Note 4: Loans and Allowance for Credit Losses

Loans are initially measured at fair value plus directly attributable costs, and are subsequently measured at amortized cost using the effective interest method. The effective interest method allocates interest income over the expected term of the loan by applying the effective interest rate to the carrying amount of the loan. The effective interest rate is defined as the rate that exactly discounts estimated future cash receipts through the expected term of the loan to the net carrying amount of the loan. Under the effective interest method, the amount recognized in interest, dividend and fee income, loans, varies over the term of the loan based on the principal outstanding. The treatment of interest income for impaired loans is described below.

Securities Borrowed or Purchased Under Resale Agreements

Securities borrowed or purchased under resale agreements represent the amounts we will receive as a result of our commitment to return or resell securities that we have borrowed or purchased, back to the original lender or seller, on a specified date at a specified price. We account for these instruments as if they were loans.

Lending Fees

The accounting treatment for lending fees varies depending on the transaction. Some loan origination, restructuring and renegotiation fees are recorded as interest income over the term of the loan, while other lending fees are taken into income at the time of loan origination. Commitment fees are recorded as interest income over the term of the loan, unless we believe the loan commitment will not be used. In the latter case, commitment fees are recorded as lending fees over the commitment period. Loan syndication fees are included in lending fees at the time the syndication is completed, unless the yield on any loans we retain is less than that of other comparable lenders involved in the financing. In the latter case, an appropriate portion of the syndication fee is recorded as interest income over the term of the loan.

Impaired Loans

We classify a loan as impaired when one or more loss events have occurred, such as bankruptcy, default or delinquency. Generally, consumer loans in both Canada and the U.S. are classified as impaired when payment is contractually 90 days past due, or one year past due for residential mortgages if guaranteed by the Government of Canada. Credit card loans are immediately written off when principal or interest payments are 180 days past due, and are not reported as impaired. In Canada, consumer instalment loans, other personal loans and some small business loans are normally written off when they are one year past due. In the U.S., all consumer loans are generally written off when they are 180 days past due, except for non-real estate term loans, which are generally written off at 120 days past due. For the purpose of measuring the amount to be written off, the determination of the recoverable amount includes an estimate of future recoveries.

Corporate and commercial loans are classified as impaired when we determine there is no longer reasonable assurance that principal or interest will be collected in their entirety on a timely basis. Generally, we consider corporate and commercial loans to be impaired when payments are 90 days past due. Corporate and commercial loans are written off following a review on an individual loan basis that confirms all recovery attempts have been exhausted.

A loan will be reclassified to performing status when we determine that there is reasonable assurance of full and timely repayment of interest and principal in accordance with the terms and conditions of the loan, and that none of the criteria for classification of the loan as impaired continue to apply.

Our average gross impaired loans were $2,248 million for the year ended October 31, 2017 ($2,198 million in 2016). Our average impaired loans, net of the specific allowance, were $1,838 million for the year ended October 31, 2017 ($1,771 million in 2016).

Once a loan is identified as impaired, we continue to recognize interest income based on the original effective interest rate of the loan. In the periods following the recognition of impairment, adjustments to the allowance for these loans reflecting the time value of money are recognized and presented as interest income. Interest income on impaired loans of $75 million was recognized for the year ended October 31, 2017 ($74 million in 2016 and $91 million in 2015).

During the year ended October 31, 2017, we recorded a net gain of $28 million before tax ($5 million in 2016 and $72 million in 2015) on the sale of impaired and written-off loans.

Allowance for Credit Losses ("ACL")

The allowance for credit losses recorded in our Consolidated Balance Sheet is maintained at a level that we consider adequate to absorb credit-related losses on our loans and other credit instruments. The portion related to other credit instruments is recorded in other liabilities in our Consolidated Balance Sheet and amounted to $163 million as at October 31, 2017 ($189 million in 2016).

The allowance is comprised of a specific allowance and a collective allowance.

Specific Allowance

These allowances are recorded for individually identified impaired loans to reduce their carrying value to the expected recoverable amount. We review our loans on an ongoing basis to assess whether any loans should be classified as impaired and whether an allowance or write-off should be recorded (excluding credit card loans, which are classified as impaired and written off when principal or interest payments are 180 days past due, as discussed under Impaired Loans). The review of individually significant problem loans is conducted at least quarterly by the account managers, each of whom assesses the ultimate collectability and estimated recoveries for a specific loan based on all events and conditions that are relevant to the loan. This assessment is then reviewed and approved by an independent credit officer.

Individually Significant Impaired Loans

To determine the amount we expect to recover from an individually significant impaired loan, we use the value of the estimated future cash flows discounted at the loan's original effective interest rate. The determination of estimated future cash flows of a collateralized impaired loan reflects the expected realization of the underlying security, net of expected costs and any amounts legally required to be paid to the borrower. Security can vary by type of loan and may include cash, securities, real properties, accounts receivable, guarantees, inventory or other capital assets.

Individually Insignificant Impaired Loans

Residential mortgages, consumer instalment and other personal loans are individually insignificant and may be individually assessed or collectively assessed for losses at the time of impairment, taking into account historical loss experience.

Collective Allowance

We maintain a collective allowance in order to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the collective allowance is based on the requirements of IFRS, considering guidelines issued by OSFI.

The collective allowance methodology incorporates both quantitative and qualitative factors to determine an appropriate level for the collective allowance. For the purpose of calculating the collective allowance, we group loans on the basis of similarities in credit risk characteristics. The loss factors for groups of loans are determined based on a minimum of five years of historical data and a one-year loss emergence period, except for credit cards, where a seven-month loss emergence period is used. The loss factors are back-tested and calibrated on a regular basis to ensure that they continue to reflect our best estimate of losses that have been incurred but not yet identified, on an individual basis, within the pools of loans. Historical loss experience data is also reviewed in the determination of loss factors. Qualitative factors are based on current observable data, such as current macroeconomic and business conditions, portfolio-specific considerations and model risk factors.

Provision for Credit Losses ("PCL")

Changes in the value of our loan portfolio due to credit-related losses or recoveries of amounts previously provided for or written off are included in the provision for credit losses in our Consolidated Statement of Income.

Loans and allowance for credit losses by category are as follows:

(Canadian $ in millions)	Residential mortgages (1)			Credit card, consumer instalment and other personal loans			Business and government loans			Total		
	2017	2016	2015	**2017**	2016	2015	**2017**	2016	2015	**2017**	2016	2015
Gross loan balances at end of year (2)	**115,258**	112,277	105,918	**70,015**	72,781	73,578	**178,232**	175,597	145,076	**363,505**	360,655	324,572
Impairment allowances (specific ACL), beginning of year	**59**	69	88	**123**	113	99	**250**	210	237	**432**	392	424
Amounts written off	**(27)**	(38)	(83)	**(654)**	(648)	(670)	**(301)**	(361)	(312)	**(982)**	(1,047)	(1,065)
Recoveries of amounts written off in previous years	**16**	16	72	**199**	173	190	**50**	154	194	**265**	343	456
Charge to income statement (specific PCL)	**11**	24	11	**487**	510	497	**352**	281	104	**850**	815	612
Foreign exchange and other movements	**(10)**	(12)	(19)	**(18)**	(25)	(3)	**(117)**	(34)	(13)	**(145)**	(71)	(35)
Specific ACL, end of year	**49**	59	69	**137**	123	113	**234**	250	210	**420**	432	392
Collective ACL, beginning of year	**71**	111	83	**596**	714	678	**1,015**	835	781	**1,682**	1,660	1,542
Charge to income statement (collective PCL)	**(1)**	(42)	19	**(6)**	(120)	7	**(69)**	162	(26)	**(76)**	–	–
Foreign exchange and other movements	**(1)**	2	9	**(4)**	2	29	**(25)**	18	80	**(30)**	22	118
Collective ACL, end of year	**69**	71	111	**586**	596	714	**921**	1,015	835	**1,576**	1,682	1,660
Total ACL	**118**	130	180	**723**	719	827	**1,155**	1,265	1,045	**1,996**	2,114	2,052
Comprised of: Loans	**93**	104	149	**722**	719	827	**1,018**	1,102	879	**1,833**	1,925	1,855
Other credit instruments (3)	**25**	26	31	**1**	–	–	**137**	163	166	**163**	189	197
Net loan balances at end of year	**115,165**	112,173	105,769	**69,293**	72,062	72,751	**177,214**	174,495	144,197	**361,672**	358,730	322,717

(1) Included in the residential mortgages balance are Canadian government and corporate-insured mortgages of $53,981 million as at October 31, 2017 ($57,922 million in 2016 and $56,579 million in 2015).
(2) Included in loans as at October 31, 2017 are $135,535 million ($139,696 million in 2016 and $117,098 million in 2015) of loans denominated in U.S. dollars and $2,528 million ($2,204 million in 2016 and $1,966 million in 2015) of loans denominated in other foreign currencies.
(3) The total specific and collective allowances related to other credit instruments are included in other liabilities.

Loans and allowance for credit losses by geographic region are as follows:

(Canadian $ in millions)	Gross amount		Specific allowance (2)		Collective allowance (3)		Net amount	
	2017	2016	**2017**	2016	**2017**	2016	**2017**	2016
By geographic region (1):								
Canada	**235,120**	228,062	**212**	173	**799**	833	**234,109**	227,056
United States	**115,606**	121,822	**161**	231	**641**	687	**114,804**	120,904
Other countries	**12,779**	10,771	**20**	1	**–**	–	**12,759**	10,770
Total	**363,505**	360,655	**393**	405	**1,440**	1,520	**361,672**	358,730

(1) Geographic region is based upon the country of ultimate risk.
(2) Excludes specific allowance of $27 million for other credit instruments ($27 million in 2016), which is included in other liabilities.
(3) Excludes collective allowance of $136 million for other credit instruments ($162 million in 2016), which is included in other liabilities.

Impaired loans, including the related allowances, are as follows:

(Canadian $ in millions)	Gross impaired amount		Specific allowance (3)		Net of specific allowance	
	2017	2016	**2017**	2016	**2017**	2016
Residential mortgages	**345**	352	**24**	33	**321**	319
Consumer instalment and other personal loans	**556**	589	**136**	123	**420**	466
Business and government loans	**1,273**	1,391	**233**	249	**1,040**	1,142
Total (1)	**2,174**	2,332	**393**	405	**1,781**	1,927
By geographic region (2):						
Canada	**747**	736	**212**	173	**535**	563
United States	**1,377**	1,594	**161**	231	**1,216**	1,363
Other countries	**50**	2	**20**	1	**30**	1
Total	**2,174**	2,332	**393**	405	**1,781**	1,927

(1) Excludes purchased credit impaired loans.
(2) Geographic region is based upon the country of ultimate risk.
(3) Excludes specific allowance of $27 million for other credit instruments ($27 million in 2016), which is included in other liabilities.

Fully secured loans with amounts past due between 90 and 180 days that we have not classified as impaired totalled $62 million and $88 million as at October 31, 2017 and 2016, respectively.

Specific provisions for credit losses by geographic region are as follows:

(Canadian $ in millions)	Residential mortgages			Credit card, consumer instalment and other personal loans			Business and government loans			Total		
	2017	2016	2015	**2017**	2016	2015	**2017**	2016	2015	**2017**	2016	2015
By geographic region (1):												
Canada	**11**	13	9	**399**	417	393	**93**	117	97	**503**	547	499
United States	**–**	11	2	**88**	93	104	**238**	164	8	**326**	268	114
Other countries	**–**	–	–	**–**	–	–	**21**	–	(1)	**21**	–	(1)
Total	**11**	24	11	**487**	510	497	**352**	281	104	**850**	815	612

(1) Geographic region is based upon the country of ultimate risk.

Notes

Loans Past Due Not Impaired

Loans that are past due but not classified as impaired are loans where our customers have failed to make payments when contractually due, but for which we expect the full amount of principal and interest payments to be collected. The following table presents loans that are past due but not classified as impaired as at October 31, 2017 and 2016.

(Canadian $ in millions)	1 to 29 days		30 to 89 days		90 days or more		Total	
	2017	2016	**2017**	2016	**2017**	2016	**2017**	2016
Residential mortgages (1)	**649**	668	**438**	451	**19**	33	**1,106**	1,152
Credit card, consumer instalment and other personal loans (2)	**1,480**	1,736	**466**	422	**94**	88	**2,040**	2,246
Business and government loans	**589**	673	**297**	364	**72**	139	**958**	1,176
Total	**2,718**	3,077	**1,201**	1,237	**185**	260	**4,104**	4,574

(1) The percentage of loans 90 days or more past due but not impaired that were guaranteed by the Government of Canada is 5% for 2017 and 7% for 2016.
(2) Credit card loans that are past due are not classified as impaired loans and are written off when 180 days past due.

Foreclosed Assets

Property or other assets that we receive from borrowers to satisfy their loan commitments are classified as either held for use or held for sale according to management's intention and are recorded at the lower of carrying amount or fair value less costs to sell. Fair value is determined based on market prices where available. Otherwise, fair value is determined using methods such as analysis of discounted cash flows or market prices for similar assets.

During the year ended October 31, 2017, we foreclosed on impaired loans and received $62 million of real estate properties that we classified as held for sale ($118 million in 2016).

As at October 31, 2017, real estate properties held for sale totalled $55 million ($76 million in 2016). These properties are disposed of when considered appropriate. During the year ended October 31, 2017, we recorded an impairment loss of $10 million on real estate properties classified as held for sale ($18 million in 2016 and $22 million in 2015).

Renegotiated Loans

From time to time we modify the contractual terms of a loan due to the poor financial condition of the borrower. We assess renegotiated loans for impairment consistent with our existing policies for impairment. When renegotiation leads to significant concessions being granted, and the concessions are for economic or legal reasons related to the borrower's financial difficulty that we would not otherwise consider, the loan is classified as impaired. We consider one or a combination of the following to be significant concessions: (1) a reduction of the stated interest rate, (2) an extension of the maturity date or dates at a stated interest rate lower than the current market rate for a new loan with similar terms, or (3) forgiveness of principal or accrued interest.

Renegotiated loans are permitted to remain in performing status if the modifications are not considered to be significant, or are returned to performing status when none of the criteria for classification as impaired continue to apply.

The carrying value of our renegotiated loans was $1,064 million as at October 31, 2017 ($988 million in 2016). Renegotiated loans of $509 million were classified as performing during the year ended October 31, 2017 ($540 million in 2016). Renegotiated loans of $36 million were written off in the year ended October 31, 2017 ($58 million in 2016).

Purchased Loans

We record all loans that we purchase at fair value on the day that we acquire the loans. The fair value of the acquired loan portfolio includes an estimate of the interest rate premium or discount on the loans, calculated as the difference between the contractual rate of interest on the loans and prevailing interest rates (the "interest rate mark"). Also included in fair value is an estimate of expected credit losses (the "credit mark") as of the acquisition date. The credit mark consists of two components: an estimate of the amount of losses that exist in the acquired loan portfolio on the acquisition date but that haven't been specifically identified on that date (the "incurred credit mark") and an amount that represents future expected losses (the "future credit mark"). Because we record the loans at fair value, no allowance for credit losses is recorded in our Consolidated Balance Sheet on the day we acquire the loans. Fair value is determined by estimating the principal and interest cash flows expected to be collected on the loans and discounting those cash flows at a market rate of interest. We estimate cash flows expected to be collected based on specific loan reviews for commercial loans. For retail loans, we use models that incorporate management's best estimate of current key assumptions, such as default rates, loss severity and the timing of prepayments, as well as collateral.

Acquired loans are classified into the following categories: those for which on the acquisition date we expect to continue to receive timely principal and interest payments (the "purchased performing loans") and those for which on the acquisition date the timely collection of interest and principal was no longer reasonably assured (the "purchased credit impaired loans" or "PCI loans"). Because PCI loans are recorded at fair value at acquisition based on the amount expected to be collected, none of the PCI loans are considered to be impaired at acquisition.

Subsequent to the acquisition date, we account for each type of loan as follows:

Purchased Performing Loans

For performing loans with fixed terms, the future credit mark is fully amortized into net interest income over the expected life of the loan using the effective interest method. The impact on net interest income for the year ended October 31, 2017 was $9 million ($15 million in 2016 and $26 million in 2015). The incurred credit losses are remeasured at each reporting period, with any increase recorded as an increase in the collective allowance and the provision for credit losses. Decreases in incurred credit losses are recorded as a decrease in the collective allowance and the provision for credit losses until the accumulated collective allowance related to these loans is exhausted. Any additional decrease is recorded in net interest income.

The impact of the remeasurement of incurred credit losses for performing loans with fixed terms for the year ended October 31, 2017 was $39 million in the provision for credit losses and $18 million in net interest income ($50 million provision and $31 million, respectively, in 2016 and $1 million recovery and $nil, respectively, in 2015).

For performing loans with revolving terms, the incurred and future credit marks are amortized into net interest income on a straight-line basis over the contractual terms of the loans. The impact on net interest income of such amortization for the year ended October 31, 2017 was $4 million ($5 million in 2016 and $15 million in 2015).

As performing loans are repaid, the related unamortized credit mark remaining is recorded as net interest income during the period in which the payments are received. The impact on net interest income of such repayments for the year ended October 31, 2017 was $39 million ($41 million in 2016 and $62 million in 2015).

For all performing loans, the interest rate premium is amortized into net interest income over the expected life of the loan using the effective interest rate method. The impact to net interest income of amortization and repayments for the year ended October 31, 2017 was an expense of $40 million ($53 million in 2016 and $51 million in 2015).

Actual specific provisions for credit losses related to these performing loans are recorded as they arise in a manner that is consistent with our policy for loans we originate. The total specific provision for credit losses for purchased performing loans for the year ended October 31, 2017 was $72 million ($32 million in 2016 and $5 million in 2015).

As at October 31, 2017, the amount of purchased performing loans remaining on the balance sheet was $5,973 million ($9,415 million in 2016). As at October 31, 2017, the credit mark remaining on performing term loans and revolving loans was $151 million and $45 million, respectively ($226 million and $57 million in 2016). Of the total credit mark for performing loans of $196 million, $110 million represents the credit mark that will be amortized over the remaining life of the portfolio. The remaining balance of $86 million represents the incurred credit mark and will be remeasured each reporting period.

Purchased Credit Impaired Loans

Subsequent to the acquisition date, we regularly re-evaluate the cash flows we expect to collect on the PCI loans. Increases in expected cash flows result in a recovery in the specific provision for credit losses and either a reduction in any previously recorded allowance for credit losses or, if no allowance exists, an increase in the current carrying value of the PCI loans. Decreases in expected cash flows will result in a charge to the specific provision for credit losses and an increase in the allowance for credit losses. The impact of these evaluations for the year ended October 31, 2017 was a $1 million recovery in the specific provision for credit losses ($58 million recovery in 2016 and $86 million recovery in 2015).

As at October 31, 2017, the amount of PCI loans remaining on the balance sheet was $187 million ($275 million in 2016). As at October 31, 2017, the remaining credit mark related to PCI loans was $nil ($3 million in 2016).

FDIC Covered Loans

Certain acquired loans are subject to a loss share agreement with the Federal Deposit Insurance Corporation ("FDIC"). Under this agreement, the FDIC reimburses us for 80% of the net losses we incur on the covered loans.

We recorded net provisions of $2 million for the year ended October 31, 2017 (net recoveries of $25 million in 2016 and net provisions of $36 million in 2015). These amounts are net of the amounts expected to be reimbursed by the FDIC.