

Minnesota

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1997 Economic Census

Transportation

1997 Commodity Flow Survey



U.S. Department of Transportation
BUREAU OF TRANSPORTATION STATISTICS

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



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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	155 184	100.0	279 607	100.0	121 384	100.0	744
Single modes	114 829	74.0	247 293	88.4	91 432	75.3	288
Truck ¹	100 592	64.8	158 187	56.6	25 192	20.8	170
For-hire truck	57 780	37.2	65 889	23.6	19 026	15.7	424
Private truck	40 276	26.0	91 403	32.7	6 075	5.0	62
Rail	7 318	4.7	66 812	23.9	48 033	39.6	755
Water	1 661	1.1	15 132	5.4	17 924	14.8	1 378
Shallow draft	1 468	.9	10 849	3.9	15 708	12.9	1 403
Great Lakes	171	.1	3 532	1.3	S	S	565
Deep draft	S	S	S	S	S	S	1
Air (includes truck and air)	3 926	2.5	116	—	164	.1	1 431
Pipeline ²	1 332	.9	7 047	2.5	S	S	S
Multiple modes	34 120	22.0	26 486	9.5	24 498	20.2	972
Parcel, U.S. Postal Service or courier	29 752	19.2	1 148	.4	993	.8	973
Truck and rail	3 516	2.3	698	.2	1 008	.8	1 430
Truck and water	8	—	S	S	S	S	5 531
Rail and water	722	.5	24 190	8.7	22 454	18.5	1 392
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	6 236	4.0	5 828	2.1	5 454	4.5	220

— 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	155 184	110 180	40.8	279 607	189 909	47.2	121 384	79 657	52.4	744	551	34.9
Single modes	114 829	88 172	30.2	247 293	168 981	46.3	91 432	60 588	50.9	288	299	-3.7
Truck ¹	100 592	77 928	29.1	158 187	114 132	38.6	25 192	17 766	41.8	170	142	19.4
For-hire truck	57 780	48 990	17.9	65 889	52 550	25.4	19 026	13 849	37.4	424	425	-3
Private truck	40 276	28 546	41.1	91 403	61 488	48.6	6 075	3 890	56.2	62	56	11.8
Rail	7 318	5 463	33.9	66 812	38 084	75.4	48 033	26 069	84.3	755	860	-12.2
Water	1 661	S	S	15 132	S	S	17 924	S	S	1 378	S	S
Shallow draft	1 468	S	S	10 849	S	S	15 708	S	S	1 403	1 501	-6.5
Great Lakes	171	158	8.1	3 532	S	S	S	S	S	565	819	-31.0
Deep draft	S	20	S	S	S	S	S	13	S	1	4 085	-100.0
Air (includes truck and air)	3 926	3 005	30.6	116	S	S	164	S	S	1 431	1 251	14.4
Pipeline ²	1 332	633	110.6	7 047	3 540	99.1	S	S	S	S	S	S
Multiple modes	34 120	17 644	93.4	26 486	S	S	24 498	S	S	972	790	23.0
Parcel, U.S. Postal Service or courier	29 752	15 555	91.3	1 148	817	40.4	993	598	65.9	973	789	23.3
Truck and rail	3 516	1 710	105.6	698	485	44.0	1 008	539	87.1	1 430	1 381	3.6
Truck and water	8	S	S	S	S	S	S	S	S	5 531	4 084	35.4
Rail and water	722	S	S	24 190	S	S	22 454	S	S	1 392	1 403	-8
Other multiple modes	S	S	S	S	S	S	S	S	S	S	2 275	S
Other and unknown modes	6 236	4 363	42.9	5 828	8 213	-29.0	5 454	S	S	220	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 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	74.0	80.0	88.4	89.0	75.3	76.1
Truck ¹	64.8	70.7	56.6	60.1	20.8	22.3
For-hire truck	37.2	44.5	23.6	27.7	15.7	17.4
Private truck	26.0	25.9	32.7	32.4	5.0	4.9
Rail	4.7	5.0	23.9	20.1	39.6	32.7
Water	1.1	S	5.4	S	14.8	S
Shallow draft .....	.9	S	3.9	S	12.9	S
Great Lakes .....	.1	.1	1.3	S	S	S
Deep draft	S	-	S	S	S	-
Air (includes truck and air)	2.5	2.7	-	S	.1	S
Pipeline ² .....	.9	.6	2.5	1.9	S	S
Multiple modes	22.0	16.0	9.5	S	20.2	S
Parcel, U.S. Postal Service or courier	19.2	14.1	.4	.4	.8	.8
Truck and rail	2.3	1.6	.2	.3	.8	.7
Truck and water	-	S	S	S	S	S
Rail and water .....	.5	S	8.7	S	18.5	S
Other multiple modes	S	S	S	S	S	S
Other and unknown modes	4.0	4.0	2.1	4.3	4.5	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 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	121 385	100.0	724
Truck	25 242	20.8	161
Rail	53 077	43.7	820
Shallow draft	15 830	13.0	1 394
Great Lakes	20 480	16.9	771
Deep draft	S	S	4 124
Air	157	.1	1 355
Parcel, U.S. Postal Service or courier	993	.8	973
Pipeline	S	S	S
Other and unknown modes	5 467	4.5	214

- 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	155 184	100.0	279 607	100.0	121 384	100.0
Less than 50 miles	42 478	27.4	113 478	40.6	2 565	2.1
50 to 99 miles	13 010	8.4	31 982	11.4	3 129	2.6
100 to 249 miles	16 933	10.9	30 004	10.7	6 616	5.5
250 to 499 miles	20 738	13.4	34 661	12.4	21 341	17.6
500 to 749 miles	14 383	9.3	25 423	9.1	21 704	17.9
750 to 999 miles	17 520	11.3	16 345	5.8	19 743	16.3
1,000 to 1,499 miles	24 310	15.7	26 153	9.4	43 010	35.4
1,500 to 1,999 miles	5 680	3.7	1 543	.6	3 205	2.6
2,000 miles or more	134	—	17	—	72	—
Single modes	114 829	100.0	247 293	100.0	91 432	100.0
Less than 50 miles	35 310	30.8	112 106	45.3	2 540	2.8
50 to 99 miles	11 399	9.9	31 599	12.8	3 095	3.4
100 to 249 miles	13 977	12.2	29 506	11.9	6 504	7.1
250 to 499 miles	15 750	13.7	20 438	8.3	8 952	9.8
500 to 749 miles	9 856	8.6	18 361	7.4	15 623	17.1
750 to 999 miles	11 545	10.1	11 454	4.6	14 305	15.6
1,000 to 1,499 miles	14 190	12.4	22 538	9.1	37 739	41.3
1,500 to 1,999 miles	2 782	2.4	1 288	.5	2 668	2.9
2,000 miles or more	19	—	S	S	S	S
Truck¹	100 592	100.0	158 187	100.0	25 192	100.0
Less than 50 miles	33 758	33.6	101 437	64.1	2 307	9.2
50 to 99 miles	10 552	10.5	16 678	10.5	1 550	6.2
100 to 249 miles	12 524	12.5	17 311	10.9	3 452	13.7
250 to 499 miles	13 244	13.2	11 301	7.1	4 753	18.9
500 to 749 miles	8 192	8.1	4 201	2.7	3 147	12.5
750 to 999 miles	10 082	10.0	3 571	2.3	3 920	15.6
1,000 to 1,499 miles	10 040	10.0	2 657	1.7	4 024	16.0
1,500 to 1,999 miles	2 197	2.2	1 030	.7	2 038	8.1
2,000 miles or more	S	S	S	S	S	S
For-hire truck	57 780	100.0	65 889	100.0	19 026	100.0
Less than 50 miles	8 979	15.5	27 522	41.8	656	3.4
50 to 99 miles	5 541	9.6	9 550	14.5	892	4.7
100 to 249 miles	7 197	12.5	10 630	16.1	2 165	11.4
250 to 499 miles	10 679	18.5	7 930	12.0	3 346	17.6
500 to 749 miles	6 728	11.6	3 551	5.4	2 671	14.0
750 to 999 miles	7 414	12.8	3 241	4.9	3 574	18.8
1,000 to 1,499 miles	9 185	15.9	2 449	3.7	3 711	19.5
1,500 to 1,999 miles	2 054	3.6	1 016	1.5	2 010	10.6
2,000 miles or more	S	S	S	S	S	S
Private truck	40 276	100.0	91 403	100.0	6 075	100.0
Less than 50 miles	24 499	60.8	73 131	80.0	1 597	26.3
50 to 99 miles	4 834	12.0	7 090	7.8	654	10.8
100 to 249 miles	5 214	12.9	6 636	7.3	1 278	21.0
250 to 499 miles	2 507	6.2	3 358	3.7	1 400	23.1
500 to 749 miles	1 443	3.6	646	.7	473	7.8
750 to 999 miles	916	2.3	322	.4	337	5.6
1,000 to 1,499 miles	777	1.9	207	.2	310	5.1
1,500 to 1,999 miles	85	.2	14	—	27	.4
2,000 miles or more	S	S	S	S	S	S
Rail	7 318	100.0	66 812	100.0	48 033	100.0
Less than 50 miles	167	2.3	S	S	S	S
50 to 99 miles	661	9.0	14 782	22.1	1 535	3.2
100 to 249 miles	1 292	17.7	11 462	17.2	2 958	6.2
250 to 499 miles	1 349	18.4	8 875	13.3	4 094	8.5
500 to 749 miles	909	12.4	S	S	S	S
750 to 999 miles	681	9.3	5 192	7.8	6 372	13.3
1,000 to 1,499 miles	2 093	28.6	13 906	20.8	23 771	49.5
1,500 to 1,999 miles	166	2.3	232	.3	580	1.2
2,000 miles or more	—	—	—	—	—	—
Water	1 661	100.0	15 132	100.0	17 924	100.0
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	318	19.2	4 274	28.2	3 870	21.6
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Shallow draft	1 468	100.0	10 849	100.0	15 708	100.0
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	222	15.1	1 547	14.3	1 744	11.1
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
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	171	100.0	3 532	100.0	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
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	S	S	S	S	S	S
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	—	—	—	—	—	—
Air (includes truck and air)	3 926	100.0	116	100.0	164	100.0
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	149	3.8	S	S	S	S
100 to 249 miles	101	2.6	S	S	S	S
250 to 499 miles	1 150	29.3	23	19.7	18	10.8
500 to 749 miles	438	11.2	7	6.3	9	5.6
750 to 999 miles	457	11.6	19	16.1	28	16.8
1,000 to 1,499 miles	1 196	30.5	33	28.3	52	31.5
1,500 to 1,999 miles	419	10.7	S	S	S	S
2,000 miles or more	16	.4	S	S	S	S
Pipeline²	1 332	100.0	7 047	100.0	S	S
Less than 50 miles	1 284	96.4	6 864	97.4	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	—	—	—	—	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	34 120	100.0	26 486	100.0	24 498	100.0
Less than 50 miles	4 824	14.1	S	S	9	—
50 to 99 miles	1 334	3.9	143	.5	12	—
100 to 249 miles	2 436	7.1	126	.5	28	.1
250 to 499 miles	4 361	12.8	13 387	50.5	11 938	48.7
500 to 749 miles	4 199	12.3	6 932	26.2	5 987	24.4
750 to 999 miles	5 755	16.9	S	S	S	S
1,000 to 1,499 miles	8 383	24.6	662	2.5	1 111	4.5
1,500 to 1,999 miles	2 722	8.0	129	.5	291	1.2
2,000 miles or more	105	.3	14	—	62	.3
Parcel, U.S. Postal Service or courier	29 752	100.0	1 148	100.0	993	100.0
Less than 50 miles	4 697	15.8	139	12.1	3	.3
50 to 99 miles	1 299	4.4	53	4.6	5	.5
100 to 249 miles	2 428	8.2	99	8.6	21	2.1
250 to 499 miles	3 710	12.5	154	13.5	72	7.3
500 to 749 miles	3 552	11.9	160	13.9	123	12.4
750 to 999 miles	4 867	16.4	201	17.6	222	22.3
1,000 to 1,499 miles	6 755	22.7	280	24.4	411	41.4
1,500 to 1,999 miles	2 347	7.9	53	4.6	105	10.6
2,000 miles or more	97	.3	S	S	S	S
Truck and rail	3 516	100.0	698	100.0	1 008	100.0
Less than 50 miles	S	S	7	.9	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	88	12.6	75	7.4
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	1 621	46.1	320	45.8	571	56.7
1,500 to 1,999 miles	374	10.7	76	10.8	186	18.4
2,000 miles or more	—	—	—	—	—	—
Truck and water	8	100.0	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	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
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	722	100.0	24 190	100.0	22 454	100.0
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	353	48.9	13 162	54.4	11 819	52.6
500 to 749 miles	237	32.9	6 684	27.6	5 789	25.8
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S
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	—	—	—	—	—	—
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 and unknown modes	6 236	100.0	5 828	100.0	5 454	100.0
Less than 50 miles	2 343	37.6	864	14.8	16	.3
50 to 99 miles	276	4.4	239	4.1	22	.4
100 to 249 miles	519	8.3	S	S	S	S
250 to 499 miles	627	10.0	S	S	S	S
500 to 749 miles	327	5.2	S	S	94	1.7
750 to 999 miles	220	3.5	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	176	2.8	S	S	S	S
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	155 184	100.0	279 607	100.0	121 384	100.0	744
Less than 50 lb	28 533	18.4	912	.3	730	.6	868
50 to 99 lb	6 438	4.1	404	.1	207	.2	529
100 to 499 lb	17 636	11.4	1 936	.7	507	.4	277
500 to 749 lb	5 356	3.5	912	.3	234	.2	256
750 to 999 lb	3 752	2.4	867	.3	203	.2	235
1,000 to 9,999 lb	30 587	19.7	15 369	5.5	2 704	2.2	194
10,000 to 49,999 lb	45 241	29.2	91 626	32.8	16 407	13.5	181
50,000 to 99,999 lb	5 659	3.6	38 598	13.8	4 537	3.7	116
100,000 lb or more	11 982	7.7	128 982	46.1	95 855	79.0	663
Single modes	114 829	100.0	247 293	100.0	91 432	100.0	288
Less than 50 lb	6 267	5.5	179	—	50	—	408
50 to 99 lb	2 985	2.6	209	—	45	—	208
100 to 499 lb	12 947	11.3	1 667	.7	371	.4	226
500 to 749 lb	4 571	4.0	843	.3	212	.2	250
750 to 999 lb	3 389	3.0	809	.3	183	.2	227
1,000 to 9,999 lb	27 871	24.3	14 707	5.9	2 509	2.7	190
10,000 to 49,999 lb	40 404	35.2	89 106	36.0	13 592	14.9	153
50,000 to 99,999 lb	5 528	4.8	38 043	15.4	4 426	4.8	115
100,000 lb or more	10 866	9.5	101 732	41.1	70 045	76.6	646
Truck¹	100 592	100.0	158 187	100.0	25 192	100.0	170
Less than 50 lb	4 408	4.4	161	.1	22	—	126
50 to 99 lb	2 564	2.5	204	.1	39	.2	185
100 to 499 lb	11 938	11.9	1 647	1.0	346	1.4	212
500 to 749 lb	4 364	4.3	836	.5	206	.8	245
750 to 999 lb	3 286	3.3	804	.5	176	.7	220
1,000 to 9,999 lb	27 487	27.3	14 655	9.3	2 471	9.8	188
10,000 to 49,999 lb	40 152	39.9	88 823	56.2	13 443	53.4	152
50,000 to 99,999 lb	5 401	5.4	37 698	23.8	4 236	16.8	112
100,000 lb or more	992	1.0	13 358	8.4	S	S	220
For-hire truck	57 780	100.0	65 889	100.0	19 026	100.0	424
Less than 50 lb	1 622	2.8	46	—	15	—	277
50 to 99 lb	1 109	1.9	51	—	30	.2	568
100 to 499 lb	6 185	10.7	413	.6	261	1.4	645
500 to 749 lb	2 486	4.3	260	.4	167	.9	643
750 to 999 lb	1 853	3.2	234	.4	131	.7	560
1,000 to 9,999 lb	13 831	23.9	4 055	6.2	1 721	9.0	485
10,000 to 49,999 lb	26 707	46.2	34 074	51.7	10 344	54.4	331
50,000 to 99,999 lb	3 248	5.6	19 422	29.5	2 616	13.8	133
100,000 lb or more	739	1.3	S	S	S	S	343
Private truck	40 276	100.0	91 403	100.0	6 075	100.0	62
Less than 50 lb	2 714	6.7	114	.1	6	.1	55
50 to 99 lb	1 271	3.2	152	.2	9	.1	56
100 to 499 lb	5 415	13.4	1 228	1.3	81	1.3	65
500 to 749 lb	1 794	4.5	575	.6	39	.6	66
750 to 999 lb	1 431	3.6	569	.6	45	.7	79
1,000 to 9,999 lb	11 942	29.6	10 569	11.6	741	12.2	74
10,000 to 49,999 lb	13 369	33.2	54 649	59.8	3 078	50.7	56
50,000 to 99,999 lb	2 089	5.2	18 030	19.7	1 608	26.5	90
100,000 lb or more	250	.6	5 518	6.0	S	S	147
Rail	7 318	100.0	66 812	100.0	48 033	100.0	755
Less than 50 lb	S	S	S	S	S	S	294
50 to 99 lb	S	S	S	S	S	S	1 301
100 to 499 lb	S	S	S	S	S	S	1 222
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	S	S	S	S	S	S	1 342
1,000 to 9,999 lb	S	S	S	S	S	S	1 975
10,000 to 49,999 lb	178	2.4	104	.2	115	.2	1 080
50,000 to 99,999 lb	69	.9	146	.2	143	.3	1 012
100,000 lb or more	6 999	95.6	66 556	99.6	47 764	99.4	721
Water	1 661	100.0	15 132	100.0	17 924	100.0	1 378
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	S	S	S	S	S	S	9
10,000 to 49,999 lb	S	S	S	S	S	S	9
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	1 650	99.3	15 127	100.0	17 924	100.0	1 457
Shallow draft	1 468	100.0	10 849	100.0	15 708	100.0	1 403
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	S	S	S	S	S	S	9
10,000 to 49,999 lb	S	S	S	S	S	S	9
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	1 456	99.2	10 844	100.0	15 708	100.0	1 486

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	171	100.0	3 532	100.0	S	S	565
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	171	100.0	3 532	100.0	S	S	565
Deep draft	S	S	S	S	S	S	1
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
Air (includes truck and air)	3 926	100.0	116	100.0	164	100.0	1 431
Less than 50 lb	1 859	47.4	18	15.8	28	17.1	1 440
50 to 99 lb	420	10.7	4	3.6	6	3.4	1 303
100 to 499 lb	1 003	25.6	19	16.0	23	14.3	1 234
500 to 749 lb	207	5.3	5	4.1	6	3.7	1 282
750 to 999 lb	101	2.6	S	S	S	S	1 501
1,000 to 9,999 lb	300	7.6	21	17.8	28	17.4	1 360
10,000 to 49,999 lb	S	S	S	S	S	S	1 375
50,000 to 99,999 lb	S	S	S	S	S	S	1 523
100,000 lb or more	—	—	—	—	—	—	—
Pipeline²	1 332	100.0	7 047	100.0	S	S	S
Less than 50 lb	—	—	—	—	S	S	S
50 to 99 lb	—	—	—	—	S	S	S
100 to 499 lb	—	—	—	—	S	S	S
500 to 749 lb	S	S	S	S	S	S	S
750 to 999 lb	S	S	S	S	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	S	S	S	S
100,000 lb or more	1 225	92.0	6 690	94.9	S	S	S
Multiple modes	34 120	100.0	26 486	100.0	24 498	100.0	972
Less than 50 lb	21 317	62.5	708	2.7	673	2.7	980
50 to 99 lb	3 232	9.5	174	.7	156	.6	926
100 to 499 lb	4 141	12.1	199	.8	127	.5	653
500 to 749 lb	690	2.0	51	.2	18	—	371
750 to 999 lb	306	.9	39	.1	19	—	451
1,000 to 9,999 lb	174	.5	S	S	17	—	S
10,000 to 49,999 lb	3 372	9.9	587	2.2	785	3.2	1 281
50,000 to 99,999 lb	S	S	S	S	S	S	S
100,000 lb or more	813	2.4	24 335	91.9	22 660	92.5	1 371
Parcel, U.S. Postal Service or courier	29 752	100.0	1 148	100.0	993	100.0	973
Less than 50 lb	21 316	71.6	708	61.7	673	67.8	980
50 to 99 lb	3 232	10.9	174	15.2	156	15.8	926
100 to 499 lb	4 138	13.9	195	17.0	127	12.7	658
500 to 749 lb	686	2.3	40	3.4	18	1.8	452
750 to 999 lb	299	1.0	28	2.5	18	1.8	621
1,000 to 9,999 lb	S	S	S	S	S	S	S
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	3 516	100.0	698	100.0	1 008	100.0	1 430
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	S	S	S	S	S	S	972
100 to 499 lb	S	S	—	—	S	S	1 723
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	S	S	S	S	S	S	457
1,000 to 9,999 lb	S	S	8	1.2	5	.5	993
10,000 to 49,999 lb	3 356	95.4	515	73.8	782	77.6	1 522
50,000 to 99,999 lb	S	S	S	S	S	S	468
100,000 lb or more	S	S	S	S	S	S	1 349
Truck and water	8	100.0	S	S	S	S	5 531
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	4 551
500 to 749 lb	S	S	S	S	S	S	2 573
750 to 999 lb	S	S	S	S	S	S	3 689
1,000 to 9,999 lb	S	S	S	S	S	S	6 834
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	S	S	S	S	S	S	4 532
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	722	100.0	24 190	100.0	22 454	100.0	1 392
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	722	100.0	24 190	100.0	22 454	100.0	1 392
Other multiple modes	S	S	S	S	S	S	S
Less than 50 lb	S	S	S	S	S	S	43
50 to 99 lb	S	S	S	S	S	S	77
100 to 499 lb	S	S	S	S	S	S	14
500 to 749 lb	S	S	S	S	S	S	15
750 to 999 lb	S	S	S	S	S	S	11
1,000 to 9,999 lb	S	S	S	S	S	S	12
10,000 to 49,999 lb	S	S	S	S	S	S	S
50,000 to 99,999 lb	S	S	S	S	S	S	47
100,000 lb or more	—	—	—	—	—	—	—
Other and unknown modes	6 236	100.0	5 828	100.0	5 454	100.0	220
Less than 50 lb	949	15.2	25	.4	S	S	198
50 to 99 lb	221	3.5	21	.4	S	S	273
100 to 499 lb	548	8.8	69	1.2	9	.2	112
500 to 749 lb	95	1.5	19	.3	4	—	S
750 to 999 lb	57	.9	19	.3	2	—	97
1,000 to 9,999 lb	2 542	40.8	481	8.3	178	3.3	336
10,000 to 49,999 lb	1 465	23.5	S	S	S	S	988
50,000 to 99,999 lb	55	.9	S	S	S	S	179
100,000 lb or more	S	S	S	S	S	S	913

— 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	155 184	100.0	279 607	100.0	121 384	100.0	744
01	Live animals and live fish	S	S	S	S	S	S	S
02	Cereal grains	4 054	2.6	37 434	13.4	25 687	21.2	223
03	Other agricultural products	4 608	3.0	13 925	5.0	9 582	7.9	82
04	Animal feed and products of animal origin, n.e.c.	1 943	1.3	6 985	2.5	1 316	1.1	S
05	Meat, fish, seafood, and their preparations	4 393	2.8	2 157	.8	1 313	1.1	235
06	Milled grain products and preparations, and bakery products	2 757	1.8	3 695	1.3	2 222	1.8	180
07	Other prepared foodstuffs and fats and oils	11 392	7.3	13 195	4.7	4 820	4.0	147
08	Alcoholic beverages	1 237	.8	1 074	.4	S	S	47
09	Tobacco products	786	.5	38	—	S	S	69
10	Monumental or building stone	373	.2	346	.1	118	.1	290
11	Natural sands	88	—	12 058	4.3	969	.8	47
12	Gravel and crushed stone	193	.1	33 143	11.9	2 249	1.9	26
13	Nonmetallic minerals n.e.c.	102	—	S	S	150	.1	S
14	Metallic ores and concentrates	1 437	.9	47 387	16.9	36 974	30.5	527
15	Coal	21	—	401	.1	21	—	47
17	Gasoline and aviation turbine fuel	3 261	2.1	13 255	4.7	S	S	57
18	Fuel oils	1 384	.9	7 401	2.6	S	S	27
19	Coal and petroleum products, n.e.c.	1 645	1.1	15 177	5.4	3 084	2.5	87
20	Basic chemicals	646	.4	S	—	S	S	295
21	Pharmaceutical products	3 839	2.5	155	—	90	—	363
22	Fertilizers	629	.4	2 591	.9	346	.3	58
23	Chemical products and preparations, n.e.c.	3 524	2.3	1 317	.5	775	.6	414
24	Plastics and rubber	5 073	3.3	1 227	.4	587	.5	593
25	Logs and other wood in the rough	S	S	S	S	S	S	S
26	Wood products	4 664	3.0	5 799	2.1	2 827	2.3	560
27	Pulp, newsprint, paper, and paperboard	3 256	2.1	3 370	1.2	2 143	1.8	148
28	Paper or paperboard articles	1 740	1.1	978	.3	254	.2	392
29	Printed products	8 276	5.3	1 721	.6	982	.8	603
30	Textiles, leather, and articles of textiles or leather	2 623	1.7	344	.1	242	.2	1 139
31	Nonmetallic mineral products	2 291	1.5	17 479	6.3	S	S	780
32	Base metal in primary or semifinished forms and in finished basic shapes	4 157	2.7	6 528	2.3	S	S	343
33	Articles of base metal	4 718	3.0	1 769	.6	817	.7	656
34	Machinery	7 774	5.0	748	.3	515	.4	551
35	Electronic and other electrical equipment and components and office equipment	19 743	12.7	730	.3	478	.4	898
36	Motorized and other vehicles (including parts)	13 787	8.9	1 317	.5	942	.8	464
37	Transportation equipment, n.e.c.	1 085	.7	68	—	56	—	773
38	Precision instruments and apparatus	9 443	6.1	126	—	87	—	918
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	1 634	1.1	260	—	193	.2	1 249
40	Miscellaneous manufactured products	10 637	6.9	1 708	.6	825	.7	1 036
41	Waste and scrap	652	.4	10 120	3.6	1 944	1.6	196
43	Mixed freight	3 840	2.5	S	S	S	S	487
--	Commodity unknown	944	.6	349	.1	S	S	486

— 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	155 184	100.0	279 607	100.0	121 384	100.0	744
Single modes	114 829	74.0	247 293	88.4	91 432	75.3	288
Truck ¹	100 592	64.8	158 187	56.6	25 192	20.8	170
For-hire truck	57 780	37.2	65 889	23.6	19 026	15.7	424
Private truck	40 276	26.0	91 403	32.7	6 075	5.0	62
Rail	7 318	4.7	66 812	23.9	48 033	39.6	755
Water	1 661	1.1	15 132	5.4	17 924	14.8	1 378
Shallow draft	1 468	.9	10 849	3.9	15 708	12.9	1 403
Great Lakes	171	.1	3 532	1.3	S	S	565
Deep draft	S	S	S	S	S	S	1
Air (includes truck and air)	3 926	2.5	116	—	164	.1	1 431
Pipeline ²	1 332	.9	7 047	2.5	S	S	S
Multiple modes	34 120	22.0	26 486	9.5	24 498	20.2	972
Parcel, U.S. Postal Service or courier	29 752	19.2	1 148	.4	993	.8	973
Truck and rail	3 516	2.3	698	.2	1 008	.8	1 430
Truck and water	8	—	S	S	S	S	5 531
Rail and water	722	.5	24 190	8.7	22 454	18.5	1 392
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	6 236	4.0	5 828	2.1	5 454	4.5	220
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck ¹	S	S	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	116
Private truck	S	S	S	S	S	S	49
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	—	—	—	—	—	—	—
SCTG 02, CEREAL GRAINS							
Total	4 054	100.0	37 434	100.0	25 687	100.0	223
Single modes	3 915	96.6	36 317	97.0	24 454	95.2	222
Truck ¹	1 238	30.5	9 886	26.4	1 338	5.2	180
For-hire truck	898	22.2	6 453	17.2	1 222	4.8	306
Private truck	338	8.3	3 417	9.1	115	.4	27
Rail	1 911	47.1	18 819	50.3	12 188	47.4	463
Water	765	18.9	7 612	20.3	10 929	42.5	1 538
Shallow draft	698	17.2	7 047	18.8	10 928	42.5	1 552
Great Lakes	S	S	S	S	S	S	1
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	767
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	767
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	4 608	100.0	13 925	100.0	9 582	100.0	82
Single modes	4 344	94.3	13 189	94.7	8 768	91.5	93
Truck ¹	2 966	64.4	7 491	53.8	929	9.7	90
For-hire truck	1 433	31.1	4 161	29.9	693	7.2	193
Private truck	1 477	32.1	3 106	22.3	227	2.4	71
Rail	781	17.0	3 269	23.5	4 049	42.3	741
Water	597	13.0	S	S	S	S	1 549
Shallow draft	597	13.0	S	S	S	S	1 549
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	495
Parcel, U.S. Postal Service or courier	6	.1	1	—	—	—	456
Truck and rail	S	S	S	S	S	S	1 069
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	230	5.0	S	S	S	S	S
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	1 943	100.0	6 985	100.0	1 316	100.0	S
Single modes	1 892	97.4	6 773	97.0	1 098	83.4	S
Truck ¹	1 838	94.6	6 379	91.3	674	51.2	S
For-hire truck	863	44.4	2 562	36.7	481	36.5	S
Private truck	975	50.2	3 813	54.6	193	14.6	30
Rail	53	2.7	395	5.7	424	32.2	1 063
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	601
Parcel, U.S. Postal Service or courier	S	S	S	S	—	—	542
Truck and rail	S	S	S	S	S	S	603
Truck and water	—	—	—	—	—	—	—
Rail and water	S	S	S	S	S	S	2 044
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	4 393	100.0	2 157	100.0	1 313	100.0	235
Single modes	4 339	98.8	2 135	99.0	1 275	97.1	238
Truck ¹	4 314	98.2	2 107	97.7	1 226	93.4	236
For-hire truck	3 276	74.6	1 543	71.5	1 152	87.7	730
Private truck	1 038	23.6	564	26.2	74	5.6	79
Rail	S	S	S	S	S	S	2 088
Water	S	S	S	S	S	S	9
Shallow draft	S	S	S	S	S	S	9
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	4 532
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 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	2 757	100.0	3 695	100.0	2 222	100.0	180
Single modes	2 625	95.2	3 620	98.0	2 194	98.7	183
Truck ¹	2 299	83.4	2 206	59.7	865	38.9	167
For-hire truck	1 325	48.1	1 269	34.3	678	30.5	676
Private truck	971	35.2	930	25.2	185	8.3	100
Rail	327	11.9	1 415	38.3	1 329	59.8	934
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 010
Pipeline ²	—	—	—	—	—	—	S
Multiple modes	S	S	S	S	S	S	478
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	363
Truck and rail	S	S	S	S	S	S	1 934
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	15
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	11 392	100.0	13 195	100.0	4 820	100.0	147
Single modes	10 907	95.7	12 850	97.4	4 685	97.2	90
Truck ¹	10 104	88.7	11 078	84.0	2 828	58.7	86
For-hire truck	4 391	38.5	4 946	37.5	1 978	41.0	446
Private truck	5 699	50.0	6 113	46.3	845	17.5	56
Rail	783	6.9	1 735	13.1	1 794	37.2	1 051
Water	S	S	S	S	S	S	1 619
Shallow draft	S	S	S	S	S	S	1 619
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	4 091
Pipeline ²	—	—	—	—	—	—	S
Multiple modes	83	.7	S	S	S	S	760
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	757
Truck and rail	S	S	S	S	S	S	1 288
Truck and water	S	S	S	S	S	S	2 573
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	1 237	100.0	1 074	100.0	S	S	47
Single modes	1 201	97.1	1 043	97.2	S	S	46
Truck ¹	1 197	96.8	1 039	96.8	S	S	46
For-hire truck	501	40.5	274	25.6	S	S	335
Private truck	696	56.2	765	71.2	23	8.6	34
Rail	S	S	S	S	S	S	2 303
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	1 127
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	1 072
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	4 611
Other and unknown modes	22	1.8	13	1.2	S	S	45

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	786	100.0	38	100.0	S	S	69
Single modes	782	99.4	38	99.8	S	S	67
Truck ¹	782	99.4	38	99.8	S	S	67
For-hire truck	445	56.6	S	S	S	S	95
Private truck	336	42.8	18	47.1	1	25.1	53
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	3	.4	—	.2	S	S	S
Parcel, U.S. Postal Service or courier	3	.4	—	.1	S	S	582
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	43
Other and unknown modes	S	S	S	S	S	S	91
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	373	100.0	346	100.0	118	100.0	290
Single modes	363	97.3	342	98.6	118	100.0	341
Truck ¹	363	97.3	342	98.6	118	100.0	341
For-hire truck	182	48.9	124	35.8	105	89.2	861
Private truck	S	S	S	S	S	S	S
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	3
SCTG 11, NATURAL SANDS							
Total	88	100.0	12 058	100.0	969	100.0	47
Single modes	87	99.6	12 056	100.0	969	99.9	46
Truck ¹	59	66.9	11 429	94.8	418	43.1	37
For-hire truck	S	S	972	8.1	36	3.7	34
Private truck	51	58.7	10 457	86.7	382	39.4	37
Rail	S	S	S	S	S	S	897
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	1 822
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	1 822
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	9

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	193	100.0	33 143	100.0	2 249	100.0	26
Single modes	193	100.0	33 133	100.0	2 247	99.9	26
Truck ¹	170	87.9	28 554	86.2	830	36.9	24
For-hire truck	38	19.5	7 414	22.4	238	10.6	18
Private truck	132	68.5	21 140	63.8	592	26.3	25
Rail	S	S	S	S	S	S	273
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	97
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	97
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	233
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	102	100.0	S	S	150	100.0	S
Single modes	97	94.9	S	S	150	99.7	S
Truck ¹	77	75.7	S	S	143	95.3	S
For-hire truck	27	26.5	S	S	86	57.4	291
Private truck	S	S	S	S	14	9.1	S
Rail	9	8.5	28	1.4	6	4.1	S
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	11	10.7	71	3.6	S	S	S
Multiple modes	S	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	14
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	1 437	100.0	47 387	100.0	36 974	100.0	527
Single modes	722	50.2	23 260	49.1	14 649	39.6	477
Truck ¹	S	S	S	S	S	S	400
For-hire truck	S	S	S	S	S	S	692
Private truck	S	S	S	S	S	S	6
Rail	587	40.9	19 532	41.2	12 427	33.6	608
Water	S	S	S	S	S	S	607
Shallow draft	—	—	—	—	—	—	—
Great Lakes	S	S	S	S	S	S	747
Deep draft	S	S	S	S	S	S	1
Air (includes truck and air)	S	S	S	S	S	S	723
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	715	49.8	24 127	50.9	22 325	60.4	913
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	715	49.8	24 127	50.9	22 325	60.4	913
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

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	21	100.0	401	100.0	21	100.0	47
Single modes	21	100.0	401	100.0	21	100.0	47
Truck ¹	21	100.0	401	100.0	21	100.0	47
For-hire truck	21	99.2	399	99.5	21	100.0	51
Private truck	S	S	S	S	S	S	4
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	—	—	—	—	—	—	—
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	3 261	100.0	13 255	100.0	S	S	57
Single modes	3 193	97.9	13 015	98.2	S	S	59
Truck ¹	2 037	62.5	7 185	54.2	S	S	41
For-hire truck	899	27.6	3 647	27.5	S	S	84
Private truck	1 138	34.9	3 538	26.7	S	S	25
Rail	S	S	S	S	S	S	1 450
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	924	28.3	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	16
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	16
Other and unknown modes	S	S	S	S	S	S	18
SCTG 18, FUEL OILS							
Total	1 384	100.0	7 401	100.0	S	S	27
Single modes	1 338	96.7	7 217	97.5	S	S	27
Truck ¹	764	55.2	3 253	44.0	81	5.4	15
For-hire truck	155	11.2	898	12.1	22	1.5	S
Private truck	570	41.2	2 330	31.5	53	3.5	14
Rail	S	S	S	S	S	S	767
Water	S	S	S	S	S	S	136
Shallow draft	S	S	S	S	S	S	136
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	303
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	13
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 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	1 645	100.0	15 177	100.0	3 084	100.0	87
Single modes	1 616	98.2	15 128	99.7	3 083	100.0	67
Truck ¹	807	49.0	8 281	54.6	S	S	53
For-hire truck	240	14.6	2 723	17.9	S	S	156
Private truck	567	34.4	5 558	36.6	175	5.7	22
Rail	S	S	S	S	S	S	348
Water	S	S	S	S	S	S	399
Shallow draft	S	S	S	S	S	S	399
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline ²	S	S	S	S	S	S	S
Multiple modes	29	1.8	S	S	S	S	228
Parcel, U.S. Postal Service or courier	15	.9	2	-	S	S	348
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	S	S	S	S	S	S	15
Other and unknown modes	-	-	-	-	-	-	8
SCTG 20, BASIC CHEMICALS							
Total	646	100.0	S	S	S	S	295
Single modes	559	86.5	S	S	S	S	475
Truck ¹	484	74.8	926	26.6	S	S	381
For-hire truck	356	55.1	539	15.5	S	S	713
Private truck	128	19.7	388	11.1	S	S	50
Rail	S	S	S	S	S	S	1 410
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	969
Pipeline ²	-	-	-	-	S	S	S
Multiple modes	S	S	3	-	-	-	S
Parcel, U.S. Postal Service or courier	S	S	2	-	-	-	S
Truck and rail	S	S	S	S	S	S	67
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	14	2.2	11	.3	S	S	83
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	3 839	100.0	155	100.0	90	100.0	363
Single modes	2 040	53.1	114	73.5	78	86.6	294
Truck ¹	1 827	47.6	113	72.6	76	84.4	207
For-hire truck	1 404	36.6	88	56.7	69	76.4	375
Private truck	423	11.0	25	15.9	S	S	S
Rail	S	S	S	S	S	S	258
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	212	5.5	1	.9	S	S	1 455
Pipeline ²	-	-	-	-	S	S	S
Multiple modes	1 765	46.0	39	25.4	11	12.4	396
Parcel, U.S. Postal Service or courier	1 765	46.0	39	25.4	11	12.4	396
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	S	S	S	S	302

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	629	100.0	2 591	100.0	346	100.0	58
Single modes	608	96.7	2 492	96.2	330	95.4	57
Truck ¹	591	93.9	2 406	92.8	317	91.7	57
For-hire truck	332	52.8	1 388	53.5	227	65.8	S
Private truck	259	41.1	1 018	39.3	89	25.9	49
Rail	S	S	S	S	S	S	151
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	423
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	423
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	21	3.3	99	3.8	S	S	S
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	3 524	100.0	1 317	100.0	775	100.0	414
Single modes	3 060	86.8	1 244	94.4	738	95.1	289
Truck ¹	3 055	86.7	1 240	94.2	735	94.8	282
For-hire truck	1 845	52.3	862	65.4	667	86.0	494
Private truck	1 209	34.3	378	28.7	S	S	150
Rail	S	S	S	S	S	S	2 356
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 366
Pipeline ²	S	S	S	S	S	S	S
Multiple modes	283	8.0	28	2.1	S	S	515
Parcel, U.S. Postal Service or courier	274	7.8	21	1.6	10	1.3	515
Truck and rail	S	S	S	S	S	S	1 558
Truck and water	S	S	S	S	S	S	2 240
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 24, PLASTICS AND RUBBER							
Total	5 073	100.0	1 227	100.0	587	100.0	593
Single modes	3 864	76.2	1 100	89.6	521	88.7	220
Truck ¹	3 738	73.7	1 091	88.9	505	85.9	201
For-hire truck	2 482	48.9	784	63.9	446	75.9	435
Private truck	1 253	24.7	306	25.0	58	9.9	85
Rail	S	S	S	S	S	S	2 010
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	33	.7	1	—	1	.2	1 333
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	945	18.6	62	5.1	49	8.4	799
Parcel, U.S. Postal Service or courier	945	18.6	62	5.1	49	8.4	799
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	264	5.2	65	5.3	S	S	76

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	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck ¹	S	S	S	S	S	S	S
For-hire truck	43	57.1	S	S	S	S	S
Private truck	S	S	S	S	S	S	95
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	14
SCTG 26, WOOD PRODUCTS							
Total	4 664	100.0	5 799	100.0	2 827	100.0	560
Single modes	4 531	97.2	5 316	91.7	2 065	73.0	150
Truck ¹	4 345	93.2	4 654	80.3	921	32.6	139
For-hire truck	2 490	53.4	2 142	36.9	631	22.3	345
Private truck	1 822	39.1	2 465	42.5	286	10.1	91
Rail	186	4.0	662	11.4	1 144	40.5	1 700
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 172
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 132
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 132
Truck and rail	S	S	S	S	S	S	1 470
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	47	1.0	S	S	S	S	S
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	3 256	100.0	3 370	100.0	2 143	100.0	148
Single modes	2 937	90.2	3 099	91.9	1 896	88.5	125
Truck ¹	2 113	64.9	2 132	63.3	846	39.5	99
For-hire truck	1 323	40.7	1 410	41.8	812	37.9	299
Private truck	790	24.3	S	S	34	1.6	25
Rail	798	24.5	945	28.0	1 014	47.3	1 098
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 026
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	234	7.2	139	4.1	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	154	4.7	S	S	S	S	1 554
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	132	3.9	S	S	62

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	1 740	100.0	978	100.0	254	100.0	392
Single modes	1 501	86.3	945	96.6	238	93.6	106
Truck ¹	1 495	85.9	944	96.6	237	93.4	86
For-hire truck	817	46.9	508	52.0	207	81.6	276
Private truck	678	39.0	436	44.6	30	11.8	36
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 461
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	202	11.6	15	1.5	16	6.2	888
Parcel, U.S. Postal Service or courier	197	11.3	11	1.2	10	4.0	887
Truck and rail	S	S	S	S	S	S	1 547
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	37	2.1	S	S	S	S	38
SCTG 29, PRINTED PRODUCTS							
Total	8 276	100.0	1 721	100.0	982	100.0	603
Single modes	5 481	66.2	1 564	90.9	868	88.4	254
Truck ¹	5 097	61.6	1 547	89.9	843	85.8	106
For-hire truck	3 176	38.4	1 123	65.3	812	82.6	S
Private truck	1 911	23.1	421	24.4	29	3.0	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	17	1.0	25	2.6	1 416
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	2 302	27.8	104	6.0	94	9.6	737
Parcel, U.S. Postal Service or courier	2 302	27.8	103	6.0	89	9.0	737
Truck and rail	S	S	S	S	S	S	1 621
Truck and water	S	S	S	S	S	S	4 453
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	493	6.0	52	3.0	S	S	S
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	2 623	100.0	344	100.0	242	100.0	1 139
Single modes	782	29.8	213	61.9	S	S	960
Truck ¹	732	27.9	212	61.7	S	S	276
For-hire truck	454	17.3	142	41.4	S	S	574
Private truck	278	10.6	70	20.3	9	3.6	86
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	50	1.9	1	.2	1	.4	1 383
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	1 652	63.0	97	28.2	101	41.6	1 153
Parcel, U.S. Postal Service or courier	1 652	63.0	97	28.2	101	41.6	1 153
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 31, NONMETALLIC MINERAL PRODUCTS							
Total	2 291	100.0	17 479	100.0	S	S	780
Single modes	2 034	88.8	15 210	87.0	1 718	42.6	202
Truck ¹	2 022	88.3	15 141	86.6	1 699	42.2	161
For-hire truck	1 314	57.4	7 447	42.6	1 182	29.3	209
Private truck	708	30.9	7 695	44.0	S	S	136
Rail	S	S	S	S	S	S	446
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	—	—	1	—	964
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	190	8.3	98	.6	S	S	1 043
Parcel, U.S. Postal Service or courier	82	3.6	S	S	S	S	1 042
Truck and rail	S	S	S	S	S	S	1 803
Truck and water	S	S	S	S	S	S	4 487
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	688
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	4 157	100.0	6 528	100.0	S	S	343
Single modes	3 999	96.2	6 465	99.0	S	S	214
Truck ¹	3 855	92.7	4 409	67.5	895	26.5	209
For-hire truck	1 843	44.3	1 947	29.8	593	17.6	408
Private truck	2 010	48.3	2 458	37.7	302	8.9	143
Rail	S	S	S	S	S	S	421
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	12	.3	S	S	S	S	1 294
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	4	—	3	—	990
Parcel, U.S. Postal Service or courier	S	S	4	—	2	—	990
Truck and rail	S	S	S	S	S	S	1 641
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	26	.6	S	S	S	S	215
SCTG 33, ARTICLES OF BASE METAL							
Total	4 718	100.0	1 769	100.0	817	100.0	656
Single modes	3 581	75.9	1 642	92.8	742	90.9	260
Truck ¹	3 540	75.0	1 632	92.2	728	89.1	238
For-hire truck	2 336	49.5	1 010	57.1	616	75.4	567
Private truck	1 193	25.3	617	34.8	109	13.3	67
Rail	S	S	S	S	S	S	2 249
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	31	.7	S	S	S	S	1 393
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	1 010	21.4	70	3.9	52	6.4	802
Parcel, U.S. Postal Service or courier	997	21.1	68	3.9	49	6.0	802
Truck and rail	S	S	S	S	S	S	2 186
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	127	2.7	58	3.3	22	2.7	98

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	7 774	100.0	748	100.0	515	100.0	551
Single modes	5 747	73.9	655	87.6	438	85.0	476
Truck ¹	5 378	69.2	626	83.8	400	77.7	354
For-hire truck	3 742	48.1	422	56.5	375	72.7	818
Private truck	1 604	20.6	202	27.0	24	4.6	44
Rail	S	S	S	S	S	S	1 430
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	271	3.5	7	.9	7	1.3	1 284
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	1 777	22.9	75	10.1	67	13.0	581
Parcel, U.S. Postal Service or courier	1 714	22.0	55	7.3	32	6.2	580
Truck and rail	S	S	S	S	S	S	1 716
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	250	3.2	18	2.4	10	1.9	355
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	19 743	100.0	730	100.0	478	100.0	898
Single modes	10 931	55.4	531	72.7	318	66.5	525
Truck ¹	9 464	47.9	516	70.7	297	62.1	238
For-hire truck	4 952	25.1	312	42.8	278	58.1	679
Private truck	2 498	12.7	199	27.3	16	3.3	S
Rail	S	S	S	S	S	S	278
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	1 457	7.4	14	2.0	20	4.2	1 401
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	8 168	41.4	166	22.8	154	32.1	1 054
Parcel, U.S. Postal Service or courier	8 138	41.2	164	22.4	153	31.9	1 054
Truck and rail	S	S	S	S	S	S	406
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	644	3.3	33	4.5	7	1.4	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	13 787	100.0	1 317	100.0	942	100.0	464
Single modes	8 179	59.3	859	65.3	377	40.0	203
Truck ¹	8 103	58.8	851	64.7	369	39.2	174
For-hire truck	5 082	36.9	402	30.5	308	32.7	346
Private truck	3 010	21.8	445	33.8	60	6.4	57
Rail	S	S	S	S	S	S	885
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	15	.1	1	—	1	—	1 440
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	3 965	28.8	355	27.0	482	51.1	726
Parcel, U.S. Postal Service or courier	1 038	7.5	64	4.8	S	S	724
Truck and rail	S	S	S	S	S	S	1 408
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	102	7.8	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 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	1 085	100.0	68	100.0	56	100.0	773
Single modes	946	87.2	64	94.4	53	95.3	818
Truck ¹	858	79.0	64	93.8	52	94.3	717
For-hire truck	312	28.7	24	35.6	19	35.0	1 012
Private truck	543	50.1	40	57.8	33	58.7	490
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	89	8.2	S	S	1	1.0	1 884
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	106	9.7	1	1.3	1	1.3	680
Parcel, U.S. Postal Service or courier	106	9.7	1	1.3	1	1.3	680
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	387
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	9 443	100.0	126	100.0	87	100.0	918
Single modes	3 481	36.9	81	64.4	48	54.8	847
Truck ¹	2 526	26.8	75	59.5	39	45.2	S
For-hire truck	1 156	12.2	43	33.7	35	40.3	662
Private truck	1 092	11.6	S	S	2	1.7	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	955	10.1	6	4.9	8	9.6	1 503
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	5 708	60.5	43	34.0	S	S	950
Parcel, U.S. Postal Service or courier	5 708	60.5	43	34.0	S	S	950
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	253	2.7	2	1.6	1	.9	298
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	1 634	100.0	260	100.0	193	100.0	1 249
Single modes	1 240	75.9	175	67.4	99	51.2	886
Truck ¹	1 227	75.1	174	66.9	97	50.2	660
For-hire truck	667	40.8	107	41.0	86	44.7	976
Private truck	560	34.3	67	25.9	11	5.6	115
Rail	S	S	S	S	S	S	1 142
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 575
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	385	23.5	84	32.2	94	48.7	1 294
Parcel, U.S. Postal Service or courier	381	23.3	83	32.0	91	47.1	1 294
Truck and rail	S	S	S	S	S	S	1 900
Truck and water	S	S	S	S	S	S	10 211
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	9	.5	1	.4	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 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	10 637	100.0	1 708	100.0	825	100.0	1 036
Single modes	6 020	56.6	1 382	80.9	542	65.7	611
Truck ¹	5 678	53.4	1 370	80.2	525	63.6	408
For-hire truck	4 284	40.3	678	39.7	447	54.1	822
Private truck	1 373	12.9	679	39.7	72	8.8	75
Rail	S	S	S	S	S	S	1 266
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	335	3.2	11	.6	16	1.9	1 478
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	3 851	36.2	227	13.3	222	26.9	1 121
Parcel, U.S. Postal Service or courier	3 777	35.5	222	13.0	212	25.7	1 121
Truck and rail	S	S	S	S	S	S	1 746
Truck and water	S	S	S	S	S	S	4 551
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	765	7.2	99	5.8	S	S	504
SCTG 41, WASTE AND SCRAP							
Total	652	100.0	10 120	100.0	1 944	100.0	196
Single modes	640	98.1	10 103	99.8	1 934	99.5	74
Truck ¹	429	65.8	S	S	S	S	64
For-hire truck	149	22.8	S	S	S	S	264
Private truck	280	43.0	S	S	S	S	52
Rail	180	27.7	S	S	S	S	478
Water	S	S	S	S	S	S	987
Shallow draft	S	S	S	S	S	S	987
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 020
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 020
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	395
SCTG 43, MIXED FREIGHT							
Total	3 840	100.0	S	S	S	S	487
Single modes	3 697	96.3	S	S	S	S	173
Truck ¹	3 659	95.3	S	S	S	S	156
For-hire truck	1 579	41.1	S	S	S	S	631
Private truck	2 081	54.2	1 103	21.1	105	3.2	60
Rail	S	S	S	S	S	S	590
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 770
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	130	3.4	14	.3	14	.4	1 067
Parcel, U.S. Postal Service or courier	130	3.4	14	.3	14	.4	1 067
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	142

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	944	100.0	349	100.0	S	S	486
Single modes	800	84.7	336	96.4	S	S	S
Truck ¹	799	84.6	329	94.3	S	S	S
For-hire truck	550	58.2	S	S	S	S	S
Private truck	248	26.3	201	57.5	S	S	40
Rail	—	—	—	—	—	—	—
Water	S	S	S	S	S	S	1 478
Shallow draft	S	S	S	S	S	S	1 478
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 550
Pipeline ²	—	—	—	—	S	S	S
Multiple modes	106	11.2	7	1.9	S	S	792
Parcel, U.S. Postal Service or courier	106	11.2	7	1.9	S	S	792
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	4 529
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	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 "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	155 184	100.0	279 607	100.0	121 384	100.0
NEW ENGLAND STATES						
Connecticut	426	.3	107	—	139	.1
Maine	412	.3	S	S	S	S
Massachusetts	1 687	1.1	240	—	345	.3
New Hampshire	317	.2	97	—	145	.1
Rhode Island	S	S	S	S	S	S
Vermont	203	.1	35	—	48	—
MIDDLE ATLANTIC STATES						
New Jersey	S	S	612	.2	853	.7
New York	3 076	2.0	836	.3	997	.8
Pennsylvania	2 974	1.9	5 899	2.1	6 539	5.4
EAST NORTH CENTRAL STATES						
Illinois	8 638	5.6	11 648	4.2	S	S
Indiana	2 261	1.5	14 375	5.1	12 512	10.3
Michigan	3 532	2.3	S	S	S	S
Ohio	3 599	2.3	12 002	4.3	9 971	8.2
Wisconsin	9 468	6.1	15 269	5.5	3 437	2.8
WEST NORTH CENTRAL STATES						
Iowa	5 360	3.5	8 954	3.2	2 114	1.7
Kansas	1 004	.6	348	.1	207	.2
Minnesota	59 392	38.3	148 513	53.1	8 579	7.1
Missouri	2 004	1.3	S	S	S	S
Nebraska	1 868	1.2	3 156	1.1	1 280	1.1
North Dakota	2 789	1.8	8 752	3.1	1 454	1.2
South Dakota	1 857	1.2	S	S	408	.3
SOUTH ATLANTIC STATES						
Delaware	67	—	21	—	28	—
District of Columbia	109	—	16	—	19	—
Florida	2 848	1.8	571	.2	940	.8
Georgia	2 056	1.3	731	.3	897	.7
Maryland	1 098	.7	332	.1	393	.3
North Carolina	2 068	1.3	S	S	S	S
South Carolina	719	.5	194	.1	249	.2
Virginia	1 304	.8	S	S	S	S
West Virginia	128	—	35	—	32	—
EAST SOUTH CENTRAL STATES						
Alabama	646	.4	427	.2	556	.5
Kentucky	1 091	.7	S	S	S	S
Mississippi	464	.3	S	S	S	S
Tennessee	1 851	1.2	1 524	.5	1 576	1.3
WEST SOUTH CENTRAL STATES						
Arkansas	672	.4	641	.2	581	.5
Louisiana	2 204	1.4	10 463	3.7	16 318	13.4
Oklahoma	767	.5	235	—	202	.2
Texas	5 757	3.7	2 415	.9	2 788	2.3
MOUNTAIN STATES						
Arizona	944	.6	365	.1	699	.6
Colorado	1 299	.8	S	S	S	S
Idaho	317	.2	52	—	71	—
Montana	422	.3	371	.1	343	.3
Nevada	238	.2	S	S	S	S
New Mexico	470	.3	57	—	83	—
Utah	853	.5	4 400	1.6	7 262	6.0
Wyoming	148	.1	17	—	14	—
PACIFIC STATES						
Alaska	47	—	3	—	S	S
California	7 439	4.8	2 270	.8	4 695	3.9
Hawaii	97	—	15	—	67	—
Oregon	936	.6	S	S	S	S
Washington	2 517	1.6	6 489	2.3	11 530	9.5

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

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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	131 295	100.0	226 619	100.0	59 447	100.0
NEW ENGLAND STATES						
Connecticut	572	.4	S	S	S	S
Maine	265	.2	191	—	269	.5
Massachusetts	956	.7	147	—	208	.3
New Hampshire	288	.2	23	—	34	—
Rhode Island	189	.1	S	S	S	S
Vermont	183	.1	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	2 245	1.7	217	.1	268	.5
New York	2 086	1.6	670	.3	789	1.3
Pennsylvania	2 213	1.7	601	.3	675	1.1
EAST NORTH CENTRAL STATES						
Illinois	7 526	5.7	4 843	2.1	2 381	4.0
Indiana	2 667	2.0	1 585	.7	948	1.6
Michigan	3 135	2.4	4 125	1.8	2 359	4.0
Ohio	3 608	2.7	S	S	S	S
Wisconsin	7 375	5.6	8 809	3.9	1 435	2.4
WEST NORTH CENTRAL STATES						
Iowa	3 985	3.0	6 614	2.9	1 619	2.7
Kansas	1 100	.8	1 024	.5	682	1.1
Minnesota	59 392	45.2	148 513	65.5	8 579	14.4
Missouri	1 953	1.5	1 017	.4	659	1.1
Nebraska	1 292	1.0	713	.3	276	.5
North Dakota	3 285	2.5	13 770	6.1	4 130	6.9
South Dakota	2 005	1.5	2 614	1.2	714	1.2
SOUTH ATLANTIC STATES						
Delaware	84	—	S	S	S	S
District of Columbia	S	S	S	S	S	S
Florida	1 336	1.0	450	.2	783	1.3
Georgia	1 230	.9	1 042	.5	1 468	2.5
Maryland	256	.2	60	—	65	.1
North Carolina	1 546	1.2	394	.2	491	.8
South Carolina	580	.4	143	—	184	.3
Virginia	609	.5	127	—	156	.3
West Virginia	184	.1	155	—	152	.3
EAST SOUTH CENTRAL STATES						
Alabama	537	.4	356	.2	422	.7
Kentucky	1 202	.9	313	.1	277	.5
Mississippi	437	.3	179	—	189	.3
Tennessee	1 152	.9	S	S	S	S
WEST SOUTH CENTRAL STATES						
Arkansas	647	.5	691	.3	606	1.0
Louisiana	562	.4	859	.4	1 176	2.0
Oklahoma	679	.5	411	.2	350	.6
Texas	4 792	3.7	1 196	.5	1 536	2.6
MOUNTAIN STATES						
Arizona	450	.3	42	—	76	.1
Colorado	535	.4	210	—	207	.3
Idaho	S	S	150	—	212	.4
Montana	186	.1	S	S	S	S
Nevada	66	—	19	—	35	—
New Mexico	S	S	22	—	S	S
Utah	152	.1	57	—	82	.1
Wyoming	111	—	10 132	4.5	10 847	18.2
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	5 727	4.4	999	.4	2 007	3.4
Hawaii	4	—	S	S	S	S
Oregon	379	.3	222	.1	410	.7
Washington	1 059	.8	306	.1	528	.9

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

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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	4.3	—	8.9	—	13.1	—	6.7
Single modes	4.6	1.5	8.6	2.4	14.1	5.2	9.0
Truck	5.1	1.7	7.0	3.3	12.4	3.4	7.2
For-hire truck	5.1	.8	10.3	2.3	15.4	3.2	6.3
Private truck	5.1	1.3	11.6	3.1	17.9	.6	7.3
Rail	14.3	.7	19.8	3.3	21.4	4.2	6.7
Water	27.7	.3	21.6	1.1	27.7	3.9	11.4
Shallow draft	33.5	.3	29.6	1.2	34.4	4.3	12.6
Great Lakes	45.6	—	49.2	.6	S	S	28.6
Deep draft	S	S	S	S	S	S	29.8
Air (includes truck and air)	10.9	.2	18.5	—	21.4	—	2.8
Pipeline	37.7	.3	38.7	.8	S	S	S
Multiple modes	9.9	1.9	25.9	2.6	26.1	5.5	6.4
Parcel, U.S. Postal Service or courier	7.3	1.4	13.8	—	16.1	.1	6.4
Truck and rail	42.2	.9	24.7	—	24.1	.2	9.3
Truck and water	47.4	—	S	S	S	S	22.8
Rail and water	26.8	.1	27.8	2.5	28.1	5.5	18.5
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	20.0	.7	42.7	.7	48.0	2.4	30.8

— 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-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	4.3	3.5	7.9	8.9	6.2	16.0	13.1	18.4	34.4	6.7	11.8	18.3
Single modes	4.6	4.2	8.1	8.6	6.6	15.8	14.1	16.8	33.1	9.0	22.7	23.6
Truck	5.1	4.4	8.7	7.0	7.5	14.3	12.4	3.5	18.3	7.2	8.4	13.2
For-hire truck	5.1	4.8	8.3	10.3	10.2	18.2	15.4	4.0	21.9	6.3	6.3	8.9
Private truck	5.1	9.6	15.4	11.6	12.4	25.2	17.9	6.8	29.9	7.3	11.8	15.5
Rail	14.3	18.1	30.9	19.8	23.9	54.4	21.4	23.8	59.0	6.7	5.1	7.4
Water	27.7	S	S	21.6	S	S	27.7	S	S	11.4	S	S
Shallow draft	33.5	S	S	29.6	S	S	34.4	S	S	12.6	24.0	25.4
Great Lakes	45.6	49.9	73.1	49.2	S	S	S	S	S	28.6	25.9	26.6
Deep draft	S	43.4	S	S	S	S	S	37.7	S	29.8	29.4	—
Air (includes truck and air)	10.9	21.1	31.0	18.5	S	S	21.4	S	S	2.8	2.7	4.4
Pipeline	37.7	43.2	120.6	38.7	42.1	113.9	S	S	S	S	S	S
Multiple modes	9.9	5.9	22.2	25.9	S	S	26.1	S	S	6.4	6.0	10.8
Parcel, U.S. Postal Service or courier	7.3	6.4	18.6	13.8	18.1	31.9	16.1	24.1	48.1	6.4	6.1	10.8
Truck and rail	42.2	44.9	126.7	24.7	30.3	56.2	24.1	29.0	70.5	9.3	9.9	14.1
Truck and water	47.4	S	S	S	S	S	S	S	S	22.8	31.6	52.8
Rail and water	26.8	S	S	27.8	S	S	28.1	S	S	18.5	28.6	33.8
Other multiple modes	S	S	S	S	S	S	S	S	S	S	31.6	S
Other and unknown modes	20.0	22.1	42.6	42.7	48.3	45.7	48.0	S	S	30.8	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-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	1.5	1.4	2.4	3.5	5.2	6.7
Truck	1.7	1.4	3.3	4.9	3.4	5.4
For-hire truck .....	.8	1.7	2.3	3.3	3.2	4.4
Private truck	1.3	1.9	3.1	3.3	.6	1.1
Rail .....	.7	.9	3.3	4.7	4.2	6.3
Water .....	.3	S	1.1	S	3.9	S
Shallow draft .....	.3	S	1.2	S	4.3	S
Great Lakes	—	—	.6	S	S	S
Deep draft	S	—	S	S	S	—
Air (includes truck and air) .....	.2	.6	—	S	—	S
Pipeline .....	.3	.2	.8	.9	S	S
Multiple modes	1.9	.7	2.6	S	5.5	S
Parcel, U.S. Postal Service or courier	1.4	.9	—	—	.1	.3
Truck and rail .....	.9	.6	—	—	.2	.3
Truck and water	—	S	S	S	S	S
Rail and water .....	.1	S	2.5	S	5.5	S
Other multiple modes	S	S	S	S	S	S
Other and unknown modes .....	.7	.9	.7	1.7	2.4	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-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	13.1	—	7.3
Truck	12.4	3.4	7.0
Rail	21.2	4.4	6.5
Shallow draft	34.0	4.2	9.0
Great Lakes	28.6	5.1	18.3
Deep draft	S	S	28.7
Air	22.0	—	3.0
Parcel, U.S. Postal Service or courier	16.1	.1	6.4
Pipeline	S	S	S
Other and unknown modes	47.9	2.4	31.7

— 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-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	4.3	—	8.9	—	13.1	—
Less than 50 miles	3.7	.8	9.8	3.3	9.9	.4
50 to 99 miles	5.6	.5	15.8	2.3	17.7	.6
100 to 249 miles	7.1	.6	16.2	1.3	16.9	1.0
250 to 499 miles	8.9	.8	16.7	1.5	18.8	3.0
500 to 749 miles	5.4	.4	27.3	1.7	29.2	2.7
750 to 999 miles	10.5	.9	23.7	1.1	24.3	3.0
1,000 to 1,499 miles	7.8	.8	14.4	1.2	13.9	4.8
1,500 to 1,999 miles	11.0	.4	20.0	.1	19.3	.6
2,000 miles or more	30.2	—	45.7	—	47.0	—
Single modes	4.6	—	8.6	—	14.1	—
Less than 50 miles	3.8	.8	9.8	4.1	10.0	.9
50 to 99 miles	4.8	.5	15.9	2.2	17.8	.7
100 to 249 miles	6.8	.6	16.4	1.4	17.0	1.7
250 to 499 miles	10.3	1.0	18.9	1.1	18.3	1.0
500 to 749 miles	6.0	.4	36.8	1.9	39.5	3.3
750 to 999 miles	16.5	1.2	24.4	.9	26.2	2.8
1,000 to 1,499 miles	8.7	.7	15.0	1.5	14.5	5.5
1,500 to 1,999 miles	12.9	.3	26.7	.1	26.1	.8
2,000 miles or more	30.5	—	S	S	S	S
Truck	5.1	—	7.0	—	12.4	—
Less than 50 miles	3.9	.9	10.9	3.5	11.2	1.8
50 to 99 miles	4.9	.5	11.1	1.4	11.9	.5
100 to 249 miles	7.0	.7	15.4	1.5	16.0	1.9
250 to 499 miles	10.5	1.1	17.6	1.1	17.1	1.9
500 to 749 miles	6.5	.4	22.4	.5	21.6	.9
750 to 999 miles	18.9	1.2	20.2	.4	20.7	1.2
1,000 to 1,499 miles	11.9	.8	9.7	.2	10.8	.8
1,500 to 1,999 miles	15.8	.4	30.1	.2	29.7	1.2
2,000 miles or more	S	S	S	S	S	S
For-hire truck	5.1	—	10.3	—	15.4	—
Less than 50 miles	8.3	1.1	11.6	3.3	14.6	.6
50 to 99 miles	6.4	.5	14.9	1.4	15.8	.5
100 to 249 miles	6.4	.6	18.1	2.2	19.1	1.8
250 to 499 miles	12.1	1.4	13.5	1.0	14.2	.9
500 to 749 miles	7.3	.6	26.0	.8	25.0	1.0
750 to 999 miles	4.6	.7	21.5	.6	22.1	1.3
1,000 to 1,499 miles	12.4	1.6	10.2	.3	11.3	.9
1,500 to 1,999 miles	15.6	.6	30.6	.3	30.1	1.6
2,000 miles or more	S	S	S	S	S	S
Private truck	5.1	—	11.6	—	17.9	—
Less than 50 miles	4.9	1.6	14.4	3.0	16.6	4.6
50 to 99 miles	8.6	1.0	10.2	1.3	11.2	1.3
100 to 249 miles	10.2	1.1	15.6	1.2	16.1	2.4
250 to 499 miles	13.2	.9	45.2	1.2	46.7	4.0
500 to 749 miles	28.1	.7	34.3	.2	32.1	1.1
750 to 999 miles	34.4	.5	26.5	—	26.3	.9
1,000 to 1,499 miles	12.1	.2	13.3	—	13.6	.8
1,500 to 1,999 miles	22.7	—	24.3	—	24.8	—
2,000 miles or more	S	S	S	S	S	S
Rail	14.3	—	19.8	—	21.4	—
Less than 50 miles	35.9	.8	S	S	S	S
50 to 99 miles	37.7	3.4	30.8	6.4	32.9	1.4
100 to 249 miles	21.3	3.4	19.7	4.1	22.7	4.1
250 to 499 miles	22.7	3.1	31.4	4.1	29.0	2.3
500 to 749 miles	28.0	2.1	S	S	S	S
750 to 999 miles	21.0	1.7	31.8	1.7	32.6	2.7
1,000 to 1,499 miles	15.7	3.3	21.3	4.2	19.5	5.7
1,500 to 1,999 miles	39.2	1.0	19.6	.2	20.2	.5
2,000 miles or more	—	—	—	—	—	—
Water	27.7	—	21.6	—	27.7	—
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	32.0	11.3	44.9	10.4	42.7	13.3
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Shallow draft	33.5	—	29.6	—	34.4	—
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	39.0	9.5	45.7	7.8	47.8	9.9
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
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	45.6	—	49.2	—	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
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	S	S	S	S	S	S
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	—	—	—	—	—	—
Air (includes truck and air)	10.9	—	18.5	—	21.4	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	43.3	1.4	S	S	S	S
100 to 249 miles	49.5	1.3	S	S	S	S
250 to 499 miles	16.2	4.5	24.6	6.4	26.6	4.9
500 to 749 miles	18.5	1.9	34.9	1.6	35.4	1.8
750 to 999 miles	18.5	1.8	39.4	4.8	40.0	4.9
1,000 to 1,499 miles	18.3	2.7	23.6	5.6	20.6	6.2
1,500 to 1,999 miles	9.6	1.2	S	S	S	S
2,000 miles or more	33.5	.2	S	S	S	S
Pipeline	37.7	—	38.7	—	S	S
Less than 50 miles	37.6	1.5	39.0	1.1	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	—	—	—	—	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	9.9	—	25.9	—	26.1	—
Less than 50 miles	11.0	1.3	S	S	43.4	—
50 to 99 miles	18.9	.6	45.7	1.9	42.3	.2
100 to 249 miles	15.5	.8	17.9	1.7	21.8	.5
250 to 499 miles	10.6	.9	29.5	9.0	29.8	9.4
500 to 749 miles	11.6	.5	31.9	6.6	31.6	6.0
750 to 999 miles	16.7	1.3	S	S	S	S
1,000 to 1,499 miles	10.6	1.1	21.1	3.9	21.9	7.6
1,500 to 1,999 miles	16.2	.9	25.9	3.2	26.9	6.2
2,000 miles or more	36.9	.1	47.2	.1	48.7	.7
Parcel, U.S. Postal Service or courier	7.3	—	13.8	—	16.1	—
Less than 50 miles	11.5	1.2	19.3	2.2	15.8	—
50 to 99 miles	19.9	.8	18.2	.4	17.6	—
100 to 249 miles	15.6	.9	14.9	.9	13.8	.3
250 to 499 miles	7.0	.8	14.5	.9	15.9	.6
500 to 749 miles	9.2	.5	19.6	1.1	19.9	.9
750 to 999 miles	12.7	1.2	21.3	1.6	20.6	1.4
1,000 to 1,499 miles	7.0	1.3	18.8	1.9	18.4	1.7
1,500 to 1,999 miles	15.9	.9	20.4	.9	20.5	2.5
2,000 miles or more	38.3	.1	S	S	S	S
Truck and rail	42.2	—	24.7	—	24.1	—
Less than 50 miles	S	S	45.2	.5	48.1	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	35.4	4.8	34.4	3.6
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	43.1	6.1	28.3	6.7	28.3	6.5
1,500 to 1,999 miles	45.4	9.1	39.0	8.0	38.8	8.6
2,000 miles or more	—	—	—	—	—	—
Truck and water	47.4	—	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	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
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	26.8	—	27.8	—	28.1	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	30.4	7.9	30.0	8.5	30.1	8.3
500 to 749 miles	31.5	9.1	33.2	9.0	32.8	9.1
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S
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	—	—	—	—	—	—
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 and unknown modes	20.0	—	42.7	—	48.0	—
Less than 50 miles	21.0	6.8	41.0	9.0	42.8	1.1
50 to 99 miles	31.8	1.0	39.2	2.2	40.9	1.0
100 to 249 miles	28.9	2.0	S	S	S	S
250 to 499 miles	18.5	2.4	S	S	S	S
500 to 749 miles	30.1	1.3	S	S	49.5	6.3
750 to 999 miles	27.6	1.2	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	41.0	.9	S	S	S	S
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	4.3	—	8.9	—	13.1	—	6.7
Less than 50 lb	6.3	1.2	14.4	—	19.2	.1	6.4
50 to 99 lb	6.4	.2	9.6	—	18.4	—	11.4
100 to 499 lb	8.9	.6	8.1	—	9.7	—	12.4
500 to 749 lb	8.8	.3	6.2	—	7.9	—	9.5
750 to 999 lb	7.2	.2	9.0	—	7.2	—	12.3
1,000 to 9,999 lb	10.2	1.5	7.9	.5	5.8	.3	6.3
10,000 to 49,999 lb	4.8	1.0	11.4	3.4	9.6	1.6	11.8
50,000 to 99,999 lb	16.4	.6	17.7	1.4	22.6	.5	8.8
100,000 lb or more	11.8	.9	12.9	2.5	14.4	2.0	8.6
Single modes	4.6	—	8.6	—	14.1	—	9.0
Less than 50 lb	9.5	.4	9.5	—	11.7	—	12.4
50 to 99 lb	10.8	.3	10.4	—	17.2	—	15.9
100 to 499 lb	10.1	.7	8.8	—	11.2	—	16.1
500 to 749 lb	8.6	.4	5.4	—	6.7	—	9.1
750 to 999 lb	6.5	.2	8.4	—	8.9	—	13.4
1,000 to 9,999 lb	8.0	1.0	8.0	.4	6.5	.4	6.6
10,000 to 49,999 lb	4.4	1.5	11.8	4.3	3.9	2.9	8.4
50,000 to 99,999 lb	16.9	.8	17.8	1.5	23.1	.5	9.2
100,000 lb or more	12.6	1.2	14.9	3.2	16.8	3.2	8.8
Truck	5.1	—	7.0	—	12.4	—	7.2
Less than 50 lb	12.2	.4	9.6	—	14.3	—	13.2
50 to 99 lb	9.6	.2	10.5	—	20.9	—	18.9
100 to 499 lb	9.5	.7	9.0	.1	10.6	.2	16.1
500 to 749 lb	7.7	.4	5.3	—	6.7	—	9.2
750 to 999 lb	7.2	.2	8.4	—	9.4	.1	13.9
1,000 to 9,999 lb	8.1	1.0	8.0	1.0	6.4	.9	6.4
10,000 to 49,999 lb	4.5	1.4	11.8	3.9	3.8	5.0	8.4
50,000 to 99,999 lb	17.1	1.0	18.0	3.6	23.6	3.1	9.8
100,000 lb or more	32.8	.3	34.1	2.7	S	S	29.2
For-hire truck	5.1	—	10.3	—	15.4	—	6.3
Less than 50 lb	21.1	.6	19.7	—	20.1	—	19.9
50 to 99 lb	10.6	.2	19.8	—	28.2	—	13.0
100 to 499 lb	15.9	1.1	8.8	—	12.3	.2	7.8
500 to 749 lb	10.3	.5	8.8	—	6.8	.1	6.6
750 to 999 lb	12.8	.3	8.4	—	11.0	.1	10.1
1,000 to 9,999 lb	6.8	.9	9.4	.9	5.6	.9	9.0
10,000 to 49,999 lb	4.7	1.9	7.8	3.9	5.0	5.4	5.8
50,000 to 99,999 lb	15.4	.9	20.6	3.5	20.8	2.6	9.8
100,000 lb or more	44.9	.6	S	S	S	S	48.5
Private truck	5.1	—	11.6	—	17.9	—	7.3
Less than 50 lb	11.8	.7	7.9	—	11.0	—	15.5
50 to 99 lb	11.6	.4	13.5	—	13.7	—	17.6
100 to 499 lb	6.8	.6	12.0	.2	7.2	.2	15.8
500 to 749 lb	20.8	.6	9.4	—	13.2	.1	15.9
750 to 999 lb	16.2	.6	10.4	—	11.5	.1	14.7
1,000 to 9,999 lb	6.0	1.3	10.0	2.0	11.9	1.9	5.6
10,000 to 49,999 lb	8.6	1.7	18.8	4.8	9.5	4.8	11.2
50,000 to 99,999 lb	25.5	1.4	24.3	3.8	40.6	4.2	12.5
100,000 lb or more	32.3	.2	46.1	2.6	S	S	33.0
Rail	14.3	—	19.8	—	21.4	—	6.7
Less than 50 lb	S	S	S	S	S	S	38.7
50 to 99 lb	S	S	S	S	S	S	31.6
100 to 499 lb	S	S	S	S	S	S	31.6
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	S	S	S	S	S	S	31.6
1,000 to 9,999 lb	S	S	S	S	S	S	26.1
10,000 to 49,999 lb	21.4	.5	22.4	—	24.5	.1	17.5
50,000 to 99,999 lb	45.2	.2	24.6	—	35.2	.1	21.7
100,000 lb or more	14.5	.9	19.8	—	21.5	.2	6.9
Water	27.7	—	21.6	—	27.7	—	11.4
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	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	28.1	2.3	21.6	.1	27.7	—	10.0
Shallow draft	33.5	—	29.6	—	34.4	—	12.6
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	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	33.9	2.3	29.7	.1	34.4	—	11.2

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	45.6	—	49.2	—	S	S	28.6
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	45.6	—	49.2	—	S	S	28.6
Deep draft	S	S	S	S	S	S	29.8
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	29.8
Air (includes truck and air)	10.9	—	18.5	—	21.4	—	2.8
Less than 50 lb	13.2	4.8	19.2	2.7	20.7	3.1	2.9
50 to 99 lb	21.7	2.3	21.4	1.7	21.4	1.3	4.0
100 to 499 lb	20.8	2.9	30.9	5.0	34.3	4.6	6.4
500 to 749 lb	37.9	1.6	34.6	4.4	29.1	3.5	26.1
750 to 999 lb	46.1	1.2	S	S	S	S	17.6
1,000 to 9,999 lb	25.8	2.0	16.9	4.6	24.3	6.2	12.0
10,000 to 49,999 lb	S	S	S	S	S	S	28.3
50,000 to 99,999 lb	S	S	S	S	S	S	28.5
100,000 lb or more	—	—	—	—	—	—	—
Pipeline	37.7	—	38.7	—	S	S	S
Less than 50 lb	—	—	—	—	S	S	S
50 to 99 lb	—	—	—	—	S	S	S
100 to 499 lb	—	—	—	—	S	S	S
500 to 749 lb	S	S	S	S	S	S	S
750 to 999 lb	S	S	S	S	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	S	S	S	S
100,000 lb or more	37.9	7.6	39.4	8.3	S	S	S
Multiple modes	9.9	—	25.9	—	26.1	—	6.4
Less than 50 lb	7.8	2.6	17.9	5.2	21.5	4.7	6.6
50 to 99 lb	8.1	.9	18.9	1.4	24.5	1.3	7.7
100 to 499 lb	10.9	.8	14.0	2.2	12.3	1.8	8.9
500 to 749 lb	38.1	.7	40.8	.3	44.8	.3	38.6
750 to 999 lb	33.1	.4	32.8	.6	33.0	.5	38.5
1,000 to 9,999 lb	37.1	.2	S	S	33.9	.2	S
10,000 to 49,999 lb	42.5	3.1	24.0	4.1	22.7	7.0	12.4
50,000 to 99,999 lb	S	S	S	S	S	S	S
100,000 lb or more	24.7	.5	27.6	15.3	27.8	14.6	15.8
Parcel, U.S. Postal Service or courier	7.3	—	13.8	—	16.1	—	6.4
Less than 50 lb	7.8	1.6	17.9	3.4	21.5	4.9	6.6
50 to 99 lb	8.1	.8	18.9	1.7	24.5	2.5	7.7
100 to 499 lb	10.9	.8	13.6	2.2	12.4	2.6	8.6
500 to 749 lb	38.3	.8	29.0	1.2	46.2	1.5	29.9
750 to 999 lb	34.5	.4	38.6	1.1	34.0	1.0	24.6
1,000 to 9,999 lb	S	S	S	S	S	S	S
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	42.2	—	24.7	—	24.1	—	9.3
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	S	S	S	S	S	S	31.6
100 to 499 lb	S	S	43.4	—	S	S	26.9
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	S	S	S	S	S	S	31.6
1,000 to 9,999 lb	S	S	32.5	.9	42.8	.9	33.1
10,000 to 49,999 lb	42.6	5.5	24.3	7.9	22.7	7.2	7.4
50,000 to 99,999 lb	S	S	S	S	S	S	29.3
100,000 lb or more	S	S	S	S	S	S	27.5
Truck and water	47.4	—	S	S	S	S	22.8
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	31.6
500 to 749 lb	S	S	S	S	S	S	31.6
750 to 999 lb	S	S	S	S	S	S	30.2
1,000 to 9,999 lb	S	S	S	S	S	S	27.6
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
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	26.8	—	27.8	—	28.1	—	18.5
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	26.8	—	27.8	—	28.1	—	18.5
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	S	S	S	S	S	S	31.6
100 to 499 lb	S	S	S	S	S	S	31.6
500 to 749 lb	S	S	S	S	S	S	30.2
750 to 999 lb	S	S	S	S	S	S	29.9
1,000 to 9,999 lb	S	S	S	S	S	S	29.9
10,000 to 49,999 lb	S	S	S	S	S	S	S
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
100,000 lb or more	—	—	—	—	—	—	—
Other and unknown modes	20.0	—	42.7	—	48.0	—	30.8
Less than 50 lb	9.9	4.7	19.1	.9	S	S	37.1
50 to 99 lb	23.6	1.4	28.4	.9	S	S	35.4
100 to 499 lb	24.7	2.8	25.6	1.9	17.2	1.2	30.8
500 to 749 lb	20.0	.5	21.8	.5	45.2	—	S
750 to 999 lb	27.4	.3	25.0	.4	38.0	.3	48.4
1,000 to 9,999 lb	39.6	5.8	11.6	8.0	35.8	8.7	30.3
10,000 to 49,999 lb	36.0	5.5	S	S	S	S	19.2
50,000 to 99,999 lb	34.9	.5	S	S	S	S	37.6
100,000 lb or more	S	S	S	S	S	S	23.2

— 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	4.3	—	8.9	—	13.1	—	6.7
01	Live animals and live fish	S	S	S	S	S	S	S
02	Cereal grains	8.3	.3	10.3	1.6	16.5	4.3	23.1
03	Other agricultural products	13.8	.4	14.7	.8	28.0	2.2	21.6
04	Animal feed and products of animal origin, n.e.c.	20.9	.3	18.1	.8	18.9	.3	S
05	Meat, fish, seafood, and their preparations	14.7	.5	15.5	.2	22.4	.3	39.2
06	Milled grain products and preparations, and bakery products	12.8	.2	13.5	.3	17.9	.4	46.2
07	Other prepared foodstuffs and fats and oils	10.2	.7	9.4	.8	13.1	.7	29.7
08	Alcoholic beverages	15.5	.1	15.7	—	S	S	45.2
09	Tobacco products	34.7	.2	41.0	—	S	S	10.6
10	Monumental or building stone	44.6	—	42.9	—	36.1	—	44.4
11	Natural sands	38.7	—	23.1	.9	46.6	.6	46.6
12	Gravel and crushed stone	28.0	—	29.0	3.5	43.4	.6	27.6
13	Nonmetallic minerals n.e.c.	34.4	—	S	S	47.0	—	S
14	Metallic ores and concentrates	21.4	.2	19.0	2.4	25.4	6.1	27.9
15	Coal	41.4	—	41.4	—	41.0	—	26.5
17	Gasoline and aviation turbine fuel	42.1	.9	45.1	1.6	S	S	27.1
18	Fuel oils	28.5	.3	32.5	.7	S	S	31.8
19	Coal and petroleum products, n.e.c.	39.1	.4	34.9	1.4	48.5	.8	20.8
20	Basic chemicals	19.8	—	S	S	S	S	24.0
21	Pharmaceutical products	9.1	.2	11.2	—	31.2	—	21.0
22	Fertilizers	15.9	—	15.0	.1	26.3	—	39.5
23	Chemical products and preparations, n.e.c.	16.6	.4	19.4	.1	25.8	.2	15.4
24	Plastics and rubber	7.3	.3	10.4	—	12.0	—	12.0
25	Logs and other wood in the rough	S	S	S	S	S	S	S
26	Wood products	16.6	.5	13.2	.3	24.5	.4	22.6
27	Pulp, newsprint, paper, and paperboard	13.1	.3	20.8	.2	10.2	.3	13.0
28	Paper or paperboard articles	15.1	.2	16.2	—	18.8	—	21.7
29	Printed products	15.0	.6	15.5	.1	19.5	.2	15.2
30	Textiles, leather, and articles of textiles or leather	15.9	.2	28.0	—	28.4	—	7.0
31	Nonmetallic mineral products	12.5	.2	26.3	1.2	S	S	17.9
32	Base metal in primary or semifinished forms and in finished basic shapes	12.3	.3	24.7	.6	S	S	16.9
33	Articles of base metal	9.8	.3	18.6	.1	28.2	.3	14.4
34	Machinery	8.8	.5	12.4	—	12.9	.2	12.9
35	Electronic and other electrical equipment and components and office equipment	11.4	1.2	15.1	—	15.4	—	5.7
36	Motorized and other vehicles (including parts)	17.7	1.2	11.8	—	25.1	.3	14.9
37	Transportation equipment, n.e.c.	23.9	.2	21.5	—	20.7	—	10.7
38	Precision instruments and apparatus	10.9	.8	33.4	—	29.9	—	7.7
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	11.0	.1	12.2	—	18.9	—	8.2
40	Miscellaneous manufactured products	6.8	.4	19.9	.1	9.2	—	4.6
41	Waste and scrap	35.7	.1	45.5	1.5	44.2	.6	48.1
43	Mixed freight	19.4	.5	S	S	S	S	27.7
--	Commodity unknown	31.9	.2	36.4	—	S	S	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-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	4.3	—	8.9	—	13.1	—	6.7
Single modes	4.6	1.5	8.6	2.4	14.1	5.2	9.0
Truck	5.1	1.7	7.0	3.3	12.4	3.4	7.2
For-hire truck	5.1	.8	10.3	2.3	15.4	3.2	6.3
Private truck	5.1	1.3	11.6	3.1	17.9	.6	7.3
Rail	14.3	.7	19.8	3.3	21.4	4.2	6.7
Water	27.7	.3	21.6	1.1	27.7	3.9	11.4
Shallow draft	33.5	.3	29.6	1.2	34.4	4.3	12.6
Great Lakes	45.6	—	49.2	.6	S	S	28.6
Deep draft	S	S	S	S	S	S	29.8
Air (includes truck and air)	10.9	.2	18.5	—	21.4	—	2.8
Pipeline	37.7	.3	38.7	.8	S	S	S
Multiple modes	9.9	1.9	25.9	2.6	26.1	5.5	6.4
Parcel, U.S. Postal Service or courier	7.3	1.4	13.8	—	16.1	.1	6.4
Truck and rail	42.2	.9	24.7	—	24.1	.2	9.3
Truck and water	47.4	—	S	—	S	—	22.8
Rail and water	26.8	.1	27.8	2.5	28.1	5.5	18.5
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	20.0	.7	42.7	.7	48.0	2.4	30.8
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck	S	S	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	32.5
Private truck	S	S	S	S	S	S	31.6
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	—	—	—	—	—	—	—
SCTG 02, CEREAL GRAINS							
Total	8.3	—	10.3	—	16.5	—	23.1
Single modes	8.9	2.1	10.7	2.0	16.8	3.1	22.6
Truck	21.4	6.0	18.1	6.2	21.3	3.5	16.6
For-hire truck	20.5	4.0	17.8	3.3	21.3	3.0	21.1
Private truck	29.5	2.5	28.0	3.5	35.2	.5	38.0
Rail	14.6	5.9	14.9	5.9	19.9	6.8	19.5
Water	29.0	7.0	27.7	6.9	29.8	8.9	11.2
Shallow draft	30.0	6.7	28.6	6.7	29.8	8.9	11.2
Great Lakes	S	S	S	S	S	S	31.6
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	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	13.8	—	14.7	—	28.0	—	21.6
Single modes	14.9	3.2	15.8	3.5	31.9	7.7	17.5
Truck	20.4	6.6	17.4	6.8	19.1	7.4	16.7
For-hire truck	16.4	3.8	15.5	4.7	14.7	4.7	31.1
Private truck	39.7	7.3	40.2	5.8	42.0	3.3	18.6
Rail	25.0	6.2	25.2	7.4	30.2	9.9	25.3
Water	49.0	5.2	S	S	S	S	22.2
Shallow draft	49.0	5.2	S	S	S	S	22.2
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	24.2
Parcel, U.S. Postal Service or courier	41.1	—	46.8	—	42.4	—	25.4
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	49.9	3.0	S	S	S	S	S
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	20.9	—	18.1	—	18.9	—	S
Single modes	21.4	2.3	18.4	1.7	13.0	6.0	S
Truck	22.2	2.9	20.2	4.2	19.3	8.0	S
For-hire truck	23.2	5.9	20.8	5.2	18.8	4.8	S
Private truck	25.9	6.4	25.7	6.6	29.2	4.7	49.3
Rail	32.9	1.7	23.3	3.5	23.3	8.0	18.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	23.6
Parcel, U.S. Postal Service or courier	S	S	S	S	38.2	—	24.0
Truck and rail	S	S	S	S	S	S	30.3
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	S
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	14.7	—	15.5	—	22.4	—	39.2
Single modes	14.8	.8	15.3	.4	21.3	1.0	37.9
Truck	14.8	1.1	15.3	1.2	19.8	2.5	37.6
For-hire truck	20.2	5.7	20.5	5.9	21.3	2.4	9.5
Private truck	19.6	6.2	24.1	6.5	22.6	2.6	37.4
Rail	S	S	S	S	S	S	29.8
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
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 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	12.8	—	13.5	—	17.9	—	46.2
Single modes	12.6	2.8	13.6	1.2	18.6	3.1	45.1
Truck	12.7	2.6	12.9	4.2	17.4	4.2	47.3
For-hire truck	18.0	5.1	13.0	3.6	18.3	4.0	12.2
Private truck	21.7	6.6	21.8	5.0	21.3	1.9	27.6
Rail	21.5	2.1	20.6	4.5	23.1	5.4	6.0
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	43.3
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	35.1
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	27.6
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	10.2	—	9.4	—	13.1	—	29.7
Single modes	9.9	2.3	9.2	1.2	13.0	.9	23.8
Truck	10.5	3.2	9.9	4.2	11.1	5.9	24.1
For-hire truck	10.8	3.7	14.0	4.3	12.0	4.6	12.9
Private truck	15.1	4.7	14.9	5.4	12.4	1.9	19.2
Rail	24.9	1.4	33.3	3.4	27.4	6.0	6.7
Water	S	S	S	S	S	S	29.8
Shallow draft	S	S	S	S	S	S	29.8
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	30.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	40.7	.5	S	S	S	S	31.1
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	26.6
Truck and rail	S	S	S	S	S	S	27.9
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	15.5	—	15.7	—	S	S	45.2
Single modes	15.5	.8	15.9	1.1	S	S	43.6
Truck	15.5	1.0	15.9	1.3	S	S	43.0
For-hire truck	25.1	7.8	38.8	7.2	S	S	21.8
Private truck	19.3	8.5	20.4	8.3	22.3	14.4	10.6
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	33.7
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	31.0
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	36.4	.5	47.3	.6	S	S	26.7

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 09, TOBACCO PRODUCTS							
Total	34.7	—	41.0	—	S	S	10.6
Single modes	34.8	.3	41.0	.1	S	S	9.3
Truck	34.8	.3	41.0	.1	S	S	9.3
For-hire truck	49.5	15.0	S	S	S	S	26.2
Private truck	21.8	14.9	23.7	14.3	24.3	18.9	6.4
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	38.0	.3	38.3	.1	S	S	S
Parcel, U.S. Postal Service or courier	42.7	.3	41.4	.1	S	S	36.7
Truck and rail	—	—	—	—	—	—	—
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	31.6
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	44.6	—	42.9	—	36.1	—	44.4
Single modes	43.4	.8	43.2	.7	36.1	—	36.9
Truck	43.4	.8	43.2	.7	36.1	—	36.9
For-hire truck	39.2	14.1	41.7	13.9	41.9	16.5	23.8
Private truck	S	S	S	S	S	S	S
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	31.6
SCTG 11, NATURAL SANDS							
Total	38.7	—	23.1	—	46.6	—	46.6
Single modes	38.9	.7	23.1	—	46.6	.1	47.7
Truck	25.3	11.5	24.6	9.4	37.3	17.5	40.3
For-hire truck	S	S	37.0	2.5	47.6	5.4	32.1
Private truck	28.8	10.1	25.7	8.6	41.4	14.6	41.0
Rail	S	S	S	S	S	S	30.4
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	—	—	—	—	—	—	—
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

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	28.0	—	29.0	—	43.4	—	27.6
Single modes	28.0	—	29.0	—	43.4	.2	27.6
Truck	31.1	10.4	31.9	10.0	33.1	18.6	19.7
For-hire truck	34.7	4.3	32.0	5.1	46.9	8.0	30.6
Private truck	35.5	8.7	36.0	8.4	40.5	15.3	20.0
Rail	S	S	S	S	S	S	29.1
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 13, NONMETALLIC MINERALS N.E.C.							
Total	34.4	—	S	S	47.0	—	S
Single modes	36.7	5.3	S	S	47.1	.3	S
Truck	46.6	9.2	S	S	49.8	9.6	S
For-hire truck	29.0	10.5	S	S	35.7	14.4	45.4
Private truck	S	S	S	S	47.0	12.2	S
Rail	39.8	3.4	38.5	3.2	48.6	9.0	S
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	21.0	6.0	21.1	6.0	S	S	S
Multiple modes	S	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.8
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	21.4	—	19.0	—	25.4	—	27.9
Single modes	36.4	12.8	33.5	13.2	40.5	13.4	37.0
Truck	S	S	S	S	S	S	30.6
For-hire truck	S	S	S	S	S	S	30.2
Private truck	S	S	S	S	S	S	43.4
Rail	45.9	13.9	40.8	14.5	45.1	14.2	37.9
Water	S	S	S	S	S	S	28.1
Shallow draft	—	—	—	—	—	—	—
Great Lakes	S	S	S	S	S	S	27.9
Deep draft	S	S	S	S	S	S	29.8
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	27.4	12.8	28.0	13.2	28.4	13.4	18.3
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	27.4	12.8	28.0	13.2	28.4	13.4	18.3
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

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	41.4	—	41.4	—	41.0	—	26.5
Single modes	41.4	—	41.4	—	41.0	—	26.5
Truck	41.4	—	41.4	—	41.0	—	26.5
For-hire truck	41.4	.3	41.4	.2	41.0	—	26.2
Private truck	S	S	S	S	S	S	31.6
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	—	—	—	—	—	—	—
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	42.1	—	45.1	—	S	S	27.1
Single modes	43.0	10.1	45.9	10.0	S	S	27.0
Truck	42.7	9.0	45.2	9.6	S	S	24.3
For-hire truck	45.0	4.5	47.6	5.4	S	S	14.2
Private truck	42.2	8.5	43.8	9.5	S	S	32.5
Rail	S	S	S	S	S	S	27.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	46.4	8.2	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	34.6
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	34.6
Other and unknown modes	S	S	S	S	S	S	44.3
SCTG 18, FUEL OILS							
Total	28.5	—	32.5	—	S	S	31.8
Single modes	28.6	7.4	32.9	7.5	S	S	31.7
Truck	29.3	9.7	33.4	11.6	31.4	19.6	15.6
For-hire truck	41.6	2.7	44.5	3.4	38.5	8.0	S
Private truck	29.3	9.5	30.1	10.4	34.3	13.1	11.2
Rail	S	S	S	S	S	S	31.6
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	S
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	S	S	S	S	S	S	42.9
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 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	39.1	—	34.9	—	48.5	—	20.8
Single modes	39.2	1.3	34.9	.1	48.5	—	19.4
Truck	24.5	12.4	27.0	13.1	S	S	19.3
For-hire truck	31.1	9.6	39.7	14.4	S	S	37.6
Private truck	33.5	8.4	42.7	12.9	35.1	10.0	23.7
Rail	S	S	S	S	S	S	43.5
Water	S	S	S	S	S	S	41.9
Shallow draft	S	S	S	S	S	S	41.9
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	S	S	S	S	S	S	S
Multiple modes	49.3	1.3	S	S	S	S	46.9
Parcel, U.S. Postal Service or courier	45.3	1.4	42.1	—	S	S	28.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	39.1	—	34.5	—	32.5	—	15.4
SCTG 20, BASIC CHEMICALS							
Total	19.8	—	S	S	S	S	24.0
Single modes	23.8	8.2	S	S	S	S	20.4
Truck	21.8	8.4	39.5	19.7	S	S	20.8
For-hire truck	28.8	9.0	42.4	14.8	S	S	14.7
Private truck	26.9	8.0	48.1	12.1	S	S	18.5
Rail	S	S	S	S	S	S	28.0
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	29.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	44.1	1.0	34.4	.1	S
Parcel, U.S. Postal Service or courier	S	S	46.9	.3	42.0	.1	S
Truck and rail	S	S	S	S	S	S	29.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	42.1	.7	47.0	4.5	S	S	41.2
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	9.1	—	11.2	—	31.2	—	21.0
Single modes	21.1	9.6	17.5	9.1	32.7	9.3	27.9
Truck	19.3	8.1	17.4	9.0	32.6	9.0	34.5
For-hire truck	25.6	9.5	22.1	9.5	30.7	10.5	17.8
Private truck	30.0	3.0	25.1	4.0	S	S	S
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	39.0	1.7	49.3	.3	S	S	13.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	22.2	9.6	28.7	8.4	41.6	7.2	22.6
Parcel, U.S. Postal Service or courier	22.2	9.6	28.7	8.4	41.6	7.2	22.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	37.1

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 22, FERTILIZERS							
Total	15.9	—	15.0	—	26.3	—	39.5
Single modes	15.9	1.1	15.3	1.5	27.3	2.5	40.5
Truck	15.9	1.8	15.0	2.1	27.2	3.4	41.0
For-hire truck	20.9	8.9	20.9	9.5	29.0	10.2	S
Private truck	22.7	8.4	23.6	8.8	46.6	9.7	32.9
Rail	S	S	S	S	S	S	25.9
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	40.3	1.1	44.2	1.5	S	S	S
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	16.6	—	19.4	—	25.8	—	15.4
Single modes	17.9	4.8	20.5	4.3	26.2	5.1	23.5
Truck	17.9	4.9	20.6	4.3	26.2	5.2	24.4
For-hire truck	17.5	6.4	29.1	9.5	29.6	9.4	23.1
Private truck	29.7	4.9	30.1	7.5	S	S	36.4
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	21.8
Pipeline	S	S	S	S	S	S	S
Multiple modes	42.6	2.1	31.5	.3	S	S	12.4
Parcel, U.S. Postal Service or courier	44.3	2.1	32.1	.3	29.4	.4	12.4
Truck and rail	S	S	S	S	S	S	28.5
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 24, PLASTICS AND RUBBER							
Total	7.3	—	10.4	—	12.0	—	12.0
Single modes	7.1	3.3	11.5	2.6	13.4	3.9	13.5
Truck	7.0	3.6	11.7	2.7	13.8	3.8	13.0
For-hire truck	10.4	4.9	18.2	6.5	16.6	5.5	18.5
Private truck	14.9	3.0	15.6	5.3	23.7	3.1	14.4
Rail	S	S	S	S	S	S	28.0
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	20.5	.1	15.5	—	17.5	—	8.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	24.4	3.6	29.4	1.6	36.5	3.2	7.6
Parcel, U.S. Postal Service or courier	24.4	3.6	29.4	1.6	36.5	3.2	7.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	45.7	2.4	41.0	2.5	S	S	28.8

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	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck	S	S	S	S	S	S	S
For-hire truck	34.1	12.7	S	S	S	S	S
Private truck	S	S	S	S	S	S	27.5
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	42.6
SCTG 26, WOOD PRODUCTS							
Total	16.6	-	13.2	-	24.5	-	22.6
Single modes	16.7	1.0	16.0	6.9	5.3	9.8	18.3
Truck	17.5	2.1	19.2	7.1	13.9	7.5	18.8
For-hire truck	26.8	8.0	23.9	6.2	15.2	5.5	17.5
Private truck	14.3	7.3	24.7	6.3	15.1	2.4	21.7
Rail	13.3	1.6	11.1	2.6	11.7	7.5	5.0
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	19.5
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	19.5
Truck and rail	S	S	S	S	S	S	28.7
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	37.0	.4	S	S	S	S	S
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	13.1	-	20.8	-	10.2	-	13.0
Single modes	12.4	2.4	21.6	2.1	7.8	3.1	14.0
Truck	19.5	5.6	31.9	6.4	14.2	6.6	7.6
For-hire truck	13.9	4.5	22.3	5.1	13.7	6.2	24.7
Private truck	36.2	4.6	S	S	41.9	.7	11.5
Rail	19.8	7.2	15.5	7.1	17.9	8.4	12.7
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	20.1
Pipeline	-	-	-	-	S	S	S
Multiple modes	34.7	2.2	48.4	1.6	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	48.9	2.3	S	S	S	S	20.4
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	34.9	1.2	S	S	17.0

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	15.1	—	16.2	—	18.8	—	21.7
Single modes	15.2	3.8	16.7	1.3	19.7	1.8	16.5
Truck	15.2	3.9	16.7	1.2	19.7	1.8	16.8
For-hire truck	18.7	6.2	16.6	4.9	22.4	3.8	12.0
Private truck	22.6	5.4	26.4	5.9	40.0	4.0	13.4
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	22.1
Pipeline	—	—	—	—	S	S	S
Multiple modes	44.5	4.1	31.4	.5	40.1	1.9	11.8
Parcel, U.S. Postal Service or courier	45.9	4.1	33.7	.5	38.5	1.7	11.8
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	45.6	.9	S	S	S	S	33.3
SCTG 29, PRINTED PRODUCTS							
Total	15.0	—	15.5	—	19.5	—	15.2
Single modes	14.0	3.8	15.8	1.1	21.8	1.9	32.6
Truck	12.3	4.4	15.6	1.1	22.0	2.0	39.2
For-hire truck	15.4	5.2	17.1	4.2	23.0	3.3	S
Private truck	18.0	3.6	20.0	4.1	21.9	1.7	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	41.9	.2	40.1	.7	1.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	28.0	4.5	17.3	.7	15.8	2.0	15.7
Parcel, U.S. Postal Service or courier	28.0	4.5	17.6	.7	15.7	2.0	15.7
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	36.0	2.0	28.2	1.0	S	S	S
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	15.9	—	28.0	—	28.4	—	7.0
Single modes	17.8	6.2	41.1	8.5	S	S	15.8
Truck	19.0	5.6	41.3	8.4	S	S	27.9
For-hire truck	25.0	5.0	49.6	6.9	S	S	19.3
Private truck	27.0	2.5	34.0	4.5	48.5	3.4	44.5
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	36.4	1.4	48.9	.4	46.1	1.5	17.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	21.3	6.0	30.7	9.4	32.6	10.4	7.3
Parcel, U.S. Postal Service or courier	21.3	6.0	30.7	9.4	32.6	10.4	7.3
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 31, NONMETALLIC MINERAL PRODUCTS							
Total	12.5	—	26.3	—	S	S	17.9
Single modes	12.3	3.3	20.9	4.7	12.2	16.3	29.1
Truck	12.3	3.4	20.9	4.7	12.2	16.3	13.2
For-hire truck	17.0	6.3	27.4	8.5	16.2	14.5	27.5
Private truck	14.1	6.0	33.2	9.1	S	S	21.5
Rail	S	S	S	S	S	S	28.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	40.4	—	45.4	S	27.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	44.5	3.3	44.1	1.0	S	S	18.8
Parcel, U.S. Postal Service or courier	40.4	1.5	S	S	S	S	18.9
Truck and rail	S	S	S	S	S	S	18.9
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	30.0
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	12.3	—	24.7	—	S	S	16.9
Single modes	12.1	1.5	25.1	.9	S	S	12.6
Truck	11.7	1.7	19.0	10.1	19.1	18.6	12.6
For-hire truck	11.5	4.3	22.9	6.8	24.3	12.4	15.8
Private truck	15.9	4.0	27.4	8.5	18.5	8.4	21.1
Rail	S	S	S	S	S	S	35.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	47.2	.1	S	S	S	S	11.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	24.1	—	31.1	.1	13.6
Parcel, U.S. Postal Service or courier	S	S	28.8	—	34.7	—	13.6
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	39.4	.4	S	S	S	S	27.8
SCTG 33, ARTICLES OF BASE METAL							
Total	9.8	—	18.6	—	28.2	—	14.4
Single modes	9.1	3.8	20.6	2.1	31.3	2.7	15.7
Truck	9.2	3.9	20.9	2.4	32.2	3.4	15.1
For-hire truck	11.9	4.0	20.0	5.5	31.7	4.9	14.4
Private truck	21.6	4.8	28.2	5.0	40.8	2.9	29.4
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	26.4	.2	S	S	S	S	6.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	30.5	4.0	33.2	1.7	36.5	2.7	11.7
Parcel, U.S. Postal Service or courier	31.0	4.0	34.1	1.7	39.2	2.4	11.7
Truck and rail	S	S	S	S	S	S	28.0
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	31.9	1.2	25.0	1.2	27.3	1.7	24.9

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	8.8	—	12.4	—	12.9	—	12.9
Single modes	12.0	5.6	15.2	4.0	15.6	4.5	11.2
Truck	13.5	5.5	16.3	4.9	16.5	6.1	16.6
For-hire truck	14.9	5.0	15.3	4.9	17.4	5.6	5.8
Private truck	19.5	3.1	30.0	4.7	21.3	1.3	19.4
Rail	S	S	S	S	S	S	29.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	37.0	1.4	44.7	.9	43.0	1.1	5.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	27.9	5.1	28.5	3.6	28.1	4.0	15.4
Parcel, U.S. Postal Service or courier	27.9	5.0	31.7	2.9	32.5	3.1	15.5
Truck and rail	S	S	S	S	S	S	25.8
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	28.0	.8	21.4	.5	33.2	.8	25.0
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	11.4	—	15.1	—	15.4	—	5.7
Single modes	20.2	5.1	17.8	4.0	20.0	5.1	20.3
Truck	22.9	5.3	18.2	4.5	21.6	6.1	35.1
For-hire truck	14.0	3.8	20.2	6.9	23.5	7.2	17.0
Private truck	26.9	2.7	41.8	7.5	21.2	1.8	S
Rail	S	S	S	S	S	S	31.3
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	19.3	1.3	13.5	.6	14.3	1.2	5.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	9.5	5.3	17.7	4.4	17.4	5.0	3.4
Parcel, U.S. Postal Service or courier	9.5	5.3	17.1	4.4	17.6	5.1	3.4
Truck and rail	S	S	S	S	S	S	39.7
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	21.8	.6	24.3	1.0	22.4	.4	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	17.7	—	11.8	—	25.1	—	14.9
Single modes	17.8	7.5	14.8	8.2	24.3	11.6	15.4
Truck	17.7	7.5	15.2	8.2	25.2	10.9	16.5
For-hire truck	24.0	6.1	19.6	6.3	31.0	9.0	22.1
Private truck	18.8	6.7	24.6	7.4	22.7	4.4	20.9
Rail	S	S	S	S	S	S	30.3
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	42.0	—	37.3	—	35.9	—	18.1
Pipeline	—	—	—	—	S	S	S
Multiple modes	38.4	8.1	41.4	8.8	45.9	12.9	10.9
Parcel, U.S. Postal Service or courier	23.6	3.2	41.7	2.6	S	S	11.1
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	44.5	2.9	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 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	23.9	—	21.5	—	20.7	—	10.7
Single modes	26.8	5.3	23.7	6.3	22.6	6.9	10.0
Truck	29.7	6.8	23.8	6.8	22.9	7.4	12.0
For-hire truck	33.3	7.5	47.5	10.8	46.7	11.1	13.6
Private truck	39.7	11.0	28.2	13.0	30.6	13.6	25.3
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	44.9	5.1	S	S	44.3	2.3	21.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	39.6	3.0	26.8	2.0	38.7	2.2	21.4
Parcel, U.S. Postal Service or courier	39.6	3.0	26.8	2.0	38.7	2.2	21.4
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	29.6
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	10.9	—	33.4	—	29.9	—	7.7
Single modes	15.2	5.5	44.0	7.3	33.3	8.0	14.5
Truck	18.1	4.6	44.7	7.0	33.4	6.7	S
For-hire truck	26.7	2.7	42.3	6.9	37.9	7.0	18.7
Private truck	30.1	3.7	S	S	40.9	.7	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	15.2	1.5	38.0	1.3	35.0	2.2	4.1
Pipeline	—	—	—	—	S	S	S
Multiple modes	17.6	5.3	42.7	7.1	S	S	9.6
Parcel, U.S. Postal Service or courier	17.6	5.3	42.7	7.1	S	S	9.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	41.2	1.0	39.9	1.2	43.5	1.4	27.0
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	11.0	—	12.2	—	18.9	—	8.2
Single modes	15.1	4.6	12.8	5.9	14.4	7.2	16.9
Truck	15.0	4.6	12.6	5.7	14.3	7.0	13.4
For-hire truck	16.1	4.8	14.3	5.9	15.1	7.8	10.0
Private truck	21.1	4.9	20.8	4.5	33.5	1.5	44.6
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	18.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	18.1	4.6	25.3	5.9	30.5	7.3	8.4
Parcel, U.S. Postal Service or courier	18.3	4.7	25.4	6.0	29.5	7.1	8.4
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	30.4
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	28.7	.3	26.8	.1	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 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	6.8	—	19.9	—	9.2	—	4.6
Single modes	7.6	2.5	24.6	3.9	14.3	5.1	19.7
Truck	7.6	2.2	24.8	3.9	14.5	4.8	25.8
For-hire truck	10.3	3.2	10.9	5.9	12.8	4.1	11.1
Private truck	20.2	2.4	45.0	8.4	38.8	2.4	34.6
Rail	S	S	S	S	S	S	30.0
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	16.3	.5	19.6	.3	24.3	.6	6.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	11.6	2.9	17.8	2.1	13.6	4.6	5.1
Parcel, U.S. Postal Service or courier	12.4	3.2	18.7	2.1	15.1	3.9	5.1
Truck and rail	S	S	S	S	S	S	26.7
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	19.8	1.4	25.3	2.6	S	S	29.4
SCTG 41, WASTE AND SCRAP							
Total	35.7	—	45.5	—	44.2	—	48.1
Single modes	36.9	9.5	45.6	1.6	44.6	4.8	40.8
Truck	36.6	9.0	S	S	S	S	42.2
For-hire truck	43.9	9.8	S	S	S	S	19.7
Private truck	41.9	10.3	S	S	S	S	31.1
Rail	49.7	6.1	S	S	S	S	11.2
Water	S	S	S	S	S	S	29.8
Shallow draft	S	S	S	S	S	S	29.8
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	31.1
SCTG 43, MIXED FREIGHT							
Total	19.4	—	S	S	S	S	27.7
Single modes	20.5	2.2	S	S	S	S	47.4
Truck	20.3	2.1	S	S	S	S	43.8
For-hire truck	31.1	9.1	S	S	S	S	21.8
Private truck	23.5	8.2	25.3	18.4	22.3	16.9	32.4
Rail	S	S	S	S	S	S	41.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	29.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	42.1	2.3	39.2	.7	43.0	4.2	21.7
Parcel, U.S. Postal Service or courier	42.1	2.3	39.2	.7	43.0	4.2	21.7
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	29.8

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	31.9	—	36.4	—	S	S	24.6
Single modes	33.1	8.0	36.7	1.1	S	S	S
Truck	33.1	7.9	37.5	1.9	S	S	S
For-hire truck	33.2	10.6	S	S	S	S	S
Private truck	42.6	8.8	33.4	12.1	S	S	41.6
Rail	—	—	—	—	—	—	—
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	29.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	36.7	7.9	46.6	.8	S	S	20.0
Parcel, U.S. Postal Service or courier	36.8	7.9	46.8	.8	S	S	20.0
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	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-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	4.3	—	8.9	—	13.1	—
NEW ENGLAND STATES						
Connecticut	15.3	—	32.9	—	31.6	—
Maine	38.4	.1	S	S	S	S
Massachusetts	10.5	.1	14.9	—	15.4	.1
New Hampshire	20.5	—	22.9	—	23.4	—
Rhode Island	S	S	S	S	S	S
Vermont	30.1	—	21.1	—	20.9	—
MIDDLE ATLANTIC STATES						
New Jersey	S	S	21.1	—	25.1	.1
New York	8.5	.2	12.7	—	14.5	.2
Pennsylvania	7.8	.2	38.5	.8	38.5	1.8
EAST NORTH CENTRAL STATES						
Illinois	12.9	.5	41.4	1.4	S	S
Indiana	10.4	.1	26.9	1.5	28.1	3.4
Michigan	8.3	.2	S	S	S	S
Ohio	9.0	.2	21.8	.9	21.8	1.7
Wisconsin	8.3	.4	27.3	1.0	23.4	.3
WEST NORTH CENTRAL STATES						
Iowa	8.3	.3	23.2	.6	32.3	.8
Kansas	21.7	.1	15.2	—	15.8	—
Minnesota	4.2	1.1	7.4	3.1	13.1	1.0
Missouri	12.1	.1	S	S	S	S
Nebraska	10.5	.1	40.6	.4	43.7	.3
North Dakota	14.0	.2	22.2	.7	31.4	.3
South Dakota	11.1	.1	S	S	22.1	.1
SOUTH ATLANTIC STATES						
Delaware	30.5	—	47.8	—	46.8	—
District of Columbia	39.3	—	42.6	—	42.4	—
Florida	15.2	.2	37.4	—	37.7	.2
Georgia	13.1	.1	23.3	—	23.7	.2
Maryland	14.9	.1	23.8	—	23.6	—
North Carolina	13.5	.2	S	S	S	S
South Carolina	8.4	—	19.5	—	21.1	—
Virginia	7.4	—	S	S	S	S
West Virginia	17.6	—	40.1	—	39.4	—
EAST SOUTH CENTRAL STATES						
Alabama	25.7	—	47.3	—	49.7	.2
Kentucky	19.2	.2	S	S	S	.6
Mississippi	22.8	—	S	S	S	.6
Tennessee	9.3	.1	34.7	.2	34.9	.3
WEST SOUTH CENTRAL STATES						
Arkansas	17.7	—	36.7	—	37.7	.2
Louisiana	24.7	.4	31.2	1.3	32.3	4.6
Oklahoma	29.3	.1	36.3	—	35.0	—
Texas	9.3	.3	27.6	.2	26.8	.4
MOUNTAIN STATES						
Arizona	9.9	—	34.1	—	32.8	.2
Colorado	13.0	—	S	S	S	S
Idaho	28.9	—	16.7	—	16.7	—
Montana	13.4	—	37.1	—	35.4	—
Nevada	18.1	—	S	S	S	S
New Mexico	24.9	—	28.4	—	27.8	—
Utah	20.7	.1	39.7	.6	39.3	2.3
Wyoming	27.0	—	45.2	—	42.4	—
PACIFIC STATES						
Alaska	30.7	—	39.4	—	S	S
California	9.5	.4	15.9	.1	15.3	.8
Hawaii	29.7	—	46.7	—	46.5	—
Oregon	16.2	—	S	S	S	S
Washington	15.5	.3	24.1	.5	24.3	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.

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	3.1	-	6.7	-	10.2	-
NEW ENGLAND STATES						
Connecticut	22.8	.1	S	S	S	S
Maine	21.4	-	26.9	-	26.2	.1
Massachusetts	12.9	.1	17.3	-	17.4	-
New Hampshire	21.9	-	22.2	-	23.1	-
Rhode Island	45.0	-	S	S	S	S
Vermont	45.3	-	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	23.3	.4	17.5	-	17.3	-
New York	8.2	.1	24.3	-	24.7	.5
Pennsylvania	11.6	.2	12.4	-	13.1	.1
EAST NORTH CENTRAL STATES						
Illinois	7.6	.4	15.6	.4	16.0	.9
Indiana	10.5	.2	12.4	.1	14.1	.3
Michigan	11.9	.3	26.4	.5	25.7	1.2
Ohio	11.3	.3	S	S	S	S
Wisconsin	7.8	.4	14.5	.5	11.5	.3
WEST NORTH CENTRAL STATES						
Iowa	9.0	.2	10.7	.4	12.6	.4
Kansas	15.8	.1	37.0	.2	43.7	.8
Minnesota	4.2	1.2	7.4	2.5	13.1	2.0
Missouri	13.6	.2	27.5	.2	26.5	.4
Nebraska	12.7	.1	13.2	-	13.0	-
North Dakota	19.0	.5	25.7	1.8	31.2	2.7
South Dakota	32.2	.5	25.6	.4	24.6	.2
SOUTH ATLANTIC STATES						
Delaware	35.7	-	S	S	S	S
District of Columbia	S	S	S	S	S	S
Florida	24.8	.2	32.2	-	32.5	.6
Georgia	17.2	.2	23.3	.1	25.2	.9
Maryland	19.5	-	40.0	-	39.0	-
North Carolina	9.7	.1	11.9	-	12.2	.2
South Carolina	15.4	-	15.5	-	16.1	-
Virginia	14.0	-	19.0	-	19.5	-
West Virginia	30.9	-	23.3	-	21.8	-
EAST SOUTH CENTRAL STATES						
Alabama	14.3	-	17.3	-	17.9	.1
Kentucky	29.8	.3	13.6	-	16.8	.1
Mississippi	44.3	.2	22.5	-	21.7	-
Tennessee	9.5	-	S	S	S	S
WEST SOUTH CENTRAL STATES						
Arkansas	15.7	-	31.8	-	28.3	.2
Louisiana	19.4	-	26.4	.1	28.2	.7
Oklahoma	26.3	.1	27.6	-	28.0	.2
Texas	31.9	1.0	7.6	-	7.4	.4
MOUNTAIN STATES						
Arizona	17.0	-	24.7	-	24.9	-
Colorado	13.3	-	34.3	-	35.5	.1
Idaho	S	S	20.2	-	21.7	-
Montana	23.5	-	S	S	S	S
Nevada	27.5	-	36.0	-	36.6	-
New Mexico	27.5	S	49.6	-	S	S
Utah	22.0	-	38.0	-	41.3	-
Wyoming	20.0	-	36.6	1.4	37.9	5.5
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	8.3	.5	31.1	.1	31.5	.6
Hawaii	40.9	-	S	S	S	S
Oregon	18.2	-	17.7	-	17.9	.2
Washington	24.0	.2	20.2	-	21.6	.2

- Represents data cell equal to zero or less than 1 unit of measure.
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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 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 <i>Instruction Guide for a definition of "shipment."</i>
--	---

DO NOT PROCEED UNTIL YOU HAVE COMPLETED ITEM D.

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

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

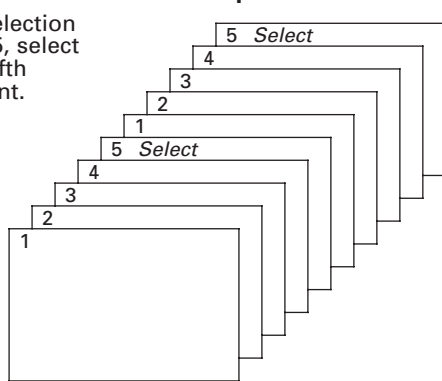
4 — Railroad
Continued →

SELECTING YOUR SAMPLE OF SHIPMENTS

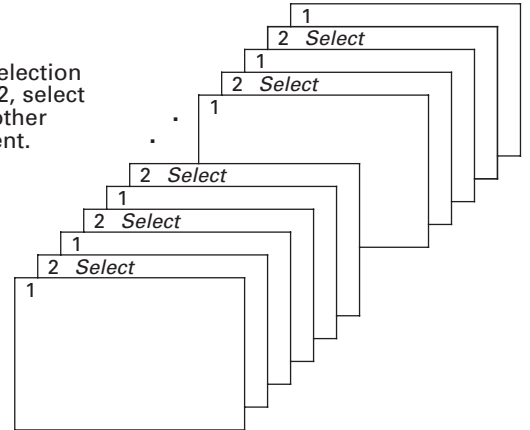
1. Use the file or combination of files that best reflects your full range of outbound shipping activities.
2. Begin with the first shipment. Count the shipments until you reach your selection rate. Select this shipment to report on in item F.
3. Continue counting with the next shipment. Count this shipment 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 <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 <i>(for export shipments only)</i> 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 7 — Pipeline 9 — Other mode
 6 — Deep draft vessel 8 — Air 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 <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 <i>(for export shipments only)</i>		Export mode	Line No.
	(j)					(m)			
(i)	City	State	ZIP Code	(k)	(l)	City	Country	(n)	(o)
									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 — <i>Please print</i>	Telephone number — <i>Include area code</i>	Date
Signature	Title	

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.
	(j)					(m)			
(i)	City	State	ZIP Code	(k)	(l)	City	Country	(n)	(o)
									35
									36
									37
									38
									39
									40

5 — Shallow draft vessel
6 — Deep draft vessel

7 — Pipeline
8 — Air

9 — Other mode
0 — Unknown

Remarks

THANK YOU FOR COMPLETING YOUR REPORT

**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)

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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 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. <i>Please see Instruction Guide for a definition of "shipment."</i>
--	---

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

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

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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

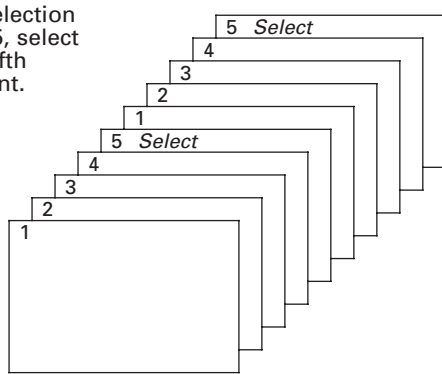
4 — Railroad
Continued →

SELECTING YOUR SAMPLE OF SHIPMENTS

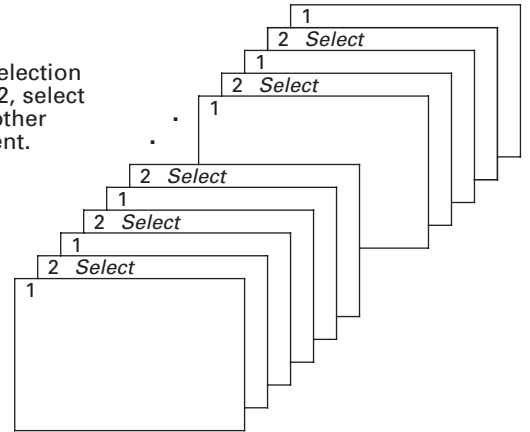
1. Use the file or combination of files that best reflects your full range of outbound shipping activities.
2. Begin with the first shipment. Count the shipments until you reach your selection rate. Select this shipment to report on in item F.
3. Continue counting with the next shipment. Count this shipment 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 <i>(for export shipments only)</i> 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	CA	9 0 0 4 0	2, 4, 3	N				0
N	New York	NY	1 0 4 5 4	5	Y	London	England	6	00
									1
									2
									3
									4
									5
									6
									7
									8
									9

5 — Shallow draft vessel 7 — Pipeline 9 — Other mode
 6 — Deep draft vessel 8 — Air 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								
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19								
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21								
22								
23								
24								
25								
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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 <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 <i>(for export shipments only)</i> Note: In column (j) enter the U.S. port, airport, or border crossing of exit.		Export mode (n)	Line No. (o)
	(j)					(m)			
(i)	City	State	ZIP Code	(k)	(l)	City	Country	(n)	(o)
									10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20
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									23
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									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

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.
	(j)					(m)			
(i)	City	State	ZIP Code	(k)	(l)	City	Country	(n)	(o)
									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.

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.	Shipment ID Number	Shipment date		Shipment value (excluding shipping costs) in whole dollars	Shipment weight in pounds	Commodity code from SCTG Manual	Commodity description
		Month	Day				
(a)	(b)	(c)	(c)	(d)	(e)	(f)	(g)
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 →
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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 <i>Enter all that apply using codes shown below.</i> (k)
		City	State	ZIP Code	
	N	Los Angeles	C A	9 | 0 | 0 | 4 | 0	2, 4, 3
| | | |	N	New York	N Y	1 | 0 | 4 | 5 | 4	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)	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.
	(m)			
(l)	City	Country	(n)	(o)
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.

