

## Supplement Information

### 1. Loans and Receivable disclosure

(Unit: Thousands of Dollars)

Category	Amount, Less Allowances
Residential Mortgage	596,037
Non-Business Loans to Individuals	140,423
Business and Government Loans	570,242
Other (Accrued Interest)	3,730

※ Information is based on OSFI monthly report M4.

### 2. Canada Exposures

(Unit: Thousands of Dollars)

	Book Value	Fair Value	Fair Value Over(Under) Book Value
Loans and Receivables	1,286,734	1,299,451	(12,717)

※ Book Value of Canada Exposure is based on Note 24 of Financial Statements which is gross exposure (not net of allowances) and excluding following Items: Due from Banks, Private Placement Bonds, Import LC, Guarantee Money, Account Receivables, Suspense Receivables.

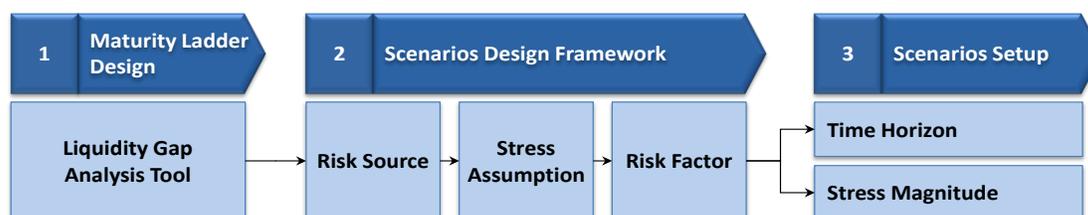
※ Fair Value over(under) Book Value is based on Note 16 of Financial Statements excluding those for Private Placement Bonds and Syndicated Loans.

### 3. Liquidity Principles

The Bank has commonly relied on retail deposits, most of which have a maturity within one year and, to some degree, relied on long-term wholesale funding as supposedly stable sources of funding. On the other hand, most of assets are residential and commercial mortgage loans, of which show a maturity of more than three years. This mismatch could be enlarged under the stressed situation due to the different customer behaviors such as rollover rates and withdrawal rates, leading to a failure to meet payment obligations.

The liquidity stress testing framework begins with a maturity ladder profile. Assets, liabilities and off-balance sheet commitments are slotted into the relevant time buckets according to the period they are expected to mature or to be called upon. In this step, assets, liabilities and off-balance sheet commitments are grouped by the items that have the similar behaviors under the stressed condition.

The next step is to identify the risk sources, make assumptions on stressed scenarios and define the factors that impact cash inflows and outflows. Once the second step is finalized, the severity of each scenario and time horizons are needed to be set. The process for the framework is shown below.



Three scenarios are developed in accordance with the Liquidity Principles Guideline (B-6): institution-specific, market-wide and combined scenario. In the scenario development, the degree of severity, institution-specific vulnerabilities and time horizons are considered.

Scenarios	Definition	Liquidity Crisis
Institution-Specific	<ul style="list-style-type: none"> <li>• Negative news or rumors leading to a loss of market confidence</li> <li>• Duration of crisis : 30 days</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of market access to unsecured borrowing               <ul style="list-style-type: none"> <li>- reduction or cancellation of GICs funding</li> </ul> </li> <li>• Huge runoff in retail and wholesale deposits</li> </ul>
Market-Wide	<ul style="list-style-type: none"> <li>• Deep economic recessions of default of primary market counterparty</li> <li>• Duration of crisis : 60 days</li> </ul>	<ul style="list-style-type: none"> <li>• Professional demand deposits are withdrawn</li> <li>• Repo markets and unsecured interbank markets are closed</li> <li>• Credit lines granted are drawn by corporate clients</li> </ul>
Combined	<ul style="list-style-type: none"> <li>• Combination of firm-specific and market-wide liquidity crisis</li> <li>• Duration of crisis : 90 days</li> </ul>	<ul style="list-style-type: none"> <li>• Combination of firm specific and market-wide liquidity crisis               <ul style="list-style-type: none"> <li>- Short-term firm-specific shocks (4 weeks)</li> <li>- Long-term market-wide shocks (4 weeks~3 months)</li> </ul> </li> </ul>

Withdrawal rates for demand deposits and rollover rates for term deposits and loans are selected as the risk factors that affect real cash flows. The values of the risk factors are determined based on our own in-house data.

The parametric approach is employed to determine the value of assumptions underlying liquidity stress testing. This approach can be expressed in formula as a measure of deviation from the mean with a confidence interval for a defined holding period:

$$\text{Value } (\alpha) = \mu + \sigma \times Z_{\alpha}$$

Where:

- $Z_{\alpha}$  is the reliability factor, a standard normal random variable for which the probability in the right tail of the distribution with the confidence interval of  $\alpha$
- $\sigma$  is the standard deviation of risk factors over a time horizon of one month
- $\mu$  is the mean of risk factors

The stress test is performed every month and managed under the capital buffer together with other risks. The results of the stress test are further utilized in combination with other measurements required by OSFI, such as LCR and NCCF.

**Test Result**

As of the end of December, the net cumulative cashflow under the combined scenario becomes negative on the fourteenth day of the month. The estimated survival period of the combined scenario thus records 21 days and the maximum gap within one month is determined to be \$27M.

# Liquidity Stress Testing

