

The 42nd Information Meeting

The 31st Long-Term Management Plan

Dare to Change; Create the Next Generation (April 2018 ~ March 2021)

Nov 15, 2018



•This document has been prepared for information purpose only so it should not be construed as an offer or solicitation to buy or sell any securities.

•This document includes statements concerning future business results. These statements do not guarantee future business results, but contain risks and uncertainties. Please note that future business results may differ from projections for reasons such as changes in the business environment.

•Information contained herein may be changed or revised without prior notice.

<For inquiry> Planning & Coordination Dept. Investor Relations TEL : 026-224-5512 FAX : 026-226-5077 E-mail : irtantou@82bank.co.jp



| Company name | THE HACHIJUNI BANK, LTD. |
|----------------------------------|--|
| Head Office | Nagano City, Nagano Prefecture |
| Date of establishments | August 1st , 1931 |
| Network | Domestic 151 (in Nagano: 131, outside Nagano:20) Overseas Branch: 1 (Hong Kong) Representative Offices: 4 (Dalian, Shanghai, Bangkok, Singapore) |
| No. of employees | 3,284 |
| Capital stock | ¥52.2bn |
| Issued shares | 511,103 thousand shares |
| Total asset | ¥9,855.5bn |
| Net asset | ¥721.1bn |
| Deposits | ¥6,619.5bn |
| Loans | ¥5,211.5bn |
| Total capital ratio (Basel Ⅲ) | Consolidated: 19.74% (preliminary) Non-consolidated: 19.06% (preliminary) |
| Ratings | S&P Global Ratings : A R&I : A+ |

"Eco-First Company"

The 2nd Company in the Banking Industry

In August 2018, the Bank was certified as an "Eco-First Company" by the Ministry of Environment, highly evaluated the Bank's advanced and sustainable programs in which both officers and employees engaged actively in environmental conservations.







Index

Main Volume

P.4~25

- 1. Outlines of 1H FY2018 Financial Results and FY2018 Full Year Forecasts
- 2. Major Accounts and Main Figures
- 3. Progress in the 31st Long-Term Management Plan

| Topics Interest on loans of 1H FY2018 increased from the 1H of the previous fiscal year for the first time in 10 years. | | | | | | | | | us | | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| (¥100mn) | FY2008 1H | FY2009 1H | FY2010 1H | FY2011 1H | FY2012 1H | FY2013 1H | FY2014 1H | FY2015 1H | FY2016 1H | FY2017 1H | FY2018 1H |
| Interest on loans | 408 | 377 | 344 | 322 | 308 | 292 | 275 | 262 | 242 | 234 | 235 |
| Change from the 1H of the previous FY | +2.3 | ▲30.9 | ▲32.6 | ▲22.1 | ▲14.7 | ▲15.3 | ▲17.6 | ▲12.9 | ▲19.6 | ▲7.6 | +0.3 |



Outline of the 1H FY2018 Financial Results

Consolidated

| | (¥100mn) | 9/2017 | 9/2018 | Change |
|---|---|--------|--------|--------|
| | nsolidated gross siness profit | 497 | 468 | ▲29 |
| | Profit of interest | 343 | 342 | ▲1 |
| | Profit on fees & commissions | 66 | 65 | ▲1 |
| | Trading profit | 11 | 12 | 1 |
| | Profit from other business transactions | 76 | 47 | ▲28 |
| ad | eneral & Iministrative penses | 316 | 310 | ▲5 |
| | edit related penses | 6 | ▲3 | ▲10 |
| | ains/losses related stocks | 21 | 9 | ▲12 |
| Or | dinary profit | 202 | 167 | ▲34 |
| Net income attributable to owners of parent | | 134 | 108 | ▲25 |
| pro co | tio of consolidated ofits to parent mpany's profits mes) | 1.098 | 0.947 | ▲0.151 |

Non-Consolidated

| (¥100mn) | | 2017/9 | 2018/9 | Change | From projections | |
|----------------------------|--|-----------------------------------|--------|--------|---------------------|-----|
| Gros | ss bus | iness profit(A) | 439 | 407 | ▲31 | 14 |
| | Prof | t on interest | 342 | 340 | ▲1 | 17 |
| | Prof | t on fees & commissions | 39 | 38 | ▲1 | ▲6 |
| | Profi | t from other business sactions | 56 | 27 | ▲28 | 4 |
| | | Gains/losses related to bonds (B) | 55 | 23 | ▲32 | 9 |
| G&A | A expe | nses (C) | 285 | 277 | ▲7 | ▲7 |
| Core | e net b | ousiness profit (A-B-C) | 98 | 106 | 8 | 11 |
| Actu | ual net | : business profit (A-C) | 153 | 130 | ▲23 | 20 |
| Tran poss | Transfer to general reserve for possible loan losses (D) | | ▲2 | - | 2 | - |
| Net | busin | ess profit (A-C-D) | 156 | 130 | ▲26 | 20 |
| (0 | Reve loan | ersal of allowance for losses | - | 4 | 4 | ▲2 |
| sses | | Reversal of general reserve | - | 11 | 11 | - |
| Temporary profit/losse | | Reversal of specific reserve | - | ▲6 | ▲6 | - |
| Temporary profit/losses | Gain: (E) | s/losses related to stocks | 22 | 9 | ▲12 | 4 |
| | Disp | osal of NPL | 3 | 0 | ▲ 3 | ▲0 |
| Ordi | inary p | profit | 175 | 142 | ▲32 | 22 |
| Extr | aordir | ary gains/losses | ▲5 | 12 | 17 | ▲ 2 |
| Net income | | 122 | 114 | ▲7 | 14 | |
| Crea | dit rela | ated expenses | 0 | ▲4 | ▲5 | 2 |
| Profi (B+ | it/loss€ ⊦E) | es related to securities | 78 | 33 | ▲44 | 13 |



Review of the 1H FY2018

[Consolidated]

- Ordinary profit was ¥16.7bn (▲¥3.4bn from 1H FY2017) due to decreases in gains/losses related to bonds (▲¥3.2bn) and in gains/losses related to stocks (▲¥1.2bn) despite the decrease in credit related expenses.
- > Net income attributable to owners of the parent was ± 10.8 bn (± 2.5 bn).

[Non-consolidated]

- > Core net business profit was ± 10.6 bn (± 10.8 bm) due to the decrease in G&A expenses (± 10.7 bn).
- > Ordinary profit was ¥14.2bn (▲¥3.2bn) due to the decrease in profit/losses related to securities (▲¥4.4bn).
- Net income was ¥11.4bn (▲¥0.7bn) due to the decrease in ordinary profit, despite the ¥1.6bn of extraordinary gains by the merger with Hachijuni Business Services Co., Ltd.

FY2018 (3/2019) Forecasts

[Consolidated]

- Ordinary profit will be ¥34.5bn (▲¥7.0bn from FY2017) due to the decrease in ordinary profit of non-consolidated account as profit/losses related to securities will decrease.
- > Net income attributable to owners of the parent will be ± 22.5 bn (± 3.3 bn).

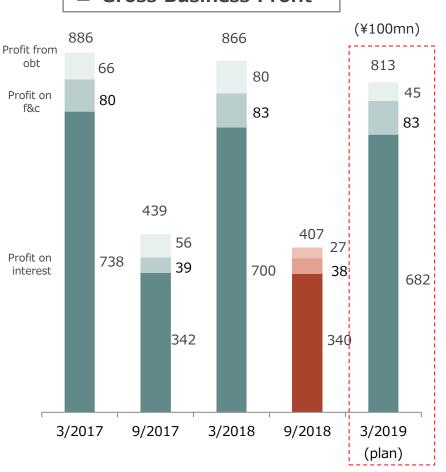
[Non-consolidated]

- Core net business profit will be ¥22.5bn (▲¥0.3bn) due to the decrease in profit on interest by the increase in funding costs, reflecting higher rates in US despite the decrease in G&A expenses.
- > Ordinary profit will be ¥28.5bn (▲¥6.3bn) due to the decrease in profit/losses related to securities.
- > Net income will be ± 21.5 bn ($\pm \pm 1.2$ bn).



Gross Business Profit (Non-Consolidated)

- Profit on interest decreased by ¥0.1bn from 1H FY2017 due to the increase in funding costs despite the increase in interest on loans.
- Gross business profit for the end of FY2018 will decrease due to the decrease trend in profit on interest.





| (¥100mn) | 9/2017 | 9/2018 | Change | For reference |
|--|--------|--------|--------|---------------|
| Profit on interest | 342 | 340 | ▲ 1 | See page 7 |
| Profit on fees & commissions | 39 | 38 | ▲1 | See page 8 |
| Profit from other business transactions | 56 | 27 | ▲28 | See page 9 |

◆ 1H FY2018 Increase/Decrease factors

FY2018 (3/2019) forecast

- Profit on interest: ¥1.8 from FY2017 due to the increase in funding costs of foreign currencies.
- ➢ Profit on f&c: almost unchanged from FY2017.



Profit on Interest (Non-Consolidated)

- Interest on loans (domestic: ¥21.7bn, international: ¥1.7bn) increased by ¥30mn from 1H FY2017 for the first time in 10 years.
- > The pace of the decline in interest on loans of domestic area will become moderate.

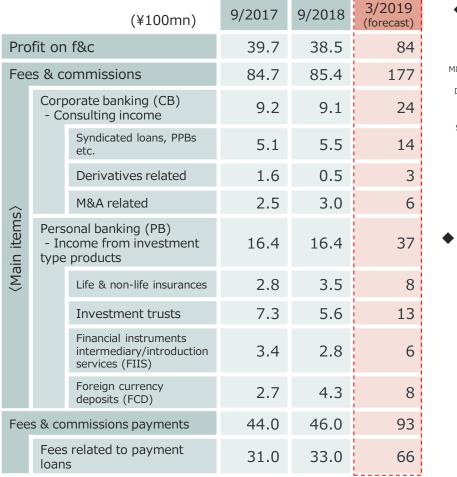
| | (¥100mn) | 9/2017 | 3/2018 | 9/2018 (FY2018 plan) | ■ Yield and | Margin | (all office | es, %) | | |
|------|---|--------|--------|-------------------------|-----------------|--------|-------------|--------|--------|----------------------|
| Prof | it on interest | 342 | 700 | 340 <u>(682)</u> | | 3/2016 | 3/2017 | 3/2018 | 9/2018 | 3/2019 |
| D | omestic | 321 | 629 | 307 <u>(628)</u> | N# 11 | | | | | (forecast) |
| | Interest on | 223 | 443 | 217 | Yield | 1.14 | 1.07 | 0.94 | 0.88 | 0.88 |
| | loans | () | 110 | · | Funding costs | 0.16 | 0.15 | 0.11 | 0.12 | 0.13 |
| | Interest & dividends on sec. | 106 | 199 | 96 | Interest margin | 0.98 | 0.92 | 0.83 | 0.76 | 0.74 |
| | Interest on deposits | ▲3 | ▲6 | ▲2 | ■ Yield and | Margin | (domest | ic, %) | | |
| | Interest payment on interest rate swaps | ▲7 | ▲13 | ▲6 | | 3/2016 | 3/2017 | 3/2018 | 9/2018 | 3/2019 (forecast) |
| Ir | nternational | 20 | 70 | 33 <u>(54)</u> | Yield on loans | 1.12 | 0.99 | 0.90 | 0.85 | 0.85 |
| | Interest on loans | 11 | 23 | 17 | Yield on sec. | 1.24 | 1.27 | 1.06 | 1.02 | 1.06 |
| | Interest & | ,, | 95 | 47 | Funding costs | 0.10 | 0.06 | 0.02 | 0.02 | 0.01 |
| | dividends on sec. | 54 | 90 | 47 | Yield on depo. | 0.03 | 0.01 | 0.01 | 0.00 | 0.00 |
| | Interest on deposits | ▲9 | ▲19 | ▲11 | Interest margin | 0.94 | 0.90 | 0.79 | 0.72 | 0.72 |
| | Interest payment on interest rate swaps | ▲4 | ▲7 | ▲3 | | | | | i I | 7 |

THE HACHIJUNI BANK, LTD. The 42nd Information Meeting

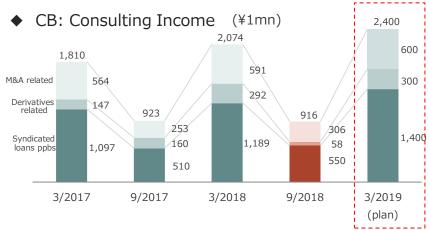


Profit on Fees & Commissions (Non-Consolidated)

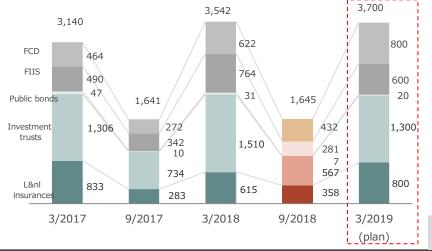
- Consulting income in corporate banking (CB) was the same level as 1H FY2017 because the issuance of Regional Revitalization Support PPBs (private placement bonds) remained solid.
- Income from investment type products in personal banking (PB) was also the same level as 1H FY2017 because income from foreign currency deposits increased firmly.



Note: The above figures were deferent from the figures on Statements of Income.



PB: Income from Investment Type Products (¥1mn)

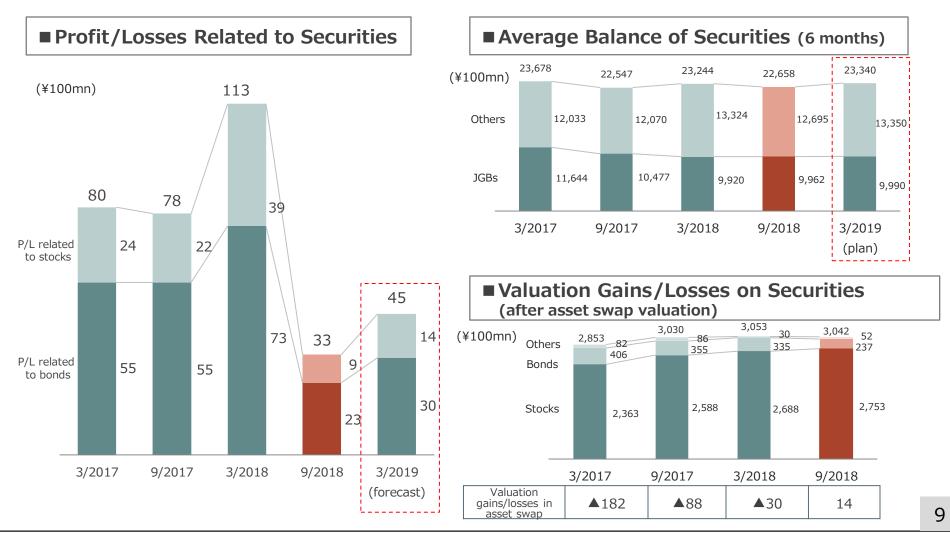


Copyright (C) 2018 THE HACHIJUNI BANK, LTD. All Rights Reserved.



Profit/Losses Related to Securities (Non-Consolidated)

- > Profit/losses related to securities decreased by ¥4.4bn from 1H FY2017.
- > Average balance of securities increased by ¥11.1bn due mainly to the increase in other securities.



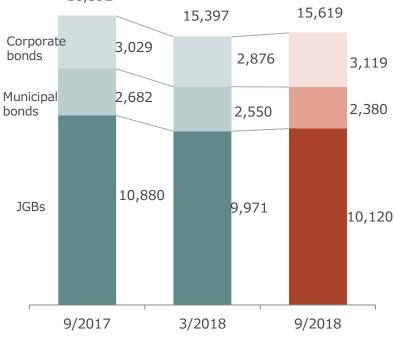
THE HACHIJUNI BANK, LTD. The 42nd Information Meeting

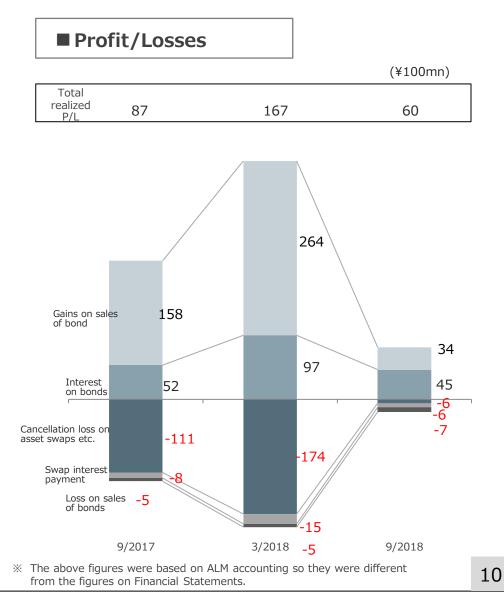


Market Investment (Yen Bonds)

| | | Balance) | (¥100mn) |
|---|-----|----------|----------|
| Valuation gains/losses before hedge | 445 | 369 | 226 |
| Valuation gains/losses after hedge | 355 | 344 | 238 |

16,592

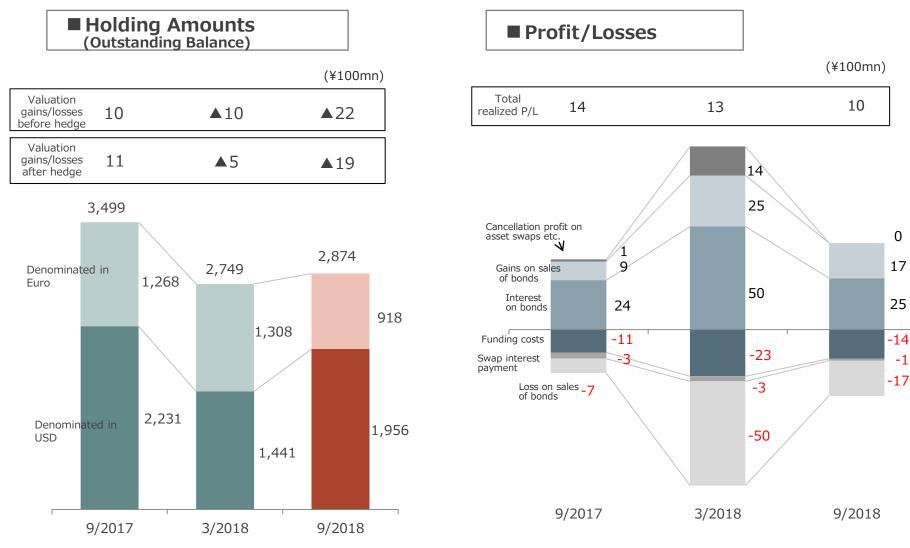




Copyright (C) 2018 THE HACHIJUNI BANK, LTD. All Rights Reserved.



Market Investment (Foreign Bonds)

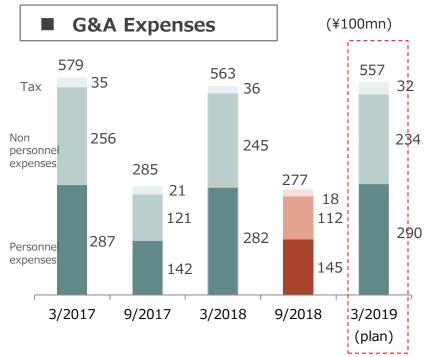


 $\,\%\,$ The above figures were based on ALM accounting so they were different from the figures on Financial Statements.



General & Administrative Expenses (Non-Consolidated)

- Personnel expenses increased by ¥0.3bn, non-personnel expenses decreased by ¥0.9bn, and tax decreased by ¥0.2bn from 1H FY2017.
- The merger with Hachijuni Business Services Co., Ltd. affected G&A expenses (increase in personnel expenses, decrease in outsourcing expenses).



FY2018 forecasts

- Personnel expenses: +¥0.8bn from FY2017 due to the employee increase caused by the merger with Hachijuni Business Services Co., Ltd.
- Non personnel expenses: ▲¥1.0bn due to the reduction of operation consignment expenses, reflecting the abovementioned merger

| Dep | reciation and | l Investment | Amounts |
|-----------------------|---|---|--|
| (¥100mn) | 3/2017 | 3/2018 | 3/2019 (plan) |
| Depreciation | 43.2 | 42.4 | 41.0 |
| Investment amounts | 35.7 | 45.1 | 42.9 |
| Main investments | *Branch system update *Increase in biometrics authentication machines *Integrated office PC update | *Instant issuance machine of card *Next phased system *OTM update | *Next phased system *Paperless *API |

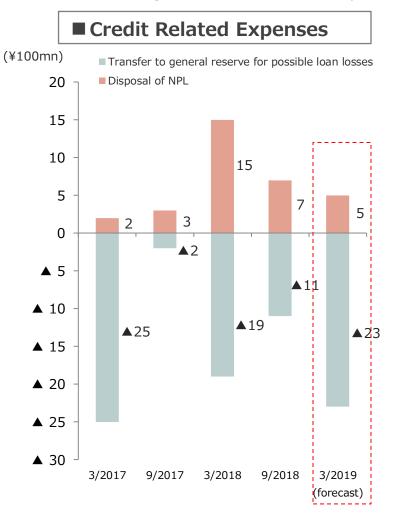
• 1H FY2018 Increase/Decrease Factors

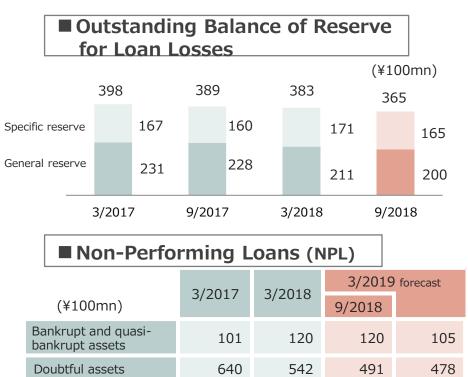
| (¥100mn) | 9/2017 | 9/2018 | Change | Main factors |
|---------------------------|--------|--------|--------|--|
| Personnel expenses | 142 | 145 | 3 | •Increase in wages •Increase in temporary employment costs |
| Non personnel expenses | 121 | 112 | ▲9 | Decrease in outsourcing expenses Decrease in advertising expenses |
| Tax | 21 | 18 | ▲2 | Decrease in consumption tax Decrease in size-based enterprise tax |



Credit Related Expenses (Non-Consolidated)

- > Non-performing loans continued to decrease, NPL ratio also declined.
- Credit related expenses of FY2018 (3/2019) will be a negative ¥1.8bn, reflecting the recent financial surroundings and the decline in the probability of default.





% Partial direct charge-off was not executed. This figure was disclosed only for the reference.

226

967

1.94%

1.83%

Substandard assets

After partial direct charge-

Total

NPL ratio

off ※

207

869

1.68%

1.53%

187

799

1.51%

1.37%

178

762

1.46%

1.32%



Return to Shareholders

- Year-end dividend per share will be ¥8.0, ¥1.0 up from the previous forecast based on the full year business forecast and management target of consolidated payout ratio (over 30%).
- > Dividend per share of FY2018 full year will be ¥14.0.
- Ratio of shareholder returns will be 43.6% due to the purchase of own stocks according to the resolution on Jun 2018.

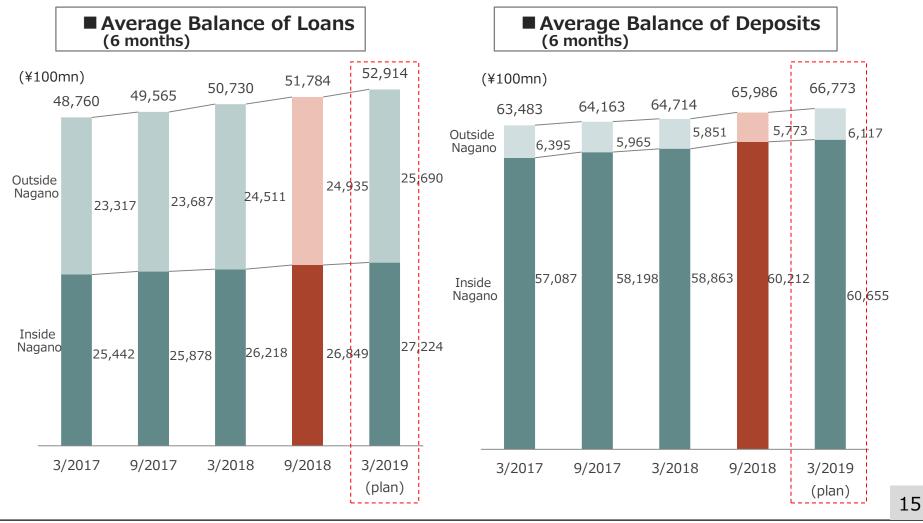
| | (¥100mn) | 3/2015 | 3/2016 | 3/2017 | 3/2018 | 3/2019 (forecast) |
|------|--|--------|--------|--------|--------|----------------------|
| Annı | ual dividends① | 75 | 75 | 70 | 65 | 69 |
| | lend per share year) | ¥15.0 | ¥15.0 | ¥14.0 | ¥13.0 | ¥14.0 |
| | Interim dividend | ¥5.0 | ¥6.0 | ¥6.0 | ¥6.0 | ¥6.0 |
| Purc | hase of own stocks② | 30 | 30 | 0 | 29 | 28 |
| | The term $(1) + (2)$ | 105 | 105 | 70 | 95 | 98 |
| | income -consolidated)④ | 257 | 277 | 231 | 227 | 225% |
| | lend payout ratio -consolidated) $\textcircled{1}\div\textcircled{4}$ | 29.2% | 27.2% | 30.6% | 28.9% | 30.8%% |
| | o of shareholder returns a-consolidated) $3\div 4$ | 40.9% | 37.9% | 30.6% | 41.9% | 43.6%% |
| | | | | | i i i | |

 \mathcal{C} Consolidated basis



Major Accounts (Loans/Deposits)

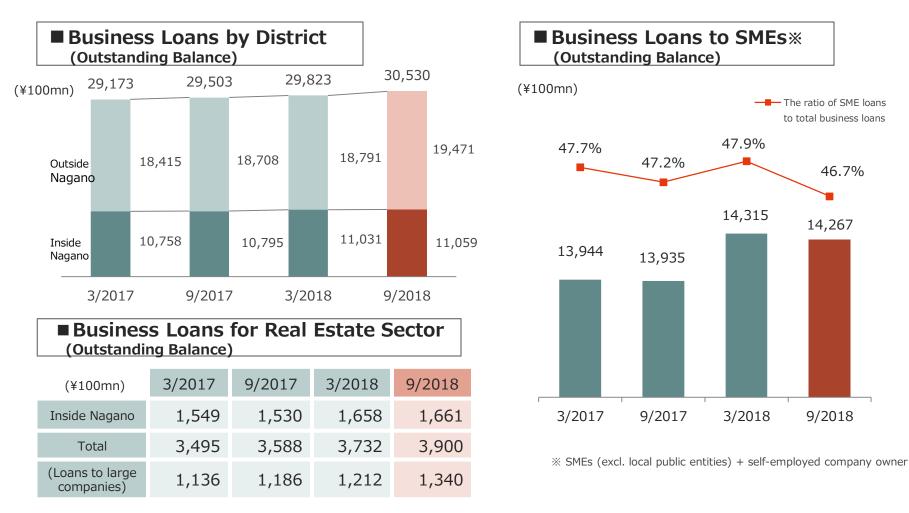
- > Loans and deposits continued to increase, hitting new record highs.
- Loans both inside and outside Nagano Prefecture increased firmly and average balance of loans exceeded the ¥5tn mark.





Main Figures (Business Loans)

- Business loans both inside and outside Nagano increased, reflecting the increase in credit needs relating to capital investment of growth industries; total business loans increased by ¥102.7bn from 1H FY2017.
- Business loans to SMEs increased by ¥33.2bn due to the reinforcement of relations with customers.

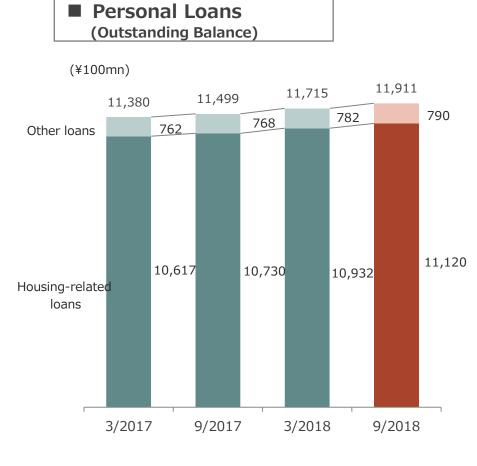


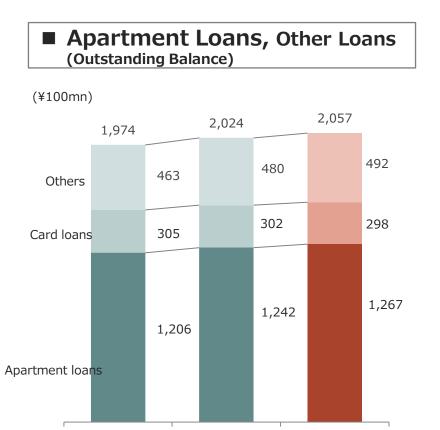
THE HACHIJUNI BANK, LTD. The 42nd Information Meeting



Main Figures (Personal Loans)

- > Personal loans increased by ¥41.2bn from 1H FY2017 to ¥1,191.1bn (record high).
- ▶ Housing-related loans increased by ¥39.0bn to ¥1,112.0bn (record high).





※ Classification codes of apartment loans were reconsidered in March 2018. After this reconsideration, the above figures of Sep 2017 were revised from the previous report.

3/2018

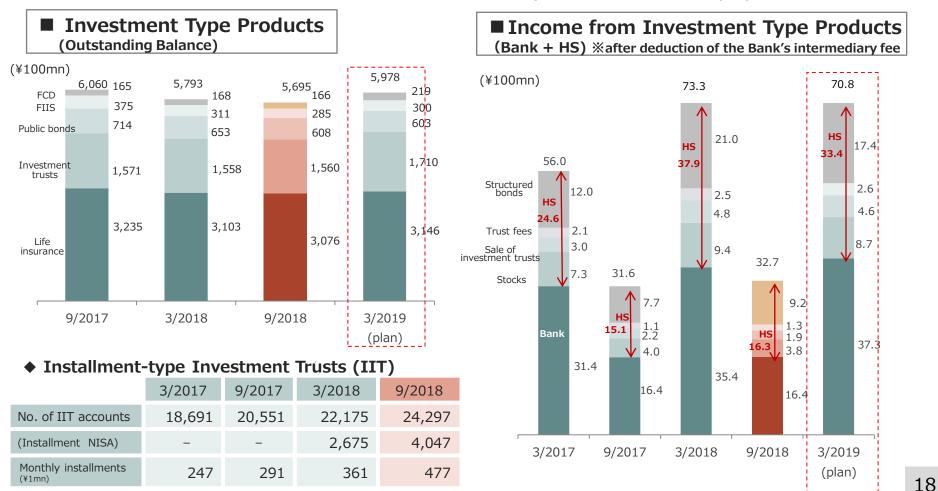
9/2017

9/2018



Main Figures (Investment Type Products in Personal Banking)

- Outstanding balance of investment type products (market price) decreased by ¥36.5 from 1H FY2017.
 Investment trusts decreased by ¥1.1bn due to the increase of cancellation backed by the rises in stock prices.
- Income from investment type products increased by ¥0.1bn, reflecting firm sales of structured bonds by the reinforcement of the alliance between the Bank and Hachijuni Securities Co., Ltd.(HS).





Market Investment (the Change in Outstanding Balance of Securities)

> Progressing diversified investment while continuing yen-denominated securities investment

| | | 0/00/7 | | 0/00/0 | 0/00/0 | |
|--------------------------------------|---|--------|--------|--------|--------|------------------------|
| (Cost | basis, ¥100mn) | 3/2017 | 9/2017 | 3/2018 | 9/2018 | Direction of 2H FY2018 |
| | Interest-bearing JGBs | 8,295 | 8,309 | 8,013 | 8,684 | \rightarrow |
| | Floating-rate JGBs | 1,855 | 1,845 | 1,656 | 1,256 | R |
| ds | Inflation-protected JGBs | 365 | 350 | 0 | 11 | \rightarrow |
| Bonds | Other domestic bonds | 3,797 | 4,862 | 4,651 | 4,816 | \rightarrow |
| | Yen-denominated securitized products | 701 | 624 | 581 | 582 | \rightarrow |
| | Structured bonds etc. | 30 | 156 | 126 | 59 | \rightarrow |
| Stocks | Domestic stocks | 1,173 | 1,150 | 1,148 | 1,162 | \uparrow |
| ט ס | Domestic ETF | 144 | 191 | 161 | 184 | \uparrow |
| inate trust | J-REIT | 213 | 219 | 263 | 273 | \rightarrow |
| enom ment | Other investment trusts | 1,676 | 1,733 | 1,796 | 1,740 | \uparrow |
| Yen-denominated investment trusts | Union-type of funds etc. | 152 | 159 | 185 | 178 | \uparrow |
| ≓. ≺ | Hedge funds | 147 | 166 | 224 | 229 | \rightarrow |
| (0 | Hedge funds | 50 | 50 | 47 | 50 | \rightarrow |
| rities | Yen-denominated foreign bonds | 79 | 206 | 342 | 352 | \rightarrow |
| secu | Foreign stocks, ETF etc. | 39 | 108 | 103 | 87 | \uparrow |
| Foreign securities | Foreign currency-denominated bonds | 2,775 | 3,216 | 2,492 | 2,499 | \rightarrow |
| Ĕ | Foreign currency-denominated securitized products | 123 | 274 | 263 | 398 | \rightarrow |
| | Total | 21,614 | 23,620 | 22,052 | 22,558 | |
| | Bond duration (years) | 4.17 | 3.94 | 3.62 | 3.68 | |

THE HACHIJUNI BANK, LTD. The 42nd Information Meeting

"Dare to Change; Create the Next Generation"

April 2018 ~ March 2021

Reform of Sales PromotionStructure and OperationalProcesses \Rightarrow P.24

- Reorganization of operational section
 (change of organization, review of business, outsourcing)
- Reduction of operational processes
- Increasing operational efficiency by IT
- Review of structure (branch/staff)
- Reduction of customers' burden/improving convenience

Strengthening and Expansion of "Face-to-Face Sales" in Order to Realize Customer Profits ⇒ P.22

- Strengthening quantity in "face-to-face sales"
- Strengthening quality in "face-to-face sales"
- Expansion of the scale of "face-to-face sales"
- Strengthening "face-to-face sales" of the whole Hachijuni Group

Expansion of Investment in Developing "Human Resources" and More Opportunities for Their Active Participation \Rightarrow P.23

- Career path/program of nurturing human resources
- Staff support system according to their age
- Personnel exchanges within the Hachijuni Group
- Nurturing human resources in specialized fields
- Work style reform



Progress in the 31st Long-Term Management Plan [Numerical Targets]

| Management Targ | Management Targets | | | | gets | |
|--|-----------------------------|-------|---|---|------------------------|----------------------------|
| | Targets | 9/ | 2018 | | Targets | 9/2018 |
| Net income attributable to owners of the parent | (FY2020) ¥ 25.0bn | ¥1(| 0.8bn | Amount of greenhouse gas emissions reduced (compared to FY2013) | (FY2020) 15% | FY end release |
| Ratio of consolidated profits to parent company's profits | (FY2020) 1.25 | 0 | .94 | No. of new contracts for electronic delivery services: cases (over 3 years) | 3,000 | 1,978 |
| Dividend payout ratio (consolidated) | | | d forecast)).8% | No. of new contracts for and renewals to e-livret: cases (over 3 years) | 100,000 | 22,579 |
| Regional Vitality Targets | | | No. of environmental investments and loans: | 3,000 | 415 | |
| | Targe | ets 9 | /2018 | cases (over 3 years) | 3,000 | 415 |
| No. of new business launch (over 3 years): companies | nes 1,00 | 0 | 194 | | | |
| No. of cases through busin matching (sales channels | | | 943 | Long-Term Manage | ement Guideli | ne |
| development, etc.) (over 3 years) | 6,00 | U | 945 | | Guideline | 9/2018 |
| No. of cases utilizing private placement bonds, funds, etc. 5 (over 3 years) | | 0 | 125 | ROE | 5% or higher | (FY end forecast) 2.88% |
| No. of business successions M&As, and change/discontinuation of businesses: cases (over 3 y | 1,00 | 0 | 225 | | | |



Theme 1 Strengthening and Expansion of "Face-to-Face Sales" in Order to Realize Customer Profits

Providing financial services most suited to customer needs

Nurturing Human Resources for the Coexistence of "Quality" and "Quantity"

(Quality) Review of training programs of staff in charge of corporate/individual customers to reinforce their consulting skills

(Quantity) Nurturing 500 staff to take charge of consulting businesses at counters by adding new training

Enhancing Both "Quality" and "Quantity"



New Small Office ~ "Hachini-no-Madoguchi (Hachini's Desk)"~



Hachini-no-Madoguchi (the Bank's first branch located in a supermarket) opened in November 19.

- > Operation staff: $1 \sim 2$ staff
- > ATMs: deposit/withdrawal, and transfer
- Original tablets: other transactions such as account opening, change of registered items

Providing New Transaction Styles



Progress in the 31st Long-Term Management Plan ②

Theme 2 Expansion of Investment in Developing "Human Resources" and More Opportunities for Their Active Participation

Creating personnel system focused on each staff's growth and worthwhileness of working

Abolition of 55 Years Old Retirement System of Managerial Posts

Age limit system of managerial post was abolished in July 2018.

Clarifying expected roles of over 55 years old staff, thereby utilizing their experience values for staff training and revitalization of the Bank



Work Style Unconstrained by Age

Appointment of Sales Assistant Staff to Managerial Posts





Sales assistant staff can take managerial posts in July 2018.

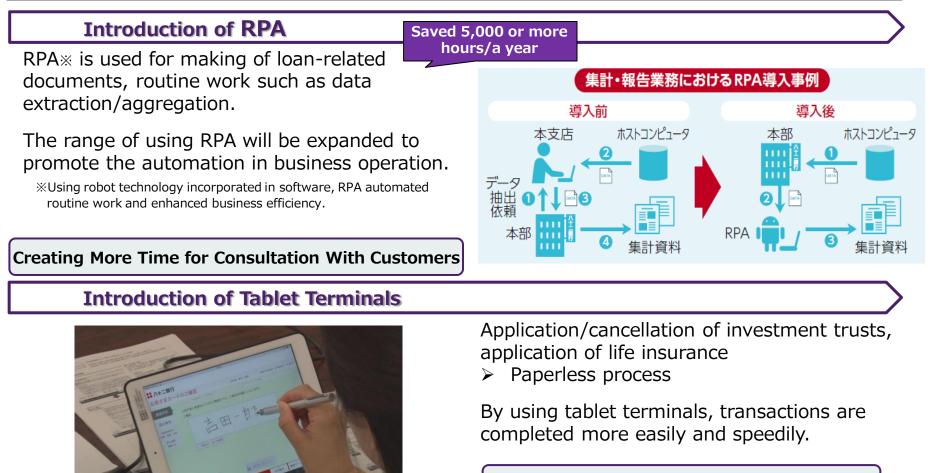
Staff having ability and desire can exert their utmost efforts by getting more opportunities, contributing to regional community.

Work Style Unconstrained by the Occupation Type

Progress in the 31st Long-Term Management Plan $\ensuremath{\textcircled{3}}$

Theme③ Reform of Sales Promotion Structure and Operational Processes

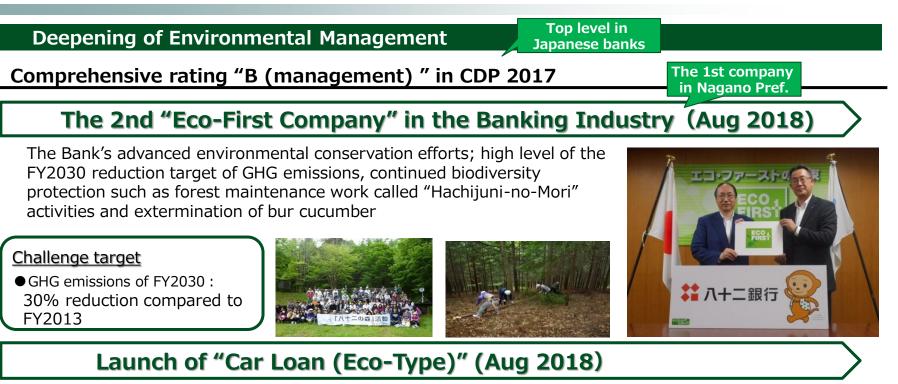
Reinforcement of counter sales structure by increasing operational efficiency Improving customers' convenience by using automation and self-services



Reduction of Customers' Burden



Progress in the 31st Long-Term Management Plan ④



"Car loan (eco-type)" was launched as a renewal version of "Car loan eco-merit", mainly provided to customers using eco-car tax break. The amount of 0.1% of the loan (average balance of the first year) is donated to Nagano Association for Conserving Environment through the Bank. That donation is used for CO2 reduction in Nagano Prefecture and the prevention of global warming.

%The association in which public sector and private sector cooperates in promotion of global warming protection

