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The Government of Canada Debt Securities Data Set

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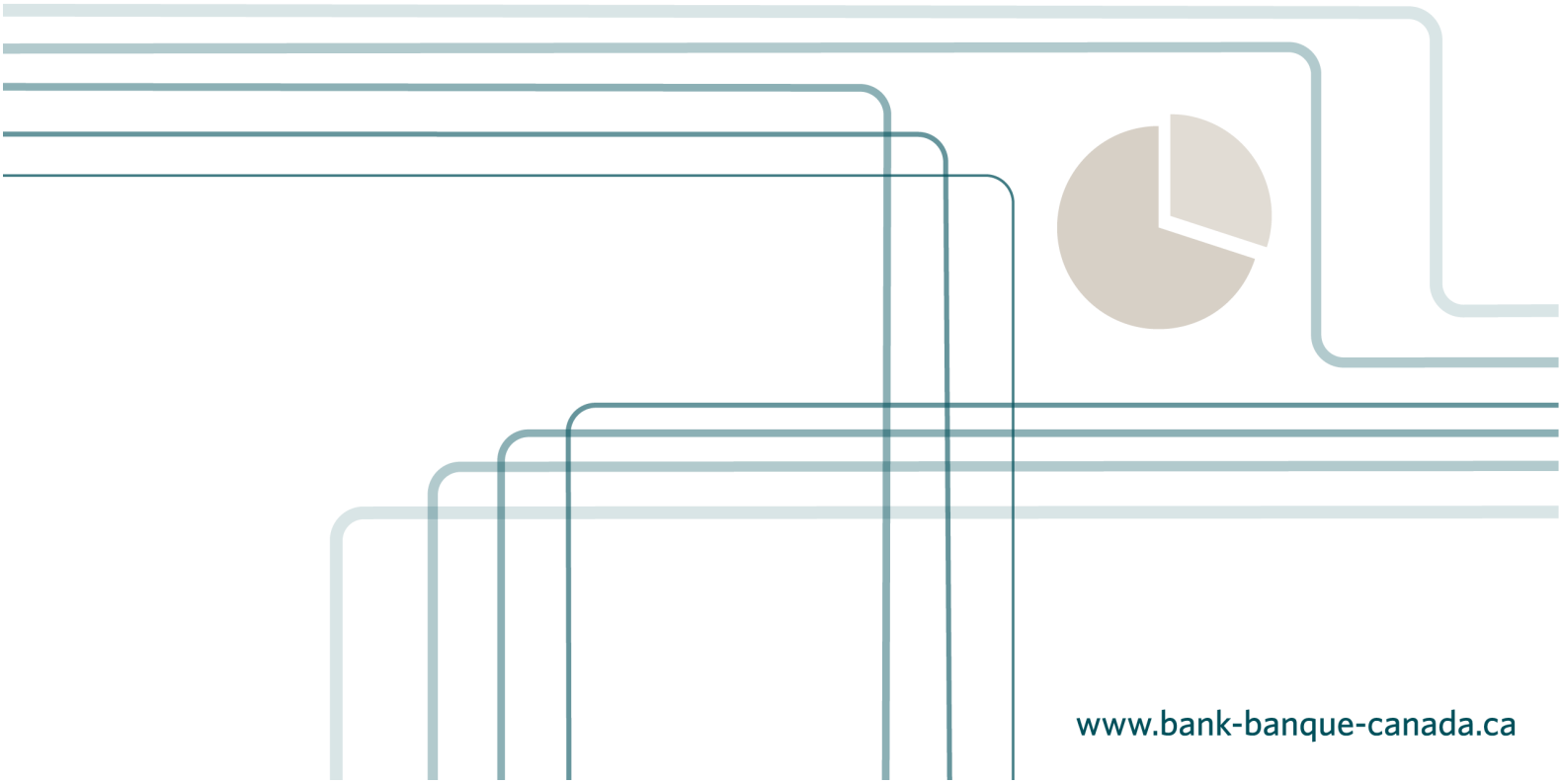

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Any remaining errors are the sole responsibility of the authors.

Abstract

We present the daily time series of the outstanding amounts of all Government of Canada marketable debt securities from July 2001 to June 2017. The data set is accompanied by a matching data set describing the most relevant events for each bond on each day: auction, repurchase, benchmark status and maturity. This previously unavailable data set is designed with academic researchers and market participants in mind and could be regularly updated in the future. We discuss the construction of the data set and potential uses for empirical asset pricing and related studies.

Bank topics: Debt management; Econometric and statistical methods; Financial markets
JEL codes: C80, G10, H63

Résumé

Nous présentons un ensemble de données composé de séries chronologiques quotidiennes sur l'encours des titres d'emprunt négociables du gouvernement du Canada pour la période allant de juillet 2001 à juin 2017. Il est associé à un ensemble de données complémentaire fournissant, pour chaque titre, l'information sur les évènements les plus pertinents de chaque journée (adjudication, rachat, obligation de référence, échéance). Contenant des informations autrefois inaccessibles au public, cet ensemble de données a été conçu à l'intention des chercheurs et des participants au marché et pourra être régulièrement mis à jour. Nous discutons de sa construction et de ses utilisations potentielles pour l'évaluation empirique des actifs et des études connexes.

Sujets : Gestion de la dette; Méthodes économétriques et statistiques; Marchés financiers
Codes JEL : C80, G10, H63

1. Introduction

As in most advanced economies, government debt securities in Canada serve critical functions in the financial system and in support of monetary and fiscal policy. Government debt is widely used as collateral in core funding markets, where it also serves as a pricing benchmark and hedging instrument. Government securities are held for their safe asset properties and for regulatory purposes. Most importantly, they are the primary means by which the government manages its spending requirements and budgetary balance.

Although pricing data on government debt securities are widely available to academics and market participants, public availability of comprehensive data on outstanding amounts is limited. This note presents a data set that fills part of this gap. It introduces a daily time series of outstanding amounts for each individual Government of Canada (GoC) domestic marketable security for the period from July 2001 to June 2017. This includes all securities that were outstanding at any time during that period. It also introduces a matching time series of key events and the statuses of each security for the same period. These time series could be updated on a regular basis as needed. The intent of publishing and updating the data is to support transparency around debt management and to encourage external research on topics related to GoC debt securities.

Knowing the outstanding amounts of debt securities and the timing of debt-related events is necessary to answer policy and academic research questions in which the level of or changes to supply are determinants of market outcomes. For example, the central bank may need to track bond supply across maturities to help assess the liquidity effects of changing its own bond holdings or the terms of its securities lending operations, while researchers may want to use outstanding amounts to standardize flow variables in empirical asset pricing work.

Subsets of this information can be obtained or computed from public data sources. The Bank of Canada's website[1] provides details on historical auction results since October 1998 and month-end debt outstanding amounts by security since 2003. The Bank also publishes its year-end loans book[2] detailing outstanding GoC securities and their issuance history. Similar data are also available from Statistics Canada's CANSIM tables[3] and the Department of Finance's annual *Debt*

[1] Bank of Canada, Government Securities Auctions: http://www.bankofcanada.ca/markets/government-securities-auctions/.

[2] Bank of Canada, Summary of Government of Canada Direct Securities and Loans: http://www.bankofcanada.ca/publications/summary-of-government-of-canada-direct-securities-and-loans/.

[3] Statistics Canada, CANSIM: http://www5.statcan.gc.ca/cansim/home-accueil?lang=eng; some relevant series are also available in the Bank of Canada's *Banking and Financial Statistics*: http://www.bankofcanada.ca/publications/bfs/.

Management Report.[4] However, there is no consolidated public source that provides all this information security-by-security, at a high frequency and for an extended history.

Although similar data are also available for other sovereign debt securities in various formats,[5] this time series is relatively novel among public data sources in its consolidated and granular content as well as its inclusion of the detailed event history for each security. The format of the series allows for direct aggregation and/or filtration of the historical data to answer user-specific questions. Depending on the usage, the data set could potentially be extended to include other relevant events.

The rest of this note is structured as follows. Section 2 describes the outstanding amounts and events data set and explains the data sources used for its construction. Section 3 presents the set of possible events that can occur during the lifetime of debt securities. Section 4 suggests some potential uses of the data set. Section 5 concludes and describes possible extensions to the data set should the usage warrant it.

2. Data overview and sources

Both the outstanding amounts and the events time series cover all GoC domestic debt securities that were outstanding at any point in the history (July 1, 2001 to June 30, 2017).

The debt securities include all instruments denominated in Canadian dollars and issued domestically by the Government of Canada through auction or syndication: currently, these include treasury bills, nominal bonds and Real Return Bonds (RRBs). Excluded are any foreign debt securities issued by the government (e.g., global bonds, medium-term notes, Canada bills and Canada notes) mainly for purposes of managing foreign reserves. Also excluded are all retail debt securities (e.g., Canada Savings Bonds and Canada Premium Bonds).

The data set is organized in two spreadsheets, one for outstanding amounts and one for events. Each column in each file describes a single security. For future updates, new columns would be added for newly issued securities. The first several rows in each file describe the properties of the security: the unique identifier, the International Securities Identification Number (ISIN), the first issue date, the maturity date, the coupon rate expressed as a per cent, the original term at issuance (in years), the term remaining (in years) as of the last date of the time series and the security type (t-bill, bond, or RRB).[6] The following rows provide the calendar-day time series from July 1, 2001

[4] Available at: https://www.fin.gc.ca/pub/dmr-rgd/index-eng.asp.

[5] For example, the US Treasury Direct website provides auction results and monthly reports on specific securities outstanding (Announcement, Data & Results: https://www.treasurydirect.gov/instit/annceresult/annceresult.htm), and the Center for Research in Security Prices produces data files for daily Treasury security amounts and prices, among other data (*US Treasury Database Guide*: http://www.crsp.com/files/treasury_guide_0.pdf).

[6] A security's unique identifier is simply a combination of its ISIN and maturity date, as ISINs for issued treasury bills can be reused starting two years after original issuance.

to June 30, 2017 for either the security's outstanding amount at the end of that day or its relevant events that day. The cell references for each security and each date are the same in both files. Section 3 provides more details regarding the different GoC security events.

Table A-1 and **Table A-2** in the Appendix provide examples of the time series for two types of securities: a treasury bill and a nominal bond. The time series for outstanding amounts are constructed using data obtained directly from the Bank of Canada's auction system. The events time series is constructed using both internal and published data on historical events.

The events spreadsheet also provides an indicator of whether the security on a given day is the benchmark security from a set of securities of similar maturity. This information is based on an internal source that tracks the daily active benchmarks, based on market information. These data are published in PDF format on the Bank of Canada's website.[7] It is important to note that neither the government nor the Bank of Canada directly designates a bond as a benchmark. Instead, the designation is based on market practice, which the Bank of Canada recognizes. Typically, a bond is designated a benchmark by market practice after it has reached a "benchmark size," which tends to coincide with the last reopening of that security. (For more details, see Section 3.)

3. Types of events

There are five categories of events: security (S), auction or issuance (A), repurchase (R), benchmark (B), and maturity (M). As shown in **Figure 1**, each of these events is identified by one of the letter labels in parentheses above, followed by a numeric identifier consisting of one to three digits that specify the type of security, or the type of auction, issuance or repurchase. The event variable is formed with 14 characters at fixed positions in the cell. If there is no event in a category on a given day, the X placeholder(s) show up instead. The security (S) label appears for every day between that security's first issuance and its maturity (inclusive); outside of that period, its event variable is blank.

Figure 1: Event entries

Code	S#	A###	R###	B#	M#
Character position	1–2	3–6	7–10	11–12	13–14
Event	Security	Auction or issuance	Repurchase	Benchmark	Maturity

All securities have a fixed type. Treasury bills are zero-coupon instruments that are generally issued with a term of one year or less (short-term cash management bills; 3-month, 6-month, and 12-month regular treasury bills). Nominal bonds are semi-annual coupon instruments classified

[7] Benchmark Canada Bonds: http://www.bankofcanada.ca/rates/interest-rates/canadian-bonds/.

in one of several maturity sectors (2-year, 3-year, 5-year, 10-year, 30-year, 50-year) based on their initial term. Real Return Bonds are also semi-annual coupon instruments, usually with longer terms (30 years), and their principal and coupons are linked directly to changes in the consumer price index (CPI).

Unlike equities, fixed-income securities have a life cycle: they are issued and eventually mature. In the case of GoC securities, some are issued more than once; this is called a reopening. More specifically, a reopening occurs when a bond and/or bill is sold in the primary market by auction or syndication for the same ISIN more than once.[8] Each issuance also has a settlement date, which is the date when the security is delivered to the market. For the time period shown, this is typically the same day for cash management bills, T+2 for regular treasury bills and bonds with terms of three years or less, and T+3 for bonds with terms greater than three years.[9]

The Bank of Canada also conducts repurchase operations of bonds outstanding, in which the government purchases outstanding securities from a list of eligible bonds from dealers in exchange for either cash (cash buyback or Cash-Management Bond Buyback (CMBB)) or issued securities (switch buyback).[10] For any securities involved in either side of the operation, the issuance/buyback date and the corresponding settlement date, if applicable, are also relevant events. Repurchased bonds also have a cancellation date, which is the date when they are formally removed from circulation.[11]

An important event for a bond is its benchmark status. A benchmark bond, much like on-the-run bonds in the United States, is typically the most liquid bond for its maturity sector, and pricing this bond is the basis for pricing other fixed-income securities in the sector. A bond typically becomes the benchmark after several reopenings and once its outstanding amount is built up to within the sector's target range,[12] at which point the previous benchmark bond loses its status. A sector's prevailing benchmark bond usually has a remaining term to maturity that is very close—but not necessarily the closest—to the stated term. Unlike in the United States, where the on-the-run bond is simply the bond most recently issued for that sector, the benchmark designation in Canada does not follow such an explicit rule and is instead based on market practice at the time.

Table 1 below lists the main event labels being recorded for this release. **Table 2** lists the special event labels for any historical cases in which multiple repurchase events for a security overlapped

[8] This reopening can be either in the same or a different maturity sector from the previous issuance(s).

[9] As of September 5, 2017, the Canadian Capital Markets Association (CCMA), in coordination with market participants, moved to a T+2 settlement convention for all bonds and regular treasury bills.

[10] Details for each type of buyback operation are available on the Bank of Canada's website: http://www.bankofcanada.ca/wp-content/uploads/2012/03/details_bond_buyback_operations_2april2012.pdf.

[11] This is separate from the settlement date, which is when the repurchased bond changes ownership from the dealer to the government. The two dates are not necessarily the same. Note also that eligible bonds that had nothing bought back at the repurchase operation still have a buyback date but not a settlement or cancellation date.

[12] As indicated in the Department of Finance's annual debt management strategy. See *Debt Management Strategy for 2017–18:* http://www.budget.gc.ca/2017/docs/plan/anx-02-en.html.

on the same day. These historical cases are infrequent, and none have occurred since January 2012. Any analysis involving repurchases before January 2012 would thus have to aggregate across all the appropriate special event labels.

Table 1 – Government of Canada Security Events, Main Labels

Event group	Event	Label in time series
Security (1st–2nd characters)	Treasury bill	S1
	Nominal bond	S2
	Real Return Bond (RRB)	S3
Auction or issuance (3rd–6th characters)	Cash-management treasury bill[13] auction / settlement / auction + settlement	A111 / A112 / A113
	3-month treasury bill auction / settlement / auction + settlement	A121 / A122 / A123
	6-month treasury bill auction / settlement / auction + settlement	A131 / A132 / A133
	1-year treasury bill auction / settlement / auction + settlement	A141 / A142 / A143
	2-year auction / settlement	A211 / A212
	3-year auction / settlement	A221 / A222
	5-year auction / settlement	A231 / A232
	10-year auction / settlement	A241 / A242
	30-year auction / settlement	A251 / A252
	Real Return Bond auction / settlement	A311 / A312
	2-year switch auction / settlement	A411 / A412
	5-year switch auction / settlement	A421 / A422
	10-year switch auction / settlement	A431 / A432
	30-year switch auction /settlement	A441 / A442
	Ultra-long syndication / settlement[14]	A511 / A512
Repurchase (7th–10th characters)—see Table 2 for special event labels	Cash-Management Bond Buyback (CMBB) / settlement / cancellation	R101 / R102 / R103
	2-year switch buyback / settlement / cancellation	R211 / R212 / R213
	5-year switch buyback / settlement / cancellation	R221 / R222 / R223
	10-year switch buyback / settlement / cancellation	R231 / R232 / R233
	30-year switch buyback / settlement / cancellation	R241 / R242 / R243
	2-year cash buyback (CBB) / settlement / cancellation	R311 / R312 / R313
	5-year cash buyback (CBB) / settlement / cancellation	R321 / R322 / R323
	10-year cash buyback (CBB) / settlement / cancellation	R331 / R332 / R333
	30-year cash buyback (CBB) / settlement / cancellation	R341 / R342 / R343
Benchmark (11th–12th characters)	2-year benchmark	B1
	3-year benchmark	B2
	5-year benchmark	B3

[13] These can be either non-fungible (newly issued) or fungible (sharing the same maturity as a previously issued treasury bill). Like the new issuance/reopening designation of bond auctions, this is not labelled explicitly here as it is implicit in the timing of the event.

[14] On August 29, 2017, for the first time, the Government of Canada issued a reopening of its 2.75 per cent, December 1, 2064, ultra-long bond through a modified auction format; for a future update, the auction/settlement for that operation would be given the new labels A261/A262

	7-year benchmark[15]	B4
	10-year benchmark	B5
	30-year benchmark	B6
	RRB benchmark	B7
Maturity (13th–14th characters)	Maturity	M1

Table 2 – Government of Canada Security Events, Special Labels

Event group	Event	Label in time series
Repurchase (7th–10th characters)—special event labels (none since January 2012)	Cash-Management Bond Buyback (CMBB) settlement + CMBB cancellation	R104
	CMBB cancellation (x2)	R105
	CMBB + CMBB cancellation	R106
	CMBB + CMBB cancellation (x2)	R107
	CMBB settlement + CMBB cancellation (x2)	R108
	CMBB cancellation (x3)	R109
	2-year switch settlement + 2-year switch cancellation	R214
	5-year switch settlement + 5-year switch cancellation	R224
	10-year switch settlement + 10-year switch cancellation	R234
	2-year switch buyback + 5-year switch cancellation	R251
	2-year switch cancellation + 5-year switch cancellation	R252
	2-year switch settlement + 2-year switch cancellation + 5-year switch cancellation	R253
	2-year cash buyback (CBB) settlement + 2-year CBB cancellation	R314
	5-year CBB settlement + 5-year CBB cancellation	R324
	10-year CBB settlement + 10-year CBB cancellation	R334
	2-year CBB settlement + 5-year CBB cancellation	R351
	2-year CBB cancellation + 5-year CBB cancellation	R352
	5-year CBB settlement + 5-year CBB cancellation + 10-year CBB cancellation	R361
	5-year CBB cancellation + 10-year CBB cancellation	R362
	10-year CBB + 30-year CBB cancellation	R371
	10-year CBB cancellation + 30-year CBB cancellation	R372
	CMBB cancellation + 2-year switch settlement	R411
	2-year switch cancellation + 2-year CBB settlement	R611
	5-year switch cancellation + 5-year CBB cancellation	R621
	10-year switch cancellation + 10-year CBB cancellation	R631
	2-year switch cancellation + 5-year CBB cancellation	R651
	2-year switch cancellation + 2-year CBB cancellation + 5-year CBB cancellation	R652
	5-year switch cancellation + 2-year CBB cancellation + 5-year CBB cancellation	R653
	5-year switch cancellation + 10-year CBB	R661
	30-year switch cancellation + 10-year CBB cancellation	R671

[15] In this history, Canada did not issue a bond in the 7-year maturity sector itself. However, as it is a relevant tenor that is issued by other major sovereigns such as the United States and other domestic issuers (e.g., corporates), the Bank of Canada tracks the 7-year benchmark—typically a bond that had previously been issued at a longer tenor and has since rolled down to around a 7-year term to maturity.

The security, benchmark and maturity events in **Table 1** are relatively straightforward and only require one digit as a numeric identifier. The issuance and repurchase events in Table 1 are more involved, and thus require three separate digits describing multiple aspects of the operation: the first digit describes the type of issuance/buyback, the second digit describes the maturity sector (0 if not applicable) and the third digit describes the specific step of the operation (auction/settlement for issuance; auction/settlement/cancellation for buybacks).

This system is designed to give flexibility for adding more numeric identifiers or category labels, if needed, to reflect potential operational extensions related to government securities.

4. Potential uses

The information contained in these tables provides a useful reference for policy-makers and market participants regarding the supply, benchmarks and key events for GoC securities over time—both individually and in aggregate. While the most direct application will be analysis related to Canadian markets and policies, the ultimate intent of publishing the data is to foster new research.

The goal is to motivate other sovereign debt issuers to make detailed time series of their security amounts and events publicly available in a standardized format.

This high-frequency and security-level information on the outstanding GoC debt stock and the events surrounding changes to it has direct applications for many avenues of research. Bulusu and Gungor (2017), for example, use stock amounts and benchmark timing to analyze the life cycle of GoC securities in terms of their use in core funding markets. Other past studies have used this type of information to analyze the supply effects of sovereign securities on the following: clientele demands and the yield curve (Greenwood and Vayanos [2014]); market liquidity (Gravelle [1999]; Fleming [2000]); repo specialness (Moulton [2004]; Keane [1996]); pricing spreads of off-the-run and corporate bonds (Krishnamurthy [2002]; Krishnamurthy and Vissing-Jorgensen [2012]); the balance-sheet activities of intermediaries (Fleming and Rosenberg [2008]); and other aspects of financial stability and market functioning.

This volume and event information on government securities can also motivate analysis of the past decision process of policy-makers and support proposed new policy practices. Similar data have been applied to questions on both debt management (Greenwood et al. [2014]; Cochrane [2015]) and unconventional monetary policy (D'Amico and King [2010]; Hamilton and Wu [2012]; Song and Zhu [2017]). To that end, it also facilitates cross-country comparisons of different sovereign debt practices.

Given the core role of government securities in financial markets, these data could also have diverse applications as a source of common supporting data in finance and economics research, perhaps by using outstanding volumes as a control variable for assessments of trading activity

(Fontaine, Garriott and Gray [2016]) or for empirical regressions (Pflueger and Viceira [2011]); or by using auction, benchmark and asset purchase dates as natural time points for event studies (Lou, Yan and Zhang [2011]; Pasquariello and Vega [2009]; Krishnamurthy and Vissing-Jorgensen [2011]).

5. Future enhancements

Potential enhancements in future releases could include adding more relevant events, such as coupon payments, coupon dates, CPI release dates (for repricing the RRBs), calls for tenders and other announcement dates for upcoming operations, and futures delivery eligibility and buyback basket eligibility, to name a few. Another potential enhancement is to provide automated access to the data through the Bank of Canada's website.

Ultimately, how this data set is enhanced will depend on data availability, as well as evidence of demand for these data by practitioners and academics. An update to this technical report would be provided whenever an enhancement is made.

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Appendix

Table A-1 – Time Series of Outstanding Amounts and of Events for September 8, 2016 Treasury Bill (CA1350Z7X417)

UNIQUE_ID	CA1350Z7X417_20160908		
ISIN	CA1350Z7X417		
RECYCLED ISIN			
ISSUE DATE[16]	10/03/2016		
MATURITY DATE	08/09/2016		
COUPON RATE			
ORIGINAL TERM (YEARS)	0.5		
CURRENT TERM (YEARS)	MATURED		
DATE/TYPE	T-BILL		
Date	**Outstanding amount in Canadian dollars**	**Event ID**	**Description**
…	…	…	…
07/03/2016			
08/03/2016		S1A131XXXXXXXX	6M treasury bill auction
09/03/2016		S1XXXXXXXXXXXX	
10/03/2016	2,000,000,000	S1A132XXXXXXXX	6M treasury bill auction settlement
11/03/2016	2,000,000,000	S1XXXXXXXXXXXX	
…	…	…	…
21/03/2016	2,000,000,000	S1XXXXXXXXXXXX	
22/03/2016	2,000,000,000	S1A131XXXXXXXX	6M treasury bill auction
23/03/2016	2,000,000,000	S1XXXXXXXXXXXX	
24/03/2016	4,000,000,000	S1A132XXXXXXXX	6M treasury bill auction settlement
25/03/2016	4,000,000,000	S1XXXXXXXXXXXX	
…	…	…	…
30/05/2016	4,000,000,000	S1XXXXXXXXXXXX	
31/05/2016	4,000,000,000	S1A121XXXXXXXX	3M treasury bill auction
01/06/2016	4,000,000,000	S1XXXXXXXXXXXX	
02/06/2016	11,100,000,000	S1A122XXXXXXXX	3M treasury bill auction settlement
03/06/2016	11,100,000,000	S1XXXXXXXXXXXX	
…	…	…	…
29/08/2016	11,100,000,000	S1XXXXXXXXXXXX	
30/08/2016	13,200,000,000	S1A113XXXXXXXX	fungible cash management bill

[16] Expressed in dd/mm/yyyy format.

			auction and settlement
31/08/2016	13,200,000,000	S1XXXXXXXXXXX	
...	...	...	...
07/09/2016	13,200,000,000	S1XXXXXXXXXXX	
08/09/2016		S1XXXXXXXXXM1	maturity
09/09/2016			

Table A-2 – Time Series of Outstanding Amounts and of Events for 3.50%, June 1, 2013 Nominal Bond (CA135087YN80)

UNIQUE_ID	CA135087YN80_20130601		
ISIN	CA135087YN80		
ISSUE DATE[17]	25/02/2008		
MATURITY DATE	01/06/2013		
COUPON RATE	3.5		
ORIGINAL TERM (YEARS)	5.26		
CURRENT TERM (YEARS)	MATURED		
DATE/TYPE	BOND		
Date	**Outstanding amount in Canadian dollars**	**Event ID**	**Description**
...	...	...	...
19/02/2008			
20/02/2008		S2A231XXXXXXXX	5Y auction
21/02/2008		S2XXXXXXXXXXX	
22/02/2008		S2XXXXXXXXXXX	
23/02/2008		S2XXXXXXXXXXX	
24/02/2008		S2XXXXXXXXXXX	
25/02/2008	2,000,000,000	S2A232XXXXXXXX	5Y auction settlement
26/02/2008	2,000,000,000	S2XXXXXXXXXXX	
...	...	...	...
04/03/2008	2,000,000,000	S2XXXXXXXXXXX	
05/03/2008	2,000,000,000	S2A421XXXXXXXX	5Y switch auction
06/03/2008	2,000,000,000	S2XXXXXXXXXXX	
07/03/2008	2,000,000,000	S2XXXXXXXXXXX	
08/03/2008	2,000,000,000	S2XXXXXXXXXXX	
09/03/2008	2,000,000,000	S2XXXXXXXXXXX	
10/03/2008	2,063,624,000	S2A422XXXXXXXX	5Y switch auction settlement
11/03/2008	2,063,624,000	S2XXXXXXXXXXX	

[17] Expressed in dd/mm/yyyy format.

...	...	...	...
06/05/2008	2,063,624,000	S2XXXXXXXXXXX	
07/05/2008	2,063,624,000	S2A231XXXXXXXX	5Y auction (re-opening)
08/05/2008	2,063,624,000	S2XXXXXXXXXXX	
09/05/2008	2,063,624,000	S2XXXXXXXXB3XX	first day as 5Y benchmark
10/05/2008	2,063,624,000	S2XXXXXXXXB3XX	
11/05/2008	2,063,624,000	S2XXXXXXXXB3XX	
12/05/2008	4,063,624,000	S2A232XXXXB3XX	5Y auction settlement
13/05/2008	4,063,624,000	S2AXXXXXXXB3XX	
...	...	...	multiple auctions
10/02/2009	15,063,624,000	S2XXXXXXXXB3XX	last day as 5Y benchmark
11/02/2009	15,063,624,000	S2XXXXXXXXXXX	
...	...	...	
02/09/2010	15,063,624,000	S2XXXXR211XXXX	2Y switch buyback (nothing bought back)
...	...	...	...
26/10/2010	15,063,624,000	S2XXXXXXXXXXX	
27/10/2010	15,063,624,000	S2XXXXR211XXXX	2Y switch buyback
28/10/2010	15,063,624,000	S2XXXXXXXXXXX	
29/10/2010	15,063,624,000	S2XXXXR212XXXX	2Y switch buyback settlement
30/10/2010	15,063,624,000	S2XXXXXXXXXXX	
31/10/2010	15,063,624,000	S2XXXXXXXXXXX	
1/11/2010	14,818,624,000	S2XXXXR213XXXX	2Y switch buyback cancellation
2/11/2010	14,818,624,000	S2XXXXXXXXXXX	
...	...	...	multiple buybacks
05/12/2011	13,330,596,000	S2XXXXXXXXXXX	
06/12/2011	13,330,596,000	S2XXXXR101XXXX	cash management bond buyback
07/12/2011	13,330,596,000	S2XXXXXXXXXXX	
08/12/2011	13,330,596,000	S2XXXXR102XXXX	cash management bond buyback settlement
09/12/2011	13,315,596,000	S2XXXXR103XXXX	cash management bond buyback cancellation
10/12/2011	13,315,596,000	S2XXXXXXXXXXX	
...	...	...	multiple buybacks
31/05/2013	5,268,324,000	S2XXXXXXXXXXX	
01/06/2013		S2XXXXXXXXXM1	maturity
02/06/2013			