Package 'CDNmoney'

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Title Components of Canadian Monetary and Credit Aggregates

Description Components of Canadian Credit Aggregates and Monetary Aggregates with continuity adjustments.

Depends R (>= 2.5.0)

Suggests tframe (>= 2006.1-1)

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R topics documented:

CanadianCreditData *Canadian Credit Aggregates*

Description

Canadian credit aggregates.

Usage

```
data(CanadianCreditData)
data(CanadianCreditData.asof.6Mar2009)
data(CanadianCreditData.asof.5Jun2007)
data(CanadianCreditData.asof.3Mar2006)
data(CanadianCreditData.asof.28Jan2005)
```

Format

The objects are time series.

Details

Several data objects are loaded, as listed in the table "Canadian Credit Variable Definitions". The `CanadianCreditData` usage loads the most recent version and other usages loads data as of the given date.

These data are the Canadian Credit aggregates in millions of Canadian dollars.

Canadian Credit Variable Definitions

variable (ID)	short description	longer description
TotalCredit	total credit	total household and business credit
ConsumerCredit	consumer credit	total consumer credit
ResidentialMortgage	residential mortgage	total residential mortgage credit
ShortTermBusinessCredit	short term-business credit	total short-term business credit
OtherBusinessCredit	other business credit	total other business credit

The components in this database are not seasonally adjusted (SA), but the corresponding Bank of Canada / Statistics Canada Cansim II numbers for the seasonally adjusted aggregates are as as shown in table "Bank of Canada / Statistics Canada Cansim II numbers".

Bank of Canada / Statistics Canada Cansim II numbers

	unadjusted	SA
TotalCredit	v122644	v122648
ConsumerCredit	v122698	v122707
ResidentialMortgage	v122736	v122746
ShortTermBusinessCredit	v122639	v122646

OtherBusinessCredit v36412

Source

Aggregates are from the *Bank of Canada* and also available from *Statistics Canada*.

References

Bank of Canada Banking and Financial Statistics. Table E2 http://www.bank-banque-canada.ca.

See Also

CanadianMoneyData, tframe

Examples

```
require("tframe")
data("CanadianCreditData", package="CDNmoney")

tfplot(TotalCredit, ConsumerCredit, ResidentialMortgage,
   ShortTermBusinessCredit, OtherBusinessCredit)
tfplot(tbind(TotalCredit, ConsumerCredit, ResidentialMortgage,
   ShortTermBusinessCredit, OtherBusinessCredit), graphs.per.page=3 )

tfplot(diff(tbind(TotalCredit, ConsumerCredit, ResidentialMortgage,
   ShortTermBusinessCredit, OtherBusinessCredit)), graphs.per.page=3 )

tfplot(tbind(TotalCredit, ConsumerCredit, ResidentialMortgage,
   ShortTermBusinessCredit, OtherBusinessCredit), graphs.per.page=3,
   start=c(1990,6), end=c(1991,6))
```

CanadianMoneyData *Continuity Adjusted Component Data for Canadian Monetary Aggregates*

Description

Components of the Canadian Monetary aggregates.

Usage

```
data(CanadianMoneyData)
data(CanadianMoneyData.asof.6Mar2009)
data(CanadianMoneyData.asof.5Jun2007)
data(CanadianMoneyData.asof.3Mar2006)
data(CanadianMoneyData.asof.28Jan2005)
data(CanadianMoneyData.asof.6Feb2004)
data(CanadianMoneyData.asof.26Aug2002)
```

Format

The objects are time series.

Details

Several data objects are loaded, as listed in the table "New Variable definitions". The `CanadianMoneyData` usage loads the most recent version and other usages loads data as of the given date.

These data are the components of the Canadian Monetary aggregates. They have been "continuity adjusted" so that take-overs and mergers do not result in breaks in the series. This involves re-arranging historical data so that it reflects the current structure of the industry. Trust company deposits are not included in some Canadian monetary aggregates so, if a bank takes over a trust company, the historical data for the trust company must be added to the bank's historical data to eliminate a break in the series. The series start at various dates but continuity adjustments prior to 1981 are not complete. More details about the adjustment are provided in Kottaras (2003).

The originally released data is usually very accurate because of bank reporting requirements. Beware that continuity adjustments described above are the main reason for revisions to the data. For this reason the "as of" data may not be especially useful for some kinds of data revision studies.

In January 2007 the aggregates M1 gross and M1 total (sometimes called M1 net) were discontinued, and M2, M2+, M2++, and M3 were modified to "gross" versions. The earlier CanadianMoneyData sets contain these series, but more recent ones do not. Components as of January 2007 are as shown in table "New Variable definitions".

New Variable definitions

variable (ID)	short description	longer description
V37258	gross M1+	
V37259	gross M1++	
V41552786	gross M2	
V41552788	gross M2+	
V41552790	gross M2++	
V41552785	gross M3	
V37173	currency	currency outside banks
MV41552775	personal chequing	personal chequing accounts at banks
MV41552777	N-P chequing notice	non-personal chequable notice
MV36818	pers non-cheq notice	personal notice - non-chequable at banks
NetNonbankCheq	Net Non-bank Cheq	chequing accounts at non-banks less TMLinterbank
GrossNonbankCheq	Non bank Chequing	chequing accounts at non-banks
MV36828	N-P non-chequing	non-personal, non-chequable accounts at banks
NonbankNonCheq	Non-bank Non-Cheq	non-chequing accounts at non-banks
MV36823	personal term	personal term at banks
NonbankTerm	Non-bank Term	term deposits at non-banks
V37243	life insurance	individual annuities at life insurance co.
MV37244	dep at gov inst	deposits at government institutions
V37245	mmmf	money market mutual funds
V37255	CSB	Canadian saving bonds
V37256	non-mmmf	non-money market mutual funds
MV36830	N-P term deposits	non-personal term at banks
MV36876	Fgn curr deposits	Foreign currency deposits of residents

MV37235	GrossNonbankTotal	Total Deposits at Trust and Mortgage Loan Companies
TMLinterbank	TML dep. at banks	Deposits of trust mortgage and loan companies at banks
adjM1p	pre-1982 problem	
adjM1pp	pre-1982 problem	
CUadj	CU estimate fix	fix for poor Statcan estimate of Nonbank non-cheq vs Term split for one Credit Union prior to April 1996

Table "Composition of the Monetary Aggregates" indicates how the components are added for the Bank of Canada monetary aggregates. This version of the table is for new monetary aggregates released in January 2007.

Composition of the Monetary Aggregates

		gross M1+	gross M1++	Monetary gross M2	Aggregate gross M2+	gross M2++	gross M3
variable (ID)	short desciption						
V37173	currency	X	X	X	X	X	X
MV41552775	pers cheq	X	X	X	X	X	X
MV41552777	N-P cheq notice	X	X	X	X	X	X
MV36818	pers n-cheq notice		X	X	X	X	X
NetNonbankCheq	NetNonbankCheq	X	X		X	X	
MV36828	N-P n-cheq		X	X	X	X	X
NonbankNonCheq	NonbankNonCheq		X		X	X	
MV36823	pers term			X	X	X	X
NonbankTerm	NonbankTerm				X	X	
V37243	life insur				X	X	
MV37244	dep at gov inst				X	X	
V37245	mmmf				X	X	
V37255	CSB					X	
V37256	non-mmmf					X	
MV36830	N-P term dep						X
MV36876	Fgn curr dep						X
adjM1p	pre-1982 problem	X					
adjM1pp	pre-1982 problem		X				
CUadj	CU estimate fix		X				

X means included; float is now included in all (gross) aggregates.

NetNonbankCheq = TMLCHEQPLUS + LCUCHEQPLUS - TMLinterbank;

NonbankNonCheq = TMLNCPLUSPLUS + LCUNCPLUSPLUS;

NetNonbankTotal= MV37235 + MV37239 - TMLinterbank;

use NetNonbankTotal = NonbankTerm + NonbankCheq + NetNonbankNonCheq

to get NonbankTerm = NetNonbankTotal - (NetNonbankCheq + NonbankNonCheq);

adjM1pp (= adjV37210 - adjV37213) adjustment is only for data prior to the sample used in Gilbert and Pichette.

CUadj changes an estimate of NonbankNonCheq/NonbankTerm split prior to April 1996. This only affects M1++.

Previously the components were defined using the B-number designations. The variables were as shown in table "Previously Components Definitions".

Previously Components Definitions

variable (ID)	short description	longer description
MB2001	currency	currency outside banks
MB486	PCA	personal chequing accounts at banks
MB487p	CA other demand	current accounts at banks
MB452	pers cheq	personal notice - chequable at banks
MB453	pers n-cheq notice	personal notice - non-chequable at banks
MB454	pers term	personal term at banks
NonbankCheq	NonbankCheq	chequing accounts at non-banks
MB472	N-P cheq notice	non-personal chequable notice
MB473	N-P non-cheq	non-personal - non-chequable
NonbankNonCheq	NonbankNonCheq	non-chequing accounts at non-banks
MB451	pers savings	personal savings accounts at banks
NonbankTerm	NonbankTerm	term deposits at non-banks
MB2046	life insur	individual annuities at life insurance co.
MB2047	dep at gov inst	deposits at government institutions
MB2048	mmmf	money market mutual funds
MB2057	CSB	Canadian saving bonds
MB2058	non-mmmf	non-money market mutual funds
MB475	N-P term dep	non-personal term at banks
MB482	Fgn curr dep	Foreign currency deposits of residents
MB451	Pers savings	MB452 + MB453 + MB454
MB478	Demand deposits	Chartered bank net demand deposits
MB2038	NonbankTotal	Total Deposits at Trust and Mortgage Loan Companies
float	B476	checks and deposits "in transit"
TMLinterbank	TML depostis at banks	Deposits of trust mortgage and loan companies at banks
MB452adj	pre-1982 problem	
MB473adj	pre-1982 problem	
CUadj	CU estimate fix	fix for poor Statcan estimate of NonbankNonCheq/NonbankTerm split for one

The "Previous Canadain Monetary Aggregates" table indicates how these components were added for the Bank of Canada monetary aggregates in the past. The column on the left indicates how they are combined to form components for factor estimates as in Gilbert and Pichette (2003).

Previous Canadain Monetary Aggregates

					Monetary	Aggregate			
comp.	variable (ID)	grossM1 B2054	netM1= totalM1 B2033	M1+ B2060	M1++ B2061	M2 B2031	M2+ B2037	M2++ B2059	M3 B2030
1	MB2001	X	X	X	X	X	X	X	X
2	MB486	X	X	X	X	X	X	X	X

4	MB487PLUS	X	X	X	X	X	X	X	X
2	MB452			X	X	X	X	X	X
6	MB453				X	X	X	X	X
3	NonbankCheq			X	X		X	X	
4	MB472			X	X	X	X	X	X
4	MB473				X	X	X	X	X
6	NonbankNonCheq				X		X	X	
6	MB454					X	X	X	X
6	NonbankTerm						X	X	
6	MB2046						X	X	
6	MB2047						X	X	
6	MB2048						X	X	
6	MB2057							X	
6	MB2058							X	
5	MB475								X
6	MB482								X
	float MB476	+	-	+	+	-	-	-	-
	TMLinterbank	X	X						
	MB452adj			X					
	MB473adj				X				
	CUadj				X				

X- included
+ float is in
- float is out

NonbankCheq = TMLCHEQPLUS + LCUCHEQPLUS
NonbankNonCheq = TMLNCPLUSPLUS + LCUNCPLUSPLUS
NonbankTotal = NonbankTerm + NonbankCheq + NonbankNonCheq = MB2038M2P + MB2042
[actually NonbankTerm= NonbankTotal - (NonbankCheq + NonbankNonCheq)]

MB473adj (= MB473PLUSPLUS - MB473)adjustment is only for data prior to the sample used in Gilbert and Pichette.

CUadj changes an estimate of NonbankNonCheq/NonbankTerm split prior to April 1996. This only affects M1++.

Many of the MB numbers are related to B numbers from Statistics Canada's Cansim series identification system. The correspondence between these related B numbers and V number identifiers from the newer Statistics Canada Cansim II system is as shown in table "Bank of Canada / Statistics Canada Cansim I and II numbers".

Bank of Canada / Statistics Canada Cansim I and II numbers

Cansim ID	Cansim II ID	
B451	V36814	personal savings deposits
B452	V36815	personal chequing deposits
B453	V36818	personal non-chequing notice deposits
B454	V36823	personal term deposits

B472	V36827	non-personal chequing notice deposits
B473	V36828	non-personal non-chequing deposits
B475	V36830	non-personal term deposits
B476	V36809	float
B478	V36831	demand deposits
B482	V36876	foreign currency deposits
B486	V36844	personal chequing accounts (PCA)
B487	V36845	current accounts deposits
B2001	V37173	currency
B2038	V37235	non-bank total deposits
B2042	V37239	credit unions and caisses populaires total deposits
B2046	V37243	life insurance
B2047	V37244	deposits at government owned institutions
B2048	V37245	money market mutual funds
B2057	V37255	Canadian savings bonds (CSB)
B2058	V37256	non-money market mutual funds

The components in this database are not seasonally adjusted (SA), but the corresponding Bank of Canada / Statistics Canada numbers for the seasonally adjusted aggregates are as shown in table "Monetary Aggregates and SA numbers".

Monetary Aggregates and SA numbers

	Monetary Aggregates			
	Cansim	Cansim II	SA Cansim	SA Cansim II
M1 total	B2033	V37200	B1627	V37124
M1 gross	B2054	V37252	B1642	V37141
M1+	B2060	V37258	B1651	V37151
M1++	B2061	V37259	B1652	V37152
M2	B2031	V37198	B1630	V37128
M2+	B2037	V37216	B1633	V37131
M2++	B2059	V37257	B1650	V37150
M3	B2030	V37197	B1628	V37125

Source

Components are from the *Bank of Canada.* Population and consumer price index (CPI) data from *Statistics Canada* are used to calculate `realM1` and `percapitaM1`.

References

Gilbert, P.D. and L. Pichette (2003) Dynamic Factor Analysis for Measuring Money. Bank of Canada Working Paper 2003-21. http://www.bank-banque-canada.ca/pgilbert.

Kottaras, J. (2003) The Construction of Continuity-Adjusted Monetary Aggregate Components. Bank of Canada Working Paper 2003-22. http://www.bank-banque-canada.ca

See Also

CanadianCreditData, tframein the dse bundle of packages

Examples

```
 require("tframe")
############ Calculations to get new monetary aggregates ######
 data("CanadianMoneyData", package="CDNmoney")

M1p  <- tframed(V37173 + MV41552775 + MV41552777 + NetNonbankCheq + adjM1p, names="M1+ (V37258)")

M1pp <-  tframed(CUadj + M1p  + MV36818 + MV36828 + adjM1pp + NonbankNonCheq, names="gross M1++ (V37259)")

M2  <-  tframed(V37173 + MV41552775  + MV41552777 + MV36818 + MV36828 + MV36823, names="gross M2 (V41552786)")

M2p  <-  tframed(M2    + NetNonbankCheq + NonbankNonCheq + NonbankTerm +
                         + V37243 + MV37244 + V37245, names="gross M2+ (V41552788)")

M2pp <-  tframed(M2p   + V37255 + V37256, names="gross M2++ (V41552790)")

M3   <-  tframed(M2    + MV36830 + MV36876, names="gross M3 (V41552785)")

######### Plot aggregates #####

 tfplot(tbind(currencyPerCapita, currencyReal))
 tfplot(tbind(M1p, M1pp))
 tfplot(tbind(M2, M2p, M2pp))
 tfplot(M3)

############ Calculations to get old monetary aggregates ######
 data("CanadianMoneyData.asof.3Mar2006", package="CDNmoney")

 #M1gross <-  tframed(MB2001 + MB486 + MB487p + TMLinterbank, names="gross M1 (B2054)")
 M1p     <-  tframed(MB2001 + MB486 + MB487p + MB452 + MB452adj + MB472
   + NonbankCheq, names="M1+ (B2060)")
 M1pp    <-  tframed(CUadj + M1p   + MB453 + MB473 + MB473adj + NonbankNonCheq,
    names="M1++ (B2061)")
 M2      <-  tframed(M1total + MB472 + MB473 + MB452 + MB453 + MB454, names="M2 (B2031)")
 M2p     <-  tframed(M2    + NonbankCheq + NonbankNonCheq + NonbankTerm
                         + MB2046 + MB2047 + MB2048, names="M2+ (B2037)")
 M2pp    <-  tframed(M2p   + MB2057 + MB2058, names="M2++ (B2059)")
 M3      <-  tframed(M2    + MB475  + MB482, names="M3 (B2030)")

######### Calculations of cpi and pop ######

 #  M1real = M1total * 100/p100000  (CPI - p20 Bank of Canada Weekly Financial
 #  Statistics, June 1992=100)
 #  M1PerCapita = M1total * 100 /(pop * p100000) # using a quarterly population
 #       series converted to monthly using spline.

 # Since M1 was discontinued, this was change to use currency, which is longer.
 # cpi <- 100 * M1total / M1real
```

```
 # seriesNames(cpi) <- "CPI"

 # popm <- M1total / M1PerCapita
 # seriesNames(popm) <- "Population of Canada"

 # cpi <- 100 * M1p / M1pReal
 # seriesNames(cpi) <- "CPI"

 cpi <- 100 * V37173 / currencyReal
 seriesNames(cpi) <- "CPI"

 # popm <- M1p / M1pPerCapita
 # seriesNames(popm) <- "Population of Canada"

 popm <- V37173 / currencyPerCapita
 seriesNames(popm) <- "Population of Canada"

######### Plot aggregates #####

 #tfplot(tbind(M1total, M1gross, M1p, M1pp))
 tfplot(tbind(M1p, M1pp))
 tfplot(tbind(M2, M2p, M2pp))
 tfplot(M3)

#### Calculations to get components as used in Gilbert and Pichette ####
 data("CanadianMoneyData.asof.3Mar2006", package="CDNmoney")

z <-tfwindow(tframed(tbind(
     MB2001,
     MB486 + MB452 ,
     NonbankCheq,
     MB472 + MB473 + MB487p,
     MB475,
     NonbankNonCheq + MB454 + NonbankTerm + MB2046 + MB2047 + MB2048 +
            MB2057 + MB2058 + MB482 + MB453),
     names=c("currency", "personal cheq.", "NonbankCheq",
              "N-P demand & notice", "N-P term", "Investment")
   ), start=c(1986,1), end=c(2002,4))

MBcomponents <- 1e8 * z /matrix(tfwindow(popm * cpi, start=c(1986,1),
                               end=c(2002,4)),196, 6)
# 1e8 * gives real $ per person
#(MB numbers in millions, CPI in fraction*100, popm in persons.)

tfplot(MBcomponents, graphs.per.page=3)
```

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