REASONS FOR DIFFERENCES BETWEEN SIC-BASED ESTIMATES AND NAICS –BASED ESTIMATES FOR THE MONTHLY WHOLESALE AND RETAIL TRADE SURVEY (MWRTS)

1. BACKGROUND

With the January 1994 signing of the North American Free Trade Agreement between Canada, the United States and Mexico, the 1997 North American Industry Classification System (NAICS) was developed by the statistical agencies of the signatory nations to fulfill the need for a common classification of economic activity. The goal of this classification system is to allow for a better comparison of industrial statistics between the three countries. There was a limited revision of the industries in 2002. NAICS divides the economy into twenty sectors, (compared to eighteen under the 1980 Standard Industrial Classification (SIC80)), with areas of special emphasis on new and emerging industries, service industries in general, and on industries engaged in the production of advanced technologies. Five sectors are largely goods-producing and fifteen are entirely service-producing industries.

Under the 2002 NAICS, the retail trade and wholesale trade sectors in Canada are classified according to 57 and 68 detailed industries at the six-digit level, respectively. Beginning with the June 2004 release of the April 2004 estimates, this classification will be reflected in the estimates from the Monthly Wholesale and Retail Trade Survey (MWRTS). Retailers are classified under NAICS sectors 44 and 45 inclusive and Wholesalers under NAICS sector 41. Previously, under the SIC80, there were 71 Retail SIC's and 76 Wholesale SIC's at a four-digit level of detail.

NAICS Definition of Wholesale Trade

The wholesale trade sector comprises establishments primarily engaged in wholesaling merchandise and providing related logistics, marketing and support services. The wholesale process is generally an intermediate step in the distribution of merchandise; many wholesalers are therefore organized to sell merchandise in large quantities to retailers and business and institutional clients. However, some wholesalers, in particular those that supply non-consumer capital goods, sell merchandise in single units to final users.

This sector recognizes two main types of wholesalers, that is, wholesale merchants and wholesale agents and brokers:

Wholesale merchants buy and sell merchandise on their own account, that is they take title to the goods they sell. In addition to the sale of goods, they may provide, or arrange for the provision of, logistics, marketing and support services, such as packaging and labeling, inventory management, shipping, handling of warranty claims, in-store or co-op promotions and product training. Dealers of machinery and equipment, such as dealers of farm machinery and heavy duty trucks, also fall within this category.

Wholesale agents and brokers buy and sell merchandise owned by others on a fee or commission basis. They do not take title to the goods they buy or sell, and they generally operate at or from an office location.

NAICS Definition of Retail Trade

The retail trade sector comprises establishments primarily engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The retailing process is the final step in the distribution of merchandise; retailers are therefore organized to sell merchandise in small quantities to the general public. The MWRTS covers store retailers in Canada. Store retailers operate fixed point-of-sale locations, located and designed to attract a high volume of walk-in customers. They typically sell merchandise to the general public for personal or household consumption, but some also serve business and institutional clients. These include establishments such as office supplies stores, computer and software stores, gasoline stations, building material dealers, plumbing supplies stores and electrical supplies stores.

In addition to selling merchandise, some types of store retailers are also engaged in the provision of after-sales services, such as repair and installation. For example, new automobile dealers, electronic and appliance stores and musical instrument and supplies stores often provide repair services, while floor covering stores and window treatment stores often provide installation services. As a general rule, establishments engaged in retailing merchandise and providing after-sales services are classified in the retail sector.

2. SOME IMPORTANT DIFFERENCES BETWEEN THE SIC80-BASED AND NAICS-BASED MWRTS

A. Concepts and definitions

NAICS is based on a production-oriented, or supply-based conceptual framework in that establishments are grouped into industries according to similarity in the production processes used to produce goods and services. Previously, under the SIC 80 classification system, the determination for inclusion within a particular sector was primarily based on the activity in which an establishment was engaged and the class of customer to which products were sold. Under NAICS, that determination is based primarily on the material and service, skills and technology used in the "production" of the sale of goods, with "class of customer" of much lesser consideration.

Though some SIC 80 classes were simply split or combined under NAICS, there are particular activities from different SIC 80 industries that were removed, transferred to other sectors, or recombined into new NAICS industries. For example, the General Automotive Repair companies, previously classified under the Wholesale Trucks and Buses industry, moved to the Services sector; Home Fuel Dealers, previously under Wholesale Petroleum Products, as well as computer and software stores selling primarily to non-households moved to the Retail sector. Also, companies in Textile and Fabric Finishing, previously classified in the Wholesale Piece Goods industry, moved from Wholesale to the Manufacturing sector.

Trade Groups are defined for Wholesale Trade (NAICS Sector 41) and for Retail Trade (NAICS Sectors 44-45) and are special aggregations of the NAICS industries within those sectors. The groupings reflect the needs of users and provide greater continuity of time series. Trade Groups, in various forms, have existed since the 1980's.

Trade Groups each comprise one or more entire 5-digit (hence also 6-digit) NAICS classes. Trade Groups are mutually exclusive and exhaustive of the classes within the Wholesale and Retail Trade Sectors of NAICS. Under the SIC classification there were 11 Trade Group categories within the wholesale sector and 16 within retail. Under NAICS, the number of Trade Groups increased to 15 and 19 for wholesale and retail trade, respectively.

In Retail trade, according to an estimation for 1998-2001, 96.3% of SIC80 retail sales remained within the retail sector under the NAICS classification, with 3.7% transferred to the manufacturing and services sectors. Similarly, 94.3% of wholesale sales within the SIC80 classification remained in the wholesale sector under NAICS, with 4.2% transferred to retail and 1.5% moving to other sectors. It is emphasized that at the more refined Trade Group level at which data are published within each sector, the number of changes and movements among the SIC-based and NAICS-based trade groups are more frequent and varied.

As a result, data coded to one classification cannot automatically be converted to the other when attempting year over year comparisons.

B. Definitions of the variables measured:

(1) The SIC 80 **"Sales and Receipts"** and NAICS **"Sales, Commissions and Other Receipts"** are conceptually the same. The revised wording is a clarification to avoid ambiguity.

(2) "Inventories" requested under NAICS differ from the value requested under SIC 80, due to the inclusion under NAICS, of inventories owned and held within or outside Canada. Under SIC 80, inventories owned but held abroad were excluded from the reported value.

(3) "Trading Location" is defined the same on both the SIC80 and NAICS basis.

C. Sampling Differences

Some important sampling strategy differences exist between the SIC80 MWRTS and the NAICS-based MWRTS, which must be borne in mind during comparisons between the two.

(1) Population

The SIC-based MWRTS surveyed employer-only businesses. Non-employer businesses and those below a sales threshold of $25,000 were excluded. An adjustment factor for non-employers derived from the analysis of other sources of data was applied to the retail monthly estimates to account for these businesses. No non-employer adjustment was applied to the wholesale estimates. The redesigned MWRTS now includes both employer and non-employer businesses operating in Canada. Both the SIC-based and NAICS-based surveys continue to exclude ancillary units, non-store retailing (NAICS 454), as well as Oilseed and Grain Wholesaler-Distributors (NAICS 411120), Petroleum Product Wholesaler-Distributors (NAICS 412110) and Wholesale Agents & Brokers (NAICS 4191).

(2) Sampling Units

The previous survey design was based on the statistical company, having at least one SIC80 retail location or wholesale establishment. The redesigned survey is based on a cluster of establishments which groups together the establishments of an enterprise which are in the same Trade Group (TG) and Geography (GEO).

(3) Size Stratum Thresholds

The previous survey design subdivided the population in three sub-strata, based on size of revenue: a take-all stratum (census) for complex businesses as well as all businesses in a trade group/geography combination whose revenue exceeded a certain threshold ; and two take-some (sampled) strata for small and medium sized businesses in terms of revenue. Under the redesigned survey a non-surveyed portion (no sample) has been added, consisting of clusters of establishments below established revenue thresholds. The non-surveyed portion is estimated using administrative data. The assignment of clusters of establishments to a particular stratum is determined by its revenue size in relation to the stratum thresholds. Exceptions to this are clusters that belong to multi-cluster enterprises, that is, enterprises with establishments in more than one trade group or geographic region, which are designated to the take-all stratum.

(4) Industrial Classification

The previous SIC80-based MWRTS for Wholesale trade was classified into 11 stratification and dissemination groups. The NAICS-based MWRTS is classified into 16 stratification and 15 dissemination trade groups, two fewer than those on the Annual Wholesale Trade Survey, namely Petroleum Products and Agents & Brokers, which are not surveyed by the MWRTS. The Farm Products trade group is disseminated exclusive of Oilseed and Grain Wholesaler-Distributors for the MWRTS but included on the Annual Wholesale Trade Survey. Table 2.1 provides a description of these trade groups.

Table 2.1 – Wholesale Trade Groups

Publication Trade Groups	Stratification Trade Groups	NAICS Codes	Description
011	011	41111, 41113, 41119	Farm products
030	030	4131, 41321	Food products
040	040	41322, 4133	Alcohol and tobacco
050	050	4141	Apparel
060	061	4142, 4143	Household products
	062	4144, 41452	Personal products
070	070	41451	Pharmaceuticals
080	080	4151	Motor vehicles
090	090	4152, 4153	Motor vehicle parts and accessories
100	100	4161, 41631, 41633, 41634, 41639	Building supplies
110	110	4162	Metal products
120	120	41632	Lumber and millwork
130	130	4171, 4172, 41799	Machinery and equipment
140	140	4173	Computers and other electronic equipment
150	150	41791, 41792, 41793	Office and professional equipment
160	160	418	Other products
999	991	41112	Oilseed and grain (not covered)
	992	412	Petroleum products (not covered)
	993	419	Agents and brokers (not covered)

Notes:
- Trade Groups starting with '9' correspond to the wholesale NAICS codes covered only by the Annual Wholesale Trade Survey

Under the 1980 SIC there were 18 stratification trade groups and 16 dissemination trade groups for Retail trade in the MWRTS. The retail NAICS codes that are covered by the MWRTS are aggregated into 24 stratification trade groups and then into 19 dissemination trade groups. Table 2.2 shows the composition of these trade groups.

Table 2.2 – Retail Trade Groups

Publication Trade Groups	Stratification Trade Groups	NAICS Codes	Description
010	010	44111	New car dealers
020	020	44112, 4412, 4413	Used and recreational motor vehicle and parts dealers
030	030	4421	Furniture stores
040	040	4422	Home furnishings stores
050	050	44312	Computer and software stores
060	060	44311, 44313	Home electronics and appliance stores
070	070	44411, 44413	Home centres and hardware stores
080	080	44412, 44419, 4442	Specialized building materials and garden stores
090	090	44511	Supermarkets
100	101	44512	Convenience stores
	102	4452	Specialty food stores
110	110	4453	Beer, wine and liquor stores
120	121	44611	Pharmacies and drug stores
	122	44612, 44613, 44619	Other health and personal care stores
130	130	447	Gasoline stations
140	141	44811	Men's clothing stores
	142	44812	Women's clothing stores
	143	44813, 44814, 44819	Other clothing stores
150	151	4482	Shoe stores
	152	44815, 4483	Clothing accessories, jewellery, luggage and leather goods stores
160	160	451	Sporting goods, hobby, book and music stores
170	170	4521	Department stores
180	180	4529	Other general merchandise stores
190	190	453	Miscellaneous store retailers
999	991	4541	Electronic shopping and mail-order houses (not covered)
	992	4542	Vending machine operators (not covered)
	993	45431	Fuel dealers (not covered)
	994	45439	Other direct selling establishments (not covered)

Notes:
- Trade Groups starting with '9' correspond to the non-covered retail NAICS codes

(5) Geographical Classification

Under the SIC80-based survey, (the design of which pre-dated the creation of Nunavut in 1999), Retail trade was classified for stratification purposes into 10 provinces, 2 territories and four Census Metropolitan Areas (CMA's) - Montreal, Toronto, Winnipeg and Vancouver. For dissemination purposes, the Monthly data was classified into 10 provinces and 3 territories (13 geographic regions) and the four CMA's. Wholesale trade was classified under 10 provinces and 2 territories (12 geographic regions) for stratification purposes and 10 provinces and 3 territories (13 geographic regions) for dissemination purposes.

Under the redesigned MWRTS, Retail trade is classified into ten provinces, three territories and the Montreal, Toronto and Vancouver CMA's for stratification and dissemination purposes. Wholesale trade is classified into 10 provinces and 3 territories for both stratification and dissemination purposes.

(6) Quality

The SIC-based MWRTS had the following target coefficients of variation:

	Retail		Wholesale	
National level	1.2%		1.7%	
Dissemination geographic region's		2.5%		3.4%
Dissemination trade groups	3.5%		4.3%	

Under the redesigned NAICS-based MWRTS, the target coefficients of variation are the same for both Retail and Wholesale:

National level	1.2%	
Dissemination geographic regions		2.5%
Priority Dissemination trade groups	2.5%	
Non-Priority Dissemination trade groups	3.5%	

(7) Over-sampling

Under the SIC80-based MWRTS, over-sampling was done to account for deaths. Under the redesigned NAICS-based MWRTS, over-sampling is done to account for deaths, misclassifications and non-response.

3. REASONS FOR DIFFERENCES BETWEEN SIC-BASED MONTHLY (MWRTS) ESTIMATES AND NAICS-BASED ANNUAL SURVEY ESTIMATES

There is no benchmarking between the estimates produced from the MWRTS and the annual surveys covering the wholesale and retail trade sectors (the Annual Wholesale Trade Survey, the Annual Retail Chain Survey and the Annual Retail Store Survey). The following is a guide to explaining reasons for differences between the two survey programs that need to be taken into account when using the two sets of estimates.

a. Different Samples

The annual wholesale and retail surveys and the MWRTS employ different sampling strategies, which may result in different weights being assigned to individual records that are common between the two surveys. Random sample selection is done for both surveys; however the strata thresholds are different for each survey. The resulting different samples and different weights mean that no direct reconciliation of results is possible.

Chain stores (a retail chain is defined as an organization operating four or more outlets in the same industry class under the same legal ownership at any time during the survey year) included on the Business Register are sampled on the Monthly Retail Trade Survey, whereas a census of chain stores is included on the Annual Retail Chain survey.

b. Coverage Differences

Both surveys draw their respective populations from the Business Register. Chain stores that are not yet included on the Business Register are added to the Annual Retail Chain Survey, based on private sector directories of chain stores.

c. Calendarization

Respondents for the annual surveys covering the wholesale and retail trade sectors are asked to report one annual total for their normal fiscal year ending within the survey reference year. Many respondents therefore report their financial data on an April to March basis, or in the case of retail trade a February to January fiscal year basis. The data from these annual surveys are not calendarized. The MWRTS annual data are based on the summation of twelve monthly totals, on a calendar year basis.

d. Period of Collection and Data Reliability

By virtue of having to collect twelve data points, there is a higher chance of reporting error, or greater necessity for imputation, on the MWRTS, compared to the annual surveys. Since the annual data are reported only once, for a fiscal year period, likely from year-end financial statements used for income tax purposes, annual reported data may be more reliable than that of the MWRTS survey data. On the other hand, more frequent contact with respondents on the Monthly survey and the collection of only two variables, Sales and Inventory, has resulted in higher response rates for the MWRTS.

e. Different Timing for Data Validation

There is a regular program of annual revisions to the MWRTS data. Cumulative revisions for each of the two last calendar years are released with the February estimates immediately following the last reference year. For example, revisions were made to the 2001 and 2002 MWRTS data with the release for reference month February, 2003. Meanwhile, 2001 data for the annual wholesale and retail trade surveys was just being finalized. There is a potential that the finalization of the 2001 annual estimates could suggest corrections to the MWRTS estimates that cannot be made since the time frame for revisions has lapsed.

f. Differences in the Collection of Revenue Data

The annual surveys collect data on operating revenue at a detailed level (e.g. sales of goods purchased for resale, net of returns and discounts; labour revenue from repair and maintenance; commission revenue and fees earned from buying and selling goods and services on account of others; revenue from rental and leasing; sales of goods manufactured as a secondary activity; all other operating revenue.) The MWRTS collects this information at an aggregate level, which may lead to reporting errors from the omission of revenues.

g. Caution in the Interpretation of Provincial/Territorial Operating Revenue in the Wholesale Trade Sector

Provincial/territorial comparisons between the Monthly Wholesale Trade Survey estimates and the Annual Wholesale Trade Survey estimates must take into account the exclusion of the following industries from the Monthly survey estimates:

Oilseed and Grain Wholesaler-Distributors (411120)
Petroleum Products Wholesaler-Distributors (412)
Wholesale Agents and Brokers (419)

In some provinces the impact of these exclusions is substantial. The following table shows the impact of these industries on the annual estimates based on the 2001 Annual Wholesale Trade Survey results:

Table 3.1 Differences in Provincial/Territorial Operating Revenues Due to Coverage Differences Between Annual and Monthly Wholesale Trade Surveys, By Province/Territory, 2001

Province/Territory	Operating Revenue ($millions) (MWRTS Coverage)	Operating Revenue ($millions) (Annual Coverage)	Difference
Newfoundland and Labrador	1,927	2,348	21.9%
Prince Edward Island	548	728	32.8%
Nova Scotia	6,203	7,127	14.9%
New Brunswick	5,880	10,576	79.9%
Quebec	86,442	94,816	9.7%
Ontario	190,006	201,921	6.3%
Manitoba	11,228	21,134	88.2%
Saskatchewan	10,521	14,514	38.0%
Alberta	42,583	79,671	87.1%
British Columbia	44,078	47,284	7.3%
Yukon	78	125	59.5%
Northwest Territories	164	275	67.6%
Nunavut	11	12	1.3%
Canada	399,671	480,533	20.2%