

Latest Developments in the Canadian Economic Accounts

Understanding household credit measures, a joint study by the Bank of Canada and Statistics Canada



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Understanding household 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. 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.

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 households, currently and in the past. However, the use of differing classification systems, methodologies, and definitions results in some reconcilable differences in the aggregate measures. Therefore, the Bank and Statistics Canada conducted a joint study to identify and understand these key differences between their respective measures of household credit.

Household credit was the focus of this current exercise, while business credit will be investigated later. The magnitude of the variance between the Bank's and Statistics Canada's main household credit aggregates is shown below. While the differences are small at the aggregate level, they are larger when examined by component. The differences at the level of residential mortgages and consumer credit are examined in subsequent sections.

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

	Main household credit aggregates								
	Bank of Canada			National Balance Sheet Accounts			Differences		
	Residential mortgages ¹	Consumer credit ²	Total household credit	Household mortgage liabilities ³	Consumer credit ⁴	Non-mortgage loans ⁵	Total household credit	Total difference in household credit	Total difference in household credit
	millions of dollars								%
First quarter 2012	1,099,569	495,207	1,594,776	1,024,021	508,234	78,551	1,610,806	-16,030	-1.01
Second quarter 2012	1,116,727	501,415	1,618,142	1,041,041	515,653	79,893	1,636,587	-18,445	-1.14
Third quarter 2012	1,137,382	508,476	1,645,858	1,058,772	524,036	79,132	1,661,940	-16,082	-0.98
Fourth quarter 2012	1,151,385	511,691	1,663,076	1,069,928	527,886	78,330	1,676,144	-13,068	-0.79
First quarter 2013	1,158,938	507,589	1,666,527	1,077,924	526,844	80,949	1,685,717	-19,190	-1.15
Second quarter 2013	1,176,275	512,199	1,688,474	1,096,521	534,018	81,229	1,711,768	-23,294	-1.38
Third quarter 2013	1,197,326	516,411	1,713,737	1,113,910	540,354	82,693	1,736,957	-23,220	-1.35
Fourth quarter 2013	1,211,490	519,316	1,730,806	1,123,435	544,864	82,517	1,750,816	-20,010	-1.16
First quarter 2014	1,218,078	517,659	1,735,737	1,129,674	543,233	84,326	1,757,233	-21,496	-1.24
Second quarter 2014	1,234,194	523,983	1,758,177	1,147,757	552,592	83,735	1,784,084	-25,907	-1.47
Third quarter 2014	1,257,385	529,692	1,787,077	1,167,939	558,650	85,200	1,811,789	-24,712	-1.38
Fourth quarter 2014	1,273,562	535,087	1,808,649	1,180,341	562,029	85,870	1,828,240	-19,591	-1.08
First quarter 2015	1,281,606	533,358	1,814,964	1,188,478	560,408	87,488	1,836,374	-21,410	-1.18
Second quarter 2015	1,302,124	540,849	1,842,973	1,211,403	568,361	93,252	1,873,016	-30,043	-1.63
Third quarter 2015	1,331,297	546,086	1,877,383	1,237,241	574,192	94,126	1,905,559	-28,176	-1.50
Fourth quarter 2015	1,354,228	549,176	1,903,404	1,256,015	576,753	94,960	1,927,728	-24,324	-1.28
First quarter 2016	1,363,288	549,020	1,912,308	1,264,914	576,046	98,010	1,938,970	-26,662	-1.39
Second quarter 2016	1,385,652	560,357	1,946,009	1,291,464	588,557	99,181	1,979,202	-33,193	-1.71
Third quarter 2016	1,415,780	567,239	1,983,019	1,315,313	592,321	98,823	2,006,457	-23,438	-1.18
Fourth quarter 2016	1,438,837	572,950	2,011,787	1,331,264	598,978	100,541	2,030,783	-18,996	-0.94
First quarter 2017	1,448,589	573,100	2,021,689	1,341,433	599,572	102,188	2,043,193	-21,504	-1.06
Second quarter 2017	1,471,434	586,860	2,058,294	1,363,076	614,562	103,480	2,081,118	-22,824	-1.11
Third quarter 2017	1,497,950	596,965	2,094,915	1,383,182	622,235	103,633	2,109,050	-14,135	-0.67

1. Retrieved March 15, 2018 CANSIM table 176-0069 (v122736).

2. Retrieved March 15, 2018 CANSIM table 176-0027 (v122698).

3. Retrieved March 15, 2018 CANSIM table 378-0121 (v62693988).

4. Retrieved March 15, 2018 CANSIM table 378-0121 (v62693986).

5. Retrieved March 15, 2018 CANSIM table 378-0121 (v62693987).

Sources: Statistics Canada and Bank of Canada, 2018.

While a comparison of the two measures of household credit results in a consistent picture of the extent of Canadians' indebtedness, differences exist between the measures. Both organizations make certain assumptions based on limited information regarding certain debt components, particularly those related to non-bank financial institutions. Moreover, it is important to note that some assumptions made by each organization are specific to the particular component being measured.

Mortgage liabilities of the household sector

The table below reconciles differences in measures of residential mortgage liabilities; however, Statistics Canada does not publish data separately on residential mortgages. Consequently, the table starts with Statistics Canada's value for the total mortgage liabilities of households. From there, explainable differences between the Bank's and Statistics Canada's values are calculated, including differences due to classification, coverage, and timing, which are explained following the table. This leads to a Statistics Canada approximated value according to how the Bank of Canada defines residential mortgage credit. The residual column is the remaining difference between the approximated value and the Bank's actual value.

Table 2
Reconciliation of estimates of mortgage liabilities of the household sector between the Bank of Canada (the Bank) and the National Balance Sheet Accounts (NBSA)

	Residential mortgages					The Bank's residential mortgage credit - published ²	Difference between NBSA approximated and the Bank's published (Level)	Difference between NBSA approximated and the Bank's published
	NBSA household mortgage liabilities - published ¹	Classification (plus)	Coverage (minus)	Timing (minus)	NBSA approximated to the Bank's definitions			
	millions of dollars							%
First quarter 2012	1,024,021	75,734	5,351	2,874	1,091,530	1,099,569	8,039	0.73
Second quarter 2012	1,041,041	77,032	5,349	3,815	1,108,910	1,116,727	7,818	0.70
Third quarter 2012	1,058,772	78,449	5,297	2,824	1,129,100	1,137,382	8,282	0.73
Fourth quarter 2012	1,069,928	79,198	5,212	2,025	1,141,890	1,151,385	9,496	0.82
First quarter 2013	1,077,924	79,890	5,078	2,096	1,150,640	1,158,938	8,298	0.72
Second quarter 2013	1,096,521	81,253	5,134	4,452	1,168,189	1,176,275	8,087	0.69
Third quarter 2013	1,113,910	82,512	5,422	2,492	1,188,508	1,197,326	8,818	0.74
Fourth quarter 2013	1,123,435	83,102	5,415	392	1,200,731	1,211,490	10,760	0.89
First quarter 2014	1,129,674	83,647	5,380	1,099	1,206,843	1,218,078	11,236	0.92
Second quarter 2014	1,147,757	85,067	5,250	4,178	1,223,397	1,234,194	10,798	0.87
Third quarter 2014	1,167,939	86,617	5,244	2,940	1,246,372	1,257,385	11,013	0.88
Fourth quarter 2014	1,180,341	87,528	5,064	1,528	1,261,278	1,273,562	12,285	0.96
First quarter 2015	1,188,478	88,115	5,011	1,104	1,270,479	1,281,606	11,128	0.87
Second quarter 2015	1,211,403	89,940	4,953	5,688	1,290,702	1,302,124	11,422	0.88
Third quarter 2015	1,237,241	91,402	4,957	3,589	1,320,098	1,331,297	11,200	0.84
Fourth quarter 2015	1,256,015	92,862	4,956	3,076	1,340,845	1,354,228	13,383	0.99
First quarter 2016	1,264,914	93,527	4,957	1,489	1,351,995	1,363,288	11,293	0.83
Second quarter 2016	1,291,464	95,634	4,956	5,745	1,376,397	1,385,652	9,255	0.67
Third quarter 2016	1,315,313	97,415	4,957	4,082	1,403,690	1,415,780	12,091	0.85
Fourth quarter 2016	1,331,264	98,550	4,957	2,004	1,422,853	1,438,837	15,984	1.11
First quarter 2017	1,341,433	99,314	4,958	3,266	1,432,524	1,448,589	16,066	1.11
Second quarter 2017	1,363,076	100,836	4,961	5,455	1,453,497	1,471,434	17,938	1.22
Third quarter 2017	1,383,182	102,319	5,215	2,930	1,477,356	1,497,950	20,594	1.37

1. Retrieved March 15, 2018 CANSIM table 378-0121 (v62693988).

2. Retrieved March 15, 2018 CANSIM table 176-0069 (v122736).

Sources: Statistics Canada and Bank of Canada, 2018.

Classification differences

In the NBSA, **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, if the government required a mortgage to finance a social housing program then the NBSA would show a residential mortgage liability and the corresponding non-financial asset (i.e., residential real estate) in the government sector. Similarly, **non-residential** mortgage liabilities are allocated to the various borrowing sectors with some non-residential mortgage borrowers classified to the household sector (i.e., unincorporated businesses).

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 residential mortgages in household credit and all non-residential mortgages in business credit.

Currently this adjustment is positive because the dollar value of residential mortgage liabilities outside the household sector is greater than the dollar value of non-residential mortgage liabilities within the household sector.

Coverage

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

Table 3
A comparison of lending sector coverage for mortgages

Lending sector	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	included	included
Federal and provincial government business enterprises	included	included
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	included
Non-financial private corporations	excluded	included
Governments	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.

Sources: Statistics Canada and Bank of Canada, 2018.

Timing differences

The Bank uses data reported on 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 the value occur throughout the period or near the end. Although this is labelled 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.

Consumer credit

The table below reconciles differences in measures of consumer credit, due to differences in how it is defined. This table starts with Statistics Canada's value for the consumer credit liabilities of households. From there, explainable differences between the Bank's and Statistics Canada's values are calculated, including differences due to classification of loans, methodology, concepts, coverage, and timing, which are explained following the table. This leads to a Statistics Canada approximated value according to how the Bank of Canada defines consumer credit. The residual column is the remaining difference between the approximated value and the Bank's actual value.

Table 4
Reconciliation of estimates of consumer credit between the Bank of Canada (the Bank) and National Balance Sheet Accounts (NBSA)

	Consumer credit							Difference in NBSA approximated and the Bank's published (Level)	Difference between NBSA approximated and the Bank's published	
	NBSA consumer credit - published ¹	Classification of loans (plus)	Methodological (minus)	Conceptual (minus)	Coverage (minus)	Timing (minus)	NBSA approximated to the Bank's definitions			The Bank's consumer credit - published ²
	millions of dollars								%	
First quarter 2012	508,234	78,551	3,176	30,547	66,219	-342	487,184	495,207	8,023	1.62
Second quarter 2012	515,653	79,893	3,091	30,921	67,900	941	492,694	501,415	8,721	1.74
Third quarter 2012	524,036	79,132	3,233	31,903	67,094	939	500,000	508,476	8,476	1.67
Fourth quarter 2012	527,886	78,330	3,403	31,899	67,367	501	503,046	511,691	8,645	1.69
First quarter 2013	526,844	80,949	3,328	32,487	68,596	-284	503,665	507,589	3,924	0.77
Second quarter 2013	534,018	81,229	3,699	32,452	69,699	942	508,455	512,199	3,744	0.73
Third quarter 2013	540,354	82,693	3,258	33,365	71,444	857	514,122	516,411	2,289	0.44
Fourth quarter 2013	544,864	82,517	3,571	34,219	72,622	628	516,342	519,316	2,974	0.57
First quarter 2014	543,233	84,326	3,513	33,609	74,314	400	515,723	517,659	1,936	0.37
Second quarter 2014	552,592	83,735	3,614	32,241	75,613	1,551	523,309	523,983	674	0.13
Third quarter 2014	558,650	85,200	3,780	32,785	76,790	1,125	529,371	529,692	321	0.06
Fourth quarter 2014	562,029	85,870	3,695	32,684	78,421	576	532,523	535,087	2,564	0.48
First quarter 2015	560,408	87,488	3,799	33,356	78,736	328	531,678	533,358	1,680	0.32
Second quarter 2015	568,361	93,252	4,057	38,244	79,761	1,384	538,168	540,849	2,681	0.50
Third quarter 2015	574,192	94,126	4,186	39,090	80,787	513	543,742	546,086	2,344	0.43
Fourth quarter 2015	576,753	94,960	4,708	39,683	81,469	-253	546,106	549,176	3,070	0.56
First quarter 2016	576,046	98,010	4,755	41,437	83,730	78	544,057	549,020	4,963	0.90
Second quarter 2016	588,557	99,181	5,158	41,632	84,905	1,634	554,409	560,357	5,948	1.06
Third quarter 2016	592,321	98,823	5,059	42,256	84,032	351	559,447	567,239	7,792	1.37
Fourth quarter 2016	598,978	100,541	5,058	44,089	83,771	173	566,427	572,950	6,523	1.14
First quarter 2017	599,572	102,188	5,744	43,704	85,424	185	566,703	573,100	6,397	1.12
Second quarter 2017	614,562	103,480	4,407	42,921	86,871	2,323	581,520	586,860	5,340	0.91
Third quarter 2017	622,235	103,633	4,339	43,424	87,368	684	590,053	596,965	6,912	1.16

1. Retrieved March 15, 2018 CANSIM table 378-0121 (v62693986).

2. Retrieved March 15, 2018 CANSIM table 176-0027 (v122698).

Sources: Statistics Canada and Bank of Canada, 2018.

Classification differences

In the NBSA framework, the measure of household consumer credit includes only the financing related to current consumption, whereas financing for financial and capital investment expenditures is included in a separate category for non-mortgage loans other than consumer credit. Both categories combined cover the total non-mortgage debt of the household sector as defined in the NBSA. In contrast, the Bank includes borrowing related to all three categories of expenditures in its measure of consumer credit.

Methodological differences

Because Statistics Canada's data are presented on a debtor-creditor basis, impaired loans are still assets and liabilities on the books of the debtor and creditor at their full outstanding value (gross of impairments). Conversely, the Bank's loan data are net of impairments because they measure the value of the loan the creditor anticipates will be collected. As a result, all else being equal, the NBSA estimate will tend to be higher.

Conceptual differences

In the NBSA, unincorporated businesses are included in the household sector. As such, the category of non-mortgage loans includes loans made to unincorporated business, while these are excluded from the measure of consumer credit produced by the Bank.

Coverage differences

The Bank's credit aggregates do not cover certain loans from some sectors that are included in the NBSA. Examples include student loans and farm loans from governments, automobile leases from non-financial private corporations, and some loans from credit unions and other private financial institutions.

Table 5
Detail on coverage differences between the Bank of Canada and the National Balance Sheet Accounts for consumer credit

	Consumer credit coverage detail			
	Coverage - total (minus)	Coverage - leases (minus)	Coverage - student loans (minus)	Coverage - other (minus)
	millions of dollars			
First quarter 2012	66,219	7,313	20,038	38,868
Second quarter 2012	67,900	7,546	20,366	39,988
Third quarter 2012	67,094	7,779	20,692	38,623
Fourth quarter 2012	67,367	8,013	21,020	38,334
First quarter 2013	68,596	8,274	21,347	38,975
Second quarter 2013	69,699	8,689	21,696	39,314
Third quarter 2013	71,444	9,104	22,044	40,296
Fourth quarter 2013	72,622	9,520	22,394	40,708
First quarter 2014	74,314	9,984	22,742	41,588
Second quarter 2014	75,613	10,531	22,793	42,289
Third quarter 2014	76,790	11,078	22,842	42,870
Fourth quarter 2014	78,421	11,626	22,891	43,904
First quarter 2015	78,736	12,207	22,940	43,589
Second quarter 2015	79,761	12,632	23,168	43,961
Third quarter 2015	80,787	13,058	23,397	44,332
Fourth quarter 2015	81,469	13,483	23,626	44,360
First quarter 2016	83,730	13,949	23,853	45,928
Second quarter 2016	84,905	14,226	24,287	46,392
Third quarter 2016	84,032	14,504	24,523	45,005
Fourth quarter 2016	83,771	14,781	24,762	44,228
First quarter 2017	85,424	15,274	25,003	45,147
Second quarter 2017	86,871	15,561	25,289	46,021
Third quarter 2017	87,368	15,849	25,539	45,981

Sources: Statistics Canada and Bank of Canada, 2018.

Table 6
A comparison of lending sector coverage for consumer credit and non-mortgage loans

	Consumer credit and non-mortgage loans	
	Bank of Canada	National Balance Sheet Accounts
Lending sector		
Chartered banks	included	included
Issuers of asset-backed securities	included	included
Property and casualty insurance companies	zero	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 ¹	zero	zero
Trust and mortgage loan companies	included	included
Credit unions ²	partial	included
Life insurance companies	included	included
Segregated funds of life insurance companies	included	zero
Households	excluded	netted
Non-financial private corporations	excluded	included
Governments	excluded	included
Non-residents (entities outside Canada)	excluded	zero

1. Sector does not have a claim on households, rather it lends to non-households.

2. The Bank's credit statistics methodology assumes that central credit unions do not have any financial assets for which households are debtors. The methodology will be reviewed in light of the findings of this study.

Legend:

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

Zero: there are no known loans in this category from this lending sector. If there were, the loans would be included.

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.

Netted: intra-sectoral loans from households to households are shown on a net basis

Sources: Statistics Canada and Bank of Canada, 2018.

Timing differences

The Bank uses data reported on 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 the value occur throughout the period or near the end. Although this is labelled 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.