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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	442 130	100.0	718 351	100.0	167 342	100.0	469
Single modes	361 345	81.7	688 164	95.8	149 306	89.2	245
Truck ²	328 191	74.2	497 573	69.3	65 577	39.2	210
For-hire truck	221 388	50.1	266 387	37.1	52 956	31.6	445
Private truck	106 380	24.1	230 839	32.1	12 565	7.5	69
Rail	14 877	3.4	88 500	12.3	33 676	20.1	504
Water	4 917	1.1	56 725	7.9	46 489	27.8	1 369
Shallow draft	4 911	1.1	56 724	7.9	46 489	27.8	1 371
Great Lakes	-	-	-	-	-	-	-
Deep draft	S	S	S	S	S	S	3
Air (includes truck and air)	3 639	.8	110	-	177	.1	1 240
Pipeline ³	9 722	2.2	45 255	6.3	S	S	S
Multiple modes	68 421	15.5	20 135	2.8	16 907	10.1	656
Parcel, U.S. Postal Service or courier	59 417	13.4	2 405	.3	1 183	.7	655
Truck and rail	7 824	1.8	6 077	.8	4 348	2.6	1 087
Truck and water	883	.2	8 014	1.1	7 393	4.4	2 077
Rail and water	S	S	S	S	S	S	1 780
Other multiple modes	S	S	S	S	S	S	2 638
Other and unknown modes	12 363	2.8	10 052	1.4	1 130	.7	93

- 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 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	81.7	82.8	95.8	96.0	89.2	90.7
Truck ²	74.2	72.1	69.3	70.5	39.2	36.4
For-hire truck	50.1	49.1	37.1	44.1	31.6	28.7
Private truck	24.1	22.5	32.1	26.1	7.5	7.4
Rail	3.4	5.1	12.3	11.6	20.1	22.9
Water	1.1	1.7	7.9	7.1	27.8	28.6
Shallow draft	1.1	1.7	7.9	7.1	27.8	28.6
Great Lakes	-	-	-	-	-	-
Deep draft	S	-	S	-	S	-
Air (includes truck and air) .....	.8	1.4	-	-	.1	.1
Pipeline ³	2.2	2.5	6.3	6.8	S	S
Multiple modes	15.5	14.4	2.8	2.1	10.1	7.6
Parcel, U.S. Postal Service or courier	13.4	12.3	.3	.2	.7	.7
Truck and rail	1.8	1.9	.8	.5	2.6	2.8
Truck and water .....	.2	-	1.1	.1	4.4	.5
Rail and water	S	-	S	1.3	S	3.7
Other multiple modes	S	S	S	S	S	S
Other and unknown modes	2.8	2.8	1.4	2.0	.7	1.6

- 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 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 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	167 342	100.0	469
Truck	65 577	39.2	210
Rail	33 676	20.1	504
Shallow draft	46 489	27.8	1 371
Great Lakes	—	—	—
Deep draft	S	S	3
Air	177	.1	1 240
Parcel, U.S. Postal Service or courier	3 387	2.0	206
Pipeline ³	S	S	S
Other and unknown modes	1 130	.7	93

— 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	442 130	100.0	718 351	100.0	167 342	100.0
Less than 50 miles	137 560	31.1	421 331	58.7	9 247	5.5
50 to 99 miles	33 510	7.6	61 052	8.5	5 570	3.3
100 to 249 miles	65 495	14.8	82 923	11.5	16 755	10.0
250 to 499 miles	73 957	16.7	55 118	7.7	25 164	15.0
500 to 749 miles	58 562	13.2	42 642	5.9	36 706	21.9
750 to 999 miles	36 891	8.3	43 365	6.0	51 636	30.9
1,000 to 1,499 miles	12 942	2.9	4 735	.7	6 949	4.2
1,500 to 1,999 miles	22 913	5.2	7 156	1.0	15 186	9.1
2,000 miles or more	300	—	28	—	129	—
Single modes	361 345	100.0	688 164	100.0	149 306	100.0
Less than 50 miles	121 290	33.6	409 622	59.5	8 994	6.0
50 to 99 miles	29 794	8.2	59 738	8.7	5 409	3.6
100 to 249 miles	56 186	15.5	79 584	11.6	16 007	10.7
250 to 499 miles	60 358	16.7	54 088	7.9	24 745	16.6
500 to 749 miles	41 217	11.4	38 939	5.7	33 035	22.1
750 to 999 miles	28 507	7.9	36 819	5.4	43 638	29.2
1,000 to 1,499 miles	8 796	2.4	3 289	.5	4 714	3.2
1,500 to 1,999 miles	15 108	4.2	6 074	.9	12 742	8.5
2,000 miles or more	S	S	10	—	21	—
Truck³	328 191	100.0	497 573	100.0	65 577	100.0
Less than 50 miles	111 941	34.1	339 770	68.3	6 645	10.1
50 to 99 miles	29 165	8.9	51 617	10.4	4 459	6.8
100 to 249 miles	51 194	15.6	42 978	8.6	8 346	12.7
250 to 499 miles	56 591	17.2	31 155	6.3	12 727	19.4
500 to 749 miles	35 374	10.8	17 001	3.4	12 808	19.5
750 to 999 miles	23 622	7.2	8 113	1.6	7 996	12.2
1,000 to 1,499 miles	7 910	2.4	2 540	.5	3 641	5.6
1,500 to 1,999 miles	12 327	3.8	4 392	.9	8 944	13.6
2,000 miles or more	S	S	S	S	S	S
For-hire truck	221 388	100.0	266 387	100.0	52 956	100.0
Less than 50 miles	47 660	21.5	151 210	56.8	3 522	6.7
50 to 99 miles	15 192	6.9	35 015	13.1	2 995	5.7
100 to 249 miles	36 800	16.6	27 193	10.2	5 337	10.1
250 to 499 miles	47 605	21.5	22 752	8.5	9 525	18.0
500 to 749 miles	33 126	15.0	15 975	6.0	12 040	22.7
750 to 999 miles	21 131	9.5	7 572	2.8	7 474	14.1
1,000 to 1,499 miles	7 785	3.5	2 481	.9	3 553	6.7
1,500 to 1,999 miles	12 021	5.4	4 182	1.6	8 500	16.1
2,000 miles or more	S	S	S	S	S	S
Private truck	106 380	100.0	230 839	100.0	12 565	100.0
Less than 50 miles	64 190	60.3	188 494	81.7	3 119	24.8
50 to 99 miles	13 858	13.0	16 469	7.1	1 450	11.5
100 to 249 miles	14 248	13.4	15 664	6.8	2 984	23.7
250 to 499 miles	8 922	8.4	8 380	3.6	3 194	25.4
500 to 749 miles	2 248	2.1	1 026	.4	768	6.1
750 to 999 miles	2 483	2.3	536	.2	518	4.1
1,000 to 1,499 miles	124	.1	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	—	—	—	—	—	—
Rail	14 877	100.0	88 500	100.0	33 676	100.0
Less than 50 miles	2 828	19.0	35 616	40.2	1 878	5.6
50 to 99 miles	286	1.9	5 418	6.1	651	1.9
100 to 249 miles	1 166	7.8	10 671	12.1	2 557	7.6
250 to 499 miles	2 297	15.4	15 914	18.0	7 011	20.8
500 to 749 miles	3 848	25.9	11 192	12.6	9 192	27.3
750 to 999 miles	2 054	13.8	S	S	S	S
1,000 to 1,499 miles	414	2.8	741	.8	1 059	3.1
1,500 to 1,999 miles	1 984	13.3	1 639	1.9	3 694	11.0
2,000 miles or more	—	—	—	—	—	—
Water	4 917	100.0	56 725	100.0	46 489	100.0
Less than 50 miles	S	S	5 130	9.0	122	.3
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	179	3.6	S	S	S	S
250 to 499 miles	841	17.1	6 388	11.3	4 838	10.4
500 to 749 miles	1 174	23.9	9 944	17.5	10 561	22.7
750 to 999 miles	2 327	47.3	21 386	37.7	27 993	60.2
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Shallow draft	4 911	100.0	56 724	100.0	46 489	100.0
Less than 50 miles	S	S	5 129	9.0	122	.3
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	179	3.6	S	S	S	S
250 to 499 miles	841	17.1	6 388	11.3	4 838	10.4
500 to 749 miles	1 174	23.9	9 944	17.5	10 561	22.7
750 to 999 miles	2 327	47.4	21 386	37.7	27 993	60.2
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	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Air (includes truck and air)	3 639	100.0	110	100.0	177	100.0
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	634	17.4	6	5.3	3	1.8
250 to 499 miles	517	14.2	21	19.1	12	6.6
500 to 749 miles	693	19.1	18	16.5	17	9.9
750 to 999 miles	503	13.8	12	11.2	15	8.5
1,000 to 1,499 miles	S	S	8	7.1	14	7.9
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	22	.6	S	S	S	S
Pipeline⁴	9 722	100.0	45 255	100.0	S	S
Less than 50 miles	6 270	64.5	29 107	64.3	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	3 013	31.0	13 753	30.4	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	—	—	—	—	S	S
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	68 421	100.0	20 135	100.0	16 907	100.0
Less than 50 miles	8 047	11.8	S	S	143	.8
50 to 99 miles	3 358	4.9	S	S	S	S
100 to 249 miles	8 685	12.7	2 795	13.9	622	3.7
250 to 499 miles	12 637	18.5	713	3.5	286	1.7
500 to 749 miles	16 395	24.0	S	S	S	S
750 to 999 miles	8 054	11.8	6 481	32.2	7 935	46.9
1,000 to 1,499 miles	4 010	5.9	S	S	S	S
1,500 to 1,999 miles	7 056	10.3	939	4.7	2 143	12.7
2,000 miles or more	179	.3	14	—	S	S
Parcel, U.S. Postal Service or courier	59 417	100.0	2 405	100.0	1 183	100.0
Less than 50 miles	7 793	13.1	S	S	S	S
50 to 99 miles	3 324	5.6	182	7.6	S	S
100 to 249 miles	8 448	14.2	409	17.0	84	7.1
250 to 499 miles	12 457	21.0	492	20.5	206	17.4
500 to 749 miles	12 145	20.4	367	15.2	283	23.9
750 to 999 miles	6 374	10.7	168	7.0	167	14.1
1,000 to 1,499 miles	3 702	6.2	98	4.1	145	12.2
1,500 to 1,999 miles	5 099	8.6	126	5.3	260	22.0
2,000 miles or more	75	.1	2	—	5	.4
Truck and rail	7 824	100.0	6 077	100.0	4 348	100.0
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	1 158	19.1	1 019	23.4
750 to 999 miles	966	12.4	398	6.6	441	10.2
1,000 to 1,499 miles	292	3.7	S	S	S	S
1,500 to 1,999 miles	1 958	25.0	813	13.4	1 883	43.3
2,000 miles or more	S	S	S	S	S	S
Truck and water	883	100.0	8 014	100.0	7 393	100.0
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	61	6.9	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	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Other multiple modes	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Other and unknown modes	12 363	100.0	10 052	100.0	1 130	100.0
Less than 50 miles	8 223	66.5	8 133	80.9	110	9.8
50 to 99 miles	358	2.9	S	S	41	3.6
100 to 249 miles	625	5.1	544	5.4	127	11.2
250 to 499 miles	961	7.8	317	3.2	132	11.7
500 to 749 miles	950	7.7	S	S	S	S
750 to 999 miles	329	2.7	64	.6	62	5.5
1,000 to 1,499 miles	137	1.1	56	.6	76	6.7
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S

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

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 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 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	442 130	100.0	718 351	100.0	167 342	100.0	469
Less than 50 lb	52 085	11.8	1 071	.1	517	.3	594
50 to 99 lb	16 677	3.8	812	.1	312	.2	378
100 to 499 lb	43 172	9.8	4 580	.6	1 342	.8	275
500 to 749 lb	12 159	2.8	2 224	.3	635	.4	282
750 to 999 lb	8 297	1.9	1 604	.2	440	.3	277
1,000 to 9,999 lb	88 901	20.1	39 142	5.4	8 896	5.3	229
10,000 to 49,999 lb	163 359	36.9	320 209	44.6	51 374	30.7	172
50,000 to 99,999 lb	24 404	5.5	127 171	17.7	10 837	6.5	84
100,000 lb or more	33 077	7.5	221 540	30.8	92 989	55.6	373
Single modes	361 345	100.0	688 164	100.0	149 306	100.0	245
Less than 50 lb	13 082	3.6	301	—	90	—	317
50 to 99 lb	7 736	2.1	343	—	91	—	259
100 to 499 lb	30 809	8.5	3 513	.5	908	.6	221
500 to 749 lb	11 112	3.1	2 006	.3	552	.4	271
750 to 999 lb	7 953	2.2	1 515	.2	388	.3	257
1,000 to 9,999 lb	85 125	23.6	37 842	5.5	8 436	5.7	228
10,000 to 49,999 lb	154 665	42.8	314 383	45.7	48 263	32.3	163
50,000 to 99,999 lb	24 017	6.6	124 988	18.2	10 572	7.1	83
100,000 lb or more	26 847	7.4	203 274	29.5	80 007	53.6	380
Truck²	328 191	100.0	497 573	100.0	65 577	100.0	210
Less than 50 lb	11 273	3.4	279	—	62	—	225
50 to 99 lb	7 030	2.1	330	—	68	.1	206
100 to 499 lb	30 036	9.2	3 496	.7	889	1.4	217
500 to 749 lb	10 956	3.3	2 000	.4	542	.8	267
750 to 999 lb	7 914	2.4	1 510	.3	383	.6	255
1,000 to 9,999 lb	84 850	25.9	37 793	7.6	8 375	12.8	226
10,000 to 49,999 lb	151 868	46.3	310 701	62.4	43 633	66.5	152
50,000 to 99,999 lb	21 872	6.7	120 183	24.2	8 167	12.5	68
100,000 lb or more	2 392	.7	21 282	4.3	3 458	5.3	274
For-hire truck	221 388	100.0	266 387	100.0	52 956	100.0	445
Less than 50 lb	S	S	95	—	44	—	473
50 to 99 lb	4 112	1.9	94	—	54	.1	565
100 to 499 lb	19 756	8.9	1 275	.5	770	1.5	591
500 to 749 lb	7 186	3.2	835	.3	477	.9	567
750 to 999 lb	5 910	2.7	649	.2	342	.6	528
1,000 to 9,999 lb	54 977	24.8	15 216	5.7	6 903	13.0	476
10,000 to 49,999 lb	105 294	47.6	168 969	63.4	35 243	66.6	237
50,000 to 99,999 lb	14 197	6.4	66 451	24.9	5 882	11.1	86
100,000 lb or more	1 938	.9	12 804	4.8	3 241	6.1	335
Private truck	106 380	100.0	230 839	100.0	12 565	100.0	69
Less than 50 lb	3 237	3.0	183	—	18	.1	105
50 to 99 lb	2 915	2.7	233	.1	14	.1	63
100 to 499 lb	10 244	9.6	2 181	.9	115	.9	45
500 to 749 lb	3 745	3.5	1 141	.5	61	.5	53
750 to 999 lb	1 982	1.9	834	.4	38	.3	45
1,000 to 9,999 lb	29 608	27.8	22 359	9.7	1 432	11.4	61
10,000 to 49,999 lb	46 531	43.7	141 707	61.4	8 387	66.7	61
50,000 to 99,999 lb	7 663	7.2	53 722	23.3	2 283	18.2	44
100,000 lb or more	454	.4	S	S	S	S	S
Rail	14 877	100.0	88 500	100.0	33 676	100.0	504
Less than 50 lb	S	S	S	S	S	S	S
50 to 99 lb	S	S	S	S	S	S	412
100 to 499 lb	S	S	S	S	S	S	429
500 to 749 lb	S	S	S	S	S	S	589
750 to 999 lb	S	S	S	S	S	S	1 010
1,000 to 9,999 lb	115	.8	25	—	22	—	968
10,000 to 49,999 lb	2 468	16.6	2 366	2.7	2 524	7.5	1 011
50,000 to 99,999 lb	S	S	S	S	S	S	501
100,000 lb or more	10 149	68.2	81 324	91.9	28 723	85.3	383
Water	4 917	100.0	56 725	100.0	46 489	100.0	1 369
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	3
10,000 to 49,999 lb	S	S	S	S	S	S	1 604
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	4 607	93.7	55 454	97.8	44 444	95.6	816
Shallow draft	4 911	100.0	56 724	100.0	46 489	100.0	1 371
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	3
10,000 to 49,999 lb	S	S	S	S	S	S	1 606
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	4 607	93.8	55 454	97.8	44 444	95.6	816

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	\$	\$	\$	\$	\$	\$	3
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	\$	\$	\$	\$	\$	\$	3
10,000 to 49,999 lb	\$	\$	\$	\$	\$	\$	3
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Air (includes truck and air)	3 639	100.0	110	100.0	177	100.0	1 240
Less than 50 lb	1 808	49.7	22	19.6	28	15.6	1 196
50 to 99 lb	705	19.4	13	11.7	22	12.6	1 695
100 to 499 lb	770	21.2	16	14.5	19	10.5	1 234
500 to 749 lb	\$	\$	6	5.6	10	5.7	1 580
750 to 999 lb	32	.9	3	2.4	3	1.5	1 010
1,000 to 9,999 lb	159	4.4	24	21.6	39	22.0	1 837
10,000 to 49,999 lb	\$	\$	\$	\$	\$	\$	2 002
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Pipeline³	9 722	100.0	45 255	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	9 699	99.8	45 213	99.9	\$	\$	\$
Multiple modes	68 421	100.0	20 135	100.0	16 907	100.0	656
Less than 50 lb	38 035	55.6	740	3.7	425	2.5	684
50 to 99 lb	8 708	12.7	454	2.3	221	1.3	480
100 to 499 lb	11 648	17.0	939	4.7	424	2.5	463
500 to 749 lb	720	1.1	\$	\$	82	.5	426
750 to 999 lb	324	.5	81	.4	\$	\$	651
1,000 to 9,999 lb	870	1.3	118	.6	172	1.0	1 476
10,000 to 49,999 lb	6 217	9.1	2 572	12.8	2 374	14.0	1 048
50,000 to 99,999 lb	\$	\$	\$	\$	229	1.4	\$
100,000 lb or more	1 696	2.5	14 139	70.2	12 929	76.5	\$
Parcel, U.S. Postal Service or courier	59 417	100.0	2 405	100.0	1 183	100.0	655
Less than 50 lb	38 031	64.0	740	30.8	425	35.9	684
50 to 99 lb	8 702	14.6	453	18.8	219	18.5	477
100 to 499 lb	11 603	19.5	935	38.9	411	34.8	453
500 to 749 lb	700	1.2	\$	\$	77	6.5	406
750 to 999 lb	319	.5	80	3.3	\$	\$	619
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	383
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	7 824	100.0	6 077	100.0	4 348	100.0	1 087
Less than 50 lb	\$	\$	\$	\$	\$	\$	1 408
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	\$	\$	2	—	3	—	1 705
500 to 749 lb	\$	\$	1	—	\$	\$	1 354
750 to 999 lb	\$	\$	\$	\$	\$	\$	1 588
1,000 to 9,999 lb	785	10.0	106	1.7	113	2.6	1 006
10,000 to 49,999 lb	5 945	76.0	1 373	22.6	2 036	46.8	1 429
50,000 to 99,999 lb	\$	\$	77	1.3	97	2.2	1 263
100,000 lb or more	889	11.4	\$	\$	2 096	48.2	\$
Truck and water	883	100.0	8 014	100.0	7 393	100.0	2 077
Less than 50 lb	\$	\$	\$	\$	\$	\$	4 604
50 to 99 lb	\$	\$	\$	\$	\$	\$	4 645
100 to 499 lb	\$	\$	\$	\$	\$	\$	5 044
500 to 749 lb	\$	\$	\$	\$	\$	\$	10 732
750 to 999 lb	\$	\$	\$	\$	\$	\$	8 455
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	9 509
10,000 to 49,999 lb	\$	\$	\$	\$	\$	\$	\$
50,000 to 99,999 lb	\$	\$	\$	\$	\$	\$	160
100,000 lb or more	518	58.7	5 988	74.7	\$	\$	1 195

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	1 780
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	4 054
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	281
100,000 lb or more	S	S	S	S	S	S	1 251
Other multiple modes	S	S	S	S	S	S	2 638
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	4 034
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	677
Other and unknown modes	12 363	100.0	10 052	100.0	1 130	100.0	93
Less than 50 lb	967	7.8	30	.3	2	.2	S
50 to 99 lb	234	1.9	15	.2	1	—	S
100 to 499 lb	714	5.8	127	1.3	11	.9	S
500 to 749 lb	S	S	25	.2	1	—	S
750 to 999 lb	21	.2	8	—	S	S	S
1,000 to 9,999 lb	2 906	23.5	1 181	11.7	288	25.5	184
10,000 to 49,999 lb	2 477	20.0	3 255	32.4	737	65.3	259
50,000 to 99,999 lb	184	1.5	S	S	36	3.2	S
100,000 lb or more	4 534	36.7	S	S	54	4.8	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 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.

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	442 130	100.0	718 351	100.0	167 342	100.0	469
01	Live animals and live fish	S	S	S	S	S	S	320
02	Cereal grains	4 410	1.0	52 895	7.4	32 438	19.4	S
03	Other agricultural products	6 562	1.5	28 289	3.9	12 297	7.3	99
04	Animal feed and products of animal origin, n.e.c.	2 097	.5	8 581	1.2	3 612	2.2	165
05	Meat, fish, seafood, and their preparations	7 912	1.8	2 790	.4	958	.6	221
06	Milled grain products and preparations, and bakery products	6 718	1.5	9 985	1.4	5 144	3.1	379
07	Other prepared foodstuffs and fats and oils	21 452	4.9	30 296	4.2	13 485	8.1	S
08	Alcoholic beverages	5 653	1.3	6 905	1.0	1 637	1.0	26
09	Tobacco products	1 360	.3	37	—	37	—	401
10	Monumental or building stone	S	S	S	S	S	S	S
11	Natural sands	156	—	17 928	2.5	2 462	1.5	S
12	Gravel and crushed stone	S	S	S	S	S	S	20
13	Nonmetallic minerals n.e.c.	115	—	13 848	1.9	341	.2	21
14	Metallic ores and concentrates	S	S	S	S	S	S	453
15	Coal	705	.2	32 296	4.5	5 153	3.1	86
17	Gasoline and aviation turbine fuel	18 725	4.2	69 844	9.7	S	S	77
18	Fuel oils	5 722	1.3	25 683	3.6	1 899	1.1	15
19	Coal and petroleum products, n.e.c.	3 892	.9	23 984	3.3	S	S	S
20	Basic chemicals	2 010	.5	3 351	.5	1 422	.8	287
21	Pharmaceutical products	24 682	5.6	1 273	.2	S	S	617
22	Fertilizers	3 030	.7	19 158	2.7	S	S	S
23	Chemical products and preparations, n.e.c.	17 861	4.0	10 262	1.4	S	S	314
24	Plastics and rubber	17 430	3.9	8 840	1.2	5 969	3.6	397
25	Logs and other wood in the rough	S	S	S	S	S	S	350
26	Wood products	2 613	.6	3 459	.5	345	.2	252
27	Pulp, newsprint, paper, and paperboard	6 360	1.4	6 590	.9	1 288	.8	142
28	Paper or paperboard articles	5 719	1.3	3 555	.5	1 315	.8	341
29	Printed products	7 253	1.6	2 151	.3	946	.6	735
30	Textiles, leather, and articles of textiles or leather	5 094	1.2	367	—	153	—	591
31	Nonmetallic mineral products	6 667	1.5	54 839	7.6	3 414	2.0	197
32	Base metal in primary or semifinished forms and in finished basic shapes	19 589	4.4	31 391	4.4	7 169	4.3	217
33	Articles of base metal	19 799	4.5	16 427	2.3	3 605	2.2	307
34	Machinery	28 156	6.4	3 647	.5	2 250	1.3	491
35	Electronic and other electrical equipment and components and office equipment	48 110	10.9	3 513	.5	1 138	.7	604
36	Motorized and other vehicles (including parts)	30 728	7.0	4 366	.6	1 811	1.1	696
37	Transportation equipment, n.e.c.	S	S	S	S	S	S	687
38	Precision instruments and apparatus	4 278	1.0	S	S	60	—	702
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	2 393	.5	355	—	97	—	593
40	Miscellaneous manufactured products	19 804	4.5	7 832	1.1	3 145	1.9	846
41	Waste and scrap	S	S	S	S	S	S	S
43	Mixed freight	71 907	16.3	28 516	4.0	6 706	4.0	277
--	Commodity unknown	821	.2	S	S	S	S	475

— 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	1.0	2.0	7.4	10.1	19.4	20.6
03	Other agricultural products	1.5	2.2	3.9	3.7	7.3	7.7
04	Animal feed and products of animal origin, n.e.c. ....	.5	1.5	1.2	2.0	2.2	5.3
05	Meat, fish, seafood, and their preparations	1.8	2.3	.4	.5	.6	1.0
06	Milled grain products and preparations, and bakery products	1.5	2.1	1.4	1.5	3.1	4.1
07	Other prepared foodstuffs and fats and oils	4.9	6.0	4.2	4.0	8.1	8.5
08	Alcoholic beverages	1.3	1.0	1.0	.5	1.0	S
09	Tobacco products .....	.3	.7	—	—	—	—
10	Monumental or building stone	S	S	S	S	S	S
11	Natural sands	—	S	2.5	S	1.5	1.5
12	Gravel and crushed stone	S	.1	S	10.4	S	1.5
13	Nonmetallic minerals n.e.c.	—	—	1.9	S	.2	S
14	Metallic ores and concentrates	S	—	S	—	S	—
15	Coal .....	.2	.5	4.5	11.2	3.1	13.3
17	Gasoline and aviation turbine fuel	4.2	3.1	9.7	7.3	S	3.0
18	Fuel oils	1.3	1.3	3.6	3.9	1.1	.6
19	Coal and petroleum products, n.e.c. ....	.9	1.0	3.3	2.6	S	2.2
20	Basic chemicals .....	.5	1.3	.5	1.1	.8	2.0
21	Pharmaceutical products	5.6	2.5	.2	—	S	.2
22	Fertilizers .....	.7	.4	2.7	1.0	S	.3
23	Chemical products and preparations, n.e.c.	4.0	4.9	1.4	1.3	S	2.6
24	Plastics and rubber	3.9	6.3	1.2	1.3	3.6	3.2
25	Logs and other wood in the rough	S	S	S	S	S	S
26	Wood products .....	.6	.7	.5	S	.2	.4
27	Pulp, newsprint, paper, and paperboard	1.4	1.0	.9	.6	.8	.8
28	Paper or paperboard articles	1.3	1.5	.5	.4	.8	.8
29	Printed products	1.6	3.2	.3	.5	.6	.8
30	Textiles, leather, and articles of textiles or leather	1.2	1.0	—	—	—	.1
31	Nonmetallic mineral products	1.5	1.3	7.6	S	2.0	3.0
32	Base metal in primary or semifinished forms and in finished basic shapes	4.4	6.3	4.4	3.6	4.3	5.0
33	Articles of base metal	4.5	4.6	2.3	.9	2.2	1.9
34	Machinery	6.4	8.5	.5	.6	1.3	1.3
35	Electronic and other electrical equipment and components and office equipment	10.9	11.6	.5	.4	.7	1.0
36	Motorized and other vehicles (including parts)	7.0	7.7	.6	.7	1.1	1.9
37	Transportation equipment, n.e.c.	S	.8	S	—	S	.2
38	Precision instruments and apparatus	1.0	1.8	S	—	—	—
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs .....	.5	.6	—	—	—	.1
40	Miscellaneous manufactured products	4.5	6.3	1.1	.8	1.9	2.4
41	Waste and scrap	S	.9	S	1.9	S	1.2
43	Mixed freight	16.3	2.1	4.0	5.5	4.0	5.5
--	Commodity unknown .....	.2	.7	S	.3	S	.2

— 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 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.

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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							
Total²	442 130	100.0	718 351	100.0	167 342	100.0	469
Single modes	361 345	81.7	688 164	95.8	149 306	89.2	245
Truck ³	328 191	74.2	497 573	69.3	65 577	39.2	210
For-hire truck	221 388	50.1	266 387	37.1	52 956	31.6	445
Private truck	106 803	24.1	230 839	32.1	12 565	7.5	69
Rail	14 877	3.4	88 500	12.3	33 676	20.1	504
Water	4 917	1.1	56 725	7.9	46 489	27.8	1 369
Shallow draft	4 911	1.1	56 724	7.9	46 489	27.8	1 371
Great Lakes	-	-	-	-	-	-	-
Deep draft	S	S	S	S	S	S	3
Air (includes truck and air)	3 639	.8	110	-	177	.1	1 240
Pipeline ⁴	9 722	2.2	45 255	6.3	S	S	S
Multiple modes	68 421	15.5	20 135	2.8	16 907	10.1	656
Parcel, U.S. Postal Service or courier	59 417	13.4	2 405	.3	1 183	.7	655
Truck and rail	7 824	1.8	6 077	.8	4 348	2.6	1 087
Truck and water	883	.2	8 014	1.1	7 393	4.4	2 077
Rail and water	S	S	S	S	S	S	1 780
Other multiple modes	S	S	S	S	S	S	2 638
Other and unknown modes	12 363	2.8	10 052	1.4	1 130	.7	93
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	S	S	S	S	S	S	320
Single modes	S	S	S	S	S	S	320
Truck ³	S	S	S	S	S	S	320
For-hire truck	S	S	S	S	S	S	320
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 02, CEREAL GRAINS							
Total	4 410	100.0	52 895	100.0	32 438	100.0	S
Single modes	3 999	90.7	47 205	89.2	25 495	78.6	S
Truck ³	1 612	36.6	19 368	36.6	773	2.4	S
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	S	S	32
Rail	S	S	S	S	S	S	136
Water	1 688	38.3	20 058	37.9	24 202	74.6	1 213
Shallow draft	1 688	38.3	20 058	37.9	24 202	74.6	1 213
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline ⁴	-	-	-	-	S	S	S
Multiple modes	410	9.3	5 682	10.7	6 939	21.4	713
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	463
Truck and rail	S	S	S	S	S	S	2 350
Truck and water	S	S	S	S	S	S	1 231
Rail and water	S	S	S	S	S	S	1 138
Other multiple modes	S	S	S	S	S	S	1 329
Other and unknown modes	S	S	S	S	S	S	340

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	6 562	100.0	28 289	100.0	12 297	100.0	99
Single modes	5 824	88.8	26 233	92.7	9 877	80.3	67
Truck ³	4 601	70.1	19 244	68.0	1 651	13.4	66
For-hire truck	2 857	43.5	17 132	60.6	S	S	68
Private truck	1 744	26.6	2 112	7.5	S	S	65
Rail	S	S	S	S	S	S	1 242
Water	1 213	18.5	6 981	24.7	8 216	66.8	1 181
Shallow draft	1 213	18.5	6 981	24.7	8 216	66.8	1 181
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	608	9.3	S	S	S	S	996
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	990
Truck and rail	S	S	S	S	S	S	1 961
Truck and water	S	S	S	S	S	S	1 226
Rail and water	S	S	S	S	S	S	932
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	48	.4	358
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	2 097	100.0	8 581	100.0	3 612	100.0	165
Single modes	2 071	98.7	8 389	97.8	3 375	93.4	144
Truck ³	1 661	79.2	4 999	58.3	886	24.5	125
For-hire truck	682	32.5	2 006	23.4	478	13.2	185
Private truck	S	S	S	S	S	S	102
Rail	294	14.0	2 198	25.6	1 354	37.5	626
Water	S	S	S	S	S	S	1 017
Shallow draft	S	S	S	S	S	S	1 017
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 112
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 044
Truck and rail	S	S	S	S	S	S	1 602
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	14	.4	530
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	7 912	100.0	2 790	100.0	958	100.0	221
Single modes	7 895	99.8	2 789	99.9	957	99.9	218
Truck ³	7 842	99.1	2 777	99.5	936	97.7	179
For-hire truck	4 517	57.1	1 515	54.3	764	79.7	664
Private truck	S	S	S	S	S	S	43
Rail	S	S	S	S	S	S	1
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 031
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 716
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	508
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	4 701
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	38

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	6 718	100.0	9 985	100.0	5 144	100.0	379
Single modes	6 160	91.7	9 420	94.3	4 355	84.7	334
Truck ³	5 825	86.7	6 856	68.7	2 915	56.7	320
For-hire truck	4 388	65.3	5 562	55.7	2 250	43.7	422
Private truck	1 437	21.4	1 294	13.0	S	S	S
Rail	334	5.0	S	S	1 433	27.9	696
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	4 874
Pipeline ⁴	—	—	—	—	—	—	S
Multiple modes	S	S	457	4.6	S	S	1 564
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	120
Truck and rail	S	S	457	4.6	S	S	1 637
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	47	.7	108	1.1	S	S	S
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	21 452	100.0	30 296	100.0	13 485	100.0	S
Single modes	20 813	97.0	29 395	97.0	12 476	92.5	S
Truck ³	18 528	86.4	21 219	70.0	6 323	46.9	S
For-hire truck	11 869	55.3	12 657	41.8	5 445	40.4	494
Private truck	6 540	30.5	S	S	853	6.3	S
Rail	1 944	9.1	6 009	19.8	4 535	33.6	856
Water	303	1.4	S	S	S	S	775
Shallow draft	303	1.4	S	S	S	S	775
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	434
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	434	2.0	617	2.0	912	6.8	788
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	761
Truck and rail	252	1.2	607	2.0	904	6.7	1 655
Truck and water	S	S	S	S	S	S	5 499
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	306
Other and unknown modes	205	1.0	284	.9	97	.7	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	5 653	100.0	6 905	100.0	1 637	100.0	26
Single modes	5 573	98.6	6 843	99.1	1 607	98.2	26
Truck ³	4 823	85.3	4 962	71.9	377	23.1	24
For-hire truck	1 268	22.4	2 206	31.9	317	19.3	145
Private truck	3 555	62.9	2 756	39.9	61	3.7	22
Rail	561	9.9	1 305	18.9	818	50.0	514
Water	189	3.3	577	8.4	411	25.1	695
Shallow draft	189	3.3	577	8.4	411	25.1	695
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	730
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	39
Truck and rail	S	S	S	S	S	S	1 268
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 09, TOBACCO PRODUCTS							
Total	1 360	100.0	37	100.0	37	100.0	401
Single modes	1 354	99.6	36	99.6	36	97.7	361
Truck ³	1 341	98.6	36	98.8	35	95.8	344
For-hire truck	844	62.1	29	78.7	S	S	1 084
Private truck	498	36.6	7	20.1	1	2.1	96
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 902
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	4 722
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	2 024
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	7 626
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	27
Truck ³	S	S	S	S	S	S	27
For-hire truck	S	S	S	S	S	S	41
Private truck	S	S	S	S	S	S	23
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	892
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	892
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	46
SCTG 11, NATURAL SANDS							
Total	156	100.0	17 928	100.0	2 462	100.0	S
Single modes	150	95.9	15 752	87.9	2 415	98.1	S
Truck ³	121	77.5	13 660	76.2	1 667	67.7	S
For-hire truck	95	60.9	S	S	S	S	259
Private truck	S	S	S	S	S	S	S
Rail	29	18.4	2 092	11.7	748	30.4	355
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	655
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	655
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 12, GRAVEL AND CRUSHED STONE							
Total	\$	\$	\$	\$	\$	\$	20
Single modes	\$	\$	\$	\$	\$	\$	20
Truck ³	\$	\$	\$	\$	2 373	46.3	20
For-hire truck	\$	\$	\$	\$	961	18.8	\$
Private truck	\$	\$	\$	\$	\$	\$	18
Rail	\$	\$	\$	\$	\$	\$	379
Water	\$	\$	\$	\$	\$	\$	175
Shallow draft	\$	\$	\$	\$	\$	\$	175
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline ⁴	-	-	-	-	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	275
Parcel, U.S. Postal Service or courier	-	-	-	-	-	-	-
Truck and rail	-	-	-	-	-	-	-
Truck and water	\$	\$	\$	\$	\$	\$	275
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	\$	\$	\$	\$	\$	\$	5
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	115	100.0	13 848	100.0	341	100.0	21
Single modes	111	96.3	13 589	98.1	330	96.8	\$
Truck ³	109	95.1	13 574	98.0	320	93.8	\$
For-hire truck	87	75.7	12 112	87.5	294	86.2	\$
Private truck	22	19.3	1 462	10.6	26	7.6	13
Rail	\$	\$	\$	\$	\$	\$	613
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	\$	\$	\$	\$	\$	\$	38
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	\$	\$	\$	\$	\$	\$	453
Single modes	\$	\$	\$	\$	\$	\$	453
Truck ³	\$	\$	\$	\$	\$	\$	453
For-hire truck	\$	\$	\$	\$	\$	\$	469
Private truck	\$	\$	\$	\$	\$	\$	313
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	-	-	-	-	-	-	-

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	705	100.0	32 296	100.0	5 153	100.0	86
Single modes	675	95.7	31 104	96.3	4 938	95.8	67
Truck ³	153	21.7	6 247	19.3	347	6.7	50
For-hire truck	153	21.7	6 247	19.3	347	6.7	50
Private truck	—	—	—	—	—	—	—
Rail	519	73.5	24 724	76.6	4 523	87.8	185
Water	S	S	S	S	S	S	507
Shallow draft	S	S	S	S	S	S	507
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	182
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	182
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	116
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	18 725	100.0	69 844	100.0	S	S	77
Single modes	18 722	100.0	69 832	100.0	S	S	77
Truck ³	11 628	62.1	39 006	55.8	S	S	77
For-hire truck	2 924	15.6	9 973	14.3	313	6.1	31
Private truck	S	S	S	S	S	S	87
Rail	—	—	—	—	—	—	—
Water	S	S	S	S	S	S	337
Shallow draft	S	S	S	S	S	S	337
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	7 094	37.9	30 826	44.1	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	22
SCTG 18, FUEL OILS							
Total	5 722	100.0	25 683	100.0	1 899	100.0	15
Single modes	5 622	98.3	24 676	96.1	1 857	97.8	15
Truck ³	3 222	56.3	11 880	46.3	248	13.1	15
For-hire truck	1 047	18.3	4 377	17.0	108	5.7	23
Private truck	2 175	38.0	7 503	29.2	140	7.4	S
Rail	S	S	S	S	S	S	818
Water	S	S	S	S	S	S	3
Shallow draft	S	S	S	S	S	S	3
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	2 379	41.6	12 613	49.1	S	S	S
Multiple modes	S	S	S	S	S	S	67
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	67
Other and unknown modes	S	S	S	S	S	S	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 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	3 892	100.0	23 984	100.0	S	S	S
Single modes	3 768	96.8	20 718	86.4	S	S	S
Truck ³	2 354	60.5	S	S	635	8.1	S
For-hire truck	766	19.7	2 003	8.4	297	3.8	168
Private truck	1 588	40.8	S	S	S	S	31
Rail	310	8.0	1 073	4.5	811	10.3	768
Water	S	S	S	S	S	S	665
Shallow draft	S	S	S	S	S	S	665
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	186	4.8	1 526	6.4	S	S	S
Multiple modes	S	S	S	S	S	S	363
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	351
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	297
Rail and water	S	S	S	S	S	S	1 472
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 20, BASIC CHEMICALS							
Total	2 010	100.0	3 351	100.0	1 422	100.0	287
Single modes	1 983	98.6	3 316	99.0	1 410	99.2	317
Truck ³	1 705	84.8	2 099	62.7	588	41.3	309
For-hire truck	1 209	60.1	1 429	42.6	537	37.8	704
Private truck	S	S	S	S	51	3.6	56
Rail	S	S	1 207	36.0	818	57.5	858
Water	S	S	S	S	S	S	3
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	3
Air (includes truck and air)	S	S	2	—	3	.2	1 404
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	11	.5	5	.2	S	S	S
Parcel, U.S. Postal Service or courier	5	.2	S	S	—	—	S
Truck and rail	S	S	S	S	S	S	975
Truck and water	S	S	S	S	S	S	2 394
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	203
Other and unknown modes	S	S	S	S	S	S	S
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	24 682	100.0	1 273	100.0	S	S	617
Single modes	21 768	88.2	1 179	92.6	S	S	486
Truck ³	21 141	85.7	1 170	91.9	S	S	356
For-hire truck	17 417	70.6	S	S	S	S	503
Private truck	3 724	15.1	348	27.3	25	4.9	48
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	627	2.5	9	.7	S	S	1 768
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 820	11.4	S	S	S	S	761
Parcel, U.S. Postal Service or courier	2 820	11.4	S	S	S	S	761
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	93	.4	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 22, FERTILIZERS							
Total	3 030	100.0	19 158	100.0	S	S	S
Single modes	2 790	92.1	S	S	S	S	S
Truck ³	1 039	34.3	5 851	30.5	S	S	S
For-hire truck	680	22.4	4 261	22.2	S	S	212
Private truck	S	S	S	S	20	.2	S
Rail	S	S	S	S	S	S	669
Water	S	S	S	S	S	S	327
Shallow draft	S	S	S	S	S	S	327
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	876
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	736
Truck and rail	S	S	S	S	S	S	989
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	S	S	S	S	100
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	17 861	100.0	10 262	100.0	S	S	314
Single modes	17 054	95.5	10 112	98.5	S	S	276
Truck ³	16 697	93.5	S	S	S	S	273
For-hire truck	13 815	77.3	S	S	S	S	653
Private truck	2 872	16.1	1 473	14.4	195	3.0	142
Rail	329	1.8	446	4.3	423	6.6	1 114
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	823
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	630	3.5	91	.9	94	1.5	661
Parcel, U.S. Postal Service or courier	549	3.1	44	.4	24	.4	624
Truck and rail	67	.4	46	.4	64	1.0	1 453
Truck and water	S	S	S	S	S	S	4 651
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	S	S	S	S	S
SCTG 24, PLASTICS AND RUBBER							
Total	17 430	100.0	8 840	100.0	5 969	100.0	397
Single modes	15 376	88.2	8 462	95.7	5 536	92.7	320
Truck ³	13 948	80.0	6 249	70.7	3 359	56.3	280
For-hire truck	12 470	71.5	5 128	58.0	3 122	52.3	374
Private truck	1 478	8.5	1 121	12.7	237	4.0	46
Rail	1 301	7.5	2 203	24.9	2 164	36.3	1 422
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	10	.1	S	S	1 153
Pipeline ⁴	-	-	-	-	S	S	S
Multiple modes	1 761	10.1	268	3.0	398	6.7	585
Parcel, U.S. Postal Service or courier	1 583	9.1	106	1.2	66	1.1	581
Truck and rail	177	1.0	161	1.8	332	5.6	1 926
Truck and water	S	S	S	S	S	S	10 727
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	294	1.7	110	1.2	35	.6	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 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	S	S	S	S	S	S	350
Single modes	S	S	S	S	S	S	350
Truck ³	S	S	S	S	S	S	291
For-hire truck	S	S	S	S	S	S	298
Private truck	S	S	S	S	S	S	176
Rail	S	S	S	S	S	S	423
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 26, WOOD PRODUCTS							
Total	2 613	100.0	3 459	100.0	345	100.0	252
Single modes	2 586	99.0	3 435	99.3	336	97.5	207
Truck ³	2 585	98.9	3 434	99.3	335	97.3	201
For-hire truck	667	25.5	602	17.4	125	36.2	508
Private truck	1 918	73.4	2 832	81.9	210	61.0	55
Rail	S	S	S	S	S	S	70
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 764
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	13	.5	2	—	2	.5	794
Parcel, U.S. Postal Service or courier	13	.5	2	—	2	.5	794
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	391
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	6 360	100.0	6 590	100.0	1 288	100.0	142
Single modes	6 138	96.5	6 290	95.4	1 112	86.4	116
Truck ³	6 126	96.3	6 288	95.4	1 111	86.3	105
For-hire truck	4 076	64.1	S	S	972	75.5	268
Private truck	2 049	32.2	1 310	19.9	S	S	35
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 027
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	73	1.1	15	.2	S	S	445
Parcel, U.S. Postal Service or courier	73	1.1	15	.2	S	S	445
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 28, PAPER OR PAPERBOARD ARTICLES							
Total	5 719	100.0	3 555	100.0	1 315	100.0	341
Single modes	5 157	90.2	3 300	92.8	1 064	80.9	188
Truck ³	5 137	89.8	3 279	92.3	1 031	78.4	188
For-hire truck	4 056	70.9	2 402	67.6	983	74.7	394
Private truck	1 082	18.9	S	S	S	S	40
Rail	S	S	S	S	S	S	1 457
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	970
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	724
Parcel, U.S. Postal Service or courier	134	2.3	28	.8	S	S	717
Truck and rail	S	S	S	S	S	S	1 122
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	114	2.0	S	S	S	S	S
SCTG 29, PRINTED PRODUCTS							
Total	7 253	100.0	2 151	100.0	946	100.0	735
Single modes	4 579	63.1	1 948	90.6	809	85.5	316
Truck ³	4 540	62.6	1 943	90.3	801	84.7	301
For-hire truck	3 545	48.9	1 541	71.6	725	76.6	524
Private truck	995	13.7	402	18.7	77	8.1	S
Rail	S	S	S	S	S	S	1 396
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 200
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	2 438	33.6	146	6.8	106	11.2	823
Parcel, U.S. Postal Service or courier	2 425	33.4	143	6.6	94	9.9	821
Truck and rail	S	S	S	S	S	S	2 278
Truck and water	S	S	S	S	S	S	10 700
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	56	2.6	S	S	S
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	5 094	100.0	367	100.0	153	100.0	591
Single modes	1 655	32.5	245	66.6	87	57.2	347
Truck ³	1 632	32.0	244	66.4	86	56.6	319
For-hire truck	1 010	19.8	122	33.2	74	48.7	467
Private truck	623	12.2	122	33.2	12	7.9	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 411
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	3 300	64.8	104	28.3	63	41.5	644
Parcel, U.S. Postal Service or courier	3 297	64.7	104	28.3	63	41.4	643
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	4 669
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	2	1.3	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	6 667	100.0	54 839	100.0	3 414	100.0	197
Single modes	6 175	92.6	54 067	98.6	3 301	96.7	S
Truck ³	6 122	91.8	53 434	97.4	3 011	88.2	S
For-hire truck	3 295	49.4	14 287	26.1	2 290	67.1	365
Private truck	2 824	42.4	39 142	71.4	721	21.1	S
Rail	S	S	S	S	S	S	517
Water	S	S	S	S	S	S	423
Shallow draft	S	S	S	S	S	S	423
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	895
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	287	4.3	S	S	S	S	723
Parcel, U.S. Postal Service or courier	S	S	20	-	S	S	746
Truck and rail	S	S	S	S	S	S	601
Truck and water	S	S	S	S	S	S	141
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	S	S	S	S	S
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	19 589	100.0	31 391	100.0	7 169	100.0	217
Single modes	19 379	98.9	31 317	99.8	7 128	99.4	205
Truck ³	18 807	96.0	29 270	93.2	6 019	84.0	196
For-hire truck	12 380	63.2	17 942	57.2	4 884	68.1	396
Private truck	S	S	S	S	S	S	62
Rail	554	2.8	2 041	6.5	1 105	15.4	558
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	483
Pipeline ⁴	-	-	-	-	S	S	S
Multiple modes	69	.4	S	S	S	S	666
Parcel, U.S. Postal Service or courier	60	.3	S	S	4	-	662
Truck and rail	S	S	S	S	S	S	2 038
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	141	.7	S	S	13	.2	S
SCTG 33, ARTICLES OF BASE METAL							
Total	19 799	100.0	16 427	100.0	3 605	100.0	307
Single modes	15 209	76.8	16 186	98.5	3 482	96.6	266
Truck ³	14 557	73.5	16 125	98.2	3 387	94.0	246
For-hire truck	9 252	46.7	S	S	2 978	82.6	491
Private truck	5 306	26.8	S	S	409	11.3	S
Rail	S	S	S	S	S	S	2 064
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	920
Pipeline ⁴	-	-	-	-	S	S	S
Multiple modes	4 097	20.7	138	.8	99	2.7	385
Parcel, U.S. Postal Service or courier	3 955	20.0	92	.6	43	1.2	374
Truck and rail	140	.7	45	.3	53	1.5	996
Truck and water	S	S	S	S	S	S	4 588
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	103	.6	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	28 156	100.0	3 647	100.0	2 250	100.0	491
Single modes	24 240	86.1	3 463	95.0	2 096	93.2	461
Truck ³	23 179	82.3	3 337	91.5	1 913	85.0	372
For-hire truck	20 281	72.0	2 890	79.3	1 858	82.6	617
Private truck	2 898	10.3	447	12.3	54	2.4	S
Rail	S	S	S	S	S	S	1 168
Water	S	S	S	S	S	S	1 605
Shallow draft	S	S	S	S	S	S	1 605
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	138	.5	4	.1	7	.3	1 509
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 642	9.4	95	2.6	118	5.3	534
Parcel, U.S. Postal Service or courier	2 350	8.3	49	1.3	30	1.4	531
Truck and rail	290	1.0	46	1.3	88	3.9	1 773
Truck and water	S	S	S	S	S	S	4 555
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	1 274	4.5	89	2.4	S	S	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	48 110	100.0	3 513	100.0	1 138	100.0	604
Single modes	23 259	48.3	S	S	986	86.6	586
Truck ³	21 807	45.3	S	S	952	83.6	460
For-hire truck	17 776	36.9	1 283	36.5	868	76.3	603
Private truck	4 014	8.3	S	S	S	S	S
Rail	S	S	S	S	S	S	115
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	14	.4	24	2.1	1 200
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	23 699	49.3	278	7.9	140	12.3	643
Parcel, U.S. Postal Service or courier	23 689	49.2	276	7.9	136	12.0	643
Truck and rail	S	S	S	S	S	S	1 506
Truck and water	S	S	S	S	S	S	3 515
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	12	1.1	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	30 728	100.0	4 366	100.0	1 811	100.0	696
Single modes	21 779	70.9	3 557	81.5	1 509	83.3	533
Truck ³	21 151	68.8	3 503	80.2	1 446	79.8	454
For-hire truck	15 753	51.3	2 580	59.1	1 303	71.9	634
Private truck	5 398	17.6	922	21.1	144	7.9	333
Rail	S	S	S	S	S	S	1 183
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	13	.7	1 183
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	3 967	12.9	246	5.6	270	14.9	811
Parcel, U.S. Postal Service or courier	2 396	7.8	127	2.9	107	5.9	807
Truck and rail	1 565	5.1	118	2.7	161	8.9	1 261
Truck and water	S	S	S	S	S	S	4 645
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	4 982	16.2	564	12.9	33	1.8	95

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	\$	\$	\$	\$	\$	\$	687
Single modes	\$	\$	\$	\$	\$	\$	608
Truck ³	\$	\$	\$	\$	\$	\$	357
For-hire truck	\$	\$	\$	\$	\$	\$	492
Private truck	\$	\$	\$	\$	\$	\$	\$
Rail	\$	\$	\$	\$	\$	\$	\$
Water	\$	\$	\$	\$	\$	\$	1 615
Shallow draft	\$	\$	\$	\$	\$	\$	1 615
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	1 246
Pipeline ⁴	-	-	-	-	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	843
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	843
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	\$	\$	\$	\$	\$	\$	42
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	4 278	100.0	\$	\$	60	100.0	702
Single modes	\$	\$	\$	\$	\$	\$	346
Truck ³	\$	\$	\$	\$	\$	\$	308
For-hire truck	\$	\$	\$	\$	8	13.9	635
Private truck	\$	\$	\$	\$	\$	\$	\$
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	905
Pipeline ⁴	-	-	-	-	\$	\$	\$
Multiple modes	3 257	76.1	\$	\$	\$	\$	721
Parcel, U.S. Postal Service or courier	3 257	76.1	\$	\$	\$	\$	721
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	\$	\$	\$	\$	\$	\$	8
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	2 393	100.0	355	100.0	97	100.0	593
Single modes	2 233	93.3	331	93.4	83	85.5	378
Truck ³	2 211	92.4	325	91.6	80	82.6	363
For-hire truck	1 522	63.6	236	66.5	71	73.4	497
Private truck	686	28.7	89	25.0	\$	\$	72
Rail	\$	\$	\$	\$	\$	\$	536
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	1 030
Pipeline ⁴	-	-	-	-	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	721
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	721
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 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	19 804	100.0	7 832	100.0	3 145	100.0	846
Single modes	11 640	58.8	6 174	78.8	2 706	86.1	533
Truck ³	11 466	57.9	4 783	61.1	1 808	57.5	506
For-hire truck	9 255	46.7	3 918	50.0	1 738	55.3	650
Private truck	2 210	11.2	865	11.0	70	2.2	95
Rail	S	S	S	S	S	S	1 281
Water	S	S	S	S	S	S	618
Shallow draft	S	S	S	S	S	S	618
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	50	.3	3	-	4	.1	1 000
Pipeline ⁴	-	-	-	-	S	S	S
Multiple modes	7 140	36.1	322	4.1	285	9.0	883
Parcel, U.S. Postal Service or courier	7 009	35.4	295	3.8	257	8.2	883
Truck and rail	131	.7	27	.3	S	S	641
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	S	S	S	S	309
SCTG 41, WASTE AND SCRAP							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck ³	S	S	S	S	S	S	75
For-hire truck	S	S	S	S	S	S	75
Private truck	378	5.8	S	S	S	S	78
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	207
Parcel, U.S. Postal Service or courier	-	-	-	-	-	-	-
Truck and rail	S	S	S	S	S	S	207
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	S	S	S	S	60
SCTG 43, MIXED FREIGHT							
Total	71 907	100.0	28 516	100.0	6 706	100.0	277
Single modes	63 764	88.7	26 545	93.1	5 718	85.3	128
Truck ³	62 802	87.3	26 321	92.3	5 326	79.4	119
For-hire truck	34 332	47.7	S	S	4 146	61.8	342
Private truck	28 252	39.3	9 592	33.6	1 153	17.2	60
Rail	S	S	S	S	S	S	1 730
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	1 077
Pipeline ⁴	-	-	-	-	S	S	S
Multiple modes	S	S	S	S	747	11.1	343
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	341
Truck and rail	S	S	S	S	355	5.3	1 493
Truck and water	S	S	S	S	S	S	4 668
Rail and water	S	S	S	S	S	S	4 054
Other multiple modes	S	S	S	S	S	S	4 781
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	
COMMODITY UNKNOWN							
Total	821	100.0	S	S	S	S	475
Single modes	759	92.5	S	S	S	S	S
Truck ³	659	80.3	S	S	S	S	158
For-hire truck	319	38.8	262	13.2	46	5.5	524
Private truck	340	41.4	S	S	S	S	33
Rail	S	S	S	S	S	S	713
Water	S	S	S	S	S	S	1 061
Shallow draft	S	S	S	S	S	S	1 061
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	2 058
Pipeline ⁴	-	-	-	-	S	S	S
Multiple modes	54	6.6	S	S	S	S	942
Parcel, U.S. Postal Service or courier	41	5.0	1	-	1	.1	941
Truck and rail	S	S	S	S	S	S	1 500
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	S	S	S	S	S

- Represents data cell equal to zero or less than 1 unit of measure.
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).
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	442 130	100.0	718 351	100.0	167 342	100.0
NEW ENGLAND STATES						
Connecticut	1 509	.3	239	—	234	.1
Maine	479	.1	262	—	327	.2
Massachusetts	3 711	.8	1 113	.2	1 172	.7
New Hampshire	S	S	S	S	S	S
Rhode Island	252	—	22	—	23	—
Vermont	170	—	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	8 378	1.9	2 812	.4	2 390	1.4
New York	8 858	2.0	2 503	.3	1 943	1.2
Pennsylvania	12 322	2.8	7 792	1.1	5 436	3.2
EAST NORTH CENTRAL STATES						
Illinois	164 946	37.3	447 212	62.3	16 755	10.0
Indiana	25 974	5.9	52 005	7.2	6 246	3.7
Michigan	21 887	5.0	11 773	1.6	3 335	2.0
Ohio	18 382	4.2	16 337	2.3	5 782	3.5
Wisconsin	18 851	4.3	24 381	3.4	3 353	2.0
WEST NORTH CENTRAL STATES						
Iowa	6 393	1.4	9 040	1.3	1 757	1.1
Kansas	2 752	.6	1 860	.3	967	.6
Minnesota	11 186	2.5	4 527	.6	2 224	1.3
Missouri	14 678	3.3	16 908	2.4	2 568	1.5
Nebraska	2 472	.6	1 757	.2	941	.6
North Dakota	2 127	.5	S	S	S	S
South Dakota	760	.2	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	471	.1	240	—	217	.1
District of Columbia	117	—	S	—	S	—
Florida	7 870	1.8	3 365	.5	4 158	2.5
Georgia	9 474	2.1	4 021	.6	2 933	1.8
Maryland	3 658	.8	1 268	.2	983	.6
North Carolina	5 316	1.2	2 535	.4	2 156	1.3
South Carolina	1 983	.4	2 148	.3	1 999	1.2
Virginia	2 331	.5	1 574	.2	1 243	.7
West Virginia	733	.2	S	S	S	S
EAST SOUTH CENTRAL STATES						
Alabama	3 543	.8	2 714	.4	1 696	1.0
Kentucky	7 571	1.7	20 269	2.8	4 884	2.9
Mississippi	3 288	.7	S	S	S	S
Tennessee	7 688	1.7	4 597	.6	2 123	1.3
WEST SOUTH CENTRAL STATES						
Arkansas	1 995	.5	1 171	.2	556	.3
Louisiana	7 228	1.6	43 486	6.1	50 479	30.2
Oklahoma	1 965	.4	727	.1	468	.3
Texas	17 320	3.9	8 042	1.1	8 984	5.4
MOUNTAIN STATES						
Arizona	2 447	.6	784	.1	1 406	.8
Colorado	3 319	.8	979	.1	986	.6
Idaho	270	—	S	—	S	—
Montana	604	.1	123	—	169	.1
Nevada	1 251	.3	262	—	470	.3
New Mexico	508	.1	160	—	198	.1
Utah	936	.2	332	—	467	.3
Wyoming	284	—	160	—	190	.1
PACIFIC STATES						
Alaska	119	—	S	—	18	—
California	18 231	4.1	5 612	.8	11 849	7.1
Hawaii	180	—	17	—	S	—
Oregon	1 807	.4	1 012	.1	2 234	1.3
Washington	1 947	.4	427	—	903	.5

— 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	416 154	100.0	672 904	100.0	160 724	100.0
NEW ENGLAND STATES						
Connecticut	1 837	.4	249	—	230	.1
Maine	794	.2	770	.1	791	.5
Massachusetts	4 333	1.0	490	—	504	.3
New Hampshire	927	.2	78	—	80	—
Rhode Island	465	.1	71	—	73	—
Vermont	192	—	195	—	179	.1
MIDDLE ATLANTIC STATES						
New Jersey	5 607	1.3	1 341	.2	1 123	.7
New York	6 837	1.6	S	S	S	S
Pennsylvania	9 376	2.3	3 664	.5	2 268	1.4
EAST NORTH CENTRAL STATES						
Illinois	164 946	39.6	447 212	66.5	16 755	10.4
Indiana	21 980	5.3	24 373	3.6	3 006	1.9
Michigan	16 832	4.0	11 287	1.7	4 027	2.5
Ohio	15 483	3.7	7 938	1.2	2 793	1.7
Wisconsin	22 857	5.5	26 683	4.0	4 312	2.7
WEST NORTH CENTRAL STATES						
Iowa	10 568	2.5	14 393	2.1	3 688	2.3
Kansas	4 408	1.1	1 508	.2	878	.5
Minnesota	9 019	2.2	12 184	1.8	8 178	5.1
Missouri	12 294	3.0	16 904	2.5	2 536	1.6
Nebraska	3 718	.9	3 071	.5	1 740	1.1
North Dakota	643	.2	907	.1	724	.5
South Dakota	S	S	1 061	.2	S	S
SOUTH ATLANTIC STATES						
Delaware	326	—	104	—	85	—
District of Columbia	S	S	S	S	S	S
Florida	3 824	.9	1 262	.2	1 531	1.0
Georgia	4 924	1.2	1 834	.3	1 378	.9
Maryland	1 643	.4	656	.1	483	.3
North Carolina	5 613	1.3	1 487	.2	1 265	.8
South Carolina	2 651	.6	1 675	.2	1 423	.9
Virginia	2 670	.6	910	.1	738	.5
West Virginia	597	.1	1 020	.2	617	.4
EAST SOUTH CENTRAL STATES						
Alabama	2 483	.6	1 730	.3	1 313	.8
Kentucky	8 062	1.9	5 482	.8	1 367	.9
Mississippi	2 742	.7	1 393	.2	889	.6
Tennessee	11 818	2.8	2 827	.4	1 412	.9
WEST SOUTH CENTRAL STATES						
Arkansas	2 983	.7	1 834	.3	1 105	.7
Louisiana	4 020	1.0	8 630	1.3	8 827	5.5
Oklahoma	1 731	.4	776	.1	549	.3
Texas	12 066	2.9	10 989	1.6	11 094	6.9
MOUNTAIN STATES						
Arizona	1 291	.3	173	—	295	.2
Colorado	2 772	.7	3 515	.5	4 898	3.0
Idaho	626	.2	843	.1	1 392	.9
Montana	300	—	6 171	.9	7 704	4.8
Nevada	452	.1	66	—	120	—
New Mexico	421	.1	495	—	642	.4
Utah	1 103	.3	S	S	S	S
Wyoming	419	.1	32 614	4.8	38 352	23.9
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	20 549	4.9	4 086	.6	8 530	5.3
Hawaii	10	—	S	S	S	S
Oregon	1 785	.4	1 412	.2	3 277	2.0
Washington	2 086	.5	1 047	.2	2 248	1.4

— 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-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	442 130	356 183	24.1	718 351	670 283	7.2	167 342	145 099	15.3	469	463	1.3
Single modes	361 345	294 873	22.5	688 164	643 174	7.0	149 306	131 672	13.4	245	219	12.2
Truck ²	328 191	256 837	27.8	497 573	472 746	5.3	65 577	52 819	24.2	210	168	25.1
Rail	14 877	18 330	-18.8	88 500	77 510	14.2	33 676	33 286	1.2	504	819	-38.4
Water	4 917	5 994	-18.0	56 725	47 371	19.7	46 489	41 558	11.9	1 369	S	S
Air (includes truck and air)	3 639	4 838	-24.8	110	161	-31.5	177	193	-8.4	1 240	1 140	8.8
Pipeline ³	9 722	8 874	9.6	45 255	45 385	-3	S	S	S	S	S	S
Multiple modes	68 421	51 259	33.5	20 135	13 892	44.9	16 907	11 087	52.5	656	673	-2.5
Parcel, U.S. Postal Service or courier ..	59 417	43 967	35.1	2 405	1 599	50.4	1 183	978	20.9	655	672	-2.6
Truck and rail	7 824	6 918	13.1	6 077	3 048	99.4	4 348	4 081	6.5	1 087	1 323	-17.8
All other multiple modes	1 180	375	215.1	11 653	9 245	26.0	11 375	6 028	88.7	2 076	1 972	5.3
Other and unknown modes ...	12 363	10 051	23.0	10 052	13 217	-23.9	1 130	2 340	-51.7	93	99	-6.1

- 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.
²Truck 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	442 130	356 183	24.1	718 351	670 283	7.2	167 342	145 099	15.3	469	463	1.3
01-05	Agricultural products and fish	21 071	28 453	-25.9	92 763	109 234	-15.1	49 378	50 059	-1.4	141	175	-19.6
06-09	Grains, alcohol, and tobacco products	35 182	34 723	1.3	47 223	40 535	16.5	20 303	19 021	6.7	113	244	-54.0
10-14	Stones, nonmetallic minerals, and metallic ores	2 000	1 410	41.9	169 244	126 503	33.8	8 595	5 025	71.0	29	53	-45.3
15-19	Coal and petroleum products	29 045	21 248	36.7	151 807	168 040	-9.7	20 048	27 722	-27.7	44	45	-2.0
20-24	Basic chemicals, chemical, and pharmaceutical products	65 013	54 580	19.1	42 883	32 154	33.4	26 987	11 959	125.7	407	561	-27.4
25-30	Logs, wood products, and textile and leather	27 072	26 437	2.4	16 263	16 116	.9	4 115	4 164	-1.2	518	551	-6.1
31-34	Base metal and machinery ..	74 211	73 564	.9	106 303	S	S	16 437	16 260	1.1	316	377	-16.1
35-38	Electronic, motorized vehicles, and precision instruments	87 119	77 898	11.8	14 864	7 860	89.1	S	4 509	S	651	444	46.6
39-43	Furniture, mixed freight and misc. manufactured prod. ..	100 597	35 211	185.7	75 018	22 459	234.0	13 167	6 119	115.2	550	679	-19.1
--	Commodity unknown	821	2 659	-69.1	S	1 846	S	S	261	S	475	544	-12.8

- 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.

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	For-hire truck	For-hire truck
Private truck	Private truck	Private truck
Rail	Rail	Rail
Air	Air	Air
Inland Water	Shallow draft vessel	Shallow draft vessel
Deep Sea Water	Deep draft vessel	Deep draft vessel
Pipeline	Pipeline	Pipeline
Parcel, U.S. Postal Service, or courier	Parcel, U.S. Postal Service, or courier	Parcel, U.S. Postal Service, or courier
Other	Other	Other
Unknown	Unknown	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	3.4	—	10.5	—	3.1	—	8.2
Single modes	3.6	2.1	11.2	.9	4.0	2.2	12.0
Truck	4.1	2.2	17.4	4.7	8.7	3.6	13.4
For-hire truck	5.1	2.6	14.2	2.9	8.0	2.6	5.9
Private truck	12.6	2.3	27.2	5.0	27.5	2.1	20.8
Rail	17.0	.6	20.5	2.7	21.6	3.4	19.3
Water	10.7	.1	21.1	2.6	11.7	3.6	13.0
Shallow draft	10.8	.1	21.1	2.6	11.7	3.6	12.9
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	20.1	.2	18.6	—	27.2	—	7.0
Pipeline	17.4	.4	18.2	1.6	S	S	S
Multiple modes	14.3	2.0	22.9	.8	23.2	2.3	7.1
Parcel, U.S. Postal Service or courier	14.2	1.7	31.7	.1	11.3	—	7.1
Truck and rail	37.1	.6	46.5	.4	17.8	.5	13.7
Truck and water	34.9	—	34.2	.5	45.3	1.9	47.8
Rail and water	S	S	S	S	S	S	28.2
Other multiple modes	S	S	S	S	S	S	31.0
Other and unknown modes	16.2	.4	27.6	.4	23.3	.2	48.3

— 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.

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	1.0	.9	1.0	2.2	.8
Truck	2.2	1.1	4.7	3.2	3.6	1.3
For-hire truck	2.6	1.2	2.9	4.9	2.6	1.0
Private truck	2.3	1.2	5.0	3.6	2.1	1.0
Rail .....	.6	.8	2.7	1.4	3.4	1.4
Water .....	.1	.1	2.6	1.3	3.6	2.2
Shallow draft .....	.1	.1	2.6	1.3	3.6	2.2
Great Lakes	—	—	—	—	—	—
Deep draft	S	—	S	—	S	—
Air (includes truck and air) .....	.2	.2	—	—	—	—
Pipeline .....	.4	.7	1.6	1.8	S	S
Multiple modes	2.0	.8	.8	.4	2.3	.9
Parcel, U.S. Postal Service or courier	1.7	.7	.1	—	—	.1
Truck and rail .....	.6	.5	.4	—	.5	.3
Truck and water	—	—	.5	—	1.9	.2
Rail and water	S	—	S	—	S	.8
Other multiple modes	S	S	S	—	S	S
Other and unknown modes .....	.4	.3	.4	1.0	.2	.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.

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	3.1	—	8.2
Truck	8.7	3.6	13.4
Rail	21.6	3.4	19.3
Shallow draft	11.7	3.6	12.9
Great Lakes	—	—	—
Deep draft	S	S	31.6
Air	27.2	—	7.0
Parcel, U.S. Postal Service or courier	22.1	.5	27.4
Pipeline	S	S	S
Other and unknown modes	23.3	.2	48.3

— 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.

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	3.4	—	10.5	—	3.1	—
Less than 50 miles	6.8	1.6	18.1	4.2	14.3	.8
50 to 99 miles	11.9	.8	15.8	1.5	14.0	.5
100 to 249 miles	8.0	.8	9.1	1.6	10.9	1.1
250 to 499 miles	5.2	.8	8.6	1.2	9.1	1.3
500 to 749 miles	7.9	1.1	9.9	.7	10.2	2.2
750 to 999 miles	6.5	.5	14.1	1.5	13.4	3.6
1,000 to 1,499 miles	9.5	.3	17.1	.2	17.5	.7
1,500 to 1,999 miles	10.9	.6	15.0	.2	15.3	1.4
2,000 miles or more	34.1	—	35.4	—	45.2	—
Single modes	3.6	—	11.2	—	4.0	—
Less than 50 miles	6.8	1.8	18.6	4.1	14.9	.9
50 to 99 miles	11.0	.7	16.4	1.5	14.8	.6
100 to 249 miles	7.7	.7	9.5	1.7	11.6	1.1
250 to 499 miles	5.8	1.0	8.6	1.3	9.2	1.8
500 to 749 miles	7.3	.8	10.5	.6	11.0	1.9
750 to 999 miles	9.0	.6	12.6	1.3	11.1	3.0
1,000 to 1,499 miles	10.6	.3	8.8	—	8.8	.3
1,500 to 1,999 miles	10.7	.4	17.6	.2	18.2	1.5
2,000 miles or more	S	S	47.8	—	46.1	—
Truck	4.1	—	17.4	—	8.7	—
Less than 50 miles	7.6	2.0	23.4	3.7	19.3	1.3
50 to 99 miles	11.2	.8	18.8	2.2	18.0	1.0
100 to 249 miles	9.0	.8	21.8	1.1	19.0	1.5
250 to 499 miles	6.1	1.1	10.5	1.1	9.7	1.4
500 to 749 miles	6.6	.7	9.1	.5	9.2	.9
750 to 999 miles	11.3	.7	12.7	.3	13.0	1.2
1,000 to 1,499 miles	11.3	.3	11.1	—	11.1	.5
1,500 to 1,999 miles	11.1	.4	14.2	.1	14.2	1.4
2,000 miles or more	S	S	S	S	S	S
For-hire truck	5.1	—	14.2	—	8.0	—
Less than 50 miles	10.9	2.2	23.6	5.2	20.0	1.1
50 to 99 miles	13.9	.7	29.4	3.6	28.0	1.4
100 to 249 miles	7.6	1.3	14.3	2.0	12.0	1.2
250 to 499 miles	7.8	1.4	8.6	1.4	8.1	1.2
500 to 749 miles	6.5	.9	9.5	1.0	9.7	1.7
750 to 999 miles	12.4	.9	13.5	.5	13.8	1.1
1,000 to 1,499 miles	11.4	.4	11.4	.1	11.2	.6
1,500 to 1,999 miles	11.1	.5	12.3	.1	12.2	1.1
2,000 miles or more	S	S	S	S	S	S
Private truck	12.6	—	27.2	—	27.5	—
Less than 50 miles	12.3	2.2	28.5	2.5	27.3	3.9
50 to 99 miles	18.5	1.7	29.6	1.5	30.0	2.1
100 to 249 miles	19.0	1.2	42.4	.9	41.1	2.8
250 to 499 miles	19.9	1.1	42.6	.8	41.1	3.3
500 to 749 miles	22.1	.7	39.1	.4	38.2	2.1
750 to 999 miles	26.2	.8	27.9	.2	27.2	2.1
1,000 to 1,499 miles	44.9	—	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	—	—	—	—	—	—
Rail	17.0	—	20.5	—	21.6	—
Less than 50 miles	46.7	5.0	37.4	7.7	35.2	2.4
50 to 99 miles	26.4	.8	33.2	3.0	32.3	1.0
100 to 249 miles	36.0	1.7	29.2	2.1	25.2	1.5
250 to 499 miles	15.9	4.4	32.1	5.1	26.8	4.9
500 to 749 miles	31.7	3.3	27.8	2.1	23.5	4.8
750 to 999 miles	34.2	4.4	S	S	S	S
1,000 to 1,499 miles	29.6	.9	23.5	.7	23.9	1.6
1,500 to 1,999 miles	43.0	4.6	40.0	1.2	40.5	4.1
2,000 miles or more	—	—	—	—	—	—
Water	10.7	—	21.1	—	11.7	—
Less than 50 miles	S	S	44.7	3.2	45.9	.2
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	44.9	2.2	S	S	S	S
250 to 499 miles	31.9	4.6	34.4	3.8	36.0	3.5
500 to 749 miles	28.5	5.7	24.0	5.3	24.3	5.4
750 to 999 miles	15.3	7.5	16.0	8.2	15.8	6.6
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Shallow draft	10.8	—	21.1	—	11.7	—
Less than 50 miles	S	S	44.7	3.2	45.9	.2
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	44.9	2.2	S	S	S	S
250 to 499 miles	31.9	4.5	34.4	3.8	36.0	3.5
500 to 749 miles	28.5	5.7	24.0	5.3	24.3	5.4
750 to 999 miles	15.3	7.6	16.0	8.2	15.8	6.6
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	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Air (includes truck and air)	20.1	—	18.6	—	27.2	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	40.3	6.8	24.7	2.6	24.1	1.1
250 to 499 miles	34.8	3.9	41.2	5.7	41.6	3.9
500 to 749 miles	29.5	5.4	23.8	3.4	24.4	2.5
750 to 999 miles	26.7	4.8	28.4	4.0	27.6	5.6
1,000 to 1,499 miles	S	S	40.9	3.2	43.6	5.2
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	44.5	.5	S	S	S	S
Pipeline	17.4	—	18.2	—	S	S
Less than 50 miles	20.0	8.2	22.7	8.4	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	26.5	8.4	28.3	8.6	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	—	—	—	—	S	S
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	14.3	—	22.9	—	23.2	—
Less than 50 miles	19.1	1.2	S	S	47.4	.3
50 to 99 miles	41.1	1.2	S	S	S	S
100 to 249 miles	17.8	1.4	36.8	4.5	37.2	1.7
250 to 499 miles	22.3	1.9	35.4	2.5	32.8	1.0
500 to 749 miles	23.3	2.8	S	S	S	S
750 to 999 miles	9.7	1.5	41.4	8.2	41.6	11.2
1,000 to 1,499 miles	15.4	1.3	S	S	S	S
1,500 to 1,999 miles	24.1	1.6	16.0	3.4	16.7	6.8
2,000 miles or more	24.4	—	34.8	—	S	S
Parcel, U.S. Postal Service or courier	14.2	—	31.7	—	11.3	—
Less than 50 miles	20.4	1.6	S	S	S	S
50 to 99 miles	41.5	1.3	49.5	1.2	S	S
100 to 249 miles	18.5	1.7	45.8	1.9	43.8	1.7
250 to 499 miles	22.1	1.9	23.7	2.6	22.8	2.4
500 to 749 miles	24.2	2.8	12.1	3.8	13.3	3.2
750 to 999 miles	11.9	1.2	9.9	1.8	9.7	2.0
1,000 to 1,499 miles	17.6	1.5	11.7	1.0	12.9	1.3
1,500 to 1,999 miles	19.7	1.2	15.2	1.3	15.1	2.4
2,000 miles or more	23.9	—	22.0	—	21.0	.2
Truck and rail	37.1	—	46.5	—	17.8	—
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	29.2	7.6	28.2	4.7
750 to 999 miles	33.0	7.0	28.7	3.7	28.2	2.2
1,000 to 1,499 miles	48.0	2.7	S	S	S	S
1,500 to 1,999 miles	38.7	5.2	19.2	9.2	19.6	8.3
2,000 miles or more	S	S	S	S	S	S
Truck and water	34.9	—	34.2	—	45.3	—
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	36.5	18.5	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	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Other multiple modes	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	S	S	S	S	S	S
Other and unknown modes	16.2	—	27.6	—	23.3	—
Less than 50 miles	23.5	8.6	33.8	10.3	29.8	5.8
50 to 99 miles	36.7	1.7	S	S	48.7	1.1
100 to 249 miles	22.8	2.0	25.3	2.4	28.8	2.2
250 to 499 miles	37.8	4.1	45.9	4.0	42.2	3.9
500 to 749 miles	25.0	2.5	S	S	S	S
750 to 999 miles	28.1	.8	33.4	1.0	34.2	4.1
1,000 to 1,499 miles	35.0	.8	33.9	.4	33.7	3.2
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S

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

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	3.4	—	10.5	—	3.1	—	8.2
Less than 50 lb	10.3	1.3	16.7	—	10.1	—	7.2
50 to 99 lb	12.3	.5	17.9	—	12.7	—	16.7
100 to 499 lb	8.6	.8	12.4	.1	9.9	—	15.4
500 to 749 lb	13.8	.4	9.2	—	9.8	—	16.2
750 to 999 lb	13.2	.3	10.7	—	9.3	—	16.1
1,000 to 9,999 lb	4.7	.9	10.1	.6	7.4	.4	10.9
10,000 to 49,999 lb	9.0	2.6	21.2	4.5	10.4	3.2	12.0
50,000 to 99,999 lb	20.9	1.2	21.3	2.6	20.4	1.3	22.7
100,000 lb or more	8.6	.6	7.2	4.4	9.4	4.4	17.5
Single modes	3.6	—	11.2	—	4.0	—	12.0
Less than 50 lb	31.4	1.1	8.7	—	16.3	—	16.9
50 to 99 lb	23.7	.5	11.6	—	17.6	—	20.1
100 to 499 lb	9.3	1.0	15.5	.1	14.1	—	14.9
500 to 749 lb	14.3	.6	11.4	—	10.7	—	16.2
750 to 999 lb	13.4	.4	12.1	—	8.0	—	14.3
1,000 to 9,999 lb	4.8	1.4	10.8	.6	7.3	.4	13.9
10,000 to 49,999 lb	9.9	2.9	21.8	4.5	11.7	3.7	11.3
50,000 to 99,999 lb	21.2	1.4	21.1	2.7	21.1	1.5	23.4
100,000 lb or more	6.9	.6	6.2	4.4	10.3	5.0	16.5
Truck²	4.1	—	17.4	—	8.7	—	13.4
Less than 50 lb	36.2	1.2	9.4	—	16.9	—	23.3
50 to 99 lb	26.0	.6	11.9	—	15.9	—	22.0
100 to 499 lb	9.4	1.1	15.6	.3	14.5	.2	14.9
500 to 749 lb	14.7	.6	11.6	.1	10.8	.2	16.1
750 to 999 lb	13.4	.4	12.1	—	8.0	—	14.4
1,000 to 9,999 lb	4.8	1.7	10.8	1.6	7.4	1.3	13.8
10,000 to 49,999 lb	9.9	2.9	21.9	3.7	10.3	2.3	11.7
50,000 to 99,999 lb	22.7	1.5	22.5	3.4	16.8	1.4	14.6
100,000 lb or more	15.0	.1	31.4	.9	30.1	1.7	16.1
For-hire truck	5.1	—	14.2	—	8.0	—	5.9
Less than 50 lb	S	S	21.3	—	22.2	—	11.3
50 to 99 lb	34.3	.6	17.8	—	19.5	—	11.8
100 to 499 lb	13.1	1.3	11.8	.1	15.3	.2	5.0
500 to 749 lb	14.2	.6	9.2	—	13.0	.1	7.1
750 to 999 lb	18.0	.6	8.2	—	9.5	—	8.2
1,000 to 9,999 lb	9.2	2.2	10.5	1.4	9.7	1.5	5.7
10,000 to 49,999 lb	10.2	3.0	17.8	3.6	10.5	2.6	9.7
50,000 to 99,999 lb	22.4	1.4	25.1	4.1	14.1	1.4	29.6
100,000 lb or more	19.1	.2	45.6	1.3	33.1	2.4	19.2
Private truck	12.6	—	27.2	—	27.5	—	20.8
Less than 50 lb	10.8	.5	14.5	—	31.4	—	27.9
50 to 99 lb	28.1	1.0	14.8	—	28.2	—	32.3
100 to 499 lb	10.6	1.8	20.9	.5	31.8	.5	13.4
500 to 749 lb	21.5	1.0	23.3	.3	19.9	.4	10.5
750 to 999 lb	17.1	.3	22.9	.1	21.1	.1	8.8
1,000 to 9,999 lb	11.2	1.2	20.9	2.2	19.2	2.4	15.8
10,000 to 49,999 lb	18.5	3.8	31.5	5.0	27.4	3.7	16.6
50,000 to 99,999 lb	35.2	1.7	40.7	4.3	46.9	3.1	20.0
100,000 lb or more	33.9	.1	S	S	S	S	S
Rail	17.0	—	20.5	—	21.6	—	19.3
Less than 50 lb	S	S	S	S	S	S	S
50 to 99 lb	S	S	S	S	S	S	31.7
100 to 499 lb	S	S	S	S	S	S	32.0
500 to 749 lb	S	S	S	S	S	S	31.6
750 to 999 lb	S	S	S	S	S	S	31.0
1,000 to 9,999 lb	44.9	.4	31.8	—	38.1	—	29.8
10,000 to 49,999 lb	24.4	3.3	26.0	.9	33.1	2.4	20.2
50,000 to 99,999 lb	S	S	S	S	S	S	22.7
100,000 lb or more	12.6	4.5	18.7	2.0	25.5	4.8	21.9
Water	10.7	—	21.1	—	11.7	—	13.0
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	27.2
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	13.8	6.8	22.4	4.8	13.8	5.3	11.1
Shallow draft	10.8	—	21.1	—	11.7	—	12.9
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	31.6
10,000 to 49,999 lb	S	S	S	S	S	S	27.2
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	13.8	6.8	22.4	4.8	13.8	5.3	11.1

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	31.6
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	31.6
10,000 to 49,999 lb	S	S	S	S	S	S	31.6
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Air (includes truck and air)	20.1	—	18.6	—	27.2	—	7.0
Less than 50 lb	39.6	8.6	19.9	6.3	20.9	6.9	8.8
50 to 99 lb	25.7	8.3	24.1	3.9	28.6	6.0	10.5
100 to 499 lb	40.5	8.7	33.7	3.5	36.6	2.9	9.5
500 to 749 lb	S	S	43.4	2.4	49.8	3.0	17.4
750 to 999 lb	35.9	.4	46.9	.9	45.3	.7	20.9
1,000 to 9,999 lb	30.1	2.3	30.5	6.3	34.9	7.7	12.0
10,000 to 49,999 lb	S	S	S	S	S	S	31.0
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Pipeline³	17.4	—	18.2	—	S	S	S
Less than 50 lb	S	S	S	S	S	S	S
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	S
10,000 to 49,999 lb	S	S	S	S	S	S	S
50,000 to 99,999 lb	S	S	S	S	S	S	S
100,000 lb or more	17.4	.4	18.2	.1	S	S	S
Multiple modes	14.3	—	22.9	—	23.2	—	7.1
Less than 50 lb	14.0	2.4	24.3	1.6	12.7	1.0	6.2
50 to 99 lb	17.5	1.4	34.6	.9	18.1	.5	16.6
100 to 499 lb	25.7	2.3	34.3	2.1	9.9	.9	20.6
500 to 749 lb	33.2	.3	S	S	36.4	.1	23.4
750 to 999 lb	35.3	.3	47.1	1.2	S	S	23.7
1,000 to 9,999 lb	23.8	.5	30.6	.7	39.2	.8	21.2
10,000 to 49,999 lb	42.7	2.3	34.1	6.4	24.6	7.3	17.0
50,000 to 99,999 lb	S	S	S	S	46.8	1.6	S
100,000 lb or more	23.8	.7	34.3	11.5	31.8	10.8	S
Parcel, U.S. Postal Service or courier	14.2	—	31.7	—	11.3	—	7.1
Less than 50 lb	14.0	2.9	24.3	2.9	12.7	3.4	6.3
50 to 99 lb	17.5	1.5	34.6	1.2	18.3	1.7	16.5
100 to 499 lb	25.8	2.4	34.4	1.7	9.6	1.8	20.4
500 to 749 lb	33.8	.3	S	S	37.9	1.9	26.1
750 to 999 lb	35.6	.3	47.3	2.7	S	S	22.0
1,000 to 9,999 lb	S	S	S	S	S	S	35.1
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	37.1	—	46.5	—	17.8	—	13.7
Less than 50 lb	S	S	S	S	S	S	27.5
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	41.4	—	47.3	—	27.1
500 to 749 lb	S	S	45.4	—	S	S	24.6
750 to 999 lb	S	S	S	S	S	S	29.0
1,000 to 9,999 lb	27.9	5.1	33.5	1.4	36.8	.7	14.3
10,000 to 49,999 lb	45.4	9.1	30.9	13.1	28.2	9.5	7.9
50,000 to 99,999 lb	S	S	35.0	1.2	37.3	1.5	21.3
100,000 lb or more	33.6	7.9	S	S	34.3	10.2	S
Truck and water	34.9	—	34.2	—	45.3	—	47.8
Less than 50 lb	S	S	S	S	S	S	29.8
50 to 99 lb	S	S	S	S	S	S	29.8
100 to 499 lb	S	S	S	S	S	S	28.9
500 to 749 lb	S	S	S	S	S	S	29.8
750 to 999 lb	S	S	S	S	S	S	30.3
1,000 to 9,999 lb	S	S	S	S	S	S	29.1
10,000 to 49,999 lb	S	S	S	S	S	S	S
50,000 to 99,999 lb	S	S	S	S	S	S	30.1
100,000 lb or more	49.1	16.2	45.7	18.8	S	S	26.2

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	28.2
Less than 50 lb	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
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	S	S	S	S	25.9
Other multiple modes	S	S	S	S	S	S	31.0
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	31.4
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	32.0
Other and unknown modes	16.2	—	27.6	—	23.3	—	48.3
Less than 50 lb	23.1	2.7	35.8	.3	26.5	.2	S
50 to 99 lb	43.8	1.1	31.9	.2	42.3	—	S
100 to 499 lb	40.9	3.0	31.3	1.0	35.1	.4	S
500 to 749 lb	S	S	43.4	.4	38.2	—	S
750 to 999 lb	37.8	.1	45.1	.3	S	S	S
1,000 to 9,999 lb	25.8	4.9	36.0	8.4	25.4	7.1	45.8
10,000 to 49,999 lb	26.2	5.0	40.4	9.6	31.0	7.9	37.0
50,000 to 99,999 lb	46.8	1.9	S	S	41.4	.9	S
100,000 lb or more	39.4	11.3	S	S	34.5	6.6	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-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	3.4	—	10.5	—	3.1	—	8.2
01	Live animals and live fish	S	S	S	S	S	S	23.9
02	Cereal grains	20.3	.2	20.2	1.5	9.4	2.3	S
03	Other agricultural products	16.4	.2	24.8	1.0	13.9	1.0	32.6
04	Animal feed and products of animal origin, n.e.c.	31.7	.2	30.1	.4	36.6	.7	25.6
05	Meat, fish, seafood, and their preparations	41.5	.7	36.9	.1	32.7	.2	31.3
06	Milled grain products and preparations, and bakery products	24.9	.4	30.8	.5	21.8	.7	25.2
07	Other prepared foodstuffs and fats and oils	15.5	.8	15.7	.5	11.3	1.0	S
08	Alcoholic beverages	19.3	.3	15.9	.2	24.0	.2	15.9
09	Tobacco products	31.2	.1	38.5	—	48.1	—	33.5
10	Monumental or building stone	S	S	S	S	S	S	S
11	Natural sands	29.0	—	34.2	.7	31.8	.5	S
12	Gravel and crushed stone	S	S	S	S	S	S	32.6
13	Nonmetallic minerals n.e.c.	17.2	—	32.3	.8	20.3	—	38.5
14	Metallic ores and concentrates	S	S	S	S	S	S	23.9
15	Coal	14.9	—	16.6	1.2	30.3	.9	19.4
17	Gasoline and aviation turbine fuel	24.7	.9	22.5	1.6	S	S	21.9
18	Fuel oils	25.0	.3	23.9	.9	29.6	.4	33.2
19	Coal and petroleum products, n.e.c.	16.9	.2	29.0	1.3	S	S	S
20	Basic chemicals	25.0	.1	18.6	.1	8.8	—	41.5
21	Pharmaceutical products	36.8	2.2	48.0	—	S	S	20.7
22	Fertilizers	44.6	.3	49.7	1.7	S	S	S
23	Chemical products and preparations, n.e.c.	31.0	1.3	47.2	.7	S	S	25.3
24	Plastics and rubber	12.0	.5	12.9	.2	14.8	.5	16.5
25	Logs and other wood in the rough	S	S	S	S	S	S	26.0
26	Wood products	12.5	—	37.3	.3	40.5	—	19.8
27	Pulp, newsprint, paper, and paperboard	38.0	.5	45.7	.3	39.7	.3	24.5
28	Paper or paperboard articles	28.5	.4	32.4	.2	38.9	.3	16.7
29	Printed products	12.4	.2	14.9	—	14.4	—	9.7
30	Textiles, leather, and articles of textiles or leather	14.8	.2	23.2	—	20.8	—	11.5
31	Nonmetallic mineral products	21.5	.3	32.2	2.2	23.8	.5	33.6
32	Base metal in primary or semifinished forms and in finished basic shapes	30.6	1.1	39.9	1.3	26.4	1.2	20.5
33	Articles of base metal	17.2	.7	42.9	1.1	33.6	.8	17.0
34	Machinery	12.6	.7	19.7	.1	22.4	.3	15.1
35	Electronic and other electrical equipment and components and office equipment	18.3	2.2	49.5	.1	20.7	.1	10.5
36	Motorized and other vehicles (including parts)	11.9	.9	15.2	.1	21.2	.2	8.3
37	Transportation equipment, n.e.c.	S	S	S	S	S	S	20.5
38	Precision instruments and apparatus	31.9	.3	S	S	37.3	—	9.8
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	31.7	.2	34.3	—	34.6	—	18.1
40	Miscellaneous manufactured products	16.7	.8	49.1	.8	28.3	.6	7.3
41	Waste and scrap	S	S	S	S	S	S	S
43	Mixed freight	21.6	2.9	36.2	1.2	28.1	1.2	15.0
--	Commodity unknown	23.7	—	S	S	S	S	26.4

— 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.

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 .....	.2	.3	1.5	1.7	2.3	2.1
03	Other agricultural products .....	.2	.1	1.0	.5	1.0	.8
04	Animal feed and products of animal origin, n.e.c. ....	.2	.2	.4	.3	.7	.6
05	Meat, fish, seafood, and their preparations .....	.7	.2	.1	-	.2	.3
06	Milled grain products and preparations, and bakery products .....	.4	.3	.5	.3	.7	.8
07	Other prepared foodstuffs and fats and oils .....	.8	.5	.5	.6	1.0	.9
08	Alcoholic beverages .....	.3	.1	.2	.1	.2	.6
09	Tobacco products .....	.1	.1	-	-	-	-
10	Monumental or building stone	S	S	S	S	S	S
11	Natural sands	-	S	.7	S	.5	.6
12	Gravel and crushed stone	S	-	S	2.1	S	-
13	Nonmetallic minerals n.e.c.	-	-	.8	S	-	S
14	Metallic ores and concentrates	S	-	S	-	S	-
15	Coal	-	.1	1.2	2.7	.9	1.9
17	Gasoline and aviation turbine fuel .....	.9	.6	1.6	1.5	S	1.5
18	Fuel oils .....	.3	.2	.9	.8	4	.2
19	Coal and petroleum products, n.e.c. ....	.2	.2	1.3	.8	6	.5
20	Basic chemicals .....	.1	.1	.1	.3	-	.4
21	Pharmaceutical products	2.2	.4	-	-	S	-
22	Fertilizers .....	.3	.1	1.7	.6	S	-
23	Chemical products and preparations, n.e.c.	1.3	.5	.7	.1	S	.2
24	Plastics and rubber .....	.5	.8	.2	.3	.5	.6
25	Logs and other wood in the rough	S	S	S	S	S	S
26	Wood products	-	-	.3	S	-	-
27	Pulp, newsprint, paper, and paperboard .....	.5	.2	.3	.2	.3	.1
28	Paper or paperboard articles .....	.4	.2	.2	.1	.3	.2
29	Printed products .....	.2	.4	-	-	-	-
30	Textiles, leather, and articles of textiles or leather .....	.2	.1	-	-	-	-
31	Nonmetallic mineral products .....	.3	.2	2.2	S	.5	1.2
32	Base metal in primary or semifinished forms and in finished basic shapes	1.1	.5	1.3	.5	1.2	.7
33	Articles of base metal .....	.7	.4	1.1	.1	.8	.2
34	Machinery .....	.7	.5	.1	-	.3	.2
35	Electronic and other electrical equipment and components and office equipment	2.2	.7	.1	-	.1	.1
36	Motorized and other vehicles (including parts) .....	.9	1.3	.1	.1	.2	.4
37	Transportation equipment, n.e.c.	S	.1	S	-	S	-
38	Precision instruments and apparatus .....	.3	.3	S	-	-	-
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs .....	.2	.1	-	-	-	-
40	Miscellaneous manufactured products .....	.8	.7	.8	.2	.6	.7
41	Waste and scrap	S	.3	S	4	S	.2
43	Mixed freight	2.9	.6	1.2	.2	1.2	.2
--	Commodity unknown	-	.2	S	.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.

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	3.4	—	10.5	—	3.1	—	8.2
Single modes	3.6	2.1	11.2	.9	4.0	2.2	12.0
Truck	4.1	2.2	17.4	4.7	8.7	3.6	13.4
For-hire truck	5.1	2.6	14.2	2.9	8.0	2.6	5.9
Private truck	12.6	2.3	27.2	5.0	27.5	2.1	20.8
Rail	17.0	.6	20.5	2.7	21.6	3.4	19.3
Water	10.7	.1	21.1	2.6	11.7	3.6	13.0
Shallow draft	10.8	.1	21.1	2.6	11.7	3.6	12.9
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	20.1	.2	18.6	—	27.2	—	7.0
Pipeline	17.4	.4	18.2	1.6	S	S	S
Multiple modes	14.3	2.0	22.9	.8	23.2	2.3	7.1
Parcel, U.S. Postal Service or courier	14.2	1.7	31.7	.1	11.3	—	7.1
Truck and rail	37.1	.6	46.5	.4	17.8	.5	13.7
Truck and water	34.9	—	34.2	.5	45.3	1.9	47.8
Rail and water	S	S	S	S	S	S	26.2
Other multiple modes	S	S	S	S	S	S	31.0
Other and unknown modes	16.2	.4	27.6	.4	23.3	.2	48.3
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	S	S	S	S	S	S	23.9
Single modes	S	S	S	S	S	S	23.9
Truck	S	S	S	S	S	S	23.9
For-hire truck	S	S	S	S	S	S	23.9
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 02, CEREAL GRAINS							
Total	20.3	—	20.2	—	9.4	—	S
Single modes	24.8	8.5	25.5	9.1	17.4	9.5	S
Truck	43.1	10.8	45.9	11.0	45.5	1.4	S
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	S	S	41.2
Rail	S	S	S	S	S	S	29.8
Water	16.4	9.9	17.4	10.0	17.6	8.7	1.4
Shallow draft	16.4	9.9	17.4	10.0	17.6	8.7	1.4
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	36.5	8.5	36.8	9.1	36.9	9.5	33.7
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	S	S	S	S	27.9
Rail and water	S	S	S	S	S	S	27.9
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	S	S	S	S	S	S	31.5

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	16.4	—	24.8	—	13.9	—	32.6
Single modes	18.0	4.2	26.2	7.2	17.8	8.8	21.3
Truck	21.1	4.8	34.2	10.3	49.2	4.9	22.4
For-hire truck	39.7	11.5	40.8	14.7	S	S	29.2
Private truck	34.0	9.5	40.6	6.3	S	S	24.8
Rail	S	S	S	S	S	S	31.6
Water	21.4	2.7	20.2	7.1	19.6	10.0	2.5
Shallow draft	21.4	2.7	20.2	7.1	19.6	10.0	2.5
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	34.7	3.8	S	S	S	S	19.1
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	24.2
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	29.8
Rail and water	S	S	S	S	S	S	29.0
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	49.8	.3	47.3
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	31.7	—	30.1	—	36.6	—	25.6
Single modes	32.2	1.2	30.4	1.6	38.1	3.5	31.8
Truck	37.9	5.9	35.7	8.5	38.3	9.5	37.9
For-hire truck	19.5	10.7	45.3	8.8	41.6	8.9	28.7
Private truck	S	S	S	S	S	S	41.6
Rail	35.3	6.4	32.1	11.0	41.7	13.1	22.5
Water	S	S	S	S	S	S	26.6
Shallow draft	S	S	S	S	S	S	26.6
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	27.0
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	47.8	1.9	27.6
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	41.5	—	36.9	—	32.7	—	31.3
Single modes	41.5	.3	36.9	—	32.6	—	34.9
Truck	41.4	.4	36.9	.2	32.0	1.0	42.1
For-hire truck	44.2	11.7	35.0	12.0	34.4	12.9	16.5
Private truck	S	S	S	S	S	S	22.6
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	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	32.0
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	32.1
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	31.0

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	24.9	—	30.8	—	21.8	—	25.2
Single modes	23.8	2.3	32.7	2.6	26.0	7.3	29.8
Truck	24.3	2.3	36.7	6.0	29.9	7.6	30.1
For-hire truck	22.4	6.4	41.0	7.6	32.3	7.8	17.9
Private truck	48.9	5.5	38.1	4.6	S	S	S
Rail	30.1	1.4	S	S	39.1	7.4	15.4
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	49.1	2.7	S	S	19.9
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	S	S	49.1	2.7	S	S	19.1
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	39.1	.3	43.5	.6	S	S	S
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	15.5	—	15.7	—	11.3	—	S
Single modes	15.9	1.0	16.5	1.2	10.3	2.1	S
Truck	19.3	5.6	22.8	6.7	17.4	7.9	S
For-hire truck	20.7	6.6	21.6	7.4	17.4	7.3	10.8
Private truck	41.1	6.2	S	S	33.0	1.8	S
Rail	36.3	4.9	15.8	4.1	20.5	5.7	11.8
Water	47.7	1.2	S	S	S	S	25.8
Shallow draft	47.7	1.2	S	S	S	S	25.8
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.7
Pipeline	S	S	S	S	S	S	S
Multiple modes	47.3	1.0	36.7	.9	35.6	1.9	22.9
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	24.6
Truck and rail	36.4	.9	37.4	.9	35.9	1.9	21.6
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	33.5	.4	39.8	.6	39.4	.3	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	19.3	—	15.9	—	24.0	—	15.9
Single modes	19.2	.4	15.9	.4	23.7	.5	14.9
Truck	22.6	5.3	18.7	6.6	14.5	11.8	9.3
For-hire truck	22.6	5.9	17.7	6.1	18.3	5.7	23.2
Private truck	29.9	8.7	34.5	10.7	29.3	10.8	7.0
Rail	34.1	4.4	33.1	5.1	25.2	9.4	43.3
Water	47.3	1.9	49.6	4.1	48.4	7.2	30.5
Shallow draft	47.3	1.9	49.6	4.1	48.4	7.2	30.5
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	32.7
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	S	S	S	S	S	S	28.5
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 09, TOBACCO PRODUCTS							
Total	31.2	—	38.5	—	48.1	—	33.5
Single modes	31.2	.2	38.5	.2	48.4	.8	33.4
Truck	31.3	.5	38.6	.4	49.0	2.2	31.9
For-hire truck	48.4	10.8	48.2	12.9	S	S	25.8
Private truck	38.5	10.9	39.9	12.9	40.6	14.6	26.8
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	S	S	S	S	S	S	28.8
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	29.8
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	30.4
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	30.0
Truck	S	S	S	S	S	S	30.0
For-hire truck	S	S	S	S	S	S	31.6
Private truck	S	S	S	S	S	S	29.9
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	30.3
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	30.3
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 11, NATURAL SANDS							
Total	29.0	—	34.2	—	31.8	—	S
Single modes	31.2	7.3	40.3	9.4	31.9	4.1	S
Truck	37.9	8.6	47.3	12.2	48.0	11.6	S
For-hire truck	46.2	9.8	S	S	S	S	31.1
Private truck	S	S	S	S	S	S	S
Rail	42.0	7.1	43.8	10.6	38.6	11.7	22.0
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	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 12, GRAVEL AND CRUSHED STONE							
Total	S	S	S	S	S	S	32.6
Single modes	S	S	S	S	S	S	31.9
Truck	S	S	S	S	44.1	13.3	30.6
For-hire truck	S	S	S	S	38.1	8.3	S
Private truck	S	S	S	S	S	S	24.1
Rail	S	S	S	S	S	S	28.6
Water	S	S	S	S	S	S	28.8
Shallow draft	S	S	S	S	S	S	28.8
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline	-	-	-	-	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	-	-	-	-	-	-	-
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	35.2
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	17.2	-	32.3	-	20.3	-	38.5
Single modes	18.4	3.0	33.5	6.7	20.8	2.6	S
Truck	18.7	3.2	33.5	6.8	21.2	3.7	S
For-hire truck	23.6	7.9	37.1	10.9	23.5	8.1	S
Private truck	30.7	5.9	25.5	7.9	32.1	7.9	44.5
Rail	S	S	S	S	S	S	30.3
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline	-	-	-	-	S	S	S
Multiple modes	S	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	S	S	S	S	30.1
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	S	S	S	S	S	S	23.9
Single modes	S	S	S	S	S	S	23.9
Truck	S	S	S	S	S	S	23.9
For-hire truck	S	S	S	S	S	S	42.6
Private truck	S	S	S	S	S	S	25.9
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline	-	-	-	-	S	S	S
Multiple modes	-	-	-	-	-	-	-
Parcel, U.S. Postal Service or courier	-	-	-	-	-	-	-
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	-	-	-	-	-	-	-

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	14.9	—	16.6	—	30.3	—	19.4
Single modes	14.5	2.8	16.7	2.7	32.0	4.2	30.4
Truck	34.2	5.8	34.0	6.5	17.2	1.4	37.0
For-hire truck	34.2	5.8	34.0	6.5	17.2	1.4	37.0
Private truck	—	—	—	—	—	—	—
Rail	17.1	7.7	21.0	8.1	34.3	4.9	10.3
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
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	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	24.7	—	22.5	—	S	S	21.9
Single modes	24.7	—	22.5	—	S	S	21.9
Truck	41.7	9.1	43.6	9.2	S	S	22.1
For-hire truck	15.8	2.8	15.9	2.5	15.3	6.4	11.9
Private truck	S	S	S	S	S	S	24.0
Rail	—	—	—	—	—	—	—
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	18.0	9.1	18.3	9.2	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	30.1
SCTG 18, FUEL OILS							
Total	25.0	—	23.9	—	29.6	—	33.2
Single modes	25.4	1.9	24.9	3.6	31.0	9.9	32.8
Truck	37.1	11.8	35.4	12.0	32.2	16.4	31.0
For-hire truck	27.3	9.0	27.2	8.9	27.5	9.4	17.3
Private truck	47.2	9.7	45.1	8.2	38.8	8.9	S
Rail	S	S	S	S	S	S	26.6
Water	S	S	S	S	S	S	29.8
Shallow draft	S	S	S	S	S	S	29.8
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	32.3	11.1	32.9	11.2	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	S	S	S	S	S	S	30.6

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 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	16.9	—	29.0	—	S	S	S
Single modes	17.7	1.9	32.9	7.8	S	S	S
Truck	18.3	7.6	S	S	26.1	13.7	S
For-hire truck	14.6	6.6	36.9	6.1	16.5	6.9	19.1
Private truck	27.4	8.7	S	S	S	S	31.9
Rail	26.4	3.6	36.8	7.3	33.2	10.9	14.1
Water	S	S	S	S	S	S	28.1
Shallow draft	S	S	S	S	S	S	28.1
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	25.1	1.5	45.2	6.7	S	S	S
Multiple modes	S	S	S	S	S	S	45.9
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	36.9
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	S	S	S	S	S	S	31.6
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 20, BASIC CHEMICALS							
Total	25.0	—	18.6	—	8.8	—	41.5
Single modes	24.8	.3	18.5	.4	8.9	.5	35.7
Truck	29.0	9.0	28.4	7.1	25.2	8.7	36.3
For-hire truck	34.6	11.1	37.4	7.9	28.3	9.1	13.2
Private truck	S	S	S	S	36.4	1.0	39.7
Rail	S	S	26.8	7.4	17.0	9.0	6.1
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	49.4	—	46.2	—	25.5
Pipeline	S	S	S	S	S	S	S
Multiple modes	45.3	.3	40.5	.1	S	S	S
Parcel, U.S. Postal Service or courier	47.3	.2	S	S	47.6	—	S
Truck and rail	S	S	S	S	S	—	29.9
Truck and water	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 21, PHARMACEUTICAL PRODUCTS							
Total	36.8	—	48.0	—	S	S	20.7
Single modes	39.5	13.1	46.2	11.1	S	S	27.8
Truck	40.8	12.9	46.3	10.9	S	S	28.0
For-hire truck	42.8	12.7	S	S	S	S	26.0
Private truck	45.2	8.3	37.6	7.5	42.9	2.9	24.5
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	43.6	1.5	41.6	.8	S	S	27.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	43.5	13.2	S	S	S	S	21.1
Parcel, U.S. Postal Service or courier	43.5	13.2	S	S	S	S	21.1
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	47.3	.3	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 22, FERTILIZERS							
Total	44.6	—	49.7	—	S	S	S
Single modes	49.3	7.6	S	S	S	S	S
Truck	38.5	13.2	33.3	14.0	S	S	S
For-hire truck	40.5	6.3	41.4	6.5	S	S	45.3
Private truck	S	S	S	S	36.7	15.1	S
Rail	S	S	S	S	S	S	26.4
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	28.2
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	29.4
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	29.9
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	31.0	—	47.2	—	S	S	25.3
Single modes	32.1	1.6	47.9	1.1	S	S	29.9
Truck	32.9	2.8	S	S	S	S	30.1
For-hire truck	37.8	10.2	S	S	S	S	8.7
Private truck	17.9	8.4	34.4	6.0	32.0	2.4	23.9
Rail	30.9	1.7	25.3	6.1	39.4	10.2	15.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	30.1
Pipeline	S	S	S	S	S	S	S
Multiple modes	27.5	1.6	26.9	1.1	30.4	2.4	12.7
Parcel, U.S. Postal Service or courier	31.6	1.4	34.2	.3	29.1	.4	12.2
Truck and rail	39.0	.5	37.8	.9	43.5	2.2	24.9
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 24, PLASTICS AND RUBBER							
Total	12.0	—	12.9	—	14.8	—	16.5
Single modes	12.5	3.3	13.5	1.5	16.4	4.0	25.5
Truck	13.0	3.1	13.1	5.5	19.4	7.6	22.9
For-hire truck	15.3	4.6	14.1	7.0	21.0	8.0	19.3
Private truck	26.3	3.2	37.5	4.4	46.1	1.8	26.9
Rail	28.0	2.3	28.8	6.0	35.3	8.5	15.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	49.2	—	S	S	20.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	31.4	3.1	18.9	1.4	20.3	4.0	10.3
Parcel, U.S. Postal Service or courier	35.0	3.0	33.1	.4	38.0	.4	11.0
Truck and rail	26.0	.8	22.3	1.4	22.8	4.0	6.9
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	39.7	.7	38.4	.4	47.6	.3	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	S	S	S	S	S	S	26.0
Single modes	S	S	S	S	S	S	26.0
Truck	S	S	S	S	S	S	28.9
For-hire truck	S	S	S	S	S	S	29.3
Private truck	S	S	S	S	S	S	29.8
Rail	S	S	S	S	S	S	26.9
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 26, WOOD PRODUCTS							
Total	12.5	—	37.3	—	40.5	—	19.8
Single modes	12.3	.3	37.2	.3	40.2	1.0	18.8
Truck	12.3	.3	37.3	.3	40.3	1.0	18.5
For-hire truck	30.7	6.3	45.5	4.4	41.5	5.4	10.0
Private truck	13.7	6.4	36.4	4.6	40.8	6.1	6.5
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	29.4
Pipeline	—	—	—	—	S	S	S
Multiple modes	31.9	.1	47.0	—	49.1	.3	14.8
Parcel, U.S. Postal Service or courier	31.9	.1	47.0	—	49.1	.3	14.8
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	30.1
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	38.0	—	45.7	—	39.7	—	24.5
Single modes	38.2	1.4	45.4	2.7	37.6	4.8	29.0
Truck	38.2	1.4	45.4	2.7	37.6	4.8	29.8
For-hire truck	43.1	9.6	S	S	41.4	7.7	26.0
Private truck	39.6	9.1	38.6	11.2	S	S	38.3
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	24.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	49.0	.5	37.5	.2	S	S	27.7
Parcel, U.S. Postal Service or courier	49.0	.5	37.5	.2	S	S	27.7
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 28, PAPER OR PAPERBOARD ARTICLES							
Total	28.5	—	32.4	—	38.9	—	16.7
Single modes	26.4	3.5	30.2	2.0	31.0	5.1	19.7
Truck	26.5	3.4	30.5	2.0	31.7	5.0	19.6
For-hire truck	29.8	5.0	35.6	7.0	33.4	4.8	14.9
Private truck	40.6	5.0	S	S	S	S	12.6
Rail	S	S	S	S	S	S	28.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	27.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	22.3
Parcel, U.S. Postal Service or courier	42.3	1.3	43.8	.4	S	S	22.6
Truck and rail	S	S	S	S	S	S	31.7
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	38.2	2.3	S	S	S	S	S
SCTG 29, PRINTED PRODUCTS							
Total	12.4	—	14.9	—	14.4	—	9.7
Single modes	18.3	7.4	15.9	2.4	17.0	5.2	27.1
Truck	18.5	7.3	16.0	2.4	17.3	5.2	22.9
For-hire truck	21.7	6.2	18.1	4.6	18.2	5.4	8.9
Private truck	19.4	3.1	26.5	4.6	34.1	2.6	S
Rail	S	S	S	S	S	S	28.3
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	42.4
Pipeline	S	S	S	S	S	S	S
Multiple modes	31.3	7.5	38.6	2.5	40.4	5.3	7.7
Parcel, U.S. Postal Service or courier	31.5	7.5	40.0	2.5	47.4	5.4	7.8
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	29.8
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	41.4	.8	S	S	S
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	14.8	—	23.2	—	20.8	—	11.5
Single modes	25.3	8.9	28.2	7.3	24.6	7.9	34.6
Truck	25.8	9.0	28.2	7.3	24.9	8.0	33.8
For-hire truck	25.2	4.4	21.5	6.2	25.5	6.9	28.9
Private truck	43.1	6.7	44.1	9.1	44.4	4.6	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	21.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	26.2	10.0	34.3	8.3	32.2	7.7	7.3
Parcel, U.S. Postal Service or courier	26.2	10.0	34.3	8.3	32.3	7.7	7.4
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	40.6	.7	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	21.5	—	32.2	—	23.8	—	33.6
Single modes	23.1	3.5	32.4	.8	24.3	2.0	S
Truck	23.4	3.7	32.7	1.1	27.9	7.9	S
For-hire truck	34.8	9.9	38.7	13.7	35.0	10.8	16.6
Private truck	33.4	10.8	46.8	13.6	36.7	8.6	S
Rail	S	S	S	S	S	S	31.3
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	29.9
Pipeline	S	S	S	S	S	S	S
Multiple modes	46.8	2.8	S	S	S	S	17.4
Parcel, U.S. Postal Service or courier	S	S	46.6	.1	S	S	19.2
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	30.6	—	39.9	—	26.4	—	20.5
Single modes	30.9	.5	39.9	.2	26.3	.1	20.5
Truck	31.2	.9	40.7	2.6	26.7	4.1	21.7
For-hire truck	22.1	6.0	29.9	7.5	23.2	5.1	13.5
Private truck	S	S	S	S	S	S	32.6
Rail	30.3	.9	36.2	2.6	31.2	4.1	45.4
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	33.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	38.2	.1	S	S	S	S	12.5
Parcel, U.S. Postal Service or courier	43.7	.1	S	S	36.7	—	12.5
Truck and rail	S	S	S	S	S	S	30.4
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	44.7	.4	S	S	39.6	.1	S
SCTG 33, ARTICLES OF BASE METAL							
Total	17.2	—	42.9	—	33.6	—	17.0
Single modes	17.6	4.8	43.5	2.1	35.0	4.0	20.7
Truck	19.0	6.2	43.4	2.1	34.4	3.6	22.9
For-hire truck	26.1	9.4	S	S	39.8	6.6	10.1
Private truck	37.0	6.4	S	S	47.3	5.5	S
Rail	S	S	S	S	S	S	30.3
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	17.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	35.1	4.9	21.0	2.0	27.4	4.1	16.3
Parcel, U.S. Postal Service or courier	36.4	4.7	25.7	1.4	36.6	2.1	16.4
Truck and rail	43.0	.6	40.5	.8	37.0	2.4	21.9
Truck and water	S	S	S	S	S	S	29.8
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	47.0	.8	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	12.6	—	19.7	—	22.4	—	15.1
Single modes	14.0	2.8	21.0	1.8	23.4	2.2	17.7
Truck	13.8	3.4	21.6	2.7	23.0	3.1	21.0
For-hire truck	14.7	3.8	23.5	4.2	23.8	3.5	8.0
Private truck	21.7	2.3	29.1	3.7	38.0	1.4	S
Rail	S	S	S	S	S	S	22.8
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	42.4	.2	40.2	—	45.4	.2	20.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	15.5	1.9	15.2	1.0	15.3	2.0	15.6
Parcel, U.S. Postal Service or courier	19.9	2.1	31.4	.9	35.4	1.2	15.7
Truck and rail	33.8	.5	22.7	.5	23.4	1.8	4.9
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	40.3	1.6	32.5	1.3	S	S	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	18.3	—	49.5	—	20.7	—	10.5
Single modes	15.1	6.1	S	S	23.9	6.0	15.7
Truck	15.6	6.5	S	S	23.8	6.2	17.6
For-hire truck	19.5	5.9	20.4	12.7	23.4	5.9	12.6
Private truck	35.6	5.3	S	S	S	S	S
Rail	S	S	S	S	S	S	38.4
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	36.4	.4	38.4	1.2	9.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	26.1	6.1	32.5	7.0	20.9	5.3	9.8
Parcel, U.S. Postal Service or courier	26.1	6.1	32.5	7.0	21.0	5.3	9.8
Truck and rail	S	S	S	S	S	S	30.1
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	46.4	1.7	S
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	11.9	—	15.2	—	21.2	—	8.3
Single modes	15.9	7.4	18.2	5.7	22.0	3.0	19.4
Truck	15.6	7.0	18.2	5.5	22.3	2.6	19.4
For-hire truck	17.7	6.7	19.1	5.2	25.1	3.7	16.6
Private truck	26.3	4.2	25.3	4.7	43.2	4.5	22.6
Rail	S	S	S	S	S	S	23.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	46.0	.2	14.7
Pipeline	S	S	S	S	S	S	S
Multiple modes	17.9	1.6	22.9	.9	24.6	2.6	4.7
Parcel, U.S. Postal Service or courier	30.3	1.6	42.1	.6	47.5	2.2	5.8
Truck and rail	35.0	1.7	30.0	.9	30.0	2.9	20.2
Truck and water	S	S	S	S	S	S	29.8
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	35.6	7.5	29.6	5.8	41.3	1.0	40.5

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	\$	\$	\$	\$	\$	\$	20.5
Single modes	\$	\$	\$	\$	\$	\$	20.3
Truck	\$	\$	\$	\$	\$	\$	33.4
For-hire truck	\$	\$	\$	\$	\$	\$	23.4
Private truck	\$	\$	\$	\$	\$	\$	\$
Rail	\$	\$	\$	\$	\$	\$	\$
Water	\$	\$	\$	\$	\$	\$	31.6
Shallow draft	\$	\$	\$	\$	\$	\$	31.6
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	29.3
Pipeline	-	-	-	-	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	26.7
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	26.7
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	\$	\$	\$	\$	\$	\$	31.6
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	31.9	-	\$	\$	37.3	-	9.8
Single modes	\$	\$	\$	\$	\$	\$	45.7
Truck	\$	\$	\$	\$	\$	\$	44.6
For-hire truck	\$	\$	\$	\$	42.6	10.6	25.0
Private truck	\$	\$	\$	\$	\$	\$	\$
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	24.5
Pipeline	-	-	-	-	\$	\$	\$
Multiple modes	38.6	11.5	\$	\$	\$	\$	7.9
Parcel, U.S. Postal Service or courier	38.6	11.5	\$	\$	\$	\$	7.9
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	\$	\$	\$	\$	\$	\$	31.2
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	31.7	-	34.3	-	34.6	-	18.1
Single modes	34.5	4.1	37.1	7.3	35.3	6.9	19.1
Truck	34.6	4.0	37.1	7.0	36.7	9.2	21.2
For-hire truck	49.1	10.9	47.7	11.3	40.9	12.0	20.3
Private truck	18.5	9.3	40.6	9.7	\$	\$	21.6
Rail	\$	\$	\$	\$	\$	\$	30.9
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	29.8
Pipeline	-	-	-	-	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	18.6
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	18.6
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 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	16.7	—	49.1	—	28.3	—	7.3
Single modes	14.9	5.2	42.4	3.9	28.8	3.4	14.4
Truck	15.0	5.4	37.8	8.3	23.2	8.4	13.9
For-hire truck	17.5	5.4	45.1	8.0	23.4	8.1	7.0
Private truck	19.7	4.3	49.3	8.7	33.8	1.6	42.0
Rail	S	S	S	S	S	S	29.1
Water	S	S	S	S	S	S	29.8
Shallow draft	S	S	S	S	S	S	29.8
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	46.0	.1	36.2	—	36.0	.1	29.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	24.3	5.1	16.0	2.4	16.7	3.7	6.3
Parcel, U.S. Postal Service or courier	25.2	5.3	19.4	2.3	21.1	3.1	6.3
Truck and rail	46.4	.7	45.4	.4	S	S	33.2
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.9
SCTG 41, WASTE AND SCRAP							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck	S	S	S	S	S	S	21.3
For-hire truck	S	S	S	S	S	S	46.6
Private truck	44.1	16.3	S	S	S	S	35.1
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	46.4
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	46.4
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 43, MIXED FREIGHT							
Total	21.6	—	36.2	—	28.1	—	15.0
Single modes	17.6	3.0	37.5	3.0	26.6	3.9	20.5
Truck	17.0	3.3	37.7	3.2	25.8	4.9	22.5
For-hire truck	29.5	6.6	S	S	33.0	9.1	19.3
Private truck	14.4	8.6	23.9	11.7	24.3	9.8	25.7
Rail	S	S	S	S	S	S	23.1
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	35.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	43.3	3.4	41.8
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	40.7
Truck and rail	S	S	S	S	46.1	2.7	26.6
Truck and water	S	S	S	S	S	S	31.6
Rail and water	S	S	S	S	S	S	31.6
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	S	S	S	S	S	S	S

See footnote at end of table.

Table B-6. **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	23.7	—	S	S	S	S	26.4
Single modes	25.1	4.6	S	S	S	S	S
Truck	22.0	5.8	S	S	S	S	35.7
For-hire truck	33.9	9.9	43.2	14.9	40.2	14.0	23.5
Private truck	40.5	11.8	S	S	S	S	34.9
Rail	S	S	S	S	S	S	31.6
Water	S	S	S	S	S	S	28.0
Shallow draft	S	S	S	S	S	S	28.0
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	35.5	4.7	S	S	S	S	19.9
Parcel, U.S. Postal Service or courier	28.9	2.2	34.9	.3	39.0	3.3	20.1
Truck and rail	S	S	S	S	S	S	30.4
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

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

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-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	3.4	—	10.5	—	3.1	—
NEW ENGLAND STATES						
Connecticut	37.9	.1	26.7	—	27.5	—
Maine	26.0	—	34.1	—	36.2	—
Massachusetts	29.3	.2	19.3	—	18.6	.1
New Hampshire	S	S	S	S	S	S
Rhode Island	30.2	—	30.7	—	30.2	—
Vermont	33.7	—	S	S	S	S
MIDDLE ATLANTIC STATES						
New Jersey	28.3	.6	19.9	.1	19.1	.2
New York	15.9	.3	24.3	—	25.5	.3
Pennsylvania	19.5	.5	15.5	.2	14.0	.4
EAST NORTH CENTRAL STATES						
Illinois	8.2	2.2	17.4	4.4	10.6	1.1
Indiana	10.9	.6	39.2	2.6	23.9	.9
Michigan	8.0	.3	17.0	.4	12.4	.3
Ohio	13.7	.6	17.5	.4	19.5	.6
Wisconsin	10.7	.5	21.9	.8	24.1	.5
WEST NORTH CENTRAL STATES						
Iowa	10.8	.1	25.4	.3	13.0	.1
Kansas	13.2	—	35.9	.1	36.9	.2
Minnesota	11.6	.2	15.1	—	16.1	.2
Missouri	7.6	.3	11.0	.4	11.8	.2
Nebraska	25.8	.1	33.4	—	33.3	.2
North Dakota	27.7	.1	S	S	S	S
South Dakota	17.7	—	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	33.0	—	43.3	—	45.3	—
District of Columbia	34.6	—	S	S	S	S
Florida	12.7	.2	28.4	.2	32.7	.8
Georgia	22.0	.4	12.6	.1	11.9	.2
Maryland	15.4	.1	39.4	—	38.3	.2
North Carolina	14.7	.2	17.9	—	18.2	.2
South Carolina	12.0	—	27.3	—	27.8	.3
Virginia	11.1	—	19.6	—	18.1	.1
West Virginia	37.9	—	S	S	S	S
EAST SOUTH CENTRAL STATES						
Alabama	12.7	.1	14.0	—	14.0	.1
Kentucky	13.4	.3	39.4	1.7	42.6	1.2
Mississippi	35.4	.3	S	S	S	S
Tennessee	12.6	.2	23.5	.2	34.8	.4
WEST SOUTH CENTRAL STATES						
Arkansas	13.0	—	11.4	—	10.9	—
Louisiana	7.7	.1	7.1	1.0	7.1	2.6
Oklahoma	21.2	—	15.3	—	14.9	—
Texas	8.1	.3	16.3	.2	22.2	1.2
MOUNTAIN STATES						
Arizona	10.8	—	31.2	—	32.3	.3
Colorado	17.6	.1	14.8	—	14.5	—
Idaho	18.3	—	S	S	S	S
Montana	22.1	—	37.9	—	36.0	—
Nevada	43.4	.1	33.6	—	32.1	—
New Mexico	15.7	—	26.3	—	26.0	—
Utah	19.6	—	43.2	—	42.2	.1
Wyoming	29.5	—	44.8	—	46.0	—
PACIFIC STATES						
Alaska	46.7	—	S	S	41.6	—
California	10.6	.4	12.7	.1	12.7	1.0
Hawaii	31.6	—	39.6	—	S	S
Oregon	26.1	.1	48.1	—	49.1	.6
Washington	11.9	—	20.3	—	20.4	.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-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	4.6	—	14.2	—	13.7	—
NEW ENGLAND STATES						
Connecticut	20.8	—	16.8	—	16.5	—
Maine	16.8	—	20.1	—	17.4	—
Massachusetts	21.7	.2	24.6	—	25.2	—
New Hampshire	20.3	—	22.3	—	22.4	—
Rhode Island	25.2	—	49.0	—	49.6	—
Vermont	18.6	—	43.3	—	43.0	—
MIDDLE ATLANTIC STATES						
New Jersey	13.1	.2	28.5	—	29.0	.2
New York	19.2	.3	S	S	S	S
Pennsylvania	12.0	.3	17.4	.2	15.3	.3
EAST NORTH CENTRAL STATES						
Illinois	8.2	1.7	17.4	2.7	10.6	1.2
Indiana	9.5	.5	14.1	.9	21.5	.8
Michigan	12.4	.5	8.9	.3	11.7	.6
Ohio	6.6	.2	9.2	.2	8.2	.3
Wisconsin	7.1	.4	29.0	.7	22.2	.5
WEST NORTH CENTRAL STATES						
Iowa	11.6	.4	18.8	.4	21.9	.6
Kansas	26.6	.2	13.3	—	14.4	.2
Minnesota	12.8	.3	29.3	.6	28.4	1.6
Missouri	8.2	.2	28.6	.4	20.3	.3
Nebraska	13.8	.2	21.3	—	21.6	.2
North Dakota	17.9	—	22.5	—	23.1	.1
South Dakota	S	S	47.9	.1	S	S
SOUTH ATLANTIC STATES						
Delaware	24.6	—	23.9	—	22.8	—
District of Columbia	S	S	S	S	S	S
Florida	11.2	.1	22.7	—	23.9	.3
Georgia	11.5	.1	16.9	—	16.6	.2
Maryland	39.2	.2	26.6	—	26.2	.1
North Carolina	12.9	.2	19.6	—	21.6	.2
South Carolina	20.8	.1	44.7	.1	43.7	.4
Virginia	10.9	—	11.3	—	12.0	.1
West Virginia	14.1	—	23.1	—	25.3	.1
EAST SOUTH CENTRAL STATES						
Alabama	14.4	.1	20.5	—	23.7	.2
Kentucky	18.0	.3	30.8	.4	15.9	.1
Mississippi	22.4	.1	26.7	.1	26.9	.2
Tennessee	20.9	.5	21.2	.1	23.0	.2
WEST SOUTH CENTRAL STATES						
Arkansas	13.4	.1	10.6	—	10.0	.1
Louisiana	22.2	.3	27.4	.5	24.8	1.9
Oklahoma	18.3	—	14.9	—	15.8	—
Texas	13.7	.4	32.8	.3	27.6	1.2
MOUNTAIN STATES						
Arizona	9.9	—	32.6	—	31.1	—
Colorado	16.5	.1	34.9	.2	36.4	1.2
Idaho	14.0	—	22.4	—	22.2	.3
Montana	29.0	—	31.8	.2	30.6	1.2
Nevada	33.0	—	23.9	—	23.2	—
New Mexico	28.8	—	44.1	—	44.0	.3
Utah	26.4	—	S	S	S	S
Wyoming	37.1	—	46.4	1.5	45.8	6.8
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	23.2	1.0	40.4	.2	39.3	1.3
Hawaii	44.9	—	S	S	S	S
Oregon	18.0	—	23.5	—	24.8	.4
Washington	20.7	—	15.2	—	15.2	.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	3.4	2.0	5.0	10.5	13.3	18.1	3.1	3.7	5.6	8.2	6.1	10.3
Single modes	3.6	2.7	5.5	11.2	13.8	19.0	4.0	3.4	6.0	12.0	7.1	15.7
Truck	4.1	2.5	6.1	17.4	18.5	26.7	8.7	5.0	12.5	13.4	9.6	20.7
Rail	17.0	16.6	19.3	20.5	9.8	25.9	21.6	7.5	23.2	19.3	4.9	12.2
Water	10.7	6.6	10.3	21.1	12.6	29.5	11.7	8.0	15.9	13.0	S	S
Air (includes truck and air)	20.1	14.5	18.6	18.6	14.0	15.9	27.2	18.7	30.2	7.0	2.2	8.0
Pipeline	17.4	29.5	37.5	18.2	29.1	34.2	S	S	S	S	S	S
Multiple modes	14.3	5.0	20.3	22.9	15.4	40.1	23.2	13.7	41.0	7.1	3.0	7.5
Parcel, U.S. Postal Service or courier ..	14.2	5.3	20.5	31.7	8.1	49.2	11.3	9.5	17.8	7.1	3.0	7.5
Truck and rail	37.1	25.7	51.0	46.5	11.1	95.3	17.8	12.1	22.9	13.7	5.3	12.0
All other multiple modes	27.1	16.8	100.5	28.9	22.2	45.9	37.2	22.6	82.2	44.6	26.6	54.7
Other and unknown modes ...	16.2	10.7	23.8	27.6	48.7	42.6	23.3	22.7	15.7	48.3	25.9	51.5

– 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	3.4	2.0	5.0	10.5	13.3	18.1	3.1	3.7	5.6	8.2	6.1	10.3
01-05	Agricultural products and fish	18.5	4.1	14.0	14.8	9.5	15.0	3.9	5.6	6.7	26.3	18.5	25.9
06-09	Grains, alcohol, and tobacco products	13.7	5.2	14.8	11.6	7.5	16.1	9.2	10.7	15.1	42.5	23.1	22.3
10-14	Stones, nonmetallic minerals, and metallic ores	38.5	23.2	63.8	46.2	27.2	71.7	33.3	20.9	67.2	38.1	30.4	26.7
15-19	Coal and petroleum products	20.5	14.3	34.2	14.5	12.0	17.0	31.5	11.2	24.2	25.9	11.2	27.7
20-24	Basic chemicals, chemical, and pharmaceutical products	20.6	6.4	25.6	27.9	8.1	38.7	34.6	7.3	79.8	17.9	5.6	13.6
25-30	Logs, wood products, and textile and leather	11.6	6.6	13.7	20.4	21.3	29.8	21.3	12.1	24.2	11.0	7.3	12.4
31-34	Base metal and machinery ..	12.7	3.6	13.3	27.8	S	S	13.2	12.7	18.5	10.1	8.8	11.3
35-38	Electronic, motorized vehicles, and precision instruments	12.4	7.5	16.2	45.3	8.8	87.3	S	12.4	S	5.9	8.0	14.6
39-43	Furniture, mixed freight and misc. manufactured prod. ..	15.0	8.6	49.3	37.6	15.0	135.2	18.8	20.8	60.3	10.5	6.2	9.9
--	Commodity unknown	23.7	26.4	10.9	S	48.2	S	S	28.4	S	26.4	20.6	29.2

– 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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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 Lavallee-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.

