

JHF No.177 Monthly MBS Issue

Strategic Memorandum DSBE019

FICC Research Dept.

Chief Strategist of Securitization

Koji Matsushita

(81) 3 5555-8778

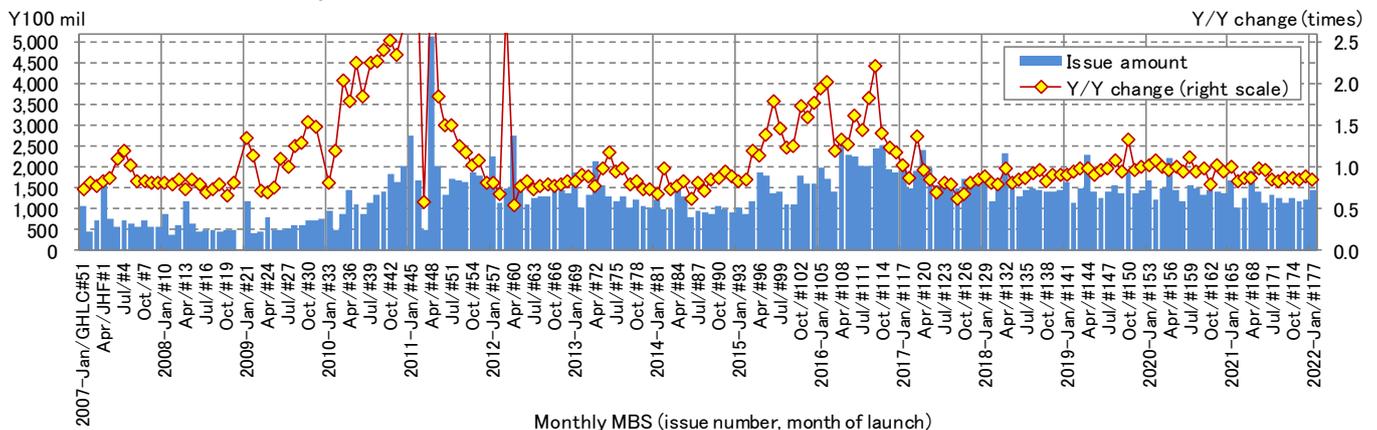
koji1.matsushita@daiwa.co.jp

Daiwa Securities Co. Ltd.

➤ Coupon of 0.4%, following rise in 10yr JGB yield

- The Japan Housing Finance Agency (JHF) plans to issue its No. 177 Monthly MBS. The coupon will be set by referencing the yield of the on-the-run 10-year JGB.
- JHF RMBS are issued with home loans as the underlying asset. The assets eligible to be used as collateral for the No. 177 issue are the Y179.8 billion of Flat 35 loans originated in December. Assuming overcollateralization at a credit enhancement ratio of 21.0 %, which is what it was the previous issue, the issuance amount will be Y142.0 billion.
- The amount of new Flat 35 mortgages originated in December declined 15% Y/Y. Preference for fixed-rate mortgages declined, as the rate on new Flat 35 mortgages hardly changed. Borrowers' average age is 42.2, a new high.
- Based on our prepayment model, we estimate a WAL of 9.72 years (based on 13 January closing prices; same hereinafter). The expected WAL based on the JHF's PSJ Forecast Statistical Data is 9.17 years.
- The No. 176, launched in December, had a launch spread of 27bps and a coupon of 0.32%. Based on the same launch spread, the No. 177 would have a coupon of 0.40% and an OAS of 4.1bps, 0.8bps wider than the previous issue's launch OAS. Based on the No. 176's OAS in the secondary market, the No. 177's coupon is estimated at 0.38% and the launch spread 25bps.
- We think it appropriate that supply and demand will meet at the launch spread of about 27bps. If so, the coupon would be about 0.40%.

Chart: Issue Amount of Monthly MBS



Source: JHF; compiled by Daiwa Securities.
 Note: Estimate for No. 177 issue.

Issuance of JHF MBS and Situations of Flat 35

No. 177 to be launched in January

The Japan Housing Finance Agency (JHF) plans to price (launch) its No. 177 MBS this month. Issuance terms are determined by the spread-pricing method, in which a new issue's coupon is set on the launch date by adding a launch spread—which is determined based on investor demand—to the compound yield on a benchmark 10Y JGB (JB365 in this case) at the time of the launch. The launch date is scheduled in late-January, and the payment date is scheduled on 28 January.

Issuance amount of about Y142 billion

Candidate trust assets for the No. 177 totaled Y179.8 billion, all of which were Flat 35 loans originated in December. The issue is likely to have the highest ratings from S&P and R&I. The issue amount is to be announced on 17 January. If the credit enhancement ratio is unchanged from that for the previous issue at 21.0%, the issue amount is estimated at Y142.0 billion.

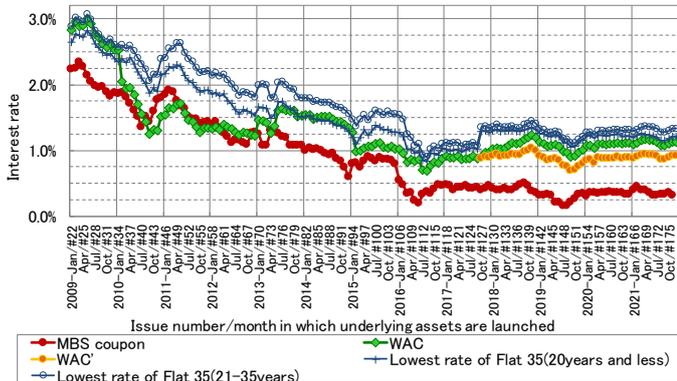
The amount of Flat 35 loans declined 15% y/y in December

The amount of new Flat 35 mortgages originated in December was Y179.8bn, up M/M owing to seasonality but down 15% Y/Y. The lowest retail rate on the mortgages was 1.30% (including group credit life insurance premiums), down 0.03ppt M/M but up 0.01ppt Y/Y. The lowest rate on Flat 20 mortgages (with terms of 20 years or less) was 1.18%, down 0.03ppt M/M and up 0.02ppt Y/Y.

Weak use of Flat 35 mortgages

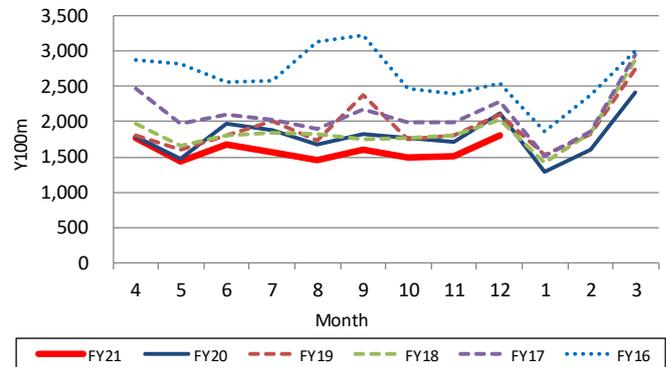
Use of new Flat 35 mortgages has been declining by more than 10% Y/Y. Last-minute demand ahead of changes to residential mortgage tax breaks in January may have led to increased home purchases and use of mortgages, but use of Flat 35 mortgages did not rise as a result. New-mortgage borrowers' average age is 42.2, a new high..

Chart: Interest Rate of Flat 35 Loans and JHF MBS (monthly trend)



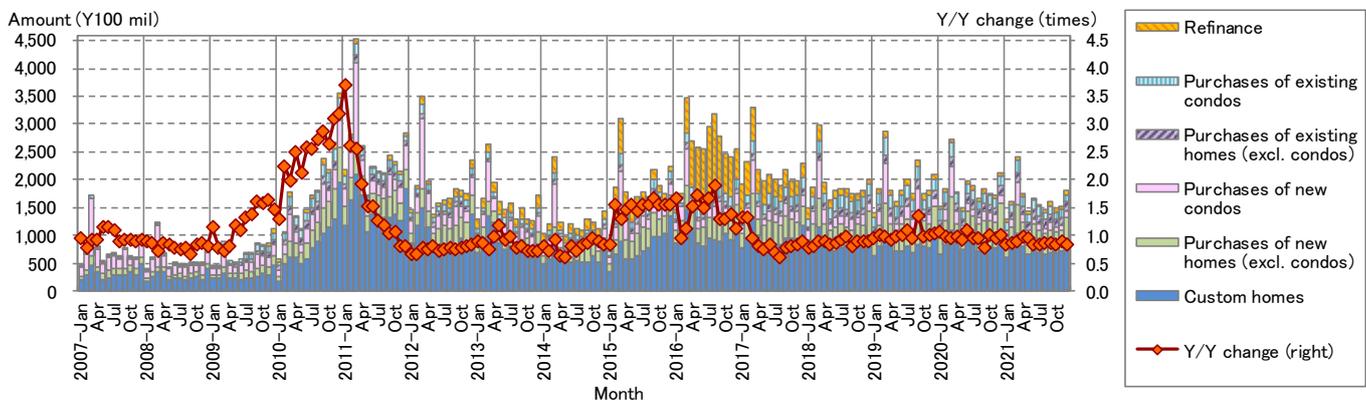
Source: JHF; compiled by Daiwa Securities.

Chart: New Flat 35 Loans



Source: JHF; compiled by Daiwa Securities.

Chart: Flat 35 Loans by Type of Loans



Source: JHF; compiled by Daiwa Securities.

Terms for the previous issue

Launch spread of 27bps and coupon of 0.32%

The No. 176 (Y119.7 billion) was launched on 16 December with a coupon of 0.32%. The coupon was determined by adding the launch spread of 27bp on the compound yield of benchmark JB364. The OAS at launch (our estimate; same hereinafter) stood at 3.3bps (2.4bps tighter than previous issue) and the YCS was 9.0bps (2.4bps tighter).

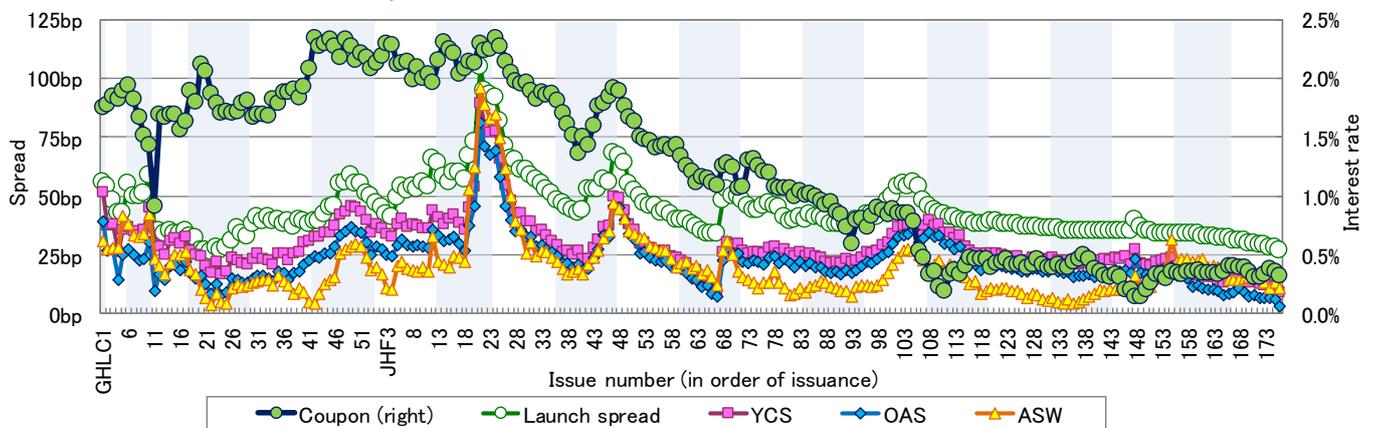
Reflection of decline in JGB yields

The launch spread is 1bp lower than the previous issue's, probably reflecting strong investor demand. The coupon fell, reflecting the decline in the reference 10yr JGB yield, in sympathy with the decline in the 10yr US Treasury yield to 1.5%. The OAS and YCS decreased more than the launch spread because the reference JGB yield fell more than other yields did.

Secondary market also confirms strong investor demand

The on-the-run secondary issue's OAS is 2bps. Demand for the issue reflects the unmet portion of investors' desired allocation of the primary offering. A decline in RMBS yields leads to a decline in Flat 35 offered rates and hence favors an increase in RMBS issuance.

Chart: Issuance Terms for JHF Monthly MBS

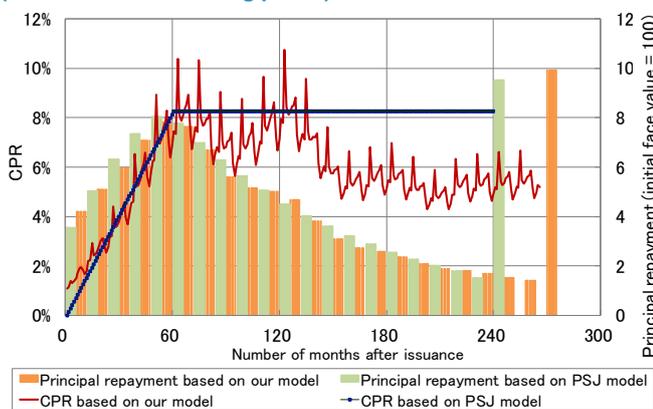


Source: JHF and our estimates.
Note: The background colors indicate different fiscal years.

Different risk premiums depending on expected cash flow distribution

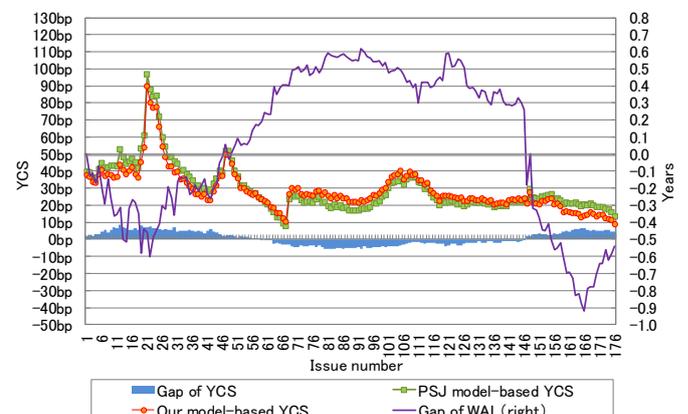
With regard to the pricing of JHF MBS, it should be noted that the risk premium varies depending on the expected cash flow distribution. The expected cash flows of JHF MBS No.177 based on our prepayment model have terms that are somewhat longer than those based on the PSJ Forecast Statistical Data. As a result, YCSs based on our prepayment model are several basis points lower than those based on the PSJ Forecast Statistical Data. Following a minor change to our model in July 2019 we have continued updating our parameters. This had caused a steady lengthening of the forecast maturity at issuance since the No. 147, but this trajectory changed from the No. 165.

Chart: Expected CPR & Principal Repayment for No. 177 Issue (based on 13 Jan closing prices)



Source: Our estimates.
Note: Although principal repayments are made every month, the graph show annual repayment totals.

Chart: Difference in YCS for Monthly MBS at Launch



Source: Our estimates.

Cash flow characteristics and issuance terms for No. 177

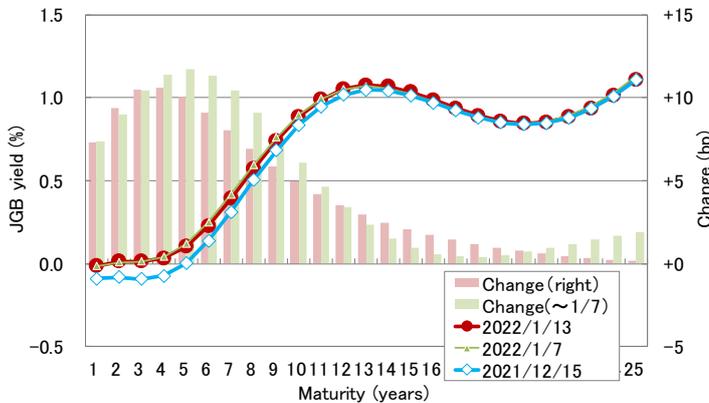
We take a look at the issuance terms for the upcoming issue. Based on expected cash flow using our prepayment model and the PSJ model, we estimate the issuance terms (the coupon and launch spread) and the risk premiums.

Expected maturity of 9~10 years

The expected cash flow distribution for the upcoming issue (the chart on the previous page, based on 13 January closing prices; hereinafter the same unless otherwise noted) is about the same as the previous issue (at the time of its launch; same hereinafter).

- Based on our model, the expected WAL is 9.72 years (9.66 years for the previous issue) and the expected final maturity 22.2 years (22.3 years). The PSJ forecast is 7.27% (vs. 7.48% for the previous issue).
- The PSJ Calculation Statistical Value (average) is 8.25% (vs. 8.36% for the previous issue). Accordingly, the expected WAL is 9.17 years (vs. 9.12 years for the previous issue) and the expected final maturity 20.2 years (19.8 years).

Chart: Change in 3Y-Forward Rate (from the day before launch day of No.176)



The expected maturity is slightly longer than the previous issue's because of a rise in implied forward rates, mainly for short- and medium-term maturities. A rise in expected refinancing rates has diminished the incentives for mortgage borrowers to refinance and led to a decline in prepayments.

The underlying loan pool's WAC (weighted average coupon; see pp. 6-7) is 1.13% and the WAC' 0.91%, equal to the previous issue's.

Source: JHF; compiled by Daiwa Securities.
Note: WAC' means the Weight Average Coupon excl. premiums for JHF group credit life insurance

Chart: Launch Spread Estimates for No. 177 MBS (based on 13 Jan closing prices)

Valuations of JHF_MBS_#177 Pricing(Simulation)										13-Jan-22 (Tokyo Close)	
Base Yield: JGB(365G) YTM 0.124 %											
Launch Spread	Coupon	Valuations of Cash Flows							Indications of Previous RMBS Issue (#176)		
		Daiwa Model				PSJ Model					
		Dynamic	Static			PSJ forecast	Statistical Data(Ave)				
		OAS	YCS	ASW	ModDur	YCS	ASW	ModDur			
18 bp	0.31 %	-4.9	2.7	8.5	9.482	6.3	11.6	8.887	(Issuance Terms) Launch Spread=27bp Coupon=0.32% (Valuations at the time of Launch) [CF based on Daiwa Model]: OAS=3.3bp, YCS=9bp, ASW=10.8bp [CF based on PSJ Model]: YCS=13.5bp, ASW=13.7bp (Valuations in the secondary market) [CF based on Daiwa Model/Daiwa Price] OAS=2bp, YCS=8.1bp, ASW=14.2bp [CF based on PSJ Model/JSDA price]: YCS=12bp, ASW=16.5bp		
19 bp	0.32 %	-3.9	3.8	9.5	9.474	7.3	12.6	8.881			
20 bp	0.33 %	-2.9	4.9	10.5	9.466	8.3	13.6	8.875			
21 bp	0.34 %	-1.9	6.0	11.5	9.458	9.3	14.6	8.869			
22 bp	0.35 %	-0.9	7.1	12.5	9.450	10.3	15.6	8.863			
23 bp	0.36 %	0.1	8.2	13.5	9.442	11.3	16.6	8.857			
24 bp	0.37 %	1.1	9.3	14.5	9.434	12.3	17.6	8.851			
25 bp	0.38 %	2.1	10.4	15.5	9.426	13.3	18.6	8.845			
26 bp	0.39 %	3.1	11.5	16.5	9.418	14.3	19.6	8.839			
27 bp	0.40 %	4.1	12.6	17.5	9.410	15.3	20.6	8.833			
28 bp	0.41 %	5.1	13.7	18.5	9.402	16.3	21.6	8.827			
29 bp	0.42 %	6.1	14.8	19.5	9.394	17.3	22.6	8.821			
		<Daiwa Model>				<PSJ Model/based on PSJ Forecast Statistical Data>					
		PSJ 7.27 %				Ave: 8.25 % (Median: 8.40) %					
		WAL 9.72 years				9.17 years (9.06) years					

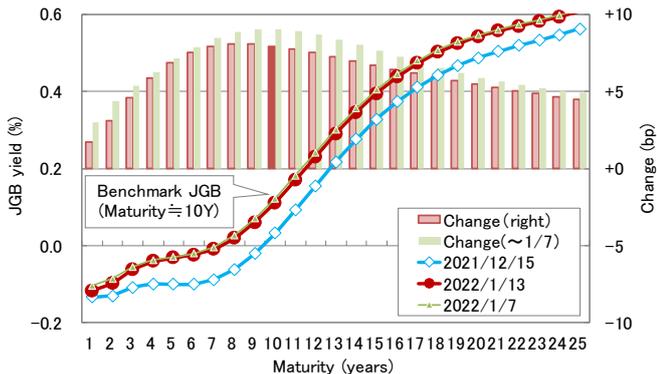
Source: Compiled by Daiwa Securities.
 Note: 1) Figures in colored cells show similar indications to those in the previous issue, as indicated in the right section (Indications of Previous MBS Issue) with the same colors. Spreads in the previous issue at launch are based on those at the time of pricing. The spreads in the previous issue in the secondary market used in the Daiwa model are based on Daiwa prices, and the spreads in the previous issue in the secondary market used in the PSJ model are based on the JSDA's Trading Reference Statistical Data.
 2) Figures for both Trading Reference Statistical Data and PSJ Forecast Statistical Data are average figures.
 3) Estimated cash flow is based on the assumption that clean-up call options are exercised in initial April or October after the outstanding amount becomes 10% or less of the original.

Launch spread indications

The previous issue (the No. 176) launched as the yield to maturity of the on-the-run 10yr JGB ran into upside resistance. After rising in late December, the 10yr JGB yield has settled down just above 0.10%.

If the launch spread is the same as the previous issue at 27bps, the No. 177 coupon would be 0.40%. In this case, the OAS would be 4.1bps, up 0.8bps from the previous issue's launch OAS. The OAS widened mainly because of a rise in the coupon owing to a change in the reference JGB.

Chart: JGB Yield Curve Changes (from the day before launch day of No.176)



Source: Compiled by Daiwa Securities.

(Connection with risk premium of previous issue)

【Pricing using our model's cash flow estimates】

- The No. 176's launch OAS was 3.3bps and the YCS 9.0bps. Based on the similar OAS and YCS, the No. 177's launch spread would be 24-27bps and the coupon 0.37-0.40%.
- In the secondary market, the No. 176's OAS is 2.0bps and the YCS 8.1bps. In line with these, the No. 177's launch spread would be about 25-27bps and the coupon 0.36-0.38%.

【Pricing using PSJ forecast-based cash flow estimates】

- The No. 176's launch YCS was 13.5bps. Based on the similar YCS, the No. 177's launch spread would be about 25-26bps and the coupon 0.37-0.38%.
- In the secondary market, the No. 176's YCS is 12.0bps. In line with this, the No. 176's launch spread would be about 24bps and the coupon 0.37%.

(Demand forecast for No. 177 issue and issuance level)

Pandemic impacts and the economic environment

In Japan, the number of Covid-19 cases is far lower than in the US, Europe, and other countries/regions, but a sixth wave of infections is underway, with the rapid spread of the Omicron variant since late 2021. Measures to prevent the spread of Covid-19 were imposed in Okinawa, Hiroshima, and Yamaguchi earlier in January. Restrictions on overseas travel and entry into the country remain tight and unlikely to be loosened anytime soon. The pace of vaccinations has slowed to about 20,000 per day, but the percentage of double vaccinations is around 80%, higher than in other countries, and the government is preparing to accelerate booster shots. With inflation still picking up in the US, in conjunction with wage increases owing to labor shortages, the 10yr US Treasury yield has risen above 1.7%.

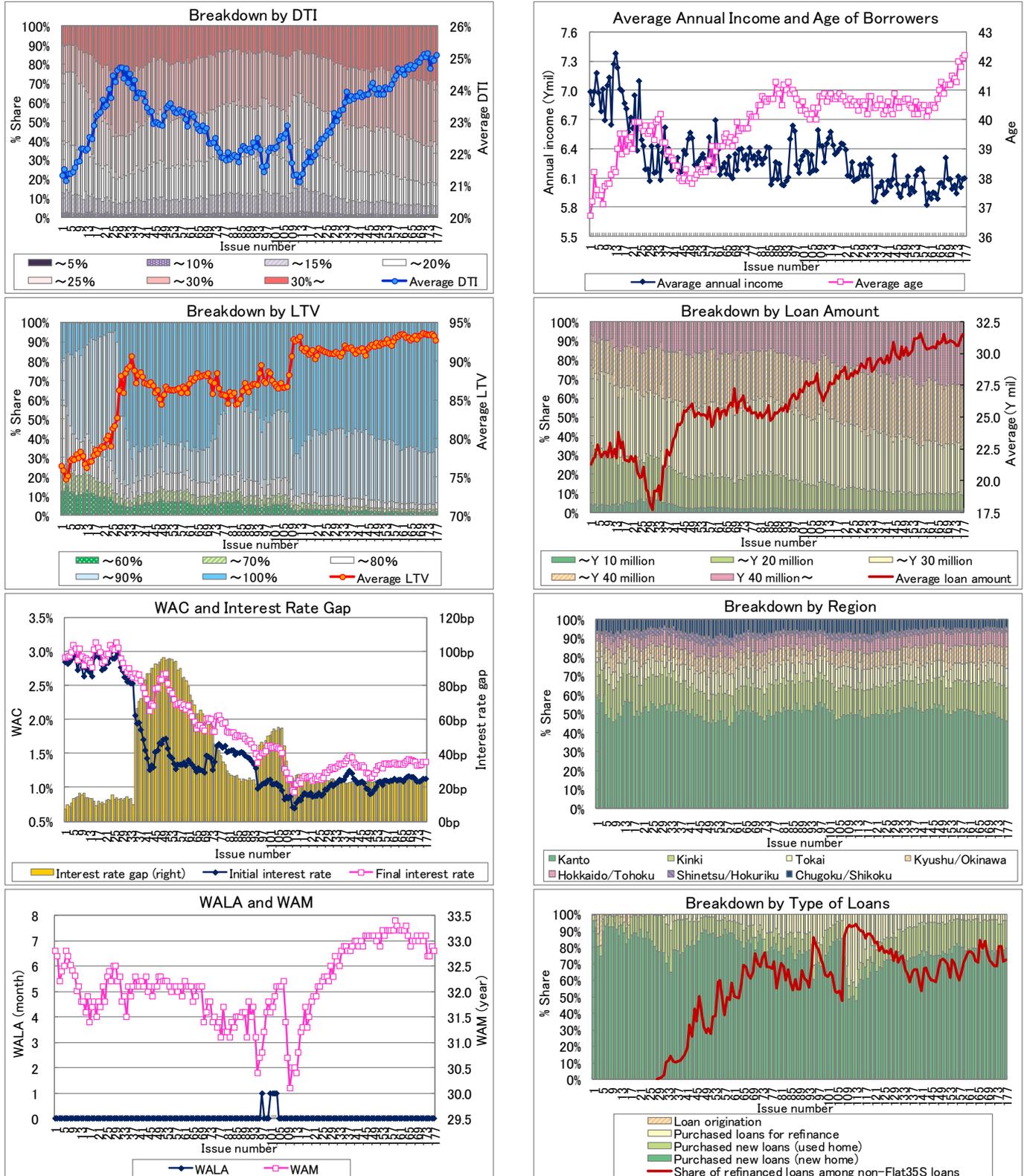
Weak volume of Flat 35 mortgages holding back RMBS issuance

The latest issue's size is likely to be down 15% Y/Y because of the weak volume of Flat 35 mortgages, the underlying assets. However, Flat 35 mortgages, which have fixed rates, are a useful option for home buyers because borrowers of the mortgages do not have to worry about an increase in interest costs or inflation over the long term, after the pandemic comes under control. Flat 35 mortgages are likely to continue to be offered smoothly and in volume, with the issuance of an appropriate amount of JHF MBS to meet investor demand.

Coupon of 0.4%

The personal opinion of your author is that the launch spread for this issue will confirm sufficient demand and be either 27bp, the same as for the last one. In this case, the coupon would be 0.40% (based on 13 January closing prices).

Characteristics of Underlying Loan Pools for All JHF Monthly MBSs



Source: JHF; compiled by Daiwa Securities.
Note: Candidate pool used for No. 177 issue.

Characteristics of Underlying Loans: No. 177 Monthly MBS and Last Six Issues (No. 171-176)

	JHF #171	JHF #172	JHF #173	JHF #174	JHF #175	JHF #176	JHF #177	Ave. of previous 6 issues	Change from #176	
Loan Pool Selected in	Jun-2021	Jul-2021	Aug-2021	Sep-2021	Oct-2021	Nov-2021	Dec-2021			
Loan Application Started in	May-2018	Mar-2019	Aug-2018	Jun-2019	Jun-2018	May-2018	Sep-2019			
Repayment Started in	Feb-2021	Mar-2021	Apr-2021	May-2021	Apr-2021, June-2021	Jul-2021	Sep-2021			
Initial Outstanding Entrusted Assets (Y mil)	167,960	156,411	145,338	160,067	148,803	151,560	179,839	155,023	+28,279	
Issue Size (Y mil)	132,600	123,400	113,900	126,700	117,700	119,700	TBD	122,333	-	
Excess Collateral (Y mil)	35,360	33,011	31,438	33,367	31,103	31,860	TBD	32,690	-	
Overcollateralization	21.0%	21.1%	21.6%	20.8%	20.9%	21.0%	TBD	21.1%	-	
Number of Loans	5,410	5,055	4,708	5,228	4,857	4,849	5,700	5,018	+851	
Average Outstanding Loan (Y mil)	31.046	30.942	30.868	30.617	30.637	31.256	31.551	30.894	+0.295	
Average LTV	93.64%	93.45%	93.39%	93.42%	93.47%	93.33%	92.70%	93.45%	-0.63%	
Average DTI	25.12%	25.04%	25.14%	24.68%	24.97%	24.93%	25.10%	24.98%	+0.17%	
Average LTV for Refinance	83.08%	81.14%	85.13%	89.36%	88.50%	86.77%	85.48%	85.66%	-1.29%	
Average DTI for Refinance	19.44%	18.76%	19.31%	18.66%	18.71%	19.51%	18.33%	19.07%	-1.18%	
Average Annual Income of Obligor (Y mil)	5.988	6.019	5.940	6.117	6.006	6.086	6.093	6.026	+0.006	
Average Age of Obligor	41.5	41.4	41.4	42.0	41.8	42.1	42.2	41.7	+0.1	
WAC (Initial Rate)	1.15%	1.13%	1.08%	1.08%	1.10%	1.13%	1.13%	1.11%	+0.00%	
WAC (Final Rate)	1.39%	1.37%	1.32%	1.32%	1.34%	1.37%	1.37%	1.35%	+0.00%	
WALA (Weighted Average Loan Age)	0	0	0	0	0	0	0	0	+0	
WALA for Refinance	116	126	121	117	117	124	120	120	-4	
WAM	397	396	397	392	392	395	394	395	-1	
Maturity Structure of Loans at Origination (% share)	Up to 10Y	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	+0.0%	
	10-20Y	4.2%	4.4%	4.4%	5.6%	5.6%	5.1%	5.5%	+0.4%	
	20-25Y	4.3%	4.0%	3.6%	5.1%	5.4%	4.2%	4.6%	+0.4%	
	25-30Y	6.9%	7.2%	7.1%	7.8%	7.1%	7.2%	7.0%	-0.1%	
	Over 30Y	84.6%	84.3%	84.8%	81.4%	81.9%	83.5%	82.7%	83.4%	-0.7%
% share of loans with bonus payments	(in number)	7.9%	8.2%	7.9%	9.2%	8.3%	7.7%	6.6%	8.2%	-1.2%
	(in value)	9.0%	9.3%	9.0%	10.1%	9.4%	8.4%	7.1%	9.2%	-1.3%
Type of Loan	new	96.8%	97.0%	96.7%	94.3%	94.4%	96.4%	96.2%	95.9%	-0.2%
	refinanced	3.2%	3.0%	3.3%	5.7%	5.6%	3.6%	3.8%	4.1%	+0.2%
Loan Amount at Origination (% share)	Up to ¥10 mil	0.8%	0.9%	0.9%	0.9%	1.0%	0.8%	0.9%	0.9%	+0.1%
	¥10-20 mil	8.4%	8.7%	8.6%	9.4%	9.5%	8.6%	7.9%	8.8%	-0.7%
	¥20-30 mil	26.4%	26.4%	26.2%	26.7%	25.9%	25.3%	24.4%	26.1%	-0.9%
	¥30-40 mil	31.4%	31.1%	32.1%	30.0%	30.9%	31.4%	31.9%	31.2%	+0.5%
	¥40-50 mil	18.7%	18.0%	17.5%	17.2%	18.1%	17.7%	19.2%	17.8%	+1.5%
	Over ¥50 mil	14.3%	14.9%	14.8%	15.9%	14.7%	16.3%	15.8%	15.1%	-0.5%
Loan Amount by Region (% share)	Hokkaido/Tohoku	6.4%	7.3%	7.7%	7.3%	7.8%	8.5%	7.9%	7.5%	-0.6%
	Kanto	51.2%	50.3%	47.5%	48.3%	47.3%	48.4%	46.5%	48.8%	-2.0%
	Shinetsu/Hokuriku	2.1%	2.4%	2.3%	1.8%	2.2%	2.6%	2.4%	2.2%	-0.2%
	Tokai	9.7%	10.3%	11.6%	10.9%	10.1%	9.9%	10.0%	10.4%	+0.1%
	Kinki	17.3%	16.5%	16.6%	17.8%	18.1%	16.7%	17.5%	17.1%	+0.9%
	Chugoku	2.8%	2.7%	3.2%	3.2%	2.7%	3.3%	3.0%	3.0%	-0.4%
	Shikoku	1.5%	1.4%	1.2%	1.2%	1.9%	1.0%	1.2%	1.4%	+0.2%
Kyushu/Okinawa	9.1%	9.1%	9.8%	9.6%	10.1%	9.6%	11.6%	9.5%	+2.0%	

Source: JHF; compiled by Daiwa Securities.

Note: Candidate pool used for No. 177 issue.

IMPORTANT

This report is provided as a reference for making investment decisions and is not intended to be a solicitation for investment. Investment decisions should be made at your own discretion and risk. Content herein is based on information available at the time the report was prepared and may be amended or otherwise changed in the future without notice. We make no representations as to the accuracy or completeness. Daiwa Securities Co. Ltd. retains all rights related to the content of this report, which may not be redistributed or otherwise transmitted without prior consent.

Ratings

Issues are rated 1, 2, 3, 4, or 5 as follows:

- 1: Outperform TOPIX/benchmark index by more than 15% over the next 12 months.
- 2: Outperform TOPIX/benchmark index by 5-15% over the next 12 months.
- 3: Out/underperform TOPIX/benchmark index by less than 5% over the next 12 months.
- 4: Underperform TOPIX/benchmark index by 5-15% over the next 12 months.
- 5: Underperform TOPIX/benchmark index by more than 15% over the next 12 months.

Benchmark index: TOPIX for Japan, S&P 500 for US, STOXX Europe 600 for Europe, HSI for Hong Kong, STI for Singapore, KOSPI for Korea, TWII for Taiwan, and S&P/ASX 200 for Australia.

Target Prices

Daiwa Securities Co. Ltd. sets target prices based on its analysts' earnings estimates for subject companies. Risks to target prices include, but are not limited to, unexpected significant changes in subject companies' earnings trends and the macroeconomic environment.

Disclosures related to Daiwa Securities

Please refer to https://lzone.daiwa.co.jp/l-zone/disclaimer/e_disclaimer.pdf for information on conflicts of interest for Daiwa Securities, securities held by Daiwa Securities, companies for which Daiwa Securities or foreign affiliates of Daiwa Securities Group have acted as a lead underwriter, and other disclosures concerning individual companies. If you need more information on this matter, please contact the Research Production Department of Daiwa Securities.

Explanatory Document of Unregistered Credit Ratings

This report may use credit ratings assigned by rating agencies that are not registered with Japan's Financial Services Agency pursuant to Article 66, Paragraph 27 of the Financial Instruments and Exchange Act. Please review the relevant disclaimer regarding credit ratings issued by such agencies at:

<https://lzone.daiwa.co.jp/l-zone/disclaimer/creditratings.pdf>

Notification items pursuant to Article 37 of the Financial Instruments and Exchange Law

(This Notification is only applicable to where report is distributed by Daiwa Securities Co. Ltd.)

If you decide to enter into a business arrangement with our company based on the information described in this report, we ask you to pay close attention to the following items.

- In addition to the purchase price of a financial instrument, our company will collect a trading commission* for each transaction as agreed beforehand with you. Since commissions may be included in the purchase price or may not be charged for certain transactions, we recommend that you confirm the commission for each transaction. In some cases, our company also may charge a maximum of ¥2 million per year as a standing proxy fee for our deposit of your securities, if you are a non-resident.
- For derivative and margin transactions etc., our company may require collateral or margin requirements in accordance with an agreement made beforehand with you. Ordinarily in such cases, the amount of the transaction will be in excess of the required collateral or margin requirements**.
- 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.

** The ratio of margin requirements etc. to the amount of the transaction 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.

When making an actual transaction, please be sure to carefully read the materials presented to you prior to the execution of agreement, and to take responsibility for your own decisions regarding the signing of the agreement with our company.

Corporate Name: Daiwa Securities Co. Ltd.

Registered: Financial Instruments Business Operator, Chief of Kanto Local Finance Bureau (Kin-sho) No.108

Memberships: Japan Securities Dealers Association, The Financial Futures Association of Japan, Japan Investment Advisers Association, Type II Financial Instruments Firms Association