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## Understanding business credit measures: a joint study by the Bank of Canada and Statistics Canada

The Bank of Canada (the Bank) and Statistics Canada both produce aggregate measures of borrowing, or credit, for sectors of the Canadian economy. The Statistics Canada measures are part of the National Balance Sheet Accounts (NBSA), which cover the entire economy and directly align with the internationally recognized national accounting principles detailed in the United Nations System of National Accounts. They are available by sector as currently defined in the Canadian System of Macroeconomic Accounts. The NBSA are created using a balance sheet approach, which involves presenting the assets and liabilities for all instruments and sectors of the economy. In other words, for each instrument all holders of financial assets must have corresponding counterparties who hold the financial liabilities, and as such, the sum of these are equal in the aggregate. To determine the amount of loans and other credit extended to businesses published by Statistics Canada that are comparable to the Bank's business credit series, one can begin by looking directly at the liability side of the NBSA for the non-financial private corporations sector. However, because the Bank's definition of business credit also includes unincorporated businesses, but the NBSA records these liabilities in the household sector, those amounts must also be included to align with the Bank's definition.

The Bank's data are presented based on the issuer of credit, i.e., the holder of the financial assets, and do not display liabilities. The Bank calculates its business credit aggregates using the asset side of the balance sheets of chartered banks and non-bank financial institutions including asset-backed securities, loans extended to individuals and others for businesses purposes. In addition, banker's acceptances are taken from the liability side of the balance sheets of chartered banks and commercial paper data from third-party sources (i.e., Dominion Bond Rating Service). Long-term debt and equity securities are taken from other sources. Given this approach and the information available, the creditor side can be equated to the debtor side of non-financial corporations and unincorporated businesses. However, the Bank's aggregates have more limited coverage than Statistics Canada's on both the lending sector and instrument dimensions (i.e., the Bank does not include all assets and liabilities for all sectors). For example, Bank estimates exclude government and government agencies lending to businesses. Data availability is the main factor for this asset-based perspective.

Both measures are constructed primarily from records of Canadian financial institutions and provide thorough coverage of lending by those institutions. They show a similar picture of the indebtedness of Canadian non-financial businesses, currently and in the past. However, the use of differing classification systems, methodologies and definitions result in some reconcilable differences in the aggregate measures. Therefore, the Bank and Statistics Canada conducted a joint study to understand and identify key differences between their respective measures of business credit, including non-mortgage business loans, non-residential mortgages and commercial paper. Long-term debt and equity securities were excluded from this exercise, but a reconciliation study covering these items will be made available at a later date. A reconciliation between estimates of household credit has already been undertaken and the results can be viewed in [Understanding household credit measures: a joint study by the Bank of Canada and Statistics Canada](#).

The magnitude of the variance between the Bank's and Statistic Canada's main business credit aggregates is shown in Table 1. The differences at the component level (non-residential mortgages, non-mortgage loans and short-term paper) are examined in subsequent sections. It should be noted that the classifications used in this document refer to those employed by the Bank, as Statistics Canada does not explicitly publish non-mortgage business loans, non-residential mortgages or commercial paper on the asset side of the balance sheet.

**Table 1**  
**Main business credit aggregates from the Bank of Canada and the National Balance Sheet Accounts**

	Bank of Canada				National Balance Sheet Accounts				Differences	
	Businesses				Private non-financial corporations				Total difference in business credit	Total difference in business credit
	Non-mortgage loans <sup>2</sup>	Non-residential mortgages <sup>3</sup>	Commercial paper and bankers' acceptances <sup>4</sup>	Total business credit, excluding securities	Non-mortgage Loans <sup>5</sup>	Mortgage loans <sup>6</sup>	Short-term paper <sup>1,7</sup>	Total business credit, excluding securities		
millions of dollars									%	
First quarter 2012	299,795	116,703	66,382	482,880	236,592	231,523	64,380	532,495	-49,615	-10.27
Second quarter 2012	305,896	118,847	67,767	492,510	237,692	235,739	63,334	536,765	-44,255	-8.99
Third quarter 2012	315,213	120,249	69,701	505,163	253,424	236,877	64,623	554,924	-49,761	-9.85
Fourth quarter 2012	327,706	122,504	68,420	518,630	275,008	240,477	62,335	577,820	-59,190	-11.41
First quarter 2013	341,857	123,758	72,780	538,395	276,079	240,531	66,177	582,787	-44,392	-8.25
Second quarter 2013	343,391	125,387	74,833	543,611	282,253	245,184	70,703	598,140	-54,529	-10.03
Third quarter 2013	350,387	127,789	74,457	552,633	294,739	250,102	69,610	614,451	-61,818	-11.19
Fourth quarter 2013	355,612	130,234	71,514	557,360	304,035	255,596	68,156	627,787	-70,427	-12.64
First quarter 2014	362,054	130,037	79,434	571,525	313,859	256,056	75,226	645,141	-73,616	-12.88
Second quarter 2014	370,022	131,305	81,969	583,296	307,955	258,359	75,689	642,003	-58,707	-10.06
Third quarter 2014	381,231	131,814	83,387	596,432	317,233	261,723	81,558	660,514	-64,082	-10.74
Fourth quarter 2014	395,041	132,769	81,884	609,694	332,151	263,602	78,414	674,167	-64,473	-10.57
First quarter 2015	409,507	134,586	86,903	630,996	334,279	266,655	83,469	684,403	-53,407	-8.46
Second quarter 2015	413,418	136,033	89,025	638,476	341,861	269,093	85,171	696,125	-57,649	-9.03
Third quarter 2015	433,255	137,957	84,407	655,619	356,450	274,066	80,676	711,192	-55,573	-8.48
Fourth quarter 2015	439,920	140,057	86,895	666,872	392,447	277,610	82,724	752,781	-85,909	-12.88
First quarter 2016	452,312	141,416	87,989	681,717	403,346	279,750	79,000	762,096	-80,379	-11.79

**Table 1**  
**Main business credit aggregates from the Bank of Canada and the National Balance Sheet Accounts**

	Bank of Canada				National Balance Sheet Accounts				Differences	
	Businesses			Total business credit, excluding securities	Private non-financial corporations			Total business credit, excluding securities	Total difference in business credit	Total difference in business credit %
Non-mortgage loans <sup>2</sup>	Non-residential mortgages <sup>3</sup>	Commercial paper and bankers' acceptances <sup>4</sup>	Non-mortgage Loans <sup>5</sup>		Mortgage loans <sup>6</sup>	Short-term paper <sup>1,7</sup>				
	millions of dollars									
Second quarter 2016	459,157	142,266	89,261	690,684	409,740	282,714	84,249	776,703	-86,019	-12.45
Third quarter 2016	469,141	144,375	86,364	699,880	422,661	287,373	84,345	794,379	-94,499	-13.50
Fourth quarter 2016	480,707	147,198	79,510	707,415	429,950	291,998	77,451	799,399	-91,984	-13.00
First quarter 2017	485,160	147,774	83,405	716,339	456,380	293,187	77,236	826,803	-110,464	-15.42
Second quarter 2017	497,900	151,637	88,818	738,355	494,354	300,911	84,262	879,527	-141,172	-19.12
Third quarter 2017	501,800	154,765	95,549	752,114	488,767	305,369	92,472	886,608	-134,494	-17.88
Fourth quarter 2017	518,173	158,387	90,505	767,065	482,690	312,846	92,220	887,756	-120,691	-15.73
First quarter 2018	531,922	160,844	94,247	787,013	481,275	316,164	98,101	895,540	-108,527	-13.92
Second quarter 2018	553,310	165,366	97,504	816,180	510,817	320,635	97,364	928,816	-112,636	-13.90

1. Includes bankers' acceptances.

2. Retrieved December 14, 2018, table 10-10-0114-01 (V105926373).

3. Retrieved December 14, 2018, table 10-10-0114-01 (V105926374).

4. Retrieved December 14, 2018, table 10-10-0114-01 (V122652 + V122635).

5. Retrieved December 14, 2018, table 36-10-0580-01 (V62694407).

6. Retrieved December 14, 2018, table 36-10-0580-01 (V62694408).

7. Retrieved December 14, 2018, table 36-10-0580-01 (V62694396).

**Source:** Statistics Canada and Bank of Canada, 2018.

While a comparison of the two measures of business credit results in a consistent picture of the extent of borrowing by businesses, differences exist between the measures. Both organizations make certain assumptions based on limited information regarding specific debt components. Moreover, it is important to note that some assumptions made by each organization are specific to the particular component being measured.

The Bank uses data reported on, or calculated as, an average-over-the-period basis (the average value of the stock of an asset over the period), whereas Statistics Canada uses data reported on an end-of-period basis (the value of the stock of an asset on the final day of the period). This results in timing differences between estimates derived from each source, especially when large movements in value occur throughout the period or near the end. For non-residential mortgages and non-mortgage loans, this adjustment is not directly measurable, but would generally be immaterial. As such, any differences due to timing are included in the overall remaining difference for these instruments.

## Mortgage liabilities of the business sector

Table 2 reconciles differences in measures of non-residential mortgage liabilities; please note, the terminology used reflects the Bank's definition. The table starts with Statistics Canada's value for the total mortgage liabilities of private non-financial corporations. From there, explainable differences between the Bank's and Statistics Canada's values are calculated, including differences due to classification and coverage, which are explained following the table. This leads to a Statistics Canada approximated value according to Bank of Canada definitions.

**Table 2**

### Reconciliation of estimates of non-residential mortgage liabilities of businesses between the Bank of Canada and the National Balance Sheet Accounts (NBSA)

	NBSA private non-financial mortgage liabilities - published <sup>1</sup>	Classification (plus)	Coverage (minus)	NBSA approximated to Bank of Canada definitions	Bank of Canada non-residential mortgage credit - published <sup>2</sup>	Difference between NBSA approximated and Bank of Canada published	Difference between NBSA approximated and Bank of Canada published
	millions of dollars						%
First quarter 2012	231,523	-51,789	58,960	120,774	116,703	-4,071	-3.49
Second quarter 2012	235,739	-53,661	59,962	122,116	118,847	-3,269	-2.75
Third quarter 2012	236,877	-55,297	59,009	122,571	120,249	-2,322	-1.93
Fourth quarter 2012	240,477	-57,037	59,284	124,156	122,504	-1,652	-1.35
First quarter 2013	240,531	-57,775	54,866	127,889	123,758	-4,131	-3.34
Second quarter 2013	245,184	-59,303	56,569	129,311	125,387	-3,924	-3.13
Third quarter 2013	250,102	-60,834	58,087	131,181	127,789	-3,392	-2.65
Fourth quarter 2013	255,596	-61,854	59,030	134,712	130,234	-4,478	-3.44
First quarter 2014	256,056	-62,672	59,850	133,534	130,037	-3,497	-2.69
Second quarter 2014	258,359	-64,558	59,754	134,047	131,305	-2,742	-2.09
Third quarter 2014	261,723	-66,381	60,877	134,465	131,814	-2,651	-2.01
Fourth quarter 2014	263,602	-67,466	61,828	134,309	132,769	-1,540	-1.16
First quarter 2015	266,655	-67,973	62,779	135,903	134,586	-1,317	-0.98
Second quarter 2015	269,093	-69,394	62,913	136,786	136,033	-753	-0.55
Third quarter 2015	274,066	-71,783	64,042	138,241	137,957	-284	-0.21
Fourth quarter 2015	277,610	-73,356	64,377	139,877	140,057	180	0.13
First quarter 2016	279,750	-73,076	64,732	141,942	141,416	-526	-0.37
Second quarter 2016	282,714	-75,051	65,474	142,189	142,266	77	0.05
Third quarter 2016	287,373	-76,789	66,008	144,576	144,375	-201	-0.14
Fourth quarter 2016	291,998	-78,599	66,663	146,736	147,198	462	0.31
First quarter 2017	293,187	-79,394	66,749	147,044	147,774	730	0.49
Second quarter 2017	300,911	-80,686	67,983	152,242	151,637	-605	-0.40
Third quarter 2017	305,369	-81,041	68,522	155,806	154,765	-1,041	-0.67
Fourth quarter 2017	312,846	-81,850	69,509	161,487	158,387	-3,100	-1.96

**Table 2**  
**Reconciliation of estimates of non-residential mortgage liabilities of businesses between the Bank of Canada and the National Balance Sheet Accounts (NBSA)**

	NBSA private non-financial mortgage liabilities - published <sup>1</sup>	Classification (plus)	Coverage (minus)	NBSA approximated to Bank of Canada definitions	Bank of Canada non-residential mortgage credit - published <sup>2</sup>	Difference between NBSA approximated and Bank of Canada published	Difference between NBSA approximated and Bank of Canada published
millions of dollars							%
First quarter 2018	316,164	-83,406	70,305	162,453	160,844	-1,609	-1.00
Second quarter 2018	320,635	-82,339	71,009	167,287	165,366	-1,921	-1.16

1. Retrieved December 14, 2018, table 36-10-0580-01 (V62694408).

2. Retrieved December 14, 2018, table 10-10-0114-01 (V105926374).

Source: Statistics Canada and Bank of Canada, 2018.

### Classification differences

In the NBSA, **non-residential** mortgage liabilities are allocated to the various borrowing sectors. For example, an unincorporated business in the household sector may hold a non-residential mortgage on a business property. Similarly, **residential** mortgage liabilities are allocated to various sectors of the economy to reflect the fact that residential mortgage liabilities are found in sectors other than the household sector. For example, non-financial corporations may own residential apartments or residential care facilities and hold the corresponding mortgage loans for these properties.

Generally, financial institutions will make a distinction between their mortgage assets based on the intended use of the mortgaged property, i.e., for residential or non-residential purposes. For example, if a residential care facility requires a mortgage, a financial lender will record this as a residential mortgage. The NBSA emphasizes the debtor-creditor relationship; that is, if the debtor is a corporation, then the liability will be classified as a residential mortgage in the corporate sector. The Bank's credit statistics classify mortgages to sectors based on the intended use of property; therefore, the Bank includes all non-residential mortgages in business credit and all residential mortgages in household credit.

### Coverage differences

Given the NBSA's integrated coverage of all sectors of the economy, non-residential mortgage assets for some sectors are recorded in the NBSA, but are not included in the Bank's mortgage statistics. These sectors are investment funds, federal and provincial government business enterprises, households, non-financial private corporations (i.e., intra-sectoral lending), governments and non-residents. The Bank excludes the corresponding mortgage liabilities of non-financial businesses involving these lending sectors because they are outside the scope of the Bank's credit aggregates.

**Table 3**  
**A comparison of lending sector coverage for non-residential mortgages**

Lending sector	Non-residential mortgages	
	Bank of Canada	National Balance Sheet Accounts
Chartered banks	included	included
Issuers of asset-backed securities	included	included
Property and casualty insurance companies	included	included
Sales finance and consumer loan companies	included	included
Other private financial institutions	partial	included
Investment funds	excluded	included
Federal and provincial government business enterprises	excluded	included

**Table 3**  
**A comparison of lending sector coverage for non-residential mortgages**

Lending sector	Non-residential mortgages	
	Bank of Canada	National Balance Sheet Accounts
Trusteed pension plans	included	included
Trust and mortgage loan companies	included	included
Credit unions	included	included
Life insurance companies	included	included
Segregated funds of life insurance companies	included	included
Households	excluded	excluded
Non-financial private corporations	excluded	included
Governments	excluded	included
Non-residents (entities outside Canada)	excluded	included

**Legend:**

Included: the lending sector is included in the credit statistics.

Partial: the lending sector is included in the credit statistics, but the reconciliation exercise has revealed that some lenders are omitted.

Excluded: the lending sector is not included in the credit statistics.

**Source:** Statistics Canada and Bank of Canada, 2018.

## Non-mortgage business loans

Table 4 reconciles differences in measures of non-mortgage loans and begins with Statistics Canada's value for non-mortgage loan liabilities of private non-financial corporations. From there, explainable differences between the Bank's and Statistics Canada's values are calculated, including differences due to classification, coverage and methodological approach, which are explained following the table. This leads to a Statistics Canada approximated value according to Bank of Canada definitions.

**Table 4**  
**Reconciliation of estimates of non-mortgage credit of businesses between the Bank of Canada and the National Balance Sheet Accounts (NBSA)**

	NBSA private non-financial non-mortgage liabilities - published <sup>1</sup>	Classification (plus)	Coverage (minus)	Methodological (minus)	NBSA approximated to Bank of Canada definitions	Bank of Canada non-mortgage loans - published <sup>2</sup>	Difference between NBSA approximated and Bank of Canada published	Difference between NBSA approximated and Bank of Canada published
millions of dollars								%
First quarter 2012	236,592	90,695	39,416	-13,244	301,114	299,795	-1,319	-0.44
Second quarter 2012	237,692	98,437	42,569	-13,243	306,803	305,896	-907	-0.30
Third quarter 2012	253,424	97,220	42,701	-10,298	318,241	315,213	-3,028	-0.96
Fourth quarter 2012	275,008	89,857	43,517	-8,563	329,911	327,706	-2,205	-0.67
First quarter 2013	276,079	104,576	39,140	-6,117	347,632	341,857	-5,775	-1.69
Second quarter 2013	282,253	104,798	42,336	-2,298	347,013	343,391	-3,622	-1.05
Third quarter 2013	294,739	99,094	42,932	-2,783	353,684	350,387	-3,297	-0.94
Fourth quarter 2013	304,035	107,193	47,934	4,506	358,788	355,612	-3,176	-0.89
First quarter 2014	313,859	110,482	48,259	8,826	367,255	362,054	-5,201	-1.44
Second quarter 2014	307,955	116,561	49,595	-431	375,352	370,022	-5,330	-1.44
Third quarter 2014	317,233	123,112	55,785	-2,113	386,673	381,231	-5,442	-1.43
Fourth quarter 2014	332,151	117,934	57,914	-4,753	396,924	395,041	-1,883	-0.48
First quarter 2015	334,279	135,856	64,332	-8,128	413,931	409,507	-4,424	-1.08
Second quarter 2015	341,861	129,736	60,921	-6,972	417,649	413,418	-4,231	-1.02
Third quarter 2015	356,450	131,132	65,506	-6,457	428,533	433,255	4,722	1.09
Fourth quarter 2015	392,447	113,886	64,544	-1,133	442,922	439,920	-3,002	-0.68
First quarter 2016	403,346	120,087	70,704	3,001	449,728	452,312	2,584	0.57
Second quarter 2016	409,740	130,738	71,351	5,678	463,450	459,157	-4,293	-0.93
Third quarter 2016	422,661	122,287	73,221	10,435	461,292	469,141	7,849	1.67

**Table 4**  
**Reconciliation of estimates of non-mortgage credit of businesses between the Bank of Canada and the National Balance Sheet Accounts (NBSA)**

	NBSA private non-financial non-mortgage liabilities - published <sup>1</sup>	Classification (plus)	Coverage (minus)	Methodological (minus)	NBSA approximated to Bank of Canada definitions	Bank of Canada non-mortgage loans - published <sup>2</sup>	Difference between NBSA approximated and Bank of Canada published	Difference between NBSA approximated and Bank of Canada published
millions of dollars								%
Fourth quarter 2016	429,950	124,437	70,921	9,482	473,983	480,707	6,724	1.40
First quarter 2017	456,380	112,892	70,348	18,598	480,325	485,160	4,835	1.00
Second quarter 2017	494,354	105,235	74,601	34,228	490,760	497,900	7,140	1.43
Third quarter 2017	488,767	104,333	72,219	25,153	495,728	501,800	6,072	1.21
Fourth quarter 2017	482,690	129,260	73,391	28,241	510,318	518,173	7,855	1.52
First quarter 2018	481,275	129,220	75,708	10,612	524,175	531,922	7,747	1.46
Second quarter 2018	510,817	121,196	77,181	10,589	544,243	553,310	9,067	1.64

1. Retrieved December 14, 2018, table 36-10-0580-01 (V62694407).

2. Retrieved December 14, 2018, table 10-10-0114-01 (V105926373).

Source: Statistics Canada and Bank of Canada, 2018.

### Classification differences

The Bank's estimates of business non-mortgage loans include both incorporated and unincorporated entities, whereas in the NBSA, unincorporated businesses are included in the household sector and incorporated businesses are included in the corporate sector. Consequently, to align with the Bank's estimate, it is necessary to include from the NBSA non-mortgage loans of private non-financial corporations and the portion of non-mortgage loans in the household sector belonging to unincorporated businesses. Additionally, amounts not explicitly classified elsewhere are included in the private non-financial corporations sector.

### Coverage differences

The Bank's credit aggregates do not cover certain loans from some sectors that are included in the NBSA. Examples include some loans from credit unions, government business enterprises and other private financial institutions where the Bank has partial coverage. Additionally, the Bank excludes some lending sectors entirely, as they are not within the scope of its definition of credit. Finally, the Bank includes non-trade receivables in its measure of business non-mortgage loans, while the NBSA excludes this category. The Bank also includes all leasing in business credit, while the NBSA includes a portion of automobile leasing as a liability of households.

**Table 5**  
**A comparison of lending sector coverage for non-mortgage loans**

Lending sector	Non-mortgage loans	
	Bank of Canada	National Balance Sheet Accounts
Chartered banks	included	included
Issuers of asset backed securities	included	included
Property and casualty insurance companies	excluded	zero
Sales finance and consumer loan companies	included	included
Other private financial institutions	partial	included
Investment funds	zero	zero
Federal and provincial government business enterprises	partial	included
Trusteed pension plans	excluded	included
Trust and mortgage loan companies	included	included
Credit unions	partial	included

**Table 5**  
**A comparison of lending sector coverage for non-mortgage loans**

Lending sector	Non-mortgage loans	
	Bank of Canada	National Balance Sheet Accounts
Life insurance business	excluded	included
Segregated funds of life insurance companies	excluded	zero
Households	excluded	excluded
Non-financial private corporations	excluded	included
Government	excluded	included
Non-residents (entities outside Canada)	excluded	partial

**Legend:**

Included: the lending sector is included in the credit statistics.

Partial: the lending sector is included in the credit statistics, but the reconciliation exercise has revealed that some lenders are omitted.

Excluded: the lending sector is not included in the credit statistics.

Zero: There are no known loans in this category from this lending sector or they are non-estimable due to data limitations. If loans existed or were quantifiable, they would be included.

**Source:** Statistics Canada and Bank of Canada, 2018.

### Methodological differences

The Bank uses data reported worldwide in Canadian currency as well as transactions to Canadian residents in foreign currency as an approximation for Canadian activity, while Statistics Canada uses data booked in Canada in domestic and foreign currency to capture activity in Canada. This adjustment reflects Canadian currency booked outside of Canada that is included in the Bank's values.

### Short-term paper

Table 6 reconciles differences in measures of short-term paper; however, the terminology used reflects the NBSA's definition, which includes bankers' acceptances and commercial paper, two series that the Bank publishes separately under 1) business loans, and; 2) debt securities, respectively. This table starts with Statistics Canada's value for Canadian short-term paper liabilities of private non-financial corporations. From there, explainable differences between the Bank's and Statistics Canada's values are calculated, including differences due to classification and timing, which are explained following the table. This leads to a Statistics Canada approximated value according to Bank of Canada definitions. In this case, given that both organizations use the same data sources, both estimates can be fully harmonized and any remaining difference is effectively nil.

**Table 6**  
**Reconciliation of estimates of short-term paper between the Bank of Canada and the National Balance Sheet Accounts (NBSA)**

	NBSA non-financial private corporations, Canadian short-term paper - published <sup>1</sup>			Of which: bankers' acceptances	Of which: commercial paper	Classification (plus)	Timing (minus)	Bank of Canada bankers' NBSA acceptances and commercial paper - aggregate <sup>2</sup>		Bankers' acceptances - published <sup>3</sup>	Commercial paper - published <sup>4</sup>	Difference between NBSA approximated and Bank of Canada published	Difference between NBSA approximated and Bank of Canada published
	Of which: bankers' acceptances	Of which: commercial paper	to Bank of Canada definitions					commercial paper - aggregate <sup>2</sup>					
millions of dollars													
First quarter 2012	64,380	53,612	10,768	3,126	1,124	66,382	66,382	54,683	11,699	0	0.00		
Second quarter 2012	63,334	54,826	8,508	2,587	-1,847	67,767	67,767	57,489	10,278	0	0.00		
Third quarter 2012	64,623	57,692	6,931	3,990	-1,089	69,701	69,701	61,329	8,372	0	0.00		

**Table 6**  
**Reconciliation of estimates of short-term paper between the Bank of Canada and the National Balance Sheet Accounts (NBSA)**

	NBSA non-financial private corporations, Canadian short-term paper - published <sup>1</sup>	Of which: bankers' acceptances	Of which: commercial paper	Classification (plus)	Timing (minus)	NBSA approximated to Bank of Canada definitions	Bank of Canada bankers' commercial paper - aggregate <sup>2</sup>	Bankers' acceptances - published <sup>3</sup>	Commercial paper - published <sup>4</sup>	Difference between NBSA approximated and Bank of Canada published	Difference between NBSA approximated and Bank of Canada published	%
Fourth quarter 2012	62,335	55,404	6,931	4,928	-1,158	68,420	68,420	58,711	9,709	0	0.00	
First quarter 2013	66,177	56,093	10,084	4,006	-2,597	72,780	72,780	61,211	11,569	0	0.00	
Second quarter 2013	70,703	59,079	11,624	3,626	-504.5	74,833	74,833	63,382	11,451	0	0.00	
Third quarter 2013	69,610	58,573	11,037	2,173	-2,674	74,457	74,457	62,240	12,217	0	0.00	
Fourth quarter 2013	68,156	58,321	9,835	3,358	-0.5	71,514	71,514	60,610	10,904	0	0.00	
First quarter 2014	75,226	63,470	11,756	1,150	-3,058	79,434	79,434	66,392	13,042	0	0.00	
Second quarter 2014	75,689	65,846	9,843	3,859	-2,421	81,969	81,969	70,184	11,785	0	0.00	
Third quarter 2014	81,558	69,308	12,250	2,382	552.5	83,387	83,387	70,321	13,066	0	0.00	
Fourth quarter 2014	78,414	65,832	12,582	1,548	-1,922	81,884	81,884	68,913	12,971	0	0.00	
First quarter 2015	83,469	72,914	10,555	3,269	-165.5	86,903	86,903	73,988	12,915	0	0.00	
Second quarter 2015	85,171	75,775	9,396	2,827	-1,028	89,025	89,025	78,589	10,436	0	0.00	
Third quarter 2015	80,676	70,985	9,691	2,567	-1,164	84,407	84,407	73,578	10,829	0	0.00	
Fourth quarter 2015	82,724	73,634	9,090	4,110	-61	86,895	86,895	75,478	11,417	0	0.00	
First quarter 2016	79,000	67,875	11,125	5,521	-3,469	87,989	87,989	75,503	12,486	0	0.00	
Second quarter 2016	84,249	74,758	9,491	2,766	-2,247	89,261	89,261	78,580	10,681	0	0.00	
Third quarter 2016	84,345	77,153	7,192	1,215	-804	86,364	86,364	77,868	8,496	0	0.00	
Fourth quarter 2016	77,451	67,768	9,683	-1,018	-3,077	79,510	79,510	71,322	8,188	0	0.00	
First quarter 2017	77,236	69,363	7,873	5,752	-417	83,405	83,405	75,305	8,100	0	0.00	
Second quarter 2017	84,262	73,924	10,338	2,544	-2,013	88,818	88,818	79,571	9,247	0	0.00	

**Table 6**  
**Reconciliation of estimates of short-term paper between the Bank of Canada and the National Balance Sheet Accounts (NBSA)**

	NBSA non-financial private corporations, Canadian short-term paper - published <sup>1</sup>		Of which:		Classification (plus)	Timing (minus)	NBSA approximated to Bank of Canada definitions	Bank of Canada bankers' NBSA acceptances and commercial paper - aggregate <sup>2</sup>		Bankers' acceptances - published <sup>3</sup>	Commercial paper - published <sup>4</sup>	Difference between NBSA approximated and Bank of Canada published	Difference between NBSA approximated and Bank of Canada published
	Of which: bankers' acceptances	Of which: commercial paper	commercial	paper									
	millions of dollars												%
Third quarter 2017	92,472	82,249	10,223	1,769	-1,309	95,549	95,549	85,156	10,393	0	0.00		
Fourth quarter 2017	92,220	77,004	15,216	-3,999	-2,284	90,505	90,505	80,896	9,609	0	0.00		
First quarter 2018	98,101	81,091	17,010	-4,342	-488	94,247	94,247	83,978	10,269	0	0.00		
Second quarter 2018	97,364	86,452	10,912	-290	-430	97,504	97,504	87,904	9,600	0	0.00		

1. Retrieved December 14, 2018, table 36-10-0580-01 (V62694396).

2. Retrieved December 14, 2018, table 10-10-0121-01 (v122635+V122652).

3. Retrieved December 14, 2018, table 10-10-0114-01 (v122635).

4. Retrieved December 14, 2018, table 10-10-0114-01 (v122652).

Source: Statistics Canada and Bank of Canada, 2018.

## Classification differences

Statistics Canada uses information from its integrated business register to assign debt-issuing entities to the appropriate institutional sector, whereas the Bank classifies entities differently in some cases. These differences in sector definitions cause discrepancies between each organization's estimates.

## Timing differences

The Bank uses data reported on, or calculated as, an average-over-the-period basis (the average value of the stock of an asset over the period), whereas Statistics Canada uses data reported on an end-of-period basis (the value of the stock of an asset on the final day of the period). This results in differences between estimates derived from each source, especially when large movements in value occur throughout the period or near the end. Although this is labelled as a timing difference, any data issues between reconciling at the end of the period compared with the average will inherently be included in this calculation.