

Commodity Flow Survey Data Users Workshop, November 2010: User Recommendations and Responses from the U.S. DOT and Census Bureau

On November 16, 2010, The Bureau of Transportation Statistics (BTS) sponsored a Commodity Flow Survey (CFS) Data Users Workshop at the Transportation Research Board's Keck Center in Washington, D.C. Approximately 125 data users and stakeholders attended this conference and actively participated in workshops and discussions aimed at improving the next cycle of the survey in 2012. The workshop consisted of three panels:

1. Content and Uses;
2. Scope, Classification, and Geography; and
3. Product Tools and Functionality.

During the workshop, data users suggested ideas for improving the CFS and related data products. Suggestions from the three panels, along with BTS responses and actions to date, are summarized below:

I. Content and Uses

1. Recommendation: Develop truck trip generation rates or some type of freight trip generation, e.g., Origin-Destination (O-D) flow estimates to derive outbound and inbound freight trip rates.

Response: The National Freight Cooperative Research Program (NCFRP) project 25: Freight Trip Generation and Land Use, involves research that will estimate the amount of freight activity generated or attracted by different types of land use for state and local planning studies. This effort will be undertaken utilizing 2007 CFS microdata reviewed at one of the Census Bureau's Research Data Centers. A research proposal to conduct this effort has been approved by the Census Bureau's Center for Economic Studies.

2. Recommendation: Capture additional characteristics on equipment type used to transport commodity (e.g., dry van not requiring temperature control, container, reefer or refrigerated truck for hauling perishables, flatbed, etc.).

Response: The CFS team tested the feasibility of capturing information on whether a shipment is temperature controlled during cognitive testing for the 2012 CFS. The results were positive and a yes/no question of whether the shipment was "temperature controlled" will be asked on the 2012 CFS questionnaire. Additional questions

involving equipment type will not be requested due to space limitations on the CFS questionnaire and the limited ability of respondents to provide information on transportation equipment type.

3. Recommendation: Capture additional information on commodity packaging, such as palletized, roll on/roll off, bulk liquid/bulk solid, drum, containerized, etc.

Response: Much of this type of information can be estimated from the type of the commodity being shipped and the mode used. Unfortunately, CFS respondents have been unable to provide information on containerized shipments in past CFS cycles despite this information being requested in multiple formats.

4. Recommendation: Revise Standard Classification of Transported Goods (SCTG) Code 08 – Alcoholic Beverages to capture (or not capture) denatured ethyl alcohol, such as rubbing alcohol, and biofuels, such as ethanol.

Response: The Standard Classification of Transported Goods' manual for use in the 2012 CFS survey has been updated to clarify the classifications for denatured ethyl alcohol at varying strengths and the alcohols that are intended for use as biofuels. New codes have also been added for biodiesel, and the oils destined for use as biodiesel. Additionally, selected parts of the commodity explanations that have been added to the Statistics Canada version of the SCTG have been adapted by the CFS to facilitate the identification of appropriate codes by the respondents.

5. Recommendation: Capture time-sensitivity or level of service of shipments.

Response: BTS added a prototype item to the questionnaire which was tested by the Census Bureau during the cognitive testing process in Spring/Summer 2011. The feedback during testing helped determine the best phrasing and placement of the question. For the 2012 survey, the information will be collected at the establishment level for all 4 quarters of the year. The 2012 questionnaire asks about "rush deliveries" and gives the respondent three options, same day/overnight, 2-3 business days, and more than 3 business days. "Rush deliveries" are defined as "requiring the purchase of a faster level of service by the shipper or buyer" and "faster service provided by hired carriers, as part of an arrangement."

6. Recommendation: Better classify commodities in the Freight Analysis Framework (FAF) that are moving through an inland port destined to a foreign country.

Response: If a respondent reports that a Mississippi River port is a port of exit (POE) on a Survey Form (Item F, Section I) then that information will be used. However, these POEs are not used in the imputation process as they are less likely, compared to, for example, Savannah, GA or Miami, FL, for such shipments.

7. Recommendation: Provide a table of distance *shipped* by mileage categories (i.e., less than 50 miles, 50-99 miles, etc.) at 3-digit SCTG level.

Response: The CFS currently publishes distance shipped by mileage categories at the 2-digit SCTG level. Once the 2012 CFS data is collected and processed the CFS team will review the quality and feasibility of publishing these data at the 3-digit SCTG level on the American FactFinder website.

8. Recommendation: Provide a metric for *average miles per ton*.

Response: The metric can be derived from the data already collected by the CFS by dividing ton-miles by tons. This will however provide an aggregated metric based on weighted data. Tables containing “average miles per ton” have been produced in the past using alternative definitions by making a “special request” to the Census Bureau through BTS.

9. Recommendation: Capture/publish additional establishment characteristics such as:

- the specific establishment or distribution center that shipped the commodity,
- the type of establishment that received the commodity at the final destination,
- whether the shipment originated as an import, and
- the size of the shipper's establishment in terms of number of employees and volume of sales

Response: The Bureau of Census Business Register, which is used as the frame for sampling the establishments for the CFS, contains information on North American Industry Classification System (NAICS) classification and the estimated annual value of shipments. Starting with the 2007 CFS, publications now include tables of shipment characteristics by establishment type (i.e., NAICS code). Information on “specific” establishments or distribution centers, however, is protected by the Census Bureau’s confidentiality legislation (Title 13) as well as the Internal Revenue Service (IRS Title 26 - Confidentiality and disclosure of returns and return information). As to the type of establishments that are the recipients of the commodities, the shipper establishments, in general, do not keep such information on their shipping records, and cannot provide accurate data on the “type” of the final recipients of their shipments. Regarding shipments that originate as an “import,” some information about the availability of data on the “import” origin of the shipments was collected during the cognitive testing of the 2012 CFS questionnaire. As the results were inconclusive, and due to space limitations, this item will not be added to the 2012 CFS questionnaire.

10. Recommendation: Capture transportation cost characteristics: What is the delivery cost? What is the cost of shipment transportation?

Response: A new establishment-level cost item was pretested on the 2012 CFS form. Unfortunately, similar to previous attempts to capture this information, most shippers did not have this information – especially on a per shipment basis. Also, in the absence of industry standards, the various ways of accounting for costs would likely lead to inaccurate and/or inconsistent estimates.

11. Recommendation: Publish additional distance characteristics: For example, could BTS Mileage Calculation provide *modal miles per shipment by state*, for Census roll-up into Ton-Miles per State?

Response: Not at the present time as mileage traveled in a state is not computed during mileage calculations, only the overall distance from origin to destination by each mode is calculated. Due to cost and time constraints these changes cannot be made to the 2012 CFS mileage calculation software.

12. Question: Is there a seasonality effect by specific commodities (e.g., truck traffic prior to the December holiday season that results in bottlenecks)?

Response: Sample establishments report for only one week in a quarter. Therefore week-to-week changes are more likely to be due to the particular establishments that are assigned to (and respond in) a week rather than any underlying seasonality. While the CFS generally balances the sample of establishments (by NAICS and metropolitan area) across the 13 weeks of a quarter, there is no guarantee that each week will be representative on the remaining classification or analysis variables (commodity, mode, destination, value of shipments, etc.). It may be possible to detect quarter-to-quarter seasonality (since the same set of establishments would be in the sample each quarter) and we will look into this. However there are still difficulties. Many establishments do not respond for all four quarters which, depending on their level of shipment activity, could affect any estimate of seasonality. In addition it is not always possible to distinguish between an establishment reporting no shipments in a week and a non-response. There is also a slow attrition of establishments out of the sample which could confound any seasonality. Establishments that go out of business or cease operations (deaths) are dropped from the sample as they are identified, however no new establishments, beginning operations after the sample was drawn (births), are added.

13. Question: Can the CFS provide growth rates or measures extending out 30-40 years?

Response: While the FAF does provide forecasts in 5 year increments from 2015-2040, they are not computed directly from information obtained from the CFS. These forecasts were developed by IHS Global Insight based on the entire FAF3 Origin-Destination-Commodity-Mode dataset.

http://ops.fhwa.dot.gov/freight/freight_analysis/faf/faf3/netwkdbflow/index.htm

II. Scope, Classification, and Geography

14. Recommendation: Shippers do not necessarily have information about carriers. As a result, more than one survey may be necessary to obtain desired information and not rely on the CFS to cover all needs.

Response: Yes. The CFS is a shipper survey and, as such, shippers can generally capture accurate information about the commodities shipped, modes of transport used, shipment value and weight, etc. Carriers, in contrast, typically do not have detailed information on commodities, their value, etc., but do have accurate information on transportation costs, routing, etc. Furthermore, other surveys like the former Vehicle Inventory Use Survey were required to gather information on vehicle fleets and their characteristics. One single survey, such as the CFS, cannot satisfy all data needs. In order to compile a comprehensive set of information on freight and freight movements, multiple surveys and/or data sources are needed.

15. Recommendation: Provide a concordance between NAICS and SCTG to anchor and guarantee consistency.

Response: Users can already map SCTG and NAICS by using the new tables produced in 2007. Published data for the 2007 CFS includes data tables that cross-tabulate establishments by their assigned NAICS code against commodities (SCTG) shipped by establishments within each of the NAICS codes. These tables allow for mapping of NAICS to SCTG and vice versa. With regard to consistency, while there are many improbable SCTG-NAICS combinations there are very few impossible ones. The shipping of promotional items or holiday gifts, in particular, can result in unexpected combinations. Further, the coding of both establishment NAICS and shipment SCTG is not without error. To access this table, link to http://www.bts.gov/publications/commodity_flow_survey/final_tables_december_2009/index.html

16. Question: Do we need to produce a 5-digit manual?

Response: We will be maintaining the 5-digit manual for the 2012 CFS for consistency and to provide commodity detail for respondents in completing the questionnaire. The 5-digit coding scheme allows for improved and expanded edits including the cross referencing of hazmat ID's entered on the CFS questionnaire.

17. Question: Could air freight be oversampled to improve coverage?

Response: Those industries that were more likely to use the air mode to ship commodities in the 2007 CFS were identified and ranked according to their usage. This information will be used, where possible, to allocate additional sample in the 2012 CFS to enhance responses in the air mode.

18. Question: Census is considering moving from Metropolitan Statistical Areas (MSAs) to Combined Statistical Areas (CSAs) to standardize geographies so users can pull data from lots of different databases and be on the same basis. How will CFS account for any changes?

Response: The Census Bureau will not be moving from MSAs to CSAs in the 2012 CFS. Some very large metropolitan areas, such as Phoenix and San Diego, are not defined as CSAs. After extensive discussion and review, the CFS team felt it was important to keep these large metropolitan areas in the survey despite the confusion caused by mixing levels of geography. The CFS will however be adding eleven additional metropolitan areas (or additional state parts of existing areas) in the 2012 CFS, for a total of 134 metropolitan areas.

III. Product Tools and Functionality

19. Question: Will American FactFinder (AFF) 2.0 allow users to pull data in from other sources?

Response: Currently no, but in a few years AFF 2 will have the ability to combine data from different Census sources given the dimensions are the same. Adding population to ECONOMICS tables with state data would be easy to create per capita figures. But, for tables with unique dimensions like mode, this will not be feasible.

20. Recommendation: Add a “most frequent query” list to the website as had existed in an earlier version of AFF.

Response: We will be able to "deep link" into tables with a certain NAICS or geography already narrowed down. For more complicated subsets of tables, minute marker 4:20 of this video (<http://factfinder.census.gov/home/saff/bookmark.html>) explains queries, which you will be able to create ahead of time, put on your websites, and instruct users how to use them. We are also in discussions with Census to post all Special tabulations requests that meet publication requirements.

21. Recommendation: AFF tools allow queries to extract data for only the highest ranked areas. Often times users are interested in states or metropolitan areas that are not included in this list. Allowing a full ranking would allow all users to find what they need.

Response: The metropolitan areas listed are the ones for which the CFS sample was designed to produce estimates. Sampled establishments are weighted to represent their metropolitan area (which may be an entire state or the balance of a state). There

is no guarantee that the sample would fairly represent other areas contained within a CFS defined metropolitan area.

22. Recommendation: Provide easier-to-use origin and destination tables.

Response: The newer version of AFF: AFF2 allows far easier use and analysis of the O-D tables. In addition, we have also recently created and will soon be releasing O-D tables with more detail on both commodities and modes.

23. Recommendation: More or multiple downloadable file formats would benefit users.

Response: Data can be downloaded in XLS, CSV, PDF, RTF or pipe-delimited files.

24. Recommendation: Provide public use microdata or, at a minimum, data at lower levels of geography.

Response: The CFS team is researching the disclosure risk and estimation risk associated with providing a public microdata file. Currently the CFS sample is designed to produce estimates at the NAICS industry level for 134 selected CFS areas. There are over 6,000 of these primary strata defined for the CFS so the sample of 100,000 establishments is already spread fairly thin. Selected establishments are weighted to represent their entire metropolitan area not just the particular county or place in which they happen to reside. In addition, the data from responding establishments are further adjusted to account for the non-responding sampled establishments. So, for a particular NAICS industry, estimates for areas below the specified metropolitan areas (whether produced from microdata or by the Census Bureau) are likely to be highly unreliable.