

Oregon: 2002

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EC02TCF-OR

2002 Economic Census

Transportation

2002 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 to 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

All results of the 2002 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs and digital versatile discs (CD-ROMs and DVD-ROMs) for sale by the Census Bureau. The American FactFinder system at the Web site allows selective retrieval and downloading of the data. For more information, including a description of reports being issued, see the Web site, write to the U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-763-4636.

HISTORICAL INFORMATION

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

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 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 service trades in 1933.

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

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

The range of industries covered in the economic censuses expanded between 1967 and 2002. 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. New for 2002 is coverage of four industries classified in the Agriculture, Forestry, and Fishing sector under the SIC system: landscape agricultural services, landscaping services, veterinary services, and pet care services.

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

SOURCES FOR MORE INFORMATION

More information about 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 2002 Economic Census at www.census.gov/epcd/ec02/guide.html. More information on the methodology, procedures, and history of the censuses will be published in the History of the 2002 Economic Census at www.census.gov/econ/www/history.html.

2002 Commodity Flow Survey

GENERAL

The 2002 Commodity Flow Survey (CFS) is undertaken through a partnership between the U.S. Census Bureau, U.S. Department of Commerce, and the Bureau of Transportation Statistics (BTS), U.S. Department of Transportation. This survey produces data on the movement of goods in the United States. It provides information on commodities shipped, their value, weight, and mode of transportation, as well as the origin and destination of shipments of manufacturing, mining, wholesale, and select retail establishments. 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. The CFS was last conducted in 1997.

This report contains background information on the 2002 Commodity Flow Survey and then presents detailed tabular results on shipment characteristics by mode of transportation, commodity, distance shipped, and shipment weight. In Appendix A, key characteristics of the 2002 CFS are compared to those of the 1993 and 1997 surveys. Appendix B focuses on the reliability of the estimates and discusses sampling and nonsampling errors. Tables containing estimates of sampling variability corresponding to each table on shipment characteristics are also included in Appendix B.

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 2002 CFS covers business establishments with paid employees that are located in the United States and are classified using the 1997 North American Industry Classification System (NAICS) in mining, manufacturing, wholesale trade, and select retail trade industries, namely, electronic shopping and mail-order houses. Establishments classified in services, transportation, construction, and most retail industries are excluded from the survey. Farms, fisheries, foreign establishments, and most government-owned establishments are also excluded.

The survey also covers auxiliary establishments (i.e., warehouses and managing offices) of multi-establishment companies, which have nonauxiliary establishments that are in-scope to the CFS or are classified in retail trade. The coverage of managing offices has been expanded in the 2002 CFS, compared to the 1997 CFS. For the 1997 CFS, the number of in-scope managing offices was reduced to a large extent based on the results of the 1992 Economic Census. A managing office was considered in-scope to the 1997 CFS only if it had sales or end-of-year inventories in the 1992 Census. However, research conducted prior to the 2002 CFS showed that not all managing offices with shipping activity in the 1997 CFS indicated sales or inventories in the 1997 Economic Census. Therefore, the 1997 Economic Census results were not used in the determination of scope for managing offices in the 2002 CFS.

For the 1993 CFS and the 1997 CFS, establishments were classified based on the 1987 Standard Industrial Classification System (SIC). Though an attempt was made to maintain similar coverage between the 1997 CFS and the 2002 CFS, there were some changes in industry coverage due to the conversion from SIC to NAICS. Most notably, coverage of the logging industry changed from an in-scope Manufacturing SIC code (SIC 2411) to an out-of-scope Agriculture, Forestry, Fishing, and Hunting NAICS code (NAICS 1133). Also, coverage of the publishing industry changed from in-scope Manufacturing SIC codes (SIC 2711, 2721, 2731, 2741, and part of 2771) to out-of-scope Information NAICS codes (NAICS 5111 and 51223).

See Appendix A for a comparison between the 2002, 1997, and 1993 surveys. Also see Appendix C for a more detailed discussion on industry coverage and the sample design. The NAICS industries covered in the 2002 CFS are listed in the following table:

NAICS code	Description
212	Mining (Except Oil and Gas)
311	Food Manufacturing
312	Beverage and Tobacco Product Manufacturing
313	Textile Mills
314	Textile Product Mills
315	Apparel Manufacturing
316	Leather and Allied Product Manufacturing
321	Wood Product Manufacturing
322	Paper Manufacturing
323	Printing and Related Support Activities
324	Petroleum and Coal Products Manufacturing
325	Chemical Manufacturing
326	Plastics and Rubber Products Manufacturing
327	Nonmetallic Mineral Product Manufacturing
331	Primary Metal Manufacturing
332	Fabricated Metal Product Manufacturing
333	Machinery Manufacturing
334	Computer and Electronic Product Manufacturing
335	Electrical Equipment, Appliance, and Component Manufacturing
336	Transportation Equipment Manufacturing
337	Furniture and Related Product Manufacturing
339	Miscellaneous Manufacturing
421	Wholesale Trade, Durable Goods
422	Wholesale Trade, Nondurable Goods
4541	Electronic Shopping and Mail-Order Houses
49310	Warehousing and Storage
551114	Corporate, Subsidiary, and Regional Managing Offices

SHIPMENT COVERAGE

The CFS captures data on shipments originating from select types of business establishments located in the 50 states and the District of Columbia. The 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 U.S. port, airport, or border crossing of exit from the U.S.

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

MILEAGE CALCULATIONS

To estimate the distance traveled by each freight shipment sampled for the 2002 Commodity Flow Survey, the BTS Mileage Calculation Team used routing algorithms and an integrated, intermodal transportation network developed and updated expressly for this purpose by the Oak Ridge

National Laboratory (ORNL). The BTS Team worked at a secure data site within the Census Bureau. Each record contained the ZIP Code shipment origin and destination, and the mode or modal sequence required by the routing algorithm for distance estimation. Each record also contained information on type of commodity moved, its weight, dollar value, and hazardous materials status. For export shipments, data on the U.S. port of exit were also identified, along with foreign destination city and country. Processing of shipment records began in the fall of 2002, with completion in October 2003.

One essential exercise was editing and imputing both absent and invalid geographic data elements, specifically origin and destination ZIP Codes, prior to estimating the distance traveled for each freight shipment. For this purpose, the BTS Mileage Calculation Team developed and maintained databases of domestic city/state names and foreign city/country names. The missing data elements, along with other related data problems found by the BTS Team, were either: (1) imputed because of high probability of accurate correction by the BTS Team, such as imputing a missing destination ZIP Code, given a destination city and state; or (2) reported back to the Census Bureau, allowing for call-backs to shippers for clarification/correction.

For a domestic shipment, the mileage is calculated between the center of the geographic area (centroid) of the U.S. origin ZIP Code and the centroid of the destination ZIP Code. The mileage for the shipments within a ZIP Code is calculated by means of a formula that approximates the longest distance within the boundaries of that ZIP Code. The mileage for an export shipment is calculated between a shipment's centroid of U.S. origin ZIP Code and its foreign destination country (city in the case of Canada and Mexico), via a U.S. port of exit (POE), be it seaport, airport, or border crossing. However, only the portion of mileage that falls within the U.S. is included in the CFS estimates. That is to say, once the export reaches the POE, the POE is considered the final domestic destination, the domestic route is finished, and any following mileage is not counted from the POE. These mileages are computed using routing algorithms that find the minimum impedance path over mathematical representations of the U.S. and North American highway, railway and waterway networks, and a transglobal representation of U.S. originating air freight and deep-sea transport networks. Shipment mileages were estimated for each record by summing over the distances of links contained within each minimum impedance path. Impedance was computed as a weighted combination of distance, time, and cost factors.

The ORNL multimodal network database is composed of mode-specific subnetworks representing each of the major transportation modes, such as highway, railway, waterway, and airway (pipeline network was not available due to security reasons). The links of these networks represent line-haul transportation facilities. Network nodes represent intersections and interchanges, along with 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 to connect 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 links characterizing the highway network included speed impacting factors, such as the presence of a divided or undivided roadway, the degree of access control, the rural or urban setting, the number of lanes, the degree of urban congestion, and the length of the link. Link impedance measures were also assigned to the local access links. Intermodal transfer link impedances are estimated in terms of the time it takes to move goods through a transfer facility. In the case of rail and air freight, intercarrier transfer penalties were also considered to obtain proper route selections. A shortest 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 distances used in CFS mileage computations. When rail and air freight were involved, these shipment distances were often averaged over more than one path between an origin-destination pair.

Mileage Data for Pipeline Shipments

For pipeline shipments, ton-miles and average miles per shipment are not shown in the tables. For most of these shipments, the respondents reported the shipment destination as a pipeline facility on the main pipeline network. Therefore, for the majority of these shipments, the resulting mileage represented only the access distance through feeder pipelines to the main pipeline network, and not the actual distance through the main pipeline network. Pipeline shipments are included in the U.S. totals for ton-miles and average miles per shipment.

For security purposes, there is no pipeline network available in the public domain with which to route petroleum-based products. Hence, any modal distance, either single or multi, involving pipeline was considered as solely pipeline mileage from origin ZIP to destination ZIP and calculated to equal great circle distance (GCD). Note: Great circle distance is defined as the shortest distance between two points on the earth's surface, taking into account the earth's curvature.

EXPLANATION OF TERMS

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.

The total value of shipments, as measured by the CFS, and the U.S. gross domestic product (GDP) while similar in size provide different measures of economic activity in the United States and are not directly comparable. GDP is the value of all goods produced and services performed by labor and capital located in the United States. In 2002, the U.S. GDP was estimated at \$10.4 trillion (measured in current U.S. dollars). The value of shipments, as measured by the CFS, is the market value of goods shipped from manufacturing, mining, wholesale, and mail order retail establishments, as well as warehouses and managing offices of multiunit establishments.

Three important differences can be identified between GDP and value of shipments:

1. GDP captures goods produced by all establishments located in the United States, while the CFS measures goods shipped from a subset of all goods-producing establishments.
2. GDP measures the value of goods produced and of services performed. CFS measures the value of goods shipped.
3. GDP counts only the value-added at each step in the production of a product. CFS captures the value of shipments of materials used to produce or manufacture a product, as well as the value of shipments of the finished product itself. This means that the value of the materials used to produce a particular product contributes multiple times to the value.

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 Standard Classification of Transported Goods (SCTG) code for the major commodity contained in the shipment, defined as the commodity with the greatest weight in the total shipment.

Average miles per shipment. For the 1993 CFS, we excluded shipments of Standard Transportation Commodity Classification (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 and 2002 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 estimates for 1997 and 2002.

Distance shipped. In Table 3, 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. (See the “Mileage Calculations” section for more details.)

Great circle distance. The shortest distance between two points on the surface of a sphere over the surface of that sphere.

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 that carry letters, 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 Intra-coastal 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.** 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

In addition, Parcel, U.S. Postal Service, or Courier shipments are considered multiple modes because this category includes all parcel shipments whether on the ground or via air tendered

to a parcel or express carrier. In defining this mode, we did not combine these shipments with any other reported mode because by their nature, Parcel, U.S. Postal Service or Courier are already multimodal. For example, if the respondent reported a shipment's mode of transportation as "parcel" and "air," we treated the shipment as parcel only. Also in the CFS reports, the "Truck and Rail" and "Rail and Water" combinations included under "Multiple Modes" may not reflect all the movement of trailers or containers by rail and at least one other mode of transportation. Since the shipper may not always know the modal combinations used to transport the goods, some shipments moving by more than one mode may be reported as a single mode shipment. This may result in underestimation of multimodal shipments in the CFS.

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." (Note: By definition, "shallow draft," "Great Lakes," and "deep draft" are mutually exclusive.)
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.

Other Definitions and Terms

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

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 Commodity Description and Coding System (Harmonized System) to address statistical needs in regard to products transported. See Appendix D for more details.

Ton-miles. The shipment weight multiplied by the mileage traveled by the shipment. The respondents reported shipment weight in pounds. Aggregated pound-miles were converted to ton-miles. 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). For trucks making multiple stops, the ton-miles are calculated for each delivery, and each drop-off point is treated as a final destination. Ton-miles estimates 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). For freight shipped to distribution centers for subsequent reshipment, the tonnage is counted each time the goods are transported.

Total modal activity (Table 2 only). 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.)

ABBREVIATIONS AND SYMBOLS

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

–	Represents an estimate equal to zero or less than 1 unit of measure.
D	Denotes estimates withheld to avoid disclosing data of individual companies.
S	Estimate does not meet publication standards because of high sampling variability or poor response quality.
CFS	Commodity Flow Survey.
lb	Pounds.
n.e.c.	Not elsewhere classified.
NA	Not applicable.

OTHER TRANSPORTATION DATA

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

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 2002 and 1997 for most characteristics.

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

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 301-763-INFO (4636).

Table 1a. Shipment Characteristics by Mode of Transportation for State of Origin: 2002

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

Mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Total	102 600	100.0	158 053	100.0	48 620	100.0	1 015
Single modes	86 420	84.2	151 528	95.9	44 383	91.3	487
Truck ²	73 655	71.8	132 229	83.7	18 403	37.9	197
For-hire truck	43 164	42.1	50 583	32.0	14 998	30.8	740
Private truck	30 267	29.5	81 127	51.3	3 331	6.9	51
Rail	5 272	5.1	17 197	10.9	25 202	51.8	1 572
Water	S	S	1 626	1.0	158	.3	679
Shallow draft	S	S	1 622	1.0	148	.3	69
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	2 411
Air (includes truck and air)	7 075	6.9	S	S	S	S	2 233
Pipeline ³	61	—	255	.2	S	S	S
Multiple modes	11 422	11.1	1 912	1.2	3 643	7.5	1 674
Parcel, U.S. Postal Service or courier	10 352	10.1	264	.2	375	.8	1 674
Truck and rail	671	.7	991	.6	1 776	3.7	2 522
Truck and water	387	.4	S	S	S	S	2 456
Rail and water	S	S	S	S	S	S	2 667
Other multiple modes	S	S	S	S	S	S	66
Other and unknown modes	4 757	4.6	4 612	2.9	594	1.2	S

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

²"Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private truck and for-hire truck.

³Estimates for pipeline exclude shipments of crude petroleum.

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Table 1b. Shipment Characteristics by Mode of Transportation for State of Origin: Percent of Total for 2002 and 1997

[Estimates are based on data from the 2002 and 1997 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Mode of transportation	Value (percent)		Tons (percent)		Ton-miles ¹ (percent)	
	2002	1997	2002	1997	2002	1997
Total	100.0	100.0	100.0	100.0	100.0	100.0
Single modes	84.2	81.9	95.9	85.1	91.3	85.5
Truck ²	71.8	72.3	83.7	67.6	37.9	47.2
For-hire truck	42.1	35.6	32.0	23.9	30.8	33.6
Private truck	29.5	36.3	51.3	43.3	6.9	13.4
Rail	5.1	4.6	10.9	6.4	51.8	32.2
Water	S	2.3	1.0	11.0	.3	5.8
Shallow draft	S	1.7	1.0	9.1	.3	S
Great Lakes	—	—	—	—	—	—
Deep draft	S	.6	S	1.9	S	S
Air (includes truck and air)	6.9	2.7	S	—	S	.3
Pipeline ³	—	S	.2	S	S	S
Multiple modes	11.1	12.2	1.2	2.1	7.5	5.9
Parcel, U.S. Postal Service or courier	10.1	9.2	.2	.2	.8	.6
Truck and rail	.7	S	.6	.7	3.7	3.1
Truck and water	.4	S	S	.3	S	1.7
Rail and water	S	S	S	S	S	S
Other multiple modes	S	S	S	S	S	.4
Other and unknown modes	4.6	5.8	2.9	12.9	1.2	8.6

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

²"Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private truck and for-hire truck.

³Estimates for pipeline exclude shipments of crude petroleum.

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Table 2. Shipment Characteristics by Total Modal Activity for State of Origin: 2002

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

Mode of transportation ¹	Ton-miles ²		Average miles per shipment
	2002 (millions)	Percent	
Total	48 620	100.0	1 015
Truck	18 403	37.9	197
Rail	25 202	51.8	1 572
Shallow draft	148	.3	69
Great Lakes	—	—	—
Deep draft	S	S	2 411
Air	S	S	2 233
Parcel, U.S. Postal Service or courier	1	—	284
Pipeline ³	S	S	S
Other and unknown modes	594	1.2	S

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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

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

³Estimates exclude shipments of crude petroleum (SCTG 16).

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Table 3. Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 2002

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

Mode of transportation and distance shipped ¹ (based on Great Circle Distance)	Value		Tons		Ton-miles ²	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Total	102 600	100.0	158 053	100.0	48 620	100.0
Less than 50 miles	32 919	32.1	106 753	67.5	1 519	3.1
50 to 99 miles	4 722	4.6	7 238	4.6	656	1.3
100 to 249 miles	17 701	17.3	15 488	9.8	3 021	6.2
250 to 499 miles	8 404	8.2	7 016	4.4	3 630	7.5
500 to 749 miles	6 223	6.1	4 573	2.9	4 029	8.3
750 to 999 miles	S	S	4 878	3.1	5 523	11.4
1,000 to 1,499 miles	2 543	2.5	2 008	1.3	3 587	7.4
1,500 to 1,999 miles	7 916	7.7	5 356	3.4	12 360	25.4
2,000 miles or more	10 841	10.6	4 743	3.0	14 296	29.4
Single modes	86 420	100.0	151 528	100.0	44 383	100.0
Less than 50 miles	28 387	32.8	102 849	67.9	1 487	3.4
50 to 99 miles	4 181	4.8	7 181	4.7	651	1.5
100 to 249 miles	15 721	18.2	15 195	10.0	2 962	6.7
250 to 499 miles	7 221	8.4	6 514	4.3	3 393	7.6
500 to 749 miles	5 024	5.8	4 344	2.9	3 823	8.6
750 to 999 miles	S	S	4 587	3.0	5 178	11.7
1,000 to 1,499 miles	1 812	2.1	1 927	1.3	3 440	7.7
1,500 to 1,999 miles	5 966	6.9	5 020	3.3	11 576	26.1
2,000 miles or more	7 757	9.0	3 911	2.6	11 872	26.7
Truck³	73 655	100.0	132 229	100.0	18 403	100.0
Less than 50 miles	27 881	37.9	99 054	74.9	1 329	7.2
50 to 99 miles	4 160	5.6	7 108	5.4	640	3.5
100 to 249 miles	14 991	20.4	13 785	10.4	2 667	14.5
250 to 499 miles	6 285	8.5	4 445	3.4	2 048	11.1
500 to 749 miles	2 860	3.9	2 128	1.6	1 631	8.9
750 to 999 miles	S	S	2 322	1.8	2 347	12.8
1,000 to 1,499 miles	1 323	1.8	690	.5	1 099	6.0
1,500 to 1,999 miles	4 260	5.8	1 511	1.1	3 240	17.6
2,000 miles or more	3 758	5.1	1 186	.9	3 401	18.5
For-hire truck	43 164	100.0	50 583	100.0	14 998	100.0
Less than 50 miles	S	S	27 383	54.1	422	2.8
50 to 99 miles	1 569	3.6	3 454	6.8	312	2.1
100 to 249 miles	7 229	16.7	9 438	18.7	1 841	12.3
250 to 499 miles	4 429	10.3	3 156	6.2	1 478	9.9
500 to 749 miles	2 399	5.6	1 835	3.6	1 404	9.4
750 to 999 miles	S	S	2 120	4.2	2 149	14.3
1,000 to 1,499 miles	1 235	2.9	601	1.2	951	6.3
1,500 to 1,999 miles	4 158	9.6	1 428	2.8	3 094	20.6
2,000 miles or more	3 704	8.6	1 169	2.3	3 349	22.3
Private truck	30 267	100.0	81 127	100.0	3 331	100.0
Less than 50 miles	17 282	57.1	71 240	87.8	880	26.4
50 to 99 miles	2 589	8.6	3 653	4.5	328	9.8
100 to 249 miles	7 742	25.6	4 339	5.3	824	24.7
250 to 499 miles	1 682	5.6	1 213	1.5	528	15.9
500 to 749 miles	449	1.5	292	.4	226	6.8
750 to 999 miles	279	.9	201	.2	198	5.9
1,000 to 1,499 miles	S	S	89	.1	148	4.4
1,500 to 1,999 miles	102	.3	83	.1	146	4.4
2,000 miles or more	S	S	S	S	S	S
Rail	5 272	100.0	17 197	100.0	25 202	100.0
Less than 50 miles	S	S	2 731	15.9	136	.5
50 to 99 miles	14	.3	73	.4	S	S
100 to 249 miles	251	4.8	596	3.5	167	.7
250 to 499 miles	671	12.7	2 066	12.0	1 340	5.3
500 to 749 miles	583	11.1	2 211	12.9	2 183	8.7
750 to 999 miles	820	15.6	2 251	13.1	2 808	11.1
1,000 to 1,499 miles	408	7.7	1 237	7.2	2 339	9.3
1,500 to 1,999 miles	1 189	22.5	3 488	20.3	8 280	32.9
2,000 miles or more	1 124	21.3	2 544	14.8	7 937	31.5
Water	S	S	1 626	100.0	158	100.0
Less than 50 miles	S	S	810	49.8	21	13.2
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	108	30.4	812	49.9	127	80.4
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Shallow draft	S	S	1 622	100.0	148	100.0
Less than 50 miles	S	S	810	49.9	21	14.1
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	108	30.7	812	50.1	127	85.9
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	—	—	—	—	—	—

See footnotes at end of table.

Table 3. Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 2002—Con.

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

Mode of transportation and distance shipped ¹ (based on Great Circle Distance)	Value		Tons		Ton-miles ²	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Single modes—Con.						
Great Lakes	—	—	—	—	—	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Air (includes truck and air)	7 075	100.0	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	371	5.2	2	1.0	1	—
250 to 499 miles	252	3.6	S	S	5	.8
500 to 749 miles	S	S	S	S	9	1.4
750 to 999 miles	1 393	19.7	S	S	S	S
1,000 to 1,499 miles	81	1.2	—	.2	1	.2
1,500 to 1,999 miles	516	7.3	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Pipeline⁴	61	100.0	255	100.0	S	S
Less than 50 miles	48	77.7	255	99.9	S	S
50 to 99 miles	—	—	—	—	S	S
100 to 249 miles	—	—	—	—	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	—	—	—	—	S	S
750 to 999 miles	—	—	—	—	S	S
1,000 to 1,499 miles	—	—	—	—	S	S
1,500 to 1,999 miles	—	—	—	—	S	S
2,000 miles or more	—	—	—	—	S	S
Multiple modes	11 422	100.0	1 912	100.0	3 643	100.0
Less than 50 miles	1 171	10.3	S	S	2	—
50 to 99 miles	380	3.3	12	.6	1	—
100 to 249 miles	1 709	15.0	107	5.6	28	.8
250 to 499 miles	1 038	9.1	91	4.7	49	1.4
500 to 749 miles	1 137	10.0	195	10.2	182	5.0
750 to 999 miles	881	7.7	245	12.8	294	8.1
1,000 to 1,499 miles	445	3.9	49	2.6	91	2.5
1,500 to 1,999 miles	1 710	15.0	283	14.8	669	18.4
2,000 miles or more	2 951	25.8	795	41.6	2 326	63.9
Parcel, U.S. Postal Service or courier	10 352	100.0	264	100.0	375	100.0
Less than 50 miles	1 160	11.2	21	8.1	—	.1
50 to 99 miles	380	3.7	12	4.6	1	.3
100 to 249 miles	1 672	16.2	37	13.9	7	1.9
250 to 499 miles	1 011	9.8	31	11.7	13	3.6
500 to 749 miles	1 059	10.2	18	6.8	14	3.8
750 to 999 miles	748	7.2	24	8.9	27	7.1
1,000 to 1,499 miles	404	3.9	13	5.0	S	S
1,500 to 1,999 miles	1 403	13.6	37	14.1	80	21.5
2,000 miles or more	2 516	24.3	71	26.9	208	55.4
Truck and rail	671	100.0	991	100.0	1 776	100.0
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	36	5.3	65	6.6	18	1.0
250 to 499 miles	27	4.0	60	6.0	36	2.0
500 to 749 miles	78	11.6	176	17.8	168	9.4
750 to 999 miles	124	18.5	219	22.1	266	14.9
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	170	25.3	181	18.2	411	23.1
2,000 miles or more	200	29.8	250	25.2	818	46.1
Truck and water	387	100.0	S	S	S	S
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	S	S	S	S	S	S
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	134	34.5	59	10.8	165	11.3
2,000 miles or more	234	60.4	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: 2002—Con.

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

Mode of transportation and distance shipped ¹ (based on Great Circle Distance)	Value		Tons		Ton-miles ²	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Multiple modes—Con.						
Rail and water	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Other multiple modes	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	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Other and unknown modes	4 757	100.0	4 612	100.0	594	100.0
Less than 50 miles	3 361	70.6	3 769	81.7	29	4.9
50 to 99 miles	S	S	45	1.0	4	.6
100 to 249 miles	271	5.7	186	4.0	31	5.3
250 to 499 miles	145	3.1	S	S	S	S
500 to 749 miles	S	S	33	.7	24	4.0
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	239	5.0	54	1.2	115	19.4
2,000 miles or more	134	2.8	36	.8	97	16.3

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹Shipments are grouped into distance categories based on Great Circle Distance (GCD). GCD is the shortest distance between 2 points on the surface of a sphere over the surface of that sphere.

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

³"Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private truck and for-hire truck.

⁴Estimates for pipeline exclude shipments of crude petroleum.

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Table 4. Shipment Characteristics by Mode of Transportation and Shipment Weight for State of Origin: 2002

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Total	102 600	100.0	158 053	100.0	48 620	100.0	1 015
Less than 50 lb	12 282	12.0	307	.2	285	.6	1 303
50 to 99 lb	3 183	3.1	139	—	60	.1	436
100 to 499 lb	14 523	14.2	993	.6	355	.7	351
500 to 749 lb	5 442	5.3	537	.3	136	.3	249
750 to 999 lb	1 795	1.7	539	.3	163	.3	301
1,000 to 9,999 lb	20 241	19.7	9 433	6.0	2 354	4.8	247
10,000 to 49,999 lb	31 130	30.3	79 674	50.4	13 892	28.6	157
50,000 to 99,999 lb	7 474	7.3	39 734	25.1	4 521	9.3	116
100,000 lb or more	6 531	6.4	26 698	16.9	26 853	55.2	1 360
Single modes	86 420	100.0	151 528	100.0	44 383	100.0	487
Less than 50 lb	5 508	6.4	143	—	35	—	736
50 to 99 lb	1 555	1.8	90	—	18	—	190
100 to 499 lb	12 214	14.1	872	.6	289	.7	309
500 to 749 lb	S	S	501	.3	121	.3	238
750 to 999 lb	1 675	1.9	513	.3	149	.3	288
1,000 to 9,999 lb	17 632	20.4	9 098	6.0	2 257	5.1	246
10,000 to 49,999 lb	29 529	34.2	77 967	51.5	12 189	27.5	142
50,000 to 99,999 lb	7 271	8.4	39 385	26.0	4 132	9.3	105
100,000 lb or more	5 896	6.8	22 959	15.2	25 191	56.8	1 371
Truck²	73 655	100.0	132 229	100.0	18 403	100.0	197
Less than 50 lb	2 797	3.8	135	.1	16	—	191
50 to 99 lb	1 326	1.8	88	—	14	—	149
100 to 499 lb	8 489	11.5	853	.6	235	1.3	252
500 to 749 lb	S	S	500	.4	118	.6	231
750 to 999 lb	1 670	2.3	513	.4	147	.8	285
1,000 to 9,999 lb	17 514	23.8	8 919	6.7	1 758	9.6	224
10,000 to 49,999 lb	28 759	39.0	77 391	58.5	11 132	60.5	130
50,000 to 99,999 lb	7 025	9.5	38 955	29.5	3 448	18.7	91
100,000 lb or more	1 008	1.4	4 875	3.7	1 535	8.3	370
For-hire truck	43 164	100.0	50 583	100.0	14 998	100.0	740
Less than 50 lb	1 233	2.9	15	—	11	—	831
50 to 99 lb	S	S	12	—	11	—	843
100 to 499 lb	5 877	13.6	201	.4	204	1.4	979
500 to 749 lb	S	S	92	.2	91	.6	961
750 to 999 lb	914	2.1	107	.2	122	.8	1 135
1,000 to 9,999 lb	7 603	17.6	1 750	3.5	1 245	8.3	817
10,000 to 49,999 lb	17 445	40.4	23 463	46.4	9 266	61.8	377
50,000 to 99,999 lb	4 542	10.5	21 052	41.6	2 552	17.0	125
100,000 lb or more	880	2.0	3 890	7.7	1 496	10.0	492
Private truck	30 267	100.0	81 127	100.0	3 331	100.0	51
Less than 50 lb	1 563	5.2	119	.1	5	.1	51
50 to 99 lb	603	2.0	76	—	3	.1	42
100 to 499 lb	2 601	8.6	652	.8	30	.9	45
500 to 749 lb	1 116	3.7	406	.5	26	.8	64
750 to 999 lb	756	2.5	406	.5	26	.8	63
1,000 to 9,999 lb	9 890	32.7	7 162	8.8	511	15.3	71
10,000 to 49,999 lb	11 136	36.8	53 606	66.1	1 807	54.2	36
50,000 to 99,999 lb	2 475	8.2	17 842	22.0	892	26.8	51
100,000 lb or more	127	.4	858	1.1	30	.9	39
Rail	5 272	100.0	17 197	100.0	25 202	100.0	1 572
Less than 50 lb	S	S	S	S	S	S	457
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	11	.2	15	—	S	S	1 161
10,000 to 49,999 lb	523	9.9	515	3.0	994	3.9	1 735
50,000 to 99,999 lb	244	4.6	428	2.5	685	2.7	1 571
100,000 lb or more	4 493	85.2	16 239	94.4	23 507	93.3	1 607
Water	S	S	1 626	100.0	158	100.0	679
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	2 693
10,000 to 49,999 lb	S	S	S	S	S	S	2 162
50,000 to 99,999 lb	S	S	S	S	S	S	33
100,000 lb or more	S	S	1 619	99.6	148	93.6	72
Shallow draft	S	S	1 622	100.0	148	100.0	69
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	S	S	S	S	S	S	33
100,000 lb or more	S	S	1 619	99.9	148	99.9	72

See footnotes at end of table.

Table 4. Shipment Characteristics by Mode of Transportation and Shipment Weight for State of Origin: 2002—Con.

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Single modes—Con.							
Great Lakes	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
Deep draft	\$	\$	\$	\$	\$	\$	2 411
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	\$	\$	\$	\$	\$	\$	2 693
10,000 to 49,999 lb	\$	\$	\$	\$	\$	\$	2 162
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Air (includes truck and air)	7 075	100.0	\$	\$	\$	\$	2 233
Less than 50 lb	2 697	38.1	9	3.8	20	3.2	2 213
50 to 99 lb	\$	\$	2	.7	4	.6	2 561
100 to 499 lb	\$	\$	19	8.6	54	8.8	2 780
500 to 749 lb	72	1.0	1	.6	4	.6	2 651
750 to 999 lb	\$	\$	\$	\$	\$	\$	2 624
1,000 to 9,999 lb	106	1.5	\$	\$	\$	\$	2 896
10,000 to 49,999 lb	\$	\$	\$	\$	\$	\$	1 750
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Pipeline³	61	100.0	255	100.0	\$	\$	\$
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	\$	\$	\$	\$	\$	\$	\$
Multiple modes	11 422	100.0	1 912	100.0	3 643	100.0	1 674
Less than 50 lb	6 458	56.5	151	7.9	\$	\$	1 694
50 to 99 lb	1 547	13.5	36	1.9	42	1.1	1 166
100 to 499 lb	2 058	18.0	54	2.8	64	1.7	1 179
500 to 749 lb	236	2.1	13	.7	12	.3	875
750 to 999 lb	\$	\$	\$	\$	\$	\$	1 082
1,000 to 9,999 lb	73	.6	29	1.5	52	1.4	1 907
10,000 to 49,999 lb	561	4.9	570	29.8	1 280	35.2	2 240
50,000 to 99,999 lb	\$	\$	181	9.4	\$	\$	2 139
100,000 lb or more	313	2.7	868	45.4	1 570	43.1	1 418
Parcel, U.S. Postal Service or courier	10 352	100.0	264	100.0	375	100.0	1 674
Less than 50 lb	6 452	62.3	151	57.2	\$	\$	1 694
50 to 99 lb	1 546	14.9	36	13.7	41	11.0	1 164
100 to 499 lb	2 035	19.7	53	20.0	63	16.7	1 188
500 to 749 lb	235	2.3	13	5.0	11	3.0	857
750 to 999 lb	\$	\$	\$	\$	\$	\$	1 055
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	315
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	671	100.0	991	100.0	1 776	100.0	2 522
Less than 50 lb	\$	\$	\$	\$	\$	\$	3 002
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	\$	\$	4	.4	\$	\$	2 607
10,000 to 49,999 lb	429	64.0	416	42.0	900	50.7	2 160
50,000 to 99,999 lb	18	2.6	41	4.1	17	.9	383
100,000 lb or more	213	31.7	530	53.5	850	47.9	1 479
Truck and water	387	100.0	\$	\$	\$	\$	2 456
Less than 50 lb	\$	\$	\$	\$	\$	\$	2 975
50 to 99 lb	\$	\$	\$	\$	\$	\$	2 597
100 to 499 lb	\$	\$	—	—	1	—	2 392
500 to 749 lb	\$	\$	\$	\$	\$	\$	2 156
750 to 999 lb	\$	\$	\$	\$	\$	\$	2 483
1,000 to 9,999 lb	61	15.8	17	3.0	39	2.7	2 226
10,000 to 49,999 lb	131	33.8	151	27.4	371	25.3	2 418
50,000 to 99,999 lb	\$	\$	\$	\$	\$	\$	2 943
100,000 lb or more	\$	\$	\$	\$	\$	\$	2 692

See footnotes at end of table.

Table 4. Shipment Characteristics by Mode of Transportation and Shipment Weight for State of Origin: 2002—Con.

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Multiple modes—Con.							
Rail and water	S	S	S	S	S	S	2 667
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	S	S	S	S	S	S	2 780
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	2 418
Other multiple modes	S	S	S	S	S	S	66
Less than 50 lb	S	S	S	S	S	S	3
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	2
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	913
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	S	S	S	S	S	S	5
100,000 lb or more	S	S	S	S	S	S	6
Other and unknown modes	4 757	100.0	4 612	100.0	594	100.0	S
Less than 50 lb	316	6.6	12	.3	1	.1	S
50 to 99 lb	80	1.7	13	.3	—	—	S
100 to 499 lb	250	5.3	66	1.4	2	.4	S
500 to 749 lb	67	1.4	22	.5	S	S	S
750 to 999 lb	S	S	15	.3	S	S	234
1,000 to 9,999 lb	S	S	306	6.6	45	7.5	S
10,000 to 49,999 lb	1 039	21.8	1 138	24.7	423	71.1	S
50,000 to 99,999 lb	S	S	S	S	26	4.4	S
100,000 lb or more	322	6.8	S	S	91	15.3	199

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

²"Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private truck and for-hire truck.

³Estimates for pipeline exclude shipments of crude petroleum.

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Table 5a. Shipment Characteristics by Two-Digit Commodity for State of Origin: 2002

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

SCTG code	Commodity description	Value		Tons		Ton-miles ¹		Average miles per shipment
		2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
	Total²	102 600	100.0	158 053	100.0	48 620	100.0	1 015
01	Live animals and live fish	S	S	S	S	S	S	373
02	Cereal grains	S	S	S	S	144	.3	134
03	Other agricultural products	1 955	1.9	4 465	.9	1 570	3.2	2 165
04	Animal feed and products of animal origin, n.e.c.	765	.7	4 025	2.5	834	1.7	215
05	Meat, fish, seafood, and their preparations	2 281	2.2	755	.5	345	.7	1 029
06	Milled grain products and preparations, and bakery products	2 261	2.2	2 717	1.7	568	1.2	S
07	Other prepared foodstuffs and fats and oils	4 086	4.0	4 169	2.6	2 116	4.4	1 184
08	Alcoholic beverages	S	S	874	.6	S	S	S
09	Tobacco products	S	S	S	S	S	S	114
10	Monumental or building stone	S	S	S	S	S	S	49
11	Natural sands	S	S	984	.6	S	S	589
12	Gravel and crushed stone	295	.3	51 887	32.8	716	1.5	12
13	Nonmetallic minerals n.e.c.	S	S	S	S	S	S	99
14	Metallic ores and concentrates	S	S	S	S	S	S	180
15	Coal	—	—	—	—	—	—	—
17	Gasoline and aviation turbine fuel	2 516	2.5	7 559	4.8	344	.7	28
18	Fuel oils	1 501	1.5	5 529	3.5	138	.3	15
19	Coal and petroleum products, n.e.c.	1 898	1.8	8 830	5.6	772	1.6	S
20	Basic chemicals	1 218	1.2	S	S	S	S	1 587
21	Pharmaceutical products	S	S	S	S	S	S	1 259
22	Fertilizers	90	—	128	—	20	—	231
23	Chemical products and preparations, n.e.c.	917	.9	S	S	S	S	414
24	Plastics and rubber	2 722	2.7	951	.6	512	1.1	343
25	Logs and other wood in the rough	S	S	S	S	S	S	207
26	Wood products	10 650	10.4	27 555	17.4	28 475	58.6	470
27	Pulp, newsprint, paper, and paperboard	1 865	1.8	3 877	2.5	3 281	6.7	398
28	Paper or paperboard articles	1 639	1.6	1 290	.8	S	S	S
29	Printed products	1 060	1.0	124	—	133	.3	1 000
30	Textiles, leather, and articles of textiles or leather	S	S	S	S	S	S	1 483
31	Nonmetallic mineral products	1 368	1.3	18 195	11.5	704	1.4	S
32	Base metal in primary or semifinished forms and in finished basic shapes	1 741	1.7	2 187	1.4	1 546	3.2	440
33	Articles of base metal	1 974	1.9	525	.3	S	S	349
34	Machinery	3 374	3.3	284	.2	345	.7	596
35	Electronic and other electrical equipment and components and office equipment	S	S	216	.1	267	.5	793
36	Motorized and other vehicles (including parts)	5 826	5.7	650	.4	265	.5	555
37	Transportation equipment, n.e.c.	1 124	1.1	S	S	S	S	1 532
38	Precision instruments and apparatus	2 579	2.5	15	—	25	—	1 703
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	859	.8	S	S	S	S	880
40	Miscellaneous manufactured products	3 756	3.7	863	.5	427	.9	1 329
41	Waste and scrap	S	S	S	S	S	S	S
43	Mixed freight	10 847	10.6	3 538	2.2	738	1.5	564
--	Commodity unknown	S	S	45	—	S	S	S

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

²Estimates exclude shipments of crude petroleum (SCTG 16).

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Table 5b. Shipment Characteristics by Two-Digit Commodity for State of Origin: Percent of Total for 2002 and 1997

[Estimates are based on data from the 2002 and 1997 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

SCTG code	Commodity description	Value (percent)		Tons (percent)		Ton-miles ¹ (percent)	
		2002	1997	2002	1997	2002	1997
	Total²	100.0	100.0	100.0	100.0	100.0	100.0
01	Live animals and live fish	S	S	S	S	S	S
02	Cereal grains	S	2.6	S	13.2	.3	1.6
03	Other agricultural products	1.9	3.2	.9	2.3	3.2	10.8
04	Animal feed and products of animal origin, n.e.c.	.7	.4	2.5	1.1	1.7	1.3
05	Meat, fish, seafood, and their preparations	2.2	1.1	.5	.3	.7	.3
06	Milled grain products and preparations, and bakery products	2.2	2.3	1.7	1.1	1.2	.9
07	Other prepared foodstuffs and fats and oils	4.0	5.0	2.6	3.5	4.4	5.3
08	Alcoholic beverages	S	1.2	.6	.7	S	S
09	Tobacco products	S	.3	S	.6	S	S
10	Monumental or building stone	S	S	S	S	S	S
11	Natural sands	S	—	.6	2.3	S	S
12	Gravel and crushed stone	.3	.1	32.8	13.4	1.5	S
13	Nonmetallic minerals n.e.c.	S	S	S	S	S	S
14	Metallic ores and concentrates	S	S	S	S	S	S
15	Coal	—	—	—	—	—	—
17	Gasoline and aviation turbine fuel	2.5	2.6	4.8	4.7	.7	S
18	Fuel oils	1.5	.6	3.5	1.8	.3	S
19	Coal and petroleum products, n.e.c.	1.8	.8	5.6	1.5	1.6	.5
20	Basic chemicals	1.2	1.1	S	S	S	.8
21	Pharmaceutical products	S	1.6	S	—	S	—
22	Fertilizers	—	.2	—	.7	—	.3
23	Chemical products and preparations, n.e.c.	.9	2.5	S	.6	S	.6
24	Plastics and rubber	2.7	1.9	.6	.5	1.1	.8
25	Logs and other wood in the rough	S	.3	S	1.3	S	S
26	Wood products	10.4	11.0	17.4	21.6	58.6	40.2
27	Pulp, newsprint, paper, and paperboard	1.8	2.3	2.5	3.4	6.7	8.9
28	Paper or paperboard articles	1.6	1.7	.8	1.0	S	3.0
29	Printed products	1.0	1.7	S	.3	.3	.6
30	Textiles, leather, and articles of textiles or leather	S	7.4	S	.2	S	.4
31	Nonmetallic mineral products	1.3	1.4	11.5	8.1	1.4	2.5
32	Base metal in primary or semifinished forms and in finished basic shapes	1.7	3.0	1.4	2.8	3.2	4.1
33	Articles of base metal	1.9	3.1	.3	.7	S	1.3
34	Machinery	3.3	4.0	.2	.3	.7	.6
35	Electronic and other electrical equipment and components and office equipment	S	10.1	.1	.3	.5	1.0
36	Motorized and other vehicles (including parts)	5.7	8.1	.4	.5	.5	1.4
37	Transportation equipment, n.e.c.	1.1	1.1	S	.2	S	—
38	Precision instruments and apparatus	2.5	2.1	—	—	—	—
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	.8	.6	S	—	S	.3
40	Miscellaneous manufactured products	3.7	3.5	.5	1.5	.9	.6
41	Waste and scrap	S	.4	S	1.7	S	.8
43	Mixed freight	10.6	S	2.2	.6	1.5	S
—	Commodity unknown	S	.5	—	.3	S	.1

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

²Estimates exclude shipments of crude petroleum (SCTG 16).

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Table 6. Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
ALL COMMODITIES							
Total ²	102 600	100.0	158 053	100.0	48 620	100.0	1 015
Single modes	86 420	84.2	151 528	95.9	44 383	91.3	487
Truck ³	73 655	71.8	132 229	83.7	18 403	37.9	197
For-hire truck	43 164	42.1	50 583	32.0	14 998	30.8	740
Private truck	30 267	29.5	81 127	51.3	3 331	6.9	51
Rail	5 272	5.1	17 197	10.9	25 202	51.8	1 572
Water	S	S	1 626	1.0	158	.3	679
Shallow draft	S	S	1 622	1.0	148	.3	69
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	2 411
Air (includes truck and air)	7 075	6.9	S	S	S	S	2 233
Pipeline ⁴	61	—	255	.2	S	S	S
Multiple modes	11 422	11.1	1 912	1.2	3 643	7.5	1 674
Parcel, U.S. Postal Service or courier	10 352	10.1	264	.2	375	.8	1 674
Truck and rail	671	.7	991	.6	1 776	3.7	2 522
Truck and water	387	.4	S	S	S	S	2 456
Rail and water	S	S	S	S	S	S	2 667
Other multiple modes	S	S	S	S	S	S	66
Other and unknown modes	4 757	4.6	4 612	2.9	594	1.2	S
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	S	S	S	S	S	S	373
Single modes	S	S	S	S	S	S	388
Truck ³	S	S	S	S	S	S	388
For-hire truck	—	—	—	—	—	—	—
Private truck	S	S	S	S	S	S	388
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	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	4
SCTG 02, CEREAL GRAINS							
Total	S	S	S	S	144	100.0	134
Single modes	S	S	S	S	144	100.0	134
Truck ³	—	—	—	—	—	—	—
For-hire truck	—	—	—	—	—	—	—
Private truck	—	—	—	—	—	—	—
Rail	S	S	S	S	S	S	23
Water	108	56.3	812	52.3	127	88.3	156
Shallow draft	108	56.3	812	52.3	127	88.3	156
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	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	—	—	—	—	—	—	—

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 03, OTHER AGRICULTURAL PRODUCTS							
Total	1 955	100.0	1 465	100.0	1 570	100.0	2 165
Single modes	1 097	56.1	1 155	78.8	1 141	72.7	S
Truck ³	1 019	52.1	1 059	72.3	857	54.6	S
For-hire truck	735	37.6	785	53.6	833	53.1	1 284
Private truck	284	14.5	249	17.0	24	1.5	S
Rail	S	S	S	S	S	S	2 825
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	966
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	175	11.9	S	S	2 355
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	2 355
Truck and rail	S	S	S	S	S	S	2 673
Truck and water	S	S	S	S	S	S	2 081
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	2 753
Other and unknown modes	S	S	S	S	S	S	S
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	765	100.0	4 025	100.0	834	100.0	215
Single modes	708	92.4	3 804	94.5	711	85.2	126
Truck ³	692	90.4	3 717	92.4	689	82.6	125
For-hire truck	488	63.8	2 225	55.3	592	71.0	223
Private truck	S	S	S	S	S	S	67
Rail	S	S	S	S	S	S	268
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	120	14.3	1 065
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 046
Truck and rail	S	S	S	S	S	S	850
Truck and water	S	S	45	1.1	114	13.6	2 313
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	6
Other and unknown modes	S	S	S	S	S	S	37
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	2 281	100.0	755	100.0	345	100.0	1 029
Single modes	2 094	91.8	715	94.7	307	88.9	S
Truck ³	1 989	87.2	709	94.0	291	84.4	S
For-hire truck	683	29.9	211	28.0	211	61.1	936
Private truck	1 303	57.1	497	65.8	80	23.2	74
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 698
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	11	1.5	23	6.8	1 832
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 830
Truck and rail	S	S	S	S	S	S	3 213
Truck and water	S	S	S	S	S	S	2 351
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	712

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	2 261	100.0	2 717	100.0	568	100.0	S
Single modes	2 112	93.4	2 602	95.8	286	50.3	S
Truck ³	2 112	93.4	2 602	95.8	286	50.3	S
For-hire truck	575	25.4	S	S	151	26.5	S
Private truck	1 537	68.0	S	S	135	23.8	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	2 189
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	2 180
Truck and rail	S	S	S	S	S	S	2 481
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	593
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	4 086	100.0	4 169	100.0	2 116	100.0	1 184
Single modes	3 876	94.9	4 005	96.1	1 988	94.0	S
Truck ³	3 740	91.5	3 853	92.4	1 652	78.1	S
For-hire truck	1 743	42.7	1 904	45.7	1 357	64.1	897
Private truck	1 996	48.9	1 949	46.7	295	13.9	S
Rail	77	1.9	134	3.2	291	13.8	2 280
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 443
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	158	3.9	S	S	S	S	2 677
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	2 678
Truck and rail	S	S	S	S	S	S	1 774
Truck and water	S	S	S	S	S	S	1 666
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	S	S	874	100.0	S	S	S
Single modes	S	S	873	99.9	S	S	S
Truck ³	S	S	873	99.9	S	S	S
For-hire truck	S	S	S	S	S	S	1 093
Private truck	S	S	S	S	S	S	56
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 549
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 526
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	2 744
Rail and water	—	—	—	—	—	—	—
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: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 09, TOBACCO PRODUCTS							
Total	\$	\$	\$	\$	\$	\$	114
Single modes	\$	\$	\$	\$	\$	\$	114
Truck ³	\$	\$	\$	\$	\$	\$	114
For-hire truck							
Private truck	\$	\$	\$	\$	\$	\$	114
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline ⁴	-	-	-	-	\$	\$	\$
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 10, MONUMENTAL OR BUILDING STONE							
Total	\$	\$	\$	\$	\$	\$	49
Single modes	\$	\$	\$	\$	\$	\$	49
Truck ³	\$	\$	\$	\$	\$	\$	49
For-hire truck							
Private truck	\$	\$	\$	\$	\$	\$	49
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline ⁴	-	-	-	-	\$	\$	\$
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 11, NATURAL SANDS							
Total	\$	\$	984	100.0	\$	\$	589
Single modes	\$	\$	858	87.1	\$	\$	509
Truck ³	\$	\$	858	87.1	\$	\$	509
For-hire truck	\$	\$	\$	\$	\$	\$	1 194
Private truck	3	6.5	422	42.9	\$	\$	10
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline ⁴	-	-	-	-	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	1 298
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	1 298
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	\$	\$	\$	\$	\$	\$	1 014

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 12, GRAVEL AND CRUSHED STONE							
Total	295	100.0	51 887	100.0	716	100.0	12
Single modes	293	99.2	51 466	99.2	698	97.5	12
Truck ³	281	95.2	49 629	95.6	578	80.8	12
For-hire truck	65	21.9	9 856	19.0	130	18.1	S
Private truck	\$	\$	\$	\$	422	58.9	S
Rail	8	2.8	1 165	2.2	107	15.0	225
Water	3	1.2	672	1.3	12	1.7	19
Shallow draft	3	1.2	672	1.3	12	1.7	19
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	34
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	\$	\$	\$	\$	\$	\$	108
Rail and water	—	—	—	—	—	—	—
Other multiple modes	\$	\$	\$	\$	\$	\$	5
Other and unknown modes	\$	\$	\$	\$	\$	\$	46
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	\$	\$	\$	\$	\$	\$	99
Single modes	\$	\$	\$	\$	\$	\$	\$
Truck ³	\$	\$	\$	\$	\$	\$	\$
For-hire truck	\$	\$	\$	\$	\$	\$	504
Private truck	\$	\$	\$	\$	\$	\$	\$
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	404
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	404
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	20
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	\$	\$	\$	\$	\$	\$	180
Single modes	\$	\$	\$	\$	\$	\$	135
Truck ³	\$	\$	\$	\$	\$	\$	135
For-hire truck	\$	\$	\$	\$	\$	\$	135
Private truck	—	—	—	—	—	—	—
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	181
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	181
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
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: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 15, COAL							
Total	—	—	—	—	—	—	—
Single modes	—	—	—	—	—	—	—
Truck ³	—	—	—	—	—	—	—
For-hire truck	—	—	—	—	—	—	—
Private truck	—	—	—	—	—	—	—
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	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	2 516	100.0	7 559	100.0	344	100.0	28
Single modes	2 516	100.0	7 559	100.0	344	100.0	28
Truck ³	2 516	100.0	7 559	100.0	344	100.0	28
For-hire truck	S	S	S	S	S	S	67
Private truck	1 845	73.3	5 873	77.7	198	57.6	22
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	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 18, FUEL OILS							
Total	1 501	100.0	5 529	100.0	138	100.0	15
Single modes	1 501	100.0	5 529	100.0	138	100.0	15
Truck ³	1 456	97.0	5 304	95.9	137	99.1	15
For-hire truck	S	S	S	S	24	17.2	25
Private truck	1 158	77.2	4 173	75.5	113	82.0	15
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	S	S	S	S	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	—	—	—	—	—	—	—

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	1 898	100.0	8 830	100.0	772	100.0	S
Single modes	1 838	96.8	8 776	99.4	666	86.3	S
Truck ³	1 600	84.3	8 530	96.6	513	66.5	S
For-hire truck	1 198	63.1	6 708	76.0	468	60.7	S
Private truck	S	S	S	S	S	S	17
Rail	S	S	246	2.8	S	S	629
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 784
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	3 007
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	2 243
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	3 390
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	9
SCTG 20, BASIC CHEMICALS							
Total	1 218	100.0	S	S	S	S	1 587
Single modes	1 048	86.0	S	S	S	S	1 518
Truck ³	669	55.0	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	884
Private truck	417	34.2	S	S	S	S	38
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 501
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	1 901
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 901
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	S	S	S	S	S	S	1 259
Single modes	S	S	S	S	S	S	842
Truck ³	S	S	S	S	S	S	710
For-hire truck	S	S	S	S	S	S	1 138
Private truck	S	S	S	S	S	S	116
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 912
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	434	20.0	S	S	S	S	1 412
Parcel, U.S. Postal Service or courier	417	19.2	S	S	S	S	1 410
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	2 912
Rail and water	—	—	—	—	—	—	—
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: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 22, FERTILIZERS							
Total	90	100.0	128	100.0	20	100.0	231
Single modes	90	99.8	128	99.9	20	99.8	177
Truck ³	90	99.8	128	99.9	20	99.8	177
For-hire truck	70	78.4	108	84.4	18	88.7	212
Private truck	\$	\$	\$	\$	\$	\$	100
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	1 344
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	1 344
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	43
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	917	100.0	\$	\$	\$	\$	414
Single modes	839	91.5	\$	\$	\$	\$	167
Truck ³	835	91.1	\$	\$	\$	\$	166
For-hire truck	604	65.9	\$	\$	\$	\$	354
Private truck	231	25.2	320	23.5	\$	\$	47
Rail	\$	\$	\$	\$	\$	\$	539
Water	\$	\$	\$	\$	\$	\$	1 995
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	\$	\$	\$	\$	\$	\$	1 995
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	286
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	955
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	952
Truck and rail	—	—	—	—	—	—	—
Truck and water	\$	\$	\$	\$	\$	\$	2 834
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	\$
SCTG 24, PLASTICS AND RUBBER							
Total	2 722	100.0	951	100.0	512	100.0	343
Single modes	2 421	88.9	904	95.1	452	88.3	194
Truck ³	2 402	88.2	903	95.0	450	87.9	167
For-hire truck	1 075	39.5	492	51.8	364	71.0	\$
Private truck	1 327	48.7	411	43.2	86	16.9	83
Rail	\$	\$	\$	\$	\$	\$	2 007
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	2 114
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	199	7.3	\$	\$	\$	\$	938
Parcel, U.S. Postal Service or courier	171	6.3	8	.9	7	1.4	933
Truck and rail	\$	\$	\$	\$	\$	\$	2 302
Truck and water	\$	\$	\$	\$	\$	\$	2 756
Rail and water	—	—	—	—	—	—	—
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: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	\$	\$	\$	\$	\$	\$	207
Single modes	\$	\$	\$	\$	\$	\$	207
Truck ³	\$	\$	\$	\$	\$	\$	207
For-hire truck	\$	\$	\$	\$	\$	\$	540
Private truck	\$	\$	\$	\$	\$	\$	81
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
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 26, WOOD PRODUCTS							
Total	10 650	100.0	27 555	100.0	28 475	100.0	470
Single modes	10 025	94.1	23 919	86.8	26 778	94.0	451
Truck ³	6 512	61.1	12 917	46.9	5 596	19.7	311
For-hire truck	4 695	44.1	9 787	35.5	4 934	17.3	645
Private truck	1 796	16.9	3 124	11.3	661	2.3	69
Rail	3 494	32.8	11 000	39.9	21 177	74.4	1 949
Water	\$	\$	\$	\$	\$	\$	2 689
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	\$	\$	\$	\$	\$	\$	2 689
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	2 444
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	233	2.2	\$	\$	\$	\$	1 523
Parcel, U.S. Postal Service or courier	\$	\$	1	—	2	—	1 423
Truck and rail	\$	\$	\$	\$	\$	\$	2 629
Truck and water	\$	\$	\$	\$	\$	\$	2 701
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	392	3.7	\$	\$	\$	\$	\$
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	1 865	100.0	3 877	100.0	3 281	100.0	398
Single modes	1 626	87.2	3 366	86.8	2 595	79.1	369
Truck ³	842	45.2	1 546	39.9	650	19.8	\$
For-hire truck	785	42.1	1 433	37.0	647	19.7	\$
Private truck	\$	\$	\$	\$	\$	\$	34
Rail	780	41.8	1 815	46.8	1 939	59.1	1 149
Water	\$	\$	\$	\$	\$	\$	1 727
Shallow draft	\$	\$	\$	\$	\$	\$	33
Great Lakes	—	—	—	—	—	—	—
Deep draft	\$	\$	\$	\$	\$	\$	2 470
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	235	12.6	511	13.2	686	20.9	1 255
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	220	11.8	472	12.2	587	17.9	1 384
Truck and water	12	.6	30	.8	80	2.4	2 458
Rail and water	\$	\$	\$	\$	\$	\$	2 667
Other multiple modes	\$	\$	\$	\$	\$	\$	2
Other and unknown modes	\$	\$	\$	\$	\$	\$	7

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 28, PAPER OR PAPERBOARD ARTICLES							
Total	1 639	100.0	1 290	100.0	S	S	S
Single modes	1 607	98.1	1 261	97.8	S	S	S
Truck ³	1 331	81.2	1 103	85.5	S	S	S
For-hire truck	816	49.8	642	49.8	S	S	478
Private truck	S	S	S	S	S	S	34
Rail	S	S	S	S	S	S	1 350
Water	S	S	S	S	S	S	64
Shallow draft	S	S	S	S	S	S	64
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 378
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	11	.6	7	.5	18	3.0	863
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	699
Truck and rail	—	—	—	—	—	—	—
Truck and water	10	.6	7	.5	18	2.9	2 716
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 29, PRINTED PRODUCTS							
Total	1 060	100.0	124	100.0	133	100.0	1 000
Single modes	552	52.0	89	71.4	94	70.4	S
Truck ³	545	51.4	88	71.0	92	69.3	S
For-hire truck	266	25.0	66	53.3	90	67.5	1 666
Private truck	S	S	S	S	S	S	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	—	.4	S	S	3 020
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	395	37.3	22	18.1	24	18.2	1 336
Parcel, U.S. Postal Service or courier	374	35.3	19	15.0	14	10.5	1 362
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	2 715
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	3
Other and unknown modes	113	10.7	S	S	S	S	S
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	S	S	S	S	S	S	1 483
Single modes	S	S	S	S	S	S	933
Truck ³	S	S	S	S	S	S	928
For-hire truck	S	S	S	S	S	S	1 207
Private truck	1 649	17.9	S	S	13	1.3	239
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 011
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	285	3.1	9	.7	11	1.1	1 831
Parcel, U.S. Postal Service or courier	285	3.1	9	.7	11	1.1	1 831
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: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 31, NONMETALLIC MINERAL PRODUCTS							
Total	1 368	100.0	18 195	100.0	704	100.0	S
Single modes	1 166	85.2	18 152	99.8	694	98.6	S
Truck ³	1 155	84.5	18 095	99.5	587	83.3	S
For-hire truck	383	28.0	5 468	30.1	304	43.1	S
Private truck	772	56.4	S	S	S	S	S
Rail	S	S	S	S	S	S	1 896
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 883
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 280
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 280
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	8
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	1 741	100.0	2 187	100.0	1 546	100.0	440
Single modes	1 660	95.3	2 108	96.4	1 440	93.1	418
Truck ³	1 233	70.8	1 273	58.2	534	34.6	365
For-hire truck	925	53.1	803	36.7	398	25.7	1 080
Private truck	308	17.7	470	21.5	136	8.8	S
Rail	338	19.4	831	38.0	894	57.9	1 105
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 200
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 213
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 175
Truck and rail	S	S	S	S	S	S	1 741
Truck and water	S	S	S	S	S	S	2 769
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 33, ARTICLES OF BASE METAL							
Total	1 974	100.0	525	100.0	S	S	349
Single modes	1 315	66.6	476	90.6	S	S	S
Truck ³	1 303	66.0	475	90.5	S	S	S
For-hire truck	529	26.8	172	32.8	S	S	753
Private truck	762	38.6	302	57.5	S	S	26
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 510
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	9	1.8	7	4.4	598
Parcel, U.S. Postal Service or courier	S	S	9	1.7	7	4.2	596
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	2 753
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: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 34, MACHINERY							
Total	3 374	100.0	284	100.0	345	100.0	596
Single modes	2 643	78.4	250	88.2	316	91.6	S
Truck ³	2 442	72.4	239	84.1	300	87.1	S
For-hire truck	1 802	53.4	188	66.4	297	86.2	1 065
Private truck	640	19.0	50	17.7	3	.9	56
Rail	S	S	S	S	S	S	55
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 249
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	613	18.2	19	6.7	20	5.9	1 032
Parcel, U.S. Postal Service or courier	604	17.9	18	6.4	18	5.4	1 031
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	2 788
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	6
Other and unknown modes	117	3.5	14	5.1	S	S	58
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	S	S	216	100.0	267	100.0	793
Single modes	S	S	188	87.1	239	89.6	678
Truck ³	S	S	180	83.6	219	82.0	406
For-hire truck	S	S	137	63.6	199	74.5	860
Private truck	S	S	S	S	S	S	32
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 159
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 685	15.0	19	8.9	25	9.5	1 077
Parcel, U.S. Postal Service or courier	2 684	15.0	19	8.8	25	9.4	1 077
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	2 737
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	5 826	100.0	650	100.0	265	100.0	555
Single modes	2 139	36.7	363	55.8	154	58.2	317
Truck ³	2 111	36.2	362	55.6	149	56.5	175
For-hire truck	1 385	23.8	238	36.6	138	52.1	336
Private truck	726	12.5	124	19.1	11	4.3	106
Rail	S	S	S	S	S	S	874
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	27	.5	1	.2	S	S	2 267
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	728	12.5	25	3.9	21	7.8	781
Parcel, U.S. Postal Service or courier	718	12.3	23	3.5	15	5.8	780
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	1 945
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	262	40.3	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: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	1 124	100.0	\$	\$	\$	\$	1 532
Single modes	937	83.4	\$	\$	\$	\$	1 416
Truck ³	913	81.3	\$	\$	\$	\$	1 397
For-hire truck	\$	\$	\$	\$	\$	\$	1 555
Private truck	406	36.1	\$	\$	\$	\$	661
Rail	\$	\$	\$	\$	\$	\$	203
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	—	—	—	.3	2 166
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	1 566
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	1 566
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	77
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	2 579	100.0	15	100.0	25	100.0	1 703
Single modes	1 267	49.1	6	42.1	\$	\$	2 193
Truck ³	\$	\$	5	33.9	\$	\$	1 041
For-hire truck	\$	\$	5	33.8	\$	\$	1 111
Private truck	\$	\$	\$	\$	\$	\$	\$
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	2 676
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	1 245	48.3	6	43.6	10	40.6	1 447
Parcel, U.S. Postal Service or courier	1 245	48.3	6	43.6	10	40.6	1 447
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	2 343
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	859	100.0	\$	\$	\$	\$	880
Single modes	705	82.0	\$	\$	\$	\$	506
Truck ³	703	81.8	\$	\$	\$	\$	468
For-hire truck	\$	\$	\$	\$	\$	\$	792
Private truck	\$	\$	\$	\$	\$	\$	\$
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	3 165
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	1 601
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	1 595
Truck and rail	—	—	—	—	—	—	—
Truck and water	\$	\$	\$	\$	\$	\$	2 597
Rail and water	—	—	—	—	—	—	—
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: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	3 756	100.0	863	100.0	427	100.0	1 329
Single modes	2 215	59.0	803	93.0	378	88.5	1 277
Truck ³	1 707	45.4	799	92.5	368	86.1	765
For-hire truck	1 240	33.0	599	69.4	343	80.4	1 273
Private truck	453	12.1	S	S	S	S	180
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 676
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	1 384	36.8	30	3.5	48	11.3	1 407
Parcel, U.S. Postal Service or courier	1 379	36.7	29	3.4	47	10.9	1 398
Truck and rail	S	S	S	S	S	S	3 002
Truck and water	S	S	S	S	S	S	2 113
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	24
SCTG 41, WASTE AND SCRAP							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck ³	92	47.2	633	39.3	23	12.4	34
For-hire truck	83	42.3	486	30.2	21	11.1	43
Private truck	10	4.9	S	S	S	S	15
Rail	S	S	S	S	S	S	S
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 451
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	1 451
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 43, MIXED FREIGHT							
Total	10 847	100.0	3 538	100.0	738	100.0	564
Single modes	10 334	95.3	3 486	98.5	695	94.1	234
Truck ³	10 327	95.2	3 485	98.5	695	94.1	202
For-hire truck	2 243	20.7	473	13.4	209	28.3	477
Private truck	7 914	73.0	2 938	83.0	444	60.1	147
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 439
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	426	3.9	S	S	S	S	988
Parcel, U.S. Postal Service or courier	381	3.5	S	S	S	S	988
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	2 156
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	87	.8	S	S	1	.1	—

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
COMMODITY UNKNOWN							
Total	\$	\$	45	100.0	\$	\$	\$
Single modes	\$	\$	30	66.1	\$	\$	\$
Truck ³	\$	\$	18	39.9	\$	\$	\$
For-hire truck	27	25.9	7	16.2	\$	\$	1 345
Private truck	\$	\$	11	23.8	\$	\$	\$
Rail	\$	\$	\$	\$	\$	\$	3 380
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	2 495
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	1 080
Parcel, U.S. Postal Service or courier	\$	\$	—	.3	\$	\$	1 074
Truck and rail	\$	\$	\$	\$	\$	\$	1 736
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	\$

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

\$ Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

²Estimates exclude shipments of crude petroleum (SCTG 16).

³"Truck" as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private truck and for-hire truck.

⁴Estimates for pipeline exclude shipments of crude petroleum.

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Table 7. Outbound Shipment Characteristics by State of Destination for State of Origin: 2002

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

State of destination	Value		Tons		Ton-miles ¹	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Total	102 600	100.0	158 053	100.0	48 620	100.0
NEW ENGLAND STATES						
Connecticut	311	.3	232	.1	788	1.6
Maine	S	S	S	S	S	S
Massachusetts	644	.6	440	.3	1 402	2.9
New Hampshire	209	.2	S	S	S	S
Rhode Island	50	—	S	S	S	S
Vermont	24	—	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	869	.8	392	.2	1 258	2.6
New York	740	.7	329	.2	1 011	2.1
Pennsylvania	620	.6	204	.1	601	1.2
EAST NORTH CENTRAL STATES						
Illinois	1 785	1.7	1 412	.9	3 277	6.7
Indiana	487	.5	S	S	S	S
Michigan	517	.5	255	.2	643	1.3
Ohio	1 206	1.2	S	S	S	S
Wisconsin	633	.6	751	.5	1 671	3.4
WEST NORTH CENTRAL STATES						
Iowa	238	.2	S	S	S	S
Kansas	140	.1	61	—	117	.2
Minnesota	958	.9	710	.4	1 289	2.7
Missouri	856	.8	905	.6	1 962	4.0
Nebraska	287	.3	124	—	209	.4
North Dakota	91	—	S	S	S	S
South Dakota	76	—	41	—	S	S
SOUTH ATLANTIC STATES						
Delaware	27	—	S	S	S	S
District of Columbia	S	S	S	S	S	S
Florida	S	S	537	.3	1 782	3.7
Georgia	773	.8	343	.2	998	2.1
Maryland	370	.4	219	.1	685	1.4
North Carolina	654	.6	160	.1	475	1.0
South Carolina	162	.2	60	—	178	.4
Virginia	448	.4	78	—	238	.5
West Virginia	47	—	21	—	55	.1
EAST SOUTH CENTRAL STATES						
Alabama	237	.2	118	—	318	.7
Kentucky	254	.2	64	—	153	.3
Mississippi	S	S	S	S	S	S
Tennessee	785	.8	207	.1	497	1.0
WEST SOUTH CENTRAL STATES						
Arkansas	132	.1	S	S	S	S
Louisiana	136	.1	75	—	199	.4
Oklahoma	202	.2	175	.1	386	.8
Texas	1 843	1.8	1 046	.7	2 399	4.9
MOUNTAIN STATES						
Arizona	1 353	1.3	1 060	.7	1 507	3.1
Colorado	877	.9	748	.5	970	2.0
Idaho	2 148	2.1	2 027	1.3	828	1.7
Montana	584	.6	294	.2	209	.4
Nevada	721	.7	454	.3	338	.7
New Mexico	94	—	61	—	101	.2
Utah	1 479	1.4	715	.5	622	1.3
Wyoming	63	—	18	—	19	—
PACIFIC STATES						
Alaska	550	.5	151	.1	253	.5
California	17 501	17.1	10 926	6.9	8 705	17.9
Hawaii	365	.4	S	S	S	S
Oregon	41 290	40.2	116 396	73.6	3 482	7.2
Washington	15 511	15.1	13 609	8.6	2 154	4.4

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Table 8. Inbound Shipment Characteristics by State of Origin for State of Destination: 2002

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

State of origin	Value		Tons		Ton-miles ¹	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Total	94 427	100.0	187 449	100.0	53 270	100.0
NEW ENGLAND STATES						
Connecticut	258	.3	15	—	48	—
Maine	182	.2	S	S	S	S
Massachusetts	440	.5	24	—	74	.1
New Hampshire	106	.1	S	S	S	S
Rhode Island	95	.1	S	S	S	S
Vermont	S	S	8	—	25	—
MIDDLE ATLANTIC STATES						
New Jersey	686	.7	155	—	455	.9
New York	S	S	73	—	203	.4
Pennsylvania	1 016	1.1	150	—	415	.8
EAST NORTH CENTRAL STATES						
Illinois	1 807	1.9	1 012	.5	2 234	4.2
Indiana	1 606	1.7	421	.2	978	1.8
Michigan	1 151	1.2	S	S	S	S
Ohio	1 371	1.5	333	.2	804	1.5
Wisconsin	954	1.0	502	.3	1 097	2.1
WEST NORTH CENTRAL STATES						
Iowa	632	.7	S	S	S	S
Kansas	270	.3	S	S	S	S
Minnesota	1 209	1.3	298	.2	514	1.0
Missouri	764	.8	S	S	S	S
Nebraska	266	.3	249	.1	403	.8
North Dakota	S	S	S	S	S	S
South Dakota	S	S	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	144	.2	16	—	48	—
District of Columbia	S	S	S	S	S	S
Florida	601	.6	169	—	528	1.0
Georgia	785	.8	230	.1	638	1.2
Maryland	240	.3	12	—	34	—
North Carolina	524	.6	135	—	383	.7
South Carolina	454	.5	104	—	295	.6
Virginia	345	.4	88	—	253	.5
West Virginia	93	.1	59	—	157	.3
EAST SOUTH CENTRAL STATES						
Alabama	360	.4	S	S	S	S
Kentucky	653	.7	S	S	S	S
Mississippi	273	.3	132	—	342	.6
Tennessee	552	.6	133	—	313	.6
WEST SOUTH CENTRAL STATES						
Arkansas	324	.3	146	—	316	.6
Louisiana	278	.3	166	—	422	.8
Oklahoma	492	.5	129	—	251	.5
Texas	1 629	1.7	546	.3	1 242	2.3
MOUNTAIN STATES						
Arizona	1 644	1.7	256	.1	341	.6
Colorado	874	.9	S	S	S	S
Idaho	1 149	1.2	3 181	1.7	1 137	2.1
Montana	321	.3	3 446	1.8	3 611	6.8
Nevada	455	.5	S	S	S	S
New Mexico	63	—	27	—	S	S
Utah	994	1.1	947	.5	741	1.4
Wyoming	189	.2	S	S	S	S
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	12 984	13.7	6 235	3.3	5 285	9.9
Hawaii	10	—	S	S	S	S
Oregon	41 290	43.7	116 396	62.1	3 482	6.5
Washington	10 981	11.6	37 478	20.0	6 464	12.1

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Discussion of Survey Changes and Comparing Estimates

The following tables provide comparisons of the 2002 and 1997 Commodity Flow Survey (CFS) estimates.

Data users are urged to use caution in comparing estimates from different survey years due to the changes that have occurred in sample design, industry coverage, methodology, commodity classification coding systems, geography, and sample sizes. Appendix A presents change in these areas by survey year.

INDUSTRY COVERAGE CHANGES

Changes to the 2002 CFS include moving the industry coverage from a Standard Industrial Classification (SIC) based definition in the 1997 CFS to a North American Industry Classification System (NAICS) based definition for the 2002 survey. For the 2002 CFS, this meant that selected industries previously covered in the 1997 CFS using the SIC definitions, were now out-of-scope to the 2002 CFS industry coverage based on the NAICS definitions. The major industries not covered by the 2002 CFS that were included in the 1997 CFS are Logging (NAICS 11331); Newspaper Periodical, Book, and Database Publishers (NAICS 5111); and Music Publishers (NAICS 51223).

To make the 1997 CFS estimates comparable with the 2002 CFS, the 1997 CFS estimates have been revised by removing shipments from establishments in the following industries:

SIC 2411 Logging
SIC 2711 Newspapers: Publishing, or Publishing and Printing
SIC 2721 Periodicals: Publishing, or Publishing and Printing
SIC 2731 Books: Publishing, or Publishing and Printing
SIC 2741 Miscellaneous Publishing
SIC 2771 Greeting Cards

We were not able to adjust the 1997 CFS estimates to account the NAICS coverage changes when only part of a SIC moved out-of-scope. For example, a wholesale industry in-scope to the 1997 CFS—SIC 5171 (Petroleum Bulk Stations and Terminals)—included Heating Oil Sold Via Retail Method, which is now classified as Retail (NAICS 454311) and is out-of-scope of the 2002 CFS. The majority of the industry remains in-scope to the 2002 CFS industry coverage, therefore we made no adjustment to the 1997 CFS estimates.

No adjustments have been made to the 1993 CFS estimates.

Detailed information about NAICS can be found at www.census.gov/epcd/www/naics.html.

AUXILIARY ESTABLISHMENT COVERAGE CHANGES

The 2002 CFS improved the coverage of auxiliary establishments. Auxiliary establishments are defined as warehouses and managing offices of multiestablishment companies, which have non-auxiliary establishments that are in-scope to CFS or are classified in retail trade. For the 1997 CFS sampling, managing offices had to have sales or inventory levels of greater than zero in order to be considered for selection. However, research conducted prior to the 2002 CFS showed that not all managing offices with shipping activity in the 1997 CFS indicated sales or inventories in the 1997 Economic Census. Therefore, to provide a more comprehensive coverage of auxiliaries, for the 2002 CFS managing offices were subjected to sampling, regardless of sales or inventories.

COMPARISON DATA AND STATISTICAL VALIDITY

Changes from the 1997 to 2002 CFS include a decrease in sample size, from approximately 100,000 establishments for the 1997 CFS to about 50,000 establishments for the 2002 survey.

One consequence of the decreased sample size was a substantial increase in the sampling variability for estimates of period-to-period change produced at full detail levels for mode and commodity. Because of the increased variability in many of these categories, one cannot conclude with a high degree of confidence that changes were significant. For a more detailed discussion of sampling variability, see Appendix B. We have provided period-to-period comparisons at the following, higher levels of aggregation for mode of transportation and commodity since the impact of increased sampling variability is less at those levels. For consistency, these aggregation levels are also now used in our Metropolitan Area and Export tables, where appropriate.

Table 9. Shipment Characteristics by Mode of Transportation for State of Origin: 2002 and 1997

[Estimates are based on data from the 2002 and 1997 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Mode of transportation	Value			Tons			Ton-miles ¹			Average miles per shipment		
	2002 (million dollars)	1997 (million dollars)	Percent change	2002 (thousands)	1997 (thousands)	Percent change	2002 (millions)	1997 (millions)	Percent change	2002	1997	Percent change
Total	102 600	102 935	−.3	158 053	141 322	11.8	48 620	38 715	25.6	1 015	530	91.6
Single modes	86 420	84 352	2.5	151 528	120 204	26.1	44 383	33 099	34.1	487	249	95.4
Truck ²	73 655	74 415	−1.0	132 229	95 595	38.3	18 403	18 265	.8	197	197	−.1
Rail	5 272	4 707	12.0	17 197	8 996	91.2	25 202	12 478	102.0	1 572	1 563	.6
Water	S	2 411	S	1 626	15 525	−89.5	158	2 251	−93.0	679	S	S
Air (includes truck and air)	7 075	2 814	151.5	S	61	S	S	105	S	2 233	1 686	32.4
Pipeline ³	61	S	S	255	S	S	S	S	S	S	S	S
Multiple modes	11 422	12 608	−9.4	1 912	2 941	−35.0	3 643	2 277	60.0	1 674	892	87.7
Parcel, U.S. Postal Service or courier ..	10 352	9 520	8.7	264	290	−8.9	375	220	70.7	1 674	889	88.3
Truck and rail	671	S	S	991	950	4.3	1 776	1 202	47.7	2 522	1 798	40.3
All other multiple modes	400	S	S	658	S	S	S	855	S	1 096	1 587	−30.9
Other and unknown modes ...	4 757	5 975	−20.4	4 612	18 176	−74.6	594	3 338	−82.2	S	489	S

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

²Truck² as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private truck and for-hire truck.

³Estimates for pipeline exclude shipments of crude petroleum.

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Table 10. Shipment Characteristics by Commodity Group for State of Origin: 2002 and 1997

[Estimates are based on data from the 2002 and 1997 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

SCTG code	Commodity description	Value			Tons			Ton-miles ¹			Average miles per shipment		
		2002 (million dollars)	1997 (million dollars)	Percent change	2002 (thousands)	1997 (thousands)	Percent change	2002 (millions)	1997 (millions)	Percent change	2002	1997	Percent change
	Total²	102 600	102 935	−.3	158 053	141 322	11.8	48 620	38 715	25.6	1 015	530	91.6
01-05	Agricultural products and fish	5 267	7 495	−29.7	7 809	23 927	−67.4	2 899	5 412	−46.4	2 057	722	184.9
06-09	Grains, alcohol, and tobacco products	7 892	9 072	−13.0	7 766	7 514	3.4	2 791	2 628	6.2	S	272	S
10-14	Stones, nonmetallic minerals, and metallic ores	359	577	−37.8	52 982	24 150	119.4	1 365	S	S	S	102	S
15-19	Coal and petroleum products	5 914	4 064	45.5	21 918	11 260	94.6	1 254	814	54.1	S	18	S
20-24	Basic chemicals, chemical, and pharmaceutical products	7 123	7 491	−4.9	4 862	6 261	−22.3	1 949	952	104.9	1 062	422	151.3
25-30	Logs, wood products, and textile and leather	24 441	25 151	−2.8	34 088	39 081	−12.8	33 497	21 301	57.3	888	687	29.2
31-34	Base metal and machinery ..	8 457	11 823	−28.5	21 191	16 938	25.1	2 750	3 307	−16.8	419	334	25.7
35-38	Electronic, motorized vehicles, and precision instruments	27 387	22 037	24.3	1 230	1 324	−7.1	651	971	−32.9	1 102	577	91.0
39-43	Furniture, mixed freight and misc. manufactured prod. ..	15 658	S	S	6 162	S	S	1 397	1 260	10.9	1 073	970	10.7
--	Commodity unknown	S	561	S	45	411	−89.0	S	49	S	S	703	S

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

¹Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

²Estimates exclude shipments of crude petroleum (SCTG 16).

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

Note: Coverage for the 2002 Commodity Flow Survey (CFS) differs from the previous surveys due to a change from the 1987 Standard Industrial Classification System to the 1997 North American Industry Classification System and other survey improvements. Therefore, data users are urged to use caution when comparing 2002 CFS estimates with estimates from prior years.

Appendix A.

Comparability With the 1993 and 1997

Commodity Flow Surveys

The following tables show a comparison of the key characteristics among the 1993, 1997, and 2002 Commodity Flow Surveys.

Industry Coverage

1993	1997	2002
Based on 1987 SIC	Based on 1987 SIC	Based on 1997 NAICS ¹
Manufacturing (excluding Printing Trade Services (SIC 279))	Manufacturing (excluding Printing Trade Services (SIC 279))	Manufacturing (excluding Prepress Services (NAICS 323122))
Mining (except mining services (SICs 108, 124, 138, 148) and oil and gas extraction (SICs 131 and 132))	Mining (except mining services (SICs 108, 124, 138, 148) and oil and gas extraction (SICs 131 and 132))	Mining (except support activities (NAICS 213) and oil and gas extraction (NAICS 211))
Wholesale (merchants and manufacturers' sales branches and government-owned liquor stores)	Wholesale (merchants and manufacturers' sales branches and government-owned liquor stores)	Wholesale (merchants and manufacturers' sales branches and government-owned liquor stores)
Retail catalog and mail order houses	Retail catalog and mail order houses	Retail electronic shopping and mail order houses
Auxiliaries (e.g., warehouses)	Auxiliaries (e.g., warehouses)	Auxiliaries ² (e.g., warehouses)

¹Because of changes in the classification of establishments between SIC and NAICS, establishments classified in the following industries were covered in the 1993 and 1997 surveys, but not in the 2002 survey: NAICS 11331, Logging; NAICS 5111, Newspaper, Periodical, Book, and Database Publishers; and NAICS 51223, Music Publishers. Detailed information about NAICS can be found on the Census Bureau Web site at: <http://www.census.gov/epcd/www/naics.html>.

²Coverage of auxiliaries has been expanded for the 2002 CFS. In comparison, for the 1997 CFS, the number of in-scope managing offices was reduced to a large extent based on the results of the 1992 Economic Census. For the 1997 CFS, a managing office was considered in-scope only if it had sales or end-of-year inventories in the 1992 Census. Research conducted prior to the 2002 CFS showed that not all managing offices with shipping activity in the 1997 CFS indicated sales or inventories in the 1997 Economic Census. Therefore, the 1997 Economic Census results were not used to determine scope for managing offices in the 2002 CFS. For the 2002 survey, the inclusion of an increased number of auxiliaries (intermediary distribution centers) which support the operations of retail stores (most of which are, themselves out-of-scope) has more of an impact on the estimates of value and tonnage and less on ton-miles.

Commodity Classification System

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

Sample Size

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

Survey Methodology

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

Reported Mode of Transportation

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

Data Items Requested

1993	1997	2002
For each shipment:	For each shipment:	For each shipment:
Total value	Total value	Total value
Total weight	Total weight	Total weight
Commodity that contributes the most to the shipment's weight (STCC)	Commodity that contributes the most to the shipment's weight (SCTG)	Commodity that contributes the most to the shipment's weight (SCTG)
All known modes of transportation	All known modes of transportation	All known modes of transportation
Single origin (assumed to be the mailing address unless the respondent provided a different physical location address)	Single origin (assumed to be the mailing address unless the respondent provided a different physical location address)	Single origin (assumed to be the mailing address unless the respondent provided a different physical location address)
Destination	Destination	Destination
Containerized (Y/N)	Containerized (Y/N)	
Hazardous material (Y/N)	Hazardous material (UN/NA) code	Hazardous material (UN/NA) code
Export (Y/N)	Export (Y/N)	Export (Y/N)
If export: mode of export, foreign city and country of destination; U.S. port, airport, or border crossing of exit.	If export: mode of export, foreign city and country of destination; U.S. port, airport, or border crossing of exit.	If export: mode of export, foreign city and country of destination; U.S. port, airport, or border crossing of exit.

Appendix B.

Reliability of the Estimates

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

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

Nonsampling errors are difficult to measure and can be introduced through inadequacies in the questionnaire, nonresponse, inaccurate reporting by respondents, errors in the application of survey procedures, incorrect recording of answers, and errors in data entry and processing. No measures of nonsampling error are presented in this publication, however, every effort is made to minimize their effect on the estimates. Data users should take into account both the measures of sampling error and the potential effects of nonsampling error when using these estimates.

More detailed descriptions of sampling and nonsampling errors for the 2002 CFS are provided in the following sections.

Sampling Error

Because the estimates are based on a sample, exact agreement with results that would be obtained from a complete enumeration of all shipments made in 2002 from all establishments included on the sampling frame using the same enumeration procedures is not expected. However, because probability sampling was used at each stage of selection, it is possible to estimate the sampling variability of the survey estimates. For CFS estimates, sampling variability arises from each of the three stages of sampling. (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 that could have been selected using the same design. If all possible samples had been surveyed under the same conditions, an estimate of a population parameter of interest could have been obtained from each sample. These samples give rise to a distribution of estimates for the population parameter. A statistical measure of the variability among these estimates is the standard error, which can be approximated from any one sample. The *standard error* is defined as the square root of the variance. The *coefficient of variation* (or relative standard error) of an estimator is the standard error of the estimator divided by the estimator. Note that measures of sampling variability, such as the standard error and 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, for the sake of brevity, we have omitted this detail.) It is important to note that the standard error only measures sampling variability. It does not measure systematic biases of the sample. The Census Bureau recommends that individuals using estimates contained in this report incorporate this information into their analyses, as sampling error could affect the conclusions drawn from these estimates.

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

1. For approximately 90 percent of the possible samples, the interval from 1.645 standard errors below to 1.645 standard errors above the estimate would include the result as obtained from a complete enumeration of the sampling frame conducted under the same survey conditions.
2. For approximately 95 percent of the possible samples, the interval from 1.96 standard errors below to 1.96 standard errors above the estimate would include the result as obtained from a complete enumeration of the sampling frame conducted under the same survey conditions.

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

Nonsampling Error

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

A potential source of bias in the estimates is nonresponse. Nonresponse is defined as the inability to obtain all the intended measurements or responses from all units in the sample. Four levels of nonresponse can occur in the CFS: item, shipment, quarter (reporting week), and establishment. Item nonresponse occurs either when a question is unanswered or the response to the question fails computer or analyst edits. Nonresponse to the shipment value or weight items is corrected by imputation, which is the procedure by which a missing value is replaced by a predicted value obtained from an appropriate model. (See Appendix C for a description of the imputation procedure.) Shipment, quarter, and establishment nonresponse are used to describe the inability to obtain any of the substantive measurements about a sampled shipment, quarter, or establishment, respectively. Shipment and quarter nonresponse are corrected by reweighting. Reweighting allocates characteristics to the nonrespondents in proportion to the characteristics observed for the respondents. The amount of bias introduced by this nonresponse adjustment procedure depends on the extent to which the nonrespondents differ, characteristically, from the respondents. Establishment nonresponse is corrected during the estimation procedure by the industry-level adjustment weight. (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 63 percent of the establishments provided at least one quarter of data that contributed to tabulation.

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 contact respondents who reported shipments having an untypically 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.)

DEFINITION OF TERMS

Confidentiality

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

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

Disclosure Limitation

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

Unpublished Estimates

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

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

Table B–1a. Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation for State of Origin: 2002

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	
Total	15.1	—	16.3	—	15.9	—	12.0
Single modes	17.7	2.1	17.0	1.6	17.4	2.3	20.0
Truck	16.3	1.8	20.4	4.4	9.7	4.2	15.0
For-hire truck	26.7	3.5	12.9	5.4	10.5	3.7	12.6
Private truck	10.0	3.4	29.7	6.6	16.2	1.2	17.6
Rail	15.4	.9	23.2	4.0	28.6	5.7	9.6
Water	S	S	38.9	.5	32.2	.2	47.0
Shallow draft	S	S	39.1	.5	35.6	.2	33.0
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	28.0
Air (includes truck and air)	46.5	1.6	S	S	S	S	7.4
Pipeline	38.1	—	44.0	—	S	S	S
Multiple modes	9.3	1.6	21.0	.5	25.0	2.4	8.4
Parcel, U.S. Postal Service or courier	9.2	1.4	20.2	—	32.0	.4	8.4
Truck and rail	24.0	.2	18.6	.2	23.6	1.0	15.4
Truck and water	36.5	.2	S	S	S	S	3.6
Rail and water	S	S	S	S	S	S	29.8
Other multiple modes	S	S	S	S	S	S	30.2
Other and unknown modes	29.2	1.4	41.7	1.5	25.3	.4	S

— Represents data cell equal to zero or less than 1 unit of measure.
S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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

Table B–1b. Estimated Standard Errors of Percentage for Shipment Characteristics by Mode of Transportation for State of Origin: Percent of Total for 2002 and 1997

[Estimates are shown as percents and are based on data from the 2002 and 1997 Commodity Flow Surveys]

Mode of transportation	Value (percent)		Tons (percent)		Ton-miles (percent)	
	2002	1997	2002	1997	2002	1997
Total	—	—	—	—	—	—
Single modes	2.1	1.7	1.6	5.1	2.3	2.5
Truck	1.8	2.3	4.4	5.6	4.2	3.1
For-hire truck	3.5	3.2	5.4	1.8	3.7	2.6
Private truck	3.4	4.1	6.6	5.4	1.2	2.6
Rail	.9	.6	4.0	1.1	5.7	2.8
Water	S	.7	.5	3.6	.2	2.6
Shallow draft	S	.7	.5	3.7	.2	S
Great Lakes	—	—	—	—	—	—
Deep draft	S	.3	S	1.0	S	S
Air (includes truck and air)	1.6	.5	S	—	S	—
Pipeline	—	S	—	S	S	S
Multiple modes	1.6	1.6	.5	.8	2.4	.8
Parcel, U.S. Postal Service or courier	1.4	.9	—	—	.4	—
Truck and rail	.2	S	.2	.3	1.0	.5
Truck and water	.2	S	—	—	S	.5
Rail and water	S	S	S	S	S	S
Other multiple modes	S	S	S	S	S	.2
Other and unknown modes	1.4	.6	1.5	5.3	.4	2.7

— Represents data cell equal to zero or less than 1 unit of measure.
S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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

Table B-2. **Estimated Measures of Reliability for Shipment Characteristics by Total Modal Activity for State of Origin: 2002**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

Mode of transportation	Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	
Total	15.9	—	12.0
Truck	9.7	4.2	15.0
Rail	28.6	5.7	9.6
Shallow draft	35.6	.2	33.0
Great Lakes	—	—	—
Deep draft	S	S	28.0
Air	S	S	7.4
Parcel, U.S. Postal Service or courier	43.1	—	31.4
Pipeline	S	S	S
Other and unknown modes	25.3	.4	S

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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

Table B–3. Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 2002

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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
Total	15.1	—	16.3	—	15.9	—
Less than 50 miles	18.9	2.0	23.7	5.1	15.3	.8
50 to 99 miles	10.3	.5	15.9	.8	16.1	.3
100 to 249 miles	6.6	1.5	11.3	.9	11.2	1.4
250 to 499 miles	8.2	.9	14.1	.9	15.5	.9
500 to 749 miles	15.4	.6	20.6	1.1	22.9	1.0
750 to 999 miles	S	S	14.9	.8	14.1	1.5
1,000 to 1,499 miles	19.5	.6	26.3	.4	26.9	1.3
1,500 to 1,999 miles	7.2	.8	21.8	1.1	22.4	2.4
2,000 miles or more	24.2	.9	22.9	1.0	23.2	4.1
Single modes	17.7	—	17.0	—	17.4	—
Less than 50 miles	21.0	2.2	24.5	5.3	15.4	.9
50 to 99 miles	12.8	.6	16.2	.8	16.4	.3
100 to 249 miles	6.1	1.8	11.5	1.0	11.4	1.6
250 to 499 miles	9.8	1.2	15.4	1.0	16.8	1.0
500 to 749 miles	20.8	.7	22.3	1.1	24.7	1.0
750 to 999 miles	S	S	16.3	.9	15.6	1.7
1,000 to 1,499 miles	24.8	.6	27.9	.5	28.6	1.5
1,500 to 1,999 miles	8.8	.8	22.8	1.1	23.5	2.4
2,000 miles or more	33.5	1.0	25.9	.8	26.4	4.2
Truck	16.3	—	20.4	—	9.7	—
Less than 50 miles	21.7	2.7	26.0	5.1	19.6	1.8
50 to 99 miles	12.9	.7	16.4	1.2	16.8	.6
100 to 249 miles	6.3	1.8	12.6	1.4	12.1	2.2
250 to 499 miles	9.6	1.2	11.0	.9	10.5	.7
500 to 749 miles	9.3	.5	14.5	.7	15.0	1.1
750 to 999 miles	S	S	30.4	1.0	29.7	2.4
1,000 to 1,499 miles	32.6	.7	36.1	.3	35.6	2.3
1,500 to 1,999 miles	12.0	.9	25.5	.4	26.1	2.8
2,000 miles or more	13.3	.6	19.7	.5	20.8	2.8
For-hire truck	26.7	—	12.9	—	10.5	—
Less than 50 miles	S	S	25.1	6.7	18.2	.8
50 to 99 miles	13.3	.7	21.2	2.1	22.3	.6
100 to 249 miles	13.8	1.7	14.1	1.9	13.5	2.6
250 to 499 miles	14.3	2.3	7.4	1.3	7.6	.7
500 to 749 miles	10.1	1.0	15.8	1.1	16.3	1.3
750 to 999 miles	S	S	31.8	2.1	30.9	2.7
1,000 to 1,499 miles	31.4	1.1	35.8	.8	35.3	2.5
1,500 to 1,999 miles	12.5	1.9	25.0	.6	25.4	3.2
2,000 miles or more	13.3	1.3	19.4	.8	20.5	3.0
Private truck	10.0	—	29.7	—	16.2	—
Less than 50 miles	12.6	2.4	32.8	4.1	26.0	4.0
50 to 99 miles	17.5	.8	23.8	1.3	24.4	1.0
100 to 249 miles	7.5	2.0	15.4	1.8	15.2	1.7
250 to 499 miles	11.6	.6	22.8	.8	22.2	2.4
500 to 749 miles	16.1	.4	16.9	.4	17.9	2.8
750 to 999 miles	25.6	.2	36.9	.2	38.0	1.8
1,000 to 1,499 miles	S	S	47.4	—	47.2	1.8
1,500 to 1,999 miles	33.9	.1	43.5	—	49.3	1.7
2,000 miles or more	S	S	S	S	S	S
Rail	15.4	—	23.2	—	28.6	—
Less than 50 miles	S	S	45.9	5.1	43.9	.3
50 to 99 miles	47.7	.2	37.7	.3	S	S
100 to 249 miles	42.7	2.4	44.3	1.3	42.0	.7
250 to 499 miles	27.7	2.9	28.6	3.5	29.6	2.2
500 to 749 miles	21.4	1.4	35.1	1.7	36.0	1.8
750 to 999 miles	23.0	3.5	18.8	2.7	19.3	2.8
1,000 to 1,499 miles	26.2	1.0	33.5	1.3	34.6	1.5
1,500 to 1,999 miles	24.4	4.1	32.6	3.5	32.8	4.4
2,000 miles or more	28.4	5.5	38.0	4.3	37.7	5.5
Water	S	S	38.9	—	32.2	—
Less than 50 miles	S	S	43.4	9.5	46.4	3.8
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	42.4	12.4	38.1	9.4	36.0	9.1
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Shallow draft	S	S	39.1	—	35.6	—
Less than 50 miles	S	S	43.4	7.9	46.4	3.5
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	42.4	13.0	38.1	7.9	36.0	3.5
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	—	—	—	—	—	—

See footnotes at end of table.

Table B–3. Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 2002—Con.

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	—	—	—	—	—	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Air (includes truck and air)	46.5	—	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	48.7	4.5	45.3	3.2	41.6	.3
250 to 499 miles	45.3	1.8	S	S	47.1	5.7
500 to 749 miles	S	S	S	S	45.1	2.7
750 to 999 miles	42.1	5.1	S	S	S	S
1,000 to 1,499 miles	35.7	1.3	19.6	.9	19.5	1.4
1,500 to 1,999 miles	41.3	4.2	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Pipeline	38.1	—	44.0	—	S	S
Less than 50 miles	47.0	9.4	44.0	10.5	S	S
50 to 99 miles	—	—	—	—	S	S
100 to 249 miles	—	—	—	—	S	S
250 to 499 miles	S	S	S	S	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	9.3	—	21.0	—	25.0	—
Less than 50 miles	24.3	2.6	S	S	37.3	.3
50 to 99 miles	26.4	.6	31.6	.3	27.4	—
100 to 249 miles	16.4	2.0	22.9	1.8	24.8	.5
250 to 499 miles	15.9	1.4	34.7	1.5	36.9	.8
500 to 749 miles	18.2	2.5	42.3	3.2	42.4	3.2
750 to 999 miles	12.2	1.0	37.6	3.3	38.8	2.5
1,000 to 1,499 miles	24.5	.8	33.4	1.5	34.8	1.6
1,500 to 1,999 miles	10.2	1.4	22.9	3.0	23.9	3.9
2,000 miles or more	17.9	2.5	34.4	6.6	32.2	7.1
Parcel, U.S. Postal Service or courier	9.2	—	20.2	—	32.0	—
Less than 50 miles	24.6	2.8	25.7	2.5	24.0	—
50 to 99 miles	26.4	.7	31.6	1.0	27.4	—
100 to 249 miles	16.8	2.3	13.2	2.5	13.4	.5
250 to 499 miles	16.0	1.4	21.1	1.5	19.5	.6
500 to 749 miles	19.4	2.5	15.1	1.2	14.9	.8
750 to 999 miles	11.9	1.1	22.6	1.4	22.7	1.4
1,000 to 1,499 miles	27.7	.9	49.2	1.1	S	S
1,500 to 1,999 miles	11.9	1.5	30.0	1.5	31.3	3.0
2,000 miles or more	19.4	3.1	36.3	3.0	37.2	3.4
Truck and rail	24.0	—	18.6	—	23.6	—
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	31.1	1.6	35.0	2.4	36.2	.8
250 to 499 miles	41.1	2.2	45.7	2.0	46.0	1.2
500 to 749 miles	35.4	4.2	46.5	5.0	45.8	5.0
750 to 999 miles	49.6	5.6	39.9	6.6	41.0	6.6
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	30.3	6.1	30.5	6.8	30.8	8.1
2,000 miles or more	49.6	6.9	41.3	6.7	42.8	9.9
Truck and water	36.5	—	S	S	S	S
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	S	S	S	S	S	S
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	26.6	9.2	39.2	4.9	44.0	6.5
2,000 miles or more	46.8	9.6	S	S	S	S

See footnotes at end of table.

Table B–3. Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 2002—Con.

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Multiple modes—Con.						
Rail and water	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Other multiple modes	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	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Other and unknown modes	29.2	—	41.7	—	25.3	—
Less than 50 miles	43.0	9.7	46.7	10.2	35.9	3.6
50 to 99 miles	S	S	49.0	1.2	47.9	3.2
100 to 249 miles	30.6	5.1	41.6	8.6	36.8	3.4
250 to 499 miles	41.5	2.8	S	S	S	S
500 to 749 miles	S	S	49.7	.5	48.6	4.0
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	38.1	3.3	49.0	2.1	48.1	7.9
2,000 miles or more	40.7	1.7	41.6	1.1	39.0	6.8

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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

Table B-4. Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation and Shipment Weight for State of Origin: 2002

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

Mode of transportation and shipment weight	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	
Total	15.1	—	16.3	—	15.9	—	12.0
Less than 50 lb	10.7	1.4	20.2	—	44.6	4	10.4
50 to 99 lb	14.4	.4	15.9	—	17.2	—	18.8
100 to 499 lb	40.7	2.2	17.5	.2	22.0	.2	21.2
500 to 749 lb	49.5	1.1	20.0	—	17.8	—	23.4
750 to 999 lb	15.6	.3	20.5	.1	23.6	—	21.0
1,000 to 9,999 lb	10.6	2.0	16.4	1.2	25.4	1.6	22.6
10,000 to 49,999 lb	17.6	1.9	30.0	5.9	11.8	2.6	43.6
50,000 to 99,999 lb	11.8	1.1	16.0	3.9	6.3	1.4	17.0
100,000 lb or more	12.5	.9	11.6	3.9	25.3	4.3	8.5
Single modes	17.7	—	17.0	—	17.4	—	20.0
Less than 50 lb	20.0	1.2	18.6	—	21.3	—	17.5
50 to 99 lb	25.7	.3	17.0	—	20.0	—	32.2
100 to 499 lb	47.2	2.4	18.3	.2	24.3	.3	23.4
500 to 749 lb	S	S	20.9	—	18.3	—	24.4
750 to 999 lb	16.7	.4	21.3	.1	22.9	—	21.7
1,000 to 9,999 lb	9.8	1.9	17.2	1.4	26.4	2.2	24.6
10,000 to 49,999 lb	18.6	2.1	30.3	6.1	12.6	2.9	45.5
50,000 to 99,999 lb	12.5	1.3	16.2	3.9	8.0	1.7	13.6
100,000 lb or more	13.7	1.1	14.9	4.0	28.0	5.1	9.0
Truck²	16.3	—	20.4	—	9.7	—	15.0
Less than 50 lb	15.3	.5	19.0	—	22.4	—	16.7
50 to 99 lb	29.0	.2	17.5	—	19.2	—	27.6
100 to 499 lb	32.4	1.4	18.3	.2	24.1	.4	26.5
500 to 749 lb	S	S	21.0	.1	18.4	.1	25.3
750 to 999 lb	16.7	.5	21.3	.1	23.1	.1	22.0
1,000 to 9,999 lb	9.8	2.1	17.9	1.7	13.4	1.1	23.5
10,000 to 49,999 lb	19.3	2.3	30.6	5.8	14.2	3.8	48.8
50,000 to 99,999 lb	13.1	1.4	16.5	4.2	9.5	2.5	12.6
100,000 lb or more	20.7	.3	23.0	1.2	42.8	2.4	19.0
For-hire truck	26.7	—	12.9	—	10.5	—	12.6
Less than 50 lb	32.9	.5	21.4	—	24.1	—	21.2
50 to 99 lb	S	S	21.2	—	25.6	—	19.3
100 to 499 lb	47.3	2.1	25.1	.2	25.7	.4	22.7
500 to 749 lb	S	S	20.0	—	21.5	—	7.6
750 to 999 lb	26.0	.7	24.5	—	26.3	.2	13.6
1,000 to 9,999 lb	10.0	2.8	11.2	.8	15.9	1.0	8.5
10,000 to 49,999 lb	31.3	2.3	17.2	5.3	16.7	4.6	18.0
50,000 to 99,999 lb	19.0	2.5	20.9	4.7	12.4	3.8	18.3
100,000 lb or more	22.3	.7	29.3	1.8	44.0	2.9	24.4
Private truck	10.0	—	29.7	—	16.2	—	17.6
Less than 50 lb	14.7	.8	20.4	.1	24.9	—	24.4
50 to 99 lb	17.9	.5	19.6	—	25.5	—	11.0
100 to 499 lb	15.2	1.4	20.7	.3	18.8	.4	20.2
500 to 749 lb	14.9	.6	24.1	.2	26.3	.4	30.1
750 to 999 lb	16.1	.5	23.5	.2	23.4	.4	34.3
1,000 to 9,999 lb	14.8	2.3	21.0	2.7	16.9	2.9	25.3
10,000 to 49,999 lb	10.5	2.8	43.1	7.9	18.9	4.3	49.8
50,000 to 99,999 lb	34.5	1.9	28.4	5.7	28.6	4.4	22.3
100,000 lb or more	48.2	.2	29.3	.7	38.9	.2	43.6
Rail	15.4	—	23.2	—	28.6	—	9.6
Less than 50 lb	S	S	S	S	S	S	32.7
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	36.2	—	46.8	—	S	S	29.5
10,000 to 49,999 lb	29.1	2.9	22.8	1.3	26.8	1.7	11.9
50,000 to 99,999 lb	19.6	1.1	22.4	.5	19.5	1.1	19.0
100,000 lb or more	16.7	3.8	24.2	1.7	30.3	2.7	8.0
Water	S	S	38.9	—	32.2	—	47.0
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	29.8
10,000 to 49,999 lb	S	S	S	S	S	S	29.8
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
100,000 lb or more	S	S	39.1	10.5	35.6	10.0	32.0
Shallow draft	S	S	39.1	—	35.6	—	33.0
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	S	S	S	S	S	S	31.6
100,000 lb or more	S	S	39.1	—	35.6	—	32.0

See footnote at end of table.

Table B-4. Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation and Shipment Weight for State of Origin: 2002—Con.

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

Mode of transportation and shipment weight	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	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	28.0
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	29.8
10,000 to 49,999 lb	S	S	S	S	S	S	29.8
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Air (includes truck and air)	46.5	—	S	S	S	S	7.4
Less than 50 lb	33.8	10.3	33.7	9.9	36.0	10.0	7.6
50 to 99 lb	S	S	36.4	3.0	42.4	4.0	15.7
100 to 499 lb	S	S	38.3	8.2	39.0	8.7	10.5
500 to 749 lb	45.4	1.5	45.6	1.1	46.6	1.2	22.5
750 to 999 lb	S	S	S	S	S	S	26.3
1,000 to 9,999 lb	32.9	2.5	S	S	S	S	17.4
10,000 to 49,999 lb	S	S	S	S	S	S	26.8
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Pipeline³	38.1	—	44.0	—	S	S	S
Less than 50 lb	S	S	S	S	S	S	S
50 to 99 lb	—	—	—	—	S	S	S
100 to 499 lb	—	—	—	—	S	S	S
500 to 749 lb	—	—	—	—	S	S	S
750 to 999 lb	—	—	—	—	S	S	S
1,000 to 9,999 lb	—	—	—	—	S	S	S
10,000 to 49,999 lb	S	S	S	S	S	S	S
50,000 to 99,999 lb	—	—	—	—	S	S	S
100,000 lb or more	S	S	S	S	S	S	S
Multiple modes	9.3	—	21.0	—	25.0	—	8.4
Less than 50 lb	10.3	2.2	35.8	3.0	S	S	8.6
50 to 99 lb	13.0	1.7	18.4	.6	20.7	.6	10.6
100 to 499 lb	15.2	2.3	17.7	1.4	18.8	2.0	11.0
500 to 749 lb	21.1	.5	30.4	.4	29.5	.3	17.4
750 to 999 lb	S	S	S	S	S	S	21.5
1,000 to 9,999 lb	27.5	.2	23.1	.5	27.1	.5	17.0
10,000 to 49,999 lb	26.1	1.8	22.4	6.9	27.1	7.9	4.9
50,000 to 99,999 lb	S	S	46.0	5.9	S	S	27.1
100,000 lb or more	48.6	.9	40.6	10.1	49.2	9.9	19.9
Parcel, U.S. Postal Service or courier	9.2	—	20.2	—	32.0	—	8.4
Less than 50 lb	10.4	2.2	35.9	6.1	S	S	8.6
50 to 99 lb	13.0	1.8	18.4	1.8	20.7	3.0	10.5
100 to 499 lb	15.6	2.4	17.3	3.7	19.2	4.2	10.8
500 to 749 lb	21.1	.6	30.7	2.1	30.5	1.5	18.0
750 to 999 lb	S	S	S	S	S	S	21.9
1,000 to 9,999 lb	S	S	S	S	S	S	29.2
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	24.0	—	18.6	—	23.6	—	15.4
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	46.0	.2	S	S	24.9
10,000 to 49,999 lb	33.8	7.9	30.2	8.9	38.6	9.4	13.3
50,000 to 99,999 lb	34.7	1.5	44.2	2.7	46.4	.8	22.9
100,000 lb or more	32.3	7.9	32.2	9.0	38.5	9.3	18.1
Truck and water	36.5	—	S	S	S	S	3.6
Less than 50 lb	S	S	S	S	S	S	29.8
50 to 99 lb	S	S	S	S	S	S	31.6
100 to 499 lb	S	S	39.8	.2	43.0	.3	21.7
500 to 749 lb	S	S	S	S	S	S	30.4
750 to 999 lb	S	S	S	S	S	S	28.1
1,000 to 9,999 lb	33.2	7.9	27.0	4.3	30.3	3.7	13.2
10,000 to 49,999 lb	28.0	11.6	26.0	16.3	26.8	18.6	5.0
50,000 to 99,999 lb	S	S	S	S	S	S	28.1
100,000 lb or more	S	S	S	S	S	S	31.6

See footnote at end of table.

Table B-4. Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation and Shipment Weight for State of Origin: 2002—Con.

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

Mode of transportation and shipment weight	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Multiple modes—Con.							
Rail and water	S	S	S	S	S	S	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	S	S	S	S	S	S	31.6
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	31.6
Other multiple modes	S	S	S	S	S	S	30.2
Less than 50 lb	S	S	S	S	S	S	31.7
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	31.6
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	38.7
10,000 to 49,999 lb	S	S	S	S	S	S	30.1
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
100,000 lb or more	S	S	S	S	S	S	31.6
Other and unknown modes	29.2	—	41.7	—	25.3	—	S
Less than 50 lb	33.2	3.4	31.1	4	34.8	—	S
50 to 99 lb	21.2	1.0	29.9	5	33.5	—	S
100 to 499 lb	33.4	3.2	32.8	1.9	49.1	5	S
500 to 749 lb	44.9	1.3	30.9	.8	S	6	S
750 to 999 lb	S	S	45.3	1.0	S	S	33.1
1,000 to 9,999 lb	S	S	27.7	5.6	27.2	8.2	S
10,000 to 49,999 lb	34.0	7.4	29.6	8.0	32.9	10.0	S
50,000 to 99,999 lb	S	S	S	S	41.9	3.8	S
100,000 lb or more	25.9	4.2	S	S	45.4	5.5	37.1

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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

Table B–5a. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity for State of Origin: 2002**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	
	Total	15.1	—	16.3	—	15.9	—	12.0
01	Live animals and live fish	S	S	S	S	S	S	31.7
02	Cereal grains	S	S	S	S	38.2	.2	22.1
03	Other agricultural products	27.7	.6	19.4	.4	38.6	1.3	21.6
04	Animal feed and products of animal origin, n.e.c.	24.9	.2	29.2	1.0	30.0	.6	31.3
05	Meat, fish, seafood, and their preparations	33.7	.9	32.5	.1	32.0	.3	22.1
06	Milled grain products and preparations, and bakery products	25.7	.8	42.1	.6	39.7	.4	S
07	Other prepared foodstuffs and fats and oils	10.7	.6	11.1	.4	23.8	1.0	27.1
08	Alcoholic beverages	S	S	49.5	.2	S	S	S
09	Tobacco products	S	S	S	S	S	S	31.6
10	Monumental or building stone	S	S	S	S	S	S	31.6
11	Natural sands	S	S	46.0	.3	S	S	33.5
12	Gravel and crushed stone	41.8	.1	41.0	5.5	28.6	.6	31.5
13	Nonmetallic minerals n.e.c.	S	S	S	S	S	S	43.0
14	Metallic ores and concentrates	S	S	S	S	S	S	29.9
15	Coal	—	—	—	—	—	—	—
17	Gasoline and aviation turbine fuel	36.6	1.0	34.0	1.9	38.9	.5	23.2
18	Fuel oils	34.4	.5	33.0	1.3	33.0	.1	27.7
19	Coal and petroleum products, n.e.c.	27.7	.6	38.0	1.4	34.3	.7	S
20	Basic chemicals	42.1	.7	S	S	S	S	29.2
21	Pharmaceutical products	S	S	S	S	S	S	21.5
22	Fertilizers	32.6	—	39.4	—	46.2	—	25.5
23	Chemical products and preparations, n.e.c.	33.9	.2	S	S	S	S	26.9
24	Plastics and rubber	26.1	.8	31.3	.3	30.5	.4	25.6
25	Logs and other wood in the rough	S	S	S	S	S	S	32.7
26	Wood products	12.3	1.3	16.0	3.8	26.6	5.8	22.5
27	Pulp, newsprint, paper, and paperboard	14.4	.3	9.8	.6	12.5	.9	39.9
28	Paper or paperboard articles	35.7	.8	39.8	.6	S	S	S
29	Printed products	21.2	.3	20.9	—	24.4	.1	20.1
30	Textiles, leather, and articles of textiles or leather	S	S	S	S	S	S	12.1
31	Nonmetallic mineral products	31.6	.5	38.7	3.7	32.7	.6	S
32	Base metal in primary or semifinished forms and in finished basic shapes	23.7	.6	23.3	.6	23.3	1.1	23.5
33	Articles of base metal	27.4	.5	22.3	.1	S	S	32.4
34	Machinery	25.5	1.0	21.8	—	27.3	.4	17.9
35	Electronic and other electrical equipment and components and office equipment	S	S	25.4	—	32.1	.2	16.3
36	Motorized and other vehicles (including parts)	28.3	1.7	27.5	.1	33.4	.3	16.8
37	Transportation equipment, n.e.c.	30.5	.3	S	S	S	S	12.1
38	Precision instruments and apparatus	26.5	.6	36.1	—	44.0	—	12.9
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	37.7	.4	S	S	S	S	26.4
40	Miscellaneous manufactured products	27.1	1.2	22.7	.2	33.6	.4	11.2
41	Waste and scrap	S	S	S	S	S	S	S
43	Mixed freight	14.6	1.8	18.1	.5	17.4	.3	28.0
—	Commodity unknown	S	S	44.7	—	S	S	S

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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

Table B–5b. Estimated Standard Errors for Shipment Characteristics by Two-Digit Commodity for State of Origin: Percent of Total for 2002 and 1997

[Estimates are shown as percents and are based on data from the 2002 and 1997 Commodity Flow Surveys]

SCTG code	Commodity description	Value (percent)		Tons (percent)		Ton-miles ¹ (percent)	
		2002	1997	2002	1997	2002	1997
	Total	—	—	—	—	—	—
01	Live animals and live fish	S	S	S	S	S	S
02	Cereal grains	S	.8	S	4.3	.2	.6
03	Other agricultural products	.6	.8	.4	.6	1.3	3.2
04	Animal feed and products of animal origin, n.e.c.	.2	.2	1.0	.6	.6	.4
05	Meat, fish, seafood, and their preparations	.9	.3	.1	—	.3	.1
06	Milled grain products and preparations, and bakery products	.8	.9	.6	.4	.4	.3
07	Other prepared foodstuffs and fats and oils	.6	1.4	.4	.9	1.0	.9
08	Alcoholic beverages	S	.2	.2	.1	S	S
09	Tobacco products	S	.2	S	S	S	S
10	Monumental or building stone	S	S	S	S	S	S
11	Natural sands	S	—	.3	1.0	S	S
12	Gravel and crushed stone	.1	—	5.5	3.4	.6	S
13	Nonmetallic minerals n.e.c.	S	S	S	S	S	S
14	Metallic ores and concentrates	S	S	S	S	S	S
15	Coal	—	—	—	—	—	—
17	Gasoline and aviation turbine fuel	1.0	.8	1.9	1.1	.5	S
18	Fuel oils	.5	.2	1.3	.9	.1	S
19	Coal and petroleum products, n.e.c.	.6	.4	1.4	.5	.7	.2
20	Basic chemicals	.7	.5	S	S	S	S
21	Pharmaceutical products	S	.4	S	—	S	—
22	Fertilizers	—	.1	—	.3	—	—
23	Chemical products and preparations, n.e.c.	.2	1.1	S	.2	S	.2
24	Plastics and rubber	.8	.5	.3	.1	.4	.2
25	Logs and other wood in the rough	S	.1	S	.6	S	S
26	Wood products	1.3	1.3	3.8	4.5	5.8	3.1
27	Pulp, newsprint, paper, and paperboard	.3	.4	.6	.6	.9	1.0
28	Paper or paperboard articles	.8	.4	.6	.2	S	1.0
29	Printed products	.3	.3	—	—	.1	.1
30	Textiles, leather, and articles of textiles or leather	S	3.3	S	—	S	.1
31	Nonmetallic mineral products	.5	.2	3.7	2.1	.6	.3
32	Base metal in primary or semifinished forms and in finished basic shapes	.6	.7	.6	.9	1.1	.8
33	Articles of base metal	.5	.4	.1	.1	S	.3
34	Machinery	1.0	.8	—	—	.4	—
35	Electronic and other electrical equipment and components and office equipment	S	1.3	—	—	.2	.2
36	Motorized and other vehicles (including parts)	1.7	2.0	.1	—	.3	.5
37	Transportation equipment, n.e.c.	.3	.2	S	—	S	—
38	Precision instruments and apparatus	.6	.6	—	—	—	—
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	.4	.1	S	—	S	—
40	Miscellaneous manufactured products	1.2	.3	.2	.1	.4	.1
41	Waste and scrap	S	.1	S	.6	S	.3
43	Mixed freight	1.8	S	.5	S	.3	S
—	Commodity unknown	S	.2	—	.1	S	—

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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

Table B–6. Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	15.1	—	16.3	—	15.9	—	12.0
Single modes	17.7	2.1	17.0	1.6	17.4	2.3	20.0
Truck	16.3	1.8	20.4	4.4	9.7	4.2	15.0
For-hire truck	26.7	3.5	12.9	5.4	10.5	3.7	12.6
Private truck	10.0	3.4	29.7	6.6	16.2	1.2	17.6
Rail	15.4	.9	23.2	4.0	28.6	5.7	9.6
Water	S	S	38.9	.5	32.2	.2	47.0
Shallow draft	S	S	39.1	.5	35.6	.2	33.0
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	28.0
Air (includes truck and air)	46.5	1.6	S	S	S	S	7.4
Pipeline	38.1	—	44.0	—	S	S	S
Multiple modes	9.3	1.6	21.0	.5	25.0	2.4	8.4
Parcel, U.S. Postal Service or courier	9.2	1.4	20.2	—	32.0	.4	8.4
Truck and rail	24.0	.2	18.6	.2	23.6	1.0	15.4
Truck and water	36.5	.2	S	S	S	S	3.6
Rail and water	S	S	S	S	S	S	29.8
Other multiple modes	S	S	S	S	S	S	30.2
Other and unknown modes	29.2	1.4	41.7	1.5	25.3	.4	S
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	S	S	S	S	S	S	31.7
Single modes	S	S	S	S	S	S	31.7
Truck	S	S	S	S	S	S	31.7
For-hire truck	—	—	—	—	—	—	—
Private truck	S	S	S	S	S	S	31.7
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 02, CEREAL GRAINS							
Total	S	S	S	S	38.2	—	22.1
Single modes	S	S	S	S	38.2	—	22.1
Truck	—	—	—	—	—	—	—
For-hire truck	—	—	—	—	—	—	—
Private truck	—	—	—	—	—	—	—
Rail	S	S	S	S	S	S	31.6
Water	42.4	11.0	38.1	11.7	36.0	3.8	21.3
Shallow draft	42.4	11.0	38.1	11.7	36.0	3.8	21.3
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	—	—	—	—	—	—	—

See footnote at end of table.

Table B-6. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	27.7	—	19.4	—	38.6	—	21.6
Single modes	24.6	9.8	24.3	7.2	47.4	12.0	S
Truck	23.5	9.5	21.6	6.5	42.7	10.6	S
For-hire truck	34.1	10.2	31.2	11.0	44.0	10.3	19.6
Private truck	34.0	8.7	34.5	7.0	38.1	2.3	S
Rail	S	S	S	S	S	S	25.8
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	48.0	5.1	S	S	17.2
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	20.1
Truck and rail	S	S	S	S	S	S	28.9
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	S	S	S	S	S	S	S
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	24.9	—	29.2	—	30.0	—	31.3
Single modes	27.5	4.0	31.3	4.3	35.3	9.0	31.2
Truck	28.7	5.6	32.5	5.7	36.7	9.3	31.2
For-hire truck	35.2	9.8	39.0	10.7	43.2	11.1	19.5
Private truck	S	S	S	S	S	S	37.9
Rail	S	S	S	S	S	S	32.5
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	38.0	8.9	34.8
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	35.5	1.7	37.9	8.0	24.4
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	S	S	S	S	S	S	30.8
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	33.7	—	32.5	—	32.0	—	22.1
Single modes	33.0	3.1	31.0	1.5	33.6	5.5	S
Truck	35.3	6.8	31.3	2.0	36.0	9.0	S
For-hire truck	34.0	10.9	28.8	11.9	35.5	11.1	18.5
Private truck	38.7	10.9	36.2	11.3	44.1	9.9	34.9
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	28.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	47.2	1.0	45.4	4.1	24.9
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	28.4
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	28.1
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	45.1

See footnote at end of table.

Table B-6. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	25.7	—	42.1	—	39.7	—	S
Single modes	27.9	6.4	44.6	5.6	22.8	14.3	S
Truck	27.9	6.4	44.6	5.6	22.8	14.3	S
For-hire truck	36.0	7.9	S	S	39.1	11.6	S
Private truck	36.5	12.8	S	S	42.7	16.2	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	27.2
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	29.1
Truck and rail	S	S	S	S	S	S	29.8
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	10.7	—	11.1	—	23.8	—	27.1
Single modes	11.1	2.0	12.5	3.1	26.3	4.7	S
Truck	11.1	2.0	13.1	3.5	29.9	6.7	S
For-hire truck	26.0	9.3	23.2	9.9	32.8	8.2	20.6
Private truck	22.1	9.0	25.6	8.6	29.7	5.6	S
Rail	23.2	1.0	25.0	1.2	22.7	4.4	14.3
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	28.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	46.9	1.8	S	S	S	S	15.7
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	24.5
Truck and rail	S	S	S	S	S	S	30.3
Truck and water	S	S	S	S	S	S	30.0
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	S	S	49.5	—	S	S	S
Single modes	S	S	49.6	.7	S	S	S
Truck	S	S	49.6	.7	S	S	S
For-hire truck	S	S	S	S	S	S	31.8
Private truck	S	S	S	S	S	S	25.0
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	29.8
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	29.9
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

See footnote at end of table.

Table B–6. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	\$	\$	\$	\$	\$	\$	31.6
Single modes	\$	\$	\$	\$	\$	\$	31.6
Truck	\$	\$	\$	\$	\$	\$	31.6
For-hire truck	\$	\$	\$	\$	\$	\$	31.6
Private truck	\$	\$	\$	\$	\$	\$	31.6
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	\$	\$	\$	\$	\$	\$	31.6
Single modes	\$	\$	\$	\$	\$	\$	31.6
Truck	\$	\$	\$	\$	\$	\$	31.6
For-hire truck	\$	\$	\$	\$	\$	\$	31.6
Private truck	\$	\$	\$	\$	\$	\$	31.6
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 11, NATURAL SANDS							
Total	\$	\$	46.0	—	\$	\$	33.5
Single modes	\$	\$	41.2	4.0	\$	\$	35.6
Truck	\$	\$	41.2	4.0	\$	\$	35.6
For-hire truck	\$	\$	\$	\$	\$	\$	31.5
Private truck	33.0	19.3	47.1	11.2	\$	\$	26.1
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	31.6
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	31.6

See footnote at end of table.

Table B–6. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	41.8	—	41.0	—	28.6	—	31.5
Single modes	41.6	.3	40.7	.3	28.2	1.0	32.3
Truck	43.9	3.4	42.7	3.4	33.8	6.5	32.4
For-hire truck	23.6	8.8	25.5	8.6	16.9	6.8	S
Private truck	S	S	S	S	45.7	8.7	S
Rail	42.7	2.4	41.1	2.3	46.8	5.6	28.1
Water	47.8	1.1	44.4	1.3	45.2	1.1	25.9
Shallow draft	47.8	1.1	44.4	1.3	45.2	1.1	25.9
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	38.1
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	30.1
Other and unknown modes	S	S	S	S	S	S	40.0
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	S	S	S	S	S	S	43.0
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	31.6
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	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 14, METALLIC ORES AND CONCENTRATES							
Total	S	S	S	S	S	S	29.9
Single modes	S	S	S	S	S	S	31.6
Truck	S	S	S	S	S	S	31.6
For-hire truck	S	S	S	S	S	S	31.6
Private truck	—	—	—	—	—	—	—
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

See footnote at end of table.

Table B-6. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	—	—	—	—	—	—	—
Single modes	—	—	—	—	—	—	—
Truck	—	—	—	—	—	—	—
For-hire truck	—	—	—	—	—	—	—
Private truck	—	—	—	—	—	—	—
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	36.6	—	34.0	—	38.9	—	23.2
Single modes	36.6	—	34.0	—	38.9	—	23.2
Truck	36.6	—	34.0	—	38.9	—	23.2
For-hire truck	S	S	S	S	S	S	40.7
Private truck	39.3	8.2	38.7	7.9	39.1	9.4	24.0
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 18, FUEL OILS							
Total	34.4	—	33.0	—	33.0	—	27.7
Single modes	34.4	—	33.0	—	33.0	—	27.7
Truck	34.5	1.0	33.2	1.3	33.1	.3	27.7
For-hire truck	S	S	S	S	47.0	3.0	32.2
Private truck	38.0	6.0	38.1	6.6	32.0	2.9	29.6
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	S	S	S	S	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	—	—	—	—	—	—	—

See footnote at end of table.

Table B–6. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	27.7	—	38.0	—	34.3	—	S
Single modes	27.4	1.0	38.2	.6	36.9	5.5	S
Truck	30.4	5.1	39.6	4.4	45.9	10.5	S
For-hire truck	41.5	13.1	45.2	14.1	49.7	13.0	S
Private truck	S	S	S	S	S	S	36.8
Rail	S	S	49.0	4.0	S	S	26.8
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	29.8
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	29.9
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	28.5
SCTG 20, BASIC CHEMICALS							
Total	42.1	—	S	S	S	S	29.2
Single modes	36.7	9.9	S	S	S	S	30.9
Truck	36.1	15.1	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	30.0
Private truck	45.7	14.4	S	S	S	S	43.1
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	29.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	29.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	S	S	S	S	S	S	21.5
Single modes	S	S	S	S	S	S	28.4
Truck	S	S	S	S	S	S	30.6
For-hire truck	S	S	S	S	S	S	29.1
Private truck	S	S	S	S	S	S	29.6
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	21.6	19.1	S	S	S	S	22.8
Parcel, U.S. Postal Service or courier	21.9	18.6	S	S	S	S	23.2
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

See footnote at end of table.

Table B–6. Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	32.6	—	39.4	—	46.2	—	25.5
Single modes	32.6	.1	39.4	—	46.1	—	26.3
Truck	32.6	.1	39.4	—	46.1	—	26.3
For-hire truck	33.4	13.7	44.1	14.9	48.7	13.4	26.8
Private truck	S	S	S	S	S	S	22.5
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.2
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.2
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 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	33.9	—	S	S	S	S	26.9
Single modes	38.1	11.7	S	S	S	S	22.5
Truck	38.1	11.6	S	S	S	S	22.4
For-hire truck	42.7	11.3	S	S	S	S	14.4
Private truck	42.8	8.3	49.6	8.1	S	S	38.6
Rail	S	S	S	S	S	S	31.6
Water	S	S	S	S	S	S	31.6
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	23.8
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	25.3
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	29.8
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 24, PLASTICS AND RUBBER							
Total	26.1	—	31.3	—	30.5	—	25.6
Single modes	27.4	3.5	32.2	2.2	28.5	7.4	31.0
Truck	27.7	3.4	32.2	2.2	28.5	7.4	37.1
For-hire truck	28.2	10.9	44.3	9.7	33.8	10.8	S
Private truck	36.6	9.2	34.9	9.3	38.5	7.6	30.6
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	26.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	37.4	2.6	S	S	S	S	27.6
Parcel, U.S. Postal Service or courier	44.9	2.8	39.8	1.2	46.2	7.9	28.1
Truck and rail	S	S	S	S	S	S	26.2
Truck and water	S	S	S	S	S	S	27.9
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. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	\$	\$	\$	\$	\$	\$	32.7
Single modes	\$	\$	\$	\$	\$	\$	32.7
Truck	\$	\$	\$	\$	\$	\$	32.7
For-hire truck	\$	\$	\$	\$	\$	\$	31.4
Private truck	\$	\$	\$	\$	\$	\$	32.5
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 26, WOOD PRODUCTS							
Total	12.3	—	16.0	—	26.6	—	22.5
Single modes	13.4	2.3	18.6	5.8	29.1	6.3	22.6
Truck	14.1	5.5	12.2	6.3	14.7	4.2	25.7
For-hire truck	9.9	4.6	15.1	6.3	15.1	3.6	17.4
Private truck	33.5	3.3	29.0	3.1	32.2	.9	33.0
Rail	23.2	5.5	31.0	6.2	33.6	7.5	8.3
Water	\$	\$	\$	\$	\$	\$	31.6
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	\$	\$	\$	\$	\$	\$	31.6
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	31.6
Pipeline	—	—	—	—	\$	\$	\$
Multiple modes	44.7	1.3	\$	\$	\$	\$	23.3
Parcel, U.S. Postal Service or courier	\$	\$	49.2	—	50.0	—	25.8
Truck and rail	\$	\$	\$	\$	\$	\$	26.3
Truck and water	\$	\$	\$	\$	\$	\$	25.9
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	41.2	1.5	\$	\$	\$	\$	\$
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	14.4	—	9.8	—	12.5	—	39.9
Single modes	15.2	3.8	12.2	4.5	14.9	5.8	41.6
Truck	17.9	2.3	9.4	2.6	15.9	2.0	\$
For-hire truck	16.9	1.8	10.6	1.7	15.9	2.0	\$
Private truck	\$	\$	\$	\$	\$	\$	36.3
Rail	16.1	3.9	15.8	4.3	15.6	5.3	4.6
Water	\$	\$	\$	\$	\$	\$	31.9
Shallow draft	\$	\$	\$	\$	\$	\$	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	\$	\$	\$	\$	\$	\$	31.6
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	\$	\$	\$
Multiple modes	28.4	3.8	32.0	4.5	27.1	5.8	22.2
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	29.3	3.7	33.1	4.3	29.3	5.4	19.7
Truck and water	39.7	.3	39.0	.3	39.3	1.0	21.2
Rail and water	\$	\$	\$	\$	\$	\$	29.8
Other multiple modes	\$	\$	\$	\$	\$	\$	31.6
Other and unknown modes	\$	\$	\$	\$	\$	\$	31.6

See footnote at end of table.

Table B–6. Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	35.7	—	39.8	—	S	S	S
Single modes	36.2	.8	40.0	.6	S	S	S
Truck	33.5	5.8	39.3	5.5	S	S	S
For-hire truck	38.3	11.3	42.2	11.7	S	S	46.0
Private truck	S	S	S	S	S	S	23.9
Rail	S	S	S	S	S	S	29.9
Water	S	S	S	S	S	S	27.9
Shallow draft	S	S	S	S	S	S	27.9
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	36.7	.9	41.2	.7	42.6	2.3	44.3
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	38.1
Truck and rail	—	—	—	—	—	—	—
Truck and water	39.2	.7	41.3	.7	42.7	2.3	23.7
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 29, PRINTED PRODUCTS							
Total	21.2	—	20.9	—	24.4	—	20.1
Single modes	26.7	8.5	27.9	8.5	30.3	7.8	S
Truck	27.2	8.4	28.1	8.5	30.8	7.8	S
For-hire truck	28.9	7.1	22.8	10.0	31.9	10.4	18.9
Private truck	S	S	S	S	S	S	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	39.3	.3	S	S	15.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	33.5	6.6	37.4	4.9	46.8	6.2	15.1
Parcel, U.S. Postal Service or courier	35.9	7.1	39.3	4.6	30.5	2.9	13.2
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	48.4	3.7	S	S	S	S	S
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	S	S	S	S	S	S	12.1
Single modes	S	S	S	S	S	S	19.0
Truck	S	S	S	S	S	S	19.0
For-hire truck	S	S	S	S	S	S	16.7
Private truck	30.0	10.4	S	S	29.8	2.8	34.2
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	28.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	32.4	4.8	32.7	2.9	36.6	6.6	8.3
Parcel, U.S. Postal Service or courier	32.4	4.8	32.7	2.9	36.6	6.6	8.3
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. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	31.6	—	38.7	—	32.7	—	S
Single modes	30.8	9.0	38.6	.1	32.7	1.7	S
Truck	31.2	9.0	38.8	5.5	39.1	8.0	S
For-hire truck	30.6	9.6	38.0	11.4	33.8	9.1	S
Private truck	37.0	9.8	S	S	S	S	S
Rail	S	S	S	S	S	S	27.9
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	22.2
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	22.2
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	28.3
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	23.7	—	23.3	—	23.3	—	23.5
Single modes	25.0	3.5	23.5	1.4	24.9	3.1	19.7
Truck	24.0	7.4	19.7	9.1	19.3	12.1	16.2
For-hire truck	31.7	7.5	23.9	7.3	23.3	11.2	21.2
Private truck	16.9	8.0	21.5	7.6	31.0	4.1	S
Rail	39.7	4.3	37.8	8.5	37.6	11.2	24.2
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	16.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	30.1
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	32.6
Truck and rail	S	S	S	S	S	S	30.7
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 33, ARTICLES OF BASE METAL							
Total	27.4	—	22.3	—	S	S	32.4
Single modes	22.5	8.3	22.7	4.4	S	S	S
Truck	22.7	8.3	22.7	4.4	S	S	S
For-hire truck	48.2	7.5	44.8	10.7	S	S	23.2
Private truck	23.8	11.7	27.7	11.8	S	S	36.8
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	22.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	33.0	2.4	37.4	8.4	45.2
Parcel, U.S. Postal Service or courier	S	S	32.7	2.4	38.8	8.5	45.3
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. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	25.5	—	21.8	—	27.3	—	17.9
Single modes	26.9	3.7	23.3	2.9	28.2	2.5	S
Truck	24.8	3.3	21.2	2.8	26.1	2.6	S
For-hire truck	27.7	4.7	22.8	5.6	26.4	3.1	21.4
Private truck	18.6	3.3	26.9	4.2	24.1	.7	27.4
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	22.1
Pipeline	S	S	S	S	S	S	S
Multiple modes	33.0	3.9	29.3	2.1	33.8	2.9	13.7
Parcel, U.S. Postal Service or courier	33.6	3.8	30.9	2.1	37.6	2.6	13.9
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	30.0
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	28.6	2.7	49.9	2.6	S	S	48.6
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	S	S	25.4	—	32.1	—	16.3
Single modes	S	S	27.7	10.2	35.8	11.0	20.2
Truck	S	S	28.9	11.1	40.3	14.2	24.6
For-hire truck	S	S	28.2	9.7	37.4	13.3	26.3
Private truck	S	S	S	S	S	S	28.2
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	12.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	27.3	8.4	37.7	9.7	42.5	10.4	17.9
Parcel, U.S. Postal Service or courier	27.3	8.4	38.1	9.7	43.3	10.4	18.0
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	29.8
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	28.3	—	27.5	—	33.4	—	16.8
Single modes	18.8	9.9	31.1	8.4	39.4	10.6	31.8
Truck	19.1	9.9	31.3	8.4	39.9	10.8	20.3
For-hire truck	23.3	6.6	39.6	7.4	43.0	8.9	20.9
Private truck	22.3	5.0	26.9	7.5	48.9	4.3	18.8
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	36.9	.2	43.4	.3	S	S	24.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	40.4	5.4	36.2	3.8	40.7	4.2	19.2
Parcel, U.S. Postal Service or courier	41.1	5.4	39.1	3.9	44.2	2.9	19.3
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	29.9
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	42.4	9.1	S	S	S

See footnote at end of table.

Table B–6. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	30.5	—	S	S	S	S	12.1
Single modes	34.6	9.4	S	S	S	S	14.3
Truck	35.0	9.0	S	S	S	S	23.1
For-hire truck	S	S	S	S	S	S	26.2
Private truck	48.6	14.4	S	S	S	S	25.2
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	43.0	.2	45.9	1.7	22.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	14.5
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	14.5
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.4
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	26.5	—	36.1	—	44.0	—	12.9
Single modes	35.6	11.1	46.0	11.6	S	S	17.2
Truck	S	S	48.2	11.9	S	S	31.5
For-hire truck	S	S	48.1	11.9	S	S	30.2
Private truck	S	S	S	S	S	S	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	22.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	36.0	10.3	49.8	10.6	48.2	11.4	19.1
Parcel, U.S. Postal Service or courier	36.0	10.3	49.8	10.6	48.2	11.4	19.1
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	30.6
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	37.7	—	S	S	S	S	26.4
Single modes	42.6	15.2	S	S	S	S	42.0
Truck	42.7	15.2	S	S	S	S	44.0
For-hire truck	S	S	S	S	S	S	40.7
Private truck	S	S	S	S	S	S	S
Rail	—	—	—	—	—	—	—
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	S	S	S	S	24.4
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	24.5
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. Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	27.1	—	22.7	—	33.6	—	11.2
Single modes	33.3	7.2	24.3	7.7	37.8	11.5	17.8
Truck	20.7	7.5	24.5	7.7	38.7	11.3	30.4
For-hire truck	27.0	7.4	32.0	12.2	42.4	13.0	18.9
Private truck	47.4	7.8	S	S	S	S	23.0
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	27.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	27.1	7.3	26.5	7.7	26.5	11.5	10.9
Parcel, U.S. Postal Service or courier	27.1	7.3	27.3	7.8	27.5	11.6	11.0
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	30.3
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	39.3
SCTG 41, WASTE AND SCRAP							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck	42.8	8.4	40.6	11.0	43.0	13.7	25.6
For-hire truck	46.8	6.9	44.3	8.7	47.7	9.7	27.4
Private truck	38.4	10.1	S	S	S	S	22.1
Rail	S	S	S	S	S	S	S
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	28.7
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	28.7
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 43, MIXED FREIGHT							
Total	14.6	—	18.1	—	17.4	—	28.0
Single modes	14.5	1.2	18.2	.7	17.0	2.4	32.6
Truck	14.6	1.2	18.2	.7	17.0	2.4	13.0
For-hire truck	16.2	7.3	13.1	4.8	19.1	5.8	12.8
Private truck	18.5	7.1	19.8	4.4	19.0	4.6	11.0
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	27.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	38.0	1.0	S	S	S	S	23.3
Parcel, U.S. Postal Service or courier	35.6	.9	S	S	S	S	23.5
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	29.8
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	48.8	.4	S	S	49.8	—	S

See footnote at end of table.

Table B–6. **Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002—Con.**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	\$	\$	44.7	—	\$	\$	\$
Single modes	\$	\$	40.5	10.6	\$	\$	\$
Truck	\$	\$	24.3	16.3	\$	\$	\$
For-hire truck	48.0	11.9	48.0	14.0	\$	\$	28.8
Private truck	\$	\$	37.4	15.6	\$	\$	\$
Rail	\$	\$	\$	\$	\$	\$	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	31.6
Pipeline	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	33.2
Parcel, U.S. Postal Service or courier	\$	\$	49.2	3.2	\$	\$	34.4
Truck and rail	\$	\$	\$	\$	\$	\$	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	\$

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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Table B–7. Estimated Measures of Reliability for Outbound Shipment Characteristics by State of Destination for State of Origin: 2002

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	15.1	—	16.3	—	15.9	—
NEW ENGLAND STATES						
Connecticut	43.6	—	46.5	—	47.2	.6
Maine	S	S	S	S	S	S
Massachusetts	23.4	.2	44.8	.2	43.6	1.4
New Hampshire	29.9	—	S	S	S	S
Rhode Island	29.9	—	S	S	S	S
Vermont	21.6	—	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	28.7	.2	22.5	—	23.1	.6
New York	21.3	.2	27.1	.1	26.9	.8
Pennsylvania	17.6	.1	32.7	—	32.6	.3
EAST NORTH CENTRAL STATES						
Illinois	18.0	.3	23.5	.3	24.8	1.2
Indiana	20.9	.2	S	S	S	S
Michigan	16.6	.1	20.2	—	20.3	.4
Ohio	20.2	.3	S	S	S	S
Wisconsin	32.5	.2	45.5	.2	46.6	1.3
WEST NORTH CENTRAL STATES						
Iowa	12.0	—	S	S	S	S
Kansas	28.8	—	44.0	—	45.2	.2
Minnesota	47.0	.5	37.9	.3	35.5	1.2
Missouri	35.8	.3	43.7	.4	44.9	1.1
Nebraska	49.2	.1	43.1	—	43.6	.3
North Dakota	42.2	—	S	S	S	S
South Dakota	36.8	—	48.7	—	S	S
SOUTH ATLANTIC STATES						
Delaware	46.7	—	S	S	S	S
District of Columbia	S	S	S	S	S	S
Florida	S	S	32.2	.1	32.6	1.0
Georgia	17.8	.2	24.4	—	25.1	.5
Maryland	23.7	—	48.7	—	49.2	.5
North Carolina	19.3	.2	28.2	—	29.7	.4
South Carolina	17.4	—	37.6	—	39.3	.1
Virginia	20.4	—	26.5	—	26.3	.1
West Virginia	37.4	—	49.7	—	49.7	—
EAST SOUTH CENTRAL STATES						
Alabama	36.4	—	28.9	—	29.0	.3
Kentucky	21.0	—	34.0	—	33.2	.1
Mississippi	S	S	S	S	S	S
Tennessee	23.8	.2	31.0	—	29.8	.4
WEST SOUTH CENTRAL STATES						
Arkansas	28.5	—	S	S	S	S
Louisiana	26.9	—	42.2	—	44.1	.2
Oklahoma	29.7	—	21.5	—	21.4	.2
Texas	12.9	.3	23.9	.2	24.8	.9
MOUNTAIN STATES						
Arizona	25.9	.3	31.8	.3	32.5	.5
Colorado	17.2	.2	38.7	.2	33.4	1.0
Idaho	10.1	.3	18.2	.4	19.7	.4
Montana	20.5	.2	21.8	—	19.7	.1
Nevada	14.3	.1	22.3	—	21.4	.2
New Mexico	22.7	—	46.2	—	48.1	.1
Utah	37.8	.3	21.8	.2	25.1	.3
Wyoming	19.4	—	37.9	—	38.1	—
PACIFIC STATES						
Alaska	19.3	.1	28.1	—	34.4	.2
California	33.1	1.9	13.0	1.6	14.2	1.3
Hawaii	37.8	.1	S	S	S	S
Oregon	15.6	2.1	23.0	5.1	15.9	1.9
Washington	6.5	1.4	11.7	1.3	10.0	.6

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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Table B–8. **Estimated Measures of Reliability for Inbound Shipment Characteristics by State of Origin for State of Destination: 2002**

[Estimates are shown as percents and are based on data from the 2002 Commodity Flow Survey]

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	9.8	—	16.1	—	12.9	—
NEW ENGLAND STATES						
Connecticut	42.6	—	42.9	—	44.3	—
Maine	36.4	—	S	S	S	S
Massachusetts	33.5	.1	27.4	—	27.6	—
New Hampshire	19.5	—	S	S	S	S
Rhode Island	45.6	—	S	S	S	S
Vermont	S	S	30.4	—	30.4	—
MIDDLE ATLANTIC STATES						
New Jersey	18.3	.2	45.4	—	45.1	.3
New York	S	S	20.4	—	19.5	—
Pennsylvania	31.5	.3	25.6	—	25.7	.2
EAST NORTH CENTRAL STATES						
Illinois	26.1	.6	48.1	.3	49.1	2.2
Indiana	25.5	.4	30.3	—	30.5	.6
Michigan	23.1	.2	S	S	S	S
Ohio	9.5	.2	14.4	—	14.5	.3
Wisconsin	36.4	.2	24.4	—	25.3	.5
WEST NORTH CENTRAL STATES						
Iowa	15.7	.1	S	S	S	S
Kansas	15.3	—	S	S	S	S
Minnesota	21.0	.3	19.9	—	20.1	.4
Missouri	27.3	.3	S	S	S	S
Nebraska	26.5	.1	42.6	—	41.8	.4
North Dakota	S	S	S	S	S	S
South Dakota	S	S	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	49.7	.1	29.9	—	30.4	—
District of Columbia	S	S	S	S	S	S
Florida	21.7	.2	22.8	—	23.1	.3
Georgia	17.0	.2	18.8	—	19.2	.3
Maryland	41.8	.1	22.1	—	22.2	—
North Carolina	13.4	.1	29.5	—	29.7	.3
South Carolina	20.6	.1	29.3	—	29.8	.3
Virginia	24.3	.1	26.9	—	26.9	.2
West Virginia	43.4	—	38.6	—	38.3	.1
EAST SOUTH CENTRAL STATES						
Alabama	42.5	.2	S	S	S	S
Kentucky	28.7	.2	S	S	S	S
Mississippi	30.8	—	27.0	—	27.3	.2
Tennessee	18.1	.1	34.5	—	33.6	.3
WEST SOUTH CENTRAL STATES						
Arkansas	35.7	.2	39.4	—	39.2	.3
Louisiana	25.1	—	24.1	—	24.0	.3
Oklahoma	16.8	.1	32.7	—	31.8	.2
Texas	30.8	.6	15.6	—	17.2	.5
MOUNTAIN STATES						
Arizona	24.9	.4	36.4	—	35.6	.2
Colorado	19.8	.2	S	S	S	S
Idaho	19.3	.1	36.1	1.0	38.7	.8
Montana	27.4	.1	27.4	.7	29.9	2.0
Nevada	13.7	—	S	S	S	S
New Mexico	28.5	—	49.6	—	S	S
Utah	14.9	.2	27.6	.2	32.0	.5
Wyoming	31.1	—	S	S	S	S
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	34.2	3.0	18.2	.6	24.0	1.6
Hawaii	32.4	—	S	S	S	S
Oregon	15.6	3.0	23.0	5.7	15.9	.9
Washington	10.9	1.6	44.3	6.5	29.1	3.3

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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Table B–9. Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation for State of Origin: 2002 and 1997

[Estimates are shown as percents and are based on data from the 2002 and 1997 Commodity Flow Surveys]

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 of number		Standard error of percent change
	2002	1997		2002	1997		2002	1997		2002	1997	
Total	15.1	8.5	17.3	16.3	5.8	19.3	15.9	4.2	20.7	12.0	9.1	28.9
Single modes	17.7	9.9	20.8	17.0	8.4	23.9	17.4	5.4	24.4	20.0	10.7	44.3
Truck	16.3	11.2	19.6	20.4	10.6	31.8	9.7	6.2	11.6	15.0	12.4	19.5
Rail	15.4	10.8	21.1	23.2	11.4	49.3	28.6	10.2	61.3	9.6	4.9	10.8
Water	S	32.3	S	38.9	36.9	5.6	32.2	49.4	4.2	47.0	S	S
Air (includes truck and air)	46.5	19.3	126.5	S	22.7	S	S	21.9	S	7.4	7.7	14.1
Pipeline	38.1	S	S	44.0	S	S	S	S	S	S	S	S
Multiple modes	9.3	11.7	13.5	21.0	42.1	30.6	25.0	15.8	47.3	8.4	8.3	22.2
Parcel, U.S. Postal Service or courier ..	9.2	7.8	13.1	20.2	18.4	24.8	32.0	11.8	58.3	8.4	8.4	22.4
Truck and rail	24.0	S	S	18.6	36.8	43.0	23.6	21.9	47.6	15.4	11.1	26.6
All other multiple modes	35.7	S	S	44.5	S	S	S	26.0	S	32.1	15.6	24.7
Other and unknown modes ...	29.2	12.7	25.4	41.7	41.3	14.9	25.3	31.2	7.1	S	34.1	S

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

S Estimate does not meet publication standards because of high sampling variability or poor response quality.

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

Table B–10. Estimated Measures of Reliability for Shipment Characteristics by Commodity Group for State of Origin: 2002 and 1997

[Estimates are shown as percents and are based on data from the 2002 and 1997 Commodity Flow Surveys]

SCTG code	Commodity description	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 of number		Standard error of percent change
		2002	1997		2002	1997		2002	1997		2002	1997	
	Total	15.1	8.5	17.3	16.3	5.8	19.3	15.9	4.2	20.7	12.0	9.1	28.9
01-05	Agricultural products and fish	15.1	15.3	15.1	17.2	25.8	10.1	25.8	23.4	18.7	22.2	25.8	97.1
06-09	Grains, alcohol, and tobacco products	9.6	16.9	16.9	15.7	16.9	23.9	17.4	18.8	27.2	S	25.6	S
10-14	Stones, nonmetallic minerals, and metallic ores	35.9	38.8	32.9	40.0	27.5	106.6	46.6	S	S	S	41.3	S
15-19	Coal and petroleum products	21.5	19.1	41.8	22.6	22.4	61.9	15.8	41.6	68.5	S	35.5	S
20-24	Basic chemicals, chemical, and pharmaceutical products	26.0	11.0	26.8	39.5	42.1	44.9	32.6	14.9	73.4	23.5	17.0	72.9
25-30	Logs, wood products, and textile and leather	22.7	14.7	26.3	14.2	15.2	18.1	23.6	8.3	39.4	16.3	7.1	23.0
31-34	Base metal and machinery ..	12.3	7.1	10.1	33.0	20.5	48.6	16.6	13.3	17.6	18.5	12.7	28.2
35-38	Electronic, motorized vehicles, and precision instruments	34.6	13.1	46.0	19.3	13.5	21.9	20.6	29.2	24.0	11.9	11.9	32.2
39-43	Furniture, mixed freight and misc. manufactured prod. ..	8.7	S	S	12.7	S	S	13.3	39.3	46.0	7.7	12.7	16.4
--	Commodity unknown	S	32.0	S	44.7	29.3	5.9	S	44.2	S	S	27.8	S

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

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Appendix C.

Sample Design, Data Collection, and Estimation

INTRODUCTION

The primary goal for the 2002 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 secondary objective is to estimate the volume of shipments moving from one geographic area to another (i.e., flows of commodities between states, regions, etc.) by mode and commodity. A detailed description of the sample design for the 2002 CFS is provided below.

SAMPLE DESIGN

The sample for the 2002 Commodity Flow Survey (CFS) was selected using a stratified three-stage design in which the first-stage sampling units were establishments, the second-stage sampling units were groups of four 1-week periods (reporting weeks) within the survey year, and the third-stage sampling units were shipments.

First Stage

Sampling frame

To create the first-stage sampling frame, we extracted a subset of establishment records from the Business Register (formerly the Standard Statistical Establishment List) as of September 2001. The Business Register is a database of all known establishments located in the United States or its territories. (An establishment is a single physical location where business transactions take place or services are performed.) Establishments located in the United States, having nonzero payroll in 2000, and classified in mining (except oil and gas extraction), manufacturing, wholesale, or electronic shopping and mail order retail industries, as defined by the 1997 North American Industry Classification System (NAICS), were included on the sampling frame. *Auxiliary establishments* (e.g. warehouses and central administrative offices) with shipping activity were also included on the sampling frame. Auxiliary establishments are establishments that are primarily involved in rendering support services for other establishments within the same company, instead of for the public, government, or other business firms. All other establishments included on the sampling frame are referred to as *nonauxiliary establishments*.

Some portion of establishments classified in the Retail Trade sector in the 1997 Economic Census was expected to be classified in the Wholesale Trade sector in the 2002 Economic Census. Because we wanted complete coverage of the Wholesale Trade sector as defined for the 2002 Economic Census, the 2002 CFS sampling frame also included establishments that were classified in particular retail industries (automotive parts and accessories, tires, floor coverings, building materials, nursery and garden, and office supplies) in the 1997 Economic Census and had characteristics indicating that they were likely to be classified as wholesale in the 2002 Economic Census. Of the establishments selected for the 2002 CFS from this set of establishments, only those that were classified as wholesale in the 2002 Economic Census were used in the production of estimates for this report.

Establishments classified in forestry, fishing, utilities, construction, transportation, services, and all other retail industries were not included on the sampling frame. Farms and government-owned entities (except government-owned liquor stores) were also excluded from the sampling frame. The resulting frame comprised approximately 760,000 establishments.

For each establishment we extracted sales, payroll, number of employees, a six-digit NAICS code, name and address, and a primary identifier. We also computed a measure of size for each establishment. The measure of size was designed to approximate an establishment's annual total value of shipments for the year 2000.

All of the establishments included on the sampling frame had state, county, and place geographic codes. We used these codes to assign each establishment to one of the 273 metropolitan areas (MAs) defined as a combination of the metropolitan statistical areas (MSAs) and consolidated metropolitan statistical areas (CMSAs). Establishments not located in an MA were assigned to MA 9999.

Stratification

We stratified the sampling frame by geography and industry. Geographic strata were defined by a combination of the 50 states, the District of Columbia, and the top 50 metropolitan areas (MAs) based on their population in Census 2000. If a particular MA was not one of the 50 largest, then it was collapsed with the remaining MAs and non-MAs within the state in which the particular MA resided. We refer to these collapsed strata as Rest of State (ROS) strata. When an MA crossed state boundaries, we considered the size of each part of the MA relative to the MAs total measure of size when determining whether or not to create strata in each state in which the MA was defined. The industry strata were determined as follows. Within each of the geographic strata, we started with a total of 45 industry groups based on 1997 NAICS: three mining (four-digit NAICS); 21 manufacturing (three-digit NAICS); 18 wholesale (four-digit NAICS); 1 retail (NAICS 4541); and 2 auxiliary (NAICS 4931 and 5511). We then implemented a rule that states a particular industry stratum will be defined within a geographic stratum if it contributes at least 2 percent to its corresponding state total measure of size or it contributes at least 2 percent to the national total measure of size for the industry. Industry groups not meeting these criteria were combined into at most 12 new collapsed industry strata using a clustering algorithm. Because of potential differences in shipping patterns between auxiliary and nonauxiliary establishments, we created two industry strata of auxiliary establishments in every geographic stratum. We refer to a particular geographic-by-industry combination as a *primary stratum*. Also note that a separate stratum was created at the national level for those Retail Trade sector establishments that we included in our sample.

Sample size and allocation

To reduce the sampling variability of the estimates, we used a stratified design with a certainty component. Within each primary stratum, a boundary (or cutoff) that divides the certainty establishments from the noncertainty establishments was determined using the Lavalée-Hidiroglou algorithm. If an establishment's measure of size was greater than the cutoff, the establishment was selected with certainty. Establishments selected with certainty were sure to be selected and represent only themselves (i.e., had a selection probability of one and a sampling weight of one).

Because the 2002 sample was about half the size of the 1997 CFS sample, we were concerned about the ability of the sample to capture less frequent types of shipments (e.g., air, water, rail, and hazardous materials). After considering several different alternatives, we felt the best approach was to identify those establishments which made the bulk of these types of shipments in 1997 and then select them with certainty. To identify these establishments, we proceeded as follows.

We identified all establishments in the 1997 CFS sample that reported shipments made by air, water, or rail. We also identified those establishments that reported shipments of hazardous materials. For each of these establishments, we computed the percentage of the establishment's total value and tonnage accounted for by each of these types of shipments. Next, we matched these establishments to the sampling frame for the 2002 CFS and identified each establishment with measure of size less than the certainty boundary. For both value and tons, we then looked to see what percent of the total volume of shipments for each type of shipment was captured by selecting with certainty the top 50, top 100, or all establishments. We considered the top 50 establishments as those establishments making the largest volume of each type of shipment (air, water, rail, hazardous). Once these establishments were identified, we grouped them into one file and unduplicated them. This procedure added a total of about 500 certainty establishments.

Establishments not selected with certainty made up the noncertainty frame. We further stratified 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 increased the efficiency of the sample design. The Dalenius-Hodges

cumulative $\sqrt{f}$ rule was used to set the substratum boundaries. We then used optimum allocation to determine the sample size required within each substratum to meet a coefficient of variation constraint on an estimate of the total measure of size for the primary stratum. Within each substratum, a simple random sample of establishments was selected without replacement.

To arrive at the final sample size, we allocated additional establishments to some of the strata so that the minimum substratum sample size was two and the probability of selecting any establishment was no less than 1 in 100. In total, the first-stage sample comprised 51,005 establishments.

Second Stage

The frame for the second stage of sampling consisted of 52-weeks from January 6, 2002 to January 4, 2003. Each establishment selected into the 2002 CFS sample was systematically assigned to report for four reporting weeks—one in each quarter of the reference year. Each of the 4-weeks was in the same relative position of the quarter. For example, an establishment might have been requested to report data for the 5th, 18th, 31st, and 44th weeks of the reference year. In this instance, each reporting week corresponds to the 5th week of each quarter. Prior to assignment of weeks to establishments, we sorted the selected sample by primary stratum (state x metropolitan area x industry) and measure-of-size.

Third Stage

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

DATA COLLECTION

Each establishment selected into the CFS sample was mailed a questionnaire for each of its four reporting weeks. We mailed each establishment a questionnaire once every quarter of 2002. For a given establishment, we requested that the respondent provide the following information about each of the establishment's reported shipments: shipment identification number, the date on which the shipment was made, value, weight, commodity, mode(s) of transportation, domestic destination or port of exit, an indication of whether the shipment was an export, and the United Nations or North America (UN/NA) number for hazardous material shipments. For a shipment that included more than one commodity, the respondent was instructed to report the commodity that made up the greatest percentage of the shipment's *weight*. For an export shipment, we also asked the respondent to provide the mode of export and the foreign destination city and country. See Appendix E for a copy of the questionnaire.

IMPUTATION OF SHIPMENT VALUE OR WEIGHT

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

- The same commodity code as the recipient.
- Both value and weight items reported greater than zero and passed edit.
- Origin and value for the item reported by the recipient similar to those of the recipient.

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

ESTIMATION

Estimated totals (e.g., value of shipments, tons, ton-miles) are produced as the sum of weighted shipment data (reported or imputed). Percent change and percent-of-total estimates are derived using the appropriate estimated totals. Estimates of average miles per shipment are computed by dividing an estimate of the total miles traveled by the estimated number of shipments. The annualized growth rate $\hat{A}$ for estimates from year y_1 to y_2 is computed as:

$$\hat{A} = 100 * \left(\left(\frac{\hat{X}_{y_2}}{\hat{X}_{y_1}} \right)^{1/(y_2 - y_1)} - 1 \right)$$

where $\hat{X}_{y_1}$ and $\hat{X}_{y_2}$ are estimates of the value of shipments, tons, ton-miles, or average miles per shipment for years y_1 and y_2 , respectively. The annualized growth rate measures the annual rate of change between estimates from any 2 years by assuming a constant yearly rate of change.

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

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

Like establishments, we identified shipments as either certainty or noncertainty. (See the Nonsampling Error section in Appendix B for a description of how certainty shipments were identified.) For noncertainty shipments, the *shipment weight* was defined as the ratio of the total number of shipments (as reported by the respondent) made by an establishment in a reporting week to the number of sampled shipments for the same week. This weight uses data from the sampled shipments to represent all the establishment's shipments made in the reporting week. However, a respondent may have failed to provide sufficient information about a particular sampled shipment. For example, a respondent may not have been able to provide value, weight, or a destination for one of the sampled shipments. If this data item could not be imputed, then this shipment did not contribute to tabulations and was deemed unusable. (A *usable shipment* is one that has valid entries for value, weight, and origin and destination ZIP Codes.) To account for these unusable shipments, we applied 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 for certainty shipments from a particular establishment's reporting week is 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 was able to provide information about all large (or certainty) shipments made in the quarter containing the reporting week, then the quarter weight for each of these shipments was one. For each establishment, the quarterly estimates were added to produce an estimate of the establishment's value of shipments for the entire survey year. Whenever an establishment did not provide the Census Bureau with a response for each of its four reporting weeks, we computed 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 computed an estimate of each establishment's value of shipments for the entire survey year. We then multiplied this estimate by a factor that adjusts the estimate using value of shipments and sales data obtained from other surveys and censuses conducted by the Census Bureau. This weight, the *establishment-level adjustment weight*, 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 was then weighted by the *establishment weight*. This weight is equal to the reciprocal of the establishment's probability of being selected into the sample.

A final adjustment weight, the *industry-level adjustment weight*, uses information from other surveys and censuses conducted by the Census Bureau 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 (2001) and the year in which the data were collected (2002). Separate industry-level adjustment weights were 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 of product classification that is used worldwide. The purpose of the SCTG coding system was to specifically address statistical needs in regard to products transported.

In 1993, Commodity Flow Survey (CFS) data were 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 and 2002, 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. For the data presented on this report, we aggregated the SCTG codes to the two-digit level.

