

Canadian International Merchandise Trade (No. 2201) **- Error Detection**

Import transactions are captured by The Canadian Border Services Agency (CBSA or Customs). Exports to countries other than the United States are compiled and edited by Statistics Canada from B-13A forms received via the CBSA and from Summary Report and Canadian Automated Export Declarations (CAED) submitted directly to Statistics Canada.

Validation, combination, unit value and 'reasonableness' edits are performed on both imports and exports data during the edit and imputation process. Validation edits use a number of meta data tables which allow the comparison of a reported variable to a list of valid codes. Other validity checks ensure that a reported variable respects the characteristics it is supposed to, e.g., numeric variables are reported as numeric. Records that are found to be invalid are replaced with valid ones, mainly through an automatic imputation process. Combination edits include commodity/country, commodity/trader and commodity/province. Unit value lows and highs are calculated for each Harmonized System¹ (HS) code. Data that fall within this range are accepted while those that fail are rejected. The imports processing system of the International Trade Division (ITD) also performs a number of edits and imputations on imports from the United States on behalf of the United States Census Bureau (USBC).

ITD's imports processing system includes the following specific review modules:

Exclusion: Because STC uses Customs administrative records for purposes of compiling Canada's international trade numbers, the file received from the Canadian Border Services Agency (CBSA or Customs) often includes records which do not constitute international trade. Records that need to be examined to determine if they are non-trade transactions are identified by exclusion rules. Automated exclusion occurs with some rules, while other rules simply flag transactions for manual review and decision.

Selective: High impact records are grouped in this module. A predetermined number of records each month is selected for review. This number comprises both a minimum number of records for each HS chapter and an allocation of records determined by the relative importance of each chapter as determined by the value. The square root of the value is used to lessen the bias of those chapters with very high values.

Pre-Macro Objective: Making use of the micro edits that are performed on the data, aggregates by import HS10 code are calculated. Aggregates that are a combination of a high percentage of potential errors (records with micro edit failures) and high values are candidates for review. All import HS10 code

¹ Harmonized Commodity Description and Coding System

aggregates with some potential errors are ranked by these criteria and a predetermined number of the highest ranked aggregates are selected. From these aggregates a given number of records are identified for review in the Pre-Macro Objective module.

Pre-Macro Subjective: Subject Matter Specialists (SMS) use knowledge gained through experience or research about a commodity (HS10) or importer or other variables to establish some edit criteria in the system. Any record that matches the information provided by the SMS will result in the record being identified for review and correction in this module. In the meantime discussions are initiated with the importer, exporter, broker via CBSA to get the problem resolved at the source.

In addition to transaction-level error detection methods, data are aggregated and subjected to month over month and year over year analysis to detect errors and explain observed movements.