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Transportation

1997 Commodity Flow Survey



U.S. Department of Transportation
BUREAU OF TRANSPORTATION STATISTICS

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U.S. CENSUS BUREAU



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1997 Economic Census *Transportation* 1997 Commodity Flow Survey



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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 United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering 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, shop, 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

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are

published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

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 Manufactures Census 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 covering 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, 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 also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. 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.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including 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 the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

1997 Commodity Flow Survey

GENERAL

The 1997 Commodity Flow Survey (CFS) is undertaken through a partnership between the Bureau of the Census, U.S. Department of Commerce, and the Bureau of Transportation Statistics, 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 manufacturing, mining, wholesale, and selected retail establishments. The CFS was last conducted in 1993. See the Comparability With the 1993 Commodity Flow Survey table (Appendix A) for a comparison between the 1997 and 1993 surveys. The data from the CFS are used by public policy analysts and for transportation planning and decision-making to assess the demand for transportation facilities and services, energy use, and safety risk and environmental concerns.

This report presents data at the state level. Additional reports will include data for the United States, census regions, divisions, and selected metropolitan areas, as well as selected data on exports and hazardous material shipments.

INDUSTRY COVERAGE

The 1997 CFS covers business establishments in mining, manufacturing, wholesale trade, and selected retail industries. The survey also covers selected auxiliary establishments (e.g., warehouses) of in-scope multiunit and retail companies. The survey coverage excludes establishments classified as farms, forestry, fisheries, governments, construction, transportation, foreign establishments, services, and most establishments in retail.

The industries covered, as defined in the 1987 Standard Industrial Classification Manual (SIC), are listed in the following table:

SIC code	Title
10, ex. 108	Metal mining (excluding metal mining services)
12, ex. 124	Coal mining (excluding coal mining services)
13	Oil and gas extraction ¹
14, ex. 148	Mining and quarrying of nonmetallic minerals, except fuels (excluding nonmetallic minerals services)
20	Food and kindred products
21	Tobacco products
22	Textile mill products
23	Apparel and other finished products made from fabrics and similar materials
24	Lumber and wood products, except furniture
25	Furniture and fixtures
26	Paper and allied products
27, ex. 279	Printing, publishing, and allied industries (excluding service industries for the printing trade)
28	Chemicals and allied products
29	Petroleum refining and related industries
30	Rubber and miscellaneous plastics products
31	Leather and leather products
32	Stone, clay, glass, and concrete products
33	Primary metal industries
34	Fabricated metal products, except machinery and transportation equipment
35	Industrial and commercial machinery and computer equipment
36	Electronic and other electrical equipment and components, except computer equipment
37	Transportation equipment
38	Measuring, analyzing, and controlling instruments; photographic, medical and optical goods; watches and clocks
39	Miscellaneous manufacturing industries
50	Wholesale trade—durable goods
51	Wholesale trade—nondurable goods
596	Catalog and mail-order houses

¹We included establishments classified in SIC 13, Oil and Gas Extraction, in the initial coverage of the 1997 CFS. However, because of unresolved industry-wide reporting issues, we have removed shipments from these establishments from our 1997 CFS tabulations. The data collected from these establishments will be used as input to a special report at a later date.

Similarly, because establishments in SIC 13 are responsible for the overwhelming number of shipments classified in SCTG 16, Crude Petroleum, we have removed all shipments with SCTG 16 from the 1997 CFS publication results.

SHIPMENT COVERAGE

The CFS captures data on shipments originating from selected types of business establishments located in the 50 states and the District of Columbia. The data do not cover shipments originating from business establishments located in Puerto Rico and other U.S. possessions and territories. Shipments traversing the U.S. 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. Imported products are included in the CFS at the point that they left the importer's domestic location for shipment to another location. Shipments that are shipped through a foreign territory with both the origin and destination in the U.S. 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 mileages for Canada). Export shipments are included, with the domestic destination defined as the port of exit from the U.S.

The "Industry Coverage" section of the text lists the SIC groups covered by the CFS. Other industry areas that are not covered, but may have significant shipping activity, include agriculture, government, and retail (other than warehouses and SIC 5961, Catalog and Mail-Order Houses). For agriculture specifically, this means that the CFS did 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.

MILEAGE CALCULATIONS

To compute shipment mileages for the 1997 CFS, The Center for Transportation Analysis (CTA) at Oak Ridge National Laboratory (ORNL) developed an integrated, intermodal transportation network modeling system. A secure data site was setup at ORNL to process census-supplied files containing data elements for individual CFS shipment records. Each record contained the ZIP Code of shipment origin and destination, and the mode or mode sequence reported. Each record also contained information on the type of commodity moved, its weight, dollar value and whether containerized or a hazardous material. Export shipments were also identified on the records, along with data on U.S. port of exit and foreign destination city and country. Encrypted data files were transmitted and returned from ORNL after processing, with turnaround of most files on a week-by-week basis. In this manner many shipment-specific data problems encountered by ORNL in their routing procedures were reported back to census in a timely fashion, allowing census to call back some shippers and thereby confirm, correct, or recover missing or otherwise unusable data. The ORNL system computed mileages, by mode, for all single modes and for any reported

multimodal sequence. This was done for any origin-destination pair of domestic ZIP Code locations, and for any internal ZIP Code of origin, via U.S. export port, to foreign (export) destination. Mileages between origin-destination ZIP Code centroids were computed by finding the minimum impedance path over mathematical representations of the highway, rail, waterway, air, and pipeline networks and then summing the lengths of individual links on these paths. Impedance is computed as a weighted combination of distance, time, and cost factors.

The ORNL multimodal network database is composed of individual modal-specific networks representing each of the major transportation modes—highway, rail, waterway, air, and pipeline. The links of these specific modal networks are the representation of line-haul transportation facilities. The nodes represent intersections and interchanges, and the access points to the transportation network. To simulate local access, test links are created from each five-digit ZIP Code centroid to nearby nodes on the network. For the truck network, local access is assumed to exist everywhere. For the other modes this is not true. Before any test links are created for these modes, a search procedure is used to determine if and where such networks are most likely to provide access to the ZIP Code. For shipments involving more than one mode, such as truck-rail or rail-water shipments, intermodal transfer links are added to the network database for the purpose of connecting the individual modal networks together for routing purposes. An intermodal terminals database and a number of terminal transfer models were developed at ORNL to identify likely transfer points for different classes of freight. A measure of link impedance was calculated for each access, line-haul, and intermodal transfer link traversed by a shipment. These impedances were mode specific and are based on various link characteristics. For example, the set of link characteristics for the highway network included speed impacting factors, such as the presence of divided or undivided roadway, the degree of access control, rural or urban setting, type of pavement, number of lanes, degree of urban congestion, and length of the link. Link impedance measures are also assigned to the local access links. Intermodal transfer link impedances are estimated in terms of the time it takes to move goods through such a transfer. In the case of rail and air freight, intercarrier transfer penalties are also considered in order to obtain proper route selections. A minimum path algorithm is used to find the minimum impedance path between a shipment's origin ZIP Code centroid and destination ZIP Code centroid. The cumulative length of the local access plus line-haul links on this path provides the estimated shipment distance. When rail was involved these shipment distances may be averaged over more than one path between an origin-destination pair.

Mileage Data for Pipeline Shipments

In the tables, we do not show ton-miles or average miles per shipment for pipeline shipments. 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.

DISCLOSURE RULES

In accordance with Federal law governing Census Bureau reports, no data are published that would disclose the operations of an individual firm or establishment.

EXPLANATION OF TERMS

Average miles per shipment. For the 1993 CFS, we excluded shipments of STCC 27, Printed Matter, from our calculation of average miles per shipment. We made this decision after determining that respondents in the 1993 CFS shipping newspapers, magazines, catalogs, etc., had used widely varying definitions of the term “shipment.”

For the 1997 CFS, we made numerous efforts throughout our data collection and editing to produce consistent results from establishments shipping SCTG 29, Printed Products. As a result, we have included printed products in the average miles per shipment calculations for the 1997 CFS.

Commodity. Products that an establishment produces, sells, or distributes. This does not include items that are considered as excess or byproducts of the establishment’s operation. Respondents reported the description and the five-digit SCTG code for the major commodity contained in the shipment, defined as the commodity with the greatest weight in the total shipment.

Distance shipped. In some tables, shipment data are presented for various “distance shipped” intervals. Shipments were categorized into these “distance shipped” intervals based on the great circle distance between their origin and destination ZIP Code centroids. All other distance-related data in this and other tables (i.e., ton-miles and average miles per shipment) are based on the mileage calculations produced by Oak Ridge National Laboratories. (See the “Mileage Calculations” section for more details.)

Great circle distance. The shortest distance between two points on the earth’s surface.

Mode of transportation. The type of transportation used for moving the shipment to its domestic destination. For exports, the domestic destination was the port of exit.

Mode Definitions

In the instructions to the respondent, we defined the possible modes as follows:

1. **Parcel delivery/courier/U.S. Postal Service.** Delivery services, parcels, packages, and other small shipments that typically weigh less than 100 pounds. Includes bus parcel delivery service.
2. **Private truck.** Trucks operated by a temporary or permanent employee of an establishment or the buyer/receiver of the shipment.
3. **For-hire truck.** Trucks that carry freight for a fee collected from the shipper, recipient of the shipment, or an arranger of the transportation.
4. **Railroad.** Any common carrier or private railroad.
5. **Shallow draft vessels.** Barges, ships, or ferries operating primarily 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 shoreline.
6. **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.
7. **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.
8. **Air.** Commercial or private aircraft, and all air service for shipments that typically weigh more than 100 pounds. Includes air freight and air express.
9. **Other mode.** Any mode not listed above.
10. **Unknown.** The shipment was not carried by a parcel delivery/courier/U.S. Postal Service, and the respondent could not determine what mode of transportation was used.

In the tables, we have used additional terms for mode, which we define as follows:

1. **Air (includes truck and air).** Shipments that used air or a combination of truck and air.
2. **Single modes.** Shipments using only one of the above-listed modes, except parcel or other and unknown.
3. **Multiple modes.** Parcel, U.S. Postal Service or courier shipments or shipments for which two or more of the following modes of transportation were used:
 - Private truck
 - For-hire truck
 - Rail
 - Shallow draft vessel
 - Deep draft vessel
 - Pipeline

We did not allow for multiple modes in combination with “parcel, U.S. Postal Service or courier,” “unknown,” or “other.” By their nature, these shipments may already include various kinds of multiple-mode activity. For example, if the respondent reported a shipment’s mode of transportation as parcel and air, we treated the shipment as parcel only.

4. **Other multiple modes.** Shipments using any other mode combinations not specifically listed in the tables.
5. **Other and unknown modes.** Shipments for which modes were not reported, or were reported by the respondent as “Other” or “Unknown.”
6. **Truck.** Shipments using for-hire truck only, private truck only, or a combination of for-hire truck and private truck.
7. **Water.** Shipments using shallow draft vessel only, deep draft vessel only, or Great Lakes vessel only. Combinations of these modes, such as shallow draft vessel and Great Lakes vessel are included as “Other multiple modes.”
8. **Great Lakes.** In the tables in this publication, “Great Lakes” appears as a single mode. ORNL’s transportation network and mileage calculation system allowed for separate mileage calculations for Great Lakes between the origin and destination ZIP Codes (see the “Mileage Calculations” section for more details).

Other Definitions and Terms

Shipment. A shipment (or delivery) is an individual movement of commodities from an establishment to a customer or to another location of the originating company (including a warehouse, distribution center, retail or wholesale outlet). A shipment uses one or more modes of transportation including parcel delivery, U.S. Postal Service, courier, private truck, for-hire truck, rail, water, pipeline, air, and other modes.

Standard Classification of Transported Goods

(SCTG). The commodities shown in this report are classified using the SCTG coding system. The SCTG coding system was developed jointly by agencies of the United States and Canadian governments based on the Harmonized System to address statistical needs in regard to products transported.

Ton-miles. The weight times the mileage for a shipment. The respondents reported shipment weight in pounds, as described below. Mileage was calculated as the distance between the shipment origin and destination ZIP Codes. For shipments by truck, rail, or shallow draft vessels, the mileage excludes international segments. For example, mileages from Alaska to the continental United States

exclude any mileages through Canada (see the “Mileage Calculations” section for more details). Aggregated pound-miles were converted to ton-miles. The ton-miles data are displayed in millions.

Tons shipped. The total weight of the entire shipment. Respondents reported the weight in pounds. Aggregated pounds were converted to short-tons (2,000 pounds). The tons data are displayed in thousands.

Total modal activity. The overall activity (e.g., ton-miles) of a specific mode of transportation, whether used in a single-mode shipment, or as part of a multiple-mode shipment. For example, the total modal activity for private truck is the total ton-miles carried by private truck in single-mode shipments, combined with the total ton-miles carried by private truck in all multiple-mode shipments that include private truck (private truck and for-hire truck, private truck and rail, private truck and air, etc.)

Value of shipments. The dollar value of the entire shipment. This was defined as the net selling value, f.o.b. plant, exclusive of freight charges and excise taxes. The value data are displayed in millions of dollars.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in the tables for this publication:

D	Denotes figures withheld to avoid disclosing data for individual companies.
–	Represents zero or less than 1 unit of measure.
S	Data do not meet publication standards due to high sampling variability or other reasons.
CFS	Commodity Flow Survey.
lb	Pounds.
n.e.c.	Not elsewhere classified.
NA	Not applicable.
n.o.s.	Not otherwise specified.

OTHER TRANSPORTATION DATA

Users of transportation data may be especially interested in the following reports:

Economic Census: Transportation Sector covers establishments that provide passenger and freight transportation to the general public, government, or other businesses.

Published data include kind of business, geographic location, total operating revenue, annual and first quarter payroll, and number of employees for pay period including March 12.

Vehicle Inventory and Use Survey covers state and U.S. level statistics on the physical and operational characteristics of the Nation’s truck, van, minivan, and sport utility vehicle population. Some of the types of data collected

include number of vehicles, major use, body type, annual miles, model year, vehicle size, fuel type, operator classification, engine size, range of operation, weeks operated, products carried, and hazardous materials carried. This survey shows comparative statistics reflecting percent changes in number of vehicles between 1997 and 1992 for most characteristics.

Transportation Annual 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, total expenses and expenses percentage of motor carrier freight revenue by commodity type, size of shipments handled, length of haul, and vehicle fleet inventory.

All results of the 1997 Economic Census are available on the Census Bureau Internet site <http://www.census.gov> and on compact discs (CD-ROM).

For more information on any Census Bureau product, including a description of electronic and printed reports being issued, see the web site or call Customer Services at 301-457-4100.

Table 1a. Shipment Characteristics by Mode of Transportation for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

Mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
All modes	183 101	100.0	238 700	100.0	48 208	100.0	479
Single modes	154 586	84.4	234 020	98.0	45 321	94.0	201
Truck ¹	146 705	80.1	213 294	89.4	34 863	72.3	168
For-hire truck	93 379	51.0	82 647	34.6	26 905	55.8	487
Private truck	51 504	28.1	128 585	53.9	7 457	15.5	55
Rail	3 876	2.1	15 340	6.4	7 532	15.6	696
Water	452	.2	3 047	1.3	S	S	1 506
Shallow draft	S	S	S	S	S	S	1 454
Great Lakes	355	.2	2 200	.9	S	S	759
Deep draft	S	S	S	S	S	S	10 468
Air (includes truck and air)	3 032	1.7	56	—	56	.1	1 275
Pipeline ²	S	S	S	S	S	S	S
Multiple modes	22 293	12.2	1 355	.6	1 318	2.7	644
Parcel, U.S. Postal Service or courier	21 429	11.7	770	.3	545	1.1	644
Truck and rail	827	.5	572	.2	691	1.4	1 326
Truck and water	S	S	S	S	S	S	9 868
Rail and water	S	S	S	S	S	S	4 304
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	6 222	3.4	3 324	1.4	1 570	3.3	155

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons. Some unpublished estimates can be derived from other data published in this table. However, figures obtained in this manner are subject to these same limitations.

¹"Truck" as a single mode includes shipments which went by private truck only, for-hire truck only, or a combination of private truck and for-hire truck.

²CFS data for pipeline exclude most shipments of crude oil. See "Mileage Calculations" section for details of CFS coverage.

Table 1b. Shipment Characteristics by Mode of Transportation for State of Origin: 1997 and 1993

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

Mode of transportation	Value			Tons			Ton-miles			Average miles per shipment		
	1997 (million dollars)	1993 (million dollars)	Percent change	1997 (thousands)	1993 (thousands)	Percent change	1997 (millions)	1993 (millions)	Percent change	1997	1993	Percent change
All modes	183 101	143 318	27.8	238 700	166 044	43.8	48 208	35 127	37.2	479	457	4.8
Single modes	154 586	126 095	22.6	234 020	159 590	46.6	45 321	32 830	38.0	201	168	19.5
Truck ¹	146 705	120 358	21.9	213 294	146 260	45.8	34 863	25 195	38.4	168	135	24.1
For-hire truck	93 379	76 736	21.7	82 647	65 261	26.6	26 905	20 244	32.9	487	429	13.5
Private truck	51 504	43 359	18.8	128 585	80 594	59.5	7 457	4 888	52.6	55	52	6.2
Rail	3 876	3 615	7.2	15 340	11 012	39.3	7 532	7 456	1.0	696	738	−5.7
Water	452	S	S	3 047	S	S	S	S	S	1 506	S	S
Shallow draft	S	S	S	S	S	S	S	S	S	1 454	53	S
Great Lakes	355	—	—	2 200	—	—	S	—	—	759	—	S
Deep draft	S	S	S	S	S	S	S	S	S	10 468	3 035	245.0
Air (includes truck and air)	3 032	1 687	79.7	56	35	59.4	56	39	43.8	1 275	1 246	2.3
Pipeline ²	S	S	S	S	S	S	S	S	S	S	S	S
Multiple modes	22 293	13 455	65.7	1 355	1 132	19.8	1 318	1 487	−11.4	644	774	−16.8
Parcel, U.S. Postal Service or courier	21 429	12 774	67.8	770	545	41.1	545	362	50.6	644	773	−16.7
Truck and rail	827	570	45.0	572	537	6.6	691	703	−1.6	1 326	1 571	−15.6
Truck and water	S	33	S	S	S	S	S	S	S	9 868	6 262	57.6
Rail and water	S	—	S	S	—	S	S	—	S	4 304	—	S
Other multiple modes	S	S	S	S	S	S	S	S	S	S	6 887	S
Other and unknown modes	6 222	3 769	65.1	3 324	5 322	−37.5	1 570	810	93.7	155	189	−18.1

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons. Some unpublished estimates can be derived from other data published in this table. However, figures obtained in this manner are subject to these same limitations.

¹"Truck" as a single mode includes shipments which went by private truck only, for-hire truck only, or a combination of private truck and for-hire truck.

²CFS data for pipeline exclude most shipments of crude oil. See "Mileage Calculations" section for details of CFS coverage.

Table 1c. Shipment Characteristics by Mode of Transportation for State of Origin: Percent of Total for 1997 and 1993

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

Mode of transportation	Value (percent)		Tons (percent)		Ton-miles (percent)	
	1997	1993	1997	1993	1997	1993
All modes	100.0	100.0	100.0	100.0	100.0	100.0
Single modes	84.4	88.0	98.0	96.1	94.0	93.5
Truck ¹	80.1	84.0	89.4	88.1	72.3	71.7
For-hire truck	51.0	53.5	34.6	39.3	55.8	57.6
Private truck	28.1	30.3	53.9	48.5	15.5	13.9
Rail	2.1	2.5	6.4	6.6	15.6	21.2
Water .....	.2	S	1.3	S	S	S
Shallow draft	S	S	S	S	S	S
Great Lakes .....	.2	—	.9	—	S	—
Deep draft	S	S	S	S	S	S
Air (includes truck and air)	1.7	1.2	—	—	.1	.1
Pipeline ²	S	S	S	S	S	S
Multiple modes	12.2	9.4	.6	.7	2.7	4.2
Parcel, U.S. Postal Service or courier	11.7	8.9	.3	.3	1.1	1.0
Truck and rail .....	.5	.4	.2	.3	1.4	2.0
Truck and water	S	—	S	S	S	S
Rail and water	S	—	S	—	S	—
Other multiple modes	S	S	S	S	S	S
Other and unknown modes	3.4	2.6	1.4	3.2	3.3	2.3

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons. Some unpublished estimates can be derived from other data published in this table. However, figures obtained in this manner are subject to these same limitations.

¹"Truck" as a single mode includes shipments which went by private truck only, for-hire truck only, or a combination of private truck and for-hire truck.

²CFS data for pipeline exclude most shipments of crude oil. See "Mileage Calculations" section for details of CFS coverage.

Table 2. Shipment Characteristics by Total Modal Activity for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

Mode of transportation ¹	Ton-miles		Average miles per shipment
	Number (millions)	Percent	
Total	48 208	100.0	474
Truck	34 923	72.4	166
Rail	8 191	17.0	838
Shallow draft	S	S	1 295
Great Lakes	S	S	654
Deep draft	S	S	9 118
Air	51	.1	1 178
Parcel, U.S. Postal Service or courier	545	1.1	644
Pipeline	S	S	S
Other and unknown modes	1 570	3.3	155

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons. Some unpublished estimates can be derived from other data published in this table. However, figures obtained in this manner are subject to these same limitations.

¹Data represent activity for a given mode across single and multiple mode shipments. For example, "Truck" ton-miles includes total ton-miles for shipments moving by truck only plus ton-miles for truck segments only of multiple mode shipments.

Table 3. Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent
All modes	183 101	100.0	238 700	100.0	48 208	100.0
Less than 50 miles	40 401	22.1	143 796	60.2	3 343	6.9
50 to 99 miles	21 804	11.9	30 824	12.9	2 919	6.1
100 to 249 miles	28 647	15.6	24 739	10.4	5 010	10.4
250 to 499 miles	26 398	14.4	13 620	5.7	6 324	13.1
500 to 749 miles	24 549	13.4	10 079	4.2	8 464	17.6
750 to 999 miles	21 503	11.7	8 645	3.6	9 636	20.0
1,000 to 1,499 miles	9 797	5.4	3 823	1.6	5 659	11.7
1,500 to 1,999 miles	9 829	5.4	3 147	1.3	6 716	13.9
2,000 miles or more	171	—	27	—	137	.3
Single modes	154 586	100.0	234 020	100.0	45 321	100.0
Less than 50 miles	36 297	23.5	142 076	60.7	3 307	7.3
50 to 99 miles	19 483	12.6	30 554	13.1	2 896	6.4
100 to 249 miles	25 212	16.3	24 270	10.4	4 912	10.8
250 to 499 miles	22 611	14.6	13 321	5.7	6 188	13.7
500 to 749 miles	19 736	12.8	9 637	4.1	8 097	17.9
750 to 999 miles	16 784	10.9	8 029	3.4	8 982	19.8
1,000 to 1,499 miles	7 325	4.7	3 251	1.4	4 827	10.7
1,500 to 1,999 miles	7 087	4.6	2 879	1.2	6 105	13.5
2,000 miles or more	51	—	3	—	7	—
Truck¹	146 705	100.0	213 294	100.0	34 863	100.0
Less than 50 miles	35 632	24.3	138 559	65.0	3 258	9.3
50 to 99 miles	18 386	12.5	26 923	12.6	2 420	6.9
100 to 249 miles	24 224	16.5	19 216	9.0	3 948	11.3
250 to 499 miles	21 554	14.7	11 010	5.2	5 007	14.4
500 to 749 miles	18 293	12.5	6 710	3.1	5 310	15.2
750 to 999 miles	15 683	10.7	5 914	2.8	6 215	17.8
1,000 to 1,499 miles	6 599	4.5	2 529	1.2	3 657	10.5
1,500 to 1,999 miles	6 326	4.3	2 432	1.1	5 045	14.5
2,000 miles or more	S	S	S	S	S	S
For-hire truck	93 379	100.0	82 647	100.0	26 905	100.0
Less than 50 miles	9 963	10.7	31 258	37.8	706	2.6
50 to 99 miles	9 763	10.5	13 730	16.6	1 237	4.6
100 to 249 miles	16 577	17.8	12 844	15.5	2 735	10.2
250 to 499 miles	17 977	19.3	9 401	11.4	4 313	16.0
500 to 749 miles	14 321	15.3	5 606	6.8	4 426	16.5
750 to 999 miles	13 381	14.3	5 271	6.4	5 543	20.6
1,000 to 1,499 miles	5 862	6.3	2 335	2.8	3 380	12.6
1,500 to 1,999 miles	5 529	5.9	2 201	2.7	4 563	17.0
2,000 miles or more	S	S	S	S	S	S
Private truck	51 504	100.0	128 585	100.0	7 457	100.0
Less than 50 miles	25 434	49.4	106 020	82.5	2 515	33.7
50 to 99 miles	8 386	16.3	12 961	10.1	1 161	15.6
100 to 249 miles	7 363	14.3	6 243	4.9	1 186	15.9
250 to 499 miles	3 357	6.5	1 506	1.2	650	8.7
500 to 749 miles	3 566	6.9	967	.8	773	10.4
750 to 999 miles	2 074	4.0	550	.4	575	7.7
1,000 to 1,499 miles	671	1.3	170	.1	242	3.3
1,500 to 1,999 miles	654	1.3	169	.1	354	4.8
2,000 miles or more	—	—	—	—	—	—
Rail	3 876	100.0	15 340	100.0	7 532	100.0
Less than 50 miles	413	10.6	S	S	44	.6
50 to 99 miles	304	7.8	3 061	20.0	391	5.2
100 to 249 miles	358	9.2	3 281	21.4	742	9.9
250 to 499 miles	613	15.8	2 303	15.0	1 176	15.6
500 to 749 miles	854	22.0	1 590	10.4	1 449	19.2
750 to 999 miles	584	15.1	1 264	8.2	1 530	20.3
1,000 to 1,499 miles	294	7.6	713	4.6	1 154	15.3
1,500 to 1,999 miles	457	11.8	440	2.9	1 046	13.9
2,000 miles or more	—	—	—	—	—	—
Water	452	100.0	3 047	100.0	S	S
Less than 50 miles	45	10.0	311	10.2	2	—
50 to 99 miles	111	24.6	560	18.4	84	3.2
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Shallow draft	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—

See footnotes at end of table.

Table 3. Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 1997—Con.

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent
Single modes—Con.						
Great Lakes	355	100.0	2 200	100.0	S	S
Less than 50 miles	45	12.7	311	14.2	2	.1
50 to 99 miles	111	31.4	560	25.5	84	6.0
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Air (includes truck and air)	3 032	100.0	56	100.0	56	100.0
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	682	22.5	10	18.1	1	1.9
100 to 249 miles	318	10.5	8	14.3	2	3.0
250 to 499 miles	444	14.6	8	14.6	5	9.1
500 to 749 miles	390	12.8	8	14.7	8	14.6
750 to 999 miles	420	13.8	4	8.0	5	9.8
1,000 to 1,499 miles	432	14.2	9	15.7	15	27.2
1,500 to 1,999 miles	304	10.0	7	12.4	14	25.7
2,000 miles or more	45	1.5	1	2.1	5	8.8
Pipeline²	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	S	S
500 to 749 miles	—	—	—	—	S	S
750 to 999 miles	—	—	—	—	S	S
1,000 to 1,499 miles	—	—	—	—	S	S
1,500 to 1,999 miles	—	—	—	—	S	S
2,000 miles or more	—	—	—	—	S	S
Multiple modes	22 293	100.0	1 355	100.0	1 318	100.0
Less than 50 miles	1 973	8.9	111	8.2	3	.2
50 to 99 miles	1 645	7.4	70	5.1	6	.5
100 to 249 miles	2 956	13.3	S	S	S	S
250 to 499 miles	3 238	14.5	136	10.0	63	4.8
500 to 749 miles	3 802	17.1	189	14.0	164	12.4
750 to 999 miles	4 115	18.5	222	16.4	248	18.8
1,000 to 1,499 miles	1 938	8.7	87	6.5	134	10.2
1,500 to 1,999 miles	2 515	11.3	239	17.6	550	41.8
2,000 miles or more	110	.5	16	1.1	89	6.7
Parcel, U.S. Postal Service or courier	21 429	100.0	770	100.0	545	100.0
Less than 50 miles	1 973	9.2	110	14.3	3	.5
50 to 99 miles	1 644	7.7	70	9.0	6	1.2
100 to 249 miles	2 892	13.5	104	13.5	24	4.3
250 to 499 miles	3 204	15.0	116	15.1	53	9.8
500 to 749 miles	3 690	17.2	131	17.0	106	19.4
750 to 999 miles	3 904	18.2	110	14.2	116	21.3
1,000 to 1,499 miles	1 900	8.9	58	7.5	87	16.0
1,500 to 1,999 miles	2 148	10.0	69	9.0	143	26.2
2,000 miles or more	75	.3	2	.3	7	1.3
Truck and rail	827	100.0	572	100.0	691	100.0
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	34	4.1	S	S	9	1.4
500 to 749 miles	S	S	58	10.2	58	8.4
750 to 999 miles	211	25.5	112	19.6	131	19.0
1,000 to 1,499 miles	38	4.6	29	5.1	47	6.9
1,500 to 1,999 miles	367	44.4	170	29.6	408	59.0
2,000 miles or more	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S

See footnotes at end of table.

Table 3. Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 1997—Con.

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent
Multiple modes—Con.						
Rail and water	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Other multiple modes	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Other and unknown modes	6 222	100.0	3 324	100.0	1 570	100.0
Less than 50 miles	2 131	34.2	1 610	48.4	33	2.1
50 to 99 miles	677	10.9	200	6.0	17	1.1
100 to 249 miles	479	7.7	183	5.5	37	2.4
250 to 499 miles	549	8.8	163	4.9	73	4.7
500 to 749 miles	1 012	16.3	252	7.6	203	12.9
750 to 999 miles	604	9.7	S	S	S	S
1,000 to 1,499 miles	534	8.6	S	S	S	S
1,500 to 1,999 miles	227	3.6	29	.9	60	3.8
2,000 miles or more	S	S	S	S	S	S

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons. Some unpublished estimates can be derived from other data published in this table. However, figures obtained in this manner are subject to these same limitations.

¹"Truck" as a single mode includes shipments which went by private truck only, for-hire truck only, or a combination of private truck and for-hire truck.

²CFS data for pipeline exclude most shipments of crude oil. See "Mileage Calculations" section for details of CFS coverage.

Table 4. Shipment Characteristics by Mode of Transportation and Shipment Size for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

Mode of transportation and shipment size	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
All modes	183 101	100.0	238 700	100.0	48 208	100.0	479
Less than 50 lb	18 731	10.2	662	.3	343	.7	532
50 to 99 lb	5 366	2.9	342	.1	119	.2	345
100 to 499 lb	16 682	9.1	1 975	.8	619	1.3	306
500 to 749 lb	5 416	3.0	1 084	.5	316	.7	288
750 to 999 lb	3 303	1.8	845	.4	212	.4	251
1,000 to 9,999 lb	42 537	23.2	20 515	8.6	5 829	12.1	292
10,000 to 49,999 lb	77 414	42.3	140 729	59.0	25 479	52.9	189
50,000 to 99,999 lb	7 614	4.2	36 070	15.1	3 672	7.6	93
100,000 lb or more	6 037	3.3	36 478	15.3	11 619	24.1	388
Single modes	154 586	100.0	234 020	100.0	45 321	100.0	201
Less than 50 lb	4 307	2.8	235	.1	37	—	156
50 to 99 lb	2 097	1.4	208	—	35	—	164
100 to 499 lb	11 826	7.6	1 671	.7	450	1.0	253
500 to 749 lb	4 748	3.1	1 018	.4	297	.7	289
750 to 999 lb	3 140	2.0	821	.4	202	.4	246
1,000 to 9,999 lb	40 732	26.3	19 795	8.5	5 634	12.4	297
10,000 to 49,999 lb	74 573	48.2	139 296	59.5	24 451	54.0	183
50,000 to 99,999 lb	7 458	4.8	35 523	15.2	3 342	7.4	87
100,000 lb or more	5 706	3.7	35 453	15.1	10 872	24.0	383
Truck¹	146 705	100.0	213 294	100.0	34 863	100.0	168
Less than 50 lb	3 489	2.4	226	.1	23	—	89
50 to 99 lb	1 791	1.2	203	.1	29	—	140
100 to 499 lb	10 735	7.3	1 653	.8	434	1.2	243
500 to 749 lb	4 584	3.1	1 012	.5	293	.8	286
750 to 999 lb	3 077	2.1	820	.4	200	.6	244
1,000 to 9,999 lb	40 020	27.3	19 731	9.3	5 582	16.0	295
10,000 to 49,999 lb	74 104	50.5	139 066	65.2	24 185	69.4	181
50,000 to 99,999 lb	7 110	4.8	34 744	16.3	2 842	8.2	79
100,000 lb or more	1 794	1.2	15 839	7.4	1 274	3.7	114
For-hire truck	93 379	100.0	82 647	100.0	26 905	100.0	487
Less than 50 lb	739	.8	48	—	14	—	321
50 to 99 lb	579	.6	54	—	20	—	376
100 to 499 lb	6 103	6.5	559	.7	365	1.4	636
500 to 749 lb	2 961	3.2	395	.5	250	.9	632
750 to 999 lb	1 879	2.0	272	.3	161	.6	595
1,000 to 9,999 lb	25 914	27.8	7 764	9.4	4 627	17.2	618
10,000 to 49,999 lb	50 069	53.6	48 174	58.3	18 819	69.9	414
50,000 to 99,999 lb	3 849	4.1	17 709	21.4	1 699	6.3	89
100,000 lb or more	1 285	1.4	7 672	9.3	950	3.5	251
Private truck	51 504	100.0	128 585	100.0	7 457	100.0	55
Less than 50 lb	2 739	5.3	177	.1	9	.1	48
50 to 99 lb	1 211	2.4	149	.1	8	.1	56
100 to 499 lb	4 607	8.9	1 087	.8	67	.9	59
500 to 749 lb	1 606	3.1	605	.5	41	.6	68
750 to 999 lb	1 169	2.3	516	.4	35	.5	67
1,000 to 9,999 lb	13 708	26.6	11 736	9.1	892	12.0	71
10,000 to 49,999 lb	22 816	44.3	90 218	70.2	4 985	66.9	57
50,000 to 99,999 lb	3 169	6.2	16 622	12.9	1 115	14.9	69
100,000 lb or more	480	.9	7 475	5.8	304	4.1	31
Rail	3 876	100.0	15 340	100.0	7 532	100.0	696
Less than 50 lb	S	S	S	S	S	S	733
50 to 99 lb	S	S	S	S	S	S	1 088
100 to 499 lb	7	.2	1	—	1	—	879
500 to 749 lb	4	.1	1	—	—	—	759
750 to 999 lb	5	.1	1	—	1	—	1 160
1,000 to 9,999 lb	S	S	S	S	S	S	981
10,000 to 49,999 lb	455	11.7	225	1.5	263	3.5	1 161
50,000 to 99,999 lb	348	9.0	779	5.1	500	6.6	646
100,000 lb or more	2 940	75.9	14 286	93.1	6 729	89.3	575
Water	452	100.0	3 047	100.0	S	S	1 506
Less than 50 lb	S	S	S	S	S	S	10 468
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	S	S	S	S	S	S	707
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	33
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	452	99.9	3 047	100.0	S	S	1 269
Shallow draft	S	S	S	S	S	S	1 454
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	1 454

See footnotes at end of table.

Table 4. Shipment Characteristics by Mode of Transportation and Shipment Size for State of Origin: 1997—Con.

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

Mode of transportation and shipment size	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
Single modes—Con.							
Great Lakes	355	100.0	2 200	100.0	S	S	759
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	S	S	S	S	S	S	707
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	33
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	354	99.9	2 200	100.0	S	S	855
Deep draft	S	S	S	S	S	S	10 468
Less than 50 lb	S	S	S	S	S	S	10 468
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Air (includes truck and air)	3 032	100.0	56	100.0	56	100.0	1 275
Less than 50 lb	817	27.0	9	17.0	13	23.6	1 303
50 to 99 lb	305	10.0	5	8.2	6	10.7	1 267
100 to 499 lb	1 083	35.7	16	29.6	15	27.4	986
500 to 749 lb	160	5.3	S	S	4	7.4	767
750 to 999 lb	58	1.9	S	S	S	S	1 059
1,000 to 9,999 lb	595	19.6	15	27.6	14	25.5	1 034
10,000 to 49,999 lb	S	S	S	S	S	S	1 036
50,000 to 99,999 lb	S	S	S	S	S	S	119
100,000 lb or more	S	S	S	S	S	S	119
Pipeline²	S	S	S	S	S	S	S
Less than 50 lb	—	—	—	—	S	S	S
50 to 99 lb	S	S	S	S	S	S	S
100 to 499 lb	S	S	S	S	S	S	S
500 to 749 lb	—	—	—	—	S	S	S
750 to 999 lb	—	—	—	—	S	S	S
1,000 to 9,999 lb	S	S	S	S	S	S	S
10,000 to 49,999 lb	S	S	S	S	S	S	S
50,000 to 99,999 lb	—	—	—	—	S	S	S
100,000 lb or more	S	S	S	S	S	S	S
Multiple modes	22 293	100.0	1 355	100.0	1 318	100.0	644
Less than 50 lb	13 621	61.1	397	29.3	301	22.8	642
50 to 99 lb	3 057	13.7	116	8.5	81	6.2	713
100 to 499 lb	4 144	18.6	218	16.1	145	11.0	656
500 to 749 lb	491	2.2	29	2.1	14	1.0	470
750 to 999 lb	126	.6	13	1.0	9	.7	658
1,000 to 9,999 lb	98	.4	20	1.4	S	S	3 044
10,000 to 49,999 lb	706	3.2	402	29.7	634	48.1	1 553
50,000 to 99,999 lb	S	S	S	S	S	S	S
100,000 lb or more	S	S	S	S	S	S	3 947
Parcel, U.S. Postal Service or courier	21 429	100.0	770	100.0	545	100.0	644
Less than 50 lb	13 621	63.6	397	51.6	301	55.2	642
50 to 99 lb	3 055	14.3	115	15.0	81	14.9	712
100 to 499 lb	4 136	19.3	215	27.9	140	25.7	651
500 to 749 lb	490	2.3	29	3.7	14	2.5	468
750 to 999 lb	125	.6	13	1.7	9	1.6	659
1,000 to 9,999 lb	S	S	S	S	S	S	550
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	827	100.0	572	100.0	691	100.0	1 326
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	S	S	S	S	S	S	993
100 to 499 lb	S	S	S	S	S	S	1 412
500 to 749 lb	S	S	S	S	S	S	1 758
750 to 999 lb	S	S	S	S	S	S	467
1,000 to 9,999 lb	76	9.2	15	2.6	25	3.6	1 561
10,000 to 49,999 lb	691	83.5	399	69.7	618	89.4	1 506
50,000 to 99,999 lb	S	S	S	S	S	S	S
100,000 lb or more	S	S	S	S	S	S	2 566
Truck and water	S	S	S	S	S	S	9 868
Less than 50 lb	S	S	S	S	S	S	4 653
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	2 803
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	10 385
10,000 to 49,999 lb	S	S	S	S	S	S	4 653
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—

See footnotes at end of table.

Table 4. **Shipment Characteristics by Mode of Transportation and Shipment Size for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

Mode of transportation and shipment size	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
Multiple modes—Con.							
Rail and water	S	S	S	S	S	S	4 304
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	4 304
Other multiple modes	S	S	S	S	S	S	S
Less than 50 lb	S	S	S	S	S	S	90
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	292
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	529
10,000 to 49,999 lb	S	S	S	S	S	S	4 871
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Other and unknown modes	6 222	100.0	3 324	100.0	1 570	100.0	155
Less than 50 lb	803	12.9	29	.9	5	.3	148
50 to 99 lb	212	3.4	19	.6	2	.1	105
100 to 499 lb	713	11.5	86	2.6	5	.3	221
500 to 749 lb	177	2.8	37	1.1	5	.3	127
750 to 999 lb	37	.6	11	.3	1	—	140
1,000 to 9,999 lb	1 707	27.4	700	21.1	130	8.3	134
10,000 to 49,999 lb	2 136	34.3	1 031	31.0	394	25.1	443
50,000 to 99,999 lb	109	1.7	S	S	S	S	709
100,000 lb or more	330	5.3	1 018	30.6	S	S	496

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons. Some unpublished estimates can be derived from other data published in this table. However, figures obtained in this manner are subject to these same limitations.

¹"Truck" as a single mode includes shipments which went by private truck only, for-hire truck only, or a combination of private truck and for-hire truck.

²CFS data for pipeline exclude most shipments of crude oil. See "Mileage Calculations" section for details of CFS coverage.

Table 5. Shipment Characteristics by Two-Digit Commodity for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code	Commodity description	Value		Tons		Ton-miles		Average miles per shipment
		Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
	All commodities	183 101	100.0	238 700	100.0	48 208	100.0	479
01	Live animals and live fish	49	—	S	S	6	—	191
02	Cereal grains	1 034	.6	8 141	3.4	3 757	7.8	43
03	Other agricultural products	1 634	.9	2 766	1.2	625	1.3	675
04	Animal feed and products of animal origin, n.e.c.	1 383	.8	5 439	2.3	884	1.8	58
05	Meat, fish, seafood, and their preparations	5 264	2.9	2 016	.8	1 014	2.1	382
06	Milled grain products and preparations, and bakery products	2 570	1.4	2 414	1.0	1 645	3.4	1 099
07	Other prepared foodstuffs and fats and oils	20 835	11.4	15 087	6.3	5 317	11.0	396
08	Alcoholic beverages	1 307	.7	1 315	.6	225	.5	37
09	Tobacco products	598	.3	15	—	1	—	70
10	Monumental or building stone	S	S	S	S	23	—	318
11	Natural sands	80	—	8 757	3.7	790	1.6	S
12	Gravel and crushed stone	250	.1	71 301	29.9	2 682	5.6	37
13	Nonmetallic minerals n.e.c.	171	—	4 722	2.0	S	S	68
14	Metallic ores and concentrates	129	—	S	S	S	S	439
15	Coal	S	S	S	S	S	S	31
17	Gasoline and aviation turbine fuel	4 253	2.3	S	S	1 237	2.6	56
18	Fuel oils	2 147	1.2	9 347	3.9	612	1.3	21
19	Coal and petroleum products, n.e.c.	658	.4	4 256	1.8	441	.9	53
20	Basic chemicals	911	.5	1 387	.6	355	.7	91
21	Pharmaceutical products	2 213	1.2	45	—	22	—	733
22	Fertilizers	579	.3	2 866	1.2	95	.2	S
23	Chemical products and preparations, n.e.c.	4 940	2.7	1 856	.8	1 018	2.1	249
24	Plastics and rubber	8 769	4.8	2 314	1.0	1 161	2.4	543
25	Logs and other wood in the rough	114	—	2 283	1.0	191	.4	82
26	Wood products	3 678	2.0	7 813	3.3	1 756	3.6	360
27	Pulp, newsprint, paper, and paperboard	7 545	4.1	11 486	4.8	8 022	16.6	405
28	Paper or paperboard articles	5 730	3.1	3 529	1.5	1 459	3.0	321
29	Printed products	9 123	5.0	3 806	1.6	2 116	4.4	S
30	Textiles, leather, and articles of textiles or leather	3 554	1.9	272	.1	174	.4	978
31	Nonmetallic mineral products	2 734	1.5	21 724	9.1	2 404	5.0	708
32	Base metal in primary or semifinished forms and in finished basic shapes	6 938	3.8	5 985	2.5	1 852	3.8	232
33	Articles of base metal	7 487	4.1	2 179	.9	1 006	2.1	379
34	Machinery	21 141	11.5	2 245	.9	1 473	3.1	377
35	Electronic and other electrical equipment and components and office equipment	13 651	7.5	1 241	.5	718	1.5	566
36	Motorized and other vehicles (including parts)	17 093	9.3	3 325	1.4	1 505	3.1	375
37	Transportation equipment, n.e.c.	1 024	.6	83	—	65	.1	627
38	Precision instruments and apparatus	3 764	2.1	61	—	47	.1	348
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	2 554	1.4	616	.3	452	.9	651
40	Miscellaneous manufactured products	10 864	5.9	2 211	.9	1 282	2.7	966
41	Waste and scrap	1 057	.6	4 275	1.8	756	1.6	162
43	Mixed freight	4 622	2.5	2 387	1.0	282	.6	726
--	Commodity unknown	574	.3	S	S	154	.3	533

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons. Some unpublished estimates can be derived from other data published in this table. However, figures obtained in this manner are subject to these same limitations.

Note: Data exclude shipments of SCTG 16, Crude Petroleum. See the section "Industry Coverage" for additional information.

Table 6. Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
ALL COMMODITIES							
Total	183 101	100.0	238 700	100.0	48 208	100.0	479
Single modes	154 586	84.4	234 020	98.0	45 321	94.0	201
Truck ¹	146 705	80.1	213 294	89.4	34 863	72.3	168
For-hire truck	93 379	51.0	82 647	34.6	26 905	55.8	487
Private truck	51 504	28.1	128 585	53.9	7 457	15.5	55
Rail	3 876	2.1	15 340	6.4	7 532	15.6	696
Water	452	.2	3 047	1.3	S	S	1 506
Shallow draft	S	S	S	S	S	S	1 454
Great Lakes	355	.2	2 200	.9	S	S	759
Deep draft	S	S	S	S	S	S	10 468
Air (includes truck and air)	3 032	1.7	56	—	56	.1	1 275
Pipeline ²	S	S	S	S	S	S	S
Multiple modes	22 293	12.2	1 355	.6	1 318	2.7	644
Parcel, U.S. Postal Service or courier	21 429	11.7	770	.3	545	1.1	644
Truck and rail	827	.5	572	.2	691	1.4	1 326
Truck and water	S	S	S	S	S	S	9 868
Rail and water	S	S	S	S	S	S	4 304
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	6 222	3.4	3 324	1.4	1 570	3.3	155
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	49	100.0	S	S	6	100.0	191
Single modes	49	99.5	S	S	6	100.0	S
Truck ¹	49	99.5	S	S	6	100.0	S
For-hire truck	27	54.7	22	25.2	5	69.7	218
Private truck	S	S	S	S	S	S	25
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	382
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	382
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 02, CEREAL GRAINS							
Total	1 034	100.0	8 141	100.0	3 757	100.0	43
Single modes	985	95.3	7 801	95.8	3 305	88.0	S
Truck ¹	206	20.0	1 707	21.0	79	2.1	30
For-hire truck	39	3.7	368	4.5	40	1.1	171
Private truck	168	16.2	1 339	16.4	38	1.0	15
Rail	436	42.1	3 499	43.0	781	20.8	606
Water	343	33.2	2 596	31.9	S	S	1 278
Shallow draft	S	S	S	S	S	S	1 454
Great Lakes	274	26.5	1 850	22.7	S	S	908
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	332
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	332
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 03, OTHER AGRICULTURAL PRODUCTS							
Total	1 634	100.0	2 766	100.0	625	100.0	675
Single modes	1 364	83.5	2 278	82.4	513	82.1	82
Truck ¹	1 145	70.1	1 701	61.5	212	34.0	81
For-hire truck	S	S	S	S	161	25.8	162
Private truck	857	52.4	912	33.0	50	8.1	79
Rail	S	S	S	S	S	S	847
Water	109	6.7	452	16.3	S	S	1 194
Shallow draft	S	S	S	S	S	S	1 454
Great Lakes	81	4.9	350	12.7	53	8.4	150
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	462
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	117	7.1	S	S	S	S	1 106
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 108
Truck and rail	S	S	S	S	S	S	198
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	1 383	100.0	5 439	100.0	884	100.0	58
Single modes	1 368	98.9	5 412	99.5	881	99.7	48
Truck ¹	1 355	98.0	5 306	97.5	743	84.0	47
For-hire truck	372	26.9	981	18.0	561	63.5	362
Private truck	982	71.0	4 318	79.4	181	20.5	29
Rail	S	S	106	2.0	S	S	1 107
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	—	—	—	—	744
Parcel, U.S. Postal Service or courier	S	S	—	—	—	—	744
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	27	.5	S	S	10
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	5 264	100.0	2 016	100.0	1 014	100.0	382
Single modes	4 983	94.6	1 863	92.4	997	98.3	S
Truck ¹	4 974	94.5	1 862	92.3	996	98.2	S
For-hire truck	2 917	55.4	1 062	52.7	708	69.8	557
Private truck	1 921	36.5	770	38.2	265	26.1	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 364
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 484
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 484
Truck and rail	S	S	S	S	S	S	2 224
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	235	4.5	147	7.3	S	S	

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	2 570	100.0	2 414	100.0	1 645	100.0	1 099
Single modes	2 502	97.3	2 392	99.1	1 587	96.4	350
Truck ¹	2 216	86.2	1 313	54.4	683	41.5	343
For-hire truck	1 288	50.1	823	34.1	591	35.9	1 033
Private truck	837	32.6	448	18.5	83	5.0	75
Rail	285	11.1	1 079	44.7	S	S	811
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	7	.3	13	.8	1 388
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 387
Truck and rail	S	S	S	S	S	S	2 422
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	20 835	100.0	15 087	100.0	5 317	100.0	396
Single modes	20 295	97.4	14 701	97.4	5 020	94.4	180
Truck ¹	20 131	96.6	14 437	95.7	4 690	88.2	179
For-hire truck	11 429	54.9	8 241	54.6	3 403	64.0	459
Private truck	7 734	37.1	5 754	38.1	978	18.4	85
Rail	156	.7	264	1.8	330	6.2	1 315
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	S
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	197	.9	131	.9	234	4.4	1 210
Parcel, U.S. Postal Service or courier	93	.4	6	—	6	.1	1 207
Truck and rail	103	.5	125	.8	228	4.3	1 841
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	344	1.7	254	1.7	63	1.2	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	1 307	100.0	1 315	100.0	225	100.0	37
Single modes	1 285	98.3	1 291	98.2	224	99.6	37
Truck ¹	1 285	98.3	1 291	98.2	224	99.6	37
For-hire truck	236	18.0	483	36.8	S	S	414
Private truck	1 050	80.3	808	61.5	S	S	34
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	22	1.7	24	1.8	1	.4	4

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 09, TOBACCO PRODUCTS							
Total	598	100.0	15	100.0	1	100.0	70
Single modes	597	99.8	15	99.8	1	100.0	71
Truck ¹	597	99.8	15	99.8	1	100.0	71
For-hire truck	—	—	—	—	—	—	—
Private truck	597	99.8	15	99.8	1	100.0	71
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	6
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	S	S	S	S	23	100.0	318
Single modes	S	S	S	S	23	100.0	321
Truck ¹	S	S	S	S	23	100.0	321
For-hire truck	S	S	S	S	S	S	381
Private truck	S	S	S	S	S	S	109
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	9
SCTG 11, NATURAL SANDS							
Total	80	100.0	8 757	100.0	790	100.0	S
Single modes	78	98.0	8 723	99.6	742	93.9	S
Truck ¹	60	74.8	8 111	92.6	201	25.4	23
For-hire truck	9	11.0	872	10.0	57	7.2	85
Private truck	26	32.8	6 723	76.8	127	16.1	16
Rail	19	23.2	613	7.0	541	68.5	846
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	2 979
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	2 546
Truck and water	—	—	—	—	—	—	—
Rail and water	S	S	S	S	S	S	4 304
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	11

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 12, GRAVEL AND CRUSHED STONE							
Total	250	100.0	71 301	100.0	2 682	100.0	37
Single modes	249	99.7	71 098	99.7	2 679	99.9	37
Truck ¹	241	96.5	69 433	97.4	2 541	94.7	37
For-hire truck	116	46.3	15 277	21.4	S	S	60
Private truck	125	50.0	54 120	75.9	1 836	68.5	33
Rail	S	S	S	S	S	S	76
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	20
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	171	100.0	4 722	100.0	S	S	68
Single modes	169	98.4	S	S	S	S	67
Truck ¹	147	85.6	S	S	132	34.9	61
For-hire truck	86	50.3	1 153	24.4	77	20.3	S
Private truck	59	34.7	S	S	54	14.3	60
Rail	S	S	S	S	S	S	212
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	169
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	169
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	50
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	129	100.0	S	S	S	S	439
Single modes	127	98.3	S	S	S	S	S
Truck ¹	52	40.6	S	S	S	S	S
For-hire truck	S	S	3	.9	S	S	278
Private truck	35	27.2	10	2.5	S	S	S
Rail	S	S	S	S	S	S	441
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	640
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	640
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	5

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 15, COAL							
Total	\$	\$	\$	\$	\$	\$	31
Single modes	\$	\$	\$	\$	\$	\$	31
Truck ¹	\$	\$	\$	\$	\$	\$	29
For-hire truck	\$	\$	\$	\$	\$	\$	29
Private truck	\$	\$	\$	\$	\$	\$	7
Rail	\$	\$	\$	\$	\$	\$	154
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	14
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	4 253	100.0	\$	\$	1 237	100.0	56
Single modes	4 252	100.0	\$	\$	1 237	100.0	56
Truck ¹	\$	\$	\$	\$	\$	\$	56
For-hire truck	\$	\$	\$	\$	483	39.1	66
Private truck	\$	\$	\$	\$	\$	\$	52
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	\$	\$	\$	\$	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	1	—	—	—	10
SCTG 18, FUEL OILS							
Total	2 147	100.0	9 347	100.0	612	100.0	21
Single modes	2 146	100.0	9 321	99.7	612	100.0	21
Truck ¹	2 038	94.9	8 612	92.1	514	84.1	21
For-hire truck	670	31.2	3 242	34.7	232	37.9	44
Private truck	1 363	63.5	5 341	57.1	283	46.2	18
Rail	\$	\$	\$	\$	\$	\$	1 335
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	\$	\$	\$	\$	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	7

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	658	100.0	4 256	100.0	441	100.0	53
Single modes	652	99.1	4 253	99.9	441	99.9	47
Truck ¹	597	90.7	3 982	93.6	159	36.0	43
For-hire truck	186	28.2	1 886	44.3	119	27.0	S
Private truck	362	55.0	1 973	46.4	35	8.0	25
Rail	55	8.4	271	6.4	282	64.0	1 084
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	79
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	5	.7	1	—	S	S	384
Parcel, U.S. Postal Service or courier	5	.7	1	—	S	S	384
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	23
SCTG 20, BASIC CHEMICALS							
Total	911	100.0	1 387	100.0	355	100.0	91
Single modes	748	82.2	1 335	96.3	352	99.0	S
Truck ¹	686	75.3	1 051	75.8	146	41.1	S
For-hire truck	308	33.8	537	38.7	108	30.5	298
Private truck	368	40.4	502	36.2	37	10.4	34
Rail	62	6.8	284	20.5	206	57.9	733
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	173
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	153	16.8	S	S	1	.3	S
Parcel, U.S. Postal Service or courier	153	16.8	S	S	1	.3	S
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	2	.7	S
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	2 213	100.0	45	100.0	22	100.0	733
Single modes	715	32.3	29	64.0	S	S	134
Truck ¹	676	30.6	29	63.7	S	S	91
For-hire truck	451	20.4	17	38.3	S	S	S
Private truck	225	10.2	11	25.4	S	S	60
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 211
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	1 446	65.3	16	34.7	10	44.9	821
Parcel, U.S. Postal Service or courier	1 446	65.3	16	34.7	10	44.9	821
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	136

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 22, FERTILIZERS							
Total	579	100.0	2 866	100.0	95	100.0	S
Single modes	574	99.0	2 842	99.2	94	99.6	S
Truck ¹	574	99.0	2 842	99.2	94	99.6	S
For-hire truck	S	S	S	S	S	S	121
Private truck	493	85.0	2 537	88.5	47	50.1	18
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 222
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 222
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	6	1.0	23	.8	—	.3	7
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	4 940	100.0	1 856	100.0	1 018	100.0	249
Single modes	4 602	93.2	1 797	96.9	979	96.2	132
Truck ¹	4 584	92.8	1 718	92.6	891	87.5	125
For-hire truck	1 474	29.8	736	39.7	401	39.4	398
Private truck	3 109	62.9	981	52.9	489	48.1	54
Rail	15	.3	80	4.3	88	8.6	1 089
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 273
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	252	5.1	24	1.3	25	2.4	507
Parcel, U.S. Postal Service or courier	220	4.5	17	.9	8	.8	507
Truck and rail	S	S	S	S	S	S	S
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	85	1.7	34	1.8	S	S	S
SCTG 24, PLASTICS AND RUBBER							
Total	8 769	100.0	2 314	100.0	1 161	100.0	543
Single modes	7 563	86.3	2 208	95.4	1 088	93.7	393
Truck ¹	7 450	85.0	2 202	95.2	1 078	92.8	265
For-hire truck	5 623	64.1	1 697	73.3	973	83.8	647
Private truck	1 772	20.2	489	21.1	82	7.1	55
Rail	S	S	S	S	S	S	2 496
Water	S	S	S	S	S	S	707
Shallow draft	—	—	—	—	—	—	—
Great Lakes	S	S	S	S	S	S	707
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	112	1.3	4	.2	7	.6	1 823
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	943	10.8	64	2.8	56	4.8	740
Parcel, U.S. Postal Service or courier	898	10.2	53	2.3	36	3.1	740
Truck and rail	S	S	S	S	S	S	1 982
Truck and water	S	S	S	S	S	S	2 803
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	263	3.0	42	1.8	18	1.5	184

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	114	100.0	2 283	100.0	191	100.0	82
Single modes	114	99.8	2 283	100.0	191	100.0	78
Truck ¹	100	87.7	1 858	81.4	139	73.0	75
For-hire truck	58	50.7	1 049	45.9	103	53.9	95
Private truck	42	37.0	S	S	S	S	43
Rail	S	S	S	S	S	S	121
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 142
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 142
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	3
SCTG 26, WOOD PRODUCTS							
Total	3 678	100.0	7 813	100.0	1 756	100.0	360
Single modes	3 538	96.2	7 688	98.4	1 686	96.0	286
Truck ¹	3 429	93.2	7 037	90.1	1 263	71.9	277
For-hire truck	1 824	49.6	4 513	57.8	882	50.2	439
Private truck	1 600	43.5	2 523	32.3	381	21.7	190
Rail	110	3.0	651	8.3	423	24.1	890
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	971
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	74	2.0	S	S	S	S	980
Parcel, U.S. Postal Service or courier	36	1.0	4	—	4	.2	974
Truck and rail	S	S	S	S	S	S	2 198
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	66	1.8	95	1.2	10	.6	S
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	7 545	100.0	11 486	100.0	8 022	100.0	405
Single modes	7 426	98.4	11 425	99.5	7 941	99.0	397
Truck ¹	5 912	78.4	9 154	79.7	6 363	79.3	386
For-hire truck	5 179	68.6	8 456	73.6	6 223	77.6	635
Private truck	670	8.9	673	5.9	S	S	55
Rail	1 311	17.4	1 788	15.6	1 574	19.6	871
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 110
Pipeline ²	S	S	S	S	S	S	S
Multiple modes	108	1.4	50	.4	71	.9	S
Parcel, U.S. Postal Service or courier	S	S	8	—	2	—	462
Truck and rail	52	.7	39	.3	56	.7	1 461
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	4 871
Other and unknown modes	S	S	S	S	S	S	

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 28, PAPER OR PAPERBOARD ARTICLES							
Total	5 730	100.0	3 529	100.0	1 459	100.0	321
Single modes	5 490	95.8	3 461	98.1	1 405	96.3	227
Truck ¹	5 468	95.4	3 451	97.8	1 399	95.9	223
For-hire truck	4 400	76.8	2 792	79.1	1 254	86.0	469
Private truck	990	17.3	614	17.4	107	7.3	57
Rail	S	S	S	S	S	S	790
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	4	—	1	—	1	—	979
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	190	3.3	43	1.2	48	3.3	733
Parcel, U.S. Postal Service or courier	115	2.0	13	.4	8	.6	731
Truck and rail	75	1.3	30	.8	40	2.7	1 182
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	50	.9	S	S	S	S	S
SCTG 29, PRINTED PRODUCTS							
Total	9 123	100.0	3 806	100.0	2 116	100.0	S
Single modes	6 269	68.7	3 440	90.4	1 947	92.0	208
Truck ¹	6 204	68.0	3 433	90.2	1 939	91.7	185
For-hire truck	4 557	49.9	2 452	64.4	1 884	89.0	272
Private truck	1 612	17.7	980	25.8	54	2.6	S
Rail	S	S	S	S	S	S	1 098
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	59	.6	2	—	2	.1	1 198
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	2 006	22.0	172	4.5	146	6.9	S
Parcel, U.S. Postal Service or courier	1 897	20.8	99	2.6	55	2.6	S
Truck and rail	S	S	S	S	91	4.3	1 237
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	848	9.3	S	S	23	1.1	220
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	3 554	100.0	272	100.0	174	100.0	978
Single modes	1 531	43.1	195	71.7	109	62.8	670
Truck ¹	1 491	42.0	193	70.9	107	61.6	437
For-hire truck	1 169	32.9	147	54.1	99	56.9	736
Private truck	322	9.1	46	16.8	8	4.8	183
Rail	S	S	S	S	S	S	835
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	39	1.1	S	S	S	S	1 609
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	1 955	55.0	72	26.4	61	35.0	993
Parcel, U.S. Postal Service or courier	1 954	55.0	71	26.0	58	33.6	993
Truck and rail	S	S	S	S	S	S	2 257
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	67	1.9	5	1.9	S	S	460

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 31, NONMETALLIC MINERAL PRODUCTS							
Total	2 734	100.0	21 724	100.0	2 404	100.0	708
Single modes	2 415	88.3	21 140	97.3	1 992	82.9	175
Truck ¹	2 318	84.8	19 915	91.7	1 130	47.0	169
For-hire truck	1 214	44.4	2 679	12.3	752	31.3	569
Private truck	1 047	38.3	16 928	77.9	357	14.9	39
Rail	S	S	S	S	S	S	699
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 260
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	225	8.2	25	.1	S	S	1 389
Parcel, U.S. Postal Service or courier	207	7.6	16	—	15	.6	1 380
Truck and rail	S	S	S	S	S	S	962
Truck and water	S	S	S	S	S	S	10 511
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	94	3.4	S	S	S	S	S
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	6 938	100.0	5 985	100.0	1 852	100.0	232
Single modes	6 601	95.1	5 694	95.1	1 708	92.2	203
Truck ¹	6 515	93.9	5 224	87.3	1 526	82.4	200
For-hire truck	4 184	60.3	3 480	58.1	1 311	70.8	428
Private truck	2 252	32.5	1 695	28.3	200	10.8	58
Rail	76	1.1	470	7.9	181	9.8	620
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	10	.1	S	S	S	S	990
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	172	2.5	16	.3	S	S	453
Parcel, U.S. Postal Service or courier	167	2.4	8	.1	5	.3	451
Truck and rail	S	S	S	S	S	S	1 680
Truck and water	S	S	S	S	S	S	4 651
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	165	2.4	274	4.6	S	S	154
SCTG 33, ARTICLES OF BASE METAL							
Total	7 487	100.0	2 179	100.0	1 006	100.0	379
Single modes	6 403	85.5	1 960	89.9	770	76.6	236
Truck ¹	6 306	84.2	1 934	88.8	737	73.2	204
For-hire truck	4 304	57.5	1 160	53.2	614	61.0	545
Private truck	2 000	26.7	775	35.5	123	12.3	70
Rail	S	S	S	S	S	S	1 325
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	43	.6	5	.2	6	.6	1 259
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	812	10.8	63	2.9	47	4.7	575
Parcel, U.S. Postal Service or courier	767	10.2	46	2.1	30	3.0	575
Truck and rail	S	S	S	S	S	S	811
Truck and water	S	S	S	S	S	S	4 653
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	272	3.6	S	S	S	S	S

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 34, MACHINERY							
Total	21 141	100.0	2 245	100.0	1 473	100.0	377
Single modes	17 672	83.6	2 077	92.5	1 342	91.1	270
Truck ¹	17 068	80.7	2 042	91.0	1 306	88.7	196
For-hire truck	13 783	65.2	1 669	74.3	1 181	80.2	729
Private truck	3 230	15.3	369	16.4	121	8.2	32
Rail	S	S	S	S	20	1.4	845
Water	S	S	S	S	S	S	33
Shallow draft	—	—	—	—	—	—	—
Great Lakes	S	S	S	S	S	S	33
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	390	1.8	17	.7	16	1.1	1 105
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	2 364	11.2	82	3.6	79	5.4	546
Parcel, U.S. Postal Service or courier	2 193	10.4	59	2.6	36	2.4	545
Truck and rail	169	.8	23	1.0	S	S	1 876
Truck and water	S	S	S	S	S	S	10 482
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	440
Other and unknown modes	1 106	5.2	86	3.8	53	3.6	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	13 651	100.0	1 241	100.0	718	100.0	566
Single modes	9 899	72.5	1 135	91.4	662	92.3	245
Truck ¹	9 041	66.2	1 092	88.0	576	80.2	165
For-hire truck	7 078	51.9	742	59.8	508	70.8	484
Private truck	1 963	14.4	350	28.2	67	9.4	33
Rail	273	2.0	38	3.0	82	11.5	2 267
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	586	4.3	5	.4	4	.6	1 111
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	3 360	24.6	57	4.6	43	6.0	792
Parcel, U.S. Postal Service or courier	3 352	24.6	55	4.5	41	5.7	792
Truck and rail	S	S	S	S	S	S	1 725
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	392	2.9	49	4.0	12	1.7	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	17 093	100.0	3 325	100.0	1 505	100.0	375
Single modes	13 052	76.4	3 141	94.5	1 375	91.4	S
Truck ¹	12 395	72.5	3 056	91.9	1 313	87.2	S
For-hire truck	8 363	48.9	2 119	63.7	1 184	78.7	531
Private truck	4 024	23.5	936	28.2	129	8.5	S
Rail	S	S	78	2.3	S	S	746
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 258
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	3 002	17.6	93	2.8	77	5.1	821
Parcel, U.S. Postal Service or courier	2 995	17.5	93	2.8	76	5.1	821
Truck and rail	S	S	S	S	S	S	1 713
Truck and water	S	S	S	S	S	S	10 719
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	1 039	6.1	90	2.7	52	3.5	266

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	1 024	100.0	83	100.0	65	100.0	627
Single modes	763	74.5	79	95.0	62	94.1	565
Truck ¹	703	68.6	67	80.9	50	76.4	465
For-hire truck	420	41.0	48	57.1	29	45.0	564
Private truck	283	27.6	20	23.9	21	31.4	S
Rail	S	S	S	S	S	S	991
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	918
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	188	18.3	S	S	S	S	650
Parcel, U.S. Postal Service or courier	178	17.4	S	S	S	S	650
Truck and rail	S	S	S	S	S	S	1 432
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	208
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	3 764	100.0	61	100.0	47	100.0	348
Single modes	2 249	59.7	41	66.4	31	65.6	500
Truck ¹	1 141	30.3	36	58.4	27	57.0	162
For-hire truck	934	24.8	30	49.0	26	56.4	515
Private truck	208	5.5	6	9.4	—	.6	28
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	1 108	29.4	5	7.9	4	8.6	1 110
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	1 149	30.5	10	15.6	6	12.2	330
Parcel, U.S. Postal Service or courier	1 149	30.5	10	15.6	6	12.2	330
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	2 554	100.0	616	100.0	452	100.0	651
Single modes	2 402	94.1	599	97.2	433	95.9	627
Truck ¹	2 326	91.1	569	92.3	412	91.1	626
For-hire truck	1 762	69.0	476	77.3	398	88.0	1 003
Private truck	555	21.7	91	14.8	13	2.9	97
Rail	S	S	S	S	S	S	713
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	881
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	146	5.7	16	2.6	17	3.8	731
Parcel, U.S. Postal Service or courier	129	5.1	9	1.4	7	1.5	693
Truck and rail	S	S	S	S	S	S	1 368
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	5	.2	S	S	S	S	683

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
SCTG 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	10 864	100.0	2 211	100.0	1 282	100.0	966
Single modes	7 744	71.3	2 073	93.8	1 176	91.7	497
Truck ¹	7 652	70.4	2 055	93.0	1 148	89.5	467
For-hire truck	4 982	45.9	1 347	60.9	1 017	79.3	786
Private truck	2 617	24.1	659	29.8	126	9.8	89
Rail	25	.2	15	.7	26	2.0	1 619
Water	S	S	S	S	S	S	10 468
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	10 468
Air (includes truck and air)	67	.6	2	.1	3	.2	1 097
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	2 740	25.2	111	5.0	97	7.6	1 052
Parcel, U.S. Postal Service or courier	2 715	25.0	105	4.8	86	6.7	1 052
Truck and rail	24	.2	6	.3	11	.8	2 035
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	90
Other and unknown modes	379	3.5	27	1.2	9	.7	490
SCTG 41, WASTE AND SCRAP							
Total	1 057	100.0	4 275	100.0	756	100.0	162
Single modes	1 055	99.8	4 273	100.0	753	99.6	160
Truck ¹	883	83.5	3 234	75.7	509	67.4	156
For-hire truck	573	54.2	2 033	47.6	396	52.4	205
Private truck	309	29.3	1 202	28.1	113	14.9	84
Rail	173	16.3	1 039	24.3	244	32.3	218
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	646
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	469
Truck and rail	S	S	S	S	S	S	1 930
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	219
SCTG 43, MIXED FREIGHT							
Total	4 622	100.0	2 387	100.0	282	100.0	726
Single modes	4 058	87.8	2 338	97.9	237	83.9	174
Truck ¹	4 057	87.8	2 338	97.9	237	83.9	174
For-hire truck	954	20.6	640	26.8	61	21.8	258
Private truck	3 101	67.1	1 697	71.1	175	62.0	172
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	505
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	908
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	908
Truck and rail	S	S	S	S	S	S	2 231
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	181

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent	
COMMODITY UNKNOWN							
Total	574	100.0	S	S	154	100.0	533
Single modes	525	91.3	S	S	142	92.2	291
Truck ¹	517	90.0	S	S	128	83.3	288
For-hire truck	174	30.2	98	11.0	57	37.1	777
Private truck	343	59.7	S	S	71	46.2	110
Rail	S	S	S	S	S	S	1 335
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	585
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	22	3.8	S	S	S	S	767
Parcel, U.S. Postal Service or courier	20	3.5	1	.1	1	.4	765
Truck and rail	S	S	S	S	S	S	2 641
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	329

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons. Some unpublished estimates can be derived from other data published in this table. However, figures obtained in this manner are subject to these same limitations.

¹"Truck" as a single mode includes shipments which went by private truck only, for-hire truck only, or a combination of private truck and for-hire truck.

²CFS data for pipeline exclude most shipments of crude oil. See "About the Data" section for details of CFS coverage.

Note: Data exclude shipments of SCTG 16, Crude Petroleum. See the section "Industry Coverage" for additional information.

Table 7. Shipment Characteristics by State of Destination for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

State of destination	Value		Tons		Ton-miles	
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent
Total	183 101	100.0	238 700	100.0	48 208	100.0
NEW ENGLAND STATES						
Connecticut	1 320	.7	257	.1	276	.6
Maine	355	.2	53	—	67	.1
Massachusetts	2 022	1.1	629	.3	702	1.5
New Hampshire	437	.2	88	—	97	.2
Rhode Island	278	.2	37	—	42	—
Vermont	179	.1	58	—	63	.1
MIDDLE ATLANTIC STATES						
New Jersey	2 968	1.6	1 209	.5	1 211	2.5
New York	4 567	2.5	2 849	1.2	2 768	5.7
Pennsylvania	6 292	3.4	2 092	.9	1 811	3.8
EAST NORTH CENTRAL STATES						
Illinois	18 720	10.2	12 955	5.4	2 399	5.0
Indiana	3 617	2.0	2 589	1.1	884	1.8
Michigan	9 447	5.2	5 984	2.5	1 973	4.1
Ohio	6 210	3.4	3 465	1.5	1 872	3.9
Wisconsin	60 843	33.2	173 904	72.9	7 069	14.7
WEST NORTH CENTRAL STATES						
Iowa	3 367	1.8	2 724	1.1	778	1.6
Kansas	1 501	.8	888	.4	638	1.3
Minnesota	7 375	4.0	8 809	3.7	1 435	3.0
Missouri	2 833	1.5	1 437	.6	787	1.6
Nebraska	1 045	.6	429	.2	249	.5
North Dakota	657	.4	295	.1	215	.4
South Dakota	715	.4	221	—	87	.2
SOUTH ATLANTIC STATES						
Delaware	247	.1	S	S	S	S
District of Columbia	72	—	16	—	15	—
Florida	3 340	1.8	951	.4	1 405	2.9
Georgia	3 826	2.1	1 430	.6	1 407	2.9
Maryland	2 064	1.1	352	.1	309	.6
North Carolina	2 336	1.3	969	.4	1 045	2.2
South Carolina	1 127	.6	243	.1	243	.5
Virginia	1 496	.8	755	.3	771	1.6
West Virginia	297	.2	60	—	42	—
EAST SOUTH CENTRAL STATES						
Alabama	1 634	.9	355	.1	305	.6
Kentucky	1 853	1.0	991	.4	578	1.2
Mississippi	953	.5	250	.1	205	.4
Tennessee	3 396	1.9	1 386	.6	964	2.0
WEST SOUTH CENTRAL STATES						
Arkansas	1 135	.6	324	.1	246	.5
Louisiana	1 008	.6	S	S	S	S
Oklahoma	994	.5	440	.2	401	.8
Texas	6 516	3.6	2 226	.9	2 751	5.7
MOUNTAIN STATES						
Arizona	845	.5	221	—	412	.9
Colorado	2 468	1.3	596	.2	659	1.4
Idaho	278	.2	57	—	94	.2
Montana	667	.4	S	S	S	S
Nevada	551	.3	S	S	S	S
New Mexico	219	.1	S	S	S	S
Utah	946	.5	730	.3	1 074	2.2
Wyoming	118	—	73	—	94	.2
PACIFIC STATES						
Alaska	64	—	S	S	S	S
California	7 630	4.2	2 469	1.0	5 343	11.1
Hawaii	109	—	17	—	105	.2
Oregon	783	.4	215	—	445	.9
Washington	1 381	.8	460	.2	904	1.9

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Table 8. Inbound Shipment Characteristics by State of Origin for State of Destination: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text. Detail may not add to total because of rounding]

State of origin	Value		Tons		Ton-miles	
	Number (million dollars)	Percent	Number (thousands)	Percent	Number (millions)	Percent
Total	147 325	100.0	275 424	100.0	79 829	100.0
NEW ENGLAND STATES						
Connecticut	676	.5	101	—	105	.1
Maine	433	.3	339	.1	427	.5
Massachusetts	1 101	.7	119	—	138	.2
New Hampshire	267	.2	S	S	S	S
Rhode Island	101	—	S	S	S	S
Vermont	129	—	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	4 262	2.9	449	.2	437	.5
New York	3 880	2.6	1 333	.5	1 237	1.5
Pennsylvania	2 257	1.5	2 238	.8	1 702	2.1
EAST NORTH CENTRAL STATES						
Illinois	13 374	9.1	10 836	3.9	1 843	2.3
Indiana	4 027	2.7	3 947	1.4	917	1.1
Michigan	5 298	3.6	7 119	2.6	2 318	2.9
Ohio	5 428	3.7	2 925	1.1	1 457	1.8
Wisconsin	60 843	41.3	173 904	63.1	7 069	8.9
WEST NORTH CENTRAL STATES						
Iowa	3 448	2.3	3 742	1.4	1 004	1.3
Kansas	984	.7	732	.3	541	.7
Minnesota	9 468	6.4	15 269	5.5	3 437	4.3
Missouri	2 065	1.4	1 289	.5	625	.8
Nebraska	856	.6	551	.2	343	.4
North Dakota	640	.4	3 677	1.3	1 532	1.9
South Dakota	855	.6	367	.1	264	.3
SOUTH ATLANTIC STATES						
Delaware	226	.2	91	—	92	.1
District of Columbia	S	S	S	S	S	S
Florida	892	.6	309	.1	418	.5
Georgia	1 386	.9	1 381	.5	1 581	2.0
Maryland	556	.4	S	S	S	S
North Carolina	2 245	1.5	663	.2	696	.9
South Carolina	951	.6	351	.1	367	.5
Virginia	1 320	.9	453	.2	442	.6
West Virginia	264	.2	896	.3	742	.9
EAST SOUTH CENTRAL STATES						
Alabama	906	.6	659	.2	630	.8
Kentucky	1 418	1.0	1 487	.5	916	1.1
Mississippi	623	.4	S	S	S	S
Tennessee	1 674	1.1	552	.2	387	.5
WEST SOUTH CENTRAL STATES						
Arkansas	493	.3	397	.1	343	.4
Louisiana	664	.5	893	.3	1 065	1.3
Oklahoma	801	.5	406	.1	372	.5
Texas	3 828	2.6	1 040	.4	1 320	1.7
MOUNTAIN STATES						
Arizona	S	S	S	S	S	S
Colorado	437	.3	S	S	S	S
Idaho	289	.2	203	—	347	.4
Montana	276	.2	14 804	5.4	15 551	19.5
Nevada	182	.1	38	—	69	—
New Mexico	89	—	825	.3	1 160	1.5
Utah	152	.1	49	—	75	—
Wyoming	185	.1	17 149	6.2	21 902	27.4
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	4 660	3.2	892	.3	1 931	2.4
Hawaii	S	S	—	—	1	—
Oregon	435	.3	380	.1	793	1.0
Washington	803	.5	284	.1	563	.7

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Appendix A.

Comparability With the 1993 Commodity Flow Survey

The Commodity Flow Survey (CFS) restores a data program on commodity flows that the Census Bureau conducted as a part of its 5-year economic census program from 1963 through 1977. The CFS was first conducted in

1993. For the 1997 CFS, the Census Bureau incorporated improvements identified from the evaluation of previous surveys and additional research. The following table shows a comparison of the 1993 and 1997 surveys.

Item	1993	1997
1. Industry coverage	Manufacturers (minor exceptions) Mining (except mining services and oil and gas extraction) All wholesale Video tape distributors Catalog mail-order houses Auxiliaries (e.g., warehouses)	Manufacturers (minor exceptions) Mining (except mining services) All wholesale Catalog mail-order houses Auxiliaries (e.g., warehouses)
2. Commodity classification system	Standard Transportation Commodity Classification (STCC), developed by the American Association of Railroads (AAR).	Standard Classification of Transported Goods (SCTG).
3. Sample size	Approximately 200,000 establishments were selected from a universe of about 800,000 in-scope establishments on the 1992 Standard Statistical Establishment List (SSEL).	Approximately 100,000 establishments were selected from a universe of about 800,000 in-scope establishments on the 1995 Standard Statistical Establishment List (SSEL).
4. Survey methodology	Respondents took a sample of their individual outbound shipments for a 2-week period during each of the four calendar quarters of 1993. Respondents reported key characteristics for each sampled shipment.	Respondents took a sample of their individual outbound shipments for a 1-week period during each of the four calendar quarters of 1997. Respondents reported key characteristics for each sampled shipment.
5. Reported mode of transportation	Rail For-hire truck Private truck Air Inland water and/or Great Lakes Deep sea water Pipeline Parcel, U.S. Postal Service, or courier Other Unknown	Rail For-hire truck Private truck Air Shallow draft vessel Deep draft vessel Pipeline Parcel, U.S. Postal Service, or courier Other Unknown

Item	1993	1997
6. Data items requested on questionnaire	<p>For each shipment:</p> <p>Total value</p> <p>Total weight</p> <p>Major commodity (STCC)</p> <p>All modes of transportation</p> <p>Multiple origins (respondents specifically requested to report all shipment origins for the sampled establishment and report the appropriate origin for each shipment; assumed to always be the mailing address if no other origins listed).</p> <p>Destination</p> <p>Containerized (Y/N)</p> <p>Hazardous material (Y/N)</p> <p>Export (Y/N)</p> <p>If export, mode of export, foreign country, and city of destination.</p>	<p>For each shipment:</p> <p>Total value</p> <p>Total weight</p> <p>Major commodity (SCTG)</p> <p>All modes of transportation</p> <p>Single origin (assumed to be the mailing address unless the respondent provided a different physical location address).</p> <p>Destination</p> <p>Containerized (Y/N)</p> <p>Hazardous material (UN/NA codes)</p> <p>Export (Y/N)</p> <p>If export, mode of export, foreign country, and city of destination.</p>

Appendix B. Reliability of the Estimates

An estimate based on a sample survey potentially contains two types of errors—sampling and nonsampling. Sampling error occurs because characteristics differ among sampling units and because only a subset of the entire population is measured in a sample survey. Nonsampling error encompasses all other factors that contribute to the total error of a sample survey estimate. The accuracy of a survey result may be affected by these two types of errors.

Sampling and nonsampling errors are often measured by the quantities, bias and variance. The bias of an estimator of an unknown population value is the difference, averaged over all possible samples of the same size and design, between the estimator and the unknown population value. Any systematic error, or inaccuracy that affects all samples of a specified design in a similar way, may bias the resulting estimates. Variance is the squared difference, averaged over all possible samples of the same size and design, between an estimator and its average value. Descriptions of sampling and nonsampling errors for the 1997 Commodity Flow Survey (CFS) are provided in the following sections.

SAMPLING ERROR

Because the estimates are based on a sample, exact agreement with the results that would be obtained from a complete enumeration of all the shipments made in 1997 from all establishments included on the CFS sampling frame 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. (See Appendix C for a description of the sample design.)

The particular sample used in this survey is one of a large number of samples of the same size and design that could have been selected. If all possible samples had been surveyed, under the same conditions, an estimate of an unknown population value could have been obtained from each sample. The estimates obtained from these samples give rise to a distribution of estimates for the unknown population value. A statistical measure of the variability among these estimates is the standard error, which can be approximated from any one sample. The coefficient of variation (or relative standard error) of an estimate is the standard error of the estimate divided by the estimate. Measures of sampling variability, such as the standard error or coefficient of variation, are estimated from the

sample and are also subject to sampling variability. (Technically, we should refer to the estimated standard error or the estimated coefficient of variation of an estimator. However, we have omitted this detail for the sake of brevity.) It is important to note that the standard error and coefficient of variation only measure sampling variability. They do not measure any biases in the estimates. All coefficients of variation are expressed as percents. Standard errors for the corresponding percentage estimates are also provided.

An estimate of an unknown population value and its approximate standard error can be used to construct a confidence interval. A confidence interval is a range about a given estimator that has a specified probability, or confidence, of containing the unknown population value. If, for each possible sample, an estimate of an unknown population value and the estimate's approximate standard error were obtained, then:

1. For approximately 90 percent of the possible samples, the interval from 1.65 standard errors below to 1.65 standard errors above the estimate would include the unknown population value.
2. For approximately 95 percent of the possible samples, the interval from two standard errors below to two standard errors above the estimate would include the unknown population value.

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: (1) nonresponse, (2) response errors, (3) differences in the interpretation of the questions, (4) mistakes in coding or keying the data obtained, and (5) other errors of collection, response, coverage, and processing. Although no direct measurement of the potential biases because of 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 its influence.

A potentially large source of bias in the estimates is due to nonresponse. Nonresponse is defined as the inability to obtain all the intended measurements or responses from all the selected establishments. 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. Item nonresponse is corrected by imputation. (Imputation 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 sufficient information about a sampled shipment, quarter, or establishment, respectively, that prevents it from contributing to tabulations. Shipment and quarter nonresponse are corrected during the estimation procedure 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 SIC-level adjustment weight. (See Appendix C for a description of the estimation procedure.) In most cases of establishment nonresponse, none of the four questionnaires have been

returned to the Census Bureau, after several attempts to elicit a response. Approximately 67 percent of the sampled establishments provided at least one quarter of data that contributed to tabulations.

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. We often contacted respondents who reported shipments having atypically large value or weight when compared to the rest of their reported shipments. Upon contact, if we are able to collect information on all of a given respondent's large shipments made either for a particular reporting week or for the entire quarter, then we identify these large shipments as certainty shipments. (See Appendix C for a description of how certainty shipments are used in the estimation process.)

Table B-1a. Measures of Reliability for Shipment Characteristics by Mode of Transportation for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

Mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
All modes	4.1	—	8.3	—	4.0	—	12.5
Single modes	3.4	1.1	8.6	.4	4.7	1.6	10.0
Truck	3.7	.8	9.3	1.8	5.5	2.8	12.6
For-hire truck	4.0	1.1	7.7	3.4	7.5	3.4	7.2
Private truck	5.5	1.1	16.0	4.3	13.7	2.1	18.8
Rail	7.9	.2	15.6	1.0	11.1	1.9	8.6
Water	31.7	—	34.7	.5	S	S	30.5
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	34.7	—	36.3	.3	S	S	27.0
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	14.9	.3	19.5	—	19.4	—	5.9
Pipeline	S	S	S	S	S	S	S
Multiple modes	11.7	.9	15.0	—	10.6	.3	15.0
Parcel, U.S. Postal Service or courier	12.3	.9	9.2	—	11.3	.1	15.0
Truck and rail	18.3	—	37.3	—	15.2	.2	11.7
Truck and water	S	S	S	S	S	S	26.7
Rail and water	S	S	S	S	S	S	31.6
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	12.3	.4	24.1	.4	50.0	1.7	24.6

— Represents data cell equal to zero or less than 1 unit of measure.
D Denotes figures withheld to avoid disclosing data for individual companies.
S Data do not meet publication standards because of high sampling variability or other reasons.

Note: For description of development and uses of measures of reliability, see Appendix B, Reliability of the Estimates.

Table B-1b. Measures of Reliability for Shipment Characteristics by Mode of Transportation for State of Origin: 1997 and 1993

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

Mode of transportation	Value			Tons			Ton-miles			Average miles per shipment		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation		Standard error of percent change
	1997	1993		1997	1993		1997	1993		1997	1993	
All modes	4.1	3.9	7.3	8.3	6.9	15.6	4.0	8.5	12.8	12.5	9.1	16.3
Single modes	3.4	4.4	6.8	8.6	7.0	16.2	4.7	8.0	12.8	10.0	6.2	14.1
Truck	3.7	4.1	6.8	9.3	6.2	16.3	5.5	6.0	11.3	12.6	4.6	16.6
For-hire truck	4.0	5.1	7.9	7.7	7.5	13.6	7.5	7.0	13.7	7.2	6.7	11.1
Private truck	5.5	4.8	8.7	16.0	7.7	28.4	13.7	5.5	22.5	18.8	3.6	20.4
Rail	7.9	13.7	17.0	15.6	13.1	28.4	11.1	18.3	21.7	8.6	8.0	11.1
Water	31.7	S	S	34.7	S	S	S	S	S	30.5	S	S
Shallow draft	S	S	S	S	S	S	S	S	S	31.6	34.1	S
Great Lakes	34.7	—	S	36.3	—	S	—	—	—	27.0	—	S
Deep draft	S	S	S	S	S	S	S	S	S	31.6	31.6	154.3
Air (includes truck and air)	14.9	10.9	33.1	19.5	11.4	36.0	19.4	13.1	33.7	5.9	5.6	8.3
Pipeline	S	S	S	S	S	S	S	S	S	S	S	S
Multiple modes	11.7	6.6	22.3	15.0	18.9	28.9	10.6	32.5	30.3	15.0	5.6	13.3
Parcel, U.S. Postal Service or courier	12.3	6.9	23.6	9.2	10.5	19.7	11.3	14.8	28.1	15.0	5.6	13.4
Truck and rail	18.3	38.1	61.3	37.3	30.3	51.2	15.2	42.1	44.0	11.7	9.6	12.7
Truck and water	S	45.8	S	S	S	S	S	S	S	26.7	27.5	60.3
Rail and water	S	—	S	S	—	S	S	—	S	31.6	—	S
Other multiple modes	S	S	S	S	S	S	S	S	S	S	29.4	S
Other and unknown modes ...	12.3	8.5	24.7	24.1	28.5	23.3	50.0	32.4	115.4	24.6	18.7	25.3

— Represents data cell equal to zero or less than 1 unit of measure.
D Denotes figures withheld to avoid disclosing data for individual companies.
S Data do not meet publication standards because of high sampling variability or other reasons.

Note: For description of development and uses of measures of reliability, see Appendix B, Reliability of the Estimates.

Table B-1c. **Standard Error of Percentage for Shipment Characteristics by Mode of Transportation for State of Origin: Percent of Total for 1997 and 1993**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

Mode of transportation	Value (percent)		Tons (percent)		Ton-miles (percent)	
	1997	1993	1997	1993	1997	1993
All modes	—	—	—	—	—	—
Single modes	1.1	.7	.4	.9	1.6	1.4
Truck .....	.8	.5	1.8	1.4	2.8	2.6
For-hire truck	1.1	1.3	3.4	1.8	3.4	2.1
Private truck	1.1	1.0	4.3	2.3	2.1	1.0
Rail .....	.2	.3	1.0	.8	1.9	2.8
Water	—	S	.5	S	S	S
Shallow draft	S	S	S	S	S	S
Great Lakes	S	S	.3	—	S	—
Deep draft	S	S	S	S	S	S
Air (includes truck and air) .....	.3	.1	—	—	—	—
Pipeline	S	S	S	S	S	S
Multiple modes .....	.9	.7	—	.1	.3	1.1
Parcel, U.S. Postal Service or courier .....	.9	.7	—	—	.1	.1
Truck and rail	—	.1	—	.1	.2	.5
Truck and water	S	—	S	S	S	S
Rail and water	S	—	S	—	S	—
Other multiple modes	S	S	S	S	S	S
Other and unknown modes .....	.4	.2	.4	.9	1.7	.5

— Represents data cell equal to zero or less than 1 unit of measure.
D Denotes figures withheld to avoid disclosing data for individual companies.
S Data do not meet publication standards because of high sampling variability or other reasons.

Note: For description of development and uses of measures of reliability, see Appendix B, Reliability of the Estimates.

Table B-2. **Measures of Reliability for Shipment Characteristics by Total Modal Activity for the State of Origin: 1997**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

Mode of transportation	Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	
Total	4.0	—	12.6
Truck	5.5	2.8	12.5
Rail	11.1	2.0	7.9
Shallow draft	S	S	31.2
Great Lakes	S	S	27.0
Deep draft	S	S	25.4
Air	18.3	—	5.8
Parcel, U.S. Postal Service or courier	11.3	.1	15.0
Pipeline	S	S	S
Other and unknown modes	50.0	1.7	24.6

— Represents data cell equal to zero or less than 1 unit of measure.
D Denotes figures withheld to avoid disclosing data for individual companies.
S Data do not meet publication standards because of high sampling variability or other reasons.

Note: For description of development and uses of measures of reliability, see Appendix B, Reliability of the Estimates.

Table B-3. Measures of Reliability for Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	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
All modes	4.1	—	8.3	—	4.0	—
Less than 50 miles	4.8	.7	13.2	3.4	23.9	1.7
50 to 99 miles	6.5	.6	16.3	1.8	15.2	.8
100 to 249 miles	5.2	.6	9.8	1.5	8.1	1.1
250 to 499 miles	4.5	.3	3.6	.5	4.3	.6
500 to 749 miles	5.9	.7	9.1	.6	9.8	1.5
750 to 999 miles	11.5	1.1	14.1	.9	16.4	2.4
1,000 to 1,499 miles	7.5	.4	16.0	.2	15.5	1.7
1,500 to 1,999 miles	6.7	.3	10.1	.2	9.5	1.5
2,000 miles or more	18.2	—	35.1	—	37.4	.1
Single modes	3.4	—	8.6	—	4.7	—
Less than 50 miles	4.9	.8	13.5	3.5	24.3	1.8
50 to 99 miles	7.5	.8	16.5	1.8	15.4	.8
100 to 249 miles	5.8	.7	9.7	1.6	8.0	1.2
250 to 499 miles	4.3	.4	3.8	.5	4.4	.6
500 to 749 miles	5.6	.7	9.8	.6	10.5	1.7
750 to 999 miles	10.8	1.1	15.5	.9	18.0	2.5
1,000 to 1,499 miles	8.7	.3	16.8	.2	16.3	1.5
1,500 to 1,999 miles	7.6	.4	11.5	.2	11.0	1.6
2,000 miles or more	24.3	—	37.7	—	24.5	—
Truck	3.7	—	9.3	—	5.5	—
Less than 50 miles	5.1	.9	13.4	3.4	24.6	2.6
50 to 99 miles	8.0	.8	19.1	2.0	18.3	1.0
100 to 249 miles	6.1	.7	9.9	.7	7.7	1.0
250 to 499 miles	5.0	.5	6.3	.7	6.4	.7
500 to 749 miles	5.8	.7	10.7	.7	9.9	1.2
750 to 999 miles	11.7	1.1	11.5	.5	11.5	1.6
1,000 to 1,499 miles	9.3	.3	19.6	.2	19.2	1.8
1,500 to 1,999 miles	8.1	.4	15.4	.3	15.3	1.9
2,000 miles or more	S	S	S	S	S	S
For-hire truck	4.0	—	7.7	—	7.5	—
Less than 50 miles	7.1	.5	16.1	4.4	14.0	.4
50 to 99 miles	8.8	.8	12.1	1.6	11.2	.5
100 to 249 miles	7.5	.8	8.5	1.3	6.5	1.1
250 to 499 miles	5.8	.7	7.2	1.1	7.4	.7
500 to 749 miles	6.1	.9	12.9	1.5	11.8	1.3
750 to 999 miles	12.9	1.6	12.3	.9	12.3	1.5
1,000 to 1,499 miles	9.3	.5	21.1	.4	20.5	2.1
1,500 to 1,999 miles	8.2	.5	16.0	.5	15.9	2.1
2,000 miles or more	S	S	S	S	S	S
Private truck	5.5	—	16.0	—	13.7	—
Less than 50 miles	5.2	1.7	18.1	3.6	32.5	5.6
50 to 99 miles	11.7	1.2	30.4	2.9	29.4	2.9
100 to 249 miles	10.2	1.4	18.6	.8	15.8	1.7
250 to 499 miles	9.4	.6	13.4	.4	13.3	1.7
500 to 749 miles	20.3	1.1	15.4	.2	15.0	1.4
750 to 999 miles	22.1	.7	14.7	.1	15.0	1.6
1,000 to 1,499 miles	21.2	.3	16.1	—	15.8	.9
1,500 to 1,999 miles	18.1	.2	19.4	—	19.4	1.3
2,000 miles or more	—	—	—	—	—	—
Rail	7.9	—	15.6	—	11.1	—
Less than 50 miles	49.4	4.0	S	S	33.6	.3
50 to 99 miles	32.6	2.5	31.8	5.4	28.2	2.2
100 to 249 miles	25.9	2.0	36.8	6.2	31.5	2.9
250 to 499 miles	18.7	2.8	29.1	2.6	29.1	3.5
500 to 749 miles	13.6	3.6	16.1	2.0	16.1	2.4
750 to 999 miles	23.5	2.8	33.3	2.6	33.2	4.3
1,000 to 1,499 miles	27.5	2.3	16.0	1.7	16.8	3.6
1,500 to 1,999 miles	28.2	2.5	21.9	.6	21.0	2.1
2,000 miles or more	—	—	—	—	—	—
Water	31.7	—	34.7	—	S	S
Less than 50 miles .....	.8	2.9	—	3.7	—	.2
50 to 99 miles	—	6.8	—	6.6	—	8.7
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Shallow draft	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—

See footnotes at end of table.

Table B-3. Measures of Reliability for Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 1997—Con.

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	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
Single modes—Con.						
Great Lakes	34.7	—	36.3	—	S	S
Less than 50 miles .....	.8	2.1	—	2.5	—	.1
50 to 99 miles	—	4.7	—	4.4	—	5.9
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	S	—	S	—	S	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Air (includes truck and air)	14.9	—	19.5	—	19.4	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	31.7	5.7	44.8	5.2	38.0	.6
100 to 249 miles	23.3	2.0	25.0	4.4	27.6	.8
250 to 499 miles	32.4	3.1	45.4	3.7	42.7	3.0
500 to 749 miles	23.9	2.5	19.1	1.8	18.7	1.5
750 to 999 miles	20.7	2.3	14.7	2.0	15.9	2.0
1,000 to 1,499 miles	26.7	4.2	35.3	2.9	36.6	4.7
1,500 to 1,999 miles	18.4	1.5	18.5	3.1	18.6	5.6
2,000 miles or more	30.9	.4	31.6	.7	32.6	3.3
Pipeline	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	S	S
500 to 749 miles	—	—	—	—	S	S
750 to 999 miles	—	—	—	—	S	S
1,000 to 1,499 miles	—	—	—	—	S	S
1,500 to 1,999 miles	—	—	—	—	S	S
2,000 miles or more	—	—	—	—	S	S
Multiple modes	11.7	—	15.0	—	10.6	—
Less than 50 miles	13.5	1.5	29.2	2.6	22.3	—
50 to 99 miles	9.9	.6	7.5	.6	7.1	—
100 to 249 miles	13.0	.9	S	S	S	S
250 to 499 miles	12.1	.8	9.6	.9	10.0	.3
500 to 749 miles	12.2	1.1	13.0	2.4	14.1	2.3
750 to 999 miles	23.2	1.6	8.0	1.6	7.8	2.6
1,000 to 1,499 miles	11.5	1.0	14.4	.9	15.2	1.0
1,500 to 1,999 miles	16.4	.8	14.9	2.2	15.2	3.6
2,000 miles or more	23.6	.1	43.4	.4	46.5	2.9
Parcel, U.S. Postal Service or courier	12.3	—	9.2	—	11.3	—
Less than 50 miles	13.5	1.6	29.3	3.3	22.5	.2
50 to 99 miles	9.9	.6	7.6	.6	7.1	—
100 to 249 miles	13.6	.9	10.0	1.3	10.1	.5
250 to 499 miles	12.3	.8	9.8	1.0	10.4	.6
500 to 749 miles	12.4	1.0	10.5	1.1	10.4	.7
750 to 999 miles	24.8	1.7	16.1	1.0	16.5	1.7
1,000 to 1,499 miles	11.9	1.1	12.3	.7	13.1	1.2
1,500 to 1,999 miles	17.5	.7	13.8	.8	13.8	1.2
2,000 miles or more	26.1	—	32.0	—	36.1	.4
Truck and rail	18.3	—	37.3	—	15.2	—
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	42.9	1.5	S	S	48.0	.4
500 to 749 miles	S	S	36.7	5.7	36.4	4.5
750 to 999 miles	19.2	5.3	18.7	5.7	17.8	4.2
1,000 to 1,499 miles	32.4	2.1	26.3	2.2	27.9	1.8
1,500 to 1,999 miles	18.8	6.2	17.7	7.5	17.8	6.1
2,000 miles or more	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S

See footnotes at end of table.

Table B-3. Measures of Reliability for Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 1997—Con.

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	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
Multiple modes—Con.						
Rail and water	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Other multiple modes	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Other and unknown modes	12.3	—	24.1	—	50.0	—
Less than 50 miles	17.1	5.9	25.2	7.2	41.9	1.6
50 to 99 miles	24.1	1.6	39.1	1.6	41.9	.7
100 to 249 miles	24.4	1.8	30.7	1.1	29.0	1.0
250 to 499 miles	28.9	3.0	21.0	1.6	22.3	3.3
500 to 749 miles	32.5	3.5	24.3	2.1	23.6	6.4
750 to 999 miles	26.5	1.8	S	S	S	S
1,000 to 1,499 miles	49.8	2.7	S	S	S	S
1,500 to 1,999 miles	36.3	1.2	23.7	.5	24.0	4.2
2,000 miles or more	S	S	S	S	S	S

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons.

Note: For description of development and uses of measures of reliability, see Appendix B, Reliability of the Estimates.

Table B-4. Measures of Reliability for Shipment Characteristics by Mode of Transportation and Shipment Size for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

Mode of transportation and shipment size	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
All modes	4.1	—	8.3	—	4.0	—	12.5
Less than 50 lb	11.4	.8	9.7	—	12.8	—	13.8
50 to 99 lb	7.6	.2	4.9	—	6.9	—	8.0
100 to 499 lb	4.5	.4	3.5	—	6.4	—	5.2
500 to 749 lb	4.1	—	8.0	—	11.7	—	4.5
750 to 999 lb	3.6	.1	7.2	—	6.4	—	8.0
1,000 to 9,999 lb	2.8	1.1	6.0	.6	14.5	1.7	9.3
10,000 to 49,999 lb	5.3	1.3	12.5	3.1	6.3	2.6	12.5
50,000 to 99,999 lb	29.3	.9	25.4	3.4	18.3	1.2	9.2
100,000 lb or more	10.2	.3	11.4	1.8	11.4	2.4	12.5
Single modes	3.4	—	8.6	—	4.7	—	10.0
Less than 50 lb	9.5	.3	15.7	—	9.4	—	21.6
50 to 99 lb	5.9	—	6.9	—	9.9	—	12.3
100 to 499 lb	3.8	.3	4.3	—	6.7	—	4.5
500 to 749 lb	6.1	.2	8.5	—	12.9	—	5.7
750 to 999 lb	3.9	.1	7.0	—	7.0	—	8.7
1,000 to 9,999 lb	3.1	1.2	6.7	.6	15.0	1.8	8.9
10,000 to 49,999 lb	5.2	1.4	12.7	3.2	6.8	2.8	12.7
50,000 to 99,999 lb	29.8	1.1	25.8	3.4	20.0	1.2	9.8
100,000 lb or more	10.3	.4	12.1	1.9	12.5	2.5	13.1
Truck	3.7	—	9.3	—	5.5	—	12.6
Less than 50 lb	10.8	.3	16.0	—	12.3	—	35.1
50 to 99 lb	6.4	—	7.2	—	13.2	—	15.0
100 to 499 lb	3.3	.2	4.3	—	6.9	—	4.7
500 to 749 lb	6.8	.2	8.6	—	13.1	.1	5.7
750 to 999 lb	3.9	.1	7.0	—	7.3	—	8.9
1,000 to 9,999 lb	3.3	1.3	6.7	.7	15.3	2.4	9.0
10,000 to 49,999 lb	5.3	1.3	12.8	3.4	6.9	2.2	12.8
50,000 to 99,999 lb	31.2	1.2	26.6	3.6	24.4	1.6	10.8
100,000 lb or more	26.1	.3	27.3	1.8	21.5	.7	12.2
For-hire truck	4.0	—	7.7	—	7.5	—	7.2
Less than 50 lb	10.7	—	20.0	—	17.4	—	28.5
50 to 99 lb	7.9	—	17.0	—	19.3	—	19.7
100 to 499 lb	3.7	.2	4.0	—	8.3	—	6.0
500 to 749 lb	8.9	.2	14.5	.1	14.4	.1	4.0
750 to 999 lb	6.3	.2	8.2	—	8.8	—	6.1
1,000 to 9,999 lb	4.2	1.7	11.2	1.0	18.7	3.0	6.2
10,000 to 49,999 lb	6.1	1.7	8.0	4.4	10.5	3.2	7.0
50,000 to 99,999 lb	27.0	.9	24.0	3.5	21.7	1.2	11.1
100,000 lb or more	29.3	.4	41.6	2.9	16.7	.6	20.9
Private truck	5.5	—	16.0	—	13.7	—	18.8
Less than 50 lb	14.3	.7	18.3	—	19.9	—	40.0
50 to 99 lb	9.3	.2	10.1	—	13.9	—	7.7
100 to 499 lb	4.4	.6	5.9	.2	8.1	.2	5.5
500 to 749 lb	10.0	.3	7.8	—	11.8	.1	6.9
750 to 999 lb	6.3	.1	8.0	—	11.3	—	12.8
1,000 to 9,999 lb	4.7	1.4	7.4	1.4	8.0	1.7	7.6
10,000 to 49,999 lb	8.1	1.7	22.2	4.8	16.2	3.4	12.2
50,000 to 99,999 lb	40.7	2.0	33.1	4.2	37.9	3.8	14.5
100,000 lb or more	35.5	.3	26.4	1.8	43.0	1.8	27.3
Rail	7.9	—	15.6	—	11.1	—	8.6
Less than 50 lb	S	S	S	S	S	S	35.8
50 to 99 lb	S	S	S	S	S	S	24.2
100 to 499 lb	38.1	—	45.8	—	41.0	—	16.4
500 to 749 lb	42.0	—	46.8	—	33.0	—	22.8
750 to 999 lb	44.3	—	39.5	—	48.9	—	19.7
1,000 to 9,999 lb	S	S	S	S	S	S	15.1
10,000 to 49,999 lb	25.7	2.3	16.9	.6	19.3	.9	9.0
50,000 to 99,999 lb	13.1	1.5	35.1	2.4	25.9	1.8	13.5
100,000 lb or more	11.1	4.1	17.6	2.6	12.9	2.2	10.2
Water	31.7	—	34.7	—	S	S	30.5
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	S	S	S	S	S	S	31.6
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	31.6
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	31.7	.2	34.7	—	S	S	27.6
Shallow draft	S	S	S	S	S	S	31.6
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	31.6

See footnote at end of table.

Table B-4. Measures of Reliability for Shipment Characteristics by Mode of Transportation and Shipment Size for State of Origin: 1997—Con.

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

Mode of transportation and shipment size	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
Single modes—Con.							
Great Lakes	34.7	—	36.3	—	S	S	27.0
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	S	S	S	S	S	S	31.6
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	31.6
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	34.7	.2	36.3	—	S	S	28.6
Deep draft	S	S	S	S	S	S	31.6
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Air (includes truck and air)	14.9	—	19.5	—	19.4	—	5.9
Less than 50 lb	14.3	2.5	19.2	2.9	23.3	3.0	6.3
50 to 99 lb	16.5	1.8	25.2	1.7	32.8	2.8	7.1
100 to 499 lb	25.7	4.0	21.5	4.3	18.1	6.3	13.0
500 to 749 lb	28.9	.9	S	S	35.5	1.4	18.0
750 to 999 lb	39.2	1.0	S	S	S	S	41.8
1,000 to 9,999 lb	26.4	5.4	39.3	4.4	41.2	4.8	14.9
10,000 to 49,999 lb	S	S	S	S	S	S	30.9
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
100,000 lb or more	S	S	S	S	S	S	31.6
Pipeline	S	S	S	S	S	S	S
Less than 50 lb	—	—	—	—	S	S	S
50 to 99 lb	S	S	S	S	S	S	S
100 to 499 lb	S	S	S	S	S	S	S
500 to 749 lb	—	—	—	—	S	S	S
750 to 999 lb	—	—	—	—	S	S	S
1,000 to 9,999 lb	S	S	S	S	S	S	S
10,000 to 49,999 lb	S	S	S	S	S	S	S
50,000 to 99,999 lb	—	—	—	—	S	S	S
100,000 lb or more	S	S	S	S	S	S	S
Multiple modes	11.7	—	15.0	—	10.6	—	15.0
Less than 50 lb	15.1	3.4	11.7	3.9	14.5	2.5	15.5
50 to 99 lb	13.3	.9	7.2	.9	9.0	.5	4.3
100 to 499 lb	17.7	2.3	11.7	2.0	17.1	1.3	5.7
500 to 749 lb	47.4	.8	27.1	.5	29.4	.4	18.7
750 to 999 lb	20.6	.1	27.6	.3	29.6	.2	7.0
1,000 to 9,999 lb	29.4	.1	34.8	.7	S	S	29.8
10,000 to 49,999 lb	19.0	.8	18.4	2.5	13.8	3.6	8.2
50,000 to 99,999 lb	S	S	S	S	S	S	S
100,000 lb or more	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	12.3	—	9.2	—	11.3	—	15.0
Less than 50 lb	15.1	3.5	11.7	3.4	14.5	4.3	15.5
50 to 99 lb	13.3	.9	7.2	.9	9.2	1.2	4.4
100 to 499 lb	17.8	2.5	12.2	2.6	18.1	3.0	5.8
500 to 749 lb	47.4	.8	27.1	.7	29.4	.7	18.8
750 to 999 lb	21.0	.1	27.9	.4	29.8	.3	7.0
1,000 to 9,999 lb	S	S	S	S	S	S	30.9
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	18.3	—	37.3	—	15.2	—	11.7
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	S	S	S	S	S	S	31.7
100 to 499 lb	S	S	S	S	S	S	27.4
500 to 749 lb	S	S	S	S	S	S	30.2
750 to 999 lb	S	S	S	S	S	S	30.3
1,000 to 9,999 lb	37.0	3.8	43.3	3.0	39.9	2.3	11.1
10,000 to 49,999 lb	19.3	4.0	18.5	8.2	13.7	2.9	8.0
50,000 to 99,999 lb	S	S	S	S	S	S	S
100,000 lb or more	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	26.7
Less than 50 lb	S	S	S	S	S	S	29.8
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	31.6
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	28.0
10,000 to 49,999 lb	S	S	S	S	S	S	29.8
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—

See footnote at end of table.

Table B-4. Measures of Reliability for Shipment Characteristics by Mode of Transportation and Shipment Size for State of Origin: 1997—Con.

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

Mode of transportation and shipment size	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
Multiple modes—Con.							
Rail and water	S	S	S	S	S	S	31.6
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	31.6
Other multiple modes	S	S	S	S	S	S	S
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	31.6
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	31.6
10,000 to 49,999 lb	S	S	S	S	S	S	31.6
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Other and unknown modes	12.3	—	24.1	—	50.0	—	24.6
Less than 50 lb	26.6	3.0	26.7	.5	34.7	.3	29.1
50 to 99 lb	11.3	.5	19.1	.3	17.5	—	47.7
100 to 499 lb	17.3	3.0	17.8	1.3	S	S	26.5
500 to 749 lb	35.8	1.1	22.9	.6	32.8	.3	18.0
750 to 999 lb	35.0	.2	20.9	.2	41.9	.2	28.1
1,000 to 9,999 lb	35.4	6.2	25.7	4.8	25.6	7.3	40.1
10,000 to 49,999 lb	22.4	4.7	41.2	4.7	33.4	10.5	19.8
50,000 to 99,999 lb	48.0	.8	S	S	S	S	20.9
100,000 lb or more	24.3	1.8	38.4	5.5	S	S	37.7

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons.

Note: For description of development and uses of measures of reliability, see Appendix B, Reliability of the Estimates.

Table B–5. Measures of Reliability for Shipment Characteristics by Two-Digit Commodity for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code	Commodity description	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
		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	
	All commodities	4.1	—	8.3	—	4.0	—	12.5
01	Live animals and live fish	27.9	—	S	S	25.1	—	47.7
02	Cereal grains	22.6	.1	20.7	.6	36.4	2.6	34.7
03	Other agricultural products	10.7	—	15.5	.2	24.8	.3	27.7
04	Animal feed and products of animal origin, n.e.c.	18.2	.1	22.1	.6	32.4	.6	16.7
05	Meat, fish, seafood, and their preparations	12.0	.4	11.6	.1	15.0	.4	32.9
06	Milled grain products and preparations, and bakery products	22.1	.3	26.3	.3	36.3	1.3	22.0
07	Other prepared foodstuffs and fats and oils	2.6	.5	8.7	.9	6.4	.6	22.3
08	Alcoholic beverages	9.1	—	14.2	.1	37.1	.2	11.5
09	Tobacco products	32.5	.1	27.8	—	34.5	—	15.1
10	Monumental or building stone	S	S	S	S	49.2	—	27.7
11	Natural sands	36.4	—	31.3	1.6	31.5	.5	S
12	Gravel and crushed stone	26.6	—	31.3	6.5	38.1	2.1	18.4
13	Nonmetallic minerals n.e.c.	23.9	—	49.6	1.1	S	S	23.3
14	Metallic ores and concentrates	45.0	—	S	S	S	S	22.0
15	Coal	S	S	S	S	S	S	27.1
17	Gasoline and aviation turbine fuel	47.2	.8	S	S	43.6	1.0	13.8
18	Fuel oils	29.7	.3	32.2	1.1	34.5	.4	16.5
19	Coal and petroleum products, n.e.c.	16.4	—	20.9	.5	27.9	.3	19.8
20	Basic chemicals	20.2	.1	16.6	.1	26.6	.2	38.9
21	Pharmaceutical products	18.4	.2	19.9	—	39.4	—	18.1
22	Fertilizers	35.2	.1	36.8	.5	46.8	—	S
23	Chemical products and preparations, n.e.c.	19.5	.5	10.0	.1	12.6	.2	14.2
24	Plastics and rubber	5.3	.2	18.3	.2	15.6	.4	8.0
25	Logs and other wood in the rough	31.7	—	37.1	.4	39.1	.2	16.4
26	Wood products	8.7	.2	15.1	.7	10.2	.4	14.3
27	Pulp, newsprint, paper, and paperboard	12.2	.5	16.4	1.1	19.5	2.9	10.7
28	Paper or paperboard articles	12.6	.4	16.2	.3	15.8	.5	16.3
29	Printed products	15.1	.6	21.5	.4	43.6	1.8	S
30	Textiles, leather, and articles of textiles or leather	8.1	.2	12.9	—	14.5	—	6.1
31	Nonmetallic mineral products	14.4	.2	19.3	2.0	36.7	1.9	24.3
32	Base metal in primary or semifinished forms and in finished basic shapes	10.5	.4	11.8	.4	20.1	.8	8.7
33	Articles of base metal	11.9	.5	9.6	.1	20.6	.5	9.6
34	Machinery	6.7	.7	8.0	—	11.8	.3	18.2
35	Electronic and other electrical equipment and components and office equipment	9.7	.5	9.8	—	10.6	.1	10.2
36	Motorized and other vehicles (including parts)	18.4	1.7	13.2	.3	21.7	.8	21.4
37	Transportation equipment, n.e.c.	19.9	.1	24.3	—	26.3	—	10.4
38	Precision instruments and apparatus	12.1	.3	24.4	—	29.6	—	19.3
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	14.5	.2	19.5	—	23.9	.2	11.5
40	Miscellaneous manufactured products	10.3	.5	12.5	.1	22.4	.6	9.0
41	Waste and scrap	12.8	—	15.5	.3	22.3	.3	14.9
43	Mixed freight	14.1	.3	20.3	.1	14.7	—	23.4
—	Commodity unknown	35.1	.1	S	S	37.0	.1	23.1

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons.

Note: For description of development and uses of measures of reliability, see Appendix B, Reliability of the Estimates.

Table B-6. Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
ALL COMMODITIES							
Total	4.1	—	8.3	—	4.0	—	12.5
Single modes	3.4	1.1	8.6	.4	4.7	1.6	10.0
Truck	3.7	.8	9.3	1.8	5.5	2.8	12.6
For-hire truck	4.0	1.1	7.7	3.4	7.5	3.4	7.2
Private truck	5.5	1.1	16.0	4.3	13.7	2.1	18.8
Rail	7.9	.2	15.6	1.0	11.1	1.9	8.6
Water	31.7	—	34.7	.5	S	S	30.5
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	34.7	—	36.3	.3	S	S	27.0
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	14.9	.3	19.5	—	19.4	—	5.9
Pipeline	S	S	S	S	S	S	S
Multiple modes	11.7	.9	15.0	—	10.6	.3	15.0
Parcel, U.S. Postal Service or courier	12.3	.9	9.2	—	11.3	.1	15.0
Truck and rail	18.3	—	37.3	—	15.2	.2	11.7
Truck and water	S	S	S	S	S	S	26.7
Rail and water	S	S	S	S	S	S	31.6
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	12.3	.4	24.1	.4	50.0	1.7	24.6
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	27.9	—	S	S	25.1	—	47.7
Single modes	28.1	.6	S	S	25.1	—	S
Truck	28.1	.6	S	S	25.1	—	S
For-hire truck	18.0	12.0	20.4	16.5	20.6	9.0	38.6
Private truck	S	S	S	S	S	S	33.1
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 02, CEREAL GRAINS							
Total	22.6	—	20.7	—	36.4	—	34.7
Single modes	23.1	3.1	20.9	2.8	38.4	5.8	S
Truck	25.7	8.0	23.4	7.8	24.9	4.9	47.7
For-hire truck	28.7	1.1	28.4	1.4	32.3	3.4	21.1
Private truck	30.0	8.0	26.8	7.8	24.2	2.5	27.3
Rail	47.3	11.3	43.0	11.3	40.0	13.7	28.9
Water	38.0	9.6	38.2	9.5	S	S	27.2
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	45.0	8.0	43.2	7.7	S	S	28.3
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	29.8
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	29.8
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 03, OTHER AGRICULTURAL PRODUCTS							
Total	10.7	—	15.5	—	24.8	—	27.7
Single modes	14.3	6.1	19.3	6.7	31.4	9.0	15.9
Truck	18.4	6.8	26.4	6.3	39.7	10.6	15.8
For-hire truck	S	S	S	S	48.3	9.4	12.7
Private truck	13.5	6.8	19.1	7.6	31.0	5.6	17.7
Rail	S	S	S	S	S	S	31.6
Water	26.1	1.9	22.5	4.4	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	.5	—	2.3	—	6.7	33.3
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	36.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	45.5	3.4	S	S	S	S	16.7
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	16.4
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	18.2	—	22.1	—	32.4	—	16.7
Single modes	18.5	.7	22.1	.3	32.5	.3	16.5
Truck	18.4	1.0	22.5	1.3	35.8	5.0	16.7
For-hire truck	30.3	8.0	36.0	6.5	45.2	13.1	20.8
Private truck	20.8	8.4	22.8	7.2	34.3	14.8	22.1
Rail	S	S	37.6	1.1	S	S	29.0
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	35.8	—	40.1	—	25.2
Parcel, U.S. Postal Service or courier	S	S	35.8	—	40.1	—	25.2
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	44.0	.3	S	S	16.2
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	12.0	—	11.6	—	15.0	—	32.9
Single modes	14.4	3.4	14.4	4.6	15.9	2.2	S
Truck	14.3	3.4	14.4	4.6	15.9	2.2	S
For-hire truck	24.9	9.5	27.9	10.3	20.5	9.1	21.2
Private truck	16.2	7.5	22.3	7.6	43.3	9.4	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	30.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	21.7
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	23.5
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	38.1	3.0	39.4	4.5	S	S	S

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	22.1	—	26.3	—	36.3	—	22.0
Single modes	22.5	1.7	26.4	.3	37.0	1.5	25.9
Truck	25.6	4.6	27.9	10.9	34.2	12.7	25.2
For-hire truck	32.0	6.0	36.7	6.7	38.5	9.8	10.8
Private truck	16.8	6.0	22.1	8.3	18.8	3.8	25.6
Rail	47.7	4.7	47.8	11.0	S	S	22.2
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	41.0	.3	40.8	1.3	20.3
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	20.1
Truck and rail	S	S	S	S	S	S	29.8
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	2.6	—	8.7	—	6.4	—	22.3
Single modes	2.8	.7	8.7	.5	7.2	1.3	14.6
Truck	2.7	.6	8.9	.7	7.5	2.0	14.5
For-hire truck	6.8	2.9	9.2	4.0	10.9	3.8	13.2
Private truck	6.6	2.7	18.8	4.3	19.3	3.9	18.1
Rail	22.4	.2	27.6	.6	27.9	1.6	14.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	S
Pipeline	—	—	—	—	S	S	S
Multiple modes	21.2	.2	26.8	.3	27.4	1.5	12.3
Parcel, U.S. Postal Service or courier	43.1	.2	33.0	—	35.3	—	13.2
Truck and rail	28.3	.2	28.4	.3	28.2	1.5	15.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	39.8	.7	40.0	.6	36.5	.4	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	9.1	—	14.2	—	37.1	—	11.5
Single modes	9.5	1.1	14.7	2.7	37.3	3.7	11.8
Truck	9.5	1.1	14.7	2.7	37.3	3.7	11.8
For-hire truck	41.4	6.1	41.1	11.2	S	S	25.9
Private truck	8.1	5.8	13.7	10.5	S	S	15.0
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	41.8	1.1	44.0	2.7	39.5	3.7	25.6

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 09, TOBACCO PRODUCTS							
Total	32.5	—	27.8	—	34.5	—	15.1
Single modes	32.4	.1	27.8	.2	34.5	—	14.9
Truck	32.4	.1	27.8	.2	34.5	—	14.9
For-hire truck	—	—	—	—	—	—	—
Private truck	32.4	.1	27.8	.2	34.5	—	14.9
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	30.0
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	S	S	S	S	49.2	—	27.7
Single modes	S	S	S	S	49.2	—	27.3
Truck	S	S	S	S	49.2	—	27.3
For-hire truck	S	S	S	S	S	S	26.7
Private truck	S	S	S	S	S	S	31.2
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	29.9
SCTG 11, NATURAL SANDS							
Total	36.4	—	31.3	—	31.5	—	S
Single modes	35.6	.6	31.3	.3	31.5	2.8	S
Truck	40.0	7.3	31.5	1.6	24.8	15.5	33.7
For-hire truck	28.0	10.7	34.3	11.2	30.2	11.1	45.8
Private truck	34.4	10.2	38.5	11.6	29.7	11.0	46.8
Rail	43.7	7.2	35.6	1.6	38.2	14.4	23.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	30.2
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	S	S	S	S	S	S	31.6
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	29.7

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 12, GRAVEL AND CRUSHED STONE							
Total	26.6	—	31.3	—	38.1	—	18.4
Single modes	26.7	.5	31.4	.9	38.2	.7	18.3
Truck	27.7	2.0	32.2	2.4	40.1	6.0	18.7
For-hire truck	45.6	11.1	27.8	11.4	S	S	22.2
Private truck	23.2	10.5	40.3	11.8	49.0	11.5	13.6
Rail	S	S	S	S	S	S	27.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	36.2
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	23.9	—	49.6	—	S	S	23.3
Single modes	24.5	1.5	S	S	S	S	26.3
Truck	28.3	7.7	S	S	20.6	17.6	27.1
For-hire truck	47.1	10.6	36.3	10.9	22.5	10.4	S
Private truck	43.9	11.3	S	S	39.3	10.8	30.5
Rail	S	S	S	S	S	S	40.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	30.5
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	30.5
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	49.0
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	45.0	—	S	S	S	S	22.0
Single modes	46.1	10.1	S	S	S	S	S
Truck	36.0	16.7	S	S	S	S	S
For-hire truck	S	S	47.1	11.9	S	S	28.0
Private truck	35.6	11.0	45.7	14.2	S	S	S
Rail	S	S	S	S	S	S	29.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	30.0
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	30.0
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 15, COAL							
Total	\$	\$	\$	\$	\$	\$	27.1
Single modes	\$	\$	\$	\$	\$	\$	27.1
Truck	\$	\$	\$	\$	\$	\$	26.5
For-hire truck	\$	\$	\$	\$	\$	\$	26.8
Private truck	\$	\$	\$	\$	\$	\$	31.6
Rail	\$	\$	\$	\$	\$	\$	28.0
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	31.6
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	47.2	—	\$	\$	43.6	—	13.8
Single modes	47.3	—	\$	\$	43.6	—	13.9
Truck	\$	\$	\$	\$	\$	\$	13.9
For-hire truck	\$	\$	\$	\$	47.5	7.4	15.9
Private truck	\$	\$	\$	\$	\$	\$	19.5
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	\$	\$	\$	\$	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	43.0	—	44.3	—	41.6	—	26.5
SCTG 18, FUEL OILS							
Total	29.7	—	32.2	—	34.5	—	16.5
Single modes	29.7	—	32.3	.2	34.5	—	16.5
Truck	31.7	4.6	35.6	5.7	42.7	9.2	16.8
For-hire truck	41.3	3.9	42.6	4.2	37.8	7.7	15.7
Private truck	29.5	6.4	32.9	6.6	49.3	8.1	21.7
Rail	\$	\$	\$	\$	\$	\$	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	\$	\$	\$	\$	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	28.6

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	16.4	—	20.9	—	27.9	—	19.8
Single modes	16.3	.3	21.0	—	27.9	.1	22.4
Truck	19.5	6.7	20.7	2.2	20.3	15.8	23.9
For-hire truck	28.1	6.6	43.6	10.7	26.9	13.8	S
Private truck	22.0	6.5	25.9	10.6	28.7	1.8	32.1
Rail	43.7	6.5	39.9	2.2	42.7	15.9	25.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	44.0	.2	43.4	—	S	S	19.6
Parcel, U.S. Postal Service or courier	44.0	.2	43.4	—	S	S	19.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	29.2
SCTG 20, BASIC CHEMICALS							
Total	20.2	—	16.6	—	26.6	—	38.9
Single modes	18.1	4.5	16.5	1.9	26.7	.4	S
Truck	19.8	5.4	16.5	6.3	18.6	14.0	S
For-hire truck	22.1	5.5	16.8	4.7	19.5	10.2	11.8
Private truck	31.0	5.3	26.3	6.8	33.1	6.5	27.6
Rail	38.0	4.1	40.0	6.4	37.6	14.2	24.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	36.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	39.8	4.5	S	S	41.4	.2	S
Parcel, U.S. Postal Service or courier	39.8	4.5	S	S	41.4	.2	S
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	47.7	.2	S
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	18.4	—	19.9	—	39.4	—	18.1
Single modes	31.7	11.9	23.7	7.7	S	S	26.3
Truck	30.8	11.1	23.9	7.6	S	S	44.1
For-hire truck	37.1	6.2	29.2	4.7	S	S	S
Private truck	34.6	5.9	36.5	7.1	S	S	35.0
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	26.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	25.2	11.9	28.5	7.8	28.4	10.1	15.1
Parcel, U.S. Postal Service or courier	25.2	11.9	28.5	7.8	28.4	10.1	15.1
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	32.2

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 22, FERTILIZERS							
Total	35.2	—	36.8	—	46.8	—	S
Single modes	35.7	.9	37.2	.9	46.9	.8	S
Truck	35.7	.9	37.2	.9	46.9	.8	S
For-hire truck	S	S	S	S	S	S	38.3
Private truck	42.5	8.5	43.1	9.5	32.8	14.0	42.8
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.0
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.0
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	39.3	.9	47.0	.9	47.0	.8	36.3
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	19.5	—	10.0	—	12.6	—	14.2
Single modes	19.9	1.2	10.1	1.0	13.3	2.1	31.8
Truck	19.9	1.2	10.2	1.2	14.8	3.6	24.0
For-hire truck	14.5	9.3	15.3	9.2	21.7	10.6	12.9
Private truck	31.5	9.9	24.0	9.7	36.8	13.3	47.2
Rail	27.6	.1	29.6	1.2	35.2	3.5	21.0
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	29.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	22.5	1.2	28.2	.3	48.9	1.0	13.7
Parcel, U.S. Postal Service or courier	23.7	.7	24.4	.2	29.9	.2	13.7
Truck and rail	S	S	S	S	S	S	S
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	32.8	.5	36.9	1.1	S	S	S
SCTG 24, PLASTICS AND RUBBER							
Total	5.3	—	18.3	—	15.6	—	8.0
Single modes	6.3	2.2	19.2	1.1	16.6	1.9	15.8
Truck	6.5	2.4	19.3	1.1	16.7	2.1	16.0
For-hire truck	7.8	2.6	24.8	3.3	16.7	2.5	8.9
Private truck	13.8	2.6	15.6	3.3	27.2	1.5	16.4
Rail	S	S	S	S	S	S	31.6
Water	S	S	S	S	S	S	31.6
Shallow draft	—	—	—	—	—	—	—
Great Lakes	S	S	S	S	S	S	31.6
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	29.5	.5	25.5	—	24.0	.3	9.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	12.3	1.8	11.6	.6	20.7	1.3	6.0
Parcel, U.S. Postal Service or courier	12.7	1.8	11.6	.6	13.1	1.0	6.0
Truck and rail	S	S	S	S	S	S	27.1
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	46.1	1.1	24.0	.6	38.0	.7	30.2

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	31.7	—	37.1	—	39.1	—	16.4
Single modes	31.7	—	37.1	—	39.1	—	17.4
Truck	32.1	5.4	39.3	6.8	36.9	8.4	18.4
For-hire truck	47.2	11.9	47.6	11.1	47.8	13.2	35.6
Private truck	42.3	14.7	S	S	S	S	34.0
Rail	S	S	S	S	S	S	27.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 26, WOOD PRODUCTS							
Total	8.7	—	15.1	—	10.2	—	14.3
Single modes	8.8	.6	15.2	.5	9.5	1.5	12.4
Truck	8.9	.8	17.6	4.4	12.4	6.1	13.8
For-hire truck	9.3	3.1	27.9	7.4	14.4	4.8	14.2
Private truck	11.9	3.5	24.1	6.7	21.6	4.3	20.5
Rail	24.9	.7	48.3	4.5	25.8	6.1	25.0
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	29.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	29.4	.6	S	S	S	S	12.8
Parcel, U.S. Postal Service or courier	32.5	.3	28.1	—	32.1	—	13.7
Truck and rail	S	S	S	S	S	S	21.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	25.2	.4	45.1	.6	38.9	.3	S
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	12.2	—	16.4	—	19.5	—	10.7
Single modes	12.1	.4	16.5	.2	19.8	.7	12.4
Truck	14.7	3.7	21.9	6.4	24.2	7.6	13.6
For-hire truck	15.7	3.0	22.9	6.7	25.0	7.7	7.1
Private truck	17.1	1.7	17.3	1.0	S	S	38.6
Rail	14.0	3.9	16.7	6.2	19.8	7.2	7.1
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	30.2
Pipeline	S	S	S	S	S	S	S
Multiple modes	40.0	.5	40.4	.2	48.1	.7	S
Parcel, U.S. Postal Service or courier	S	S	34.7	—	23.2	—	30.1
Truck and rail	48.9	.3	48.3	.2	44.7	.4	23.4
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	S	S	S	S	S	S	S

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 28, PAPER OR PAPERBOARD ARTICLES							
Total	12.6	—	16.2	—	15.8	—	16.3
Single modes	13.1	1.0	16.3	.5	16.8	1.8	15.9
Truck	13.1	1.1	16.4	.6	16.8	1.9	16.2
For-hire truck	15.1	3.2	19.9	4.1	17.5	3.2	10.1
Private truck	21.8	3.4	24.3	4.2	22.7	2.1	9.2
Rail	S	S	S	S	S	S	37.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	31.4	—	41.9	—	40.0	—	32.4
Pipeline	—	—	—	—	S	S	S
Multiple modes	18.6	1.0	25.7	.5	29.1	1.7	9.3
Parcel, U.S. Postal Service or courier	15.4	.6	10.6	.1	15.8	.2	9.4
Truck and rail	32.6	.6	36.6	.4	36.1	1.7	18.3
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	49.8	.3	S	S	S	S	S
SCTG 29, PRINTED PRODUCTS							
Total	15.1	—	21.5	—	43.6	—	S
Single modes	13.0	5.6	23.0	3.7	47.6	6.1	43.6
Truck	13.2	5.5	23.1	3.7	47.9	6.3	46.6
For-hire truck	19.6	4.3	35.1	8.6	49.6	7.6	44.7
Private truck	14.7	4.7	31.6	9.5	25.1	2.9	S
Rail	S	S	S	S	S	S	30.0
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	29.4	.3	25.4	—	36.8	.1	12.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	41.4	5.3	24.9	2.9	30.8	6.2	S
Parcel, U.S. Postal Service or courier	44.0	5.4	25.0	.9	27.2	2.0	S
Truck and rail	S	S	S	S	44.8	5.4	24.1
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	47.2	3.2	S	S	48.0	1.1	27.3
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	8.1	—	12.9	—	14.5	—	6.1
Single modes	7.9	3.0	15.7	3.5	17.9	3.7	18.6
Truck	8.3	2.6	15.9	3.2	18.2	3.5	16.0
For-hire truck	13.0	3.7	17.6	4.7	17.8	3.1	6.9
Private truck	20.1	2.5	35.7	4.2	38.3	1.2	41.6
Rail	S	S	S	S	S	S	35.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	47.6	.8	S	S	S	S	22.1
Pipeline	—	—	—	—	S	S	S
Multiple modes	11.4	3.2	13.5	3.5	14.0	3.3	5.5
Parcel, U.S. Postal Service or courier	11.4	3.2	14.0	3.5	15.2	3.4	5.5
Truck and rail	S	S	S	S	S	S	28.0
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	22.7	.5	29.4	.5	S	S	26.1

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 31, NONMETALLIC MINERAL PRODUCTS							
Total	14.4	—	19.3	—	36.7	—	24.3
Single modes	16.3	3.2	19.6	2.2	43.5	6.9	30.3
Truck	16.9	3.1	20.8	4.6	22.2	12.7	31.5
For-hire truck	23.4	4.6	25.2	3.8	28.6	7.3	16.1
Private truck	16.5	4.1	23.2	7.8	20.5	7.2	11.6
Rail	S	S	S	S	S	S	27.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	23.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	31.2	3.2	24.7	—	S	S	12.6
Parcel, U.S. Postal Service or courier	34.7	3.2	34.3	—	37.6	.7	13.5
Truck and rail	S	S	S	S	S	S	31.1
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	46.9	1.5	S	S	S	S	S
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	10.5	—	11.8	—	20.1	—	8.7
Single modes	11.1	1.6	11.0	1.4	19.7	2.1	12.4
Truck	11.2	1.6	10.1	3.0	21.8	4.6	12.5
For-hire truck	12.7	4.1	17.4	4.8	23.0	4.5	8.4
Private truck	16.4	4.2	10.0	6.1	30.6	3.5	15.0
Rail	35.6	.4	41.5	2.7	45.6	4.1	21.4
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	49.3	—	S	S	S	S	19.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	42.9	1.1	31.5	—	S	S	13.2
Parcel, U.S. Postal Service or courier	44.6	1.2	25.0	—	30.2	.1	13.4
Truck and rail	S	S	S	S	S	S	27.4
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	34.4	.8	45.3	1.4	S	S	23.7
SCTG 33, ARTICLES OF BASE METAL							
Total	11.9	—	9.6	—	20.6	—	9.6
Single modes	11.6	1.4	10.7	3.6	20.6	7.0	13.1
Truck	11.6	1.6	10.6	3.9	21.1	7.4	11.1
For-hire truck	15.2	3.9	10.1	4.0	25.1	6.9	6.9
Private truck	17.0	3.9	19.3	4.7	21.2	3.9	17.7
Rail	S	S	S	S	S	S	29.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	39.2	.2	42.3	—	46.1	.3	18.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	18.5	1.2	25.0	.8	23.9	1.7	8.0
Parcel, U.S. Postal Service or courier	20.2	1.3	21.9	.5	30.5	1.4	8.0
Truck and rail	S	S	S	S	S	S	36.9
Truck and water	S	S	S	S	S	S	29.8
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	44.6	1.3	S	S	S	S	S

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 34, MACHINERY							
Total	6.7	—	8.0	—	11.8	—	18.2
Single modes	8.2	3.1	8.9	1.4	13.1	2.2	25.0
Truck	8.7	3.4	9.0	1.8	13.6	2.8	30.5
For-hire truck	10.6	4.2	11.0	2.7	15.4	2.9	2.3
Private truck	18.3	2.2	15.4	2.4	20.3	1.9	39.4
Rail	S	S	S	S	47.1	.8	30.5
Water	S	S	S	S	S	S	31.6
Shallow draft	—	—	—	—	—	—	—
Great Lakes	S	S	S	S	S	S	31.6
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	15.8	.2	42.8	.2	46.8	.3	8.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	16.3	1.8	13.4	.7	26.4	1.4	11.2
Parcel, U.S. Postal Service or courier	18.1	1.9	18.7	.8	14.8	.5	11.2
Truck and rail	41.8	.3	47.3	.5	S	S	16.8
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	29.0	1.5	17.5	.9	32.3	1.5	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	9.7	—	9.8	—	10.6	—	10.2
Single modes	9.2	4.0	10.4	1.9	10.5	1.7	20.1
Truck	11.0	4.3	11.0	2.3	11.3	3.6	27.4
For-hire truck	12.9	3.7	13.4	3.4	11.1	3.0	14.6
Private truck	9.0	1.5	13.6	3.1	21.9	1.6	11.1
Rail	39.2	.9	37.2	1.1	38.4	3.8	21.1
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	22.6	1.3	31.4	.1	20.3	.2	4.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	24.8	3.7	23.0	1.1	37.2	1.6	7.6
Parcel, U.S. Postal Service or courier	24.8	3.6	23.8	1.0	39.3	1.5	7.6
Truck and rail	S	S	S	S	S	S	29.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	16.5	.6	42.8	1.4	28.8	.5	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	18.4	—	13.2	—	21.7	—	21.4
Single modes	20.6	5.0	13.6	1.3	22.9	2.3	S
Truck	21.6	5.8	14.3	2.3	24.0	3.4	S
For-hire truck	33.7	6.7	20.2	6.4	25.9	4.2	8.4
Private truck	20.8	5.3	20.7	6.0	28.0	2.2	S
Rail	S	S	41.4	1.3	S	S	23.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	16.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	46.1	5.1	45.0	1.0	46.7	1.6	13.7
Parcel, U.S. Postal Service or courier	46.2	5.1	45.3	1.0	47.9	1.6	13.7
Truck and rail	S	S	S	S	S	S	29.8
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	18.7	2.5	16.8	1.0	27.7	2.2	24.2

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	19.9	—	24.3	—	26.3	—	10.4
Single modes	26.3	10.9	25.0	5.3	26.6	3.3	9.9
Truck	29.4	11.1	21.8	6.2	24.3	6.0	15.4
For-hire truck	24.4	6.3	24.1	7.1	27.6	9.4	12.6
Private truck	46.5	8.6	45.1	7.2	47.9	10.2	S
Rail	S	S	S	S	S	S	29.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	23.1	10.0	S	S	S	S	18.4
Parcel, U.S. Postal Service or courier	22.8	10.1	S	S	S	S	18.4
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	30.2
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	12.1	—	24.4	—	29.6	—	19.3
Single modes	14.1	6.7	15.3	5.8	22.1	6.6	15.6
Truck	23.1	6.7	18.3	6.4	24.6	7.1	28.6
For-hire truck	28.4	6.4	21.3	5.9	24.9	6.9	18.7
Private truck	16.1	2.5	24.3	3.8	29.2	.7	43.4
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	27.1	6.5	17.8	3.9	22.8	3.3	13.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	25.7	5.5	28.7	4.1	22.4	5.5	26.2
Parcel, U.S. Postal Service or courier	25.7	5.5	28.7	4.1	22.4	5.5	26.2
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	14.5	—	19.5	—	23.9	—	11.5
Single modes	15.3	1.7	19.5	.6	23.8	1.1	13.1
Truck	15.2	2.3	19.0	3.0	23.6	3.1	13.1
For-hire truck	18.6	4.5	21.9	5.3	24.8	4.6	6.7
Private truck	18.2	4.3	19.0	5.2	41.0	3.5	38.6
Rail	S	S	S	S	S	S	29.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	26.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	22.8	1.7	36.0	.6	44.8	1.0	12.8
Parcel, U.S. Postal Service or courier	21.9	1.7	16.5	.6	20.6	.9	12.1
Truck and rail	S	S	S	S	S	S	29.8
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	42.8	—	S	S	S	S	35.6

See footnote at end of table.

Table B–6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
SCTG 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	10.3	—	12.5	—	22.4	—	9.0
Single modes	8.5	3.5	13.1	1.0	24.1	2.1	14.8
Truck	8.6	3.6	13.2	1.1	25.0	3.1	13.3
For-hire truck	9.8	4.3	16.5	4.3	28.8	5.4	7.3
Private truck	16.7	3.7	19.8	4.3	19.2	4.1	22.9
Rail	47.3	.1	40.7	.3	49.0	1.5	20.5
Water	S	S	S	S	S	S	31.6
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	33.6	.2	31.6	—	41.2	.1	14.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	24.8	3.6	13.5	.9	17.7	2.1	7.9
Parcel, U.S. Postal Service or courier	25.0	3.6	14.9	.9	20.0	1.7	7.9
Truck and rail	34.7	—	44.9	.2	46.6	1.0	22.5
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	20.0	.6	17.5	.2	22.5	.3	19.5
SCTG 41, WASTE AND SCRAP							
Total	12.8	—	15.5	—	22.3	—	14.9
Single modes	12.7	—	15.5	—	22.1	.2	15.1
Truck	12.4	2.4	15.8	2.7	24.3	4.7	17.2
For-hire truck	20.4	5.6	24.3	6.9	30.3	8.0	14.6
Private truck	16.3	6.1	16.8	6.2	28.0	5.0	12.5
Rail	24.3	2.3	17.4	2.7	22.2	4.8	16.2
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	36.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	33.6
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 43, MIXED FREIGHT							
Total	14.1	—	20.3	—	14.7	—	23.4
Single modes	17.1	7.3	21.2	4.6	19.8	8.6	26.6
Truck	17.1	7.3	21.2	4.6	19.8	8.6	26.6
For-hire truck	31.9	8.8	33.4	11.8	30.5	8.4	43.9
Private truck	23.5	10.0	29.9	11.6	27.9	11.4	27.1
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	17.5
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	18.8
Truck and rail	S	S	S	S	S	S	27.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	41.4

See footnote at end of table.

Table B-6. **Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 1997—Con.**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	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	
COMMODITY UNKNOWN							
Total	35.1	—	S	S	37.0	—	23.1
Single modes	35.8	5.8	S	S	35.3	3.0	34.5
Truck	36.2	5.7	S	S	32.3	4.9	34.9
For-hire truck	29.9	10.3	36.3	15.7	42.4	12.1	7.9
Private truck	47.9	13.0	S	S	36.9	11.8	30.9
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	30.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	32.5	6.3	S	S	S	S	17.1
Parcel, U.S. Postal Service or courier	37.2	6.3	25.6	1.8	32.3	3.3	19.0
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.8

— Represents data cell equal to zero or less than 1 unit of measure.

D Denotes figures withheld to avoid disclosing data for individual companies.

S Data do not meet publication standards because of high sampling variability or other reasons.

Note: For description of development and uses of measures of reliability, see Appendix B, Reliability of the Estimates.

Table B-7. **Measures of Reliability for Shipment Characteristics by State of Destination for State of Origin: 1997**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

State of destination	Value		Tons		Ton-miles	
	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	4.1	—	8.3	—	4.0	—
NEW ENGLAND STATES						
Connecticut	31.1	.2	35.2	—	35.9	.3
Maine	29.9	—	22.8	—	22.4	—
Massachusetts	8.6	.1	33.4	—	30.9	.5
New Hampshire	29.0	—	24.0	—	23.2	—
Rhode Island	36.5	—	27.2	—	27.3	—
Vermont	36.7	—	31.8	—	31.7	—
MIDDLE ATLANTIC STATES						
New Jersey	13.7	.2	20.9	.2	21.1	.5
New York	13.2	.2	26.2	.2	26.8	1.5
Pennsylvania	12.9	.4	14.9	.2	15.5	.6
EAST NORTH CENTRAL STATES						
Illinois	6.0	.7	8.1	.7	9.0	.6
Indiana	4.9	.1	13.8	.1	14.1	.3
Michigan	16.1	.8	19.9	.4	10.4	.4
Ohio	4.7	.2	12.5	.2	13.0	.5
Wisconsin	4.9	.8	11.7	2.7	15.4	2.3
WEST NORTH CENTRAL STATES						
Iowa	7.8	.2	13.7	.1	10.2	.2
Kansas	26.9	.2	33.9	.2	33.5	.5
Minnesota	7.8	.3	14.5	.7	11.5	.4
Missouri	9.5	.1	13.0	—	13.7	.2
Nebraska	14.5	—	15.7	—	14.1	—
North Dakota	24.6	—	26.3	—	28.8	.1
South Dakota	28.9	.1	32.7	—	24.9	—
SOUTH ATLANTIC STATES						
Delaware	22.1	—	S	S	S	S
District of Columbia	31.7	—	42.9	—	44.8	—
Florida	11.1	.2	18.0	—	20.0	.5
Georgia	11.7	.2	18.7	.2	19.3	.6
Maryland	23.8	.3	12.1	—	12.5	—
North Carolina	9.7	.1	26.1	.1	30.9	.7
South Carolina	12.5	—	13.8	—	14.4	—
Virginia	9.3	—	23.8	.1	23.8	.4
West Virginia	19.1	—	14.7	—	14.3	—
EAST SOUTH CENTRAL STATES						
Alabama	30.7	.3	20.8	—	17.4	—
Kentucky	12.7	.1	21.2	.1	23.3	.2
Mississippi	21.2	.1	34.4	—	32.2	.1
Tennessee	15.0	.3	23.3	.2	22.0	.3
WEST SOUTH CENTRAL STATES						
Arkansas	20.5	.1	26.1	—	24.7	.1
Louisiana	13.9	—	S	S	S	S
Oklahoma	14.9	—	19.4	—	19.4	.1
Texas	12.4	.4	13.0	.2	12.2	.5
MOUNTAIN STATES						
Arizona	15.5	—	36.0	—	34.3	.3
Colorado	43.3	.6	25.8	—	24.8	.4
Idaho	28.6	—	19.4	—	19.9	—
Montana	29.1	.1	S	S	S	S
Nevada	18.2	—	S	S	S	S
New Mexico	14.2	—	S	S	S	S
Utah	18.9	—	46.9	.1	46.8	1.0
Wyoming	30.8	—	34.5	—	35.4	—
PACIFIC STATES						
Alaska	29.7	—	S	S	S	S
California	7.1	.2	10.9	.2	10.3	1.3
Hawaii	25.1	—	47.8	—	47.1	—
Oregon	12.7	—	15.8	—	15.6	.1
Washington	8.9	—	18.6	—	18.2	.4

— Represents data cell equal to zero or less than 1 unit of measure.
D Denotes figures withheld to avoid disclosing data for individual companies.
S Data do not meet publication standards because of high sampling variability or other reasons.

Note: For description of development and uses of measures of reliability, see Appendix B, Reliability of the Estimates.

Table B–8. **Measures of Reliability for Inbound Shipment Characteristics by State of Origin for State of Destination: 1997**

[For explanation of terms and meaning of abbreviations and symbols, see introductory text]

State of origin	Value		Tons		Ton-miles	
	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	2.8	—	9.4	—	14.4	—
NEW ENGLAND STATES						
Connecticut	17.8	—	42.6	—	41.7	—
Maine	11.3	—	17.0	—	20.8	.2
Massachusetts	10.5	—	15.1	—	15.2	—
New Hampshire	35.5	—	S	S	S	S
Rhode Island	27.9	—	S	S	S	S
Vermont	36.6	—	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	44.3	1.2	18.4	—	18.9	.2
New York	20.7	.5	21.8	.2	22.8	.4
Pennsylvania	7.9	.1	14.8	.1	12.8	.4
EAST NORTH CENTRAL STATES						
Illinois	6.4	.9	9.0	.7	10.8	.6
Indiana	8.3	.2	14.6	.2	10.8	.3
Michigan	6.6	.3	21.0	.7	21.3	.8
Ohio	7.6	.4	17.8	.3	19.6	.4
Wisconsin	4.9	1.3	11.7	2.7	15.4	1.3
WEST NORTH CENTRAL STATES						
Iowa	5.3	.1	6.7	.2	6.5	.3
Kansas	13.2	—	29.4	—	33.0	.2
Minnesota	8.3	.5	27.3	1.3	23.4	.9
Missouri	11.1	.2	26.7	.1	25.0	.2
Nebraska	21.2	.1	24.8	—	28.4	.1
North Dakota	41.4	.2	48.2	.5	41.5	.7
South Dakota	31.4	.2	21.6	—	24.4	—
SOUTH ATLANTIC STATES						
Delaware	48.2	—	34.6	—	34.8	—
District of Columbia	S	S	S	S	S	S
Florida	9.9	—	20.7	—	22.4	.1
Georgia	6.5	—	15.4	—	16.3	.4
Maryland	25.9	.1	S	S	S	S
North Carolina	10.3	.1	27.0	—	32.3	.3
South Carolina	17.6	.1	21.0	—	22.1	.2
Virginia	20.4	.2	17.0	—	17.4	.2
West Virginia	15.7	—	44.7	.2	49.5	.5
EAST SOUTH CENTRAL STATES						
Alabama	10.4	—	9.1	—	10.2	.2
Kentucky	7.5	—	43.2	.3	44.4	1.0
Mississippi	14.5	—	S	S	S	S
Tennessee	14.2	.1	14.6	—	16.4	.1
WEST SOUTH CENTRAL STATES						
Arkansas	10.9	—	9.9	—	10.5	.1
Louisiana	18.4	—	17.7	—	19.5	.4
Oklahoma	14.5	—	13.5	—	13.6	.1
Texas	38.5	.9	13.8	—	15.1	.2
MOUNTAIN STATES						
Arizona	S	S	S	S	S	S
Colorado	13.0	—	S	S	S	S
Idaho	32.2	—	21.0	—	22.6	.1
Montana	18.4	—	31.5	1.4	31.2	4.6
Nevada	33.5	—	31.9	—	30.9	—
New Mexico	15.6	—	29.5	.1	29.5	.5
Utah	23.0	—	24.2	—	25.1	—
Wyoming	20.7	—	37.3	1.9	36.4	5.3
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	16.0	.5	14.6	—	14.1	.3
Hawaii	S	S	44.7	—	43.7	—
Oregon	8.5	—	15.3	—	14.9	.3
Washington	26.4	.1	12.4	—	12.7	.2

— Represents data cell equal to zero or less than 1 unit of measure.
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S Data do not meet publication standards because of high sampling variability or other reasons.

Note: For description of development and uses of measures of reliability, see Appendix B, Reliability of the Estimates.

Appendix C.

Sample Design, Data Collection, and Estimation

INTRODUCTION

The primary goal for the 1997 Commodity Flow Survey (CFS) is to estimate shipping volumes (value, tons, and ton-miles) by commodity and mode of transportation at varying levels of geographic detail. A detailed description of the sample design for the 1997 CFS is provided below.

SAMPLE DESIGN

The sample for the 1997 CFS is selected using a stratified three-stage design in which the first-stage sampling units are establishments, the second-stage sampling units are groups of four 1-week periods (reporting weeks) within the survey year, and the third-stage sampling units are shipments.

First Stage

To create the first-stage sampling frame, we extracted a subset of establishment records from the 1995 Standard Statistical Establishment List (SSEL). The SSEL is a database, maintained by the Bureau of the Census, that contains a record for each establishment with employees. (An establishment is a single physical location where business transactions take place.) Establishments having nonzero payroll in 1994 and classified in the mining, manufacturing, wholesale, or selected retail industries, as defined by the 1987 Standard Industrial Classification (SIC) Manual, are included on the sampling frame. Auxiliary establishments (e.g. warehouses and central administrative offices) with shipping activity are also included. 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. All other establishments contained on the sampling frame are referred to as nonauxiliary establishments. For each establishment we extracted sales, payroll, number of employees, name and address information, as well as a primary identifier. We also computed a measure of size for each establishment. The measure of size for a particular establishment is designed to approximate the establishment's total value of shipments for 1994.

To reduce the amount of sampling variability and because estimates are desired for each commodity, we used a stratified design with a certainty component for each three-digit SIC. To accomplish this, each establishment on the sampling frame is classified into a three-digit

SIC grouping. For each group of establishments, a boundary (or cutoff) that divides the certainty establishments from the noncertainty establishments is determined using the Lavallee-Hidiroglou algorithm. If an establishment's measure of size is greater than the cutoff, the establishment is selected "with certainty". Establishments selected "with certainty" were assured of being selected and represented only themselves (i.e., have a selection probability of one and a sampling weight of one). No certainty cutoffs are set for auxiliary establishments because they only make up a small portion of the estimated total value of shipments for all establishments on the sampling frame.

Establishments not selected with certainty make up the noncertainty universe. We stratify the noncertainty universe by SIC recode, National Transportation Analysis Region (NTAR), and a flag used to differentiate auxiliary establishments from nonauxiliary establishments. Each SIC recode is constructed from a group of related three-digit SIC codes. The NTARs, developed by the Department of Transportation as combinations of Bureau of Economic Analysis (BEA) Areas, collectively provide a mutually exclusive and exhaustive coverage of the United States. Finally, the auxiliary stratification came about because establishments with different types of operation may have different shipping practices. We refer to a particular SIC recode-NTAR-auxiliary flag combination as a primary stratum.

We further stratify the noncertainty establishments within each primary stratum using the measure of size previously described. We refer to these measure-of-size strata as substrata of the primary strata. The measure of size stratification increases the efficiency of the sample design. The Dalenius-Hodges cumulative rule is used to set the substratum boundaries. We then use Neyman allocation to determine the sample size required within each substratum to meet a coefficient of variation constraint on the primary stratum total measure of size. Within each substratum, a simple random sample of establishments is selected without replacement.

To arrive at the final sample size, we allocated additional establishments to some of the strata so that the probability of selecting any establishment is no less than 1 in 100. In total, the first-stage sample comprises 102,739 establishments.

Second Stage

The frame for the second stage of sampling consists of 52 one-week reporting periods (reporting weeks) during the interval from December 29, 1996, to December 26,

1997. Each establishment selected for the 1997 CFS was systematically assigned to report for a group of four reporting weeks throughout the survey year. The four reporting weeks in a given group are separated by 12 weeks. For example, an establishment might be requested to report data for the 5th, 18th, 31st, and 44th weeks of the survey year.

Third Stage

For each of the four reporting weeks in which an establishment is asked to report, we request the respondent to construct a sampling frame that consists of all shipments made by their establishment in each particular reporting week. For any particular reporting week, if an establishment makes 40 or fewer shipments during that week, we ask the respondent to provide information about all of their establishment's shipments from that week, i.e., no sampling is required. For establishments making more than 40 shipments in a given reporting week, we ask the respondent to select a systematic sample of these shipments and to provide us with information only about the selected shipments. The size of a particular respondent's sample for a given reporting week should be between 20 and 40 shipments, depending on the total number of shipments the establishment made during that reporting week.

DATA COLLECTION

Each establishment selected into the CFS sample is mailed a questionnaire for each of its four reporting weeks. For a given establishment, we request the respondent to provide the following information about their establishment's shipments: domestic destination or port of exit, commodity, value, weight, mode(s) of transportation, the date on which the shipment was made, and an indication of whether the shipment was an export, hazardous material, or containerized. For shipments that include more than one commodity, respondents are instructed to report the commodity that makes up the greatest percentage of the shipment's weight. For exports, we also ask the respondent to provide the mode of export and the foreign destination city and country.

We used two versions of the questionnaire to collect data from the sampled establishments—the CFS-1000 and the CFS-2000. Each establishment received the CFS-1000 in each of its first three reporting weeks. However, for the fourth reporting week, a subsample of approximately 25,000 establishments received the CFS-2000, while the remaining establishments received the CFS-1000. The CFS-2000 requests the respondent to provide additional information about their establishment's access to on-site and off-site shipping facilities, as well as transportation equipment. See Appendix E for a copy of each questionnaire.

ESTIMATION

Each shipment has associated with it a single tabulation weight, that is used in computing all estimates to which

the shipment contributes. The tabulation weight is a product of seven different weights. A description of each weight follows.

CFS respondents provide data for a sample of shipments made by their respective establishments in the survey year. For each establishment, we produce an estimate of that establishment's total value of shipments for the entire survey year. To do this, we use four different weights, the shipment weight, the shipment nonresponse weight, the quarter weight, and the quarter nonresponse weight.

Like establishments, we identify shipments as either certainty or noncertainty. (See the Nonsampling Error section in Appendix B for a description of how certainty shipments are identified.) For noncertainty shipments, the shipment weight is defined as the ratio of the total number of noncertainty shipments (as reported by the respondent) made by an establishment in a reporting week to the number of sampled noncertainty shipments for the same week. This weight uses the data from the sampled shipments to represent all the establishment's shipments made in the reporting week. However, some respondents fail to provide sufficient information about a sampled shipment. For example, a respondent may not be able to provide value, weight, or a destination ZIP Code for some of the sampled shipments. If these data items cannot be imputed, then these shipments would not contribute to tabulations and are 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, we apply the shipment nonresponse weight. For noncertainty shipments from a particular establishment's reporting week, this weight is 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 and shipment nonresponse weight for certainty shipments from a particular establishment's reporting week are both equal to one.

The quarter weight inflates an establishment's estimate for a particular reporting week to an estimate for the corresponding quarter. For noncertainty shipments, the quarter weight is equal to 13. The quarter weight for most certainty shipments is also equal to 13. However, if a respondent is 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 would be one. For each establishment, the quarterly estimates are added to produce an estimate of the establishment's value of shipments for the entire survey year. Whenever an establishment does not provide the Census Bureau with a response for each of its four reporting weeks, we compute a quarter nonresponse weight. The quarter nonresponse weight for a particular establishment is 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 we received usable shipment data from the establishment.

Using these four component weights, we compute an estimate of each establishment's value of shipments for the entire survey year. We then multiply this estimate by a weight that adjusts the estimate using value of shipments and sales data obtained from other Census Bureau surveys and preliminary results of the 1997 Economic Census. This weight, called the establishment-level adjustment weight, attempts to correct for any sampling or nonsampling errors that occur during the sampling of shipments by the respondent.

The adjusted value of shipments estimate for an establishment is then weighted by the establishment weight. This weight is equal to the inverse of the establishment's probability of being selected into the sample.

A final adjustment weight, called the SIC-level adjustment weight, uses preliminary results of the 1997 Economic Census to account for establishments from which we did not receive a response (including establishments from which we did not receive any usable shipment data) and for changes in the population of establishments between the time the first-stage sampling frame was constructed (1995) and the year in which the data were collected (1997). Separate SIC-level adjustment weights are determined for nonauxiliary and auxiliary establishments.

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 agencies of the United States and Canadian governments based on the Harmonized System (HS) of product classification which is used worldwide. The purpose of the SCTG coding system was to specifically address statistical needs in regard to products transported.

In the past, Commodity Flow Survey (CFS) data have been collected and reported using product classifications found in the Standard Transportation Commodity Classification (STCC) system. These classifications were developed in the early 1960s by the American Association of Railroads (AAR) to analyze commodity movements by rail. The original purpose of the STCC was for identification of commodities for purposes of assigning rates for Interstate Commerce Commission (ICC) regulated rail carriers. The STCC continues to be used by the AAR as a tariff mechanism.

At the time that the Commodity Transportation Survey (CTS) (the CTS—the predecessor of the CFS) was first conducted in 1963, STCC codes were still useful for analyzing most important aspects of the U.S. transportation system. Since then, many changes have taken place that have gradually made the STCC code less useful for tracking domestic product movements across all modes (although

it remains perfectly functional for tracking rail-only movements). These include the deregulation of trucking, the enactment of North American Free Trade Agreement (NAFTA), changes in logistics practices, the emergence of plastics and composite materials to replace metals and glass, the obsolescence of many categories of wood products, and the very rapid recent development of high-tech electronic goods. Because the CFS is a shipper survey, the CFS collects information about shipments moving on all modes. As a consequence, STCC classifications frequently provide inadequate detail for identifying products that are significant for modes, such as truck and air. It is for these reasons that the Bureau of Transportation Statistics (BTS) has sponsored the development of a new product code to collect and report CFS data.

In 1997 the CFS 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, we instructed respondents to use the five-digit code for the major commodity, defined as the commodity of greatest total weight in the shipment.

Additional information on the SCTG system can be found on the Internet through the BTS web page at <http://www.bts.gov>. Comments or questions on the SCTG should be directed to [http://cfs@bts.gov](mailto:cfs@bts.gov).

Appendix E.

Sample Report Forms and Instructions

The sample report forms and instructions are shown on the following pages.

Note: The CFS-2000 was sent to a subsample of establishments to obtain additional information about the use of transportation equipment and facilities.

1997 COMMODITY FLOW SURVEY
CENSUS OF TRANSPORTATION**Reporting period:****Please return by:****RETURN TO****BUREAU OF THE CENSUS**
1201 East 10th Street
Jeffersonville IN 47132-0001

(Please correct any error in name, address, and ZIP Code)

BEFORE COMPLETING YOUR REPORT, please read the accompanying instruction guide. If book figures are not available for requested data, please provide estimates. If you have any questions, please call 1-800-772-7851.

Through this survey, we are requesting data on a representative sample of your outbound shipments, to help us produce key statistics used by transportation planners and managers. We greatly appreciate your assistance in this program.

Item A Is the establishment name shown in the mailing address correct?

- 1 ☐ Yes
- 2 ☐ No — Enter correct name. ↗

Item B Mark (X) the **ONE** box which best describes this establishment during the one-week period shown above.

- 1 ☐ In operation
- 2 ☐ Temporarily or seasonally inactive
- 3 ☐ Ceased operation — Give date →

Month	Day	Year

Item C Is this establishment's physical location the same as the address shown in the label? (PO boxes or rural routes are not physical locations.)

- 1 ☐ Yes
- 2 ☐ No — Enter physical location below. ↗

Number and street

City, town, village, etc.

State

ZIP Code

NOTE — The rest of this questionnaire requests information about shipments (or deliveries) from the establishment located at the address in the mailing label.

If you entered a different address in item C — Please complete the form for shipments originating from the location listed in item C.

Item D Please enter the **total number** of outbound shipments (or deliveries), including customer pick-up, for the one-week reporting period shown above. If book figures are not available, please provide your best estimate.

--

This number should reflect all shipments and deliveries leaving this location during the one-week reporting period. Please see *Instruction Guide* for a definition of "shipment."**DO NOT PROCEED UNTIL YOU HAVE COMPLETED ITEM D.****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 Census Bureau. By the same law, **YOUR CENSUS REPORT IS CONFIDENTIAL.** It may be seen only by Census Bureau employees and may be used only for statistical purposes. Further, copies retained in respondents' files are immune from legal process.

Item E SAMPLING INSTRUCTIONS

Our goal in this section is to identify a sample of your shipments that you will provide data on. Through the use of a sample, we can avoid asking you for information on all of your shipments, while still obtaining statistically accurate information.

FINDING YOUR SELECTION RATE

If you reported 40 or fewer shipments in item D, please enter "1" as your selection rate in the box below, then go directly to item F and enter the information for each of your shipments.

If you reported 41 or more shipments in item D, we will now ask you to select and report on a sample of your shipments. Following the steps below will result in a sample of 20 to 40 shipments to report on in item F.

In the table at right, identify the selection rate that corresponds to the number you entered in item D, and enter it in the box below.

Please enter your selection rate. →

Number of shipments entered in item D	Selection rate
1— 40	1
41— 80	2
81— 100	3
101— 200	5
201— 400	10
401— 800	20
801— 1600	40
1601— 3200	80
3201— 6400	160
6401—12800	320
More than 12800	Call Census at 1-800-772-7851

CONTINUE ON NEXT PAGE. →

Item F SHIPMENT CHARACTERISTICS

Line No. (a)	Shipment ID Number (b)	Shipment date (c)		Shipment value (excluding shipping costs) in whole dollars (d)	Shipment weight in pounds (e)	Commodity code from SCTG Manual (f)	Commodity description (g)	If a hazardous material, enter the "UN" or "NA" number (h)
		Month	Day					
0	123-5	4	26	4,235	140	3 5 1 2 0	Electrical transformers	| | | |
00	402H	4	26	125,300	626,500	1 7 1 0 0	Gasoline	1 2 0 3
1						| | | |		| | | |
2						| | | |		| | | |
3						| | | |		| | | |
4						| | | |		| | | |
5						| | | |		| | | |
6						| | | |		| | | |
7						| | | |		| | | |
8						| | | |		| | | |
9						| | | |		| | | |

Mode of transport codes for columns (k) and (n)

1 — Parcel delivery, courier, or U.S. Postal Service

2 — Private truck
3 — For-hire truck

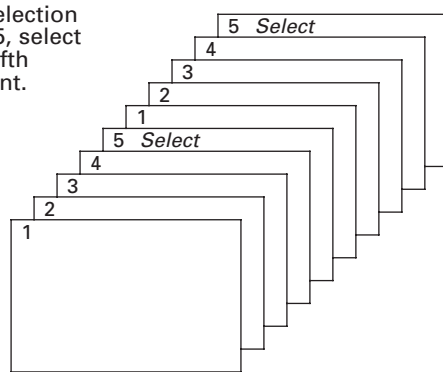
4 — Railroad
Continued →

SELECTING YOUR SAMPLE OF SHIPMENTS

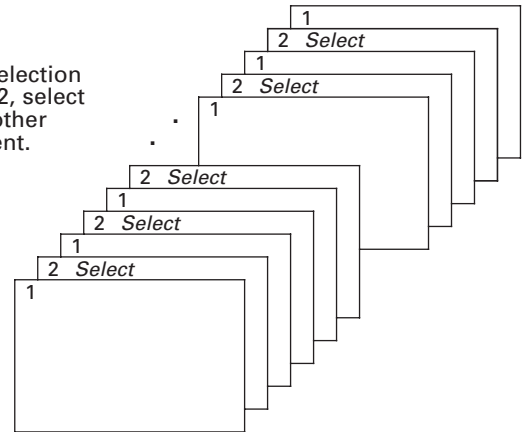
1. Use the file or combination of files that best reflects your full range of outbound shipping activities.
2. Begin with the first shipment. Count the shipments until you reach your selection rate. Select this shipment to report on in item F.
3. Continue counting with the next shipment. Count this shipment as 1 and continue until you reach the selection rate again. Select this shipment to report on in item F.
4. Repeat step 3 until you reach the last shipment for the one-week period. If the last shipment is counted as the selection rate, select this shipment to report on in item F. If the last shipment is not counted as the selection rate, do not report this shipment.

In the following examples, each rectangle represents one shipment.

If the selection rate is 5, select every fifth shipment.



If the selection rate is 2, select every other shipment.



Once you have selected your sample of shipments, please proceed to item F and enter the requested information for each selected shipment. Examples of completed lines for two shipments are provided on lines "0" and "00" below.

If you have difficulties constructing a file of shipments or have questions about how to select the sample of your shipments, please call our toll-free number for assistance: 1-800-772-7851.

Containerized? (Y/N)	U.S. destination (Complete for all shipments.)			Mode(s) of transport to U.S. destination Enter all that apply in order used. Use codes below.	Export? (Y/N)	Foreign destination (for export shipments only) Note: In column (j) enter the U.S. port, airport, or border crossing of exit.		Export mode	Line No.
	(i)	(j)				(k)	(l)			(m)		(n)	(o)
	City	State	ZIP Code			City	Country		
N	Los Angeles	C A	9 0 0 4 0	2, 4, 3	N				0
N	New York	N Y	1 0 4 5 4	5	Y	London	England	6	00
									1
									2
									3
									4
									5
									6
									7
									8
									9

5 — Shallow draft vessel

6 — Deep draft vessel

7 — Pipeline

8 — Air

9 — Other mode

0 — Unknown

Item F SHIPMENT CHARACTERISTICS — Continued

Line No. (a)	Shipment ID Number (b)	Shipment date (c)		Shipment value (excluding shipping costs) in whole dollars (d)	Shipment weight in pounds (e)	Commodity code from SCTG Manual (f)	Commodity description (g)	If a hazardous material, enter the "UN" or "NA" number (h)
		Month	Day					
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								

 Mode of transport codes
for columns (k) and (n)

1 — Parcel delivery, courier, or U.S.
Postal Service

2 — Private truck
3 — For-hire truck

4 — Railroad
Continued


Containerized? (Y/N)	U.S. destination (Complete for all shipments.)			Mode(s) of transport to U.S. destination Enter all that apply in order used. Use codes below. (k)	Export? (Y/N)	Foreign destination (for export shipments only) Note: In column (j) enter the U.S. port, airport, or border crossing of exit. (m)		Export mode (n)	Line No. (o)
	(j)								
(i)	City	State	ZIP Code			City	Country		
									10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20
									21
									22
									23
									24
									25
									26
									27
									28
									29
									30
									31
									32
									33
									34

5 — Shallow draft vessel
6 — Deep draft vessel

7 — Pipeline
8 — Air

9 — Other mode
0 — Unknown

Item F SHIPMENT CHARACTERISTICS — Continued

Line No. (a)	Shipment ID Number (b)	Shipment date (c)		Shipment value (excluding shipping costs) in whole dollars (d)	Shipment weight in pounds (e)	Commodity code from SCTG Manual (f)	Commodity description (g)	If a hazardous material, enter the "UN" or "NA" number (h)
		Month	Day					
35								
36								
37								
38								
39								
40								

Mode of transport codes for columns (k) and (n)


1 — Parcel delivery, courier, or U.S. Postal Service

2 — Private truck
3 — For-hire truck

4 — Railroad
Continued
Item G
1. Do this establishment's outbound shipments leave more than one site within this physical location?

☐ Yes

☐ No

2. Are the records for outbound shipments from this location maintained in a number of separate files (e.g., separate files for each commodity, or for each shipping site) at this location?

☐ Yes

☐ No

If yes to item G1 or item G2:
3. Would it be easier to receive a separate questionnaire for each file or each shipment site?

☐ Yes

☐ No

Item H

Enter the total value of shipments for the one-week reporting period. This figure should represent all products leaving this establishment for the one-week period. An estimate is acceptable.

Total value in whole dollars

Item I

In the last three months did this location have any individual shipments with a value over \$2,000,000?

☐ Yes

☐ No

Item J
CERTIFICATION

Name of person to contact regarding this report — *Please print*

Telephone number — *Include area code*

Date

Signature

Title

1997 COMMODITY FLOW SURVEY
CENSUS OF TRANSPORTATION**Reporting period:****Please return by:****RETURN TO****BUREAU OF THE CENSUS**
1201 East 10th Street
Jeffersonville IN 47132-0001

(Please correct any error in name, address, and ZIP Code)

BEFORE COMPLETING YOUR REPORT, please read the accompanying instruction guide. If book figures are not available for requested data, please provide estimates. If you have any questions, please call 1-800-772-7851.

Through this survey, we are requesting data on a representative sample of your outbound shipments, to help us produce key statistics used by transportation planners and managers. We greatly appreciate your assistance in this program.

Item A Is the establishment name shown in the mailing address correct?

- 1
- ☐
- Yes
-
- 2
- ☐
- No — Enter correct name. ↗

Item B Mark (X) the **ONE** box which best describes this establishment during the one-week period shown above.

- 1
- ☐
- In operation
-
- 2
- ☐
- Temporarily or seasonally inactive
-
- 3
- ☐
- Ceased operation — Give date →

Month	Day	Year

Item C Is this establishment's physical location the same as the address shown in the label? (PO boxes or rural routes are not physical locations.)

- 1
- ☐
- Yes
-
- 2
- ☐
- No — Enter physical location below. ↗

Number and street

City, town, village, etc.

State

ZIP Code

NOTE — The rest of this questionnaire requests information about shipments (or deliveries) from the establishment located at the address in the mailing label.

If you entered a different address in item C — Please complete the form for shipments originating from the location listed in item C.

Item D Please enter the **total number** of outbound shipments (or deliveries), including customer pick-up, for the one-week reporting period shown above. If book figures are not available, please provide your best estimate.

--

This number should reflect all shipments and deliveries leaving this location during the one-week reporting period. Please see Instruction Guide for a definition of "shipment."

DO NOT PROCEED UNTIL YOU HAVE COMPLETED ITEM D.**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 Census Bureau. By the same law, **YOUR CENSUS REPORT IS CONFIDENTIAL.** It may be seen only by Census Bureau employees and may be used only for statistical purposes. Further, copies retained in respondents' files are immune from legal process.

Item E SAMPLING INSTRUCTIONS

Our goal in this section is to identify a sample of your shipments that you will provide data on. Through the use of a sample, we can avoid asking you for information on all of your shipments, while still obtaining statistically accurate information.

FINDING YOUR SELECTION RATE

If you reported 40 or fewer shipments in item D, please enter "1" as your selection rate in the box below, then go directly to item F and enter the information for each of your shipments.

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In the table at right, identify the selection rate that corresponds to the number you entered in item D, and enter it in the box below.

Please enter your selection rate. →

Number of shipments entered in item D	Selection rate
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41— 80	2
81— 100	3
101— 200	5
201— 400	10
401— 800	20
801— 1600	40
1601— 3200	80
3201— 6400	160
6401—12800	320
More than 12800	Call Census at 1-800-772-7851

CONTINUE ON NEXT PAGE. →

Item F SHIPMENT CHARACTERISTICS

Line No. (a)	Shipment ID Number (b)	Shipment date (c)		Shipment value (excluding shipping costs) in whole dollars (d)	Shipment weight in pounds (e)	Commodity code from SCTG Manual (f)	Commodity description (g)	If a hazardous material, enter the "UN" or "NA" number (h)
		Month	Day					
0	123-5	4	26	4,235	140	3 5 1 2 0	Electrical transformers	| | | |
00	402H	4	26	125,300	626,500	1 7 1 0 0	Gasoline	1 2 0 3
1						| | | |		| | | |
2						| | | |		| | | |
3						| | | |		| | | |
4						| | | |		| | | |
5						| | | |		| | | |
6						| | | |		| | | |
7						| | | |		| | | |
8						| | | |		| | | |
9						| | | |		| | | |

Mode of transport codes for columns (k) and (n)

1 — Parcel delivery, courier, or U.S. Postal Service

2 — Private truck
3 — For-hire truck

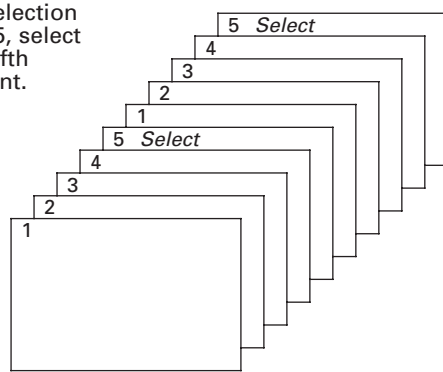
4 — Railroad
Continued →

SELECTING YOUR SAMPLE OF SHIPMENTS

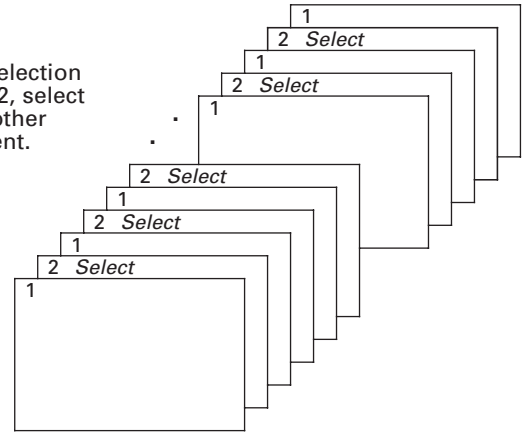
1. Use the file or combination of files that best reflects your full range of outbound shipping activities.
2. Begin with the first shipment. Count the shipments until you reach your selection rate. Select this shipment to report on in item F.
3. Continue counting with the next shipment. Count this shipment as 1 and continue until you reach the selection rate again. Select this shipment to report on in item F.
4. Repeat step 3 until you reach the last shipment for the one-week period. If the last shipment is counted as the selection rate, select this shipment to report on in item F. If the last shipment is not counted as the selection rate, do not report this shipment.

In the following examples, each rectangle represents one shipment.

If the selection rate is 5, select every fifth shipment.



If the selection rate is 2, select every other shipment.



Once you have selected your sample of shipments, please proceed to item F and enter the requested information for each selected shipment. Examples of completed lines for two shipments are provided on lines "0" and "00" below.

If you have difficulties constructing a file of shipments or have questions about how to select the sample of your shipments, please call our toll-free number for assistance: 1-800-772-7851.

Containerized? (Y/N)	U.S. destination <i>(Complete for all shipments.)</i>			Mode(s) of transport to U.S. destination <i>Enter all that apply in order used. Use codes below.</i>	Export? (Y/N)	Foreign destination (for export shipments only) Note: In column (j) enter the U.S. port, airport, or border crossing of exit.		Export mode	Line No.
	(j)					(m)			
(i)	City	State	ZIP Code	(k)	(l)	City	Country	(n)	(o)
N	Los Angeles	CA	90040	2, 4, 3	N				0
N	New York	NY	10454	5	Y	London	England	6	00
									1
									2
									3
									4
									5
									6
									7
									8
									9

5 — Shallow draft vessel
6 — Deep draft vessel

7 — Pipeline
8 — Air

9 — Other mode
0 — Unknown

Item F SHIPMENT CHARACTERISTICS — Continued

Line No. (a)	Shipment ID Number (b)	Shipment date (c)		Shipment value (excluding shipping costs) in whole dollars (d)	Shipment weight in pounds (e)	Commodity code from SCTG Manual (f)	Commodity description (g)	If a hazardous material, enter the "UN" or "NA" number (h)
		Month	Day					
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								

 Mode of transport codes
for columns (k) and (n)

1 — Parcel delivery, courier, or U.S.
Postal Service

2 — Private truck
3 — For-hire truck

4 — Railroad
Continued


Containerized? (Y/N)	U.S. destination (Complete for all shipments.) (j)			Mode(s) of transport to U.S. destination Enter all that apply in order used. Use codes below. (k)	Export? (Y/N) (l)	Foreign destination (for export shipments only) Note: In column (j) enter the U.S. port, airport, or border crossing of exit. (m)		Export mode (n)	Line No. (o)
	City	State	ZIP Code			City	Country		
									10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20
									21
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									24
									25
									26
									27
									28
									29
									30
									31
									32
									33
									34

5 — Shallow draft vessel
6 — Deep draft vessel

7 — Pipeline
8 — Air

9 — Other mode
0 — Unknown

Item F SHIPMENT CHARACTERISTICS — Continued

Line No. (a)	Shipment ID Number (b)	Shipment date (c)		Shipment value (excluding shipping costs) in whole dollars (d)	Shipment weight in pounds (e)	Commodity code from SCTG Manual (f)	Commodity description (g)	If a hazardous material, enter the "UN" or "NA" number (h)
		Month	Day					
35								
36								
37								
38								
39								
40								

Mode of transport codes for columns (k) and (n)


1 — Parcel delivery, courier, or U.S. Postal Service

2 — Private truck
3 — For-hire truck

4 — Railroad
Continued →

Item G Enter the total dollar value of **all** shipments for the one-week reporting period. This figure should represent all products leaving this establishment for the one-week period. An estimate is acceptable.

Total value in whole dollars

Item H In the last three months did this location have any individual shipments with a value over \$2,000,000?

☐ Yes

☐ No

Item I AVAILABILITY AND USE OF ON-SITE SHIPPING FACILITIES

In column (b), check "Yes" or "No" for each type of shipping facility to indicate whether or not this type of facility existed **on-site** during 1997. For each "Yes" in column (b), check "Yes" or "No" in column (c) to indicate whether or not you used the facility on your premises for **outbound shipments** during 1997.

Type of shipping facility (a)	Was a shipping facility of this type on your premises during 1997? (b)	Did you use this facility on your premises for outbound shipments during 1997? (c)
1. Rail siding	1 <input type="checkbox"/> Yes → 2 <input type="checkbox"/> No	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
2. Dock on the Great Lakes	1 <input type="checkbox"/> Yes → 2 <input type="checkbox"/> No	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
3. Dock on inland water	1 <input type="checkbox"/> Yes → 2 <input type="checkbox"/> No	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
4. Dock on deep sea water	1 <input type="checkbox"/> Yes → 2 <input type="checkbox"/> No	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
5. Airport/landing strip capable of handling your shipments	1 <input type="checkbox"/> Yes → 2 <input type="checkbox"/> No	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
6. Pipeline terminal	1 <input type="checkbox"/> Yes → 2 <input type="checkbox"/> No	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No

Containerized? (Y/N)	U.S. destination (Complete for all shipments.)			Mode(s) of transport to U.S. destination <i>Enter all that apply in order used. Use codes below.</i>	Export? (Y/N)	Foreign destination (for export shipments only) Note: In column (j) enter the U.S. port, airport, or border crossing of exit.		Export mode	Line No.
	(i)	(j)				(k)	(l)			(m)		(n)	(o)
	City	State	ZIP Code			City	Country		
									35
									36
									37
									38
									39
									40

5 — Shallow draft vessel
6 — Deep draft vessel

7 — Pipeline
8 — Air

9 — Other mode
0 — Unknown

Item J **USE OF OFF-SITE SHIPPING FACILITIES**

In column (b), check "Yes" or "No" for each type of shipping facility to indicate whether or not you used an **off-site** facility of that type for **outbound shipments** during 1997. For each "Yes", enter the miles to that off-site facility in column (c), and the mode of transport used to reach that facility in column (d). The modes are listed below.

Type of shipping facility (a)	Did you use this type of off-site facility for outbound shipments during 1997? (b)	Distance to the off-site facility of this type that you used most in 1997 (Report in miles – estimates are acceptable) (c)	Mode of transport used to reach that facility (Enter a code from the list below) (d)
1. Rail siding	1 <input type="checkbox"/> Yes —————→ 2 <input type="checkbox"/> No		
2. Dock on the Great Lakes	1 <input type="checkbox"/> Yes —————→ 2 <input type="checkbox"/> No		
3. Dock on inland water	1 <input type="checkbox"/> Yes —————→ 2 <input type="checkbox"/> No		
4. Dock on deep sea water	1 <input type="checkbox"/> Yes —————→ 2 <input type="checkbox"/> No		
5. Airport/landing strip capable of handling your shipments	1 <input type="checkbox"/> Yes —————→ 2 <input type="checkbox"/> No		
6. Pipeline terminal	1 <input type="checkbox"/> Yes —————→ 2 <input type="checkbox"/> No		

1 – Trailer on Flat Car (TOFC)
2 – Private Truck

3 – For-Hire Truck
4 – Rail

5 – Water
6 – Pipeline

7 – Air
8 – Other

PLEASE CONTINUE ON PAGE 8.

Item K USE AND AVAILABILITY OF TRANSPORTATION EQUIPMENT

During 1997, did this location use any of the following types of equipment for outbound shipments? Please check "Yes" or "No." For rail cars reported in number 1 below, enter the approximate percentage of your total outbound rail shipments that used that type of rail car. These percentages should add to 100%. If you had no rail shipments, leave the percentages blank.

Equipment (a)	Was this type of equipment used for outbound shipments during 1993? (b)	Percentage of total rail shipments (c)
1. Rail cars that:	1 <input type="checkbox"/> Yes → 2 <input type="checkbox"/> No	
a. Your company owned/leased		
b. A common carrier owned/leased	1 <input type="checkbox"/> Yes → 2 <input type="checkbox"/> No	
c. Another party owned/leased (e.g. receiver)	1 <input type="checkbox"/> Yes → 2 <input type="checkbox"/> No	
2. Trucks with 6 or more tires or truck-tractors that:	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	
a. Your company owned		
b. Your company leased, with driver	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	
c. Your company leased, without driver	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	
3. Truck trailers that your company owned or leased	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	
4. Aircraft that your company owned or leased	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	
5. Barges that your company owned or leased	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	
6. Other equipment that your company owned or leased – Specify ↴	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	

Item L TRANSPORTATION DECISIONS

During 1997, who generally decided on the mode of transportation for your outbound shipments? *Check the appropriate box.*

1 ☐ Your company2 ☐ Receiver of shipment3 ☐ Other

Remarks

Item M CERTIFICATIONName of person to contact regarding this report – *Please print*Telephone number – *Include area code*

Date

Signature

Title

Instructions for Completing the Commodity Flow Survey

TIPS FOR COMPLETING THE CFS QUESTIONNAIRE

Please read all instructions.

You may use estimates if book figures are not readily available.

If you have questions about completing the survey, a Census Bureau representative will be glad to assist you. You can call us at 1-800-772-7851.

Some instructions are included on the questionnaire itself. However, due to space limitations, most of the instructions and definitions are included in separate reference materials. These include this instruction guide, and a listing of commodity codes to be used for classifying individual shipments in this survey.

PART I – GENERAL INFORMATION

Frequently Asked Questions About the Commodity Flow Survey (CFS)

Why are you conducting the CFS?

The CFS produces valuable measures of the demands on the nation's transportation system.

The results of the CFS are used by transportation policy makers to analyze future transportation needs.

Who reports in the CFS?

The CFS covers a sample of establishments in the mining, manufacturing, wholesale, and selected retail industries.

Why is my participation important?

Your establishment was selected as part of a sample designed to represent a wide range of industries and geographic regions.

Your report helps ensure quality results.

Is this survey mandatory?

Yes. The CFS is mandatory under the authority of Title 13, United States Code (USC).

Will my data be kept confidential?

Yes. The same law that requires your participation, Title 13, USC, also guarantees your data will be kept strictly confidential.

The reports you provide the Census Bureau cannot be used for purposes of taxation, regulation, or investigation.

Your report is used only to develop summary data that do not reveal the activities of individual firms or establishments.

How often must I report?

You will be sent four questionnaires in all: one during each quarter of 1997.

The CFS will not be conducted again until 2002.

PART II – INSTRUCTIONS FOR COMPLETING YOUR QUESTIONNAIRE

Items A – C

Please enter the information requested on your establishment's name, operational status, and physical location.

Item D

Enter in the space provided your total number of outbound shipments **for the one week reporting period** on the front of the questionnaire.

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

What we mean by a "shipment":

For the purposes of this survey, a shipment is a single movement of goods, commodities, products, etc. from your location to a customer or to another location of your company.

"Commodities" refer to items that your location produces, sells, or distributes, *not* to items that are considered by-products of your location's operation.

What we don't mean by a "shipment":

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

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

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 stop as one shipment.**

Item E: Sampling Instructions

If you reported 40 or fewer shipments in Item D, complete Item F (Shipment Characteristics) for all of your shipments covered by the one-week reporting period.

If you reported more than 40 shipments in Item D, follow the instructions in Item E in order to select a sample of shipments on which to report in Item F.

By asking you to select a sample of your shipments for the one-week reporting period, we avoid asking you for information on all your shipments, while still obtaining statistically accurate information.

Reminder: The files you are sampling from should reflect the full range of your location's shipping activities in terms of modes of transportation used, commodities 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 call us at 1-800-772-7851.

PART II – INSTRUCTIONS FOR COMPLETING YOUR QUESTIONNAIRE – Continued

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.
- **Shipment Weight (column e)** – Enter the weight of the total shipment in whole pounds. If weight is not readily available from your records, please estimate.
- **Commodity Code (column f)** – Please use the list of Standard Classification of Transported Goods (SCTG) Codes in the enclosed SCTG Manual to select the proper code. For shipments with more than one commodity, enter only the code for the commodity with the greatest weight.
- **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)	Shipment ID Number (b)	Shipment date (c)		Shipment value (excluding shipping costs) in whole dollars (d)	Shipment weight in pounds (e)	Commodity code from SCTG Manual (f)	Commodity description (g)
		Month	Day				
0	123-5	4	26	4,235	140	3 6 1 2 0	Electrical transformers
00	123-6	4	26	125,300	626,500	1 7 1 0 0	Gasoline
1						| | | |	
2						| | | |	
3						| | | |	
4						| | | |	

Mode of transport codes for columns (k) and (n) ▶

1 — Parcel delivery, courier, or U.S. Postal Service

2 — Private truck
3 — For-hire truck

4 — Railroad
Continued →

PART II – INSTRUCTIONS FOR COMPLETING YOUR QUESTIONNAIRE – Continued

Item F: Shipment Characteristics – Continued

- **For Hazardous Materials (column h)** – If shipment is a hazardous material, enter the 4-digit United Nations or North American number.
- **Containerized (column i)** – Indicate whether or not the shipment was containerized by entering "Y" or "N" (yes or no). Containerized means that the shipment **left your establishment** in an intermodal container or stackable tank without permanently attached wheels. These containers typically vary from 20 to 53 feet in length, and are carried on truck chassis, trains, and ships.
- **U.S. Destination: City, State, and ZIP Code (column j)** – 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 abbreviation shown in Part IV.

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 (column k)** – 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 j). Codes are located on the bottom of pages 2, 3, 4, and 5 of the questionnaire. Enter in the sequence used, all that apply. See Part III 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 port, airport, or border crossing of exit.

If a hazardous material, enter the "UN" or "NA" number (h)	Containerized? (Y/N) (i)	U.S. destination (j)			Mode(s) of transport to U.S. destination Enter all that apply using codes shown below. (k)
		City	State	ZIP Code	
	N	Los Angeles	CA	90040	2, 4, 3
	N	New York	NY	10454	5

PART II – INSTRUCTIONS FOR COMPLETING YOUR QUESTIONNAIRE – Continued

Item F: Shipment Characteristics – Continued

- **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 j),** enter the U.S. port, airport, or border crossing of exit. **In column (k),** 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 2, 3, 4, and 5 of the questionnaire.

Export? (Y/N) (l)	Foreign destination (for export shipments only) Note: In column (j) enter the U.S. port, airport, or border crossing of exit. (m)		Export mode (n)	Line No. (o)
	City	Country		
N				0
Y	London	England	6	00
				1
				2
				3
				4
				5

Items G – I

Please enter the information requested.

Item J: Certification

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

PART III – MODE DEFINITIONS

Parcel delivery/Courier/U.S. Postal Service – Delivery services that carry letters, parcels, packages, and other small shipments that typically weigh less than 100 pounds. Includes bus parcel delivery service.

Private truck – Trucks operated by a temporary or permanent employee of this establishment or the buyer/receiver of the shipment.

For-hire truck – Trucks that carry freight for a fee collected from the shipper, recipient of the shipment, or an arranger of the transportation.

Railroad – Any common carrier or private railroad.

Shallow draft vessel – Barges, ships, or ferries operating primarily 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 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 – Commercial or private aircraft, and all air service for shipments that typically weigh more than 100 pounds. Includes air freight and air express.

Other mode – Any mode not listed above.

Unknown – The shipment was not carried by a parcel delivery/courier/U.S. Postal service, and you cannot determine what mode of transportation is used.

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

PART IV -- STATE 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 - We estimate that it will take an average of 2 hours to complete this form. This includes time to read instructions, assemble and review information, and record answers on the form. If you have any comments regarding this estimate or any other aspect of this survey, send them to the Associate Director for Administration, Attn: Paperwork Reduction Project 0607-0189, Room 3104, Federal Building 3, Bureau of the Census, Washington, DC 20233-0001. 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.

