S&P Global Ratings

Research

Presale:

# Autopia China 2020-2 Retail Auto Mortgage Loan Securitization Trust

**October 26, 2020**

PRIMARY CREDIT ANALYST

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## Preliminary Ratings As Of Oct. 26, 2020

| Class | Preliminary rating | Preliminary amount (mil. RMB) | Credit support provided by subordination (%) |
|---|---|---|---|
| A | AAA (sf) | 3,240.0 | 19.0 |
| B | A- (sf) | 160.0 | 15.0 |
| Subordinated | NR | 600.0 | N/A |

Note: This presale report is based on information as of Oct. 26, 2020. The ratings shown are preliminary. Subsequent information may result in the assignment of final ratings that differ from the preliminary ratings. This report does not constitute a recommendation to buy, hold, or sell securities. NR--Not rated. N/A--Not applicable.

## Profile

| | |
|---|---|
| Expected closing date | November 2020 |
| Legal final maturity date | Jan. 26, 2025 |
| Collateral | Renminbi-denominated, fully amortizing loans to prime-quality borrowers, secured by first registered mortgages over vehicles |
| Structure type | Prime auto loan asset-backed securities with sequential repayment mechanism following a three-month revolving period. |
| Issuer | China Foreign Economy And Trade Trust Co. Ltd. as trustee of the Autopia China 2020-2 Retail Auto Mortgage Loan Securitization Trust |
| Servicer | Beijing Hyundai Auto Finance Co. Ltd. |
| Primary credit enhancement | Note subordination |

## Supporting Ratings

| | |
|---|---|
| Bank account provider | Standard Chartered Bank (China) Ltd. |

## Loan Pool Statistics As Of June 30, 2020

| | |
|---|---|
| Total number of contracts | 101,285 |
| Total receivables balance of contracts (RMB) | 3,999,999,996 |
| Maximum receivables balance of contracts (RMB) | 209,624 |
| Average receivables balance of contracts (RMB) | 39,493 |
| Weighted average down-payment (%) | 33.22 |
| Weighted average interest rate (%) | 2.97 |
| Total balloon payments as a percentage of total pool balance (%) | 0 |
| Weighted-average contract seasoning (months) | 9.29 |
| Weighted-average remaining term to maturity (months) | 21.29 |

# Rationale

S&P Global Ratings assigned its 'AAA (sf)' preliminary rating to the class A notes and 'A- (sf)' preliminary rating to the class B notes of asset-backed securities (ABS) to be issued by China Foreign Economy And Trade Trust Co. Ltd. (FOTIC) as trustee of the Autopia China 2020-2 Retail Auto Mortgage Loan Securitization Trust (the issuer). This is an auto loan securitization transaction sponsored by Beijing Hyundai Auto Finance Co. Ltd. (BHAF).

The ratings reflect the following factors.

The credit risk associated with the underlying collateral portfolio and the credit support available are commensurate with our view of credit risk under 'AAA' rating stress for the class A notes, and 'A-' rating stress for the class B notes. Our assessment of credit risk takes into account originator BHAF's underwriting standards and centralized approval process, which are largely consistent with parent company Hyundai Capital Services Inc.'s global practice and risk management approach, with some local adaptation.

The credit support for the class A notes is provided via the subordination of the class B notes and the subordinated notes. The credit support for the class B notes is provided via the subordination of the subordinated notes. In addition, any balance remaining in the liquidity reserve account on the legal maturity of the notes can be applied toward the redemption of the rated notes, providing additional credit support.

The transaction's cash flows can meet the timely payment of interest and ultimate payment of principal to holders of the rated notes under stresses commensurate with the ratings assigned. All rating stresses are assessed on the basis that the issuer does not call the notes on or beyond the call-option threshold date, and that the notes must be fully redeemed via the mechanisms under the transaction documents.

The timely payment of senior expenses and rated notes coupons are supported by the use of interest and principal collections from the underlying pool of loans and a liquidity reserve equal to 1.0% of the initial receivables balance. The liquidity reserve will not amortize and will be topped up to a floor of around Chinese renminbi (RMB) 40 million through remaining proceeds available on each payment date. The transaction is further supported by a yield supplementary reserve equal to RMB22 million or 0.55% of the initial receivables balance during the revolving period.

The legal structure of the trust, established as a special-purpose trust (SPT) under China's Trust Law, and the transaction structure and terms, are consistent with the governance of China

Banking and Insurance Regulatory Commission (CBIRC) and The People's Bank of China (PBOC)'s credit assets securitization (CAS) scheme. The legal structure of the SPT reflects our criteria for insolvency remoteness.

The rating on the bank account provider, currently Standard Chartered Bank (China) Ltd., coupled with the replacement trigger of the bank account provider if the rating on it falls below a certain level, is consistent with our counterparty criteria to support an 'AAA' rated transaction.

The rating on the class A notes is higher than our sovereign credit rating on China. We applied our "Incorporating Sovereign Risk In Rating Structured Finance Securities: Methodology And Assumptions," criteria published on Jan. 30, 2019. Based on our analysis, the criteria allow a maximum differential of six notches above the sovereign rating. Therefore, the highest rating that can be assigned to this transaction is 'AAA' under our criteria for a rating above the sovereign.

## Strengths And Weaknesses

### Strengths

In our opinion, the strengths of the transaction observed in the rating analysis are:

- The sound credit quality of the loan portfolio at close. All underlying loans have a full-recourse feature and are fully amortizing ones backed by new passenger vehicles for personal use. The initial portfolio is well diversified, with a single borrower concentration of less than 0.01%, and it is seasoned by about nine months in weighted-average terms. Our observations in other markets suggest these features tend to support consistent and stronger performance.
- The limited exposure period. Loans with remaining terms no longer than 36 months account for all of the initial pool balance, with a weighted-average remaining term of about 21 months. The pool has a revolving period of three months, and the eligibility criteria constrain the remaining term of the additionally purchased loan receivables to be no more than 36 months. Therefore, we believe the risk exposure period of the pool--or weighted-average life of the notes--is likely to remain short.
- The repayment structure of the transaction. Once the transaction starts amortization, the principal payment structure will be sequential, which means no principal may be passed through to the subordinated notes until the senior notes have been fully repaid.

### Weaknesses

In our opinion, the weaknesses of the transaction and the corresponding mitigants observed in the rating analysis are:

- The short operating history of China's auto finance sector, which has seen rapid growth only in the past decade. As a result, the sector has limited historical performance data available for analysis and it has not experienced true periods of economic stress. We have factored this potential weakness into our credit risk analysis of the transaction. We also note that China's regulators have set forth quite stringent requirements on auto loan origination, and have adopted continued supervision and administrative guidelines on loan quality control. In our view, such regulatory oversight is one of the main reasons for the reasonable credit performance we have observed in the vintage loan pools.
- Relative lack of experience in servicing transition in China's securitization market. Despite the

rapid development of Chinese securitization during the past couple of years, only a few transactions to date have experienced the critical stress of a failure of important counterparties such as the servicer, and the potential for negative effect on the transaction's cash flow. In this transaction, the risk of servicer transition and cash-flow continuity are partly mitigated by the payment arrangements such as direct debit associated with borrowers and a liquidity reserve.

- This is not a closed-pool transaction. New receivables can be added during the transaction's three-month revolving period, and this could cause a shift in the collateral pool's credit profile. In our credit loss analysis of the transaction, we have considered the early amortization events, a yield supplementary reserve, and eligibility criteria. We have also factored in the potential change in pool composition in our credit and cash flow analysis.

## Transaction Structure

This is a securitization transaction based on the CAS scheme set up by the CBIRC and PBOC.

BHAF will sell a pool of auto loan receivables, along with all related rights such as mortgages, to an SPT, which is set up by FOTIC for the purpose of securitization. To fund the receivables purchase, the trustee will issue, on behalf of the SPT, three classes of trust certificates: class A, class B, and subordinated notes.

The collateralized assets are loans extended to retail borrowers for financing the purchase of new cars manufactured by Beijing Hyundai Motor Co. (BHMC), Dongfeng Yueda KIA Motors Co. (DYK), Kia Motors Co. (KI), BAIC Motor Corp. Ltd. (BAIC), and BAIC Group Off-road Vehicle Co. (BAICORV). Vehicles financed by these loans are mortgaged for the benefit of the originator.

The asset pool will be revolving for the initial three months. During this time, asset collections (inclusive of interest, principal, penalties, and any other payments) will be used to purchase additional receivables, after paying SPT taxes, senior fees and expenses, interest on rated notes, and the replenishment of the liquidity reserve.

At the end of the reinvestment period or upon the occurrence of an early amortization event, the asset pool will become static. Thereafter, collections (inclusive of interest, principal, penalties, and any other payments) from the assets will be used to pay SPT taxes, senior fees and expenses, interests on the rated notes, and replenish liquidity reserve if required. The remaining proceeds will be used to fully pay down the principal of the class A notes first before payment to the class B notes. The transaction incorporates a sequential-pay mechanism, which prevents payments to the subordinated notes before the full pay-down of senior notes.

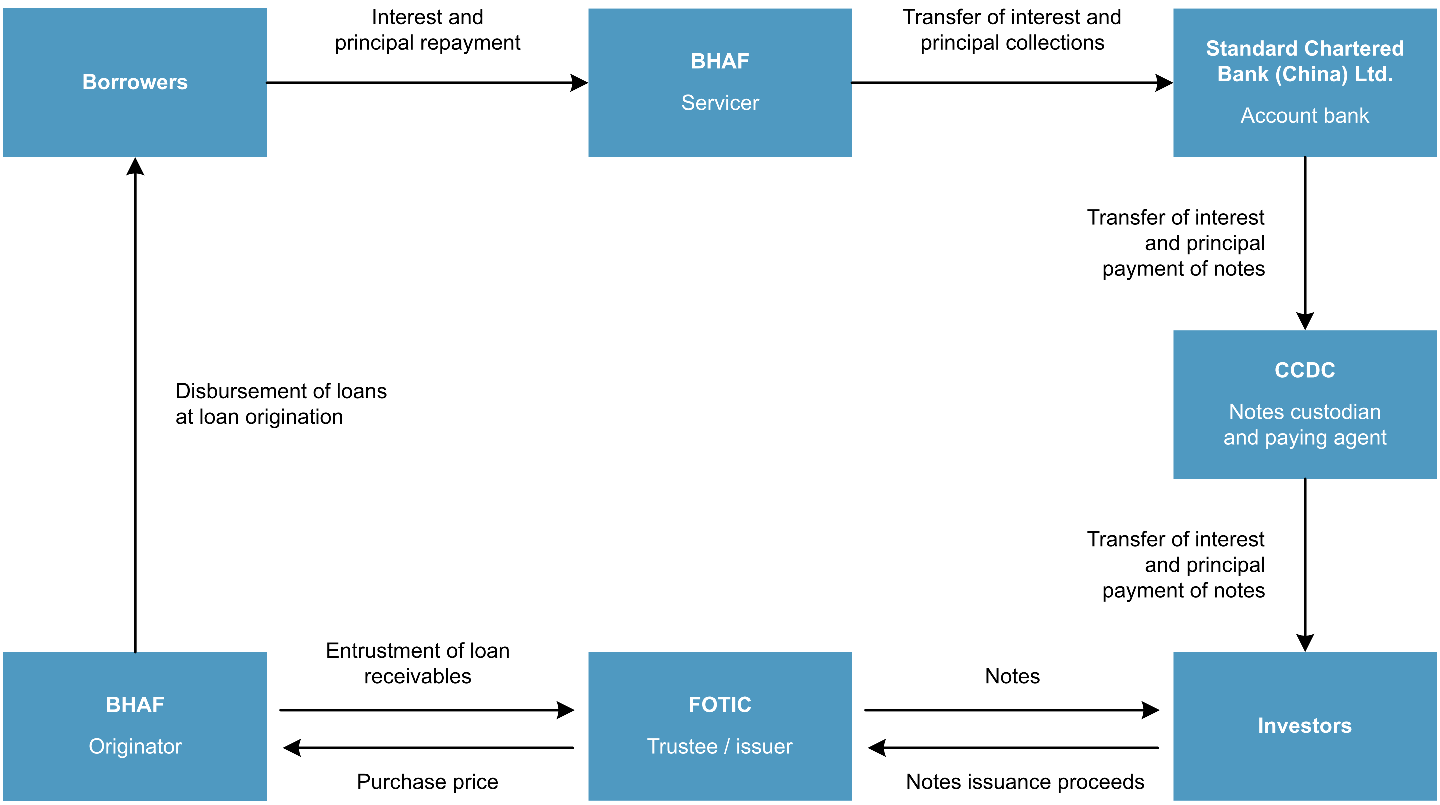
A cash liquidity reserve will be funded upon transaction closing. The liquidity reserve provides liquidity support to the transaction's senior expenses and interest on the rated notes, if needed.

A yield supplementary reserve equal to 0.55% of the initial asset pool balance will be funded by the originator upon transaction closing to provide additional liquidity and credit support.

The originator will be the transaction's servicer to collect borrower payments and to manage arrears.

Chart 1

**Autopia China 2020-2 Retail Auto Mortgage Loan Securitization Trust**
Transaction structure






## Asset Segregation And Issuer's Bankruptcy Remoteness Under The CAS Scheme

The CAS pilot program shares the typical features of international securitization transactions, such as asset sale and issuer bankruptcy remoteness. The program is primarily for bank and nonbank financial institution originators under the management of CBIRC.

We believe the asset true sale and issuer's bankruptcy remoteness in this transaction meet our special-purpose entity criteria. The primary reason for this is that the securitization transaction adopts an SPT structure by referring to China's Trust Law, in line with the regulations in the CAS pilot program.

## Collateral Assignment

Typical car loan contracts in China have clauses addressing the transferrable and assignable nature of the receivables, meaning that the originators can sell/transfer the contracts to third parties without the borrowers' consent, pursuant to China's Contract Law. The asset eligibility criteria stipulated in this transaction confirms that the purchased loan receivables are assignable.

Legally, the issuer will have the title of the receivables and the associated rights, including the mortgage, after the asset sale. Practically, however, the transfer will not be effective against the borrowers if the originator does not notify the borrowers of the transfer. Without such notification, although the receivables have been legally acquired by the issuer, the borrowers' payments will continue to be made to the originator or the initial servicer. This issue could be more complicated if the originator becomes insolvent, making it unable to issue a notice to borrowers that a trust has been created over the related loan and that borrowers should redirect their payments to the new lender.

The transaction addresses this concern by introducing a right-perfection event upon the termination of the initial servicer. The occurrence of a right-perfection event will cause the title and rights transfer to be perfected through the originator's notification to each borrower, each guarantor, if any, and the vehicle's insurance company. Such notification will state a trust has been created over the related loan and all payments on the loans should be made from then on to the issuer accounts or the replacement servicer's account.

Through an executed power of attorney upon transaction closing, the originator has empowered the trustee to issue the transfer notices to individual obligors directly if the servicer does not do so, and to redirect the loans payments to the replacement servicer's account or the issuer's accounts.

## Note Terms And Conditions

### Interest payments structure

The class A and class B notes are fixed-rate notes. Interest payments on the class A notes rank in priority to interest payments on the class B notes.

Interest paid on each class of notes will be calculated based on their outstanding principal, which is the initial principal as reduced by cumulative principal repayments on previous payment dates.

### Principal payment structure: reinvestment period

During the revolving period and before the occurrence of an early amortization event, monthly collections (after meeting payment obligations in tax, transaction expenses and notes interest, and topping up the cash reserve) will be allocated to the replenishment sub-account to the required replenishment amount for the purchase of new receivables from the seller.

The transaction will continue reinvestment for three months. However, if any of the early amortization events occur, the transaction will stop reinvestment and start amortization. The acquisition of additional receivables in the revolving period is subject to documented eligibility criteria.

### Principal payment structure: amortization

Principal repayment to the class A, class B and subordinated notes will be sequential after the end of the revolving period. The subordinated notes will receive payments only after class A and class B notes' principal is fully repaid.

### Clean-up call

The originator has a "clean-up call" option to purchase the auto loans from the trust if the pool balance at the end of any month is 10% or less of the initial pool balance, or the class A and class B notes have been repaid in full. The originator may exercise its clean-up call option only if eventually the rated notes can be repaid in full.

Our analysis is on the basis that the notes are fully redeemed by their legal final maturity date. We don't assume the clean-up call will be exercised.

## Priority Of Payments

The transaction has a combined interest and principal cash-flow priority of payments. The pre-enforcement priority of payments after the expiry of the revolving period is summarized in table 1.

Table 1

### Priority Of Payments (Summarized)

| | |
|---|---|
| 1 | Taxes - to pay any taxes of the trust due under China's laws that have not been paid, if any. |
| 2 | Senior fees and expenses - to pay trustee, fund custodian, notes custodian and paying agent, rating agencies and auditor, (a) their service fees, and (b) up to a maximum amount of RMB150,000 of trust expenses per month. |
| 3 | Servicer fee. |
| 4 | Interest on class A notes. |
| 5 | Interest on class B notes. |
| 6 | Top up the liquidity reserve up to its required level. |
| 7 | Class A notes principal until zero. |
| 8 | Class B notes principal until zero. |
| 9 | Any unpaid expenses and indemnities under item 2. |
| 10 | Subordinated notes. |

We analyzed the effect of an immediate moderate macroeconomic stress on the transaction to determine whether the maximum expected rating transition of the notes under such a scenario would be within the limits specified in the credit stability section of "S&P Global Ratings Definitions," published Aug. 7, 2020. The results of our analysis suggest that under a moderate rating stress scenario, the maximum expected rating transition on the class A and class B notes would still fall within the bounds of those outlined in the article.

## Originator/Servicer Overview

### Company background

BHAF is a joint venture of Hyundai Motor Group and BAIC Motor Group, one of the largest automotive manufacturing groups in China. Hyundai Capital Services, BHAF's major shareholder, has undertaken many securitization transactions worldwide.

BHAF was set up in June 2012, and commenced operations in August 2012. As of June 30, 2020, it employed over 400 staff, mostly based at its Beijing headquarters. Its management team has extensive experience in the automotive or finance industry. In addition to its own risk and compliance/auditing function, BHAF benefits from its parent's support in risk management and the implementation of global policies and systems.

As a manufacturer captive finance company, BHAF's primary business is to provide consumer loans to finance the purchase of vehicles related to Hyundai Motor Group and BAIC Motor Group. The vehicle financing coverage includes locally built vehicles from BHMC, DYK, BAIC Motor Corp., and HTBC.

Since August 2012, the company has extended over 2,063,000 retail loans, with an aggregate notional amount of about RMB140 billion. As of May 31, 2020, it has about 749,000 loans outstanding, with a principal amount of about RMB28 billion. It originates loans through a nationwide network of more than 1,600 dealerships.

## Loan origination and underwriting

More than 1,600 auto dealerships across China act as the first-contact points for potential customers of BHAF auto loan products. Financial consultants in these dealerships provide services that include loan product introduction, preliminary loan terms suggestions, borrowers' identity verification, and income documents collection. The financial consultants enter loan applications and related information in BHAF's loan review system.

All credit decisions are centralized at BHAF's head office. In addition, dealership performance is also tracked via arrears performance that could affect its future business relationship with BHAF.

After the dealers' financial consultants enter the client-related information in the loan-review system, BHAF adopts a three-step review and approval process in its credit department.

Operation staff in the credit department will first check loan documents and conduct system-based credit record enquiries and borrower credit scoring. At this stage, staff will decide whether to process the review based on manual check, or go through automatic approval process. For loans going through manual check, credit reviewers will conduct personal interviews, validation, and credit analyses. The credit reviewers prepare credit reports based on the proposed loan terms and suggest revisions to the terms, if necessary. Loan applications may be approved, referred, or rejected at this stage. The credit-approval team, composed of more experienced credit staff, makes the final credit decision on referred loans, based on the loan application data and credit analyses conducted by the credit reviewers.

BHAF's credit process includes checks on each borrower's identity, the borrower's credit history, and affordability in the Financial Credit Information Database, a nationwide credit reference system. The process also looks into adverse credit history such as fraud and criminal records. Any exceptions on loan applications need to be decided by an independent committee.

Applications are previously assessed via BHAF's scorecard, an expert system based on external auto loan default experiences. Starting in March 2015, all loan applications are reviewed under a scoring system that is based on BHAF's internal loan default data to better reflect the loan underwriting experience accumulated in the past years. The scores generated are used by BHAF primarily as a supplementary credit reference rather than a direct loan credit decision. In most cases, the credit reviewer and the credit approver decide whether a loan is approved based on a full review of all the materials and credit record check results. Loan applications are subject to automatic approval under limited conditions.

We note BHAF's underwriting practices have become more proficient in recent years, and the company has been able to leverage on new tools such as a credit scoring system and other obligor recognition technology in its credit decisions. This observation, along with the company's conservative product/obligors strategy, is consistent with the decreasing loan default and losses trend in its loan book.

### Loan servicing

BHAF will be responsible for servicing the receivables in the collateral pool. Its customer-service department tracks and manage loan repayments. The collections department, centralized at the head office, is responsible for telephone contact on overdue loans, on-site collection for severe delinquency, outsource management, and legal and foreclosure processes.

Borrowers repay their loans through direct-debit repayments into BHAF's account. To do this, all borrowers need to maintain a bank account at designated banks and deposit sufficient money for periodic loan repayments. Each of these banks has a nationwide network in China for such service.

When a contract falls into arrears, BHAF follows a staged collections process of text messaging, phone notification, official letters, BHAF collections, and vehicles repossession as agreed with the borrowers, depending on how long the loans are delinquent. Delinquent loans will be classified according to the prospect and difficulty of recovery. The collection process typically starts with a loan payment reminder two days before the payment date, followed by text messaging and phone notification of delinquency within three days, then delivery of official letters. On-site collections and borrower-agreed repossession can apply for severely delinquent loans, loss of contact with borrowers, or other material adverse developments relating to the loan or the borrower.

## Collateral

The pool contains consumer loan contracts, secured by vehicles manufactured by BHMC, DYK, KI, BAIC, and BAICORV. The aggregate outstanding principal balance in the initial pool is about RMB4 billion.

The following summarizes some distinct features of the collateral pool:

- The collateral pool may change with reinvestment of receivables in the first three months after transaction close.
- The entire portfolio comprises receivables that are backed by new passenger vehicles. Historical data in other markets show that losses when the motor vehicle financed was new are typically lower than those when the motor vehicle was pre-owned.
- All loans are fully amortized with either equal instalments or equal principal.
- The transaction has a diversified pool, with the largest single loan accounting for less than 0.01% of the initial pool balance. Borrower concentrations therefore do not present an additional risk for this transaction.
- The collateral pool is somewhat seasoned, with a weighted-average contract seasoning as of the cut-off date of 9.29 months.
- The loans in the initial collateral pool have relatively low interest rates, which are skewed toward less than 2% with a weighted-average interest rate of 2.97%. The loans with interest rates of 4% or higher account for 34.67% of the pool, while those with interest rates of less than 2% represent 50.5%.

The receivables pool for Autopia China 2020-2 Retail Auto Mortgage Loan Securitization Trust as of June 30, 2020, is summarized in table 2.

Table 2

## Characteristics (% pool by outstanding principal balance)

| | |
|---|---|
| **Customer type** | |
| Retail | 100.00 |
| Corporate | 0.00 |
| **New and used (financed vehicle)** | |
| New | 100.00 |
| Used | 0.00 |
| **Loan payment method** | |
| Direct debit | 100.00 |
| **Seasoning (months)** | |
| >=2 and <6 | 31.87 |
| >=6 and <9 | 32.60 |
| >=9 and <12 | 10.68 |
| >=12 and <15 | 8.48 |
| >=15 and <18 | 6.09 |
| >=18 and <21 | 5.24 |
| >=21 and <24 | 2.90 |
| >=24 | 2.14 |
| **Remaining term to maturity (months)** | |
| <5 | 2.80 |
| >=5 and <10 | 7.54 |
| >=10 and <15 | 12.58 |
| >=15 and <20 | 24.52 |
| >=20 and <25 | 10.84 |
| >=25 and <30 | 23.14 |
| >=30 and <35 | 18.58 |
| >=35 and <36 | 0.00 |
| **Interest rate (%)*** | |
| >=0 and <2.00 | 50.47 |
| >=2.00 and <4.00 | 14.86 |
| >=4.00 and <6.00 | 12.19 |
| >=6.00 and <8.00 | 12.20 |
| >=8.00 and <10.00 | 7.52 |
| >=10.00 and <12.00 | 1.53 |
| >=12.00 and <14.00 | 0.38 |
| >=14.00 and <16.00 | 0.86 |

Table 2

## Characteristics (% pool by outstanding principal balance) (cont.)

| **Outstanding principal balance (RMB)*** | |
|---|---|
| <50,000 | 42.05 |
| 50,000-100,000 | 54.99 |
| 100,000-150,000 | 2.77 |
| 150,000-200,000 | 0.20 |
| 200,000-250,000 | 0.01 |
| **Manufacturer** | |
| BHMC | 92.44 |
| DYK | 7.37 |
| BAIC | 0.17 |
| BAICORV | 0.01 |
| KI | 0.01 |

*Results subject to rounding

The obligor concentrations for the collateral pool are set out in table 3.

Table 3

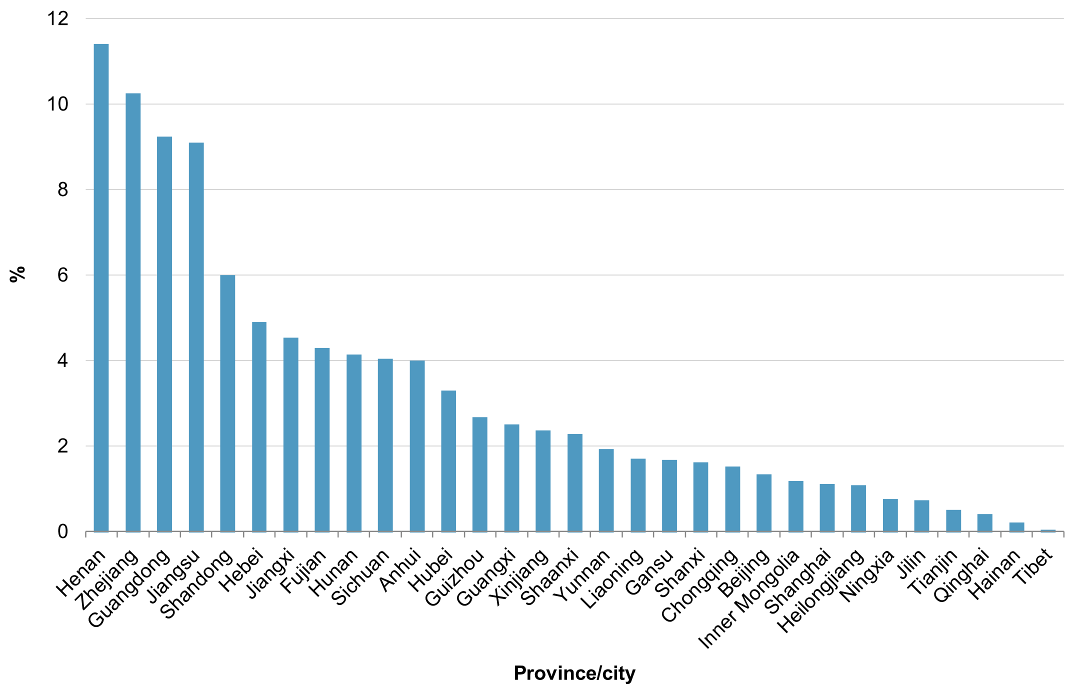
## Obligor Concentrations (% Of Pool Outstanding Principal Balance)

| | |
|---|---|
| The largest obligor | 0.006 |
| The largest 10 obligors | 0.05 |
| The largest 20 obligors | 0.09 |

Chart 2 illustrates borrower geographic distribution of the collateral portfolio.

Chart 2

**Securitized Loans**
Borrower geographic distribution






## Selective Eligibility Criteria

- The financed vehicle was manufactured by BHMC, DYK, BAIC, KI, and BAICORV.
- The financed vehicle was a new vehicle at the time the loan was originated.
- The loan is secured by the grant of a mortgage over the related financed vehicle.
- Direct debit authorization has been established by the borrower for amounts to be directly debited by BHAF from the borrower's bank account in payment of amounts due and payable under the loan agreement.
- The loan agreement stipulates monthly principal amortization schedule. The repayment method shall be either equal installment or equal principal.
- The loan accrues interest at a floating rate of not less than zero percent on which BHAF can adjust based on changes permitted in the loan agreement under the applicable law or at a fixed rate of not less than zero percent.
- The loan agreement does not contain any restriction on BHAF's ability to transfer the loan or its related security or to create a trust over the loan.
- As of the initial cut-off date or as of any additional cut-off date, the loan has not been paid off,

charged off or rescinded.

- To BHAF's knowledge, as of the initial cut-off date or as of any additional cut-off date, no right of rescission, setoff, counterclaim, or defense has been asserted or threatened with respect to the loan; there is no unsettled dispute between BHAF and the borrower; and there is no litigation, arbitration, or enforcement proceedings concerning the loan.
- As of the initial cut-off date or as of any additional cut-off date, the loan is current--i.e. it is not a delinquent or defaulted loan.
- As of the initial cut-off date or as of any additional cut-off date, the loan has never been 60 days past due or more.
- As of the initial cut-off date or as of any additional cut-off date, at least two scheduled monthly payments have been made on the loan.
- As of the initial cut-off date or as of any additional cut-off date, the remaining term of each loan has not exceeded 36 months.
- Under the loan agreement, the original principal amount borrowed is not greater than RMB300,000.
- As of the initial cut-off date or as of any additional cut-off date, each borrower has made a down-payment of not less than 20% of the vehicle price.
- As of any additional cut-off date, the weighted average interest rate of the additional purchase loans shall not be lower than 2% per annum.

## Early Amortization Events

The transaction has a set of early amortization events. Upon the occurrence of the early amortization events, the transaction will stop reinvestment and start amortization. The early amortization events mainly include the cumulative default ratio exceeding 2.0%, the shortfall in the replenishment account exceeding 20% of the required replenishment amount, as well as the occurrence of an event of default or a servicer termination event. For analytical purposes, our credit and cash flow evaluations on this transaction are based on the possible portfolio features allowable by the stated asset eligibility criteria, early amortization events, and the originator's historical performance. With that, we derived our assumption of certain credit loss to occur during the revolving period before the transaction enters into amortization.

## Commingling Risk

Our counterparty criteria consider a transaction's commingling risk through the rating on the servicer, the amount of funds likely to be held in a servicer account at any given time, and the potential impact of a delay in receipt of those funds on the supported securities. In our opinion, there is potential commingling risk in this transaction if the servicer defaults, because BHAF, acting as the servicer in this transaction, can hold the collections for a period of one month before remittance to the SPT account.

A commingling reserve account will be established for this transaction with the account bank upon closing, but there will not be upfront deposit in the account upon closing. Remedy actions would be taken in accordance with the transaction documents to mitigate servicer commingling risk if the servicer's rating is lowered to certain levels, based on local ratings agencies' scales.

In our view, the current transaction arrangement (such as uncertainty about the commingling reserve amount and rating triggers do not include S&P Global Ratings' ratings) does not sufficiently mitigate commingling risk in accordance with our counterparty criteria. For this reason we have assumed that one full month of collections may be lost before collections could be redirected to the SPT accounts or the accounts of the replacement servicer, when the original servicer becomes insolvent. We have considered this one-month collection loss in our cash-flow analysis of the transaction.

## Set-Off Risk

We believe the obligors' set-off risk in this transaction is remote because BHAF is not an authorized deposit-taking institution in China. Although the assets eligibility criteria does not exclude loans extended to employees to be securitized, such loan amounts only account for about 0.01% of the aggregate portfolio and securitized pool. In addition, the representations and warranties provided by BHAF in respect of the collateral pool include that the borrowers in particular have no set-off claim thereto or thereunder the loans, or the status and enforceability of the purchased loan receivables is not impaired by set-off rights.

## Counterparty Risk On The Bank Account Provider

Issuer accounts for this transaction will be held with Standard Chartered Bank (China) Ltd. pursuant to the account bank agreement. Among other transaction arrangements, the bank will be replaced if the rating is below 'A', within 30 calendar days of the downgrade. This arrangement meets our counterparty criteria to support an 'AAA' rated transaction, considering the transaction's cash-flow arrangement.

## Counterparty Risk On The Servicer

BHAF cannot resign from its role as the initial servicer, but can be removed if a servicer termination event occurs. Such an event might happen if BHAF were to become insolvent, failed to remit collections to the issuer when due, or could not remedy a breach of a material covenant that has a material adverse effect on the noteholders. The transaction does not have a back-up servicer upon transaction closing. Only if the ratings of BHAF fall below a certain level, based on local rating agencies' rating scales, will a noteholders' meeting appoint a back-up servicer.

Prime auto transactions in other markets do not typically include back-up servicers upon transaction closing, however, because of the high credit quality and homogeneous nature of the receivables, combined with the availability of institutions experienced in servicing them. We believe that in China the most likely servicer replacement would be other auto finance companies or commercial banks that have a nationwide network for loan collections.

All loan payments in this transaction will be collected through the direct debit of borrowers' cash accounts in three national banks. This will reduce the workload of the servicer and make it easier to find a replacement. We have also considered a potential increase in servicer fees should a replacement servicer require a higher return. Finally, the transaction includes a liquidity reserve that is funded up-front and could cover transaction expenses and note interests should asset collections be temporarily unavailable to meet the transaction obligations. In our view, this will allow the transaction sufficient time to find a new servicer and resume asset collections.

## Liquidity Support

Timely payment of senior expenses and rated notes interest are supported by the use of principal draw, and a liquidity reserve funded at closing by BHAF, equal to 1.0% of the initial receivables balance.

The liquidity reserve is held in the liquidity reserve account. It does not amortize and will be topped up to a floor of RMB40 million through remaining proceeds available on each payment date. On each payment date, the trustee may draw funds in the liquidity reserve account if asset collections are insufficient to cover the tax, if any, senior fees/expenses, servicing fees, and interest payments to the class A and class B notes. Upon transaction maturity, any balance remaining in the liquidity reserve will be transferred to the collection and distribution account for payments to the notes, creating another source of credit support.

In addition to the liquidity reserve, a yield supplementary reserve of RMB22 million (equivalent to 0.55% of the initial asset pool balance) will be funded upon transaction closing by the originator. The yield supplementary reserve will provide additional liquidity and credit support to the transaction by transferring the credit balance in the yield supplementary reserve account to the replenishment sub-account for purchase of additional loan receivables during the revolving period, if the outstanding pool balance is less than the initial pool balance. The yield supplementary reserve will be returned to the originator upon the earlier of the end of the revolving period or the occurrence of an early amortization event.

## Interest-Rate Risk

About 0.25% of the collateral loans carry a variable interest rate, while the interest rate is fixed on the issued class A and class B notes. In our view, the interest-rate risk is negligible in this transaction.

Moreover, according to BHAF, all loans originated since Jan. 1, 2020, have been priced at fixed rate. Going forward, only fixed rate loans will be originated. For variable rate loans in BHAF's managed portfolio, the interest rate will either be converted to fixed rate or a margin over the loan prime rate (LPR), subject to the borrowers' preference. As of the initial cut-off date, none of the variable rate loans in the initial pool has its benchmark rate converted to LPR.

In cash flow modeling, we assume loan defaults and prepayment will first happen in the highest-yield loans because of the expected higher credit risk and higher payment burden. This will cause the weighted average asset yield drop quickly over time.

## Credit And Cash-Flow Analysis

We consider a significant performance deterioration of the underlying receivables to be the principal factor affecting rating transition in this transaction. We have applied our "Global Methodology And Assumptions For Assessing The Credit Quality Of Securitized Consumer Receivables" criteria, published Oct. 9, 2014, to the credit risk analyses in this transaction.

### Historical performance data

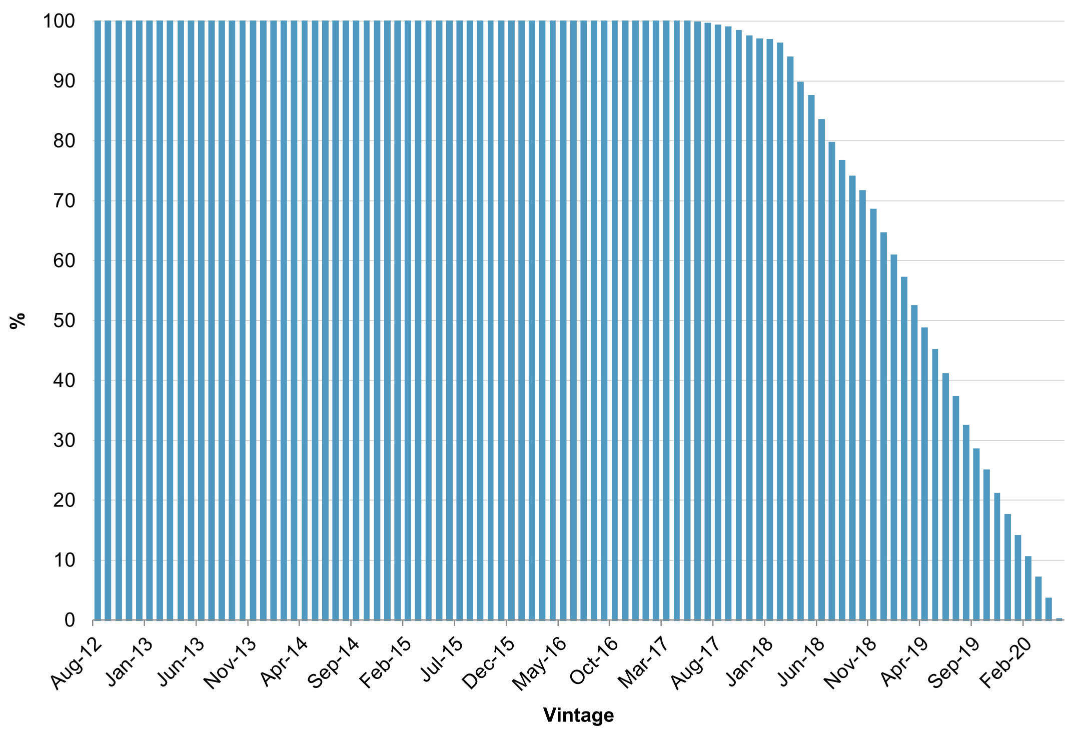
We received the following historical performance data for auto loan pools originated by BHAF:

- Static pool data included vintage performance data from August 2012 to May 2020.
- Dynamic pool data for each month from August 2012 to May 2020.

The pay-out ratio for each vintage is depicted in chart 3.

Chart 3

**BHAF's Loan Vintages**
Payout ratio






BHAF typically charges off loans that are more than 120 days past due. Loans could be charged off earlier only under very limited circumstances.

In our credit-risk analysis, we assumed all loans delinquent for more than 90 days would default, and used this classification to determine the base-case default frequency for the securitized pool. This assumption reflects the low but stable cure rates--returning from delinquency to current--of loans overdue for more than 90 days, and the practical collection operations BHAF adopts. BHAF typically starts court processes and conducts vehicle repossession after loans become delinquent for 120 days. Our assessment also takes into account the comparison with the loan performance of major peers in the China auto finance industry and BHAF's customer and product features.

We assume that loans overdue for more than 120 days and loans charged off for other reasons would be deemed as a loss. We use this as a benchmark to estimate the recovery after defaults for the collateral pool.

Charts 4 and 5 illustrate the cumulative default and cumulative loss experience of BHAF's total auto loan portfolio, based on our assumptions of deemed default and deemed loss, from August

2012 to May 2020.

Chart 4

**Historical Performance**
Cumulative default rate

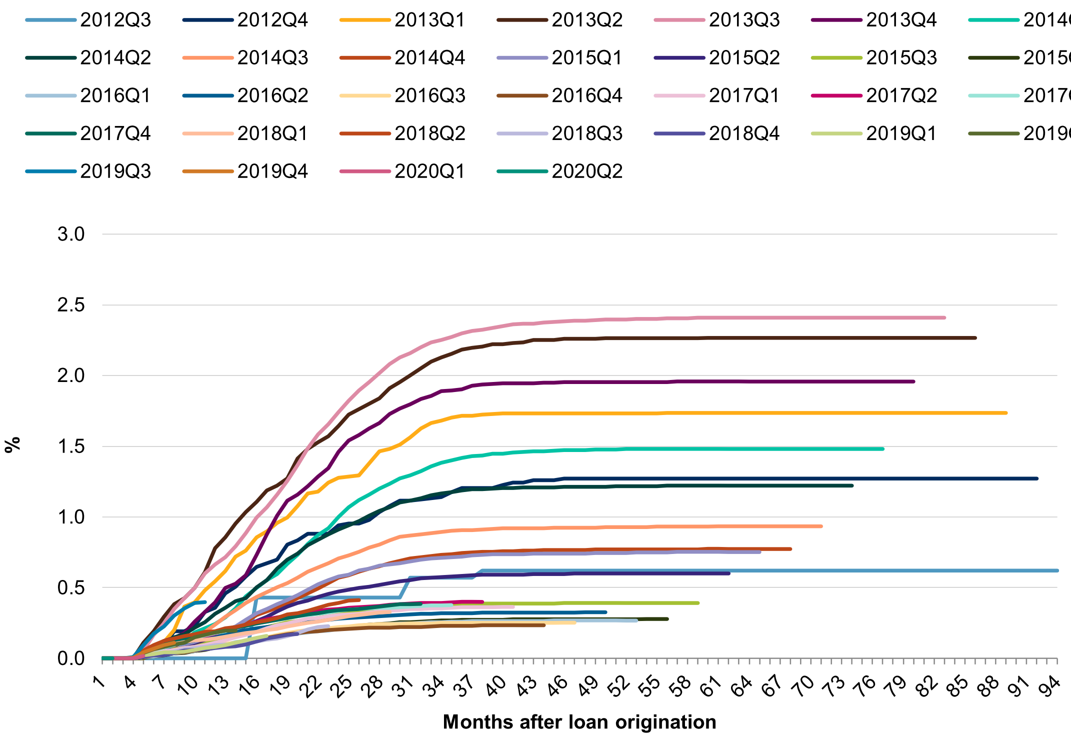
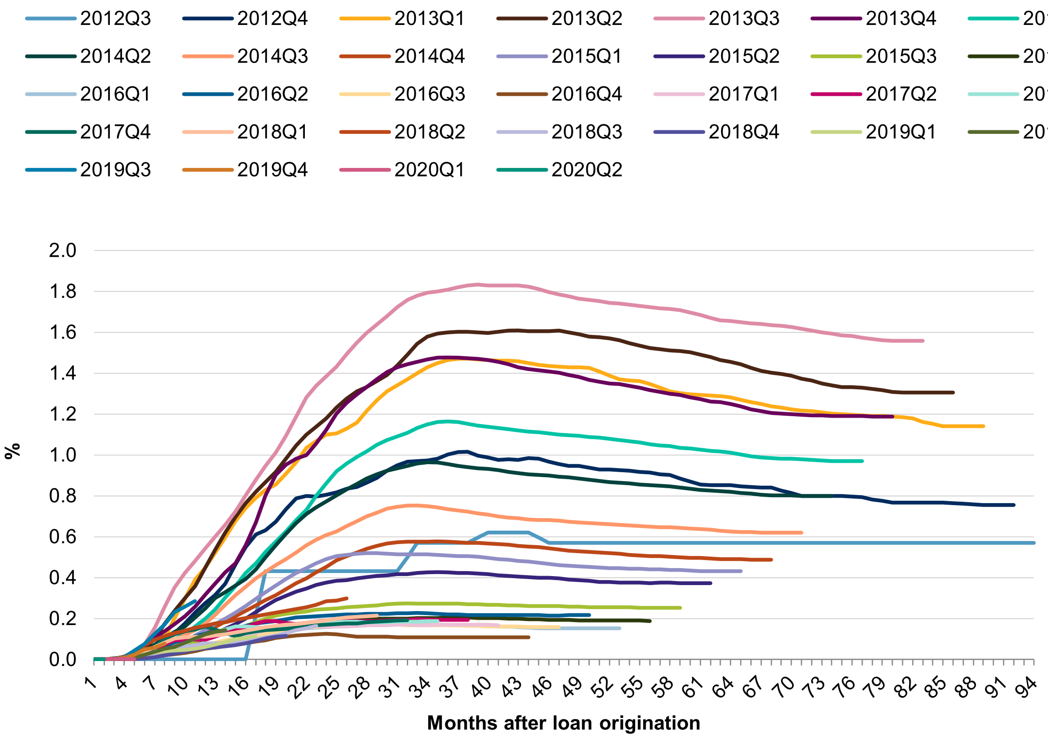


Chart 5

**Historical Performance**
Cumulative loss rate






## Base-case assumptions and stressed default and loss

Our base-case default assumption for the collateral pool is 1.5%, based on the historical performance observed in the static pool and dynamic pool data. We applied a stress multiple to the base-case default percentage in the 'AAA' rating category for the class A notes, and 'A-' rating category for the class B notes. The magnitude of the stress multiples that we applied reflects the notes' respective rating levels, the underlying pool's revolving nature that could render a portfolio profile different from the initial pool, as well as our consideration of the relatively short development history of auto loan securitization in China. We have not observed any real macroeconomic stress because the economic environment has been benign in the past decade. We therefore applied a higher stress multiples.

We have taken into account the short reinvestment period of three months and the relatively short remaining terms of the initially securitized loans in our analysis. We believe these help make the risk exposure period of the transaction, or weighted-average life of the notes, relatively short.

We gave limited credit to recoveries. Our base-case recovery assumption for the collateral pool is 10.0%, which we derived from the migration analyses of the "deemed default" and "deemed loss" loans. We gave 50% credit of the 10% base-case expected recoveries to arrive at a loss severity assumption of 95% for both rating stresses. Although some loans in the collateral pool may not have mortgage registrations, BHAF indicates it targets such loans at borrowers of higher debt serviceability, e.g. those with higher down payment or better internal credit scores. We consider our stressed default and loss severity assumptions for this transaction to be sufficient to capture any potential increase in risk associated with the inclusion of loans without mortgage registrations.

Table 4 shows a summary of the credit assessment.

Table 4

### Summary Credit Assessment

| | AAA | A- |
|---|---|---|
| Base-case default frequency (%) | 1.5 | 1.5 |
| Stress multiple used (x) | 6.6 | 4.0 |
| Default frequency (%) | 9.9 | 6.1 |
| Loss severity (%) | 95.0 | 95.0 |
| Minimum credit support after credit to recovery (%) | 9.5 | 5.8 |

## Cash-flow analysis

We analyzed the capacity of the transaction's cash flows to support the rated notes--i.e., timely interest payments and repayment of principal by the legal maturity date--by running several different scenarios correlated with a 'AAA' rating level for class A notes, as well as an 'A-' rating level for class B notes. Our cash-flow analysis included various scenarios that reflect different combinations of the following factors:

- Level of defaults and recoveries commensurate with the rating level.
- Three different default curves: a front-loaded, back-loaded, and normal default curve. The curves we employed primarily reflected the default timing that we observed in BHAF's static default curves.
- Potential credit losses during the reinvestment period.
- Recovery period (assumed to be nine months).
- Stressed fees and expenses upon servicer transition and unexpected expenses increase.
- The loss of one month of collections due to the potential commingling risk.
- Different prepayment rates.
- Compression in asset yield as a result of default and prepayment in the higher-yielding loans.

For the prepayment rates, we modeled three different prepayment curves. The prepayment stresses assumed include voluntary and involuntary (default) prepayments (see table 5). We use a high constant prepayment rate (CPR) test--going to 15% annualized CPR under high CPR stress, a normal CPR scenario (constant at 4%) that reflects the prepayment we observed in BHAF's historical data and a low CPR scenario (constant at 1%).



Table 5

### CPR Assumption

| Months from transaction close | Normal CPR (% per year) | High CPR (% per year) | Low CPR (% per year) |
|---|---|---|---|
| 1 | 4.0 | 4.0 | 1.0 |
| 2 | 4.0 | 6.0 | 1.0 |
| 3 | 4.0 | 8.0 | 1.0 |
| 4 | 4.0 | 10.0 | 1.0 |
| 5 | 4.0 | 12.0 | 1.0 |
| 6 | 4.0 | 14.0 | 1.0 |
| 7+ | 4.0 | 15.0 | 1.0 |

*Total CPR shown is inclusive of voluntary and involuntary (defaults) prepayments.

The transaction can pass all of the scenarios that we analyzed in our cash-flow adequacy tests. Some of the noteworthy features of the transaction cash flows are as follows:

- We project the transaction would experience significant negative carry under our rating stresses scenarios. That's partly because: (1) 50.5% of the initial pool has interest rate below 2.0%, lower than assumed note coupons; and (2) the possibility that loan receivables replenished during the revolving period may be purchased at a lower weighted average portfolio yield at 2.0% per eligibility criteria compared to the initial weighted average yield of 2.97%. The transaction would therefore need to draw principal collections to cover senior expenses and notes interest throughout the amortization period. Such potential negative carry risk has been mitigated by credit enhancement provided.

## Sensitivity Analysis

We cash-flow modeled two additional scenarios to determine how vulnerable the notes would be to a downgrade under each scenario:

- Scenario 1: Base-case default frequency is 25% higher than our expected level of 1.5%.
- Scenario 2: Base recoveries are only 75% of our expected base recovery rate of 10%.

The minimum credit support under each scenario is set out in table 6.

Table 6

### Minimum Credit Support After Credit To Recovery (%)

| Scenario | AAA | A- |
|---|---|---|
| Expected | 9.5 | 5.8 |
| Scenario 1 | 11.8 | 7.2 |
| Scenario 2 | 9.6 | 5.9 |

Table 7 sets out what the rating level of each class of notes would be at transaction close under each scenario.

Table 7

### Rating Transition

| Scenario | Class A notes | Class B notes |
|---|---|---|
| Expected | AAA (sf) | A- (sf) |
| Scenario 1 | AA (sf) | BBB (sf) |
| Scenario 2 | AAA (sf) | A- (sf) |

## Potential impact of COVID-19

S&P Global Ratings acknowledges a high degree of uncertainty about the evolution of the coronavirus pandemic. The current consensus among health experts is that COVID-19 will remain a threat until a vaccine or effective treatment becomes widely available, which could be around mid-2021. We are using this assumption in assessing the economic and credit implications associated with the pandemic (see our research here: www.spglobal.com/ratings). As the situation evolves, we will update our assumptions and estimates accordingly.

## Related Criteria

- 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
- Legal Criteria: Structured Finance: Asset Isolation And Special-Purpose Entity Methodology, March 29, 2017
- Criteria | Structured Finance | ABS: Global Methodology And Assumptions For Assessing The Credit Quality Of Securitized Consumer Receivables, Oct. 9, 2014
- Criteria - Structured Finance - General: Global Framework For Cash Flow Analysis Of Structured Finance Securities, Oct. 9, 2014
- Criteria | Structured Finance | General: Global Framework For Assessing Operational Risk In Structured Finance Transactions, Oct. 9, 2014
- Criteria | Structured Finance | General: Criteria Methodology Applied To Fees, Expenses, And Indemnifications, July 12, 2012
- 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

- S&P Global Ratings Definitions, Aug. 7, 2020
- Credit FAQ: What Do The First Performance Reports Reveal About COVID-19's Effects On China Auto ABS And RMBS? March 26, 2020
- Credit FAQ: How S&P Global Ratings Factors In The Potential Effects Of The COVID-19 Outbreak When Analyzing China Auto ABS and RMBS, March 4, 2020
- China Structured Finance Outlook 2020: Performance To Diverge Amid Flat-To-Modest Issuance Growth, Feb. 6, 2020
- China Auto ABS And RMBS Must Brace For Coronavirus Impact, Feb. 3, 2020
- An Overview Of China's Auto Finance Market And Auto Loan Securitization, March 12, 2019
- Global Structured Finance Scenario And Sensitivity Analysis 2016: The Effects Of The Top Five Macroeconomic Factors, Dec. 17, 2016
- Securitization Performance Watch – China, published quarterly