.01	0.00	0.00	0.00	0.00
Total delinquencies as a % of the portfolio outstanding	2.20	2.19	2.66	1.87	2.09	2.96	3.70
Net charge-off as a % of the avg. outstanding(ii)	0.66	0.34	0.60	0.42	1.14	1.47	1.64

(i)Excludes repossessed vehicles. (ii)Annualized if not based on a full year. NM--Not meaningful.

Table 7

Hyundai managed portfolio

	As of June 30		Year ended Dec. 31				
	2023	2022	2022	2021	2020	2019	2018
Portfolio outstanding (mil. $)	18,639.85	15,165.01	15,879.55	14,321.22	10,898.83	7,230.34	5,525.61
Avg. principal balance outstanding (mil. $)	17,318.36	14,634.01	14,801.89	12,234.53	7,863.57	5,685.25	5,555.74
Delinquency (%)(i)							
30-60 days	1.23	1.20	1.43	1.08	1.19	1.91	2.67
61-90 days	0.33	0.35	0.41	0.29	0.32	0.50	0.81
91-120 days	0.08	0.09	0.11	0.08	0.08	0.11	0.18
Over 120 days	NM	NM	0.01	0.00	0.00	0.00	0.00
Total delinquencies as a % of the portfolio outstanding	1.64	1.64	1.96	1.45	1.59	2.52	3.66
Net charge-off as a % of the avg. outstanding(ii)	0.49	0.25	0.43	0.29	0.91	1.22	1.42

(i)Excludes repossessed vehicles. (ii)Annualized if not based on a full year.

Table 8

Kia managed portfolio

	As of June 30		Year ended Dec. 31				
	2023	2022	2022	2021	2020	2019	2018
Portfolio outstanding (mil. $)	15,663.92	14,111.66	14,075.63	14,093.24	11,312.80	9,139.70	7,872.29
Avg. principal balance outstanding (mil. $)	14,800.25	14,061.04	14,058.97	12,420.43	9,363.32	7,982.15	7,817.34
Delinquency (%)(i)							
30-60 days	2.13	2.01	2.50	1.72	1.87	2.48	2.75
61-90 days	0.59	0.61	0.71	0.45	0.55	0.67	0.81
91-120 days	0.14	0.15	0.22	0.13	0.14	0.14	0.18
Over 120 days	NM	NM	0.02	0.00	0.00	0.00	0.00
Total delinquencies as a % of the portfolio outstanding	2.83	2.78	3.45	2.30	2.56	3.30	3.74
Net charge-off as a % of the avg. outstanding(ii)	0.85	0.43	0.79	0.55	1.34	1.65	1.80

(i)Excludes repossessed vehicles. (ii)Annualized if not based on a full year.

Origination static pool analysis

To derive the base-case expected loss for the series 2023-C transaction, we analyzed performance data on the origination static pools by cohorts (i.e., by make [Hyundai/Kia], FICO score band, and original term) consistent with this series' pool. We used historical loss curves to develop expected net loss projections for each of the outstanding cohorts with at least 12 months of performance. Then, we weighted these projections based on the various attributes' concentrations in the series 2023-C pool to determine a base-case loss expectation.

HART series performance

We currently maintain ratings on 12 HART transactions that were issued between 2019 and 2023 (see table 9).

Table 9

HART collateral performance and CNL expectations(i)

Series	Month	Pool factor (%)	CNL (%)	60-plus-day delinquency (%)	Initial lifetime ECNL (%)(ii)	Current revised lifetime ECNL (%)(iii)
2019-B	47	6.50	0.84	0.55	1.40-1.60	Up to 1.00
2020-A	42	13.71	0.93	0.65	1.80-2.00	1.20
2020-B	39	12.49	0.77	0.84	1.80-2.00	1.10
2020-C	36	21.27	0.74	0.59	1.80-2.00	1.15
2021-A	30	29.33	0.58	0.51	1.55-1.75	1.00
2021-B	27	35.27	0.72	0.52	1.40-1.60	1.30
2021-C	23	42.36	0.70	0.52	1.40-1.60	1.40
2022-A	19	49.61	0.59	0.51	1.30-1.50	1.40
2022-B	15	57.88	0.45	0.40	1.30-1.50	N/A
2022-C	11	68.74	0.30	0.30	1.40	N/A
2023-A	6	78.68	0.19	0.27	1.35	N/A
2023-B	3	89.37	0.06	0.26	1.35	N/A

(i)As of the October 2023 distribution date. (ii)Each of the initial loss expectations for series 2020-A, 2020-B, 2020-C, and 2021-A included an adjustment to account for the potential impact of the COVID-19 pandemic. (iii)For series 2019-B through 2020-C and 2022-A, we revised our ECNLs in April 2023. For series 2021-A through 2021-C, we revised our ECNLs in January 2023. CNL--Cumulative net loss. ECNL--Expected cumulative net loss. N/A--Not applicable.

On Jan. 11, 2023, we raised our ratings on three classes and affirmed the ratings on 12 classes from three HART series due to better-than-expected performance relative to our initial expectations (see "Three Ratings Raised And 12 Affirmed On Three Hyundai Auto Receivables Trust Transactions," published Jan. 11, 2023). Also, on April 7, 2023, we raised our ratings on two classes and affirmed our ratings on 21 classes from six HART series due to better or in-line performance with the initial expectations of ECNL (see "Two Ratings Raised And 21 Affirmed On Six Hyundai Auto Receivables Trust Transactions," published April 6, 2023).

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

The paid-off transactions, HART 2000-A through 2019-A, experienced cumulative net losses ranging from approximately 0.6% (series 2011-A) to 5.1% (series 2002-A). The 2000-2002 securitizations experienced the highest losses, ranging from 4.1% to 5.1% (see charts 1 and 2). These earlier vintages had low weighted average FICO scores of less than 680, while the later vintages (2009-2011) exhibited strong credit quality, with weighted average FICO scores between 742 and 751.

Chart 1

Hyundai paid-off securitization cumulative net losses | 2000-2009

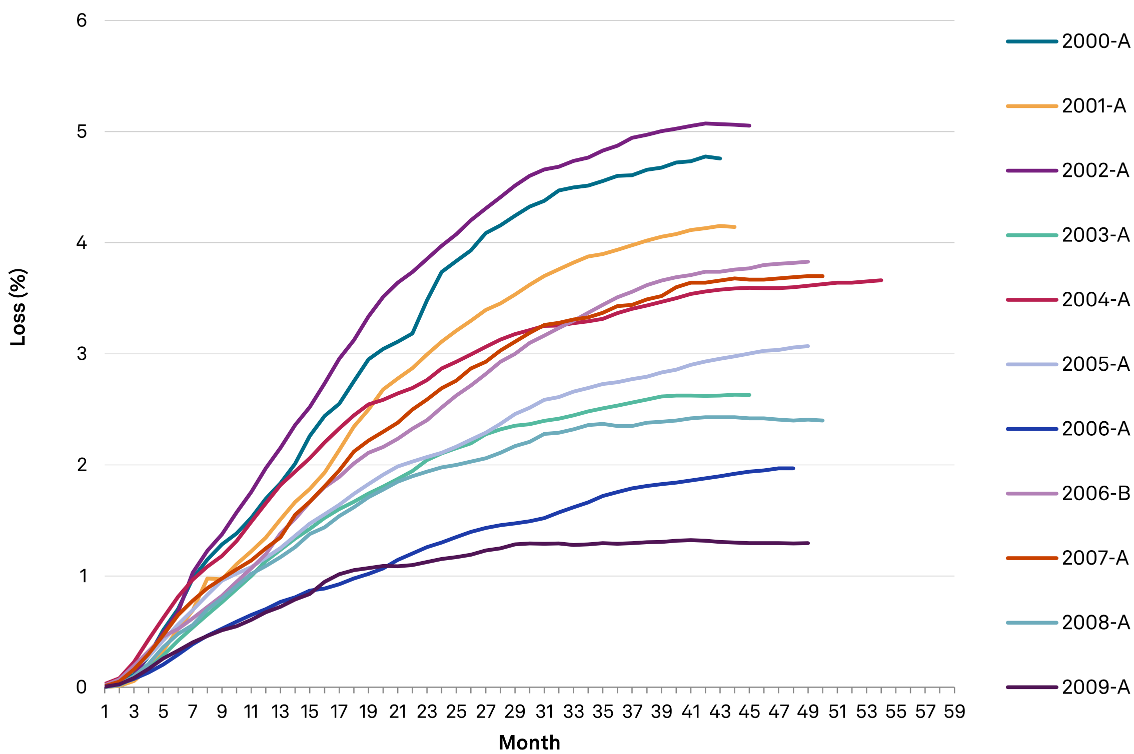
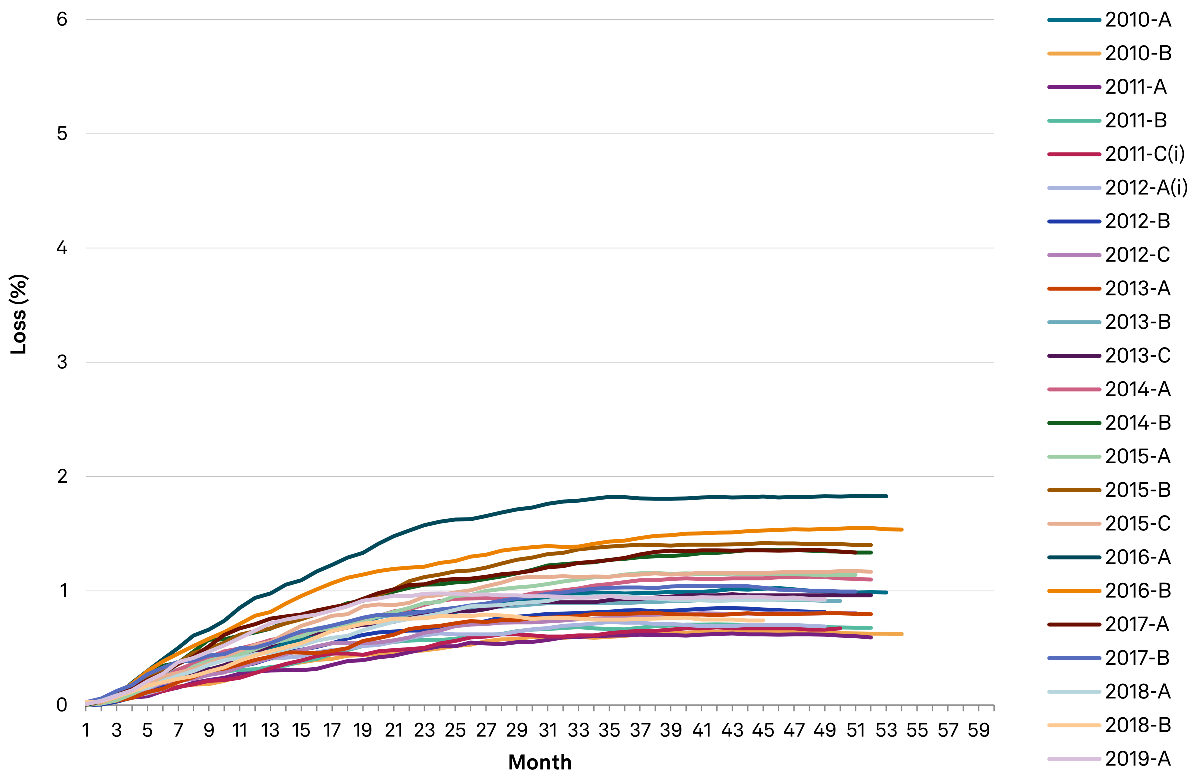


Chart 2

Hyundai paid-off securitization cumulative net losses | 2010-2019



(i)Not rated by S&P Global Ratings.

Cumulative net losses for the outstanding series 2019-B through 2023-A securitizations are generally trending low relative to those of earlier deals (see chart 3). We believe the strong performance is partly attributable to higher weighted average FICO scores (approximately 740-770).

Chart 3

Hyundai 2019-2023 securitization cumulative net losses

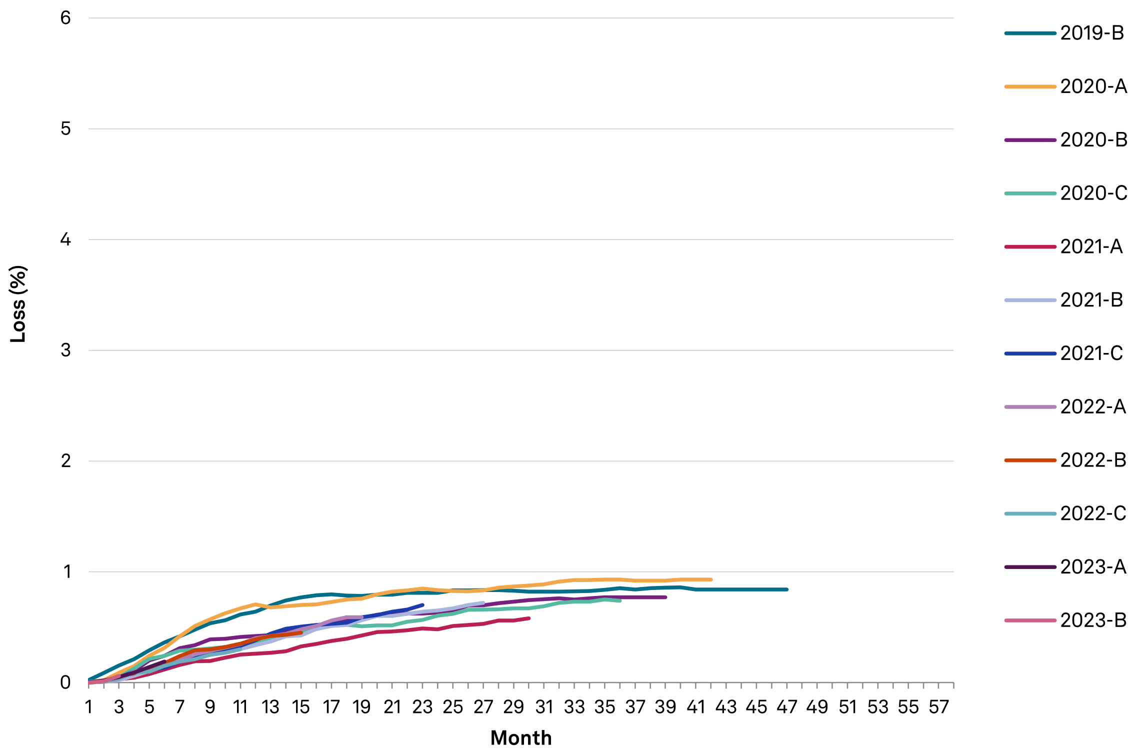
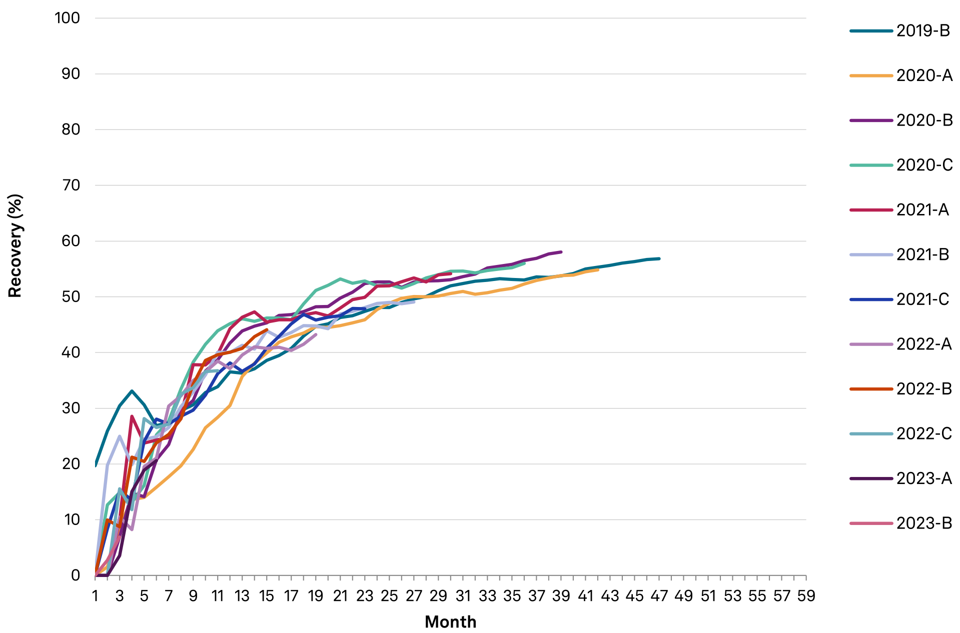


Chart 4 shows the cumulative recovery rates on each outstanding securitization. Recovery rates on the paid-off series 2016-2019 transactions ranged from approximately 56% to 61%. The outstanding series 2019 and 2020 transactions currently range between 55% and 58%, while the series 2021 transactions, with fewer datapoints, are around 50%, on average. As of March 1, 2020, proceeds from the disposition of vehicles charged-off and sold in the same day are subtracted from gross charge-offs. This has started to result in a decrease in gross charge-offs and a corresponding decrease in recoveries, although net losses should ultimately remain unaffected.

Chart 4

Hyundai securitizations | cumulative recovery rates



Legal Overview And Transaction Structure

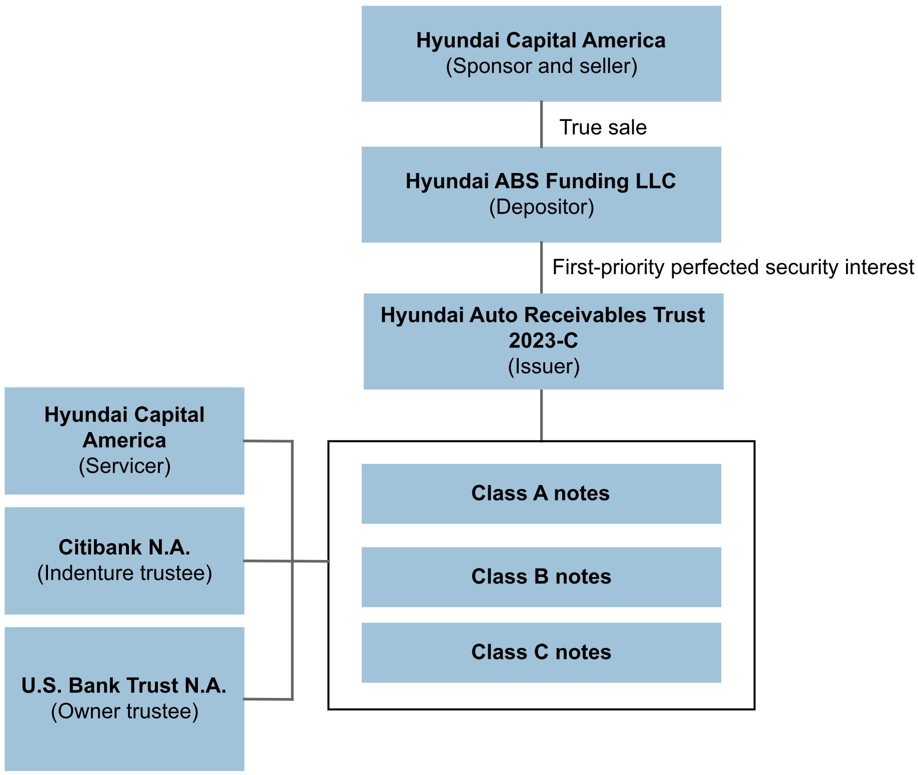
Legal overview

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 series 2023-C transaction is structured as a true sale of the receivables to Hyundai ABS Funding LLC from HCA. Through this true sale, Hyundai ABS Funding LLC will sell the acquired assets to the trust, a bankruptcy-remote special-purpose entity, which will then pledge its interest in the receivables to the trustee on the noteholders' behalf (see chart 5).

Chart 5

Transaction structure



Transaction structure

HART 2023-C incorporates the following structural features:

- A sequential principal payment structure among the class A, B, and C notes, which is expected to result in increasing credit enhancement for the senior notes as the pool amortizes.
- Subordination of 4.80% and 3.00% for classes A and B, respectively.
- A fully funded nonamortizing reserve account that will equal 0.25% of the initial adjusted pool balance.
- Initial overcollateralization of 2.50% that will grow to 3.00% of the initial adjusted pool balance.
- A YSOA that initially will equal 8.39% (8.38% if upsized) of the initial aggregate pool balance and will amortize based on a set schedule. The YSOA is sized so that the yield on the contracts with an annual percentage rate (APR) below the YSOA discount rate is raised to the required rate, which is 9.70%. The YSOA is included to address the liquidity risk associated with the low interest rate loans in the securitized pool.
- Excess spread, adjusted for YSOA, of 2.49% per year (pre-pricing).

The class A-2 notes may consist of two tranches: the class A-2-A fixed-rate notes and the class A-2-B floating-rate notes. The class A-2-B notes, if issued, will be indexed to SOFR plus a spread and may constitute up to 50.00% of the class A-2 notes. The class A-2-B coupons will initially be based on a compounded SOFR (a 30-day average SOFR calculated in advance by the calculation agent using the published rate on the Federal Reserve Bank of New York's website). In addition, the transaction documents include provisions that govern alternative rate selection if SOFR becomes unavailable.

Payment Priority

Payment distributions before an event of default

Distributions will be made from the available funds according to the priority shown in table 10 as long as an event of default has not occurred.

Table 10

Payment waterfall

Priority	Payment
1	The 1.00% annual servicing fee and all unpaid servicing fees and reimbursements for any servicer advances.
2	To the class A noteholders, accrued and unpaid interest on the class A notes.
3	To the principal distribution account, the first-priority principal distribution amount, which will generally be an amount equal to the excess of the class A outstanding principal amount over the adjusted pool balance.
4	To the class B noteholders, accrued and unpaid interest on the class B notes.
5	To the principal distribution account, the second-priority principal distribution amount, which will generally be an amount equal to the excess of the sum of the aggregate class A and B outstanding principal amount over the adjusted pool balance, provided this amount will be reduced by any amounts previously deposited in the principal distribution account according to item 3 above.
6	To the class C noteholders, accrued and unpaid interest on the class C notes.
7	To the principal distribution account, the regular principal distribution amount, which will generally be an amount equal to the excess of the aggregate class A, B, and C outstanding principal amount over the adjusted pool balance, minus the target overcollateralization amount, provided that this amount will be reduced by any amounts previously deposited in the principal distribution account according to items 3 and 5 above.
8	To the reserve account, up to its required level.
9	To the trustees, pro rata, and then to the asset representations reviewer, reimbursements, expenses, and indemnities not previously paid.
10	Any remaining funds to the certificateholders.

Events of default

The payment priority can change if certain events of default occur and continue, including a failure to pay interest on the controlling note class; a failure to pay principal at final maturity; a breach of a representation, warranty, or covenant; or the trust's involuntary or voluntary bankruptcy.

If an event of default occurs and continues, the indenture trustee or a majority of the noteholders of the controlling class's outstanding amount may accelerate the notes. The trust estate may be liquidated as a result, but only under three circumstances:

- If the event of default is a failure to pay timely interest or principal at final maturity, the trust estate may be liquidated without further caveat.
- If the event of default is a breach of a representation, warranty, or covenant, the trust estate may be liquidated if all noteholders and certificateholders consent or if the sale or liquidation proceeds are sufficient to ensure all noteholders and certificateholders are paid in full.
- If a bankruptcy event of default occurs, the trust estate may be liquidated if all of the controlling class's noteholders consent, if the sale or liquidation proceeds are sufficient to ensure all notes are paid in full, or if the indenture trustee determines that the trust estate will not provide sufficient funds to pay the noteholders in full and obtains the consent of noteholders holding two-thirds of the principal amount of the controlling class.

Payment distributions after an event of default

If the notes are accelerated following a failure to pay timely interest or principal at final maturity or a bankruptcy event of default, or if there is a representation, warranty, or covenant breach following one of the other events of default and the trust estate's liquidation, then distributions will be made from the available funds according to the priority shown in table 11.

Table 11

Event of default payment waterfall

Priority	Payment
1	All amounts owed to the trustees not previously paid.
2	All amounts owed to the servicer not previously paid.
3	All amounts owed to the asset representations reviewer not previously paid.
4	To the class A noteholders, pro rata, for amounts due and unpaid on the class A notes in respect of interest, ratably, without preference or priority of any kind, according to the amounts due and payable on the notes in respect of interest.
5	To the class A-1 noteholders, principal owed until the class A-1 notes are reduced to zero.
6	Principal amounts due and unpaid on the class A-2, A-3, and A-4 notes, ratably, without preference or priority of any kind until each class's outstanding amount is reduced to zero; provided that if there are insufficient funds to pay each class's outstanding principal amount, the amounts available will be applied to pay principal on the notes, pro rata.
7	Any accrued and unpaid interest on the class B notes.
8	To the class B noteholders, principal owed until the class B notes are reduced to zero.
9	Any accrued and unpaid interest on the class C notes.
10	To the class C noteholders, principal owed until the class C notes are reduced to zero.
11	Any remaining funds to the certificateholders.

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 HART 2023-C transaction structure, we used a bifurcated-pool method and applied the assumptions outlined in table 12 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 (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 subvened loans and nonsubvened loans using an APR of 5.00% and applied different prepayment and default assumptions between the two pools. For nonsubvened loans (with APRs of 5.00% or greater), we ran faster voluntary prepayments, disproportionately higher losses, and faster loss timing than for the subvened loans (with APRs less than 5.00%). Conversely, we ran a slower voluntary prepay speed, disproportionately lower losses, and slower loss timing on the subvened 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-2-B 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-2-B note balance (50.00% of the class A-2 notes) indexed to SOFR.

Based on our stressed cash flows, the break-even net loss results show that the class A, B, and C notes are credit-enhanced to the degree appropriate for the assigned preliminary ratings (see tables 13 and 14).

Table 12

Break-even cash flow assumptions

Servicing fee (%)	1
Recovery rate (%)	50
Charge-off and recovery lag (mos.)	4
Bifurcated pool (%)	
Subvened	36
Nonsubvened	64
Loss allocation (% of total losses)	
Subvened	20
Nonsubvened	80
Voluntary ABS (%)	
Subvened	0.25
Nonsubvened	1.50

Table 12

Break-even cash flow assumptions (cont.)

CNL timing mos.: front-loaded (12/24/36/48) (%)	
Subvened	40/70/90/100
Nonsubvened	50/85/95/100
CNL timing mos.: back-loaded (12/24/36/48) (%)	
Subvened	20/50/80/100
Nonsubvened	30/65/90/100

ABS--Absolute prepayment speed. CNL--Cumulative net loss. Mos.--Months.

Table 13

Break-even cash flow results | base

	Class		
	A	**B**	**C**
Preliminary rating	AAA (sf)	AA+ (sf)	AA (sf)
CNL timing mos.: front-loaded (12/24/36/48) (%)			
Aggregate	48/83/95/100	48/83/95/100	48/83/95/100
Subvened/underwater	41/73/93/100	41/73/93/100	41/73/93/100
Nonsubvened/above water	49/85/95/100	49/85/95/100	49/85/95/100
CNL timing mos.: back-loaded (12/24/36/48) (%)			
Aggregate	28/63/89/100	28/63/89/100	28/63/89/100
Subvened/underwater	22/55/85/100	22/55/85/100	22/55/85/100
Nonsubvened/above water	30/66/90/100	30/66/90/100	30/66/90/100
Approximate break-even CNL levels (%)(i)			
Required	6.8	6.1	5.4
Available (front-loaded)	11.9	10.4	7.7
Available (back-loaded)	11.8	10.3	7.8

(i)The maximum cumulative net losses, with 100% credit to any excess spread, the transaction can withstand without triggering a payment default on the relevant class of notes. CNL--Cumulative net loss. Mos.--Months.

Table 14

Break-even cash flow results | upsize

	Class		
	A	**B**	**C**
Preliminary rating	AAA (sf)	AA+ (sf)	AA (sf)
CNL timing mos.: front-loaded (12/24/36/48) (%)			
Aggregate	48/83/95/100	48/83/95/100	48/83/95/100
Subvened/underwater	41/73/93/100	41/73/93/100	41/73/93/100
Nonsubvened/above water	49/85/95/100	49/85/95/100	49/85/95/100

Table 14

Break-even cash flow results | upsize (cont.)

	Class		
	A	B	C
CNL timing mos.: back-loaded (12/24/36/48) (%)			
Aggregate	28/63/89/100	28/63/89/100	28/63/89/100
Subvened/underwater	22/55/85/100	22/55/85/100	22/55/85/100
Nonsubvened/above water	30/66/90/100	30/66/90/100	30/66/90/100
Approximate break-even CNL levels(%)(i)			
Required	6.8	6.1	5.4
Available (front-loaded)	11.9	10.4	7.7
Available (back-loaded)	11.8	10.3	7.8

(i)The maximum cumulative net losses, with 100% credit to any excess spread, the transaction can withstand without triggering a payment default on the relevant class of notes. CNL--Cumulative net loss. Mos.--Months.

Although the break-even levels for classes B and C satisfy our minimum requirement for the preliminary ratings assigned to the classes immediately above, given their relative subordinated position and distribution of losses within the transaction's structure, class B and C's assigned ratings are structurally constrained (see "S&P Global Ratings Definitions," published June 9, 2023).

Sensitivity analysis

In addition to running break-even cash flows, we undertook sensitivity analyses using the assumptions in table 12. We believe that under a moderate ('BBB') stress scenario (2.00x of our 1.35% expected loss level) and with 100% credit to any excess spread, all else being equal, our preliminary ratings will be within the credit stability limits specified by section A.4 of the Appendix of "S&P Global Ratings Definitions," published June 9, 2023 (see table 15 and charts 6-9).

Table 15

Credit stability as a limiting factor on ratings

	Maximum projected deterioration associated with rating levels for one- and three-year horizons under moderate stress conditions					
Horizon	**AAA**	**AA**	**A**	**BBB**	**BB**	**B**
One year	AA	A	BB	B	CCC	D
Three years	BBB	BB	B	CCC	D	D

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

Sensitivity analysis | coverage multiples (front-loaded two-pool approach) | base

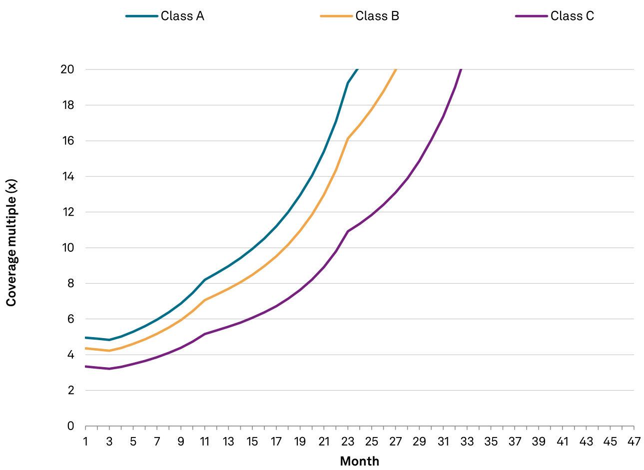


Chart 7

Sensitivity analysis | coverage multiples (front-loaded two-pool approach) | upsize

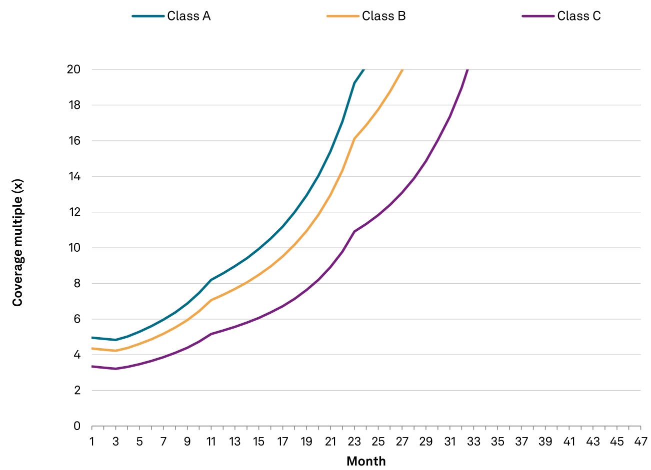


Chart 8

Sensitivity analysis | coverage multiples (back-loaded two-pool approach) | base

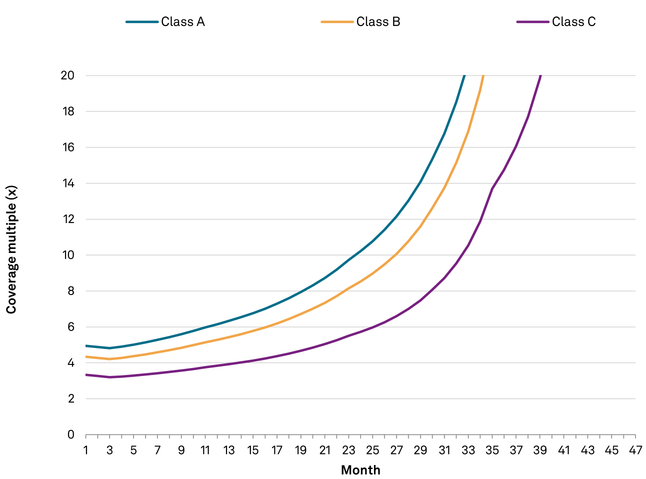
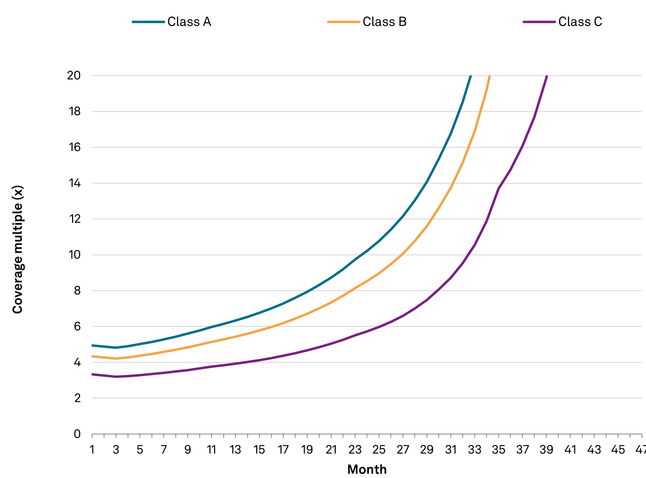


Chart 9

Sensitivity analysis | coverage multiples (back-loaded two-pool approach) | upsize



Money market tranche sizing

The proposed class A-1 money market tranche has a final maturity date of Nov. 15, 2024. To test whether the money market tranche can be repaid by then, we ran cash flows using assumptions to delay the principal collections during the that time. In addition to zero defaults, we assumed a zero absolute prepayment speed for the subvened collateral and 0.50% absolute prepayment speed for the nonsubvened collateral in our cash flow scenario. Based on our cash flow scenario, approximately 10 months of collections would be sufficient to pay off the money market tranche.

Legal final maturity

To test the legal final maturity dates set for classes A and B, we determined the date when the respective notes were fully amortized in a zero-loss, zero-prepayment scenario and then added three months to the result. Furthermore, in the break-even scenario for each respective preliminary rating level, we confirmed that there was sufficient credit enhancement to cover losses and to repay the related notes in full by the legal final maturity date. We calculated the legal final maturity for the class C notes by adding at least six months to accommodate recoveries and extensions to the longest loan term in the pool as of the cutoff date.

Counterparty And Operational Risks

Bank account providers

On or before the closing date, the HART 2023-C bank accounts will be established with the bank account provider, Citibank N.A. The bank account provider is consistent with our counterparty criteria for a 'AAA' supported transaction (see "Counterparty Risk Framework: Methodology And Assumptions," published March 8, 2019).

Servicer

HCA's long history in the prime auto finance business. As servicer, HCA has an experienced management team that oversees origination, underwriting, servicing, collections, and general operational practices. HCA is rated by S&P Global Ratings (BBB+/Stable/A-2) and commingling risk is addressed by the requirement that all collections are deposited into the series collections account within two business days of collection. Our operational risk assessment of HCA as servicer does not constrain the ratings (see "Global Framework For Assessing Operational Risk In Structured Finance Transactions," published Oct. 9, 2014).

HCA

HCA (BBB+/Stable/A-2) is an 80.00%-owned subsidiary of Hyundai Motor America, which, in turn, is a wholly owned subsidiary of South Korea-based automaker Hyundai Motor Co. (BBB+/Stable/--). The remaining 20.00% is owned by Kia America Inc. (formerly known as Kia Motors America Inc.), an affiliate of HCA and a wholly owned subsidiary of Kia Corp. (BBB+/Stable/--). HCA offers both retail and lease products to its customers. HCA is a full-service auto finance company that provides services to Hyundai dealers across the country and arranges financing for facilities refurbishment, real estate purchases, construction, working capital requirements, and dealer inventory. On Sept. 2, 2021, we revised our rating outlook on HCA to stable and affirmed our 'BBB+' issuer credit rating on the company after taking similar rating action on its parent Hyundai Motor Co. (see "Research Update: Hyundai Capital America, Hyundai Capital Canada Outlooks Revised To Stable After Same Action On Group; Ratings Affirmed," published Sept. 2, 2021).

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
- Credit Conditions North America Q4 2023: Shift To Low Gear, Sept. 26, 2023
- Economic Outlook U.S. Q4 2023: Slowdown Delayed, Not Averted, Sept. 25, 2023
- Two Ratings Raised And 21 Affirmed On Six Hyundai Auto Receivables Trust Transactions, April 6, 2023
- Hyundai Motor Co., Feb. 21, 2023
- Kia Corp., Feb. 13, 2023
- Three Ratings Raised And 12 Affirmed On Three Hyundai Auto Receivables Trust Transactions, Jan. 11, 2023