United States: 2007

Exports

Issued August 2010

EC07TCF-US(EX)

2007 Economic Census

Transportation

2007 Commodity Flow Survey

U.S. Department of Transportation
Research and Innovative Technology Administration
BUREAU OF TRANSPORTATION STATISTICS

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU

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Contents

Introduction to the Economic Census v
2007 Commodity Flow Survey vii

Tables

1a. Export Shipment Characteristics by Export Mode of Transportation for the United States: 2007 1
1b. Export Shipment Characteristics by Export Mode of Transportation for the United States: 2007 and 2002 1
1c. Export Shipment Characteristics by Export Mode of Transportation for the United States: Percentage of Total for 2007 and 2002 2
2a. Export Shipment Characteristics by Domestic Mode of Transportation for the United States: 2007 2
2b. Export Shipment Characteristics by Domestic Mode of Transportation for the United States: 2007 and 2002 . . . 3
2c. Export Shipment Characteristics by Domestic Mode of Transportation for the United States: Percentage of Total for 2007 and 2002 3
3a. Export Shipment Characteristics by Country of Destination: 2007 4
3b. Export Shipment Characteristics by Country of Destination: 2007 and 2002 4
3c. Export Shipment Characteristics by Country of Destination: Percentage of Total for 2007 and 2002 4
4a. Export Shipment Characteristics by Export Mode of Transportation and Country of Destination: 2007 5
4b. Export Shipment Characteristics by Export Mode of Transportation and Country of Destination: 2007 and 2002 6
4c. Export Shipment Characteristics by Export Mode of Transportation and Country of Destination: Percentage of Total for 2007 and 2002 7
5a. Export Shipment Characteristics by Commodity Group for the United States: 2007 8
5b. Export Shipment Characteristics by Commodity Group for the United States: 2007 and 2002 8
5c. Export Shipment Characteristics by Commodity Group for the United States: Percentage of Total for 2007 and 2002 9
6. Export Shipment Characteristics by Two-Digit Commodity for the United States: 2007 10
7. Export Shipment Characteristics by State of Origin for the United States: 2007 11
8. Export Shipment Characteristics by NAICS Codes for the United States: 2007 12

Appendixes

A. Comparability With Previous Commodity Flow Surveys A-1
B. Reliability of the Estimates B-1
C. Sample Design, Data Collection, and Estimation C-1
D. Standard Classification of Transported Goods Code Information D-1
E. Sample Questionnaire Instructions and Form E-1

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the U.S. Code (Sections 131, 191, and 224) directs the U.S. Census Bureau to take the economic census every 5 years, ending in "2" and "7."

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the federal government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, ship, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

AVAILABILITY OF ADDITIONAL DATA

All results of the 2007 Economic Census are available on the American FactFinder Internet site <www.factfinder.census.gov>. The American FactFinder system at the Web site allows selective retrieval and downloading of the data. For more information, including a description of reports being issued, see the Web site; write to the U.S. Census Bureau, Washington, DC 20233-8300; or call the Customer Services center at 1-800-923-8282 or 301-763-4636.

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Census of Manufactures was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some service trades in 1933.

Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated, providing comparable census data across economic sectors and using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other federal agencies. Since 1963, administrative records have also been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census report forms.

The range of industries covered in the economic censuses expanded between 1967 and 2007. The census of construction industries began on a regular basis in 1967; and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also, new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic

activity. In 2002, there was new coverage in the following four industries classified in the Agriculture, Forestry, and Fishing sector under the Standard Industry Classification (SIC) system: landscape agricultural services, landscaping services, veterinary services, and pet care services.

Printed statistical reports from the 1997 and earlier economic censuses provide historical figures for the study of long-term time series and are available in some large libraries. CD-ROMs issued from the 1987, 1992, and 1997 Economic Censuses contain databases including all or nearly all data published in print, plus additional statistics, such as Zip Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about scope, coverage, and classification system for each economic census and related surveys is published in the "What's New for 2007" section of the 2007 Economic Census Web site at <www.census.gov/econ/census07/www/whats_new_for_2007/>. Data items and publications for each economic census and related surveys are published as part of the 2007 Economic Census on American FactFinder at <www.factfinder.census.gov>. More information on the methodology, procedures, and history of each economic census is published in the "Methodology" section of the 2007 Economic Census Web site at <www.census.gov/econ/census07/www/methodology/>.

2007 Commodity Flow Survey

GENERAL

The 2007 Commodity Flow Survey (CFS) is undertaken through a partnership between the U.S. Census Bureau, U.S. Department of Commerce and the Research and Innovative Technology Administration (RITA), Bureau of Transportation Statistics (BTS), U.S. Department of Transportation. This survey produces data on the movement of goods in the United States. It provides information on commodities shipped, their value, weight, and mode of transportation, as well as the origin and destination of shipments of commodities from manufacturing, mining, wholesale, and select retail and services establishments. The CFS data are used by policy makers and transportation planners in various federal, state, and local agencies for assessing the demand for transportation facilities and services, energy use, and safety risk and environmental concerns. Additionally, business owners, private researchers, and analysts use the CFS data for analyzing trends in the movement of goods, mapping spatial patterns of commodity and vehicle flows, forecasting demands for the movement of goods, and determining needs for associated infrastructure and equipment. The CFS was conducted previously in 2002, 1997, and 1993.

EXPORT

For the purposes of this report, an export is considered a shipment from any of the 50 states and the District of Columbia to a foreign country. Shipments to U.S. possessions and territories are also treated as exports. We asked the respondent to report the foreign city, country of destination, and mode of transport by which the shipment left the country. We also asked the respondent to report the U.S. port, airport, or border crossing of exit, and to report the "domestic mode" of transport used to reach the U.S. destination. Due to the exclusion of industries outside the scope of the CFS (see the "Industry Coverage" section of this report), these data are not directly comparable to the 2007 merchandise trade exports published by the Department of Commerce.

Shipment characteristics, including value, tons, and ton-miles, are presented in summary form in this report. Ton-miles, which is defined as the shipment weight multiplied by the mileage traveled by the shipment, uses domestic mileage only for the calculation. Domestic mileages (i.e., the portion of shipment mileage measured within U.S. borders) are used in calculating the ton-mile measures.

If a respondent fails to report a port of exit (POE), then a likely POE is assigned using a detailed set of algorithms in the mileage calculation process.

Standard Classification of Transported Goods (SCTG) Codes

The SCTG codes for this report are aggregated into nine commodity groupings. The following table lists the two-digit SCTG codes included in each commodity grouping:

SCTG code	SCTG title
01–05	Agricultural products and fish
01	Live animals and live fish
02	Cereal grains
03	Agricultural products, except live animals, cereal grains and forage products
04	Animal feed and feed ingredients, cereal, straw, and eggs and other products of animal origin, n.e.c.
05	Meat, fish, seafood, and preparations
06–09	Grains, alcohol, and tobacco products
06	Milled grain products and preparations and bakery products
07	Prepared foodstuffs, n.e.c. and fats and oils
08	Alcoholic beverages
09	Tobacco products
10–14	Stone, nonmetallic minerals, and metallic ores
10	Monumental or building stone
11	Natural sands
12	Gravel and crushed stone
13	Nonmetallic minerals, n.e.c.
14	Metallic ores
15–19	Coal and petroleum products
15	Coal
17	Gasoline and aviation turbine fuel
18	Fuel oils
19	Products of petroleum refining n.e.c. and coal products
20–24	Basic chemicals, chemical, and pharmaceutical products
20	Basic chemical
21	Pharmaceutical products
22	Fertilizer and fertilizer materials
23	Chemical products and preparations, n.e.c.
24	Plastics and rubber
25–30	Logs, wood products, and textile and leather
25	Logs and other wood in the rough
26	Wood products
27	Pulp, newsprint, paper, and paperboard
28	Paper or paperboard articles
29	Printed products
30	Textiles, leather, and articles
31–34	Base metal and machinery
31	Nonmetallic mineral products
32	Base metal in primary or semifinished forms and in finished basic shapes
33	Articles of base metal
34	Machinery

SCTG code	SCTG title
35–38	Electronics, motorized vehicles, and precision instruments
35	Electronic and other electrical equipment and components, and office equipment
36	Vehicles
37	Transportation equipment, n.e.c.
38	Precision instruments and apparatus
39–43	Furniture, mixed freight, and miscellaneous manufactured products
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs
40	Miscellaneous manufactured products
41	Waste and scrap
43	Mixed freight

SCOPE

Industry Coverage

The 2007 CFS covers business establishments with paid employees that are located in the United States and are classified by the 2002 North American Industry Classification System (NAICS) in mining, manufacturing, wholesale trade, and selected retail and services trade industries—namely, electronic shopping and mail-order houses, fuel dealers, and publishers. Additionally, the survey covers auxiliary establishments (i.e., warehouses and managing offices) of multiestablishment companies. For the 2007 CFS, an advance survey (precanvass) of approximately 40,000 auxiliary establishments was conducted to identify those with shipping activity. Surveyed establishments that indicated undertaking shipping activities and the nonrespondents to the precanvass were included in the CFS sample universe.

The survey does not cover establishments classified in transportation, construction, and most retail and services industries. Farms, fisheries, foreign establishments, and most government-owned establishments are also excluded.

In-scope industries for the 2007 CFS were selected based on the 2002 version of the NAICS, while the industries included in the 2002 CFS were selected based on the 1997 version of the NAICS. For the 1993 CFS and the 1997 CFS, the industries were selected based on the 1987 Standard Industrial Classification (SIC) system. Although attempts were made to maintain similar coverage among the SIC-based surveys (1993 and 1997) and the NAICS-based surveys (2002 and 2007), there have been some changes in industry coverage due to the conversion from SIC to NAICS. Most notably, the logging industry changed from an in-scope Manufacturing SIC code (SIC 2411) to an out-of-scope sector of Agriculture, Forestry, Fishing, and Hunting under NAICS 1133. Also, publishers were reclassified from Manufacturing Division (SIC 2711, 2721, 2731, 2741, and part of 2771) to information sector (NAICS 5111 and 51223) and were excluded from the 2002 CFS. The 2007 CFS, however, includes publishers and retail fuel dealers. Therefore, data users are urged to use caution when comparing 2007 CFS estimates with estimates from prior years.

The NAICS industries covered in the 2007 CFS are listed in the following table:

NAICS code	Description
212	Mining (except oil and gas)
311	Food manufacturing
312	Beverage and tobacco product manufacturing
313	Textile mills
314	Textile product mills
315	Apparel manufacturing
316	Leather and allied product manufacturing
321	Wood product manufacturing
322	Paper manufacturing
323[1]	Printing and related support activities
324	Petroleum and coal products manufacturing
325	Chemical manufacturing
326	Plastics and rubber products manufacturing
327	Nonmetallic mineral product manufacturing
331	Primary metal manufacturing
332	Fabricated metal product manufacturing
333	Machinery manufacturing
334	Computer and electronic product manufacturing
335	Electrical equipment, appliance, and component manufacturing
336	Transportation equipment manufacturing
337	Furniture and related product manufacturing
339	Miscellaneous manufacturing
423[2]	Wholesale trade, durable goods
424[2]	Wholesale trade, nondurable goods
4541	Electronic shopping and mail-order houses
45431	Fuel dealers
4931[3]	Warehousing and storage
5111	Newspaper, periodical, book, and directory publishers
51223[4]	Music publishers
551114[5]	Corporate, subsidiary, and regional managing offices

[1] Excludes Pre-Press Services (NAICS 323122).
[2] Excludes manufacturers sale offices, agents and brokers, and own brand importers.
[3] Includes only captive warehouses that provide storage and shipping support to a single company. Warehouses offering their services to the general public and other businesses are excluded.
[4] For tabulation and publication purposes, NAICS 51223 is grouped with NAICS 5111.
[5] Includes only those establishments in NAICS 551114 with shipping activity.

Note: Other industry areas that are not covered, but may have significant shipping activity, include agriculture and government. For agriculture, specifically, this means that the CFS does not cover shipments of agricultural products from the farm site to the processing centers or terminal elevators (most likely short-distance local movements) but does cover the shipments of these products from the initial processing centers or terminal elevators onward.

Shipment Coverage

The CFS captures data on shipments originating from select types of business establishments located in the 50 states and the District of Columbia. The survey does not cover shipments originating from business establishments located in Puerto Rico and other U.S. possessions and territories. Shipments traversing the United States from a foreign location to another foreign location (e.g., from Canada to Mexico) are not included, nor are shipments from a foreign location to a U.S. location. However, imported products are included in the CFS at the point that they leave the importer's initial domestic location for shipment to another location. Shipments that are shipped through a foreign territory with both the origin and destination in the United States are included in the CFS data. The mileages calculated for these shipments exclude the international segments (e.g., shipments from New York to Michigan through Canada do not include any mileage for Canada). Export shipments are included in the 2007 CFS. See the "Mileage Calculation" section for additional detail on how mileage estimates were developed.

Information Collected

Establishments in the 2007 CFS were asked to provide the following information for a sample of their outbound shipments:

- Shipment ID number
- Shipment date (mm/dd)
- Shipment value
- Shipment weight in pounds
- Commodity code from Standard Classification of Transported Goods (SCTG) list
- Commodity description
- Hazmat flag (United Nations [UN] or North American [NA] number)
- U.S. destination (city, state, Zip Code)—gateway for export shipment
- Modes of transportation
- Foreign destination (exports only—city, country)
- Export mode

By CFS definition, a shipment is a single movement of goods, commodities, or products from an establishment to a single customer or to another establishment owned or operated by the same company as the originating establishment (e.g., a warehouse, distribution center, or retail or wholesale outlet). Full or partial truckloads were counted as a single shipment only if all commodities on the truck were destined for the same location. For multiple deliveries on a route, the goods delivered at each stop were counted as one shipment. Interoffice memos, payroll checks, or business correspondence were not included in the CFS. Likewise, the CFS does not include shipments of refuse, scrap paper, waste, or recyclable materials unless the establishment was in the business of selling or providing these materials.

Data Collection Method

The CFS survey was conducted through a mailout/mailback with an electronic reporting option. Each establishment selected into the 2007 CFS sample was mailed four questionnaires—one during each calendar quarter of year 2007. The four questionnaires were the same, except for the addition of Item H—"Third-Party Logistics" to the fourth quarter questionnaire (see Appendix E for a copy of the questionnaire). The establishments were asked to provide shipment information about a sample of their individual outbound shipments during a prespecified 1-week period in each calendar quarter. Each of the 4 weeks was in the same relative position of the calendar quarter. Respondents who were interested in electronic reporting could request and use a secure electronic reporting option.

Mileage Calculations

General

The distance traveled by each freight shipment sampled for the 2007 CFS was estimated using routing algorithms and an integrated, intermodal transportation network that has been developed and updated expressly for this purpose. Each shipment record contained the ZIP Codes of shipment origin and destination (O-D pair) and the mode or modal sequence required by the routing algorithm for distance estimation. Each record also contained information on type of commodity moved, its weight, dollar value, and hazardous materials (hazmat) status. For each export shipment, the U.S. port of exit (POE) was also identified, along with foreign destination city and country.

Valid and accurate O-D pair ZIP Codes were essential elements needed for estimating the travel distance of any shipment. For shipments with missing or invalid geographic data elements, such data elements were imputed if there was a high probability of accurate correction (e.g., a specific destination city/state was provided to allow a ZIP Code to be imputed for the shipment). Follow-up contact with respondents was required when the missing information could not be reasonably imputed.

GeoMiler—software to measure the distance traveled by commodity shipments

Mileages were computed using GeoMiler, a routing tool developed in partnership with MacroSys Research and Technology (MacroSys) specifically for CFS mileage calculations. This software tool used current Geographic Information System (GIS) technology and spatial multimodal network databases. It integrated map-visualization features with route solvers to handle many alternative multimodal combinations. This tool used algorithms that found the "best path" over spatial representations of the U.S. highway, railway, waterway, and airway networks. For waterborne export shipments, GeoMiler used a waterborne commerce database from the U.S. Army Corps of Engineers to route freight originating in the United States via the deep sea (ocean). For airborne export shipments, GeoMiler used a newly developed air export network from the RITA/BTS Office of Airline Information (OAI).

For a domestic shipment, the mileage was calculated between the centroid (center of the geographic area) of the U.S. origin ZIP Code and the centroid of the destination ZIP Code. The route between an O-D pair was composed of a series of links and an impedance factor was assigned to each link (impedance is defined as a function of distance and travel time). Given a mode or modal sequence, the role of GeoMiler was to find that "best path" route which minimized the summed total impedance of the links between the specified O-D pair.

The mileage for shipments within a ZIP Code (matchng O-D pair) was calculated by means of a formula that approximated the longest distance within the boundaries of that ZIP Code.

For multimodal shipments (those shipments involving more than one mode, such as truck-rail shipments), spatial joins (intermodal transfer links) were added to the network database to connect the individual modal networks together for routing purposes. An intermodal terminals database and a number of terminal transfer models were developed at RITA/BTS to identify likely transfer points for freight. An algorithm was used to find the minimum impedance path between a shipment's origin ZIP Code to the transfer point and then from the transfer point to the destination ZIP Code. The cumulative length of the spatial joins plus links on this path provided the estimated distances used in CFS mileage computations.

The mileage for an export shipment was calculated between the centroid of the U.S. origin ZIP Code and the border crossing on the path of minimum impedance to the foreign destination country (foreign city in the case of Canada and Mexico). For all exports, a POE was found (seaport, airport, or border crossing) if not already provided by the respondent. However, only the portion of mileage measured within U.S. borders was included as domestic mileage in the CFS estimates.

Methodological Changes From Past Commodity Flow Surveys

Improvements in routing logic—particularly for highway, railway, and airway—were built into the GeoMiler software. Through the use of GeoMiler, distance calculations for freight transportation were refined to better estimate the actual shipment mileage. In particular, GeoMiler introduced an overall concept change in algorithm for:

- Highway routing
- Railway routing
- Waterway routing on export shipments
- Airway routing on both domestic and export shipments
- Routing in Alaska

Highway routing

To estimate highway mileage, GeoMiler considered the functional class of highway so that the "best path" was the quickest path based on the likely use of interstate and other major roadways and not necessarily the shortest path. The "quickest path" algorithms in terms of travel time incorporated the following hierarchical functional class of highway:

1. Interstate route
2. U.S. route
3. State route
4. County or other local route

Hence, the 2007 highway model favored the selection of the higher-order routes (interstate) rather than lower-order routes (state and county), which provided a more realistic path for freight movement via highway.

The use of these selection criteria, coupled with a more extensive highway network, produced higher mileages (an average of about 3 percent) on highway shipments of distances less than 300 miles.

Railway routing

To estimate railway mileage, GeoMiler selected a "single best path" from those calibrated with route density information obtained from sampled 2005 rail waybills, assigned a specific railroad company at shipment origin, and considered ownership, trackage rights, and interlining (the transfer from one railroad company's trackage network to that of another). This procedure resulted in an average of about 3 percent higher mileages on railway shipments than the procedure used to estimate the mileage for the 2002 CFS.

Waterway routing on export shipments

The mileage estimates for export shipments in the 2007 CFS include the total distance from the shipment origin up to the exit port on the U.S. territorial borders.

For waterway exports via inland waterways (e.g., the Mississippi River), the mileage calculation included the distance from an inland water POE (such as St. Louis) to a coastal POE (such as New Orleans), and this extra inland waterway mileage was included in the total domestic mileage for this shipment.

The use of these selection criteria on waterway exports via inland waterways resulted in negligible changes to mileages on inland waterways.

For waterway exports via the Great Lakes (Lakes Erie, Huron, Michigan, Ontario, Superior), the mileage calculation was continued from a Great Lakes POE (such as Chicago, Cleveland, Duluth) to the line of demarcation between the United States and Canada (drawn within each of the Great Lakes except Michigan), and this extra Great Lakes mileage was included in the total domestic mileage for this shipment.

The use of these selection criteria on waterway exports via the Great Lakes produced much higher (an average of about 15 percent) mileages on Great Lakes waterways.

Airway routing on both domestic and export shipments

To estimate domestic airway mileage, GeoMiler selected the "single best path" from the three airports closest to the origin ZIP Code to the three airports closest to the destination ZIP Code. Criteria for route selection were calibrated with 2005 air route information provided by the OAI at RITA/BTS. As in the past, to be acceptable, an airway routing must generate at least twice as many airway miles as highway miles (the ratio of air/truck miles should be at least 2 to 1) in order to reach the destination.

Consequently, the GeoMiler chose the most likely air route from those routes that were nonstop (direct) from airport facilities with higher cargo lifts (weight transported between two airports) based on the OAI air cargo data.

For airway exports, the total domestic mileage included the mileage from the inland POE to a coastal point on the U.S. landmass (where the air flight path to a foreign country intersected with the U.S. territorial border).

The use of these selection criteria on both domestic airway and airway exports via inland airports, coupled with a more extensive airway network, produced much higher (an average of about 12 percent) mileages on airways.

Routing in Alaska

Much of Alaska was inaccessible by any mode of transportation except "bush" airplanes. A "bush" airplane is a small aircraft that usually carries no more than four people, including the "bush" pilot. For the 2007 CFS, a network of mini airports, more extensive than that used previously in the 2002 CFS, was incorporated into intrastate travel within Alaska to accommodate "short-hop" flights where no established roads existed, especially in cases where the respondent reported a mode of highway.

Mileage Data for Pipeline Shipments

For pipeline shipments, ton-miles and average miles per shipment are not shown in the data files. For most of these shipments, the respondents reported the shipment destination as a pipeline facility on the main pipeline network. Therefore, for the majority of these shipments, the resulting mileage represented only the access distance through feeder pipelines to the main pipeline network and not the actual distance through the main pipeline network. Pipeline shipments are included in the U.S. totals for ton-miles and average miles per shipment. For security purposes, there is no pipeline network available in the public domain with which to route petroleum-based products. Hence, any modal distance, either single or multi, involving pipeline was considered as solely pipeline mileage from origin ZIP Code to destination ZIP Code and calculated to equal great circle distance (GCD). GCD is defined as the shortest distance between two points on the earth's surface, taking into account the earth's curvature.

Availability of Additional Transportation Data

Users of transportation data may be especially interested in the reports from the Service Annual Survey, which can be found on the Census Bureau's Web site at <www.census.gov/services>. This survey covers firms with paid employees that provide commercial motor freight transportation and public warehousing services. Data collected include operating revenue and operating revenue by source, percentage of motor carrier freight revenue by commodity type, size of shipments handled, length of haul, and vehicle fleet inventory.

Table 1a.

Export Shipment Characteristics by Export Mode of Transportation for the United States: 2007

[Estimates are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

Export mode of transportation	Value		Tons	
	2007 (million dollars)	Percent	2007 (thousands)	Percent
Total	**873,409**	**100.0**	**479,578**	**100.0**
Single modes	**777,854**	**89.1**	**461,065**	**96.1**
Truck [1]	155,630	17.8	57,565	12.0
Rail	34,610	4.0	50,617	10.6
Water	306,191	35.1	348,035	72.6
Air (includes truck and air)	279,987	32.1	3,671	0.8
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes	**57,293**	**6.6**	**511**	**0.1**
Parcel, U.S. Postal Service or courier	57,293	6.6	511	0.1
Other and unknown modes	**38,262**	**4.4**	**18,002**	**3.8**

(S) Estimate did not meet publication standards.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.

[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 1b.

Export Shipment Characteristics by Export Mode of Transportation for the United States: 2007 and 2002

[Estimates are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Export mode of transportation	Value			Tons		
	2007 (million dollars)	2002 (million dollars)	Percentage change	2007 (thousands)	2002 (thousands)	Percentage change
Total	**873,409**	**595,518**	**46.7**	**479,578**	**487,473**	**–1.6**
Single modes	**777,854**	**508,639**	**52.9**	**461,065**	**452,934**	**1.8**
Truck [1]	155,630	148,459	4.8	57,565	54,923	4.8
Rail	34,610	17,536	97.4	50,617	49,916	1.4
Water	306,191	162,273	88.7	348,035	344,416	1.1
Air (includes truck and air)	279,987	180,265	55.3	3,671	3,441	6.7
Pipeline [2]	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes [3]	**57,293**	**71,541**	**–19.9**	**511**	**24,242**	**–97.9**
Parcel, U.S. Postal Service or courier	57,293	24,360	135.2	511	585	–12.6
Other multiple modes	(X)	47,181	(X)	(X)	23,657	(X)
Other and unknown modes	**38,262**	**15,338**	**149.5**	**18,002**	**10,296**	**74.8**

(S) Estimate did not meet publication standards.

(X) Not applicable.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.

[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).

[3] For 2007, "Parcel, U.S. Postal Service or courier" is the only valid multiple mode of transportation for export shipments.

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 1c.

Export Shipment Characteristics by Export Mode of Transportation for the United States: Percentage of Total for 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Export mode of transportation	Value		Tons	
	2007	2002	2007	2002
Total	**100.0**	**100.0**	**100.0**	**100.0**
Single modes	**89.1**	**85.4**	**96.1**	**92.9**
Truck [1]	17.8	24.9	12.0	11.3
Rail	4.0	2.9	10.6	10.2
Water	35.1	27.2	72.6	70.7
Air (includes truck and air)	32.1	30.3	0.8	0.7
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes [3]	**6.6**	**12.0**	**0.1**	**5.0**
Parcel, U.S. Postal Service or courier	6.6	4.1	0.1	0.1
Other multiple modes	(X)	7.9	(X)	4.9
Other and unknown modes	**4.4**	**2.6**	**3.8**	**2.1**

(S) Estimate did not meet publication standards.
(X) Not applicable.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[3] For 2007, "Parcel, U.S. Postal Service or courier" is the only valid multiple mode of transportation for export shipments.

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 2a.

Export Shipment Characteristics by Domestic Mode of Transportation for the United States: 2007

[Estimates are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

Domestic mode of transportation	Value		Tons		Ton-miles [1]	
	2007 (million dollars)	Percent	2007 (thousands)	Percent	2007 (thousands)	Percent
Total	**873,409**	**100.0**	**479,578**	**100.0**	**230,154**	**100.0**
Single modes	**666,462**	**76.3**	**404,786**	**84.4**	**164,784**	**71.6**
Truck [2]	481,925	55.2	210,910	44.0	78,673	34.2
Rail	62,726	7.2	132,541	27.6	74,474	32.4
Water	20,832	2.4	58,013	12.1	10,664	4.6
Air (includes truck and air)	98,873	11.3	926	0.2	944	0.4
Pipeline [3]	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes	**178,808**	**20.5**	**54,319**	**11.3**	**62,266**	**27.1**
Parcel, U.S. Postal Service or courier	104,600	12.0	719	0.1	656	0.3
Truck and rail	49,303	5.6	26,263	5.5	34,741	15.1
Truck and water	18,146	2.1	13,206	2.8	19,575	8.5
Rail and water	1,841	0.2	(S)	(S)	3,225	1.4
Other multiple modes	4,917	0.6	9,752	2.0	4,070	1.8
Other and unknown modes	**28,139**	**3.2**	**20,472**	**4.3**	**3,103**	**1.3**

(S) Estimate did not meet publication standards.

[1] Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See the "Mileage Calculations" section for additional information.
[2] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[3] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 2b.

Export Shipment Characteristics by Domestic Mode of Transportation for the United States: 2007 and 2002

[Estimates are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Domestic mode of transportation	Value			Tons			Ton-miles [1]		
	2007 (million dollars)	2002 (million dollars)	Percentage change	2007 (thousands)	2002 (thousands)	Percentage change	2007 (millions)	2002 (millions)	Percentage change
Total	**873,409**	**595,518**	**46.7**	**479,578**	**487,473**	**–1.6**	**230,154**	**207,534**	**10.9**
Single modes	**666,462**	**512,647**	**30.0**	**404,786**	**464,146**	**–12.8**	**164,784**	**185,010**	**–10.9**
Truck [2]	481,925	386,968	24.5	210,910	184,093	14.6	78,673	84,122	–6.5
Rail	62,726	28,638	119.0	132,541	114,042	16.2	74,474	78,035	–4.6
Water	20,832	21,099	–1.3	58,013	156,664	–63.0	10,664	21,085	–49.4
Air (includes truck and air)	98,873	75,042	31.8	926	1,404	–34.1	944	1,719	–45.1
Pipeline [3]	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes [4]	**178,808**	**69,915**	**155.8**	**54,319**	**15,468**	**251.2**	**62,266**	**20,212**	**208.1**
Parcel, U.S. Postal Service or courier	104,600	53,997	93.7	719	484	48.5	656	353	85.7
Truck and rail	49,303	13,388	268.3	26,263	9,366	180.4	34,741	9,760	256.0
Truck and water	18,146	(X)	(X)	13,206	(X)	(X)	19,575	(X)	(X)
Rail and water	1,841	(X)	(X)	(S)	(X)	(X)	3,225	(X)	(X)
Other multiple modes	4,917	2,531	(X)	9,752	5,617	(X)	4,070	10,098	(X)
Other and unknown modes	**28,139**	**12,955**	**117.2**	**20,472**	**7,859**	**160.5**	**3,103**	**2,312**	**34.2**

(S) Estimate did not meet publication standards.
(X) Not applicable.

[1] Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See the "Mileage Calculations" section for additional information.
[2] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[3] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[4] Select multiple modes categories for 2002 and 2007 are not directly comparable due to definition changes. For 2002, "Other multiple modes" includes shipments using "Truck and water," "Rail and water," and other mode combinations not specifically listed. For 2007, "Truck and water" and "Rail and water" are not part of "Other multiple modes".

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 2c.

Export Shipment Characteristics by Domestic Mode of Transportation for the United States: Percentage of Total for 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Domestic mode of transportation	Value		Tons		Ton-miles [1]	
	2007	2002	2007	2002	2007	2002
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Single modes	**76.3**	**86.1**	**84.4**	**95.2**	**71.6**	**89.1**
Truck [2]	55.2	65.0	44.0	37.8	34.2	40.5
Rail	7.2	4.8	27.6	23.4	32.4	37.6
Water	2.4	3.5	12.1	32.1	4.6	10.2
Air (includes truck and air)	11.3	12.6	0.2	0.3	0.4	0.8
Pipeline [3]	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes [4]	**20.5**	**11.7**	**11.3**	**3.2**	**27.1**	**9.7**
Parcel, U.S. Postal Service or courier	12.0	9.1	0.1	0.1	0.3	0.2
Truck and rail	5.6	2.2	5.5	1.9	15.1	4.7
Truck and water	2.1	(X)	2.8	(X)	8.5	(X)
Rail and water	0.2	(X)	(S)	(X)	1.4	(X)
Other multiple modes	0.6	0.4	2.0	1.2	1.8	4.9
Other and unknown modes	**3.2**	**2.2**	**4.3**	**1.6**	**1.3**	**1.1**

(S) Estimate did not meet publication standards.
(X) Not applicable.

[1] Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See the "Mileage Calculations" section for additional information.
[2] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[3] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[4] Select multiple modes categories for 2002 and 2007 are not directly comparable due to definition changes. For 2002, "Other multiple modes" includes shipments using "Truck and water," "Rail and water," and other mode combinations not specifically listed. For 2007, "Truck and water" and "Rail and water" are not part of "Other multiple modes".

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 3a.

Export Shipment Characteristics by Country of Destination: 2007

[Estimates are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

Country of destination	Value		Tons	
	2007 (million dollars)	Percent	2007 (thousands)	Percent
Total	**873,409**	**100.0**	**479,578**	**100.0**
Canada	197,503	22.6	101,198	21.1
Mexico	81,719	9.4	68,327	14.2
All other countries	594,186	68.0	310,053	64.7

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 3b.

Export Shipment Characteristics by Country of Destination: 2007 and 2002

[Estimates are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Country of destination	Value			Tons		
	2007 (million dollars)	2002 (million dollars)	Percentage change	2007 (thousands)	2002 (thousands)	Percentage change
Total	**873,409**	**595,518**	**46.7**	**479,578**	**487,473**	**–1.6**
Canada	197,503	141,677	39.4	101,198	106,127	–4.6
Mexico	81,719	71,044	15.0	68,327	55,379	23.4
All other countries	594,186	382,797	55.2	310,053	325,967	–4.9

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 3c.

Export Shipment Characteristics by Country of Destination: Percentage of Total for 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Country of destination	Value		Tons	
	2007	2002	2007	2002
Total	**100.0**	**100.0**	**100.0**	**100.0**
Canada	22.6	23.8	21.1	21.8
Mexico	9.4	11.9	14.2	11.4
All other countries	68.0	64.3	64.7	66.9

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 4a.

Export Shipment Characteristics by Export Mode of Transportation and Country of Destination: 2007

[Estimates are shown as percentages and are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

Export mode of transportation and country of destination	Value		Tons	
	2007 (million dollars)	Percent	2007 (thousands)	Percent
Total	**873,409**	**100.0**	**479,578**	**100.0**
Canada				
Total	**197,503**	**100.0**	**101,198**	**100.0**
Single modes	**167,158**	**84.6**	**93,080**	**92.0**
Truck [1]	114,194	57.8	42,550	42.0
Rail	23,310	11.8	29,847	29.5
Water	5,683	2.9	20,575	20.3
Air (includes truck and air)	23,969	12.1	108	0.1
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes	**14,801**	**7.5**	**238**	**0.2**
Parcel, U.S. Postal Service or courier	14,801	7.5	238	0.2
Other and unknown modes	**15,544**	**7.9**	**7,880**	**7.8**
Mexico				
Total	**81,719**	**100.0**	**68,327**	**100.0**
Single modes	**66,667**	**81.6**	**61,894**	**90.6**
Truck [1]	41,435	50.7	15,015	22.0
Rail	11,283	13.8	20,760	30.4
Water	8,527	10.4	24,891	36.4
Air (includes truck and air)	3,987	4.9	51	0.1
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes	**1,875**	**2.3**	**32**	**(Z)**
Parcel, U.S. Postal Service or courier	1,875	2.3	32	(Z)
Other and unknown modes	**13,178**	**16.1**	**6,401**	**9.4**
All Other Countries				
Total	**594,186**	**100.0**	**310,053**	**100.0**
Single modes	**544,029**	**91.6**	**306,092**	**98.7**
Truck [3]	(X)	(X)	(X)	(X)
Rail [3]	(X)	(X)	(X)	(X)
Water	291,981	49.1	302,569	97.6
Air (includes truck and air)	252,031	42.4	3,513	1.1
Pipeline [3]	(X)	(X)	(X)	(X)
Multiple modes	**40,617**	**6.8**	**241**	**0.1**
Parcel, U.S. Postal Service or courier	40,617	6.8	241	0.1
Other and unknown modes	**9,541**	**1.6**	**3,720**	**1.2**

(S) Estimate did not meet publication standards.
(X) Not applicable.
(Z) Estimate is between zero and half the unit shown, thus rounded to zero.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[3] "Truck," "Rail," and "Pipeline" single-mode categories are not valid modes of transportation for export shipments to "All Other Countries."

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 4b.

Export Shipment Characteristics by Export Mode of Transportation and Country of Destination: 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Export mode of transportation and country of destination	Value			Tons		
	2007 (million dollars)	2002 (million dollars)	Percentage change	2007 (thousands)	2002 (thousands)	Percentage change
Total	**873,409**	**595,518**	**46.7**	**479,578**	**487,473**	**–1.6**
Canada						
Total	**197,503**	**141,677**	**39.4**	**101,198**	**106,127**	**–4.6**
Single modes	**167,158**	**119,144**	**40.3**	**93,080**	**94,028**	**–1.0**
Truck [1]	114,194	95,518	19.6	42,550	38,143	11.6
Rail	23,310	11,400	104.5	29,847	30,194	–1.1
Water	5,683	2,024	180.8	20,575	25,297	–18.7
Air (includes truck and air)	23,969	10,166	135.8	108	159	–32.1
Pipeline [2]	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes [3]	**14,801**	**18,662**	**–20.7**	**238**	**8,855**	**–97.3**
Parcel, U.S. Postal Service or courier	14,801	7,966	85.8	238	170	40.0
Other multiple modes	(X)	10,696	(X)	(X)	8,685	(X)
Other and unknown modes	**15,544**	**3,871**	**301.5**	**7,880**	**3,244**	**142.9**
Mexico						
Total	**81,719**	**71,044**	**15.0**	**68,327**	**55,379**	**23.4**
Single modes	**66,667**	**50,426**	**32.2**	**61,894**	**52,233**	**18.5**
Truck [1]	41,435	35,598	16.4	15,015	14,738	1.9
Rail	11,283	4,756	137.2	20,760	13,861	49.8
Water	8,527	6,263	36.1	24,891	23,592	5.5
Air (includes truck and air)	3,987	3,810	4.6	51	42	21.4
Pipeline [2]	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes [3]	**1,875**	**(S)**	**(S)**	**32**	**2,337**	**–98.6**
Parcel, U.S. Postal Service or courier	1,875	1,076	74.3	32	(S)	(S)
Other multiple modes	(X)	(S)	(X)	(X)	2,312	(X)
Other and unknown modes	**13,178**	**1,907**	**591.0**	**6,401**	**809**	**691.2**
All Other Countries						
Total	**594,186**	**382,797**	**55.2**	**310,053**	**325,967**	**–4.9**
Single modes [4]	**544,029**	**339,069**	**60.4**	**306,092**	**306,673**	**–0.2**
Truck [1]	(X)	17,343	(X)	(X)	2,042	(X)
Rail	(X)	1,381	(X)	(X)	5,862	(X)
Water	291,981	153,986	89.6	302,569	295,528	2.4
Air (includes truck and air)	252,031	166,289	51.6	3,513	3,240	8.4
Pipeline [2]	(X)	(S)	(X)	(X)	(S)	(X)
Multiple modes [3]	**40,617**	**34,167**	**18.9**	**241**	**13,050**	**–98.2**
Parcel, U.S. Postal Service or courier	40,617	15,318	165.2	241	390	–38.2
Other multiple modes	(X)	18,849	(X)	(X)	12,661	(X)
Other and unknown modes	**9,541**	**9,560**	**–0.2**	**3,720**	**6,243**	**–40.4**

(S) Estimate did not meet publication standards.
(X) Not applicable.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[3] For 2007, "Parcel, U.S. Postal Service or courier" is the only valid multiple mode of transportation for export shipments.
[4] "Truck," "Rail," and "Pipeline" single-mode categories are not valid modes of transportation for export shipments to "All Other Countries."

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 4c.

Export Shipment Characteristics by Export Mode of Transportation and Country of Destination: Percentage of Total for 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Export mode of transportation and country of destination	Value		Tons	
	2007	2002	2007	2002
Total	**100.0**	**100.0**	**100.0**	**100.0**
Canada				
Total	**100.0**	**100.0**	**100.0**	**100.0**
Single modes	**84.6**	**84.1**	**92.0**	**88.6**
Truck [1]	57.8	67.4	42.0	35.9
Rail	11.8	8.0	29.5	28.5
Water	2.9	1.4	20.3	23.8
Air (includes truck and air)	12.1	7.2	0.1	0.1
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes [3]	**7.5**	**13.2**	**0.2**	**8.3**
Parcel, U.S. Postal Service or courier	7.5	5.6	0.2	0.2
Other multiple modes	(X)	7.5	(X)	8.2
Other and unknown modes	**7.9**	**2.7**	**7.8**	**3.1**
Mexico				
Total	**100.0**	**100.0**	**100.0**	**100.0**
Single modes	**81.6**	**71.0**	**90.6**	**94.3**
Truck [1]	50.7	50.1	22.0	26.6
Rail	13.8	6.7	30.4	25.0
Water	10.4	8.8	36.4	42.6
Air (includes truck and air)	4.9	5.4	0.1	–
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes [3]	**2.3**	**(S)**	**(Z)**	**4.2**
Parcel, U.S. Postal Service or courier	2.3	1.5	(Z)	(S)
Other multiple modes	(X)	(S)	(X)	4.2
Other and unknown modes	**16.1**	**2.7**	**9.4**	**1.5**
All Other Countries				
Total	**100.0**	**100.0**	**100.0**	**100.0**
Single modes [4]	**91.6**	**88.6**	**98.7**	**94.1**
Truck [1]	(X)	4.5	(X)	0.6
Rail	(X)	0.4	(X)	1.8
Water	49.1	40.2	97.6	90.7
Air (includes truck and air)	42.4	43.4	1.1	1.0
Pipeline [2]	(X)	(S)	(X)	(S)
Multiple modes [3]	**6.8**	**8.9**	**0.1**	**4.0**
Parcel, U.S. Postal Service or courier	6.8	4.0	0.1	0.1
Other multiple modes	(X)	4.9	(X)	3.9
Other and unknown modes	**1.6**	**2.5**	**1.2**	**1.9**

– Estimate equal to zero.
(S) Estimate did not meet publication standards.
(X) Not applicable.
(Z) Estimate is between zero and half the unit shown, thus rounded to zero.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[3] For 2007, "Parcel, U.S. Postal Service or courier" is the only valid multiple mode of transportation for export shipments.
[4] "Truck," "Rail," and "Pipeline" single-mode categories are not valid modes of transportation for export shipments to "All Other Countries."

Notes:

Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Generally, estimates that equal zero are not shown and are indicated by "–." However, the 2007 and 2002 Commodity Flow Surveys have different distinctions between an estimate that equals zero and an estimate that rounds to zero. For 2007 data, the "–" represents estimates that equal zero. For 2002 data, the "–" represents estimates that equal or round to zero.

Table 5a.

Export Shipment Characteristics by Commodity Group for the United States: 2007

[Estimates are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

SCTG code	Commodity description	Value		Tons	
		2007 (million dollars)	Percent	2007 (thousands)	Percent
	Total [1]	**873,409**	**100.0**	**479,578**	**100.0**
01–05	Agricultural products and fish	59,864	6.9	165,711	34.6
06–09	Grains, alcohol, and tobacco products	23,800	2.7	19,222	4.0
10–14	Stones, nonmetallic minerals, and metallic ores	11,012	1.3	17,027	3.6
15–19	Coal and petroleum products	25,494	2.9	92,585	19.3
20–24	Basic chemicals, chemical, and pharmaceutical products	125,331	14.3	52,633	11.0
25–30	Logs, wood products, and textile and leather	41,236	4.7	32,987	6.9
31–34	Base metal and machinery	146,139	16.7	32,537	6.8
35–38	Electronic, motorized vehicles, and precision instruments	368,098	42.1	16,576	3.5
39–43	Furniture, mixed freight and misc. manufactured products	72,435	8.3	50,299	10.5
99	Commodity unknown	(S)	(S)	(S)	(S)

(S) Estimate did not meet publication standards.

[1] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 5b.

Export Shipment Characteristics by Commodity Group for the United States: 2007 and 2002

[Estimates are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

SCTG code	Commodity description	Value			Tons		
		2007 (million dollars)	2002 (million dollars)	Percentage change	2007 (thousands)	2002 (thousands)	Percentage change
	Total [1]	**873,409**	**595,518**	**46.7**	**479,578**	**487,473**	**–1.6**
01–05	Agricultural products and fish	59,864	47,056	27.2	165,711	218,571	–24.2
06–09	Grains, alcohol, and tobacco products	23,800	12,552	89.6	19,222	12,842	49.7
10–14	Stones, nonmetallic minerals, and metallic ores	11,012	4,035	172.9	17,027	28,186	–39.6
15–19	Coal and petroleum products	25,494	6,946	267.0	92,585	63,235	46.4
20–24	Basic chemicals, chemical, and pharmaceutical products	125,331	75,620	65.7	52,633	64,254	–18.1
25–30	Logs, wood products, and textile and leather	41,236	37,489	10.0	32,987	34,177	–3.5
31–34	Base metal and machinery	146,139	85,835	70.3	32,537	31,965	1.8
35–38	Electronic, motorized vehicles, and precision instruments	368,098	285,483	28.9	16,576	17,083	–3.0
39–43	Furniture, mixed freight and misc. manufactured products	72,435	38,672	87.3	50,299	15,945	215.5
99	Commodity unknown	(S)	1,830	(S)	(S)	(S)	(S)

(S) Estimate did not meet publication standards.

[1] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 5c.

Export Shipment Characteristics by Commodity Group for the United States: Percentage of Total for 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

SCTG code	Commodity description	Value		Tons	
		2007	2002	2007	2002
	Total [1]	**100.0**	**100.0**	**100.0**	**100.0**
01–05	Agricultural products and fish	6.9	7.9	34.6	44.8
06–09	Grains, alcohol, and tobacco products	2.7	2.1	4.0	2.6
10–14	Stones, nonmetallic minerals, and metallic ores	1.3	0.7	3.6	5.8
15–19	Coal and petroleum products	2.9	1.2	19.3	13.0
20–24	Basic chemicals, chemical, and pharmaceutical products	14.3	12.7	11.0	13.2
25–30	Logs, wood products, and textile and leather	4.7	6.3	6.9	7.0
31–34	Base metal and machinery	16.7	14.4	6.8	6.6
35–38	Electronic, motorized vehicles, and precision instruments	42.1	47.9	3.5	3.5
39–43	Furniture, mixed freight and misc. manufactured products	8.3	6.5	10.5	3.3
99	Commodity unknown	(S)	0.3	(S)	(S)

(S) Estimate did not meet publication standards.

[1] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 6.

Export Shipment Characteristics by Two-Digit Commodity for the United States: 2007

[Estimates are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

SCTG code	Commodity description	Value		Tons	
		2007 (million dollars)	Percent	2007 (thousands)	Percent
	Total [1]	**873,409**	**100.0**	**479,578**	**100.0**
01	Live animals and live fish	(S)	(S)	(S)	(S)
02	Cereal grains	19,782	2.3	111,785	23.3
03	Other agricultural products	18,423	2.1	30,877	6.4
04	Animal feed and products of animal origin, n.e.c.	11,017	1.3	17,799	3.7
05	Meat, fish, seafood, and their preparations	10,591	1.2	5,239	1.1
06	Milled grain products and preparations, and bakery products	4,178	0.5	4,591	1.0
07	Other prepared foodstuffs and fats and oils	15,659	1.8	12,496	2.6
08	Alcoholic beverages	3,690	0.4	2,123	0.4
09	Tobacco products	273	(Z)	12	(Z)
10	Monumental or building stone	27	(Z)	49	(Z)
11	Natural sands	188	(Z)	2,030	0.4
12	Gravel and crushed stone	46	(Z)	3,309	0.7
13	Nonmetallic minerals n.e.c.	1,735	0.2	6,835	1.4
14	Metallic ores and concentrates	9,016	1.0	4,805	1.0
15	Coal	2,809	0.3	46,920	9.8
17	Gasoline and aviation turbine fuel	(S)	(S)	(S)	(S)
18	Fuel oils	4,542	0.5	(S)	(S)
19	Coal and petroleum products, n.e.c.	13,501	1.5	28,430	5.9
20	Basic chemicals	35,251	4.0	24,335	5.1
21	Pharmaceutical products	28,195	3.2	598	0.1
22	Fertilizers	1,715	0.2	7,220	1.5
23	Chemical products and preparations, n.e.c.	26,464	3.0	7,298	1.5
24	Plastics and rubber	33,705	3.9	13,181	2.7
25	Logs and other wood in the rough	1,039	0.1	3,175	0.7
26	Wood products	4,096	0.5	6,277	1.3
27	Pulp, newsprint, paper, and paperboard	10,481	1.2	13,883	2.9
28	Paper or paperboard articles	3,240	0.4	3,073	0.6
29	Printed products	3,713	0.4	1,293	0.3
30	Textiles, leather, and articles of textiles or leather	18,667	2.1	5,286	1.1
31	Nonmetallic mineral products	7,562	0.9	6,274	1.3
32	Base metal in primary or semifinished forms and in finished basic shapes	29,751	3.4	14,146	2.9
33	Articles of base metal	22,346	2.6	4,955	1.0
34	Machinery	86,480	9.9	7,162	1.5
35	Electronic and other electrical equipment and components and office equipment	177,376	20.3	3,681	0.8
36	Motorized and other vehicles (including parts)	86,317	9.9	11,543	2.4
37	Transportation equipment, n.e.c.	47,038	5.4	726	0.2
38	Precision instruments and apparatus	57,368	6.6	626	0.1
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	3,264	0.4	498	0.1
40	Miscellaneous manufactured products	36,242	4.1	3,098	0.6
41	Waste and scrap	21,456	2.5	44,062	9.2
43	Mixed freight	11,473	1.3	2,640	0.6
99	Commodity unknown	(S)	(S)	(S)	(S)

(S) Estimate did not meet publication standards.

(Z) Estimate is between zero and half the unit shown, thus rounded to zero.

[1] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 7.

Export Shipment Characteristics by State of Origin for the United States: 2007

[Estimates are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

State of origin	Value		Tons	
	2007 (million dollars)	Percent	2007 (thousands)	Percent
Total	**873,409**	**100.0**	**479,578**	**100.0**
Alabama	14,828	1.7	12,940	2.7
Alaska	2,947	0.3	3,851	0.8
Arizona	13,731	1.6	1,658	0.3
Arkansas	4,067	0.5	1,455	0.3
California	135,826	15.6	55,240	11.5
Colorado	8,025	0.9	(S)	(S)
Connecticut	9,264	1.1	836	0.2
Delaware	2,503	0.3	(S)	(S)
District of Columbia	(S)	(S)	(S)	(S)
Florida	40,855	4.7	11,059	2.3
Georgia	19,257	2.2	8,080	1.7
Hawaii	663	0.1	(S)	(S)
Idaho	3,583	0.4	1,012	0.2
Illinois	39,863	4.6	12,607	2.6
Indiana	18,938	2.2	6,109	1.3
Iowa	8,420	1.0	6,829	1.4
Kansas	6,982	0.8	2,319	0.5
Kentucky	11,942	1.4	3,131	0.7
Louisiana	25,657	2.9	77,574	16.2
Maine	1,346	0.2	890	0.2
Maryland	7,167	0.8	1,026	0.2
Massachusetts	19,708	2.3	2,247	0.5
Michigan	48,553	5.6	14,658	3.1
Minnesota	17,841	2.0	8,618	1.8
Mississippi	3,582	0.4	2,736	0.6
Missouri	9,258	1.1	6,147	1.3
Montana	1,391	0.2	1,800	0.4
Nebraska	3,783	0.4	3,646	0.8
Nevada	(S)	(S)	523	0.1
New Hampshire	3,029	0.3	349	0.1
New Jersey	22,181	2.5	9,181	1.9
New Mexico	1,745	0.2	249	0.1
New York	46,123	5.3	16,955	3.5
North Carolina	26,199	3.0	5,566	1.2
North Dakota	2,020	0.2	4,651	1.0
Ohio	34,405	3.9	11,053	2.3
Oklahoma	5,059	0.6	1,175	0.2
Oregon	20,943	2.4	18,510	3.9
Pennsylvania	24,304	2.8	8,710	1.8
Rhode Island	1,485	0.2	187	(Z)
South Carolina	12,707	1.5	4,038	0.8
South Dakota	895	0.1	1,332	0.3
Tennessee	15,159	1.7	5,525	1.2
Texas	90,295	10.3	70,800	14.8
Utah	8,591	1.0	1,404	0.3
Vermont	4,027	0.5	588	0.1
Virginia	14,303	1.6	(S)	(S)
Washington	34,846	4.0	20,383	4.3
West Virginia	4,018	0.5	(S)	(S)
Wisconsin	16,590	1.9	6,039	1.3
Wyoming	339	(Z)	(S)	(S)

(S) Estimate did not meet publication standards.

(Z) Estimate is between zero and half the unit shown, thus rounded to zero.

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table 8.

Export Shipment Characteristics by NAICS Codes[1] for the United States: 2007

[Estimates are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

NAICS code	Classification description	2007 value (million dollars)	2007 tons (thousands)	Ton-miles (millions)
212	Mining (except oil and gas)	10,539	61,853	38,330
311	Food manufacturing	20,982	20,016	15,978
312	Beverage and tobacco product manufacturing	4,173	2,703	1,726
313	Textile mills	4,739	1,270	944
314	Textile product mills	930	214	227
315	Apparel manufacturing	1,925	187	121
316	Leather and allied product manufacturing	928	261	385
321	Wood product manufacturing	3,110	4,443	2,417
322	Paper manufacturing	11,248	12,840	6,180
323	Printing and related support activities	2,999	335	247
324	Petroleum and coal products manufacturing	13,577	31,100	3,653
325	Chemical manufacturing	93,361	41,586	23,380
326	Plastics and rubber products manufacturing	14,780	3,323	2,790
327	Nonmetallic mineral product manufacturing	6,191	5,550	3,256
331	Primary metal manufacturing	21,367	9,510	6,749
332	Fabricated metal product manufacturing	21,356	4,209	2,955
333	Machinery manufacturing	69,822	6,377	7,959
334	Computer and electronic product manufacturing	114,408	735	544
335	Electrical equipment, appliance, and component manufacturing	15,062	2,108	1,707
336	Transportation equipment manufacturing	97,733	9,282	6,261
337	Furniture manufacturing	1,996	651	779
339	Miscellaneous manufacturing	15,893	906	799
4231	Motor vehicle and motor vehicle parts and supplies	32,985	3,829	2,378
4232	Furniture and home furnishing	1,505	434	236
4233	Lumber and other construction materials	1,829	2,458	1,243
4234	Professional and commercial equipment and supplies	38,241	900	496
4235	Metal and mineral (except petroleum)	8,787	4,451	4,192
4236	Electrical and electronic goods	48,602	1,611	1,194
4237	Hardware, and plumbing and heating equipment and supplies	2,220	363	155
4238	Machinery, equipment, and supplies	32,061	2,422	1,658
4239	Miscellaneous durable goods	34,777	51,718	29,187
4241	Paper and paper products	2,292	2,481	(S)
4242	Drugs and druggists' sundries	3,838	263	112
4243	Apparel, piece goods, and notions	4,576	1,969	357
4244	Grocery and related product wholesalers	16,337	9,804	11,042
4245	Farm product raw material	33,257	132,257	33,545
4246	Chemical and allied products	6,527	4,042	3,002
4247	Petroleum and petroleum products	5,476	(S)	1,315
4248	Beer, wine, and distilled alcoholic beverage	250	110	85
4249	Miscellaneous nondurable goods	7,135	12,624	5,861
4541	Electronic shopping and mail order houses	4,544	109	108
45431	Fuel dealers	(S)	(S)	(S)
4931	Warehousing and storage	13,889	5,465	1,721
5111	Newspaper, periodical, book, and directory publishers (and music publishers)	845	(S)	(S)
551114	Corporate, subsidiary, and regional managing offices	26,307	13,248	3,017

(S) Estimate did not meet publication standards.

[1] NAICS codes shown are those covered in the Commodity Flow Survey.

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Appendix A.
Comparability With Previous Commodity Flow Surveys

The following tables show a comparison of the commodity classification system, industry coverage, sample size, sample weeks, reported mode of transportation, and data items requested for each shipment among the 1993, 1997, 2002, and 2007 Commodity Flow Surveys (CFS).

Commodity Classification System

1993	1997, 2002, and 2007
Standard Transportation Commodity Classification (STCC), developed by the Association of American Railroads (AAR)	Standard Classification of Transported Goods (SCTG)

Industry Coverage

1993 and 1997	2002	2007
Establishments classified based on the 1987 Standard Industrial Classification (SIC) system.	Establishments classified based on the 1997 North American Industry Classification System (NAICS).	Establishments classified based on the 2002 NAICS.
Publishers were covered—classified in Manufacturing Division.	Publishers were not covered—classified in information sector.[1]	Publishers were covered—classified in information sector.[1]
Logging covered—under Manufacturing Division.	Logging not covered.[2]	Logging not covered.[2]
Other Manufacturing (excluding Printing Trade Services [SIC 279]).	Other manufacturing (excluding pre-press services [NAICS 323122]).	Other manufacturing (excluding pre-press services [NAICS 323122]).
Mining (except mining services [SICs 108, 124, 138, 148] and oil and gas extraction [SICs 131 and 132]).	Mining (except support activities [NAICS 213] and oil and gas extraction [NAICS 211]).	Mining (except support activities [NAICS 213] and oil and gas extraction [NAICS 211]).
Wholesale (merchants and manufacturers' sales branches and government-owned liquor stores).	Wholesale (merchants and manufacturers' sales branches and government-owned liquor stores).	Wholesale (merchants and manufacturers' sales branches and government-owned liquor stores).
Retail—catalog and mail-order houses.	Retail—electronic shopping and mail-order houses.	Retail—electronic shopping and mail-order houses, fuel dealers.
Auxiliaries (e.g., warehouses).	Auxiliaries (e.g., warehouses).	Auxiliaries (e.g., warehouses).[3]

[1] Under NAICS, publishers were reclassified from Manufacturing (SIC 2711, 2721, 2731, 2741, and part of 2771) to Information (NAICS 5111 and 51223) and were excluded in the 2002 CFS. However, for the 2007 CFS, publishers were restored as an in-scope industry.

[2] Because of changes in the classification of establishments between SIC and NAICS, logging establishments (NAICS 1133), which were covered as part of Manufacturing in the 1993 and 1997 surveys, were not included in 2002 and 2007. Detailed information about NAICS classification can be found on the Census Bureau's NAICS Web site.

[3] While included in all surveys, the procedures for identifying in-scope auxiliary establishments have changed over the years. For the 1997 CFS, a managing office was considered in-scope only if it had sales or end-of-year inventories in the 1992 Economic Census. Research conducted prior to the 2002 CFS showed that not all managing offices with shipping activity in the 1997 CFS indicated sales or inventories in the 1997 Economic Census. Consequently, the 1997 Economic Census results were not used to determine scope for managing offices in the 2002 CFS. For 2002, an auxiliary was included if it supported an in-scope or retail company. For the 2007 CFS, an advance survey of approximately 40,000 auxiliary establishments was conducted in 2006 to identify those auxiliary establishments with shipping activity. Those that indicated that shipping was performed (as well as nonrespondents) were included in the CFS sample universe.

Sample Size

1993	1997	2002	2007
Approximately 200,000 establishments selected from a universe of about 790,000 in-scope establishments.	Approximately 100,000 establishments selected from a universe of about 770,000 in-scope establishments.	Approximately 50,000 establishments selected from a universe of about 760,000 in-scope establishments.	Approximately 102,000 establishments selected from a universe of about 754,000 in-scope establishments.

Sample Weeks

1993	1997, 2002, and 2007
Respondents reported for a sample of their individual outbound shipments for a 2-week period during each of the four calendar quarters of the reference year.	Respondents reported for a sample of their individual outbound shipments for a 1-week period during each of the four calendar quarters of the reference year.
Respondents reported key characteristics for each sampled shipment.	Respondents reported key characteristics for each sampled shipment.

Reported Mode of Transportation

1993	1997, 2002, and 2007
For-hire truck	For-hire truck
Private truck	Private truck
Rail	Rail
Air	Air
Inland water	Shallow draft vessel
Deep sea water	Deep draft vessel
Pipeline	Pipeline
Parcel, U.S. Postal Service, or courier	Parcel, U.S. Postal Service, or courier
Other	Other
Unknown	Unknown

Data Items Requested for Each Shipment

1993	1997	2002 and 2007
Total value	Total value	Total value
Total weight	Total weight	Total weight
Standard Transportation Commodity Code (STCC) of the commodity that contributes the most to the shipment's weight	Standard Classification of Transported Goods (SCTG) code of the commodity that contributes the most to the shipment's weight	SCTG code of the commodity that contributes the most to the shipment's weight
All known modes of transportation	All known modes of transportation	All known modes of transportation
Single origin (assumed to be the mailing address unless the respondent provided a different physical location address)	Single origin (assumed to be the mailing address unless the respondent provided a different physical location address)	Single origin (assumed to be the mailing address unless the respondent provided a different physical location address)
Destination	Destination	Destination
Containerized (Y/N)	Containerized (Y/N)	(NA)
(NA)	(NA)	Intermodal (2002-N/A) (2007-Y/N)
Hazardous material (Y/N)	Hazardous material—United Nations or North American (UN/NA) code	Hazardous material—UN/NA code
Export (Y/N)	Export (Y/N)	Export (Y/N)
If export: U.S. exit gateway, mode(s) of transport to the gateway, foreign city and country of destination, and mode(s) of export	If export: U.S. exit gateway, mode(s) of transport to the gateway, foreign city and country of destination, and mode(s) of export	If export: U.S. exit gateway, mode(s) of transport to the gateway, foreign city and country of destination, and mode(s) of export

(NA) Not available.

Appendix B.
Reliability of the Estimates

INTRODUCTION

The estimates presented by the 2007 Commodity Flow Survey (CFS) may differ from the actual, unknown population values. Statisticians define this difference as the total error of the estimate. When describing the accuracy of survey results, it is convenient to discuss total error as the sum of sampling error and nonsampling error. Sampling error is the average difference between the estimate and the result that would be obtained from a complete enumeration of the sampling frame conducted under the same survey conditions. Nonsampling error encompasses all other factors that contribute to the total error of a sample survey estimate.

The sampling error of the estimates in this publication can be estimated from the selected sample because the sample was selected using probability sampling. Common measures related to sampling error are the sampling variance, the standard error, and the coefficient of variation (CV). The sampling variance is the squared difference, averaged over all possible samples of the same size and design, between the estimator and its average value. The standard error is the square root of the sampling variance. The CV expresses the standard error as a percentage of the estimate to which it refers.

Nonsampling errors are difficult to measure and can be introduced through inadequacies in the questionnaire, nonresponse, inaccurate reporting by respondents, errors in the application of survey procedures, incorrect recording of answers, and errors in data entry and processing. In conducting the 2007 CFS, every effort was made to minimize the effect of nonsampling errors on the estimates. Data users should take into account both the measures of sampling error and the potential effects of nonsampling error when using these estimates.

More detailed descriptions of sampling and nonsampling errors for the 2007 CFS are provided in the following sections.

SAMPLING ERROR

Because the estimates are based on a sample, exact agreement with results that would be obtained from a complete enumeration of all shipments made in 2007 from all establishments included on the sampling frame using the same enumeration procedures is not expected. However, because probability sampling was used at each stage of selection, it is possible to estimate the sampling variability of the survey estimates. For CFS estimates, sampling variability arises from each of the three stages of sampling.

The particular sample used in this survey is one of a large number of samples of the same size that could have been selected using the same design. If all possible samples had been surveyed under the same conditions, an estimate of a population parameter of interest could have been obtained from each sample. These samples give rise to a distribution of estimates for the population parameter. A statistical measure of the variability among these estimates is the standard error, which can be approximated from any one sample. The standard error is defined as the square root of the variance. The coefficient of variation (CV or relative standard error) of an estimator is the standard error of the estimator divided by the estimator. For the 2007 CFS, the CV also incorporates the effect of the noise infusion disclosure avoidance method. Note that measures of sampling variability, such as the standard error and CV, are estimated from the sample and are also subject to sampling variability; technically, they should have been referred to as estimated standard error and estimated CV. However, it is important to note that the standard error only measures sampling variability and does not measure systematic biases of the sample. Individuals using estimates contained in this report are advised to incorporate this information into their analyses, as sampling error could affect the conclusions drawn from these estimates.

Data users should exercise caution when using estimates with a high CV. These data are being provided because aggregates of the tabulated estimates can be useful.

An estimate from a particular sample and the standard error associated with the estimate can be used to construct a confidence interval. A “confidence interval” is a range about a given estimator that has a specified probability of containing the result of a complete enumeration of the sampling frame conducted under the same survey conditions. Associated with each interval is a percentage of confidence, which is interpreted as follows. If, for each possible sample, an estimate of a population parameter and its approximate standard error were obtained, then:

1. For approximately 90 percent of the possible samples, the interval from 1.645 standard errors below to 1.645 standard errors above the estimate would include the

result as obtained from a complete enumeration of the sampling frame conducted under the same survey conditions.

2. For approximately 95 percent of the possible samples, the interval from 1.96 standard errors below to 1.96 standard errors above the estimate would include the result as obtained from a complete enumeration of the sampling frame conducted under the same survey conditions.

To illustrate the computation of a confidence interval for an estimate of total value of shipments, assume that an estimate of total value is $10,750 million and the CV for this estimate is 1.8 percent, or 0.018. First, obtain the standard error of the estimate by multiplying the value of shipments estimate by its CV. For this example, multiply $10,750 million by 0.018. This yields a standard error of $193.5 million. The upper and lower bounds of the 90 percent confidence interval are computed as $10,750 million plus or minus 1.645 times $193.5 million. Consequently, the 90 percent confidence interval is $10,432 million to $11,068 million. If corresponding confidence intervals were constructed for all possible samples of the same size and design, approximately 9 out of 10 (90 percent) of these intervals would contain the result obtained from a complete enumeration.

NONSAMPLING ERROR

Nonsampling error encompasses all other factors that contribute to the total error of a sample survey estimate and may also occur in censuses. It is often helpful to think of nonsampling error as arising from deficiencies or mistakes in the survey process. In the CFS, nonsampling error can be attributed to many sources: inability to obtain information about all units in the sample; response errors; differences in the interpretation of the questions; mistakes in coding or keying the data obtained; and other errors of collection, response, coverage, and processing. Although no direct measurement of the potential biases due to nonsampling error has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence. Individuals using estimates in this report should incorporate this information into their analyses, as nonsampling error could affect the conclusions drawn from these estimates.

A potential source of bias in the estimates is nonresponse. "Nonresponse" is defined as the inability to obtain all the intended measurements or responses from all units in the sample. Four levels of nonresponse can occur in the CFS: item, shipment, quarter (reporting week), and establishment. Item nonresponse occurs either when a question is unanswered or the response to the question fails computer or analyst edits. Nonresponse to the shipment value or weight items is corrected by imputation, which is the procedure by which a missing value is replaced by a predicted value obtained from an appropriate model.

Shipment, quarter, and establishment nonresponse are used to describe the inability to obtain any of the substantive measurements about a sampled shipment, quarter, or establishment, respectively. Shipment and quarter nonresponse are corrected by reweighting. Reweighting allocates characteristics to the nonrespondents in proportion to the characteristics observed for the respondents. The amount of bias introduced by this nonresponse adjustment procedure depends on the extent to which the nonrespondents differ, characteristically, from the respondents. Establishment nonresponse is corrected during the estimation procedure by the industry-level adjustment weight. In most cases of establishment nonresponse, none of the four questionnaires have been returned to the U.S. Census Bureau, even after several attempts to elicit a response. Approximately 67 percent of the establishments in the sample provided at least one quarter of data that contributed to these tables.

Some possible sources of bias that are attributed to respondent-conducted sampling include misunderstanding the definition of a shipment, constructing an incomplete frame of shipments from which to sample, ordering the shipment sampling frame by selected shipment characteristics, and selecting shipment records by a method other than the one specified in the questionnaire's instructions. The respondents who had reported a shipment with untypically large value or weight when compared to the rest of their reported shipments were often contacted for verification. In such cases, if it was feasible to collect information on all of the large shipments a respondent had made either for a particular reporting week or for the entire quarter, then those large shipments were identified as certainty shipments.

DEFINITIONS OF TERMS

Confidentiality

Title 13 of the U.S. Code authorizes the Census Bureau to conduct censuses and surveys. Section 9 of Title 13 requires that any information collected from the public under the authority of Title 13 be maintained as confidential. Section 214 of Title 13 and Sections 3559 and 3571 of Title 18 of the U.S. Code provide for the imposition of penalties of up to 5 years in prison and up to $250,000 in fines for wrongful disclosure of confidential census information. In accordance with Title 13, no estimates are published that would disclose the operations of an individual firm.

The Census Bureau's internal Disclosure Review Board sets the confidentiality rules for all data releases. A checklist approach is used to ensure that all potential risks to the confidentiality of the data are considered and addressed.

Disclosure Avoidance

Disclosure is the release of data that have been deemed confidential. It generally reveals information about a specific individual or establishment or permits deduction of sensitive information about a particular individual or establishment. Disclosure avoidance is the process used to protect the confidentiality of the survey data provided by an individual or firm. Using disclosure avoidance procedures, the Census Bureau modifies or removes the characteristics that put confidential information at risk of disclosure. Although it may appear that a table shows information about a specific individual or business, the Census Bureau has taken steps to disguise or suppress the original data while making sure the results are still useful. The techniques used by the Census Bureau to protect confidentiality in tabulations vary, depending on the type of data.

For the CFS, the primary method of disclosure avoidance is noise infusion. Noise infusion is a method of disclosure avoidance in which values for each shipment are perturbed prior to tabulation by applying a random noise multiplier to the magnitude data—characteristics such as shipment value and weight (but not shipment mileage). Disclosure protection is accomplished in a manner that causes the vast majority of cell values to be perturbed by at most a few percentage points. For sample-based tabulations, such as CFS, the estimated relative standard error for a published cell includes both the estimated sampling error and the amount of perturbation in the estimated cell value due to noise. In certain circumstances, some individual cells may be suppressed on a case-by-case basis for additional disclosure avoidance. In these cases the data are replaced with a "D" in the tables. Other cells in the table may be suppressed because the quality of the data do not meet publication standards. The most common reason for suppressing a cell is a high CV (greater than 50 percent). These suppressed cells are shown with an "S" in the tables.

Unpublished Estimates

Some unpublished estimates can be derived directly from this report by subtracting published estimates from their respective totals. However, the estimates obtained by such subtraction would be subject to poor response, high sampling variability, or other factors that may make them potentially misleading.

Individuals who use estimates in this report to create new estimates should cite the Census Bureau as the source of only the original estimates.

Table B-1a.

Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation for the United States: 2007

[Estimates are shown as percentages and are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

Export mode of transportation	Value		Tons	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	**2.5**	**–**	**4.2**	**–**
Single modes	**2.9**	**0.5**	**4.6**	**0.5**
Truck [1]	2.4	0.6	4.5	0.7
Rail	11.3	0.4	10.1	1.1
Water	3.9	0.8	6.0	1.6
Air (includes truck and air)	4.5	0.7	6.2	0.1
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes	**4.6**	**0.4**	**6.0**	**–**
Parcel, U.S. Postal Service or courier	4.6	0.4	6.0	–
Other and unknown modes	**5.9**	**0.3**	**10.2**	**0.5**

– Estimate equal to zero.

(S) Estimate did not meet publication standards.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.

[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-1b.

Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation for the United States: 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Export mode of transportation	Value			Tons		
	Coefficient of variation of number		Standard error of percentage change	Coefficient of variation of number		Standard error of percentage change
	2007	2002		2007	2002	
Total	**2.5**	**4.9**	**8.1**	**4.2**	**11.8**	**12.3**
Single modes	**2.9**	**4.1**	**7.7**	**4.6**	**12.4**	**13.5**
Truck [1]	2.4	6.4	7.2	4.5	6.5	8.3
Rail	11.3	8.9	28.4	10.1	16.2	19.4
Water	3.9	6.2	13.8	6.0	15.9	17.2
Air (includes truck and air)	4.5	7.5	13.6	6.2	11.2	13.7
Pipeline [2]	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes [3]	**4.6**	**18.2**	**15.0**	**6.0**	**14.7**	**0.3**
Parcel, U.S. Postal Service or courier	4.6	11.0	28.0	6.0	31.4	27.9
Other multiple modes	(X)	27.7	(X)	(X)	15.2	(X)
Other and unknown modes	**5.9**	**13.8**	**37.5**	**10.2**	**28.6**	**53.1**

(S) Estimate did not meet publication standards.

(X) Not applicable.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.

[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).

[3] For 2007, "Parcel, U.S. Postal Service or courier" is the only valid multiple mode of transportation for export shipments.

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-1c.

Estimated Standard Errors for Export Shipment Characteristics by Export Mode of Transportation for the United States: Percentage of Total 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Export mode of transportation	Value—standard error		Tons—standard error	
	2007	2002	2007	2002
Total	**–**	**–**	**–**	**–**
Single modes	**0.5**	**1.3**	**0.5**	**1.0**
Truck [1]	0.6	1.9	0.7	1.6
Rail	0.4	0.3	1.1	1.9
Water	0.8	1.0	1.6	3.2
Air (includes truck and air)	0.7	1.3	0.1	0.2
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes [3]	**0.4**	**1.5**	**–**	**0.9**
Parcel, U.S. Postal Service or courier	0.4	0.5	–	–
Other multiple modes	(X)	1.5	(X)	0.9
Other and unknown modes	**0.3**	**0.3**	**0.5**	**0.4**

– Estimate equal to zero.
(S) Estimate did not meet publication standards.
(X) Not applicable.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[3] For 2007, "Parcel, U.S. Postal Service or courier" is the only valid multiple mode of transportation for export shipments.

Notes:
The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Generally, estimates that equal zero are not shown and are indicated by "–." However, the 2007 and 2002 Commodity Flow Surveys have different distinctions between an estimate that equals zero and an estimate that rounds to zero. For 2007 data, the "–" represents estimates that equal zero. For 2002 data, the "–" represents estimates that equal or round to zero.

Table B-2a.

Estimated Measures of Reliability for Export Shipment Characteristics by Domestic Mode of Transportation for the United States: 2007

[Estimates are shown as percentages and are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

Domestic mode of transportation	Value		Tons		Ton-miles [1]	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	**2.5**	**–**	**4.2**	**–**	**6.6**	**–**
Single modes	**3.4**	**0.8**	**5.2**	**2.5**	**7.4**	**3.5**
Truck [2]	2.5	0.9	6.3	3.5	7.1	2.6
Rail	9.9	0.6	12.9	2.7	11.0	2.7
Water	15.8	0.4	15.1	2.0	23.1	0.8
Air (includes truck and air)	12.2	1.1	6.4	–	11.5	0.1
Pipeline [3]	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes	**2.7**	**0.7**	**18.0**	**2.1**	**18.7**	**3.5**
Parcel, U.S. Postal Service or courier	3.3	0.6	5.6	–	4.8	–
Truck and rail	7.7	0.5	13.1	0.8	15.5	1.7
Truck and water	12.2	0.2	39.7	1.1	38.9	2.7
Rail and water	16.2	–	(S)	(S)	32.4	0.4
Other multiple modes	22.5	0.1	27	0.6	26.0	0.4
Other and unknown modes	**7.6**	**0.3**	**34.0**	**1.2**	**13.9**	**0.2**

– Estimate equal to zero.
(S) Estimate did not meet publication standards.

[1] Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See the "Mileage Calculations" section for additional information.
[2] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[3] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-2b.

Estimated Measures of Reliability for Export Shipment Characteristics by Domestic Mode of Transportation for the United States: 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Domestic mode of transportation	Value			Tons			Ton-miles [1]		
	Coefficient of variation of number		Standard error of percentage change	Coefficient of variation of number		Standard error of percentage change	Coefficient of variation of number		Standard error of percentage change
	2007	2002		2007	2002		2007	2002	
Total	**2.5**	**4.9**	**8.1**	**4.2**	**11.8**	**12.4**	**6.6**	**15.0**	**18.2**
Single modes	**3.4**	**5.8**	**8.7**	**5.2**	**12.4**	**11.7**	**7.4**	**15.2**	**15.0**
Truck [2]	2.5	5.9	7.9	6.3	11.1	14.5	7.1	26.0	25.2
Rail	9.9	6.3	25.7	12.9	13.6	21.6	11.0	16.1	18.5
Water	15.8	20.2	25.2	15.1	21.4	9.7	23.1	17.5	14.8
Air (includes truck and air)	12.2	9.9	20.4	6.4	24.1	16.4	11.5	31.5	18.4
Pipeline [3]	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes [4]	**2.7**	**7.4**	**20.1**	**18.0**	**14.5**	**82.3**	**18.7**	**19.3**	**83.1**
Parcel, U.S. Postal Service or courier	3.3	8.1	16.9	5.6	7.8	14.4	4.8	14.4	28.2
Truck and rail	7.7	10.4	47.7	13.1	15.8	58.0	15.5	6.4	60.0
Truck and water	12.2	(X)	(X)	39.7	(X)	(X)	38.9	(X)	(X)
Rail and water	16.2	(X)	(X)	(S)	(X)	(X)	32.4	(X)	(X)
Other multiple modes	22.5	28.9	(X)	27.0	26.3	(X)	26.0	38.4	(X)
Other and unknown modes	**7.6**	**16.4**	**39.4**	**34.0**	**21.1**	**105.7**	**13.9**	**22.2**	**35.2**

(S) Estimate did not meet publication standards.
(X) Not applicable.

[1] Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See the "Mileage Calculations" section for additional information.
[2] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[3] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[4] Select multiple modes categories for 2002 and 2007 are not directly comparable due to definition changes. For 2002, "Other multiple modes" includes shipments using "Truck and water," "Rail and water," and other mode combinations not specifically listed. For 2007, "Truck and water" and "Rail and water" are not part of "Other multiple modes."

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-2c.

Estimated Standard Errors for Export Shipment Characteristics by Domestic Mode of Transportation for the United States: Percentage of Total for 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Domestic mode of transportation	Value—standard error		Tons—standard error		Ton-miles [1]—standard error	
	2007	2002	2007	2002	2007	2002
Total	**–**	**–**	**–**	**–**	**–**	**–**
Single modes	**0.8**	**1.1**	**2.5**	**0.8**	**3.5**	**1.3**
Truck [2]	0.9	1.0	3.5	3.6	2.6	3.6
Rail	0.6	0.3	2.7	1.8	2.7	3.8
Water	0.4	0.7	2.0	4.1	0.8	1.9
Air (includes truck and air)	1.1	1.0	–	–	0.1	0.3
Pipeline [3]	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes [4]	**0.7**	**1.0**	**2.1**	**0.8**	**3.5**	**1.4**
Parcel, U.S. Postal Service or courier	0.6	0.8	–	–	–	–
Truck and rail	0.5	0.3	0.8	0.6	1.7	0.7
Truck and water	0.2	(X)	1.1	(X)	2.7	(X)
Rail and water	–	(X)	(S)	(X)	0.4	(X)
Other multiple modes	0.1	–	0.6	0.3	0.4	1.3
Other and unknown modes	**0.3**	**0.4**	**1.2**	**0.3**	**0.2**	**0.2**

– Estimate equal to zero.
(S) Estimate did not meet publication standards.
(X) Not applicable.

[1] Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See the "Mileage Calculations" section for additional information.
[2] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[3] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[4] Select multiple modes categories for 2002 and 2007 are not directly comparable due to definition changes. For 2002, "Other multiple modes" includes shipments using "Truck and water," "Rail and water," and other mode combinations not specifically listed. For 2007, "Truck and water" and "Rail and water" are not part of "Other multiple modes."

Notes:
The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Generally, estimates that equal zero are not shown and are indicated by "–." However, the 2007 and 2002 Commodity Flow Surveys have different distinctions between an estimate that equals zero and an estimate that rounds to zero. For 2007 data, the "–" represents estimates that equal zero. For 2002 data, the "–" represents estimates that equal or round to zero.

Table B-3a.

Estimated Measures of Reliability for Export Shipment Characteristics by Country of Destination: 2007

[Estimates are shown as percentages and are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

Country of destination	Value		Tons	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	**2.5**	**–**	**4.2**	**–**
Canada	7.2	1.2	9.2	2.2
Mexico	5.9	0.7	19.0	2.2
All other countries	3.0	1.2	6.5	2.5

– Estimate equal to zero.

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-3b.

Estimated Measures of Reliability for Export Shipment Characteristics by Country of Destination: 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Country of destination	Value			Tons		
	Coefficient of variation of number		Standard error of percentage change	Coefficient of variation of number		Standard error of percentage change
	2007	2002		2007	2002	
Total	**2.5**	**4.9**	**8.1**	**4.2**	**11.8**	**12.3**
Canada	7.2	4.5	11.8	9.2	9.5	12.6
Mexico	5.9	18.0	21.8	19.0	16.0	30.6
All other countries	3.0	4.9	8.9	6.5	15.0	15.5

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-3c.

Estimated Standard Errors for Export Shipment Characteristics by Country of Destination: Percentage of Total for 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Country of destination	Value—standard error		Tons—standard error	
	2007	2002	2007	2002
Total	**–**	**–**	**–**	**–**
Canada	1.2	1.2	2.2	3.0
Mexico	0.7	1.4	2.2	1.2
All other countries	1.2	1.1	2.5	2.9

– Estimate equal to zero.

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-4a.

Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation and Country of Destination: 2007

[Estimates are shown as percentages and are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

Export mode of transportation and country of destination	Value		Tons	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	**2.5**	**–**	**4.2**	**–**
Canada				
Total	**7.2**	**–**	**9.2**	**–**
Single modes	**7.9**	**0.7**	**9.9**	**1.1**
Truck [1]	2.8	2.9	7.2	3.6
Rail	14.7	1.7	10.8	2.2
Water	46.8	1.1	34.8	4.1
Air (includes truck and air)	45.3	3.6	15.8	–
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes	**8.2**	**0.5**	**7.1**	**–**
Parcel, U.S. Postal Service or courier	8.2	0.5	7.1	–
Other and unknown modes	**5.8**	**0.6**	**16.3**	**1.1**
Mexico				
Total	**5.9**	**–**	**19.0**	**–**
Single modes	**6.6**	**2.2**	**21.8**	**3.0**
Truck [1]	6.4	2.3	9.3	3.4
Rail	14.1	2.0	19.4	5.2
Water	36.4	2.9	48.3	7.8
Air (includes truck and air)	14.4	1.0	15.1	–
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes	**23.6**	**0.5**	**36.7**	**–**
Parcel, U.S. Postal Service or courier	23.6	0.5	36.7	–
Other and unknown modes	**14.9**	**2.2**	**20.5**	**3.0**
All Other Countries				
Total	**3.0**	**–**	**6.5**	**–**
Single modes	**3.4**	**0.6**	**6.8**	**0.5**
Truck [3]	(X)	(X)	(X)	(X)
Rail [3]	(X)	(X)	(X)	(X)
Water	4.7	1.2	6.9	0.6
Air (includes truck and air)	3.1	0.9	6.6	0.1
Pipeline [3]	(X)	(X)	(X)	(X)
Multiple modes	**6.8**	**0.5**	**9.6**	**–**
Parcel, U.S. Postal Service or courier	6.8	0.5	9.6	–
Other and unknown modes	**10.8**	**0.2**	**30.7**	**0.5**

– Estimate equal to zero.
(S) Estimate did not meet publication standards.
(X) Not applicable.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[3] "Truck," "Rail," and "Pipeline" single-mode categories are not valid modes of transportation for export shipments to "All Other Countries."

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-4b.

Estimated Measures of Reliability for Export Shipment Characteristics by Export Mode of Transportation and Country of Destination: 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Export mode of transportation and country of destination	Value			Tons		
	Coefficient of variation of number		Standard error of percentage change	Coefficient of variation of number		Standard error of percentage change
	2007	2002		2007	2002	
Total	**2.5**	**4.9**	**8.0**	**4.2**	**11.8**	**12.4**
Canada						
Total	**7.2**	**4.5**	**11.8**	**9.2**	**9.5**	**12.6**
Single modes	**7.9**	**4.7**	**12.9**	**9.9**	**9.0**	**13.2**
Truck [1]	2.8	5.9	12.1	7.2	5.7	10.3
Rail	14.7	13.7	41.1	10.8	18.8	21.4
Water	46.8	12.6	136.1	34.8	18.4	32.0
Air (includes truck and air)	45.3	13.2	111.2	15.8	25.3	20.2
Pipeline [2]	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes [3]	**8.2**	**10.9**	**10.8**	**7.1**	**31.3**	**0.9**
Parcel, U.S. Postal Service or courier	8.2	22.4	44.3	7.1	17.2	26.1
Other multiple modes	(X)	11.1	(X)	(X)	31.7	(X)
Other and unknown modes	**5.8**	**21.7**	**90.3**	**16.3**	**36.4**	**96.8**
Mexico						
Total	**5.9**	**18.0**	**21.8**	**19.0**	**16.0**	**30.7**
Single modes	**6.6**	**7.1**	**12.8**	**21.8**	**16.5**	**32.4**
Truck [1]	6.4	9.8	49.6	9.3	13.0	16.3
Rail	14.1	12.0	44.0	19.4	26.1	48.7
Water	36.4	27.4	62.0	48.3	28.8	59.3
Air (includes truck and air)	14.4	23.4	28.7	15.1	28.5	39.2
Pipeline [2]	(S)	(S)	(S)	(S)	(S)	(S)
Multiple modes [3]	**23.6**	**(S)**	**(S)**	**36.7**	**20.4**	**0.6**
Parcel, U.S. Postal Service or courier	23.6	22.1	56.4	36.7	(S)	(S)
Other multiple modes	(X)	(S)	(X)	(X)	20.8	(X)
Other and unknown modes	**14.9**	**22.6**	**187.1**	**20.5**	**9.2**	**177.8**
All Other Countries						
Total	**3.0**	**4.9**	**8.9**	**6.5**	**15.0**	**15.6**
Single modes [4]	**3.4**	**5.3**	**10.1**	**6.8**	**15.6**	**17.0**
Truck [1]	(X)	42.1	(X)	(X)	10.4	(X)
Rail	(X)	21.8	(X)	(X)	43.7	(X)
Water	4.7	5.8	14.1	6.9	16.4	18.2
Air (includes truck and air)	3.1	7.5	12.3	6.6	11.5	14.4
Pipeline [2]	(X)	(S)	(X)	(X)	(S)	(X)
Multiple modes [3]	**6.8**	**6.1**	**10.9**	**9.6**	**24.7**	**0.5**
Parcel, U.S. Postal Service or courier	6.8	10.3	32.7	9.6	46.9	29.6
Other multiple modes	(X)	8.8	(X)	(X)	25.6	(X)
Other and unknown modes	**10.8**	**16.1**	**19.3**	**30.7**	**36.5**	**28.4**

(S) Estimate did not meet publication standards.
(X) Not applicable.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[3] For 2007, "Parcel, U.S. Postal Service or courier" is the only valid multiple mode of transportation for export shipments.
[4] "Truck," "Rail," and "Pipeline" single-mode categories are not valid modes of transportation for export shipments to "All Other Countries."

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-4c.

Estimated Standard Errors for Export Shipment Characteristics by Export Mode of Transportation and Country of Destination: Percentage of Total for 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Export mode of transportation and country of destination	Value—standard error		Tons—standard error	
	2007	2002	2007	2002
Total	**–**	**–**	**–**	**–**
Canada				
Total	**–**	**–**	**–**	**–**
Single modes	**0.7**	**1.1**	**1.1**	**1.9**
Truck [1]	2.9	2.0	3.6	3.0
Rail	1.7	1.1	2.2	4.1
Water	1.1	0.2	4.1	3.5
Air (includes truck and air)	3.6	1.0	–	–
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes [3]	**0.5**	**1.1**	**–**	**1.9**
Parcel, U.S. Postal Service or courier	0.5	1.0	–	–
Other multiple modes	(X)	0.8	(X)	1.9
Other and unknown modes	**0.6**	**0.6**	**1.1**	**1.0**
Mexico				
Total	**–**	**–**	**–**	**–**
Single modes	**2.2**	**7.5**	**3.0**	**1.2**
Truck [1]	2.3	7.0	3.4	5.2
Rail	2.0	0.9	5.2	4.8
Water	2.9	2.4	7.8	7.4
Air (includes truck and air)	1.0	1.3	–	–
Pipeline [2]	(S)	(S)	(S)	(S)
Multiple modes [3]	**0.5**	**(S)**	**–**	**1.0**
Parcel, U.S. Postal Service or courier	0.5	0.5	–	(S)
Other multiple modes	(X)	(S)	(X)	1.0
Other and unknown modes	**2.2**	**0.8**	**3.0**	**0.3**
All Other Countries				
Total	**–**	**–**	**–**	**–**
Single modes [4]	**0.6**	**0.8**	**0.5**	**1.1**
Truck [1]	(X)	1.9	(X)	0.1
Rail	(X)	–	(X)	1.1
Water	1.2	1.4	0.6	1.9
Air (includes truck and air)	0.9	2.1	0.1	0.3
Pipeline [2]	(X)	(S)	(X)	(S)
Multiple modes [3]	**0.5**	**0.7**	**–**	**1.2**
Parcel, U.S. Postal Service or courier	0.5	0.6	–	–
Other multiple modes	(X)	0.4	(X)	1.2
Other and unknown modes	**0.2**	**0.4**	**0.5**	**0.6**

– Estimate equal to zero.
(S) Estimate did not meet publication standards.
(X) Not applicable.

[1] "Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private and for-hire truck.
[2] Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).
[3] For 2007, "Parcel, U.S. Postal Service or courier" is the only valid multiple mode of transportation for export shipments.
[4] "Truck," "Rail," and "Pipeline" single-mode categories are not valid modes of transportation for export shipments to "All Other Countries."

Notes:

The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Generally, estimates that equal zero are not shown and are indicated by "–." However, the 2007 and 2002 Commodity Flow Surveys have different distinctions between an estimate that equals zero and an estimate that rounds to zero. For 2007 data, the "–" represents estimates that equal zero. For 2002 data, the "–" represents estimates that equal or round to zero.

Table B-5a.

Estimated Measures of Reliability for Export Shipment Characteristics by Commodity Group for the United States: 2007

[Estimates are shown as percentages and are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

SCTG code	Commodity description	Value		Tons	
		Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
	Total [1]	**2.5**	**–**	**4.2**	**–**
01–05	Agricultural products and fish	7.8	0.5	10.2	2.7
06–09	Grains, alcohol, and tobacco products	8.2	0.2	10.7	0.5
10–14	Stones, nonmetallic minerals, and metallic ores	26.3	0.3	13.5	0.5
15–19	Coal and petroleum products	11.9	0.4	16.9	2.8
20–24	Basic chemicals, chemical, and pharmaceutical products	6.8	1.0	8.4	1.1
25–30	Logs, wood products, and textile and leather	7.8	0.4	8.9	0.6
31–34	Base metal and machinery	4.7	0.6	3.4	0.4
35–38	Electronic, motorized vehicles, and precision instruments	5.5	1.5	4.8	0.2
39–43	Furniture, mixed freight and misc. manufactured products	4.0	0.5	12.9	1.3
99	Commodity unknown	(S)	(S)	(S)	(S)

– Estimate equal to zero.

(S) Estimate did not meet publication standards.

[1] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-5b.

Estimated Measures of Reliability for Export Shipment Characteristics by Commodity Group for the United States: 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

SCTG code	Commodity description	Value			Tons		
		Coefficient of variation of number		Standard error of percentage change	Coefficient of variation of number		Standard error of percentage change
		2007	2002		2007	2002	
	Total [1]	**2.5**	**4.9**	**8.1**	**4.2**	**11.8**	**12.3**
01–05	Agricultural products and fish	7.8	14.1	20.5	10.2	17.4	15.3
06–09	Grains, alcohol, and tobacco products	8.2	18.3	38.0	10.7	13.8	26.1
10–14	Stones, nonmetallic minerals, and metallic ores	26.3	16.9	85.3	13.5	23.9	16.6
15–19	Coal and petroleum products	11.9	31.2	122.6	16.9	24.2	43.2
20–24	Basic chemicals, chemical, and pharmaceutical products	6.8	7.2	16.4	8.4	23.2	20.2
25–30	Logs, wood products, and textile and leather	7.8	7.3	11.8	8.9	11.0	13.7
31–34	Base metal and machinery	4.7	7.0	14.4	3.4	12.4	13.1
35–38	Electronic, motorized vehicles, and precision instruments	5.5	8.5	13.1	4.8	10.1	10.9
39–43	Furniture, mixed freight and misc. manufactured products	4.0	8.2	17.1	12.9	15.4	63.4
99	Commodity unknown	(S)	32.1	(S)	(S)	(S)	(S)

(S) Estimate did not meet publication standards.

[1] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-5c.

Estimated Standard Errors for Export Shipment Characteristics by Commodity Group for the United States: Percentage of Total for 2007 and 2002

[Estimates are shown as percentages and are based on data from the 2007 and 2002 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

SCTG code	Commodity description	Value—standard error		Tons—standard error	
		2007	2002	2007	2002
	Total [1]	–	–	–	–
01–05	Agricultural products and fish	0.5	0.9	2.7	3.9
06–09	Grains, alcohol, and tobacco products	0.2	0.3	0.5	0.6
10–14	Stones, nonmetallic minerals, and metallic ores	0.3	0.1	0.5	1.9
15–19	Coal and petroleum products	0.4	0.3	2.8	2.7
20–24	Basic chemicals, chemical, and pharmaceutical products	1.0	0.9	1.1	1.6
25–30	Logs, wood products, and textile and leather	0.4	0.5	0.6	0.8
31–34	Base metal and machinery	0.6	1.3	0.4	1.0
35–38	Electronic, motorized vehicles, and precision instruments	1.5	2.2	0.2	0.6
39–43	Furniture, mixed freight and misc. manufactured products	0.5	0.6	1.3	0.5
99	Commodity unknown	(S)	0.1	(S)	(S)

– Estimate equal to zero.
(S) Estimate did not meet publication standards.

[1] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-6.

Estimated Measures of Reliability for Export Shipment Characteristics by Two-Digit Commodity for the United States: 2007

[Estimates are shown as percentages and are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

SCTG code	Commodity description	Value		Tons	
		Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
	Total [1]	**2.5**	**–**	**4.2**	**–**
01	Live animals and live fish	(S)	(S)	(S)	(S)
02	Cereal grains	15.6	0.4	15.2	2.9
03	Other agricultural products	12.6	0.2	12.7	0.7
04	Animal feed and products of animal origin, n.e.c.	26.4	0.3	19.8	0.8
05	Meat, fish, seafood, and their preparations	7.4	0.1	13.5	0.1
06	Milled grain products and preparations, and bakery products	11.3	0.1	15.4	0.2
07	Other prepared foodstuffs and fats and oils	11.4	0.2	16.0	0.5
08	Alcoholic beverages	31.8	0.1	23.5	0.1
09	Tobacco products	43.1	–	38.4	–
10	Monumental or building stone	27.1	–	44.1	–
11	Natural sands	25.3	–	22.1	0.1
12	Gravel and crushed stone	24.9	–	32.7	0.2
13	Nonmetallic minerals n.e.c.	31.4	0.1	12.4	0.2
14	Metallic ores and concentrates	34.2	0.3	29.3	0.3
15	Coal	37.0	0.1	32.7	2.7
17	Gasoline and aviation turbine fuel	(S)	(S)	(S)	(S)
18	Fuel oils	43.4	0.2	(S)	(S)
19	Coal and petroleum products, n.e.c.	19.1	0.3	12.8	0.9
20	Basic chemicals	9.7	0.4	15.7	0.7
21	Pharmaceutical products	22.8	0.7	16.7	–
22	Fertilizers	39.0	0.1	45.3	0.8
23	Chemical products and preparations, n.e.c.	11.1	0.3	4.3	0.1
24	Plastics and rubber	4.6	0.2	8.0	0.3
25	Logs and other wood in the rough	19.7	–	19.3	0.1
26	Wood products	10.7	0.1	15.1	0.2
27	Pulp, newsprint, paper, and paperboard	7.0	0.1	7.0	0.2
28	Paper or paperboard articles	12.1	–	16.1	0.1
29	Printed products	10.7	–	30.8	0.1
30	Textiles, leather, and articles of textiles or leather	12.3	0.3	32.5	0.4
31	Nonmetallic mineral products	10.2	0.1	8.7	0.1
32	Base metal in primary or semifinished forms and in finished basic shapes	8.2	0.2	6.0	0.3
33	Articles of base metal	4.0	0.1	8.3	0.1
34	Machinery	7.5	0.6	9.7	0.2
35	Electronic and other electrical equipment and components and office equipment	7.2	1.2	10.6	0.1
36	Motorized and other vehicles (including parts)	6.8	0.5	7.0	0.2
37	Transportation equipment, n.e.c.	24.6	1.1	22.4	–
38	Precision instruments and apparatus	7.1	0.5	18.6	–
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	8.7	–	15.1	–
40	Miscellaneous manufactured products	6.3	0.3	12.3	0.1
41	Waste and scrap	11.9	0.3	14.3	1.3
43	Mixed freight	24.9	0.4	25.1	0.1
99	Commodity unknown	(S)	(S)	(S)	(S)

– Estimate equal to zero.
(S) Estimate did not meet publication standards.

[1] Estimates exclude shipments of crude petroleum (SCTG 16).

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-7.

Estimated Measures of Reliability for Export Shipment Characteristics by State of Origin for the United States: 2007

[Estimates are shown as percentages and are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

State of origin	Value		Tons	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	**2.5**	**–**	**4.2**	**–**
Alabama	15.7	0.3	24.2	0.6
Alaska	23.6	0.1	39.1	0.3
Arizona	14.7	0.2	28.6	0.1
Arkansas	26.4	0.1	15.9	–
California	5.8	0.8	14.5	1.9
Colorado	18.3	0.2	(S)	(S)
Connecticut	18.4	0.2	16.1	–
Delaware	22.4	0.1	(S)	(S)
District of Columbia	(S)	(S)	(S)	(S)
Florida	16.9	0.7	26.4	0.8
Georgia	13.2	0.3	9.7	0.2
Hawaii	44.3	–	(S)	(S)
Idaho	41.6	0.2	23.4	–
Illinois	12.4	0.6	20.5	0.6
Indiana	13.0	0.3	8.4	0.1
Iowa	13.5	0.1	11.4	0.2
Kansas	20.8	0.2	23.5	0.1
Kentucky	14.6	0.2	10.7	0.1
Louisiana	14.4	0.4	17.3	2.7
Maine	15.9	–	22.6	–
Maryland	24.6	0.2	21.8	–
Massachusetts	12.1	0.3	9.9	0.1
Michigan	17.1	0.9	15.8	0.5
Minnesota	12.7	0.3	11.8	0.2
Mississippi	16.1	0.1	20.3	0.1
Missouri	13.9	0.1	43.7	0.5
Montana	29.3	–	24.8	0.1
Nebraska	12.4	0.1	31.0	0.2
Nevada	(S)	(S)	25.6	–
New Hampshire	7.4	–	19.4	–
New Jersey	13.1	0.3	10.0	0.2
New Mexico	22.8	0.1	19.4	–
New York	10.6	0.6	24.2	0.8
North Carolina	14.5	0.4	18.8	0.2
North Dakota	19.9	–	39.0	0.4
Ohio	6.8	0.3	23.0	0.5
Oklahoma	19.0	0.1	17.1	–
Oregon	8.0	0.2	31.0	1.1
Pennsylvania	10.5	0.3	35.8	0.6
Rhode Island	19.7	–	27.6	–
South Carolina	12.2	0.1	15.9	0.1
South Dakota	23.7	–	42.1	0.1
Tennessee	9.1	0.2	15.0	0.2
Texas	9.3	0.9	17.8	2.3
Utah	35.0	0.3	23.3	0.1
Vermont	42.7	0.2	26.4	–
Virginia	13.8	0.2	(S)	(S)
Washington	31.1	1.0	16.1	0.6
West Virginia	23.9	0.1	(S)	(S)
Wisconsin	5.3	0.1	13.9	0.2
Wyoming	28.4	–	(S)	(S)

– Estimate equal to zero.

(S) Estimate did not meet publication standards.

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Table B-8.

Estimated Coefficients of Variation for Export Shipment Characteristics by NAICS Codes[1] for the United States: 2007

[Estimates are shown as percentages and are based on data from the 2007 Commodity Flow Survey. Because of rounding, estimates may not be additive]

NAICS code	NAICS title	Value—coefficient of variation of number	Tons—coefficient of variation of number	Ton-miles [2]—coefficient of variation of number
212	Mining (except oil and gas)	27.1	25.2	19.3
311	Food manufacturing	4.9	9.6	6.0
312	Beverage and tobacco product manufacturing	24.3	21.5	20.8
313	Textile mills	6.6	10.1	12.9
314	Textile product mills	9.5	16.6	21.4
315	Apparel manufacturing	32.6	30.4	28.5
316	Leather and allied product manufacturing	23.4	29.7	29.2
321	Wood product manufacturing	11.0	11.9	7.0
322	Paper manufacturing	4.4	5.9	5.6
323	Printing and related support activities	44.1	15.3	11.5
324	Petroleum and coal products manufacturing	24.9	17.0	21.3
325	Chemical manufacturing	6.7	6.4	7.0
326	Plastics and rubber products manufacturing	3.4	3.5	6.1
327	Nonmetallic mineral product manufacturing	9.1	5.2	7.9
331	Primary metal manufacturing	6.5	7.3	9.6
332	Fabricated metal product manufacturing	5.8	11.8	7.9
333	Machinery manufacturing	5.3	10.4	21.7
334	Computer and electronic product manufacturing	5.9	12.5	9.3
335	Electrical equipment, appliance, and component manufacturing	6.6	17.4	16.0
336	Transportation equipment manufacturing	13.5	4.8	3.9
337	Furniture manufacturing	12.5	42.8	47.7
339	Miscellaneous manufacturing	6.2	9.4	11.0
4231	Motor vehicle and motor vehicle parts and supplies	22.1	22.5	24.6
4232	Furniture and home furnishing	14.7	28.0	24.6
4233	Lumber and other construction materials	13.8	23.9	26.9
4234	Professional and commercial equipment and supplies	12.7	17.0	24.3
4235	Metal and mineral (except petroleum)	18.0	19.0	34.4
4236	Electrical and electronic goods	16.1	43.2	32.4
4237	Hardware, and plumbing and heating equipment and supplies	15.6	32.7	15.6
4238	Machinery, equipment, and supplies	10.8	21.6	26.0
4239	Miscellaneous durable goods	9.2	10.3	22.9
4241	Paper and paper products	21.8	39.1	(S)
4242	Drugs and druggists' sundries	22.6	34.7	33.3
4243	Apparel, piece goods, and notions	18.9	49.5	39.9
4244	Grocery and related product wholesalers	17.3	17.8	35.7
4245	Farm product raw material	11.0	10.2	29.2
4246	Chemical and allied products	20.2	20.5	15.8
4247	Petroleum and petroleum products	37.2	(S)	33.0
4248	Beer, wine, and distilled alcoholic beverage	44.5	35.3	44.1
4249	Miscellaneous nondurable goods	19.0	25.3	28.6
4541	Electronic shopping and mail order houses	21.2	29.3	32.3
45431	Fuel dealers	(S)	(S)	(S)
4931	Warehousing and storage	13.0	43.3	27.7
5111	Newspaper, periodical, book, and directory publishers	25.9	(S)	(S)
551114	Corporate, subsidiary, and regional managing offices	15.6	31.2	12.3

(S) Estimate did not meet publication standards.

[1] NAICS codes shown are those covered in the Commodity Flow Survey.

[2] Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

Note: The Introduction and appendixes give information on confidentiality protection, sampling error, sample design, and definitions. Links to this information on the Internet may be found at <www.census.gov/cfs>.

Appendix C.
Sample Design, Data Collection, and Estimation

INTRODUCTION

The primary goal for the 2007 Commodity Flow Survey (CFS) was to estimate *shipping volumes* (value, tons, and ton-miles) by *commodity and mode of transportation* at varying levels of geographic detail. A secondary objective was to estimate the volume of shipments moving from one geographic area to another (i.e., flows of commodities between states, regions, etc.) by mode and commodity. A detailed description of the sample design for the 2007 CFS is provided below.

SAMPLE DESIGN

The sample for the 2007 CFS was selected using a stratified three-stage design in which the first-stage sampling units were establishments, the second-stage sampling units were groups of four 1-week periods (reporting weeks) within the survey year, and the third-stage sampling units were shipments.

First Stage—Establishment Selection

Sampling frame

To create the first-stage sampling frame, a subset of establishment records (as of August 2006) was extracted from the U.S. Census Bureau's Business Register. The Business Register is a database of all known establishments located in the United States or its territories. An establishment is a single physical location where business transactions take place or services are performed. Most establishments located in the United States, having nonzero payroll in 2005, and classified in mining (except oil and gas extraction), manufacturing, wholesale, electronic shopping and mail order, fuel dealers, and publishing industries, as defined by the 2002 North American Industry Classification System (NAICS), were included on the sampling frame. Certain manufacturers (pre-press services) and wholesalers (manufacturers' sales offices, agents and brokers, and certain importers) were excluded from the frame.

Auxiliary establishments (e.g., warehouses and central administrative offices) with shipping activity were also included on the sampling frame. Auxiliary establishments are establishments that are primarily involved in rendering support services for other establishments within the same company instead of for the public, government, or other business firms. Establishments classified in forestry, fishing, utilities, construction, transportation, and all other retail and services industries were not included on the sampling frame. Farms and government-owned entities (except government-owned wholesale liquor stores) were also excluded from the sampling frame.

The resulting frame comprised approximately 754,000 establishments as listed in the table below.

Trade area	Establishments
Mining	6,789
Manufacturing	327,826
Wholesale	356,477
Retail	25,190
Services	22,539
Auxiliaries	14,878
Total	**753,699**

For each establishment, sales, payroll, number of employees, a six-digit NAICS code, name and address, and a primary identifier were extracted, and a measure of size was computed. The measure of size was designed to approximate an establishment's annual total value of shipments for the year 2004.

All of the establishments included on the sampling frame had state, county, and place geographic codes, which were used to assign each establishment to one of the 73 metropolitan areas (MAs) defined as a combination of the metropolitan statistical areas (MSAs), combined statistical areas (CSAs), and states. Establishments not located in an MA were assigned to the balance of the state.

Stratification

The sampling frame was stratified by geography and industry. A particular geographic-by-industry combination defined a "primary stratum." Geographic strata were defined by a combination of the 50 states, the District of Columbia, and 65 MAs based on their population and importance as transportation gateways. All other MAs were collapsed with the non-MAs within the state into rest of state (ROS) strata. When an MA crossed state boundaries, the size of each part of the MA was considered relative to the MAs total measure of size when determining whether or not to create strata in each state in which the MA was defined. Six MAs had strata in two or more states.

The industry strata were determined as follows. Within each of the geographic strata, 48 industry groups were defined based on the 2002 NAICS: 3 mining (four-digit NAICS); 21 manufacturing (three-digit NAICS); 18 wholesale (four-digit NAICS); 2 retail (NAICS 4541 and 45431); 1 ser-

vices (NAICS 5111 and 51223 combined); and 3 auxiliary (combinations of NAICS 4931 and 551114).

If a three- or four-digit NAICS industry contributed at least 4 percent of the total value (based on sampling measure of size) or tonnage (based on 2002 CFS data) for the geographic stratum or the nation, it was designated as a *do not collapse* industry stratum within the geographic stratum. Industries not meeting this level of activity within a geographic stratum were grouped with other similar industries. The remaining industry strata were collapsed to form at most 10 *collapsed* industry strata within each geographic stratum.

The method used to collapse the remaining strata used 2002 CFS data as input to a Classification and Regression Tree (CART) procedure that related industries with commodities. The terminal nodes from the CART procedure were then grouped using a hierarchical clustering algorithm. Using the results from the hierarchical clustering algorithm, some of the clusters were manually regrouped to arrive at the final industry clusters.

To produce better estimates of the shipment of hazardous materials (hazmat) for 2007, a total of 160 strata targeting hazmat shippers were created. Using 2002 CFS data, the six-digit NAICS industries that accounted for a large proportion of the estimated total value and/or total tonnage for six groups of hazmat were identified. These included ammonium nitrate, ethanol, explosives, hydrogen, toxic by inhalation, and all other miscellaneous hazmat.

The treatment of auxiliary establishments was modified for 2007 to take advantage of the data collected through the advance survey. For auxiliaries that responded to the advance survey and were considered to be shippers, 123 strata were created—one in each geographic stratum, combining both NAICS 4931 and 551114. Two national strata for auxiliary establishments were also created for those that did not respond to the advance survey—one stratum for nonresponding warehouses (those classified in NAICS 4931) and one stratum for nonresponding management offices (NAICS 551114).

The table below summarizes the primary stratification of the CFS sampling frame. Of the 2,745 primary strata, 232 were designated as *take-all* strata because of the small number of establishments in the stratum and/or their importance.

Primary strata	Number
Do not collapse	1,306
Collapsed	1,154
Auxiliaries (advance survey responders)	123
Auxiliaries (advance survey nonresponders)	2
Hazmat	160
Total	**2,745**

Sample size and allocation

Sample sizes were computed to meet coefficient of variation (CV) constraints on estimated value of shipments totals for each primary stratum. A CV of 1.5 percent on the estimated total value of shipments was used for each primary stratum because it produced total sample sizes of approximately 100,000 establishments.

The primary constraints were budget related, which are translated into an approximate fixed sample size for the survey. The goal of the design was to allocate this fixed total sample size in a statistically efficient manner. The CV constraints were primarily used as a tool to allocate more of the sample to more important strata. It was assumed that the cost of data collection would not vary by stratum. Maximum sampling weight and minimum sample size constraints were also imposed. For the CFS designs, the maximum first stage sample weight was set to 100 and the minimum sample size to 2 establishments per stratum.

The procedure for determining sampling parameters was an iterative computerized process. The sample design programs used in the process are part of a group of generalized programs that have been modified to accommodate the needs of the survey but use common methods, such as the Dalenius & Hodges cumulative sqrt(f) procedure, Neyman allocation, and similar rules for determining acceptable designs.

For each (non-take-all) primary sampling stratum, the survey designer specified as input to a Generalized Univariate Stratification (GUS) program:

- The desired number of bins (for a frequency distribution used in the Dalenius & Hodges' cumulative sqrt[f] procedure).
- The desired number of size strata.
- The desired number of certainty companies.
- The desired coefficient of variation for total value of shipments.
- The maximum sampling weight.
- The minimum sample size.

Once designs were determined for each of the primary strata, the information from these designs was used as input to a program that attempted to more efficiently allocate the sample to meet the desired CV on each primary stratum and also determine the sample sizes needed to meet a national level constraint. Designs with a national-level constraint tend to allocate more samples to the larger states so there is a trade off between better national estimates and the quality of the more detailed geographic estimates. For the 2007 CFS, a design with a primary strata CV of 1.7 percent and a national CV of 0.036 percent was chosen. The final first stage sample size was 102,369 establishments.

Second Stage—Reporting Week Selection

The frame for the second stage of sampling consisted of 52 weeks from January 6, 2007, to January 4, 2008. Each establishment selected into the 2007 CFS sample was systematically assigned to report for four reporting weeks—one in each quarter of the reference year. Each of the four weeks was in the same relative position of the quarter. For example, an establishment might have been requested to report data for the 5th, 18th, 31st, and 44th weeks of the reference year. In this instance, each reporting week corresponds to the 5th week of each quarter. Prior to assignment of weeks to establishments, the selected sample was sorted by primary stratum (state by metropolitan area by industry) and measure-of-size.

Third Stage—Shipment Selection

For each of the four reporting weeks in which an establishment was asked to report, the respondent was requested to construct a sampling frame consisting of all shipments made by the establishment in the reporting week. Each respondent was asked to count or estimate the total number of shipments comprising the sampling frame and to record this number on the questionnaire. For each assigned reporting week, if an establishment made *more than 40* shipments during that week, the respondent was asked to select a systematic sample of the establishment's shipments and to provide information only about the selected shipments. If an establishment made *40 or fewer* shipments during that week, the respondent was asked to provide information about *all* of the establishment's shipments made during that week (i.e., no sampling was required).

DATA COLLECTION

Each establishment selected into the CFS sample was mailed a questionnaire for each of its four reporting weeks, that is, an establishment was sent a questionnaire once every quarter of 2007. For a given establishment, the respondent was asked to provide the following information about each of the establishment's reported shipments:

- Shipment ID number
- Shipment date (mm/dd)
- Shipment value
- Shipment weight in pounds
- Commodity code from Standard Classification of Transported Goods (SCTG) list
- Commodity description
- United Nations or North America (UN/NA) number for hazardous material shipments
- U.S. destination (city, state, Zip Code)—or gateway for export shipment
- Modes of transport
- An indication of whether the shipment was an export
- City and country of destination for exports
- Export mode

For a shipment that included more than one commodity, the respondent was instructed to report the commodity that made up the greatest percentage of the shipment's weight.

IMPUTATION OF SHIPMENT VALUE OR WEIGHT

To correct for nonresponse to *either* the value *or* weight for a given shipment reported in the CFS, the missing value for the item (or value that failed edit) was replaced by a predicted value obtained from an appropriate model. Such a shipment was considered a "recipient" if it had a valid commodity code and the other item reported was greater than zero and had passed edit. The recipient's item that was missing or failed edit was imputed as follows. First, a "donor" shipment was randomly selected from shipments that were reported in the CFS with:

- The same commodity code as the recipient.
- Both value and weight items reported greater than zero and had passed edit.
- Similar origin and value for the item reported by the recipient.

Then, the donor's value and weight data were used to calculate a ratio, which was then applied to the recipient's reported item to impute the item that was missing or failed edit. If no donor was found, the median ratio for all shipments reported in the survey with the same commodity code as the recipient—and with both value and weight items reported greater than zero—was applied to the recipient's reported item. For either the value or weight item, about 3 percent of the shipment records used for the calculation of estimates had imputed data for the item.

ESTIMATION

Estimated totals (e.g., value of shipments, tons, ton-miles) were produced as the sum of weighted shipment data (reported or imputed). Percentage change and percentage-of-total estimates were derived using the appropriate estimated totals. Estimates of average miles per shipment were computed by dividing a weighted estimate of the total miles traveled by the estimated weighted number of shipments.

Each shipment had associated with it a single tabulation weight, which was used in computing all estimates to which the shipment contributes. The tabulation weight was a product of seven different component weights and a noise factor. A description of each component weight follows.

CFS respondents provided data for a sample of shipments made by their respective establishments in the survey year. For each establishment, an estimate of that establishment's total value of shipments was produced for the entire survey year. To do this, four different weights were used—the shipment weight, the shipment nonresponse weight, the quarter weight, and the quarter nonresponse weight. Three additional weights were then applied to produce estimates representative of the entire universe—the establishment-level adjustment weight, the establishment (or sample) weight, and the industry-level adjustment weight.

Like establishments, shipments were identified as either certainty or noncertainty (see the "Nonsampling Error" section). For noncertainty shipments, the "shipment weight" was defined as the ratio of the reported total number of shipments made by an establishment in a reporting week to the number of sampled shipments for the same week. This weight used data from the sampled shipments to represent all the establishment's shipments made in the reporting week. However, a respondent may have failed to provide sufficient information about a particular sampled shipment. For example, a respondent may not have been able to provide value, weight, or a destination for one of the sampled shipments. If this data item could not be imputed, then this shipment did not contribute to tabulations and was deemed unusable (a "usable shipment" is one that has valid entries for value, weight, and origin and destination ZIP Codes). To account for these unusable shipments, a "shipment nonresponse weight" was applied. For noncertainty shipments from a particular establishment's reporting week, the weight was equal to the ratio of the number of sampled shipments for the reporting week to the number of usable shipments for the same week. The shipment weight for certainty shipments from a particular establishment's reporting week was equal to 1.

The *quarter weight* inflated an establishment's estimate for a particular reporting week to an estimate for the corresponding quarter. For noncertainty shipments, the quarter weight was equal to 13. The quarter weight for most certainty shipments is also equal to 13. However, if a respondent was able to provide information about all large (or certainty) shipments made in the quarter containing the reporting week, then the quarter weight for each of these shipments was one. For each establishment, the quarterly estimates were added to produce an estimate of the establishment's value of shipments for the entire survey year. Whenever an establishment did not provide the Census Bureau with a response for each of its four reporting weeks, a quarter nonresponse weight was computed. The "quarter nonresponse weight" for a particular establishment was defined as the ratio of the number of quarters for which the establishment was in business in the survey year to the total number of quarters (reporting weeks) for which usable shipment data was received from the establishment.

Using these four component weights, an estimate of each establishment's value of shipments was computed for the entire survey year. This estimate was then multiplied by a factor that adjusts the estimate using value of shipments and sales data obtained from other surveys and censuses conducted by the Census Bureau. This weight, the *establishment-level adjustment weight*, attempted to correct for any sampling or nonsampling errors that occurred during the sampling of shipments by the respondent.

The adjusted value of shipments estimate for an establishment was then weighted by the *establishment (or sample) weight*. This weight was equal to the reciprocal of the establishment's probability of being selected into the first stage sample.

A final adjustment weight, the *industry-level adjustment weight*, used information from other surveys and censuses conducted by the Census Bureau to account for establishment nonresponse or nonuseable response and changes in the universe of establishments from 2006 when the first-stage sampling frame was constructed and from 2007 when the data were collected. Separate industry-level adjustment weights were determined for nonauxiliary and auxiliary establishments. For the final CFS estimates, these industry-level adjustments were made by state at the three-digit (Manufacturing) or four-digit (all other industries) NAICS levels. There were approximately 2,150 separate industry adjustment weights computed.

A noise factor was then applied to provide additional disclosure protection (see Appendix B, "Reliability of the Estimates").

Appendix D.
Standard Classification of Transported Goods Code Information

The commodities shown in this report are classified using the Standard Classification of Transported Goods (SCTG) coding system. The SCTG coding system was created jointly by U.S. agencies and Canadian governments based on the Harmonized System of product classification that is used worldwide. The purpose of the SCTG coding system was to specifically address statistical needs in regard to products transported.

In 1997, 2002, and 2007, the Commodity Flow Survey provided respondents with a listing of SCTG codes and descriptions at the five-digit level to use in assigning a commodity code for each shipment. For shipments of more than one commodity, respondents were instructed to use the five-digit code for the major commodity, defined as the commodity of greatest total weight in the shipment. For the data presented on this report, the SCTG codes were aggregated to the two-digit level.

Appendix E.
Sample Questionnaire Instructions and Form

The sample questionnaire instructions and form for the fourth quarter are shown on the following pages.

Note: The questionnaires for each calendar quarter were the same, except for the addition of Item H—"Third Party Logistics" to the fourth quarter questionnaire.

2007 Commodity Flow Survey

INSTRUCTION GUIDE

Instructions for Completing the Commodity Flow Survey
Please read all instructions.

Contents:

- **Part I** — Instructions for Completing your Questionnaire . . . . . Pages 2–6
- **Part II** — Mode of Transportation Definitions . . . . . Page 7
- **Part III** — State Postal Abbreviation List . . . . . Page 8

Instructions for completing the Commodity Flow Survey also are available on our website at **http://www.census.gov/CFS**. If you need to contact us by telephone, a representative will be glad to assist you. Call us at **1–800–772–7851** between 8:30 a.m. and 5:00 p.m. Eastern time.

Part I — Instructions for Completing Your Questionnaire

Item A: Establishment Name:
Enter ***only*** if different from mailing address in label area.

Item B: Physical Location:
Enter ***only*** if different from mailing address in label area.

Item C: Operating Status:
Check the box that best describes this establishment's operating status during the designated reporting week.

If this establishment was inactive and made no outbound shipments during the designated reporting week: skip to the end of the questionnaire and complete the Contact information, and then return the form to the Census Bureau in the envelope provided.

Item D(1): Total Number of Outbound Shipments

Enter in the space provided your total number of outbound shipments **for the one week reporting period** printed in Item D(1).

What we mean by a "shipment":

For the purposes of this survey, a shipment is a single consignment of commodities or products from your establishment to a single customer or to another specific location of your company transported in commerce, often with a shipping document such as a manifest, bill of lading, or waybill.

"Commodities" refer to items that the establishment at this location produces, sells, or distributes, *not* to items that are considered waste-products (without value) of your location's operation.

A special note about "shipments":

A full, or partial, truckload should be counted as a single shipment only if all the commodities on the truck are destined for one location. If a truck makes multiple deliveries on a route, **please count each delivery as one shipment.**

Include:

Include in this count any materials picked up by the customer ("customer pick-up").

Include only those shipments from the location specified in Item B, or label address if not changed.

Include shipments of commodities of all sizes, by any mode of transportation (e.g., parcels).

Include any shipment of products from this establishment to another location of the company if intended for sale (e.g., products moved from this establishment to a company warehouse).

Do not include:

Do *not* include as shipments internal administrative items, such as inter-office memos, payroll checks, business correspondence, etc.

Do *not* include as shipments such as refuse, scrap paper, waste, and recyclable materials **unless** this establishment is in the business of selling or providing these materials to others.

Do *not* include as shipments items moved from the establishment at this location to another location of the company if not intended for commercial activity (e.g., the transfer of office furniture from one location of this company to another location of this company for use at the new location).

Item D(2): Total Number of Outbound Shipments

Check the appropriate box in Item D(2) to indicate whether this establishment reported 40 or fewer shipments in Item D(1). If "Yes" is marked, skip to Item F beginning on page 4 and report the information requested for all shipments made during the assigned week.

If "No", continue with Item E on page 3 to determine the sample of shipments that this establishment should report in Item F.

Item E: Sampling Instructions

If you have more than 40 outbound shipments for the one-week reporting period you are asked to report only a sample of them in Item F.

Item E provides instructions for selecting shipments for which to report in Item F.

Example

For example, if in Item D(1) you reported 150 outbound shipments for the one-week period:

Using the table provided in Item E: Go to the line with the range in column 1 that includes your total number of shipments for the week. In this example, row 4 (101-200), includes 150 so you would follow the instructions in column 2 which reads, “Report every 5th outbound shipment”. You would then report the following 30 shipments in Item F, beginning on Page 4 of the report form:

Line 1: your 5th outbound shipment
Line 2: your 10th outbound shipment
Line 3: your 15th outbound shipment
• • • (continue with every 5th shipment)
• • •
• • •
Line 30: your 150th outbound shipment

When sampling your shipments, please use the files, or combination of files that reflect the full range of your location’s shipping activities in terms of modes of transportation used, commodities or products shipped, and destinations.

We’re here to answer your questions! If you have questions about the sampling process (or any part of the questionnaire) please visit our website at www.census.gov/cfs or call us at 1-800-772-7851, from 8:30 am to 5:00 pm, Eastern time.

Item F: Shipment Characteristics

Shipment ID Number, Column (B) – Enter the invoice number, shipment number, or some other unique identification number that your establishment could use to find this particular shipping document if questions arise regarding your report.

Shipment Date, Column (C) – Enter the month and day of the shipment. If shipment date is not available, use the invoice/shipping document date. Use numbers only.

Shipment Value, Column (D) – Enter the dollar value, in whole dollars, of the entire shipment. The value should not include freight charges or excise taxes (i.e., report the net selling value, f.o.b. plant). If the value is not readily available from your records, please estimate.

Net Shipment Weight, Column (E) – Enter the net weight of the total shipment in whole pounds. If net weight is not readily available from your records, please estimate.

SCTG Commodity Code, Column (F) – Please use the list of commodity codes provided in the SCTG Commodity Codes booklet to select the proper code. For shipments with more than one commodity, enter only the code for the commodity with the greatest weight. For assistance in locating the appropriate commodity code, refer to the alphabetized listing of selected commodities at the end of the SCTG Commodity Codes booklet. Additional assistance is available at our website at www.census.gov/cfs, or you may call us at 1–800–772–7851 to speak with a Census Bureau representative.

Commodity Description, Column (G) – Enter a brief description of the commodity shipped. For shipments with more than one commodity, describe only the commodity with the greatest weight. Do not use trade names, catalog numbers, or other codes not familiar to persons outside your business.

Item F SHIPMENT CHARACTERISTICS

Line No. (A)	Your Shipment ID Number (B)	Shipment date (C) Month	Shipment date (C) Day	Shipment value (excluding shipping costs) in whole dollars *Estimates acceptable.* (D)	Net Shipment weight **in pounds** (E)	SCTG commodity code from accompanying booklet (F)	Commodity description (G)	*Continue with column (H) on page 5*
0	123-5	4	26	244,235	4840	34520	Mechanical machinery	➜
00	402H	4	26	1,375	50,125	20222	Sulfuric acid	➜
1								
2								
3								
4								

Item F: Shipment Characteristics – Continued

- **For Hazardous Materials, Column (H) –** If shipment is a hazardous material, enter the 4-digit United Nations (UN) or North American (NA) number.

- **U.S. Destination or U.S. Exit Port, Column (I) –** For domestic shipments, enter the city, state, and 5-digit ZIP Code of the buyer/receiver as it appears on the shipping document. Use the **"ship to"** address. Use the two letter state postal abbreviation shown in part III.

  Important – For export shipments, report the U.S. **port of exit** as the destination city. The port of exit is the port or airport from which the shipment left the country. In case of land shipments into Mexico or Canada, it is the border crossing.

- **Mode(s) of Transport to U.S. Destination, Column (J) –** Enter the code(s) for **all** modes of transport used for the shipment to its U.S. destination (i.e., the destination reported in **Column (I)**). Codes are located on the bottom of pages 5 and 7 of the questionnaire. Enter in the sequence used, all that apply. See part II for definitions of each mode.

  For Customer Pick-up: Report the mode(s) of transportation used, if known. Otherwise, report mode as "0" (unknown).

  For Export Shipments: List only the mode(s) of transport used to reach the U.S. port, airport, or border crossing of exit.

If a hazardous material, enter the "UN" or "NA" number (H)	U.S. destination or U.S. Exit Port *(Complete for all shipments.)* (I)			Mode(s) of transport to U.S. destination ***Enter all that apply in order used. Use codes at bottom.*** (J)
	City	State	ZIP Code	
	Los Angeles	C A	90040	2, 4
1 8 3 0	Newark	N J	07105	4

Item F: Shipment Characteristics – Continued

- **Intermodal Shipment, Column (K) –** An intermodal shipment is defined as a shipment of a commodity that has been placed within a piece of transportation equipment that is designed to be interchanged (transferred) between different modes of transportation under a single rate (e.g., a single bill of lading). Examples of intermodal transportation include the shipment of commodities in truck trailers designed to be placed on railroad flat cars (TOFC); shipping containers designed to be placed on railroad flat cars (COFC); or shipping containers for marine transportation. Intermodal (IM or ISO) tanks designed for interchange between the truck, rail and marine modes are also examples of intermodal transportation reportable in the CFS.
- **Export Shipment, Column (L) –** Indicate whether or not the shipment is intended for export outside of the United States, by entering a "Y" or "N" (yes or no). For purposes of this survey, shipments to Puerto Rico and U.S. territories and possessions **are** considered exports.
- **Foreign Destination: City and Country, Column (M) –** If the shipment is an export, enter the foreign city and country of destination. For **U.S. Destination, Column (I),** enter the U.S. port, airport, or border crossing of exit. In **Column (J),** enter the mode of transport used to the U.S. destination.
- **Export Mode, Column (N) –** If the shipment is an export, enter the code for the mode of transport by which the shipment left the country. Codes are located at the bottom of pages 5 and 7 of the questionnaire.

Intermodal Shipment? (Y/N)* (K)	Export? (Y/N) (L)	Foreign Destination (for export shipments only) **Note:** In column (I) enter the U.S. port, airport, or border crossing of exit. (M)		Export mode (N)	Line No. (O)
		City	Country		
Y	Y	Beijing	China	6	0
N	N				00
					1
					2
					3
					4

Item G: Monthly Value of Outbound Shipments

Please check the box that corresponds to the total value of all outbound shipments from this location for the most recently completed calendar month.

Contact

Please enter name and telephone number of the person to contact in the event that we have a question about your report.

Part II — Mode of Transportation Definitions

Parcel delivery/Courier/U.S. Parcel Post – Includes ground and air shipments of packages and parcels that each weigh less than 100 pounds, and are transported by a for-hire carrier.

Private truck – Trucks operated by employees of this establishment or the buyer/receiver of the shipment. Includes trucks providing dedicated services to this establishment.

For-hire truck – Shipments by common or contract carriers made under a negotiated rate.

Railroad – Any common carrier or private railroad.

Shallow draft vessel – Barges, ships, or ferries operating on rivers and canals; in harbors, the Great Lakes, the Saint Lawrence Seaway, the Intracoastal Waterway, the Inside Passage to Alaska, major bays and inlets, or in the ocean close to the U.S. shoreline.

Deep draft vessel – Barges, ships, or ferries operating primarily in the open ocean. (Shipping on the Great Lakes and the Saint Lawrence Seaway is classified with shallow draft vessels.)

Pipeline – Movements of oil, petroleum, gas, slurry, etc. through pipelines that extend to other establishments or locations beyond the shipper's establishment. (Aqueducts for the movement of water are not included.)

Air – Any individual package shipped by air that weighs 100 pounds or more.

Other mode – Any mode not listed above.

Unknown – A shipment where you are unable to determine the mode of transportation.

Note: Transportation equipment that is "shipped" under its own power, such as boats, barges, ferries, ships, aircraft, trucks, and trains **should be classified with the appropriate mode above.** Transportation equipment shipped under its own power for which an appropriate mode is not listed (e.g., buses, recreational vehicles) should be listed as **"other" mode.**

Part III — State Postal Abbreviation List

State	Abbrev.	State	Abbrev.
Alabama	AL	Montana	MT
Alaska	AK	Nebraska	NE
Arizona	AZ	Nevada	NV
Arkansas	AR	New Hampshire	NH
California	CA	New Jersey	NJ
Colorado	CO	New Mexico	NM
Connecticut	CT	New York	NY
Delaware	DE	North Carolina	NC
Dist. of Col.	DC	North Dakota	ND
Florida	FL	Ohio	OH
Georgia	GA	Oklahoma	OK
Hawaii	HI	Oregon	OR
Idaho	ID	Pennsylvania	PA
Illinois	IL	Rhode Island	RI
Indiana	IN	South Carolina	SC
Iowa	IA	South Dakota	SD
Kansas	KS	Tennessee	TN
Kentucky	KY	Texas	TX
Louisiana	LA	Utah	UT
Maine	ME	Vermont	VT
Maryland	MD	Virginia	VA
Massachusetts	MA	Washington	WA
Michigan	MI	West Virginia	WV
Minnesota	MN	Wisconsin	WI
Mississippi	MS	Wyoming	WY
Missouri	MO		

NOTICE :
Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: Paperwork Project 0607-0932, U.S. Census Bureau, 4700 Silver Hill Road, Stop 1500, Washington, DC 20233-1500. You may e-mail comments to Paperwork@census.gov; use "Paperwork Project 0607-0932" as the subject. Respondents are not required to respond to any information collection unless it displays a valid approval number in the top right corner on the front of the questionnaire.

U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

FORM
CFS(07)-2000
(10-02-2006)

2007 Commodity Flow Survey

07200017

DUE DATE:

YOUR RESPONSE IS REQUIRED BY LAW. Title 13, United States Code, requires businesses and other organizations that receive this questionnaire to answer the questions and return the report to the U.S.Census Bureau. By the same law, **YOUR REPORT IS CONFIDENTIAL.** It may be seen only by persons sworn to uphold the confidentiality of Census Bureau information and may be used only for statistical purposes. Further, copies retained in respondents' files are immune from legal process.

Please make corrections to name, address, and ZIP code if necessary.

INSTRUCTIONS:

- **Please refer to the accompanying Instruction Guide for help in answering specific questions.**
- **More information is available at www.census.gov/cfs or at 1-800-772-7851.**

PURPOSE OF THIS SURVEY: To develop information on the characteristics of freight flows in the United States. The information you provide is critical to understanding transportation markets, investment needs and the economic, energy, safety, and security consequences of transportation.

Item A ESTABLISHMENT NAME

Is the establishment name shown above in the mailing address correct?

1 ☐ Yes

2 ☐ No - *Enter establishment name* →

Item B PHYSICAL LOCATION

Is the establishment's physical location the same as shown in the mailing label above? *PO Box or rural routes are not physical locations.*

1 ☐ Yes

2 ☐ No - *Print physical location below*

Number and street

City, town, village, etc. | State | ZIP Code + 4 –

If you entered a different location above, please complete the form for that location.

Item C OPERATING STATUS

Which of the following best describes this establishment's operating status during the week of

_____ ?

1 ☐ In operation

2 ☐ Temporarily or seasonally inactive

3 ☐ Ceased operation - *Enter date ceased operation* → Date (MM-DD-YYYY) ___ - ___ - ___

Item D TOTAL NUMBER OF OUTBOUND SHIPMENTS

For this survey, it is important to obtain information about a sample of the outbound shipments made from this establishment.

*An outbound shipment in this survey is defined as a movement of commodities from your establishment to another **single** location. If a truck makes multiple stops on a delivery route, please **count each stop as one shipment.***

- Remember to include only outbound shipments from your physical location (label address or physical location in Item B).
- Also include customer pick-ups, parcels, and all other outbound shipments.

1. What was the total number of all outbound shipments for this establishment the week of

_____ ? . . . . . Total number of outbound shipments ☐

Estimates are acceptable.

For further information, refer to the Instruction Guide, page 2.

2. Did you enter 40 or fewer shipments above?

1 ☐ Yes - *Skip Item E and report all outbound shipments in Item F, pages 4-7.*

2 ☐ No - *Continue with Item E, on page 3.*

Item E SAMPLING INSTRUCTIONS

In order to avoid asking you for information regarding all of your shipments, we will only ask about a sample of them. This section will help you **identify your sample of shipments.**

1. Using the table below, mark the row that includes the total number of outbound shipments reported in Item D, and the corresponding "report every" number.

Number of outbound shipments reported in Line 1	Report every...	Mark (X) one
1-40	Report every outbound shipment	
41-80	Report every **2nd** outbound shipment	
81-100	Report every **3rd** outbound shipment	
101-200	Report every **5th** outbound shipment	
201-400	Report every **10th** outbound shipment	
401-800	Report every **20th** outbound shipment	
801-1600	Report every **40th** outbound shipment	
1601-3200	Report every **80th** outbound shipment	
3201-6400	Report every **160th** outbound shipment	
6401-12800	Report every **320th** outbound shipment	
More than 12800	Call Census at 1-800-772-7851 or go to www.census.gov/cfs	

2. Using your full set of shipments records for the week named in Item D, follow the steps below.

Step 1. Count until you reach the "report every" number marked above.
Step 2. Select that record.
Step 3. Report that record in Line 1 of Item F, pages 4-5.
Step 4. Continuing with the next shipment record, count until you reach the "report every" number again.
Step 5. Select that record.
Step 6. Report in Line 2 of Item F, pages 4-5.
Step 7. Repeat this process until you have gone through your full set of shipment records.

3. Report these selected shipments in Item F.

Example: If an establishment reported 150 shipments in Item D, it would correspond to the range of 101-200 in the table above, and every 5th outbound shipment record would be selected. This means the establishment would count 5 shipment records, select that record, and report it in Item F. Continuing with the next shipment record, the establishment would count 5 shipment records again, select that record, and report it in Item F. The establishment would repeat this until it had gone through the full set of shipment records for the week named in Item D.

For further information, refer to the Instruction Guide, page 3.

Item F SHIPMENT CHARACTERISTICS

NOTE: Each line runs across pages 4 and 5. After entering column H data on page 4 for any line, continue with column (I) on page 5 for the same line.

Line No. (A)	Your Shipment ID Number (B)	Shipment Date (C) Month	Shipment Date (C) Day	Shipment value (excluding shipping costs) in whole dollars. *Estimates acceptable.* (D)	Net Shipment Weight **in pounds** (E)	SCTG commodity code from accompanying booklet (F)	Commodity Description (G)	If a hazardous material, enter the "UN" or "NA" number (H)	*Continue with column (I) on page 5*
0	**123-5**	**4**	**26**	**224,235**	**4840**	**34520**	**Mechanical machinery**		→
00	**402H**	**4**	**26**	**1,375**	**50,125**	**20222**	**Sulfuric acid**	**1830**	→
1									→
2									→
3									→
4									→
5									→
6									→
7									→
8									→
9									→
10									→
11									→
12									→
13									→
14									→
15									→
16									→
17									→
18									→
19									→
20									→

U.S. Destination or U.S. Exit Port *(Complete for all shipments.)* (I)			Mode(s) of transport to U.S. destination. ***Enter all that apply in order used. Use codes at bottom.***	Intermodal shipment? (Y/N) *	Export? (Y/N)	Foreign Destination (for export shipments only) **Note:** In column (I) enter the U.S. port, airport, or border crossing of exit. (M)		Export mode	Line No.
City	State	ZIP Code	(J)	(K)	(L)	City	Country	(N)	(O)
Los Angeles	**CA**	**90040**	**2, 4**	**Y**	**Y**	**Beijing**	**China**	**6**	0
Newark	**NJ**	**07105**	**4**	**N**	**N**				00
									1
									2
									3
									4
									5
									6
									7
									8
									9
									10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20

Mode of transport codes for columns (J) and (N):

1 - Parcel delivery, courier, or U.S. Parcel Post
2 - Private truck
3 - For-hire truck
4 - Railroad
5 - Shallow draft vessel
6 - Deep draft vessel
7 - Pipeline
8 - Air
9 - Other mode
0 - Unknown

* **Intermodal shipments (column K):** include Trailer on Flat Car (TOFC), Container on Flat Car (COFC), and Intermodal (IM or ISO) tank.

Item F SHIPMENT CHARACTERISTICS - Continued

NOTE: Each line runs across pages 6 and 7. After entering column H data on page 6 for any line, continue with column (I) on page 7 for the same line.

Line No. (A)	Your Shipment ID Number (B)	Shipment Date (C) Month	Shipment Date (C) Day	Shipment value (excluding shipping costs) in whole dollars. *Estimates acceptable.* (D)	Net Shipment Weight **in pounds** (E)	SCTG Commodity Code from accompanying booklet (F)	Commodity Description (G)	If a hazardous material, enter the "UN" or "NA" (H)	*Continue with column (I) on page 7*
21									→
22									→
23									→
24									→
25									→
26									→
27									→
28									→
29									→
30									→
31									→
32									→
33									→
34									→
35									→
36									→
37									→
38									→
39									→
40									→

U.S.Destination or U.S. Exit Port *(Complete for all shipments.)* (I)			Mode(s) of transport to U.S. destination. ***Enter all that apply in order used. Use codes at bottom.***	Intermodal shipment? (Y/N) *	Export? (Y/N)	Foreign Destination (for export shipments only) **Note:** In column (I) enter the U.S. port, airport, or border crossing of exit. (M)		Export mode	Line No.
City	State	ZIP Code	(J)	(K)	(L)	City	Country	(N)	(O)
									21
									22
									23
									24
									25
									26
									27
									28
									29
									30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Mode of transport codes for columns (J) and (N):

1 - Parcel delivery, courier, or U.S. Parcel Post
2 - Private truck
3 - For-hire truck
4 - Railroad
5 - Shallow draft vessel
6 - Deep draft vessel
7 - Pipeline
8 - Air
9 - Other mode
0 - Unknown

* **Intermodal shipments (column K):** include Trailer on Flat Car (TOFC), Container on Flat Car (COFC), and Intermodal (IM or ISO) tank.

Item G MONTHLY VALUE OF OUTBOUND SHIPMENTS

Which of the following represents your best estimate of the total value of all outbound shipments originating from this establishment for the most recently completed month?

1 ☐ Less than $1 Million
2 ☐ $1 Million or more but less than $10 Million
3 ☐ $10 Million or more but less than $40 Million
4 ☐ $40 Million or more but less than $100 Million
5 ☐ $100 Million or more but less than $400 Million
6 ☐ $400 Million or more

Item H THIRD-PARTY LOGISTICS

The next series of questions relates to your use of third-party logistics providers (3PLs).

*A 3PL is **not** a contractor who provides only basic logistics services, such as common carrier trucking and/or public warehousing.*

Rather, a 3PL is a contractor that manages and arranges for the provision of multiple logistics services, including freight forwarding, customs brokerage, contract warehousing, transportation, etc.

1. Does this establishment contract out all or a portion of its logistics activities to a 3PL(s)?

1 ☐ Yes 2 ☐ No - *Go to Contact below.*

2. Which of the following services does the 3PL(s) provide, manage and arrange for this establishment? *Mark (X) all that apply.*

1 ☐ Transportation
2 ☐ Contract warehousing
3 ☐ Cross-docking
4 ☐ Re-packing/consolidation
5 ☐ Reverse Logistics
6 ☐ Management of overall transportation and logistics functions (including dedicated trucking services)
7 ☐ Customs brokerage
8 ☐ Freight forwarding
9 ☐ Inventory control and/or management
10 ☐ Information systems

3. Which of the following best represents the percentage of this establishment's outbound shipments (by weight) which was shipped with the involvement of a 3PL(s) during the last 12 months?

1 ☐ 1 to 25% 2 ☐ 26 to 50% 3 ☐ 51 to 75% 4 ☐ 76 to 100%

Contact Please provide the information below for the contact person regarding this report.

Name - *Please print*

Title - *Please print*

Signature

Area Code - Phone Number - Extension

Please return this survey in the enclosed envelope or send it to:
U.S. CENSUS BUREAU
1201 East 10th Street
Jeffersonville IN 47132-0001

THANK YOU FOR COMPLETING THIS REPORT.