

Securitized Products Monthly (Jul 2026)

Japan Housing Finance Agency RMBS performance analysis

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Daiwa Securities Co. Ltd.

Abridged translation

1. Last month's issuance terms and upcoming launch schedule

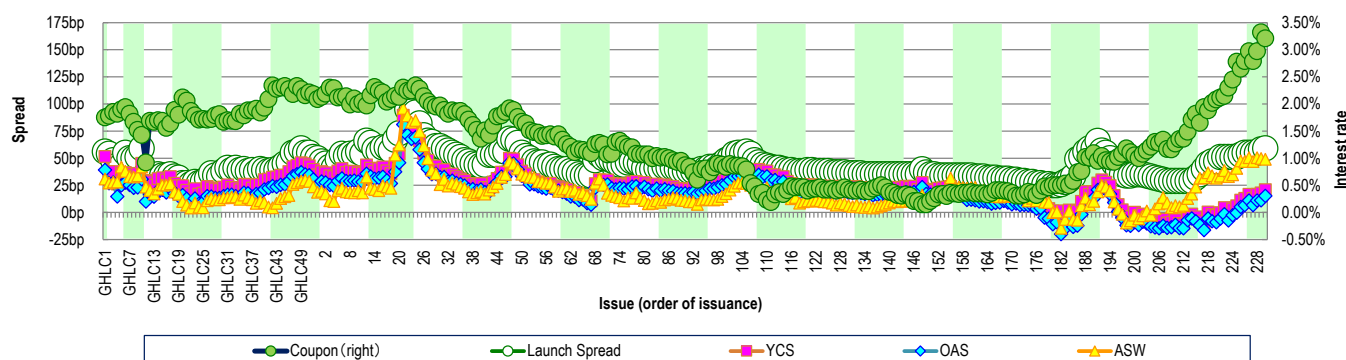
On 19 June, the Japan Housing Finance Agency launched its No. 230 Monthly MBS, backed by mortgage receivables, hereafter referred to as "JHF RMBS". The issuance amount was ¥16.1bn and the coupon was 3.21%. The coupon was set at the compound yield on 10-year JGB (JB 382) plus 59bp, namely the launch spread on a nominal basis. The OAS at launch was 15.2bp and the YCS based on the PSJ forecast statistics was 31.7bp.

- The coupon fell by 0.11ppt from the previous coupon, from 3.32% to 3.21%.
- The OAS at launch widened by 4.2bp from the previous launch, from 11.1bp to 15.2bp.
- The YCS based on the PSJ forecast statistics widened by 1.5bp, from 30.2bp to 31.7bp.

The coupon fell from its previous record high as the 10-year JGB yield dropped. 1bp was added to the nominal, probably in order to stimulate investment demand. OAS and YCS have also increased in terms of depth, making it easier for institutional investors to consider them as investment targets from the perspectives of both absolute and relative returns.

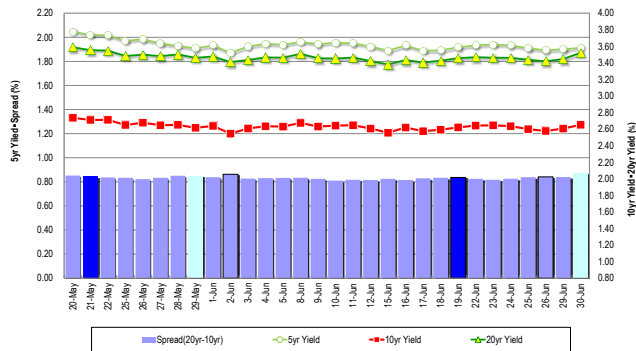
On 24 June, JHF finalized the issuance terms for its 4th series of E55 bonds (¥30bn). This will likely attract investment demand because its cleanup call is scheduled earlier than those of the monthly issues, resulting in a shorter expected maturity. This type of flexible issuance in response to market conditions demonstrates the agency's commitment to maintaining an ongoing dialogue with the market under its business model of funding Flat 35 loans primarily through RMBS issuance.

Issuance Terms and Spreads for Monthly MBS

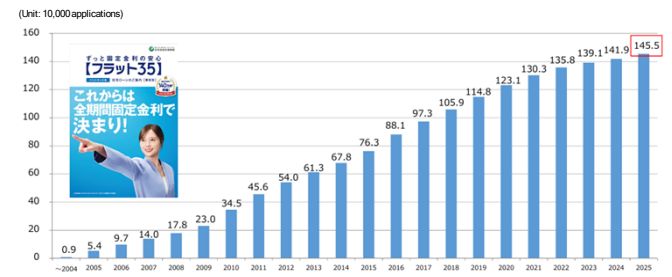


Source: JHF and Daiwa. Shadows used to distinguish between fiscal years. Launch spread based on actual measurements with inclusion of some estimates. OAS, YCS, and ASW are based on our model-generated cash flows.

JGB Yields



Cumulative Number of Flat 35 Applications



(Issuance schedule for this month)

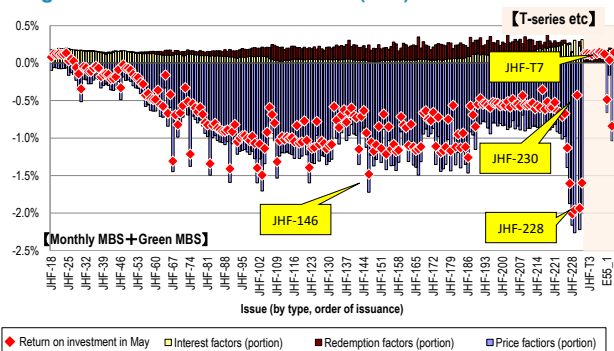
In July, JHF finalized the issuance terms for its No. 231 Monthly MBS, with an issuance amount of ¥15.4bn.

2. Return on investment

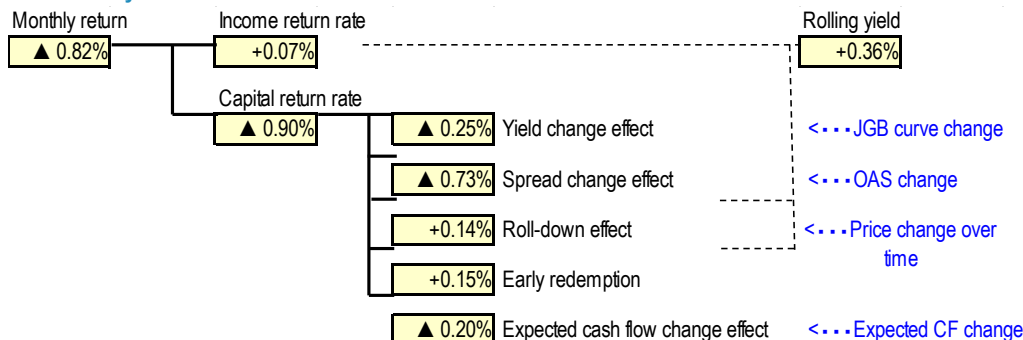
In the secondary market, the JHF RMBS holding period return ranged from +0.15% to -2.01% in June, based on our OTC mid-rate and not annualized. The sector overall was -0.82%, underperforming the overall long-term bond market by 0.82ppt. By maturity, short-term maturities were down 0.04%, underperforming the overall market by 0.18ppt, medium-term maturities were down 0.68%, underperforming the market by 0.88ppt, and long-term maturities were down 0.91%, underperforming the market by 0.71ppt.

The JGB yield curve bear steepened slightly in June. For many fixed-rate bonds with medium-term maturities, the carry offsets the price declines caused by limited upside for JGB yields, allowing them to maintain positive holding period returns. In contrast, RMBS risk premiums have widened across the board, leading to a significant drop in prices.

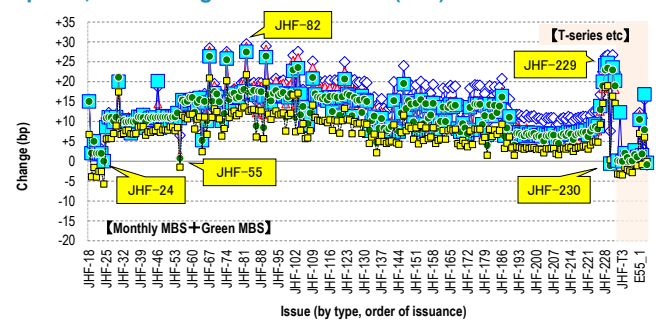
Holding Period Return for Each Issue (Jun)



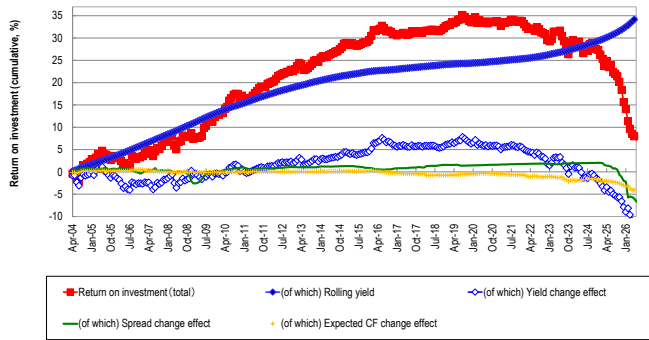
Factor Analysis of Return on Investment in Jun



Spread, BEY Changes for Each Issue (Jun)

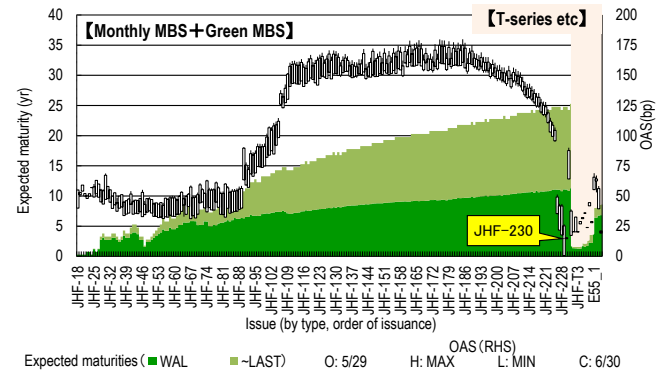


Factor Analysis of Return on Investment in Jun (sector)



Source: DBI data and Poet-SB; compiled by Daiwa.

OAS and Expected Maturities of Individual Issues



Source: Compiled by Daiwa. Expected maturity is mid-range forecast for end-Jun based on our model.

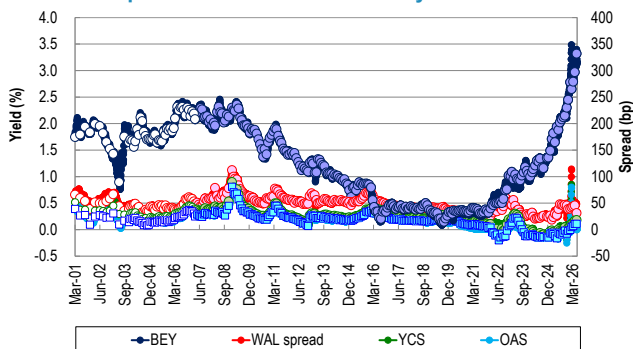
3. Yields and risk premiums

As for the No. 230 bond, the on-the-run issue in the secondary market, the BEY, or compound yield based on our model's median expected cash flow, was 3.29% at the end of June, 0.16ppt higher than that of the on-the-run issue at the end of the previous month. The OAS was 14.6bp, 0.6bp lower than at launch and 14.0bp higher than that of the on-the-run issue at the end of the previous month.

In June, the 10-year JGB yield fluctuated around the 2.6% range while testing upside. At the 16 June Monetary Policy Meeting, the BOJ decided to hike its policy interest rate from 0.75% to 1.00%. The long-term JGB market is now reassessing the terminal rate level and timing. The yen, which had reached the USD/JPY160 range at the start of June, remained steady overall, but continued to slowly depreciate further toward the end of the month. Japan's policy interest rate of 1.00% may be seen as still sufficiently far below the US interest rate of 3.75%. The 10-year UST yield has edged lower from the 4.5% range to the 4.4% range in June.

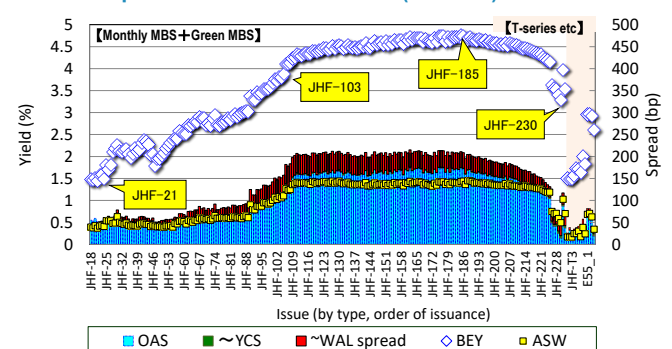
Some off-the-run monthly bonds with high BEY topped 4.7%. BEY is rising across all maturities, particularly for issues with low coupons. Amid the policy interest rate hiking trend, demand to offload low-coupon bonds is causing spreads to widen, which, combined with rising base rates, is driving up the BEY.

Yields and Spreads of On-the-run Monthly MBS



Source: JHF and Daiwa. BEY is final yield based on mid-range projected cash flow.

YTM and Spreads of Individual Issues (end-Jun)



Source: Compiled by Daiwa. BEY is final yield based on mid-range projected cash flow.

(Relationship between YCS and OAS)

YCS is a spread calculated by valuing prices based on the JGB spot rate curve and the median expected cash flow derived from that curve. It serves as an estimate of the excess return relative to a JGB portfolio with the same maturity distribution. The OAS is a spread estimated by taking into account changes in yields and cash flows. It represents a conservative estimate of the forecast excess return. It is taken into account that the RMBS cash flow will be outside of the median forecast depending on the yield environment that materializes in the future. The difference between YCS and OAS corresponds to the option premium associated with RMBS

principal redemption and largely reflects the likelihood that mortgage borrowers' early repayments will deviate from the median forecast.

As for secondary market OTC valuations, the OAS for issues that are slightly off-the-run exceeds 100bp, with 150bp as the highest level. YCS based on our prepayment forecast model is generally a few basis points more than OAS. That said, for issues with shorter maturities, in particular, the spread can be more than 10bp than the OAS, depending on when the factor is expected to fall below 0.1.

Conservative view based on YCS stress model

Due to rising market yields, prepayments on existing RMBS have remained at low levels for nearly a year. However, this creates a synergistic effect that worsens the period returns for existing RMBS. As prepayment outlooks have consistently fallen short of the PSJ forecast statistics, even the PSJ model cash flow assessments, the market is now driven by a stress-testing perspective that focuses on confirming the depth of the YCS, which is measured using (conservative, longer-term) expected cash flows based on lower prepayment assumptions that align more closely with existing RMBS prepayment trends than the PSJ forecast statistics.

4. Early redemption

Principal redemption follows reduction in mortgage balance

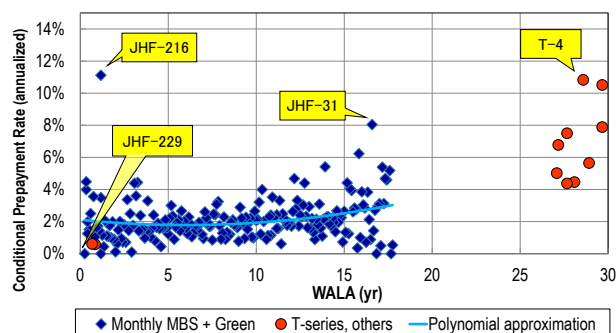
The principal on JHF RMBS is partially redeemed each month. Partial redemption of the RMBS principal is made by mortgage borrowers in the collateral asset pool for each tranche, specifically (1) scheduled repayment (repayment according to repayment schedule), (2) early repayment (prepaid by debtor, early repayment), and (3) carried out on a pass-through basis in proportion to the volume of partial cancellation (purchase of impaired loans) conducted by JHF to maintain the eligibility of collateral. The initial excess collateral ratio is maintained for as long as the bonds remain outstanding.

On the 25th of each month, JHF confirms the previous month's collection status for mortgage loans to prepare for the following month's RMBS principal and interest payments. The latest data (released on 25 Jun) summarizes May's mortgage repayment results, which will be reflected in this month's (July) RMBS principal redemptions.

(Early repayment for home loan)

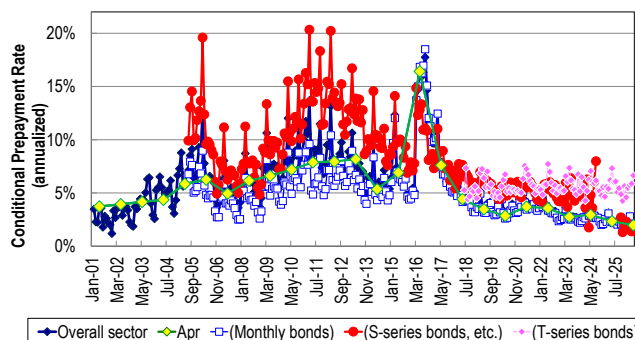
The following trends can be observed in the early repayment patterns of mortgage borrowers.

Debtor CPR of Underlying Assets (latest, by issue)



Source: JHF; compiled by Daiwa.

Average CPR Trends for Underlying Assets (sector time series)



Source: JHF; compiled by Daiwa.

- Distribution of mortgage borrowers' installment payments by issue (total prepayments by debtors in trust property; annualized rate is CPR) shows certain trends over time.
- Seasonal factors with up and down movements depending on month.
- Debtor CPR in May was the largest for the No. 216 bond at 11.1%. The monthly result is 1.0%.

Prepayment characteristics of mortgage borrowers

Borrowers of Flat 35 and JHF loans, which constitute the underlying assets of JHF RMBS, are not subject to fees or penalties for early repayments. Since this is a fixed-rate mortgage, the level of the collateral pool's CPR is influenced not only by the passage of time and seasonal factors, but also by interest rate conditions. The higher the WAC (average rate), which evens out the interest burden on the debtor, the higher the interest rate sensitivity of the CPR.

Early repayments tend to be lower in May than in April. In May, the debtor CPR for all existing RMBS backed assets came to 1.98%, down 0.11ppt from April. This represents a 0.36ppt decline compared to the same month last year. RMBS prepayments reflect not only borrower early repayments, but also the cancellation rate.

(Future outlook)

Burnout effect, aging, seasonal factors, preferential interest rate period

Recently, early repayment among borrowers in the JHF RMBS collateral pools have been relatively low. With market interest rates on the rise, the CPR for debtors is expected to remain modest. There is limited room for refinancing rates to fall further. It is also unlikely that they will drop below their summer 2016 levels in the future. For those issue pools formed in 2016 or later, the low WAC makes it difficult to generate strong incentives for refinancing. Even though the previous pools before 2016 had high WAC, many debtors with high-interest rate sensitivity refinanced in 2016 and have since burned out.

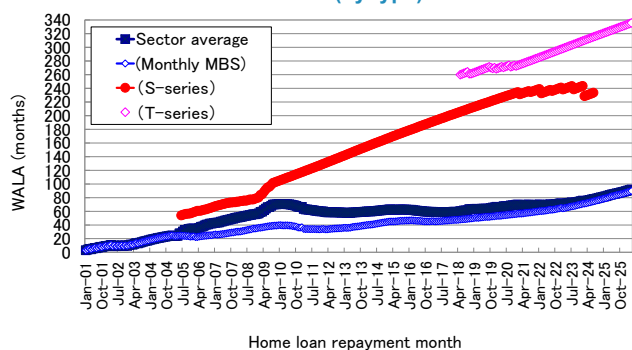
<Category average>

- For monthly MBS, the WALA is close to 100 months on average. As WALA has a high CPR, five years or more in the PSJ model, and five to ten years in our model, the overall CPR is likely to be supported.
- Since the WALA for T-series bonds is sufficiently high from the time of issuance, the CPR tends to remain somewhat high.

<Individual issues>

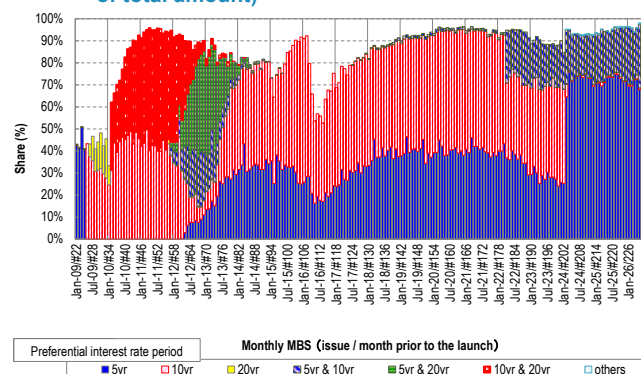
- The CPR for each issue likely shows differences in terms of each period, the aging of WALA and interest rate burdens (the higher the WAC, the higher the CPR, especially when interest rates fall).
- Seasonal factors based on the collection period (with higher levels typically observed from January to March and in September) are also likely to be observed.
- For many borrowers, the mortgage tax deduction period ends 10 years after taking out the loan. As WALA reaches its 10th year issue, CPR is likely to rise temporarily.
- CPR for issues containing a large number of loans with preferential interest rates, such as Flat 35S, in the loan pool will likely remain low during the preferential period and then rise temporarily once that period ends.

JHF RMBS Sector WALA Trends (by type)



Source: JHF; compiled by Daiwa. WALA is weighted average elapsed period for loan pool.

Preferential Interest Rate Period for Loan Pool (monthly MBS, % of total amount)



Source: JHF; compiled by Daiwa. % based on balance at launch

(Forecast model: prepayment projections and cash flow analysis)

By using a median forecast based on current market interest rates and scenario projections that assume changes in the interest rate environment, we can project the future JHF RMBS cash flows, as well as their changes and impacts.

PSJ model and PSJ forecast statistics

The PSJ model is a simplified model that represents the prepayment rate for each future month using a single PSJ forecast value. It also illustrates aging over a period of up to five years, based on the number of months (WALA). $CPR_i (WALA_i) = PSJ \text{ forecast value} \times \min(1, WALA_i/60)$.

The PSJ forecast statistics are compiled from the PSJ forecast values provided by securities firms. As for the primary, JHF compiles and publishes only median forecasts for demand forecasting purposes. As for the secondary, in addition to the median forecast (0bp scenario) based on actual secondary conditions, the Japan Securities Dealers Association compiles and publishes figures based on eight different actual and parallel yield scenarios ($\pm 50bp$, $\pm 100bp$, $\pm 200bp$, $\pm 300bp$) that diverge from actual market conditions. The securities firms calculate the PSJ forecasts based on the forecast WAL estimated in advance using their own models (to match WAL).

Currently, for newly issued bonds and secondary issues near the on-the-run issue, our model generally predicts lower prepayments and longer expected maturities than the PSJ forecast statistics. Also, when comparing the median forecast with other scenarios, our model assumes a greater impact on prepayments and maturities in the event of yield changes.

PSJ Value and Projected WAL (changes due to mid-range forecasts and interest rate conditions)

	Mid-range forecasts ("0bp")		Forecast for impact of market interest rate changes						
	data	Number	-100bp	-50bp	+50bp	+100bp	Number	+200bp	+300bp
PSJ forecast statistics (avg. value) base (PSJ model CF)	PSJ values (%)		Change in PSJ values (ppt)						
	Ave	5.20	+0.47	+0.18	-0.14	-0.24		-0.41	-0.54
	Max	6.32 JHF-T1	+1.37	+0.59	-0.45	-0.83	JHF-T3	-1.09	-1.52
	Min	4.61 JHF-66	+0.24	+0.09	-0.03	-0.11	JHF-42	-0.29	-0.39
	Expected WAL		Change in expected WAL						
	Ave	6.7yr	-0.2yr	-0.1年	0.1yr	0.1yr		0.2yr	0.3yr
	Max	10.3yr JHF-G2	-6.1yr	-0.3yr	0.4yr	0.4yr	JHF-25	0.4yr	0.4yr
	Min	0.3yr JHF-20	0.0yr	0.0yr	0.0yr	0.0yr	JHF-19	0.0yr	0.0yr
Based on Daiwa model (Daiwa model CF)	PSJ values (%)		Change in PSJ values (ppt)						
	Ave	4.90	+0.65	+0.29	-0.24	-0.43		-0.73	-0.94
	Max	6.07 JHF-T6	+1.12	+0.64	+0.00	-0.78	JHF-47	-1.24	-1.57
	Min	4.50 JHF-95	+0.25	+0.00	-0.64	-0.12	JHF-98	-0.46	-0.65
	Expected WAL		Change in expected WAL						
	Ave	7.0yr	-0.4yr	-0.2yr	0.1yr	0.2yr		0.4yr	0.6yr
	Max	11.3yr JHF-G2	-0.7yr	-0.4yr	0.4yr	0.4yr	JHF-25	0.7yr	0.9yr
	Min	0.3yr JHF-20	0.0yr	0.0yr	0.0yr	0.0yr	JHF-19	0.0yr	0.0yr

Source: JSDA and Daiwa. PSJ forecast statistics, based on end-Jun standard, was released after the market close on 2 July. Average for all issues is simple average. The changes resulting from interest rate assumptions that differ from the figures in the mid-range forecast are shown in cells colored to match the plots in the following chart (graph).

<Assumptions amid current interest rate conditions (secondary issues)>

[PSJ forecast statistics]

The PSJ forecast statistics for the end of June showed an average median forecast of 5.20%, simple average of all remaining bond issues, down 0.03ppt from the end of the previous month. The forecast WAL, assuming a cleanup call, was 6.73 years on average, shortening by 0.01 years. According to PSJ forecast statistics, the No. 1 T-series bond has the highest value of 6.32%, while the lowest is 4.61% for the No. 66 bond.

[Our model]

According to our model, the forecast WAL as of the end of June was 7.02 years on average across all issues, a shortening of 0.01 years from the end of the previous month. Our PSJ forecast stands at an average of 4.90%, down 0.04ppt from the end of last month. The No. 6 T-series bond has the highest value at 6.07%, while the lowest is 4.50% for the No. 95 bond.

<Assumptions under various yield scenarios>

Estimates of prepayment deviation and impacts

For the PSJ forecast statistics for secondary issues, a median forecast based on prevailing market yields can be used as a prepayment projection, while figures based on the assumption that JGB yields have moved in parallel across all maturities can also be utilized. Projections for prepayments based on yield assumptions that differ from actual market rates are likely to be useful for assessing yield sensitivity and conducting stress tests. For example, it helps estimate how much investment performance might deviate from the median expected cash flow or level assessments depending on market conditions.

[PSJ forecast statistics]

At the end of June, the PSJ forecast statistics for the “+100bp” scenario, forecast assumes yields that are 1.0ppt higher than current market rates across all maturities, in the graph on page 9, these are represented by green cross plot, showed an issue average of 4.96%, which is 0.02ppt lower than the median forecast. The forecast WAL is 6.84 years, which is 0.02 years shorter than the median forecast. The maximum change in the forecast WAL is +0.44 years for the No. 25 bond, while the minimum is zero years for the No. 19 bond and others.

[Our model]

According to our model's estimates, the forecast WAL for the “+100bp” scenario is 7.27 years on average across all issues, which is 0.25 years longer than the median forecast. At that time, our PSJ forecast averaged 4.47%, which was 0.43ppt lower than the median forecast. The forecast WAL change by bond issue ranges from a maximum of +0.44 years for the No. 25 bond to a minimum of 0 years for the No. 19 bond and others.

RMBS expected cash flow change and price characteristics

The expected cash flow will change to reflect changes in interest rates and updates to the data on the 25th of each month. In addition to impacting the parameters of our model and updates to PSJ forecast statistics, the confirmation of partial repayments for the following month and updates to the rescheduling factor are directly reflected in the expected cash flow. For issues with a short forecast WAL or where the price deviates significantly from par, the holding period yield tends to fluctuate. The final yield and YCS are also likely to change significantly. Because changes in expected cash flow significantly impact prices, for near-term issues, shifts in the lump-sum redemption dates, which occur every six months, amplify the rate of change for WAL.

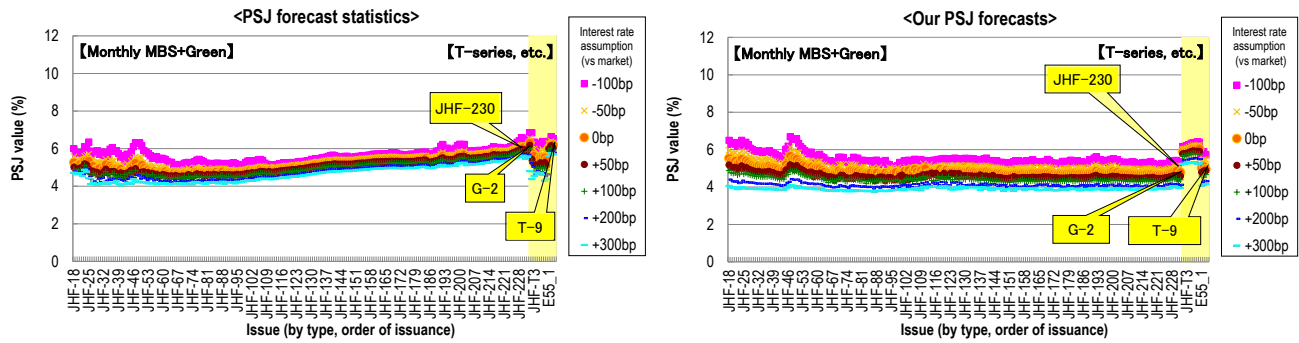
T-series bonds

T-series bonds are refinancing issues backed by mortgage loans that originated during the Government Housing Loan Corporation era and are more than 20 years old. As they are backed by a pool of aging loans, their expected maturities are short from the time of issuance and their prices on the secondary market tend not to deviate significantly from par. Even if the expected maturities change, the variance in BEY and YCS remains small and the resulting final yield and YCS also have relatively small deviations from the forecast.

As of the end of June, the expected WAL for the T1 through T4 bonds was approximately 1.3 years, that for the T5 through T7 bonds was just over 1.5 years, and that for the T8 and T9 bonds was just over 2 years. The one-month changes are as explained below and the impact of changes in the yield environment has been minimal. Even based on the PSJ forecast statistics, the expected WAL is shortening, primarily due to the passage of time. This is the case in our model as well.

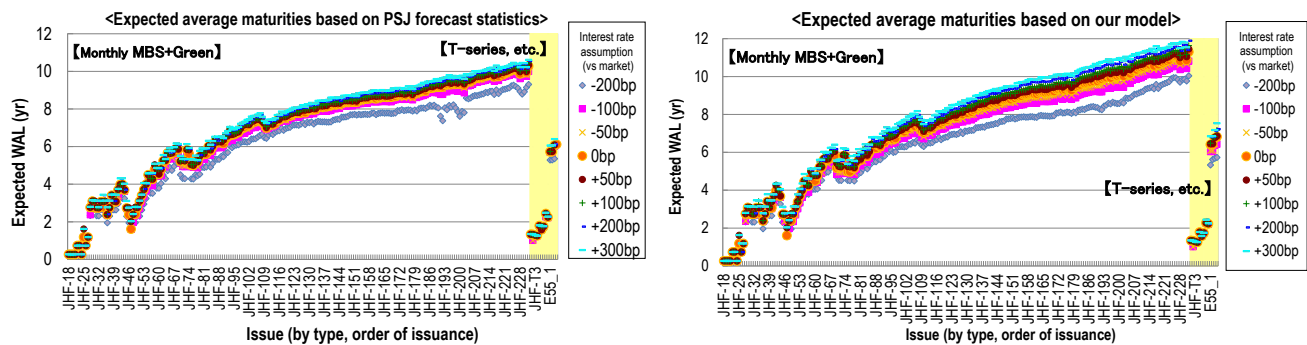
- The forecast WAL for the No. 1 issue is 1.33 years based on PSJ model cash flow, using PSJ forecast statistics, and 1.34 years based on our model's expected cash flow. This has shortened by 0.06 years and 0.05 years, respectively, since the end of last month. Assuming interest rate conditions in which rates rise by 1% across all maturities in a parallel manner, the forecast WAL is 1.34 years based on both PSJ forecast statistics and our model, which are 0.01 years and 0.00 years longer, respectively, than the median forecast.
- According to PSJ forecast statistics and our own model, the No. 2 T-series bond has forecast WALs of 1.33 years and 1.32 years, respectively. These have shortened by 0.05 years and 0.06 years, respectively, since the end of last month. Assuming interest rates rise by 1%, the forecast WAL would be 1.33 years under both approaches, which is 0.00 years and 0.01 years longer, respectively, than the median forecast.
- The No. 3 T-series bond is 1.29 years according to the PSJ forecast statistics and 1.28 years according to our model. It has shortened by 0.04 years and 0.05 years, respectively, since the end of last month. This comes to 1.26 years and 1.25 years, respectively, for the No. 4 T-series bond, 1.79 years and 1.78 years, respectively, for the No. 5 T-series bond, 1.58 years and 1.57 years, respectively, for the No. 6 T-series bond, 1.75 years and 1.74 years, respectively, for the No. 7 T-series bond, 2.43 years and 2.27 years, respectively, for the No. 8 T-series bond, and 2.25 years and 2.22 years, respectively, for the No. 9 T-series bond. Compared to the end of last month, the No. 4 T-series bond shortened by 0.06 years under both approaches, the No. 5 T-series bond shortened by 0.04 years, the No. 6 T-series bond shortened by 0.04 years, the No. 7 T-series bond shortened by 0.05 years, the No. 8 T-series bond shortened by 0.05 years, and the No. 9 T-series bond shortened by 0.04 years.

Pre-Paid Forecast (end-Jun)



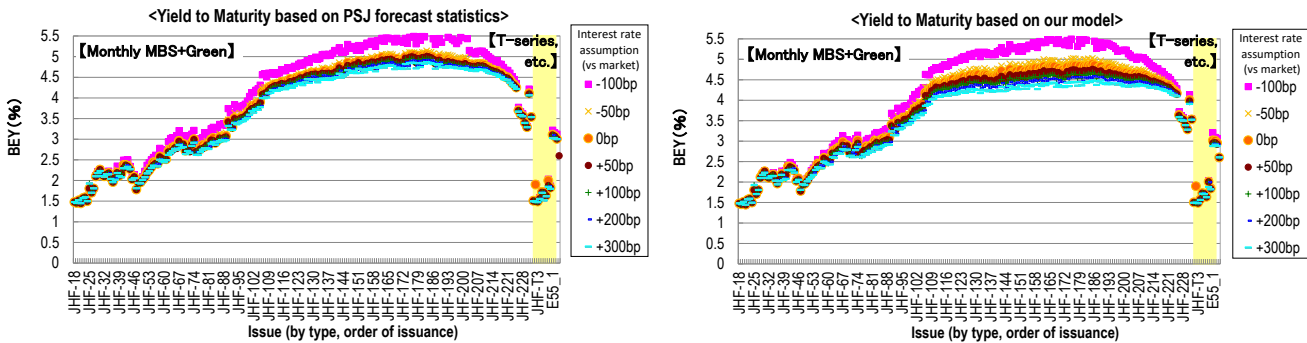
Source: JSDA and Daiwa. Interest rate assumption is "0bp" based on current market, while "±Xbp" refers to an interest rate environment in which the yield curve has shifted Xbp parallel to current market. Issues are listed in ascending order and categories are listed from left to right as Monthly MBS, green bonds, T-series bonds, and others.

Expected WAL (end-Jun)



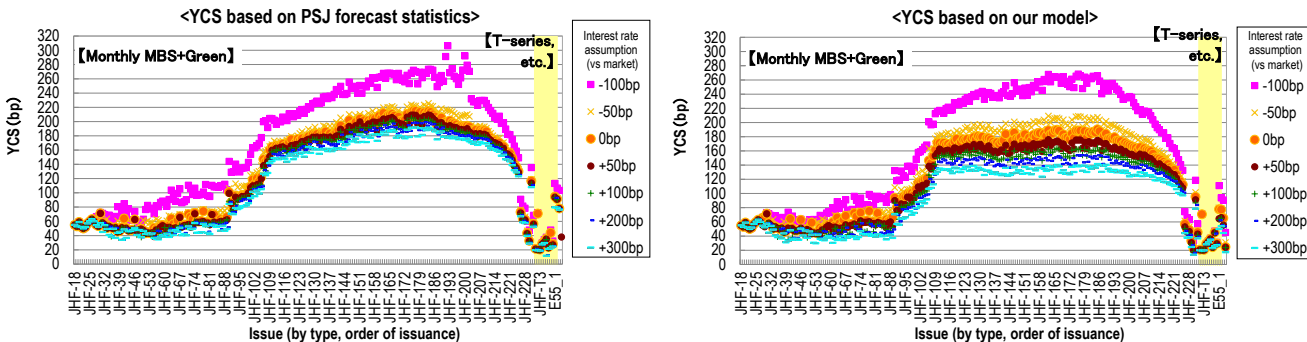
Source: Compiled by Daiwa. Interest rate assumptions and order are same as above.

Final Yields (end-Jun)



Source: Compiled by Daiwa. BEY assumes semi-annual yield compounding based on the cash flows realized when the projected prepayments under each interest rate scenario are met, using our OTC quotes as the valuation price. Interest rate assumptions and order are same as above.

YCS (end-Jun)



Source: Compiled by Daiwa. YCS when cash flows projected based on each interest rate assumptions are realized, using our OTC quotes as the valuation price. Interest rate assumptions and order are same as above.

(Cancellation rate)

JHF ensures eligibility of collateral asset pool

While JHF RMBS remains a bond (as long as there is no opportunity to exercise its beneficial interests), JHF will make principal and interest payments on RMBS and maintain the health of the mortgage pool secured to RMBS in a third-party-beneficiary trust. Individual mortgage loans that no longer qualify as collateral will be partially cancelled from the trust assets by JHF as appropriate. Based on (1) mortgage repayments by the borrower and (2) proportionate reduction in assets due to partial cancellation, partial repayments of the RMBS principal are made on a pro rata basis each month (with a two-month lag) to maintain the credit enhancement ratio specified at issuance.

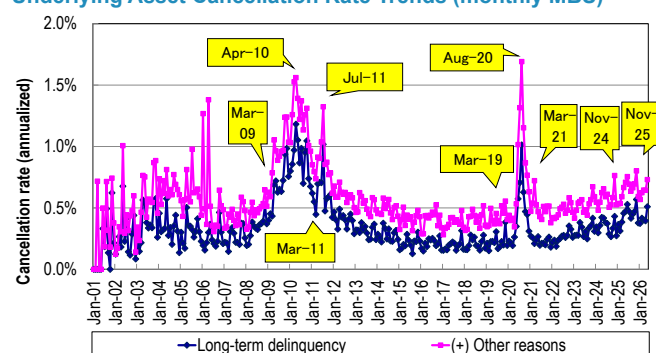
<Grounds for exercising beneficial interests>

If a specified credit event (grounds for exercising beneficial interests; examples include incorporation as a corporation or cross-default) occurs with respect to JHF, the JHF RMBS bonds cancellations and investors will be issued trust beneficial interests with the remaining trust assets as the underlying assets. Here, there is a “full-turbo” redemption for the beneficial interests.

Each month, JHF publishes its “cancellation rate,” which is the percentage of claims that have been partially cancelled from the assets held of each JHF RMBS series. The reasons are broadly categorized into “long-term delinquency,” for debts that are four months past due, and “other reasons,” for receivables that have lost their eligibility as collateral elsewhere. The cancellation rate trends are provided below.

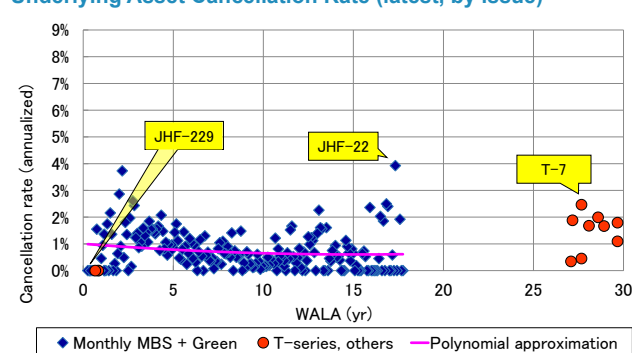
- The long-term average cancellation rate for the collateral pool of monthly MBS is approximately 0.5% annually.
- It rose around FY09 due to the impact of the Lehman Shock.
- It started to rise in April 2011 following the Great East Japan Earthquake, but peaked in July of that year.
- In 2020, due to the impact of the coronavirus outbreak, the cancellation rate rose sharply from June to August of that year.
- The most recent achievement was a partial cancellation that took place in May. Highest cancellation rate was for the No. 22 bond underlying pool, at 0.33%, actual amount for current month, and 3.93% annually.

Underlying Asset Cancellation Rate Trends (monthly MBS)



Source: JHF; compiled by Daiwa. Weighted averages of all monthly bonds.

Underlying Asset Cancellation Rate (latest, by issue)

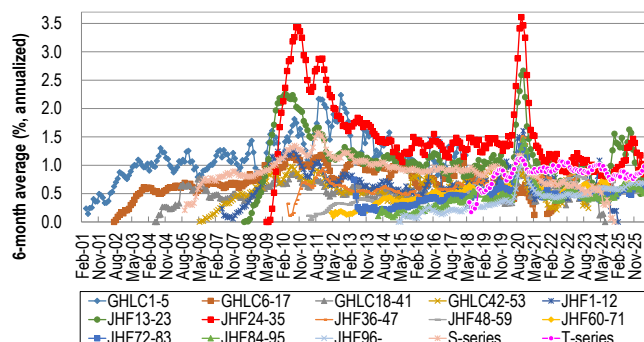


Source: JHF; compiled by Daiwa. Total cancellation rate (long-term delinquency + other reasons)

In particular, in 2020, the cancellation rate rose starting in the spring due to the coronavirus outbreak and peaked in August. With economic activity restricted under the state of emergency, many loans began to fall into arrears in April and May of that year, and the cancellation rate rose sharply in the summer when these arrears reached four months. Since the disbursement of cash handouts began in earnest in the fall, even if many receivables were removed from the collateral assets held by RMBS, many of these claims likely returned to normal status without reaching the six-month delinquency threshold that would result in the loss of the benefit for the term. JHF also implemented measures to ease repayment terms in response to the coronavirus outbreak.

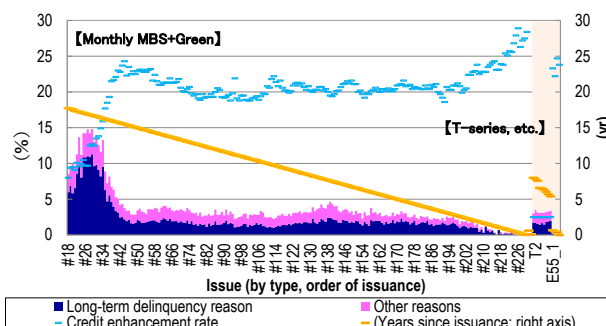
The cancellation rate pace varies depending on the timing of the loan execution (vintage). Differences in the rate of loan cancellations tend to widen through the third to fifth years due to variations in the economic environment at the time of lending and disparities in borrower characteristics.

Cancellation Rate Trends (by vintage)



Source: JHF; compiled by Daiwa. Annualized rate calculated as simple average over six-month trailing period.

Cumulative Cancellation Rate and Credit Enhancement Rate (by issue)



Source: JHF; compiled by Daiwa. Cumulative cancellation rate by reason is displayed in a stacked format. This rate is calculated as cumulative amount of partially cancelled principal, as a percentage of original principal balance.

(Rating status)

All tranches of JHF RMBS, with the exception of Green RMBS, have received the highest ratings from R&I and S&P at the time of issuance (S&P uses the identifier “sf” in its rating symbols). The ratings have all remained stable since issuance. Four issues consisting of JHF23, 25–27 bonds, which were issued in 2009, were downgraded by one to two notches by S&P in September 2011. However, all of them regained their AAA ratings in September 2016.

5. Final redemption via cleanup call

To date, 98 JHF RMBS bonds have been fully redeemed. JHF exercised its right to a total “cleanup call” and redeemed all of the housing loans in a lump sum. The issues and redemption months are as follows. All remaining monthly JFC and S-series bonds reached their final redemptions in October 2024.

Redemption month		GHLC monthly MBS	JHF monthly MBS	GHLC S-series	JHF S-series	JHF T-series	Number of issues
2018	Apr	1,2					2
	Oct	3,4,5					3
2019	Apr	7					1
	Oct	6,8,9					3
2020	Apr	10,13					2
	Oct	14,16,18					3
2021	Apr	11,12,26			13~15		6
	Oct	15,30		1~5			7
2022	Apr	17,19,20,22~ 25,46,50		6,7	16~18		14
	Oct	21,29,31,42,45	1,5	8,9			9
2023	Apr	27,32,33,36,38,39, 43,44,47,48,51	3,4,6,8	10	1,2		18
	Oct	28,35,37,41,52,53			3~6		10
2024	Apr	40,49	2,7,9,12,13		7~10		11
	Oct	34	16		11~12		4
2025	Apr		10,11,14,15,17				5
	Oct						0
2026	Apr						0

Source: JHF; compiled by Daiwa.

The JHF has clearly outlined its policy regarding the timing of clean-up calls and regularly issues forecasts to ensure operational transparency.

JHF cleanup call operations (lump-sum redemption in Apr or Oct)

<Forecasts for March and September (25th) . . . Target issue for lump-sum redemptions to be announced on following month, along with candidate for six months from now>

(1) Issues with scheduled early redemptions: Entry of candidates for lump-sum redemptions after six months. Issues for which factor is likely to fall below 0.1 within the next six months are forecast through a limited listing.

(2) Issues subject to early redemption: Those scheduled for early redemption that were forecast six months ago and for which the factor has fallen to 0.1 or lower. Lump-sum redemptions will be made on the 10th of the month following the announcement of the “target” status (April or October).

There were no issues for lump-sum redemptions in April. JHF announced on 25 March via its website that there are no bond issues eligible for early redemption. This is because the No. 18 and No. 20 bonds, which were forecasted for early redemption six months ago, both failed to reach a factor of 0.1 or lower by March. The following five issues are scheduled for early redemption in October, as announced at that time.

<Issues eligible for early redemption in Apr> None

<Scheduled early redemption in Oct> No. 18, No. 19, No. 20, No. 21, and No. 24

6. Cash flow distribution and earnings characteristics

Usefulness of market-neutral expected cash flows

Since JHF RMBS are partially redeemed each month, principal redemptions are spread out over various maturities. When assessing profitability and risk for the period, it is appropriate to manage price volatility risk by taking into account the maturity profile of expected cash flows, similar to managing a portfolio of “hard bullet” bonds.

The expected cash flows for JHF RMBS vary depending on assumptions such as market interest rates. The general price characteristics resulting from such changes are referred to as negative convexity. The negative convexity of JHF RMBS is small and the contribution to price movements and returns is limited.

- RMBS with negative convexity tends to generate lower capital gains in response to short-term interest rate declines compared to bullet bonds with similar durations. Over the medium term, deviations for the holding period return are easier to suppress.
- Expected cash flow changes along with changes in the future CPR outlook in response to changing conditions. For example, the forecast CPR in our model reflects the implied forward rate level.
- Japanese mortgage early repayments are not very interest rate sensitive and even fixed-rate mortgages are about one-quarter the rate of those in the US, based on our simple calculations. As such, the expected change in cash flow for RMBS is generally small.

Taking into account price volatility within the expected cash flow based on the median forecast (“0bp” in the case of PSJ forecast statistics), we should probably anticipate the impact of partial repayments deviating from forecasts each term and, if there are prospects for changes in interest rate conditions, prepare for shifts in profitability by employing stress scenarios.

Model risk

Changes in model forecasts due to external factors, such as interest rate conditions, are reflected in effective duration and effective convexity. Also, actual partial repayments are subject to fluctuations in mortgage borrowers’ repayment patterns, making deviations from model forecasts inevitable. Deviations from model forecasts cause changes in price and holding period returns over time when they are known (identified).

- The model risk price sensitivity tends to increase as the redemption price deviates further from the redemption price (par).

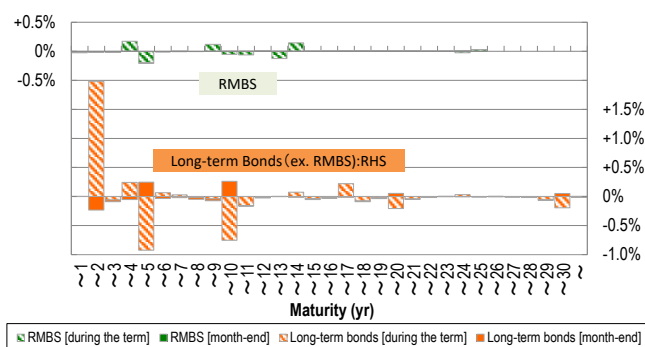
At the end of June, the estimated average maturity of the RMBS sector in the long-term bond index was 8.04 years, our model's median forecast, unchanged from the end of the previous month. The average maturity of the long-term bond market shortened by 0.07 years to 10.24 years. As a result, the RMBS sector has a duration that is 2.20 years longer than the overall market. The modified duration for the RMBS sector stands at 6.39 in our median forecast, down 0.05 from the end of last month.

Forecast (mid-range) Average Maturity and Changes

Average maturity	End of Jun	Change from end of previous month		
		During the term (passage of time + partial redemption + change in CF forecasts)	Term-end (month-end rebalancing)	Total
Long-term bond	10.24yr	-0.09 yr	+0.02 yr	-0.07 yr
RMBS	8.04yr	+0.00 yr	+0.00 yr	+0.00 yr
Difference	2.20yr	-0.09 yr	+0.01 yr	-0.07 yr

Source: DBI; compiled by Daiwa. End-month figures show index after rebalancing. RMBS figures are based on our forecasts

Changes in Maturity Structure for Redemption of Principal (Jun)



Source: Poet-SB and DBI; compiled by Daiwa. RMBS figures are based on our forecasts

(Long-term bond market as traditional benchmark index)

The RMBS sector expected maturities to remain unchanged as the shortening over time is offset by the lengthening of expected cash flows. As forward rates rose due to rising JGB yields on the market, future expected prepayments decreased, causing expected cash flows to extend over a longer period. That said, this effect was offset by the shortening of cash flows over time. There were quite a few issues for which expected cash flows were prolonged because prepayments among debtors in May were low and partial repayments in June were less than previously anticipated.

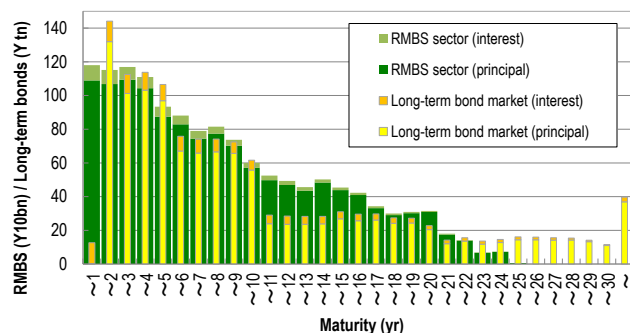
Our model estimates the prepayment rate for each future month by calculating the following three scenarios in separate sub-models: (1) full early repayment by the debtor, (2) partial early repayment by the debtor, and (3) partial cancellation from the collateral pool, and then aggregates these results. Of these, only (1) is subject to fluctuations based on interest rate factors, specifically, interest rate levels for refinancing loans. Basically, (1) is the single largest factor in the actual composition of prepayments.

The duration of the overall market (the composite index of securities with remaining maturities of one year or more) lengthened after the end-of-May rebalancing because issues with remaining maturities dropping below one year in June were excluded from the reference portfolio. Since a large volume of JGBs maturing in months that are multiples of three (Mar, Jun, Sep, Dec) are removed from the index, the reference portfolio's duration tends to lengthen significantly after the rebalancing at the end of the preceding month.

Expected cash flow and price sensitivity

By examining price changes in response to interest rate fluctuations, taking into account the changes in expected cash flows, we can estimate the effective duration. As of the end of June, our model indicates that the effective duration for the entire RMBS sector, with an expected average maturity of one year or more, is 7.43. It is estimated that if market interest rates rise by 0.1ppt, the interest inclusive price will fall from Y100 to around Y99.26.

Distribution of Cash Flow Forecasts (end-Jun)



Source: Poet-SB and DBI; compiled by Daiwa.

Price Volatility (overall sector)

< Sensitivity >

Characteristics/factors		Effective duration	Effective convexity	OAS sensitivity	Volatility sensitivity	CPR sensitivity
Valuation timing	End of Jun	7.43	0.79	6.15	-0.56	2.32
	End of May	7.45	0.78	6.19	-0.65	2.25
(Changes)		-0.02	+0.01	-0.04	+0.09	+0.07

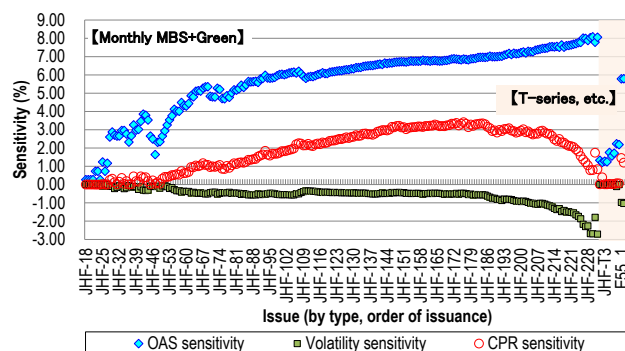
< Effective key rate duration >

Effective key rate duration (%)		3m	2yr	5yr	10yr	20yr
Valuation timing	End of Jun	0.02	0.49	2.09	3.03	1.82
	End of May	0.02	0.48	2.06	3.05	1.86
(Changes)		+0.00	+0.01	+0.03	-0.02	-0.04

Source: Compiled by Daiwa.

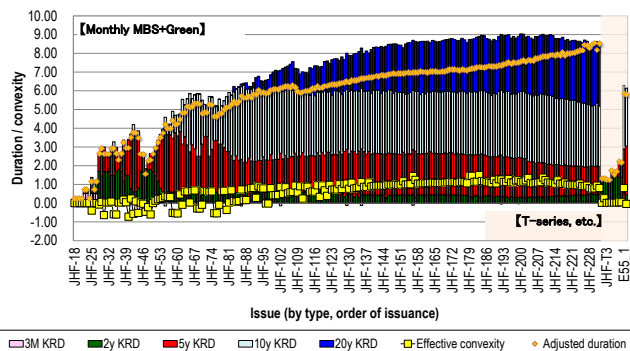
The effective convexity, price sensitivity resulting from changes in duration due to interest rates changes, is 0.79 on average across the sector. Since it is positive, it is not what is known as “negative convexity.” A 0.1ppt drop in interest rates results in a price increase of only ¥0.0079 per ¥100. While there are some negative convexities, the absolute values are small. Even if market interest rates rise, the duration of the sector as a whole will not expand significantly. That said, regardless of the effective convexity, when actual partial repayments are smaller than expected, RMBS maturities tend to lengthen.

Price Volatility of Individual Issues (end-Jun)



Source: Compiled by Daiwa.

Note: KRD indicates effective key rate duration.



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- There is a risk that you will incur losses on your transactions due to changes in the market price of financial instruments based on fluctuations in interest rates, exchange rates, stock prices, real estate prices, commodity prices, and others. In addition, depending on the content of the transaction, the loss could exceed the amount of the collateral or margin requirements.
- There may be a difference between bid price etc. and ask price etc. of OTC derivatives handled by our company.
- Before engaging in any trading, please thoroughly confirm accounting and tax treatments regarding your trading in financial instruments with such experts as certified public accountants.

* The amount of the trading commission cannot be stated here in advance because it will be determined between our company and you based on current market conditions and the content of each transaction etc.

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