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Canada

Statistique
Canada

Re-examining the approach to data suppression in the Canadian Economic Accounts

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Telling Canada's
story in numbers



Re-examining our approach

- Motivation
 - Data users of economic statistics are increasingly demanding access to very detailed aggregate economic statistics.
 - To stay relevant while minimizing response burden, Statistics Canada continuously improves the methods and data sources used in the process of statistical compilation. The approach to data suppression must take into account these latest methods and data sources, hence the need for periodical reviews.

Re-examining our approach

Why re-examine our approach

- Balancing two risks:
 - **Relevance:** *Data suppression reduces the relevance of Statistics Canada and the loss of relevance is a substantial risk to the agency.*
 - **Trust:** *Releasing or perceiving to release confidential information breaks the trust relationship between the Statistical Agency and the respondent.*
 - **The basic question we sought to answer was whether we could develop a new approach that substantially reduces the risk to our relevance and has minimal or no impact on the risk to our trust relationship.**

Re-examining our approach – A few key points about ‘Confidentiality Rules’

- Confidentiality Rules are not written in legislation – they are our own constructs / best practices implemented to comply to the legislation.
- While the confidentiality rules may have been systematized and embedded in methods, at their core they reflect our judgement / risk tolerance and are constructed around decisions made in the past.
 - *e.g. if a firm contributes more than $X\%$ to an aggregate measure the data are suppressed – X is an arbitrary number.*



Re-examining our approach – Canada's *Statistics Act*

- The confidentiality provisions that Statistics Canada must adhere to are found in section 17 of Canada's *Statistics Act* which states:
 - ***“no person who has been sworn under section 6 shall disclose or knowingly cause to be disclosed, by any means, any information obtained under this Act in such a manner that it is possible from the disclosure to relate the particulars obtained from any individual return to any identifiable individual person, business or organization.”***



Re-examining our approach – current interpretation

- The foundation of our current interpretation of section 17 of the *Statistics Act* dates back to a 1970's memo from the Chief Statistician:
 - We must suppress an aggregate statistics if there is only a single firm that reported results or if there is a dominate firm among a group of firms.
 - We must suppress an aggregate statistic if the aggregate statistic can be related to a firm even if the data is not the particulars obtained from the firm or if the data represents a statistical construct rather than a reported observation.

Towards a new interpretation: **Can/Should I release this information?**

Integrated Business Statistics Program (IBSP)

2013 Annual Retail Trade Survey

➤ ***“no person who has been sworn under section 6 shall disclose or knowingly cause to be disclosed, by any means, any information obtained under this Act in such a manner that it is possible from the disclosure to relate the particulars obtained from any individual return to any identifiable individual person, business or organization.”***

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Selon nos dossiers votre langue de préférence est l'anglais, si vous préférez recevoir ce document en français, veuillez nous appeler au numéro sans frais suivant : 1-800-858-7921.

Please verify the information for this business's contact person and correct where needed.

B00101	Legal name	ABC Inc
B00102	Operating name	ABC Inc
B00109	First name	John
B00111	Last name	Smith
B00112	Title	President
B00103	Address (number and street)	123 Hockey Stick Lane
B00104	City	Ottawa
B00105	Province, territory or state	Ontario
B00106	Postal code or zip code	K1K0Z6
B00107	Country	Canada

What was this business's revenue from each of the following sources?

- Sales of products and services
Exclude: GST/HST, PST and QST

'000 CAN\$

F43008

\$,000

F45801



Towards a new interpretation: **Can/Should I release this information?**

Integrated Business Statistics Program (IBSP)

2013 Annual Retail Trade Survey

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1. Statistics Canada uses the **North American Industrial Classification System** to classify the activities of each business. According to our records, this business's **main activity** is classified as:

Sporting Goods Retailing

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Please verify the information for this business's contact person and correct where needed.

B00101	Legal name	<input type="text"/>
B00102	Operating name	<input type="text"/>
B00109	First name	<input type="text"/>
B00111	Last name	<input type="text"/>
B00112	Title	<input type="text"/>
B00103	Address (number and street)	<input type="text"/>
B00104	City	<input type="text"/>
B00105	Province, territory or state	<input type="text"/>
B00106	Postal code or zip code	<input type="text"/>
B00107	Country	<input type="text"/>

What was this business's revenue from each of the following sources?

1. Sales of products and services
Exclude: GST/HST, PST and QST

'000 CAN\$

F43008

\$

500

,000

F45801



Towards a new interpretation: Can/Should I release this information?

Integrated Business Statistics Program (IBSP)

2013 Annual Retail Trade Survey

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1. Statistics Canada uses the **North American Industrial Classification System** to classify the activities of each business. According to our records, this business's **main activity** is classified as:

Sporting Goods Retailing

What was this business's revenue from each of the following sources?

1. ~~Sales of products and services~~ **Gross Value Added**
~~Exclude: GST/HST, PST and QST~~

'000 CAN\$
F43008
\$ **316** ,000
F35801

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Please verify the information for this business's contact person and correct where needed.

B00101 Legal name

B00102 Operating name

B00109 First name

B00111 Last name

B00112 Title

B00103 Address (number and street)

B00104 City

B00105 Province, territory or state Postal code or zip code

✓ The decision as to whether we release this information depends, in part on how we interpret the word **particulars**.

Towards a new interpretation: Can/Should I release this information?

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Please verify the business or organization name, contact person and address for this questionnaire and correct where needed.

Legal name **ABC Manufacturing**

Operating name **Hockey Stick Inc**

First name **Jim**

Last name **Tebrake**

1. Statistics Canada uses the **North American Industrial Classification System** to classify the activities of each business. According to our records, this business's **main activity** is classified as:

Manufacturing

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Please verify the business or organization name, contact person and address for this questionnaire and correct where needed.

Legal name **ONP Wholesaling**

Operating name **Hockey Stick Wholesaling**

First name **Tim**

Last name **Tebrake**

1. Statistics Canada uses the **North American Industrial Classification System** to classify the activities of each business. According to our records, this business's **main activity** is classified as:

Wholesaling

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Please verify the business or organization name, contact person and address for this questionnaire and correct where needed.

Legal name **XYZ Retailing**

Operating name **Slap Shot Sales**

First name **Kim**

Last name **Tebrake**

1. Statistics Canada uses the **North American Industrial Classification System** to classify the activities of each business. According to our records, this business's **main activity** is classified as:

Retailing

MACHINERY AND EQUIPMENT		
Asset code	New Assets including financial leases (include used fixed assets if imported)	Purchase Used Capital Assets
Columns (1)	(2)	(3)
a) Computers	50 ,000	
b) Radar System	,000	
c)	,000	
d)	,000	

MACHINERY AND EQUIPMENT		
Asset code	New Assets including financial leases (include used fixed assets if imported)	Purchase Used Capital Assets
Columns (1)	(2)	(3)
a) Computers	,000	
b) Radar System	,000	
c)	,000	
d)	,000	

MACHINERY AND EQUIPMENT		
Asset code	New Assets including financial leases (include used fixed assets if imported)	Purchase Used Capital Assets
Columns (1)	(2)	(3)
a) Computers	,000	
b) Radar System	25 ,000	
c)	,000	
d)	,000	



Towards a new interpretation: Can/Should I release this information?

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Legal name

Operating name

First name

Last name

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Manufacturing

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Please verify the business or organization name, contact person and address for this questionnaire and correct where needed.

Legal name

Operating name

First name

Last name

1. Statistics Canada uses the North American Industrial Classification System to classify the activities of each business. According to our records, this business's main activity is classified as:

Wholesaling

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Please verify the business or organization name, contact person and address for this questionnaire and correct where needed.

Legal name

Operating name

First name

Last name

1. Statistics Canada uses the North American Industrial Classification System to classify the activities of each business. According to our records, this business's main activity is classified as:

Retailing

MACHINERY AND EQUIPMENT		
Asset code	New Assets including financial leases (include used fixed assets if imported)	Purchase Used Capital Assets
Columns (1)	(2)	(3)
a) Computers	50 ,000	
b) Radar System	,000	
c)	,000	
d)	,000	

MACHINERY AND EQUIPMENT		
Asset code	New Assets including financial leases (include used fixed assets if imported)	Purchase Used Capital Assets
Columns (1)	(2)	(3)
a) Computers	,000	
b) Radar System	,000	
c)	,000	
d)	,000	

MACHINERY AND EQUIPMENT		
Asset code	New Assets including financial leases (include used fixed assets if imported)	Purchase Used Capital Assets
Columns (1)	(2)	(3)
a) Computers	,000	
b) Radar System	25 ,000	
c)	,000	
d)	,000	



Towards a new interpretation: **Can/Should I release this information?**

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Please verify the business or organization name, contact person and address for this questionnaire and correct where needed.

Legal name

Operating name

First name

Last name

1. Statistics Canada uses the North American Industrial Classification System to classify the activities of each business. According to our records, this business's main activity is classified as:

All Industries

MACHINERY AND EQUIPMENT		
Asset code Columns (1)	New Assets including financial leases (include used fixed assets if imported) (2)	Purchase Used Capital Assets (3)
a) Computers	50 ,000	
b) Radar System	25 ,000	
c)	,000	
d)	,000	

- ✓ Under the old approach these data would be suppressed because only one firm reported data for each asset.
- ✓ A new approach could be to consider the likelihood of firms that could report the data. In this case all three firms could have reported the investment – publishing this detail does not disclose who invested in the particular asset.

Re-examining our approach – an updated interpretation of the *Statistics Act*

- An updated Interpretation of section 17 for the macroeconomic accounts
 - ***“no person who has been sworn under section 6 shall disclose or knowingly cause to be disclosed, by any means, any information obtained under this Act in such a manner that it is possible from the disclosure to relate the particulars obtained from any individual return to any identifiable individual person, business or organization.”***
 - ✓ We can release data that could be related to a business provided it is not the particulars we obtained from any individual return (*i.e. we can release GDP but not revenue*).
 - ✓ We can release the particulars we obtained from any individual return provided there is no way, through the release of the information, to relate the particulars to any identifiable business (*i.e. we can release the particulars provided by a firm provided there is no way to trace those particulars back to the firm – many other firms can engage in the activity*).

Re-examining our approach – An decision making process rather than rules

- At Statistics Canada a data release decision tree has been developed that encapsulates this new approach. This decision tree can be used by programs to determine which cells can be released and which cells need to be suppressed for reasons of confidentiality.
- Key Principles of the Data Release Decision Tree
 - Adhere to section 17 of the *Statistics Act*
 - Clear
 - Comprehensive
 - Consistently applied (through time and across programs)
 - Efficient and Gated
 - Based on an assessment of risk



The new approach in practice Foreign Direct Investment Statistics



Foreign Direct Investment – Product

CANSIM Table	Title	Geography	Industry	Counter-party Geography	Variables	Frequency
376-0051	International investment position, Canadian direct investment abroad and foreign direct investment in Canada, by country, annual (Dollars)	Canada	N/A	177 Countries or regions	2 items: Foreign Direct Investment, Canadian direct investment abroad	Annual (Latest year 2015)
376-0052	International investment position, Canadian direct investment abroad and foreign direct investment in Canada, by North American Industry Classification System (NAICS) and region, annual (Dollars)	Canada	41 NAICS industry groups	6 countries or regions	2 items: Foreign Direct Investment, Canadian direct investment abroad	Annual (Latest year 2015)



Previous data suppression – FDI (CANSIM Table 376-0051)

Selected items [\[Add/Remove data\]](#)

Geography = Canada

Canadian and foreign direct investment	Countries or regions	2010	2011	2012	2013	2014
Canadian direct investment abroad ¹	All countries	637,285	675,020	704,335	761,550	828,812 ^P
	Bahamas	14,511	x	x	x	x
	Cayman Islands	23,970	32,996	28,735	32,288	36,598 ^P
	Haiti	x	x	x	x	x
	Russian Federation	588	3,451	x	x	2,080 ^P
Foreign direct investment in Canada ²	All countries	592,406	603,455	633,778	691,942	732,263 ^P
	Bahamas	214	x	x	x	x
	Cayman Islands	x	338	598	1,115	2,692 ^P
	Haiti
	Russian Federation	1,249	x	x	1,220	x

[Back to original table](#)

Symbol legend:

- ^P Preliminary
- x Suppressed to meet the confidentiality requirements of the Statistics Act
- .. Not available



Previous data suppression – FDI (CANSIM Table 376-0052)

Selected items [[Add/Remove data](#)]

Geography = Canada

North American Industry Classification System (NAICS)¹ = Mining and oil and gas extraction [21]

Canadian and foreign direct investment = Foreign direct investment in Canada

Countries or regions	2010	2011	2012	2013	2014
Total, all countries	111,955	118,214	116,872	141,171	152,071 ^P
United States	63,060	69,241	57,389	70,099	68,311 ^P
Other America	x	x	x	x	x
Asia and Oceania ¹⁰	x	27,055	24,158	24,368	x
Europe ¹¹	3,707	x	12,813	24,737	27,466 ^P
Other countries ¹²	x	x	x	x	x

[Back to original table](#)

Symbol legend:

- ^P Preliminary
- x Suppressed to meet the confidentiality requirements of the Statistics Act

New data suppression – Canadian FDI Abroad by Region (CANSIM Table 376-0051)

- Data were released in May 2016 with the following suppression applied.

	2012	2013	2014	2015
FDI Flow	704,335	778,371	825,303	1,0005,227
Number of Data Cells	171	171	171	171
Previously Suppressed Cells	65	71	77	77
Current Suppression	11	13	23	23
New information	54	58	54	54

New data suppression – FDI in Canada by Region (CANSIM Table 376-0051)

- Data were released in May 2016 with the following suppression applied.

	2012	2013	2014	2015
FDI Flow	633,778	688,873	719,574	767,675
Number of Data Cells	171	171	171	171
Previously Suppressed Cells	74	44	44	44
Current Suppression	0	2	4	4
New information	74	42	40	40

New data suppression – Canadian FDI Abroad by Industry and Region (CANSIM Table 376-0052)

- Data were released in May 2016 with the following suppression applied.

	2012	2013	2014	2015
FDI Flow	704,335	778,371	825,303	1,0005,227
Number of Data Cells	241	241	241	241
Previously Suppressed Cells	99	84	90	90
Current Suppression	4	10	6	6
New information	95	74	84	84

New data suppression – FDI in Canada by Industry and Region (CANSIM Table 376-0051)

- Data were released in May 2016 with the following suppression applied

	2012	2013	2014	2015
FDI Flow	633,778	688,873	719,574	767,675
Number of Data Cells	241	241	241	241
Previously Suppressed Cells	107	91	99	99
Current Suppression	9	4	11	11
New information	98	87	88	88

Programs reviewed to date and next steps

- The Canadian macroeconomic accounts are continuing to apply this new approach on a program by program basis when the timing makes sense and after a complete evaluation has taken place.
- Programs reviewed to date and due for review include:
 - ✓ Canadian National, Provincial and Territorial Supply and Use Tables (November 2016)
 - ✓ Canadian Capital Stock consumption of fixed capital (November 2016)
 - ✓ Outward Foreign Affiliate Statistics Program (September 2016)
 - ✓ Inward Foreign Affiliate Statistics Program (December 2016)
 - ✓ Trade by Exporter Characteristics (October 2016)
 - ✓ Trade by Importer Characteristics (Summer 2017)



Communication Plan and Feedback

- Communication
 - Developed media lines and a backgrounder with the following messages:
 - New approach
 - Will be implemented gradually
 - The new approach continues to respect the confidentiality provisions of the *Statistics Act*.
 - The approach responds to users' demands to increase the amount of data in the public domain while ensuring continued respect for the confidentiality requirements of the *Statistics Act*.
 - Reviewed and updated messaging to respondents (e.g. reviewed messaging on the FDI questionnaire to respondents) to make sure it was consistent with our new approach to data suppression.
- Feedback
 - Up to this point feedback has been positive from data users.
 - We have not received any feedback from respondents