California: 2002

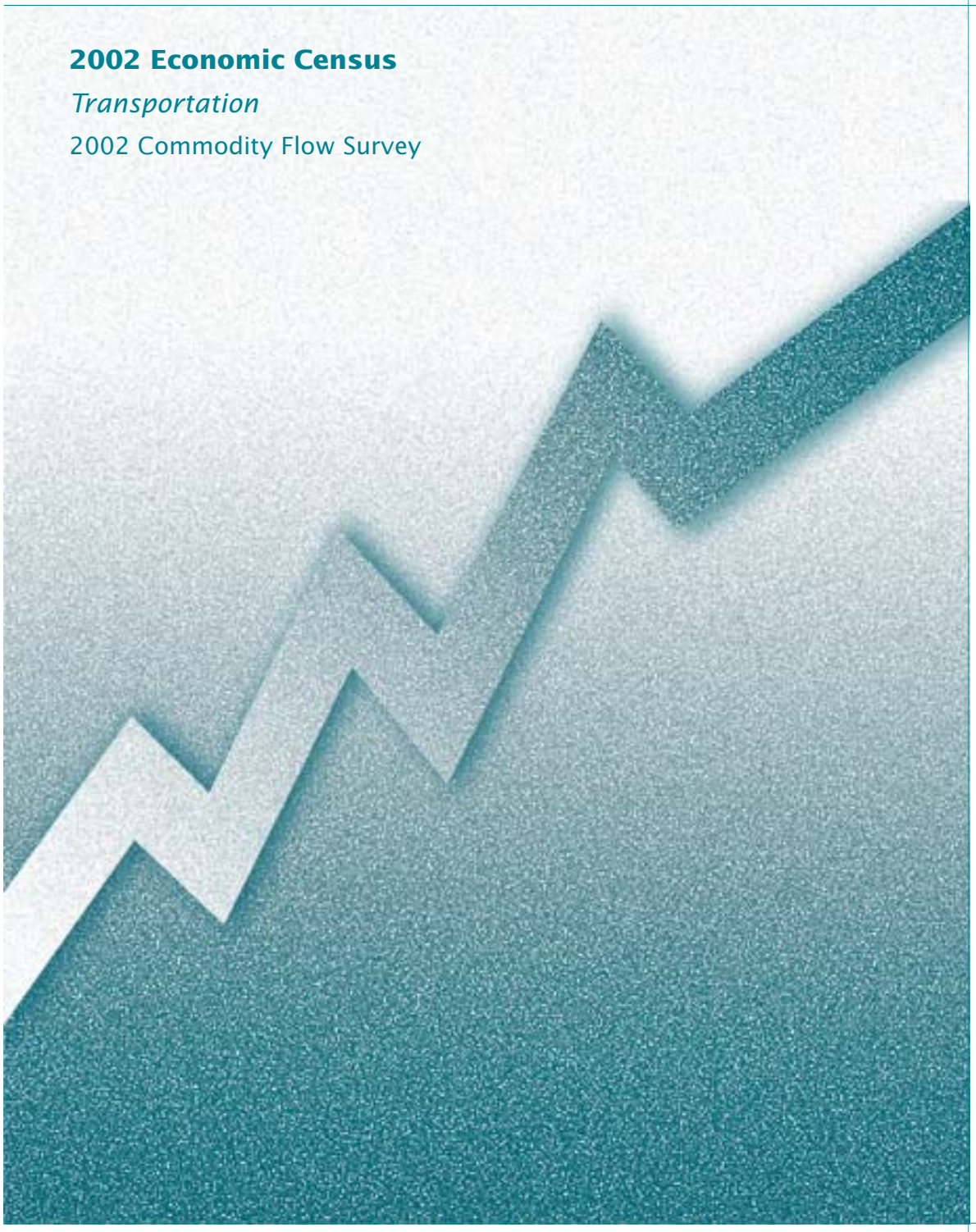
Issued December 2004

EC02TCF-CA

2002 Economic Census

Transportation

2002 Commodity Flow Survey



U.S. Department of Transportation
BUREAU OF TRANSPORTATION STATISTICS

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

ACKNOWLEDGMENTS

This report was prepared in the Service Sector Statistics Division under the direction of **Thomas E. Zabelsky,** Assistant Division Chief for Current Service and Transportation Programs. Planning, implementation, and compiling of this report were under the supervision of **John L. Fowler,** Chief, Commodity Flow Survey Branch, assisted by **Bruce Dembroski, Marilyn Quiles Amaya, Debra Corbett, Shirley Gray, Stephanie Groth, Michael Jones, Mabel Ocasio, Bonnie Opalko, Joyce Price,** and **Barbara Selinske.**

Sample design and statistical methodology were developed under the direction of **Ruth E. Detlefsen,** Assistant Division Chief, Research and Methodology. Sample design and estimation were developed under the supervision of **Jock Black,** Chief, Program Research and Development Branch, assisted by **William C. Davie Jr., Jacklyn R. Jonas, Brett Moore, M. Cristina Cruz,** and **Michael Beaghen.** Frame construction, status change, editing, and imputation procedures were developed under the supervision of **Carol King,** Chief, Statistical Methods Branch, assisted by **David Kinyon, Anthony Myers,** and **Quatracia Williams.**

The processing system and computer programs were developed and implemented by the Economic Statistical Methods and Programming Division, under the direction of **Barry F. Sessamen,** Assistant Division Chief for Post Collection, assisted by **Steven G. McCraith,** Chief, Census Related Surveys Branch, **Joy McLaughlin, John Nelson, Duc-Mong Nguyen,** and **Edna Vega.**

The Systems Support Division provided the table composition system. **Robert Joseph Brown**, Table Image Processing System (TIPS) Senior Software Engineer, was responsible for the design and development of the TIPS, under the supervision of **Robert J. Bateman**, Assistant Division Chief, Information Systems.

Coordination of data collection efforts was under the direction of National Processing Center, **Judith N. Petty,** Chief, assisted by **Carlene Bottorff, Linda Broadus, Sandra Hurst, Debbie Woods, Debbie Hamilton,** and **Michael Lutz.**

Margaret A. Smith and **Michael T. Browne** of the Administrative and Customer Services Division, **Walter C. Odom,** Chief, provided publications and printing management, graphics design and composition, and editorial review for print and electronic media. General direction and production management were provided by **James R. Clark,** Assistant Division Chief, and **Susan L. Rappa,** Chief, Publications Services Branch.

The Bureau of Transportation Statistics (BTS) of the Department of Transportation played a major role in all aspects of the Commodity Flow Survey. **Jack Wells,** Chief Economist, assisted with program planning and oversight. Survey methodology, design, and implementation were conducted under the direction of **Michael P. Cohen,** Assistant Director for Survey Programs assisted by BTS staff: **Mike Margreta, Ronald J. Duych, Joy Sharp, Julie Smith, Irwin Silberman, Promod Chandhok, Hossain Sanjani,** and **Scott Dennis. Felix Ammah-Tagoe** and **Adhi Dipo** of MacroSys Research and Technology assisted BTS in various aspects of the survey. **Frank Southworth, Shih-Miao Chin,** and **Bruce Peterson** of Oak Ridge National Laboratory, provided support to BTS staff in performing the mileage calculations for the survey.

Special acknowledgment is also due to the many businesses whose cooperation has contributed to the publication of these data.

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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 shipments 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 mutliple 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.

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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	**923 669**	**100.0**	**903 954**	**100.0**	**166 862**	**100.0**	**782**
Single modes	**709 161**	**76.8**	**873 245**	**96.6**	**143 025**	**85.7**	**457**
Truck[2]	625 530	67.7	767 680	84.9	114 225	68.5	237
For-hire truck	335 939	36.4	303 308	33.6	80 005	47.9	785
Private truck	283 577	30.7	456 852	50.5	33 492	20.1	93
Rail	9 718	1.1	21 358	2.4	22 836	13.7	1 730
Water	1 789	.2	8 673	1.0	S	S	2 383
Shallow draft	S	S	S	S	S	S	S
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	7 178	.8	S	S	2 938
Air (includes truck and air)	51 996	5.6	636	–	933	.6	2 826
Pipeline[3]	20 129	2.2	74 898	8.3	S	S	S
Multiple modes	**181 123**	**19.6**	**11 567**	**1.3**	**19 804**	**11.9**	**1 152**
Parcel, U.S. Postal Service or courier	175 036	19.0	2 891	.3	3 220	1.9	1 151
Truck and rail	3 946	.4	5 261	.6	7 508	4.5	1 895
Truck and water	1 958	.2	S	S	S	S	2 572
Rail and water	S	S	S	S	S	S	2 475
Other multiple modes	S	S	S	S	S	S	14
Other and unknown modes	**33 385**	**3.6**	**19 142**	**2.1**	**4 033**	**2.4**	**272**

– 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.

[1]Ton-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.
[3]Estimates 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 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	**76.8**	**76.8**	**96.6**	**95.3**	**85.7**	**79.9**
Truck[2]	67.7	67.8	84.9	82.5	68.5	62.5
For-hire truck	36.4	35.0	33.6	31.5	47.9	43.9
Private truck	30.7	32.0	50.5	43.5	20.1	16.3
Rail	1.1	.9	2.4	1.8	13.7	12.1
Water	.2	S	1.0	S	S	S
Shallow draft	S	S	S	S	S	S
Great Lakes	–	–	–	–	–	–
Deep draft	S	S	.8	S	S	S
Air (includes truck and air)	5.6	5.9	–	.1	.6	1.5
Pipeline[3]	2.2	1.8	8.3	8.2	S	S
Multiple modes	**19.6**	**17.4**	**1.3**	**.8**	**11.9**	**8.4**
Parcel, U.S. Postal Service or courier	19.0	16.5	.3	.3	1.9	2.3
Truck and rail	.4	.7	.6	.3	4.5	4.2
Truck and water	.2	.2	S	.1	S	1.9
Rail and water	S	–	S	–	S	–
Other multiple modes	S	–	S	–	S	S
Other and unknown modes	**3.6**	**5.8**	**2.1**	**3.9**	**2.4**	**11.7**

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

[1]Ton-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.
[3]Estimates 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 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	**166 862**	**100.0**	**782**
Truck	114 225	68.5	237
Rail	22 836	13.7	1 730
Shallow draft	S	S	S
Great Lakes	–	–	–
Deep draft	S	S	2 938
Air	933	.6	2 826
Parcel, U.S. Postal Service or courier	1 724	1.0	248
Pipeline[3]	S	S	S
Other and unknown modes	4 033	2.4	272

– 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.

[1]Estimates 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.
[2]Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.
[3]Estimates 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	**923 669**	**100.0**	**903 954**	**100.0**	**166 862**	**100.0**
Less than 50 miles	345 384	37.4	662 677	73.3	12 458	7.5
50 to 99 miles	83 157	9.0	66 897	7.4	5 903	3.5
100 to 249 miles	66 038	7.1	62 127	6.9	12 012	7.2
250 to 499 miles	95 336	10.3	48 848	5.4	20 233	12.1
500 to 749 miles	45 045	4.9	11 452	1.3	8 953	5.4
750 to 999 miles	27 439	3.0	9 317	1.0	10 270	6.2
1,000 to 1,499 miles	50 041	5.4	8 546	.9	13 844	8.3
1,500 to 1,999 miles	89 872	9.7	18 655	2.1	41 072	24.6
2,000 miles or more	121 357	13.1	15 435	1.7	42 117	25.2
Single modes	**709 161**	**100.0**	**873 245**	**100.0**	**143 025**	**100.0**
Less than 50 miles	297 949	42.0	648 009	74.2	12 142	8.5
50 to 99 miles	67 435	9.5	64 376	7.4	5 687	4.0
100 to 249 miles	54 584	7.7	60 147	6.9	11 676	8.2
250 to 499 miles	72 745	10.3	47 039	5.4	19 475	13.6
500 to 749 miles	35 602	5.0	10 718	1.2	8 379	5.9
750 to 999 miles	20 488	2.9	8 986	1.0	9 894	6.9
1,000 to 1,499 miles	34 159	4.8	7 347	.8	11 823	8.3
1,500 to 1,999 miles	56 294	7.9	14 272	1.6	30 358	21.2
2,000 miles or more	69 904	9.9	12 350	1.4	33 590	23.5
Truck[3]	**625 530**	**100.0**	**767 680**	**100.0**	**114 225**	**100.0**
Less than 50 miles	276 703	44.2	570 243	74.3	11 288	9.9
50 to 99 miles	65 645	10.5	63 244	8.2	5 502	4.8
100 to 249 miles	50 803	8.1	52 774	6.9	10 222	8.9
250 to 499 miles	58 467	9.3	39 289	5.1	15 676	13.7
500 to 749 miles	32 289	5.2	8 882	1.2	6 592	5.8
750 to 999 miles	18 924	3.0	7 230	.9	7 811	6.8
1,000 to 1,499 miles	29 013	4.6	5 620	.7	8 692	7.6
1,500 to 1,999 miles	44 124	7.1	10 031	1.3	20 757	18.2
2,000 miles or more	49 563	7.9	10 367	1.4	27 686	24.2
For-hire truck	**335 939**	**100.0**	**303 308**	**100.0**	**80 005**	**100.0**
Less than 50 miles	89 143	26.5	183 597	60.5	4 015	5.0
50 to 99 miles	29 506	8.8	33 656	11.1	2 882	3.6
100 to 249 miles	29 249	8.7	30 159	9.9	6 119	7.6
250 to 499 miles	42 894	12.8	22 312	7.4	9 153	11.4
500 to 749 miles	S	S	6 703	2.2	4 936	6.2
750 to 999 miles	15 808	4.7	6 042	2.0	6 578	8.2
1,000 to 1,499 miles	22 208	6.6	4 645	1.5	7 184	9.0
1,500 to 1,999 miles	38 190	11.4	7 029	2.3	14 585	18.2
2,000 miles or more	42 583	12.7	9 165	3.0	24 552	30.7
Private truck	**283 577**	**100.0**	**456 852**	**100.0**	**33 492**	**100.0**
Less than 50 miles	183 050	64.6	380 521	83.3	7 106	21.2
50 to 99 miles	35 386	12.5	28 959	6.3	2 561	7.6
100 to 249 miles	21 318	7.5	22 333	4.9	4 052	12.1
250 to 499 miles	15 490	5.5	16 925	3.7	6 506	19.4
500 to 749 miles	5 895	2.1	2 156	.5	1 638	4.9
750 to 999 miles	2 929	1.0	795	.2	850	2.5
1,000 to 1,499 miles	6 789	2.4	970	.2	1 500	4.5
1,500 to 1,999 miles	5 905	2.1	S	S	S	S
2,000 miles or more	6 816	2.4	1 201	.3	3 134	9.4
Rail	**9 718**	**100.0**	**21 358**	**100.0**	**22 836**	**100.0**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	450	4.6	880	4.1	144	.6
100 to 249 miles	173	1.8	S	S	S	S
250 to 499 miles	1 323	13.6	3 163	14.8	1 632	7.1
500 to 749 miles	S	S	628	2.9	536	2.3
750 to 999 miles	208	2.1	1 738	8.1	2 044	9.0
1,000 to 1,499 miles	920	9.5	1 700	8.0	3 056	13.4
1,500 to 1,999 miles	2 911	30.0	4 167	19.5	9 418	41.2
2,000 miles or more	1 555	16.0	1 677	7.8	5 094	22.3
Water	**1 789**	**100.0**	**8 673**	**100.0**	**S**	**S**
Less than 50 miles	507	28.3	3 927	45.3	108	3.3
50 to 99 miles	–	–	–	–	–	–
100 to 249 miles	–	–	–	–	–	–
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	–	–	–	–	–	–
1,500 to 1,999 miles	–	–	–	–	–	–
2,000 miles or more	145	8.1	99	1.1	S	S
Shallow 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	–	–	–	–	–	–

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**	**7 178**	**100.0**	**S**	**S**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	–	–	–	–	–	–
100 to 249 miles	–	–	–	–	–	–
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	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
Air (includes truck and air)	**51 996**	**100.0**	**636**	**100.0**	**933**	**100.0**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	1 339	2.6	S	S	S	S
100 to 249 miles	2 737	5.3	S	S	S	S
250 to 499 miles	11 847	22.8	81	12.7	125	13.4
500 to 749 miles	2 609	5.0	19	3.0	47	5.1
750 to 999 miles	1 357	2.6	17	2.7	40	4.2
1,000 to 1,499 miles	4 225	8.1	27	4.3	74	7.9
1,500 to 1,999 miles	9 257	17.8	74	11.6	182	19.5
2,000 miles or more	18 626	35.8	145	22.8	388	41.6
Pipeline[4]	**20 129**	**100.0**	**74 898**	**100.0**	**S**	**S**
Less than 50 miles	19 037	94.6	69 935	93.4	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	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	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Multiple modes	**181 123**	**100.0**	**11 567**	**100.0**	**19 804**	**100.0**
Less than 50 miles	28 947	16.0	845	7.3	24	.1
50 to 99 miles	13 998	7.7	687	5.9	74	.4
100 to 249 miles	9 931	5.5	S	S	S	S
250 to 499 miles	20 037	11.1	882	7.6	412	2.1
500 to 749 miles	8 553	4.7	307	2.7	244	1.2
750 to 999 miles	6 019	3.3	195	1.7	230	1.2
1,000 to 1,499 miles	13 960	7.7	981	8.5	1 682	8.5
1,500 to 1,999 miles	30 811	17.0	3 871	33.5	9 675	48.9
2,000 miles or more	48 867	27.0	2 618	22.6	7 275	36.7
Parcel, U.S. Postal Service or courier	**175 036**	**100.0**	**2 891**	**100.0**	**3 220**	**100.0**
Less than 50 miles	28 893	16.5	585	20.2	18	.5
50 to 99 miles	13 907	7.9	251	8.7	24	.7
100 to 249 miles	9 754	5.6	212	7.3	45	1.4
250 to 499 miles	19 867	11.4	404	14.0	167	5.2
500 to 749 miles	8 481	4.8	133	4.6	101	3.1
750 to 999 miles	5 877	3.4	127	4.4	139	4.3
1,000 to 1,499 miles	13 391	7.7	221	7.6	341	10.6
1,500 to 1,999 miles	28 983	16.6	314	10.8	653	20.3
2,000 miles or more	45 883	26.2	645	22.3	1 732	53.8
Truck and rail	**3 946**	**100.0**	**5 261**	**100.0**	**7 508**	**100.0**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	428	8.1	49	.6
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	127	3.2	476	9.0	244	3.3
500 to 749 miles	69	1.8	174	3.3	141	1.9
750 to 999 miles	142	3.6	67	1.3	91	1.2
1,000 to 1,499 miles	S	S	S	S	1 337	17.8
1,500 to 1,999 miles	1 553	39.4	1 302	24.7	2 964	39.5
2,000 miles or more	1 214	30.8	828	15.7	2 533	33.7
Truck and water	**1 958**	**100.0**	**S**	**S**	**S**	**S**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	–	–	–	–	–	–
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	1 770	90.4	S	S	S	S

See footnotes at end of table.

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

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

Mode of transportation and distance shipped[1] (based on Great Circle Distance)	Value		Tons		Ton-miles[2]	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Multiple modes—Con.						
Rail and water	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	–	–	–	–	–	–
100 to 249 miles	–	–	–	–	–	–
250 to 499 miles	–	–	–	–	–	–
500 to 749 miles	–	–	–	–	–	–
750 to 999 miles	–	–	–	–	–	–
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	–	–	–	–	–	–
Other multiple modes	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	–	–	–	–	–	–
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	–	–	–	–	–	–
Other and unknown modes	**33 385**	**100.0**	**19 142**	**100.0**	**4 033**	**100.0**
Less than 50 miles	18 488	55.4	13 823	72.2	S	S
50 to 99 miles	1 724	5.2	1 834	9.6	142	3.5
100 to 249 miles	1 523	4.6	798	4.2	147	3.6
250 to 499 miles	2 554	7.6	927	4.8	346	8.6
500 to 749 miles	891	2.7	427	2.2	330	8.2
750 to 999 miles	931	2.8	136	.7	146	3.6
1,000 to 1,499 miles	1 922	5.8	219	1.1	339	8.4
1,500 to 1,999 miles	2 767	8.3	511	2.7	1 039	25.8
2,000 miles or more	2 585	7.7	467	2.4	1 253	31.1

– 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.

[1]Shipments 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.
[2]Ton-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.
[4]Estimates 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*.

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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	**923 669**	**100.0**	**903 954**	**100.0**	**166 862**	**100.0**	**782**
Less than 50 lb	175 687	19.0	2 031	.2	1 677	1.0	1 007
50 to 99 lb	57 865	6.3	1 539	.2	861	.5	555
100 to 499 lb	116 956	12.7	10 361	1.1	3 227	1.9	337
500 to 749 lb	35 140	3.8	5 231	.6	1 309	.8	250
750 to 999 lb	27 696	3.0	5 273	.6	1 126	.7	211
1,000 to 9,999 lb	195 325	21.1	68 311	7.6	22 444	13.5	321
10,000 to 49,999 lb	229 158	24.8	360 969	39.9	78 658	47.1	228
50,000 to 99,999 lb	42 574	4.6	261 432	28.9	17 722	10.6	65
100,000 lb or more	43 268	4.7	188 807	20.9	39 839	23.9	340
Single modes	**709 161**	**100.0**	**873 245**	**100.0**	**143 025**	**100.0**	**457**
Less than 50 lb	56 522	8.0	783	–	332	.2	793
50 to 99 lb	36 274	5.1	944	.1	334	.2	347
100 to 499 lb	80 111	11.3	9 224	1.1	2 094	1.5	223
500 to 749 lb	28 714	4.0	4 885	.6	1 031	.7	210
750 to 999 lb	23 520	3.3	5 078	.6	995	.7	193
1,000 to 9,999 lb	181 020	25.5	64 942	7.4	20 372	14.2	301
10,000 to 49,999 lb	218 686	30.8	352 429	40.4	68 939	48.2	209
50,000 to 99,999 lb	42 124	5.9	257 494	29.5	17 028	11.9	64
100,000 lb or more	42 189	5.9	177 465	20.3	31 900	22.3	323
Truck[2]	**625 530**	**100.0**	**767 680**	**100.0**	**114 225**	**100.0**	**237**
Less than 50 lb	33 736	5.4	718	–	170	.1	280
50 to 99 lb	29 978	4.8	893	.1	184	.2	198
100 to 499 lb	68 679	11.0	9 171	1.2	1 985	1.7	209
500 to 749 lb	26 081	4.2	4 867	.6	997	.9	203
750 to 999 lb	20 320	3.2	5 053	.7	937	.8	183
1,000 to 9,999 lb	176 475	28.2	64 735	8.4	20 005	17.5	297
10,000 to 49,999 lb	214 925	34.4	350 034	45.6	64 236	56.2	199
50,000 to 99,999 lb	41 056	6.6	256 324	33.4	16 608	14.5	63
100,000 lb or more	14 280	2.3	75 886	9.9	9 103	8.0	165
For-hire truck	**335 939**	**100.0**	**303 308**	**100.0**	**80 005**	**100.0**	**785**
Less than 50 lb	13 524	4.0	99	–	114	.1	1 270
50 to 99 lb	S	S	166	–	128	.2	776
100 to 499 lb	30 533	9.1	1 801	.6	1 298	1.6	665
500 to 749 lb	13 306	4.0	904	.3	712	.9	778
750 to 999 lb	10 028	3.0	874	.3	593	.7	683
1,000 to 9,999 lb	105 114	31.3	16 346	5.4	13 214	16.5	841
10,000 to 49,999 lb	114 798	34.2	133 611	44.1	47 402	59.2	415
50,000 to 99,999 lb	17 438	5.2	124 887	41.2	10 903	13.6	83
100,000 lb or more	9 114	2.7	24 620	8.1	5 643	7.1	318
Private truck	**283 577**	**100.0**	**456 852**	**100.0**	**33 492**	**100.0**	**93**
Less than 50 lb	20 092	7.1	617	.1	55	.2	S
50 to 99 lb	7 640	2.7	715	.2	56	.2	79
100 to 499 lb	36 777	13.0	7 281	1.6	683	2.0	89
500 to 749 lb	12 437	4.4	3 948	.9	285	.9	73
750 to 999 lb	10 283	3.6	4 177	.9	343	1.0	80
1,000 to 9,999 lb	70 912	25.0	48 238	10.6	6 771	20.2	127
10,000 to 49,999 lb	98 047	34.6	212 686	46.6	16 244	48.5	84
50,000 to 99,999 lb	22 240	7.8	128 030	28.0	5 606	16.7	44
100,000 lb or more	5 149	1.8	51 159	11.2	3 449	10.3	113
Rail	**9 718**	**100.0**	**21 358**	**100.0**	**22 836**	**100.0**	**1 730**
Less than 50 lb	S	S	S	S	S	S	1 937
50 to 99 lb	S	S	S	S	S	S	1 389
100 to 499 lb	S	S	S	S	S	S	567
500 to 749 lb	S	S	S	S	S	S	878
750 to 999 lb	S	S	S	S	S	S	862
1,000 to 9,999 lb	S	S	S	S	S	S	1 867
10,000 to 49,999 lb	2 975	30.6	1 902	8.9	4 318	18.9	2 273
50,000 to 99,999 lb	306	3.2	330	1.5	271	1.2	710
100,000 lb or more	5 275	54.3	19 041	89.2	18 088	79.2	1 151
Water	**1 789**	**100.0**	**8 673**	**100.0**	**S**	**S**	**2 383**
Less than 50 lb	S	S	S	S	S	S	2 595
50 to 99 lb	S	S	S	S	S	S	2 473
100 to 499 lb	S	S	1	–	2	–	2 589
500 to 749 lb	S	S	S	S	S	S	2 619
750 to 999 lb	–	–	–	–	–	–	–
1,000 to 9,999 lb	S	S	S	S	S	S	2 362
10,000 to 49,999 lb	136	7.6	128	1.5	252	7.6	1 706
50,000 to 99,999 lb	S	S	S	S	S	S	384
100,000 lb or more	1 571	87.8	S	S	S	S	201
Shallow draft	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 lb	S	S	S	S	S	S	2
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	45
10,000 to 49,999 lb	–	–	–	–	–	–	–
50,000 to 99,999 lb	S	S	S	S	S	S	31
100,000 lb or more	S	S	S	S	S	S	35

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	**S**	**S**	**7 178**	**100.0**	**S**	**S**	**2 938**
Less than 50 lb	S	S	S	S	S	S	3 752
50 to 99 lb	S	S	S	S	S	S	2 473
100 to 499 lb	S	S	1	–	2	–	2 589
500 to 749 lb	S	S	S	S	S	S	2 619
750 to 999 lb	–	–	–	–	–	–	–
1,000 to 9,999 lb	S	S	S	S	S	S	2 382
10,000 to 49,999 lb	136	9.6	S	S	S	S	1 706
50,000 to 99,999 lb	S	S	S	S	S	S	483
100,000 lb or more	S	S	S	S	S	S	266
Air (includes truck and air)	**51 996**	**100.0**	**636**	**100.0**	**933**	**100.0**	**2 826**
Less than 50 lb	22 576	43.4	61	9.6	156	16.8	2 833
50 to 99 lb	6 097	11.7	48	7.6	147	15.7	3 048
100 to 499 lb	11 308	21.7	50	7.8	106	11.4	2 228
500 to 749 lb	2 578	5.0	16	2.6	30	3.2	1 899
750 to 999 lb	3 199	6.2	S	S	S	S	2 315
1,000 to 9,999 lb	3 891	7.5	110	17.3	192	20.6	1 670
10,000 to 49,999 lb	S	S	50	7.8	S	S	2 229
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	S	S	S	S	S
Pipeline[3]	**20 129**	**100.0**	**74 898**	**100.0**	**S**	**S**	**S**
Less than 50 lb	S	S	S	S	S	S	S
50 to 99 lb	S	S	S	S	S	S	S
100 to 499 lb	S	S	S	S	S	S	S
500 to 749 lb	–	–	–	–	S	S	S
750 to 999 lb	–	–	–	–	S	S	S
1,000 to 9,999 lb	S	S	S	S	S	S	S
10,000 to 49,999 lb	58	.3	316	.4	S	S	S
50,000 to 99,999 lb	S	S	S	S	S	S	S
100,000 lb or more	19 309	95.9	73 736	98.4	S	S	S
Multiple modes	**181 123**	**100.0**	**11 567**	**100.0**	**19 804**	**100.0**	**1 152**
Less than 50 lb	110 966	61.3	1 117	9.7	1 324	6.7	1 156
50 to 99 lb	20 373	11.2	515	4.5	518	2.6	1 010
100 to 499 lb	33 935	18.7	863	7.5	1 080	5.5	1 263
500 to 749 lb	6 060	3.3	272	2.4	250	1.3	952
750 to 999 lb	3 682	2.0	147	1.3	113	.6	742
1,000 to 9,999 lb	S	S	S	S	S	S	2 373
10,000 to 49,999 lb	3 944	2.2	3 658	31.6	8 452	42.7	2 297
50,000 to 99,999 lb	82	–	868	7.5	S	S	S
100,000 lb or more	560	.3	3 859	33.4	S	S	1 203
Parcel, U.S. Postal Service or courier	**175 036**	**100.0**	**2 891**	**100.0**	**3 220**	**100.0**	**1 151**
Less than 50 lb	110 952	63.4	1 116	38.6	1 323	41.1	1 155
50 to 99 lb	20 367	11.6	515	17.8	518	16.1	1 009
100 to 499 lb	33 835	19.3	856	29.6	1 063	33.0	1 257
500 to 749 lb	5 964	3.4	260	9.0	224	7.0	899
750 to 999 lb	3 633	2.1	137	4.7	90	2.8	630
1,000 to 9,999 lb	S	S	S	S	S	S	411
10,000 to 49,999 lb	–	–	–	–	–	–	–
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	–	–	–	–	–	–	–
Truck and rail	**3 946**	**100.0**	**5 261**	**100.0**	**7 508**	**100.0**	**1 895**
Less than 50 lb	S	S	S	S	S	S	3 138
50 to 99 lb	S	S	S	S	S	S	817
100 to 499 lb	S	S	S	S	S	S	1 854
500 to 749 lb	S	S	S	S	S	S	1 699
750 to 999 lb	S	S	S	S	S	S	2 191
1,000 to 9,999 lb	272	6.9	S	S	S	S	2 181
10,000 to 49,999 lb	3 281	83.1	2 769	52.6	6 137	81.7	2 194
50,000 to 99,999 lb	46	1.2	S	S	125	1.7	S
100,000 lb or more	S	S	S	S	S	S	962
Truck and water	**1 958**	**100.0**	**S**	**S**	**S**	**S**	**2 572**
Less than 50 lb	S	S	S	S	S	S	2 584
50 to 99 lb	4	.2	–	–	1	–	2 667
100 to 499 lb	85	4.4	7	.3	17	.3	2 483
500 to 749 lb	84	4.3	S	S	S	S	2 214
750 to 999 lb	20	1.0	S	S	S	S	2 624
1,000 to 9,999 lb	S	S	141	7.3	373	6.9	2 647
10,000 to 49,999 lb	663	33.8	S	S	S	S	2 606
50,000 to 99,999 lb	S	S	S	S	S	S	2 644
100,000 lb or more	S	S	S	S	S	S	3 051

See footnotes at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles[1]		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Multiple modes—Con.							
Rail and water	**S**	**S**	**S**	**S**	**S**	**S**	**2 475**
Less than 50 lb	–	–	–	–	–	–	–
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	–	–	–	–	–	–	–
500 to 749 lb	–	–	–	–	–	–	–
750 to 999 lb	–	–	–	–	–	–	–
1,000 to 9,999 lb	–	–	–	–	–	–	–
10,000 to 49,999 lb	–	–	–	–	–	–	–
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	S	S	S	S	2 475
Other multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**14**
Less than 50 lb	S	S	S	S	S	S	14
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	–	–	–	–	–	–	–
500 to 749 lb	–	–	–	–	–	–	–
750 to 999 lb	–	–	–	–	–	–	–
1,000 to 9,999 lb	S	S	S	S	S	S	2
10,000 to 49,999 lb	–	–	–	–	–	–	–
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	–	–	–	–	–	–	–
Other and unknown modes	**33 385**	**100.0**	**19 142**	**100.0**	**4 033**	**100.0**	**272**
Less than 50 lb	8 199	24.6	131	.7	21	.5	272
50 to 99 lb	1 218	3.6	80	.4	9	.2	S
100 to 499 lb	2 911	8.7	274	1.4	53	1.3	226
500 to 749 lb	366	1.1	73	.4	27	.7	353
750 to 999 lb	S	S	48	.3	S	S	S
1,000 to 9,999 lb	12 783	38.3	3 101	16.2	1 442	35.7	519
10,000 to 49,999 lb	6 528	19.6	4 881	25.5	1 267	31.4	340
50,000 to 99,999 lb	367	1.1	3 071	16.0	288	7.1	S
100,000 lb or more	519	1.6	S	S	908	22.5	399

– 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.

[1]Ton-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.
[3]Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

SCTG code	Commodity description	Value		Tons		Ton-miles[1]		Average miles per shipment
		2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
	Total[2]	**923 669**	**100.0**	**903 954**	**100.0**	**166 862**	**100.0**	**782**
01	Live animals and live fish	S	S	S	S	7	–	1 735
02	Cereal grains	758	–	5 878	.7	S	S	S
03	Other agricultural products	31 339	3.4	24 456	2.7	18 364	11.0	S
04	Animal feed and products of animal origin, n.e.c.	S	S	S	S	S	S	145
05	Meat, fish, seafood, and their preparations	18 350	2.0	7 389	.8	2 430	1.5	S
06	Milled grain products and preparations, and bakery products	11 686	1.3	9 601	1.1	4 193	2.5	218
07	Other prepared foodstuffs and fats and oils	39 572	4.3	40 455	4.5	20 398	12.2	166
08	Alcoholic beverages	18 427	2.0	11 645	1.3	6 334	3.8	126
09	Tobacco products	253	–	S	S	S	S	58
10	Monumental or building stone	S	S	S	S	S	S	17
11	Natural sands	334	–	35 666	3.9	1 169	.7	28
12	Gravel and crushed stone	1 439	.2	187 086	20.7	9 765	5.9	28
13	Nonmetallic minerals n.e.c.	895	.1	5 044	.6	1 754	1.1	S
14	Metallic ores and concentrates	143	–	218	–	40	–	1 255
15	Coal	–	–	–	–	–	–	–
17	Gasoline and aviation turbine fuel	39 234	4.2	120 743	13.4	7 667	4.6	54
18	Fuel oils	10 232	1.1	43 613	4.8	3 018	1.8	S
19	Coal and petroleum products, n.e.c.	7 202	.8	57 760	6.4	4 943	3.0	S
20	Basic chemicals	6 128	.7	13 188	1.5	3 663	2.2	465
21	Pharmaceutical products	28 344	3.1	496	–	354	.2	1 129
22	Fertilizers	S	S	S	S	1 555	.9	S
23	Chemical products and preparations, n.e.c.	17 647	1.9	7 832	.9	4 160	2.5	517
24	Plastics and rubber	18 344	2.0	6 071	.7	3 628	2.2	741
25	Logs and other wood in the rough	S	S	S	S	S	S	56
26	Wood products	11 516	1.2	15 124	1.7	4 122	2.5	372
27	Pulp, newsprint, paper, and paperboard	5 457	.6	6 553	.7	2 014	1.2	120
28	Paper or paperboard articles	8 817	1.0	5 863	.6	1 200	.7	235
29	Printed products	9 666	1.0	2 713	.3	1 270	.8	823
30	Textiles, leather, and articles of textiles or leather	61 793	6.7	3 138	.3	3 015	1.8	1 429
31	Nonmetallic mineral products	18 245	2.0	132 562	14.7	16 015	9.6	619
32	Base metal in primary or semifinished forms and in finished basic shapes	16 677	1.8	14 533	1.6	5 891	3.5	254
33	Articles of base metal	24 936	2.7	10 284	1.1	4 140	2.5	700
34	Machinery	39 800	4.3	2 726	.3	1 804	1.1	584
35	Electronic and other electrical equipment and components and office equipment	190 623	20.6	5 857	.6	3 353	2.0	950
36	Motorized and other vehicles (including parts)	28 751	3.1	S	S	2 145	1.3	728
37	Transportation equipment, n.e.c.	12 231	1.3	86	–	76	–	1 317
38	Precision instruments and apparatus	68 006	7.4	1 427	.2	897	.5	1 128
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	15 998	1.7	3 443	.4	1 281	.8	374
40	Miscellaneous manufactured products	57 332	6.2	8 661	1.0	5 535	3.3	1 412
41	Waste and scrap	5 805	.6	24 301	2.7	3 495	2.1	S
43	Mixed freight	84 526	9.2	27 039	3.0	5 139	3.1	372
--	Commodity unknown	2 572	.3	1 229	.1	153	–	559

– 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.

[1]Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.
[2]Estimates exclude shipments of crude petroleum (SCTG 16).

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

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
	Total[2]	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
01	Live animals and live fish	S	S	S	S	–	S
02	Cereal grains	–	–	.7	.3	S	S
03	Other agricultural products	3.4	2.1	2.7	2.1	11.0	7.9
04	Animal feed and products of animal origin, n.e.c	S	.5	S	2.3	S	1.7
05	Meat, fish, seafood, and their preparations	2.0	2.5	.8	1.0	1.5	1.3
06	Milled grain products and preparations, and bakery products	1.3	1.4	1.1	1.3	2.5	2.9
07	Other prepared foodstuffs and fats and oils	4.3	4.1	4.5	5.5	12.2	12.0
08	Alcoholic beverages	2.0	2.2	1.3	1.7	3.8	4.9
09	Tobacco products	–	.2	S	–	S	–
10	Monumental or building stone	S	S	S	.2	S	S
11	Natural sands	–	–	3.9	5.1	.7	1.0
12	Gravel and crushed stone	.2	.1	20.7	20.8	5.9	3.7
13	Nonmetallic minerals n.e.c.	.1	S	.6	.5	1.1	1.1
14	Metallic ores and concentrates	–	–	–	–	–	S
15	Coal	–	S	–	S	–	S
17	Gasoline and aviation turbine fuel	4.2	4.4	13.4	15.9	4.6	3.7
18	Fuel oils	1.1	1.3	4.8	5.1	1.8	3.1
19	Coal and petroleum products, n.e.c.	.8	.7	6.4	6.2	3.0	2.8
20	Basic chemicals	.7	.8	1.5	.8	2.2	1.5
21	Pharmaceutical products	3.1	2.1	–	–	.2	.3
22	Fertilizers	S	.2	S	S	.9	.5
23	Chemical products and preparations, n.e.c.	1.9	2.6	.9	.9	2.5	2.1
24	Plastics and rubber	2.0	2.5	.7	.7	2.2	2.2
25	Logs and other wood in the rough	S	–	S	–	S	.3
26	Wood products	1.2	1.3	1.7	2.6	2.5	4.6
27	Pulp, newsprint, paper, and paperboard	.6	.8	.7	.8	1.2	1.3
28	Paper or paperboard articles	1.0	1.3	.6	1.7	.7	1.5
29	Printed products	1.0	1.5	.3	.4	.8	1.4
30	Textiles, leather, and articles of textiles or leather	6.7	6.1	.3	.5	1.8	2.1
31	Nonmetallic mineral products	2.0	1.5	14.7	11.2	9.6	7.3
32	Base metal in primary or semifinished forms and in finished basic shapes	1.8	2.3	1.6	1.7	3.5	3.6
33	Articles of base metal	2.7	2.7	1.1	1.1	2.5	4.1
34	Machinery	4.3	4.1	.3	.3	1.1	2.0
35	Electronic and other electrical equipment and components and office equipment	20.6	26.1	.6	.7	2.0	4.2
36	Motorized and other vehicles (including parts)	3.1	3.2	S	.5	1.3	1.3
37	Transportation equipment, n.e.c.	1.3	2.8	–	–	–	–
38	Precision instruments and apparatus	7.4	3.5	.2	–	.5	.3
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	1.7	1.3	.4	.2	.8	1.3
40	Miscellaneous manufactured products	6.2	8.1	1.0	1.2	3.3	S
41	Waste and scrap	.6	.5	2.7	2.9	2.1	4.1
43	Mixed freight	9.2	4.3	3.0	1.9	3.1	1.5
--	Commodity unknown	.3	.6	.1	S	–	.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.

[1]Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.
[2]Estimates exclude shipments of crude petroleum (SCTG 16).

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

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

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles[1]		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
ALL COMMODITIES							
Total[2]	**923 669**	**100.0**	**903 954**	**100.0**	**166 862**	**100.0**	**782**
Single modes	**709 161**	**76.8**	**873 245**	**96.6**	**143 025**	**85.7**	**457**
Truck[3]	625 530	67.7	767 680	84.9	114 225	68.5	237
For-hire truck	335 939	36.4	303 308	33.6	80 005	47.9	785
Private truck	283 577	30.7	456 852	50.5	33 492	20.1	93
Rail	9 718	1.1	21 358	2.4	22 836	13.7	1 730
Water	1 789	.2	8 673	1.0	S	S	2 383
Shallow draft	S	S	S	S	S	S	S
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	7 178	.8	S	S	2 938
Air (includes truck and air)	51 996	5.6	636	–	933	.6	2 826
Pipeline[4]	20 129	2.2	74 898	8.3	S	S	S
Multiple modes	**181 123**	**19.6**	**11 567**	**1.3**	**19 804**	**11.9**	**1 152**
Parcel, U.S. Postal Service or courier	175 036	19.0	2 891	.3	3 220	1.9	1 151
Truck and rail	3 946	.4	5 261	.6	7 508	4.5	1 895
Truck and water	1 958	.2	S	S	S	S	2 572
Rail and water	S	S	S	S	S	S	2 475
Other multiple modes	S	S	S	S	S	S	14
Other and unknown modes	**33 385**	**3.6**	**19 142**	**2.1**	**4 033**	**2.4**	**272**
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	**S**	**S**	**S**	**S**	**7**	**100.0**	**1 735**
Single modes	**S**	**S**	**S**	**S**	**4**	**51.2**	**1 057**
Truck[3]	S	S	S	S	S	S	26
For-hire truck	S	S	S	S	–	–	8
Private truck	S	S	S	S	S	S	29
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	23	26.5	1	24.4	4	50.6	2 477
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**1 752**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 752
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
SCTG 02, CEREAL GRAINS							
Total	**758**	**100.0**	**5 878**	**100.0**	**S**	**S**	**S**
Single modes	**589**	**77.7**	**4 173**	**71.0**	**S**	**S**	**S**
Truck[3]	441	58.2	S	S	S	S	S
For-hire truck	S	S	S	S	252	3.3	S
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	2 037
Water	S	S	S	S	S	S	2 567
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 567
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**2 735**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	S	S	S	S	S	S	2 255
Truck and water	S	S	S	S	S	S	3 034
Rail and water	S	S	S	S	S	S	2 478
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**185**

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	**31 339**	**100.0**	**24 456**	**100.0**	**18 364**	**100.0**	**S**
Single modes	**29 998**	**95.7**	**23 533**	**96.2**	**16 353**	**89.0**	**S**
Truck[3]	28 984	92.5	22 763	93.1	14 301	77.9	S
For-hire truck	16 108	51.4	12 630	51.6	11 778	64.1	1 041
Private truck	12 876	41.1	10 133	41.4	S	S	S
Rail	S	S	S	S	S	S	2 648
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	180	.6	46	.2	S	S	2 767
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**885**	**2.8**	**726**	**3.0**	**S**	**S**	**1 909**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 736
Truck and rail	565	1.8	543	2.2	1 356	7.4	2 697
Truck and water	S	S	S	S	S	S	2 556
Rail and water	S	S	S	S	S	S	1 643
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**456**	**1.5**	**S**	**S**	**108**	**.6**	**602**
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**145**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**87**
Truck[3]	S	S	S	S	S	S	87
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	S	S	109
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**2 621**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	2 900
Truck and rail	S	S	S	S	S	S	171
Truck and water	S	S	S	S	S	S	2 626
Rail and water	S	S	S	S	S	S	2 478
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**85**
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	**18 350**	**100.0**	**7 389**	**100.0**	**2 430**	**100.0**	**S**
Single modes	**18 184**	**99.1**	**7 345**	**99.4**	**2 380**	**97.9**	**S**
Truck[3]	18 088	98.6	7 247	98.1	2 301	94.7	S
For-hire truck	4 211	22.9	1 385	18.7	1 294	53.3	825
Private truck	13 877	75.6	5 861	79.3	S	S	48
Rail	S	S	S	S	S	S	781
Water	S	S	S	S	S	S	2 826
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 826
Air (includes truck and air)	S	S	S	S	S	S	3 553
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**66**	**.4**	**17**	**.2**	**S**	**S**	**1 437**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 071
Truck and rail	–	–	–	–	–	–	–
Truck and water	53	.3	16	.2	S	S	2 555
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**100**	**.5**	**S**	**S**	**16**	**.7**	**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 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	**11 686**	**100.0**	**9 601**	**100.0**	**4 193**	**100.0**	**218**
Single modes	**11 541**	**98.8**	**9 542**	**99.4**	**4 063**	**96.9**	**191**
Truck[3]	11 464	98.1	9 224	96.1	3 486	83.1	188
For-hire truck	6 061	51.9	4 439	46.2	3 009	71.8	816
Private truck	5 403	46.2	S	S	S	S	65
Rail	74	.6	311	3.2	558	13.3	1 803
Water	S	S	S	S	S	S	2 504
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 504
Air (includes truck and air)	S	S	S	S	S	S	3 508
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**127**	**1.1**	**46**	**.5**	**107**	**2.6**	**1 003**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	925
Truck and rail	89	.8	24	.2	56	1.3	2 322
Truck and water	S	S	S	S	S	S	2 561
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	**39 572**	**100.0**	**40 455**	**100.0**	**20 398**	**100.0**	**166**
Single modes	**36 855**	**93.1**	**38 628**	**95.5**	**16 873**	**82.7**	**129**
Truck[3]	35 724	90.3	37 230	92.0	13 960	68.4	127
For-hire truck	18 157	45.9	15 749	38.9	11 714	57.4	824
Private truck	17 473	44.2	21 415	52.9	2 226	10.9	85
Rail	972	2.5	1 171	2.9	2 810	13.8	2 079
Water	S	S	S	S	S	S	1 999
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	1 999
Air (includes truck and air)	S	S	S	S	S	S	2 678
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**2 198**	**5.6**	**S**	**S**	**S**	**S**	**S**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	S	S	S	S	S	S	2 097
Truck and water	58	.1	36	–	93	.5	2 603
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 08, ALCOHOLIC BEVERAGES							
Total	**18 427**	**100.0**	**11 645**	**100.0**	**6 334**	**100.0**	**126**
Single modes	**17 514**	**95.0**	**11 252**	**96.6**	**5 424**	**85.6**	**94**
Truck[3]	16 627	90.2	10 484	90.0	3 952	62.4	91
For-hire truck	8 956	48.6	4 899	42.1	3 554	56.1	S
Private truck	7 576	41.1	5 538	47.6	394	6.2	35
Rail	S	S	S	S	S	S	1 656
Water	S	S	S	S	S	S	2 468
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 468
Air (includes truck and air)	S	S	S	S	S	S	2 749
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**663**	**3.6**	**326**	**2.8**	**786**	**12.4**	**1 087**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	956
Truck and rail	519	2.8	294	2.5	708	11.2	2 413
Truck and water	33	.2	28	.2	74	1.2	2 684
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**1 864**

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	**253**	**100.0**	**S**	**S**	**S**	**S**	**58**
Single modes	**253**	**100.0**	**S**	**S**	**S**	**S**	**58**
Truck[3]	253	100.0	S	S	S	S	58
For-hire truck	–	–	–	–	–	–	–
Private truck	253	100.0	S	S	S	S	58
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 10, MONUMENTAL OR BUILDING STONE							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**17**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**17**
Truck[3]	S	S	S	S	2	17.1	17
For-hire truck	–	–	–	–	–	–	–
Private truck	S	S	S	S	2	17.1	17
Rail	–	–	–	–	–	–	–
Water	S	S	S	S	S	S	29
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	29
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 11, NATURAL SANDS							
Total	**334**	**100.0**	**35 666**	**100.0**	**1 169**	**100.0**	**28**
Single modes	**334**	**99.9**	**35 619**	**99.9**	**1 169**	**100.0**	**28**
Truck[3]	334	99.9	35 619	99.9	1 169	100.0	28
For-hire truck	126	37.8	S	S	520	44.5	24
Private truck	208	62.1	15 172	42.5	649	55.5	33
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**3**

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	**1 439**	**100.0**	**187 086**	**100.0**	**9 765**	**100.0**	**28**
Single modes	**1 379**	**95.9**	**180 494**	**96.5**	**9 521**	**97.5**	**27**
Truck[3]	1 335	92.8	174 291	93.2	5 932	60.7	26
For-hire truck	558	38.8	74 123	39.6	3 678	37.7	35
Private truck	777	54.0	100 141	53.5	2 254	23.1	20
Rail	S	S	S	S	S	S	696
Water	S	S	S	S	S	S	27
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	27
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	**895**	**100.0**	**5 044**	**100.0**	**1 754**	**100.0**	**S**
Single modes	**849**	**94.9**	**4 963**	**98.4**	**1 618**	**92.2**	**S**
Truck[3]	493	55.0	3 877	76.9	520	29.6	S
For-hire truck	311	34.7	494	9.8	S	S	542
Private truck	182	20.3	S	S	236	13.4	S
Rail	356	39.8	1 084	21.5	1 091	62.2	1 466
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	2 598
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**45**	**5.0**	**S**	**S**	**S**	**S**	**S**
Parcel, U.S. Postal Service or courier	S	S	S	S	–	–	671
Truck and rail	S	S	S	S	S	S	1 455
Truck and water	S	S	S	S	S	S	2 678
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**764**
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	**143**	**100.0**	**218**	**100.0**	**40**	**100.0**	**1 255**
Single modes	**141**	**98.6**	**218**	**100.0**	**40**	**99.8**	**S**
Truck[3]	141	98.6	218	100.0	40	99.8	S
For-hire truck	119	82.9	217	99.7	39	98.7	S
Private truck	S	S	S	S	S	S	740
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**2**	**1.4**	**–**	**–**	**–**	**.2**	**2 421**
Parcel, U.S. Postal Service or courier	2	1.4	–	–	–	.2	2 421
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles[1]		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 15, COAL							
Total	–	–	–	–	–	–	–
Single modes	–	–	–	–	–	–	–
Truck[3]	–	–	–	–	–	–	–
For-hire truck	–	–	–	–	–	–	–
Private truck	–	–	–	–	–	–	–
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	–	–	–	–	–	–	–
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	–	–	–	–	–	–	–
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	**39 234**	**100.0**	**120 743**	**100.0**	**7 667**	**100.0**	**54**
Single modes	**38 931**	**99.2**	**119 894**	**99.3**	**7 381**	**96.3**	**54**
Truck[3]	24 137	61.5	71 036	58.8	4 440	57.9	53
For-hire truck	7 492	19.1	21 787	18.0	1 558	20.3	77
Private truck	14 055	35.8	42 707	35.4	2 362	30.8	34
Rail	–	–	–	–	–	–	–
Water	S	S	S	S	S	S	495
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	495
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	13 889	35.4	45 398	37.6	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**2 637**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	S	S	S	S	S	S	2 637
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 18, FUEL OILS							
Total	**10 232**	**100.0**	**43 613**	**100.0**	**3 018**	**100.0**	**S**
Single modes	**10 061**	**98.3**	**43 004**	**98.6**	**2 996**	**99.3**	**S**
Truck[3]	4 034	39.4	14 601	33.5	1 517	50.3	S
For-hire truck	1 667	16.3	6 346	14.6	913	30.2	177
Private truck	2 286	22.3	8 124	18.6	539	17.9	S
Rail	–	–	–	–	–	–	–
Water	S	S	S	S	S	S	396
Shallow draft	S	S	S	S	S	S	24
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	577
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	5 619	54.9	25 841	59.3	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**	**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 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	**7 202**	**100.0**	**57 760**	**100.0**	**4 943**	**100.0**	**S**
Single modes	**6 704**	**93.1**	**53 912**	**93.3**	**4 090**	**82.8**	**S**
Truck[3]	4 753	66.0	46 061	79.7	2 183	44.2	S
For-hire truck	2 020	28.0	12 595	21.8	S	S	S
Private truck	2 733	37.9	33 466	57.9	656	13.3	32
Rail	S	S	S	S	1 609	32.6	702
Water	S	S	S	S	S	S	1 603
Shallow draft	S	S	S	S	S	S	39
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 564
Air (includes truck and air)	S	S	S	S	S	S	2 784
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**1 399**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 689
Truck and rail	S	S	S	S	S	S	289
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 20, BASIC CHEMICALS							
Total	**6 128**	**100.0**	**13 188**	**100.0**	**3 663**	**100.0**	**465**
Single modes	**5 340**	**87.1**	**13 124**	**99.5**	**3 614**	**98.7**	**S**
Truck[3]	5 163	84.3	12 054	91.4	2 100	57.3	S
For-hire truck	2 046	33.4	1 852	14.0	S	S	779
Private truck	3 112	50.8	10 201	77.4	1 330	36.3	S
Rail	172	2.8	S	S	S	S	1 593
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	3 190
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**1 784**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 784
Truck and rail	S	S	S	S	S	S	2 085
Truck and water	S	S	S	S	S	S	3 000
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**51**	**.4**	**S**	**S**	**S**
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	**28 344**	**100.0**	**496**	**100.0**	**354**	**100.0**	**1 129**
Single modes	**11 124**	**39.2**	**394**	**79.4**	**274**	**77.6**	**1 127**
Truck[3]	7 567	26.7	389	78.5	263	74.5	206
For-hire truck	5 242	18.5	271	54.7	246	69.7	311
Private truck	2 326	8.2	118	23.7	17	4.8	S
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	3 557	12.5	5	1.0	11	3.1	2 536
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**16 968**	**59.9**	**95**	**19.1**	**76**	**21.4**	**1 132**
Parcel, U.S. Postal Service or courier	16 965	59.9	94	19.0	75	21.2	1 132
Truck and rail	–	–	–	–	–	–	–
Truck and water	S	S	S	S	S	S	2 680
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 22, FERTILIZERS							
Total	**S**	**S**	**S**	**S**	**1 555**	**100.0**	**S**
Single modes	**S**	**S**	**S**	**S**	**1 553**	**99.9**	**S**
Truck[3]	S	S	S	S	1 173	75.4	S
For-hire truck	1 128	19.0	S	S	727	46.7	215
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	746
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	**17 647**	**100.0**	**7 832**	**100.0**	**4 160**	**100.0**	**517**
Single modes	**15 507**	**87.9**	**7 646**	**97.6**	**3 907**	**93.9**	**S**
Truck[3]	15 291	86.6	7 426	94.8	3 423	82.3	S
For-hire truck	6 560	37.2	3 002	38.3	S	S	740
Private truck	8 731	49.5	4 424	56.5	S	S	S
Rail	S	S	S	S	S	S	2 206
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	14	–	S	S	S	S	2 527
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**1 654**	**9.4**	**86**	**1.1**	**153**	**3.7**	**1 365**
Parcel, U.S. Postal Service or courier	1 505	8.5	48	.6	48	1.2	1 364
Truck and rail	S	S	S	S	S	S	2 713
Truck and water	S	S	S	S	S	S	2 719
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**99**	**1.3**	**S**	**S**	**S**
SCTG 24, PLASTICS AND RUBBER							
Total	**18 344**	**100.0**	**6 071**	**100.0**	**3 628**	**100.0**	**741**
Single modes	**14 632**	**79.8**	**5 413**	**89.2**	**2 927**	**80.7**	**378**
Truck[3]	13 902	75.8	4 459	73.4	2 168	59.8	300
For-hire truck	9 314	50.8	2 594	42.7	2 023	55.8	865
Private truck	4 586	25.0	1 865	30.7	145	4.0	85
Rail	S	S	S	S	S	S	935
Water	S	S	S	S	S	S	2 597
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 597
Air (includes truck and air)	272	1.5	S	S	S	S	2 449
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**2 750**	**15.0**	**140**	**2.3**	**158**	**4.4**	**1 127**
Parcel, U.S. Postal Service or courier	2 670	14.6	105	1.7	119	3.3	1 126
Truck and rail	S	S	S	S	S	S	579
Truck and water	S	S	S	S	S	S	2 662
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**962**	**5.2**	**S**	**S**	**S**	**S**	**306**

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**	**56**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**58**
Truck[3]	S	S	S	S	S	S	59
For-hire truck	S	S	S	S	S	S	149
Private truck	S	S	S	S	S	S	50
Rail	S	S	S	S	S	S	52
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**20**
SCTG 26, WOOD PRODUCTS							
Total	**11 516**	**100.0**	**15 124**	**100.0**	**4 122**	**100.0**	**372**
Single modes	**10 660**	**92.6**	**14 796**	**97.8**	**3 822**	**92.7**	**95**
Truck[3]	10 384	90.2	14 114	93.3	3 006	72.9	88
For-hire truck	3 836	33.3	6 047	40.0	2 250	54.6	335
Private truck	6 534	56.7	8 055	53.3	755	18.3	57
Rail	273	2.4	680	4.5	815	19.8	578
Water	S	S	S	S	S	S	31
Shallow draft	S	S	S	S	S	S	31
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	1 979
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**118**	**.8**	**230**	**5.6**	**1 179**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 175
Truck and rail	54	.5	51	.3	112	2.7	2 265
Truck and water	S	S	S	S	S	S	1 778
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**346**	**3.0**	**210**	**1.4**	**70**	**1.7**	**S**
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	**5 457**	**100.0**	**6 553**	**100.0**	**2 014**	**100.0**	**120**
Single modes	**5 224**	**95.7**	**6 252**	**95.4**	**1 757**	**87.3**	**137**
Truck[3]	4 911	90.0	5 449	83.2	1 289	64.0	134
For-hire truck	2 412	44.2	3 103	47.4	1 168	58.0	371
Private truck	2 499	45.8	2 346	35.8	122	6.0	46
Rail	S	S	S	S	S	S	610
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	926
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**643**
Parcel, U.S. Postal Service or courier	S	S	5	–	1	–	S
Truck and rail	S	S	S	S	S	S	1 975
Truck and water	S	S	S	S	S	S	2 582
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**190**	**2.9**	**43**	**2.1**	**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	**8 817**	**100.0**	**5 863**	**100.0**	**1 200**	**100.0**	**235**
Single modes	**8 141**	**92.3**	**5 707**	**97.3**	**1 123**	**93.6**	**101**
Truck[3]	8 094	91.8	5 684	96.9	1 091	90.9	73
For-hire truck	4 998	56.7	3 786	64.6	961	80.0	253
Private truck	3 096	35.1	1 897	32.4	131	10.9	44
Rail	26	.3	22	.4	S	S	1 492
Water	S	S	S	S	S	S	2 608
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 608
Air (includes truck and air)	19	.2	1	–	1	.1	2 689
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**23**	**.4**	**42**	**3.5**	**1 193**
Parcel, U.S. Postal Service or courier	S	S	8	.1	S	S	1 191
Truck and rail	S	S	S	S	S	S	1 826
Truck and water	22	.3	8	.1	20	1.7	2 630
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**133**	**2.3**	**S**	**S**	**S**
SCTG 29, PRINTED PRODUCTS							
Total	**9 666**	**100.0**	**2 713**	**100.0**	**1 270**	**100.0**	**823**
Single modes	**6 708**	**69.4**	**2 410**	**88.8**	**968**	**76.2**	**397**
Truck[3]	6 566	67.9	2 351	86.7	827	65.1	222
For-hire truck	3 180	32.9	930	34.3	719	56.6	651
Private truck	3 335	34.5	1 414	52.1	107	8.4	S
Rail	S	S	S	S	S	S	2 196
Water	S	S	S	S	S	S	2 630
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 630
Air (includes truck and air)	55	.6	6	.2	14	1.1	3 017
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**2 332**	**24.1**	**202**	**7.5**	**S**	**S**	**890**
Parcel, U.S. Postal Service or courier	2 213	22.9	161	5.9	138	10.8	886
Truck and rail	–	–	–	–	–	–	–
Truck and water	S	S	S	S	S	S	2 624
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**627**	**6.5**	**100**	**3.7**	**S**	**S**	**S**
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	**61 793**	**100.0**	**3 138**	**100.0**	**3 015**	**100.0**	**1 429**
Single modes	**48 011**	**77.7**	**2 676**	**85.3**	**2 577**	**85.5**	**1 432**
Truck[3]	47 498	76.9	2 659	84.7	2 540	84.2	1 403
For-hire truck	38 178	61.8	1 806	57.6	2 089	69.3	1 793
Private truck	9 306	15.1	851	27.1	S	S	763
Rail	S	S	S	S	S	S	2 738
Water	S	S	S	S	S	S	2 597
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 597
Air (includes truck and air)	452	.7	8	.3	16	.5	2 607
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**10 991**	**17.8**	**251**	**8.0**	**357**	**11.8**	**1 585**
Parcel, U.S. Postal Service or courier	10 848	17.6	245	7.8	343	11.4	1 584
Truck and rail	S	S	S	S	S	S	3 131
Truck and water	127	.2	5	.2	12	.4	2 069
Rail and water	–	–	–	–	–	–	–
Other multiple modes	S	S	S	S	S	S	1
Other and unknown modes	**2 791**	**4.5**	**211**	**6.7**	**81**	**2.7**	**136**

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	**18 245**	**100.0**	**132 562**	**100.0**	**16 015**	**100.0**	**619**
Single modes	**16 475**	**90.3**	**128 461**	**96.9**	**15 414**	**96.2**	**411**
Truck[3]	16 394	89.9	127 737	96.4	15 050	94.0	411
For-hire truck	8 615	47.2	42 145	31.8	6 209	38.8	449
Private truck	7 777	42.6	85 566	64.5	S	S	382
Rail	74	.4	S	S	S	S	S
Water	S	S	S	S	S	S	2 686
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 686
Air (includes truck and air)	S	S	S	S	S	S	1 441
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**998**	**5.5**	**130**	**.1**	**238**	**1.5**	**1 565**
Parcel, U.S. Postal Service or courier	984	5.4	92	–	141	.9	1 564
Truck and rail	S	S	S	S	S	S	2 059
Truck and water	S	S	33	–	87	.5	2 568
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**772**	**4.2**	**3 971**	**3.0**	**364**	**2.3**	**979**
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	**16 677**	**100.0**	**14 533**	**100.0**	**5 891**	**100.0**	**254**
Single modes	**14 341**	**86.0**	**13 321**	**91.7**	**5 010**	**85.0**	**157**
Truck[3]	13 914	83.4	12 296	84.6	4 114	69.8	150
For-hire truck	6 382	38.3	6 668	45.9	3 509	59.6	562
Private truck	7 531	45.2	5 628	38.7	605	10.3	S
Rail	354	2.1	S	S	S	S	1 097
Water	S	S	S	S	S	S	2 434
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 434
Air (includes truck and air)	65	.4	S	S	S	S	1 679
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**1 129**	**6.8**	**S**	**S**	**S**	**S**	**524**
Parcel, U.S. Postal Service or courier	1 051	6.3	S	S	39	.7	520
Truck and rail	S	S	S	S	S	S	2 223
Truck and water	S	S	17	.1	45	.8	2 573
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**1 207**	**7.2**	**S**	**S**	**S**	**S**	**S**
SCTG 33, ARTICLES OF BASE METAL							
Total	**24 936**	**100.0**	**10 284**	**100.0**	**4 140**	**100.0**	**700**
Single modes	**18 120**	**72.7**	**9 800**	**95.3**	**3 521**	**85.0**	**248**
Truck[3]	17 051	68.4	8 981	87.3	2 757	66.6	228
For-hire truck	9 418	37.8	5 469	53.2	2 239	54.1	745
Private truck	7 632	30.6	3 512	34.1	518	12.5	73
Rail	702	2.8	809	7.9	742	17.9	1 069
Water	S	S	S	S	S	S	2 514
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 514
Air (includes truck and air)	342	1.4	S	S	S	S	1 288
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**5 920**	**23.7**	**200**	**1.9**	**324**	**7.8**	**1 028**
Parcel, U.S. Postal Service or courier	5 837	23.4	140	1.4	180	4.4	1 024
Truck and rail	S	S	S	S	S	S	2 266
Truck and water	S	S	S	S	S	S	2 670
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**896**	**3.6**	**283**	**2.8**	**S**	**S**	**S**

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 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	**39 800**	**100.0**	**2 726**	**100.0**	**1 804**	**100.0**	**584**
Single modes	**31 773**	**79.8**	**2 416**	**88.6**	**1 358**	**75.3**	**178**
Truck[3]	29 440	74.0	2 388	87.6	1 296	71.8	139
For-hire truck	16 857	42.4	983	36.1	1 074	59.5	1 130
Private truck	12 583	31.6	1 405	51.5	222	12.3	S
Rail	S	S	S	S	S	S	S
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	2 638
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**6 119**	**15.4**	**237**	**8.7**	**429**	**23.8**	**1 182**
Parcel, U.S. Postal Service or courier	5 387	13.5	193	7.1	308	17.1	1 176
Truck and rail	S	S	S	S	S	S	2 817
Truck and water	S	S	S	S	S	S	2 685
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**1 908**	**4.8**	**73**	**2.7**	**17**	**.9**	**154**
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	**190 623**	**100.0**	**5 857**	**100.0**	**3 353**	**100.0**	**950**
Single modes	**120 470**	**63.2**	**4 915**	**83.9**	**2 472**	**73.7**	**513**
Truck[3]	93 852	49.2	4 767	81.4	2 160	64.4	221
For-hire truck	69 279	36.3	2 214	37.8	1 808	53.9	819
Private truck	24 573	12.9	2 554	43.6	351	10.5	S
Rail	1 052	.6	S	S	S	S	1 693
Water	S	S	S	S	S	S	2 546
Shallow draft	S	S	S	S	S	S	45
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 645
Air (includes truck and air)	25 553	13.4	98	1.7	238	7.1	2 744
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**62 295**	**32.7**	**695**	**11.9**	**735**	**21.9**	**1 255**
Parcel, U.S. Postal Service or courier	62 164	32.6	684	11.7	708	21.1	1 254
Truck and rail	S	S	S	S	S	S	2 117
Truck and water	S	S	S	S	S	S	2 849
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**7 858**	**4.1**	**247**	**4.2**	**146**	**4.4**	**585**
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	**28 751**	**100.0**	**S**	**S**	**2 145**	**100.0**	**728**
Single modes	**21 084**	**73.3**	**S**	**S**	**1 801**	**84.0**	**876**
Truck[3]	20 654	71.8	S	S	1 769	82.5	S
For-hire truck	5 794	20.2	1 015	12.9	981	45.7	566
Private truck	S	S	S	S	784	36.5	41
Rail	S	S	S	S	S	S	2 277
Water	S	S	S	S	S	S	2 520
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 520
Air (includes truck and air)	S	S	7	–	S	S	2 923
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**2 638**	**9.2**	**96**	**1.2**	**92**	**4.3**	**699**
Parcel, U.S. Postal Service or courier	2 561	8.9	82	1.0	57	2.7	698
Truck and rail	S	S	S	S	S	S	2 705
Truck and water	S	S	S	S	S	S	2 718
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 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	**12 231**	**100.0**	**86**	**100.0**	**76**	**100.0**	**1 317**
Single modes	**6 710**	**54.9**	**47**	**54.4**	**S**	**S**	**1 568**
Truck[3]	4 524	37.0	44	50.5	S	S	871
For-hire truck	2 600	21.3	S	S	S	S	1 091
Private truck	1 593	13.0	S	S	S	S	353
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	2 185	17.9	3	3.8	7	8.6	2 475
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**5 174**	**42.3**	**9**	**10.5**	**9**	**11.7**	**1 119**
Parcel, U.S. Postal Service or courier	5 174	42.3	9	10.5	9	11.7	1 119
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**176**
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	**68 006**	**100.0**	**1 427**	**100.0**	**897**	**100.0**	**1 128**
Single modes	**29 212**	**43.0**	**1 199**	**84.0**	**601**	**66.9**	**2 425**
Truck[3]	17 315	25.5	1 153	80.8	503	56.1	919
For-hire truck	14 890	21.9	951	66.7	494	55.0	1 242
Private truck	2 425	3.6	S	S	S	S	208
Rail	–	–	–	–	–	–	–
Water	S	S	S	S	S	S	2 581
Shallow draft	S	S	S	S	S	S	2
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	3 788
Air (includes truck and air)	11 889	17.5	45	3.2	97	10.8	2 923
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**37 211**	**54.7**	**207**	**14.5**	**272**	**30.3**	**895**
Parcel, U.S. Postal Service or courier	37 166	54.7	206	14.4	268	29.8	895
Truck and rail	S	S	S	S	S	S	2 406
Truck and water	S	S	S	S	S	S	2 612
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**1 582**	**2.3**	**21**	**1.5**	**S**	**S**	**1 000**
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	**15 998**	**100.0**	**3 443**	**100.0**	**1 281**	**100.0**	**374**
Single modes	**15 151**	**94.7**	**3 326**	**96.6**	**1 069**	**83.4**	**297**
Truck[3]	15 097	94.4	3 319	96.4	1 053	82.2	292
For-hire truck	8 629	53.9	S	S	853	66.6	688
Private truck	4 601	28.8	1 120	32.5	182	14.2	108
Rail	S	S	S	S	S	S	2 237
Water	S	S	S	S	S	S	2 494
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 494
Air (includes truck and air)	S	S	S	S	–	–	2 664
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**622**	**3.9**	**76**	**2.2**	**S**	**S**	**807**
Parcel, U.S. Postal Service or courier	476	3.0	21	.6	21	1.7	785
Truck and rail	S	S	S	S	S	S	2 301
Truck and water	8	–	1	–	4	.3	2 450
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 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	**57 332**	**100.0**	**8 661**	**100.0**	**5 535**	**100.0**	**1 412**
Single modes	**39 627**	**69.1**	**7 447**	**86.0**	**4 578**	**82.7**	**801**
Truck[3]	35 773	62.4	7 360	85.0	4 365	78.9	371
For-hire truck	25 229	44.0	4 443	51.3	4 014	72.5	1 102
Private truck	10 540	18.4	2 917	33.7	350	6.3	60
Rail	S	S	S	S	S	S	2 395
Water	S	S	S	S	S	S	2 656
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	2 656
Air (includes truck and air)	3 809	6.6	S	S	S	S	2 630
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**14 513**	**25.3**	**455**	**5.3**	**584**	**10.6**	**1 593**
Parcel, U.S. Postal Service or courier	14 447	25.2	444	5.1	555	10.0	1 593
Truck and rail	S	S	S	S	S	S	2 475
Truck and water	S	S	6	–	15	.3	2 876
Rail and water	–	–	–	–	–	–	–
Other multiple modes	S	S	S	S	S	S	31
Other and unknown modes	**3 193**	**5.6**	**S**	**S**	**373**	**6.7**	**S**
SCTG 41, WASTE AND SCRAP							
Total	**5 805**	**100.0**	**24 301**	**100.0**	**3 495**	**100.0**	**S**
Single modes	**5 759**	**99.2**	**24 165**	**99.4**	**3 181**	**91.0**	**S**
Truck[3]	5 267	90.7	24 099	99.2	3 057	87.5	S
For-hire truck	3 147	54.2	S	S	2 495	71.4	S
Private truck	2 120	36.5	S	S	S	S	S
Rail	S	S	S	S	S	S	444
Water	S	S	S	S	S	S	252
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	252
Air (includes truck and air)	S	S	S	S	S	S	3 428
Pipeline[4]	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**2 456**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	S	S	S	S	S	S	2 456
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**7**	**–**	**S**	**S**	**S**
SCTG 43, MIXED FREIGHT							
Total	**84 526**	**100.0**	**27 039**	**100.0**	**5 139**	**100.0**	**372**
Single modes	**80 095**	**94.8**	**26 424**	**97.7**	**4 759**	**92.6**	**235**
Truck[3]	78 611	93.0	25 915	95.8	4 132	80.4	194
For-hire truck	18 702	22.1	3 831	14.2	1 791	34.9	680
Private truck	59 220	70.1	21 640	80.0	2 258	43.9	S
Rail	S	S	S	S	S	S	2 353
Water	S	S	S	S	S	S	S
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	S
Air (includes truck and air)	S	S	S	S	S	S	2 502
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**2 638**	**3.1**	**244**	**.9**	**311**	**6.1**	**704**
Parcel, U.S. Postal Service or courier	2 300	2.7	144	.5	79	1.5	702
Truck and rail	S	S	S	S	S	S	1 366
Truck and water	253	.3	81	.3	207	4.0	2 598
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**1 792**	**2.1**	**371**	**1.4**	**S**	**S**	**S**

See footnotes at end of table.

Table 6. **Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 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	**2 572**	**100.0**	**1 229**	**100.0**	**153**	**100.0**	**559**
Single modes	**1 393**	**54.2**	**1 197**	**97.4**	**144**	**93.8**	**235**
Truck[3]	1 316	51.2	707	57.6	132	86.0	152
For-hire truck	482	18.7	178	14.5	71	46.1	673
Private truck	834	32.4	529	43.1	S	S	S
Rail	S	S	S	S	S	S	610
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	2 820
Pipeline[4]	S	S	S	S	S	S	S
Multiple modes	**S**	**S**	**6**	**.5**	**S**	**S**	**1 057**
Parcel, U.S. Postal Service or courier	S	S	4	.3	4	2.3	1 057
Truck and rail	S	S	S	S	S	S	1 349
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.

[1]Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.
[2]Estimates 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.
[4]Estimates 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	**923 669**	**100.0**	**903 954**	**100.0**	**166 862**	**100.0**
NEW ENGLAND STATES						
Connecticut	3 060	.3	282	–	833	.5
Maine	839	–	96	–	304	.2
Massachusetts	7 700	.8	919	.1	2 816	1.7
New Hampshire	2 137	.2	S	S	S	S
Rhode Island	558	–	41	–	126	–
Vermont	468	–	80	–	235	.1
MIDDLE ATLANTIC STATES						
New Jersey	11 158	1.2	1 365	.2	4 013	2.4
New York	15 259	1.7	1 639	.2	4 760	2.9
Pennsylvania	11 760	1.3	1 527	.2	4 212	2.5
EAST NORTH CENTRAL STATES						
Illinois	20 549	2.2	4 086	.5	8 530	5.1
Indiana	9 979	1.1	1 055	.1	2 293	1.4
Michigan	10 797	1.2	1 997	.2	4 771	2.9
Ohio	16 263	1.8	2 418	.3	5 774	3.5
Wisconsin	6 179	.7	854	–	1 857	1.1
WEST NORTH CENTRAL STATES						
Iowa	3 317	.4	395	–	733	.4
Kansas	2 458	.3	1 119	.1	1 890	1.1
Minnesota	5 493	.6	1 184	.1	2 465	1.5
Missouri	6 432	.7	1 227	.1	2 274	1.4
Nebraska	1 022	.1	224	–	348	.2
North Dakota	S	S	150	–	271	.2
South Dakota	390	–	24	–	42	–
SOUTH ATLANTIC STATES						
Delaware	661	–	S	S	S	S
District of Columbia	S	S	55	–	151	–
Florida	20 720	2.2	1 887	.2	5 156	3.1
Georgia	7 796	.8	1 154	.1	2 777	1.7
Maryland	5 806	.6	877	.1	2 403	1.4
North Carolina	5 048	.5	882	.1	2 361	1.4
South Carolina	S	S	417	–	1 094	.7
Virginia	7 744	.8	438	–	1 225	.7
West Virginia	590	–	20	–	52	–
EAST SOUTH CENTRAL STATES						
Alabama	3 328	.4	1 187	.1	2 707	1.6
Kentucky	5 669	.6	S	S	S	S
Mississippi	1 883	.2	S	S	S	S
Tennessee	7 277	.8	919	.1	2 030	1.2
WEST SOUTH CENTRAL STATES						
Arkansas	S	S	408	–	683	.4
Louisiana	4 029	.4	S	S	S	S
Oklahoma	3 764	.4	578	–	976	.6
Texas	50 066	5.4	7 127	.8	11 502	6.9
MOUNTAIN STATES						
Arizona	18 392	2.0	8 820	1.0	3 881	2.3
Colorado	8 297	.9	1 936	.2	2 198	1.3
Idaho	2 202	.2	1 337	.1	1 134	.7
Montana	1 791	.2	S	S	S	S
Nevada	15 025	1.6	9 551	1.1	2 897	1.7
New Mexico	3 012	.3	809	–	699	.4
Utah	8 125	.9	2 780	.3	1 957	1.2
Wyoming	214	–	43	–	45	–
PACIFIC STATES						
Alaska	S	S	102	–	195	.1
California	557 566	60.4	822 876	91.0	44 777	26.8
Hawaii	3 264	.4	S	S	S	S
Oregon	12 984	1.4	6 235	.7	5 285	3.2
Washington	20 744	2.2	6 079	.7	6 130	3.7

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

[1]Ton-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	**894 487**	**100.0**	**973 826**	**100.0**	**302 128**	**100.0**
NEW ENGLAND STATES						
Connecticut	2 583	.3	143	–	421	.1
Maine	526	–	148	–	452	.1
Massachusetts	7 678	.9	492	–	1 504	.5
New Hampshire	2 059	.2	156	–	476	.2
Rhode Island	1 262	.1	S	S	S	S
Vermont	540	–	93	–	276	–
MIDDLE ATLANTIC STATES						
New Jersey	10 255	1.1	1 785	.2	5 128	1.7
New York	16 656	1.9	2 048	.2	7 065	2.3
Pennsylvania	8 062	.9	1 637	.2	4 374	1.4
EAST NORTH CENTRAL STATES						
Illinois	18 231	2.0	5 612	.6	11 849	3.9
Indiana	10 122	1.1	3 793	.4	8 462	2.8
Michigan	9 925	1.1	1 827	.2	4 235	1.4
Ohio	16 857	1.9	4 987	.5	11 942	4.0
Wisconsin	8 387	.9	2 171	.2	4 735	1.6
WEST NORTH CENTRAL STATES						
Iowa	6 444	.7	S	S	S	S
Kansas	4 923	.6	1 468	.2	2 364	.8
Minnesota	7 740	.9	4 193	.4	8 377	2.8
Missouri	6 087	.7	2 445	.3	4 518	1.5
Nebraska	2 785	.3	2 522	.3	4 279	1.4
North Dakota	551	–	1 336	.1	2 866	.9
South Dakota	S	S	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	799	–	166	–	473	.2
District of Columbia	11	–	S	S	S	S
Florida	9 373	1.0	1 565	.2	4 128	1.4
Georgia	9 005	1.0	1 881	.2	4 439	1.5
Maryland	2 056	.2	515	–	1 459	.5
North Carolina	9 000	1.0	1 785	.2	4 614	1.5
South Carolina	3 708	.4	825	–	2 056	.7
Virginia	6 725	.8	1 098	.1	3 059	1.0
West Virginia	1 085	.1	431	–	1 132	.4
EAST SOUTH CENTRAL STATES						
Alabama	4 306	.5	2 601	.3	6 326	2.1
Kentucky	7 006	.8	1 862	.2	4 321	1.4
Mississippi	4 313	.5	5 277	.5	S	S
Tennessee	18 179	2.0	2 300	.2	4 818	1.6
WEST SOUTH CENTRAL STATES						
Arkansas	4 917	.5	2 277	.2	4 224	1.4
Louisiana	2 505	.3	2 574	.3	5 772	1.9
Oklahoma	2 591	.3	1 334	.1	2 099	.7
Texas	27 033	3.0	11 036	1.1	16 912	5.6
MOUNTAIN STATES						
Arizona	14 916	1.7	4 014	.4	2 000	.7
Colorado	9 702	1.1	2 726	.3	3 225	1.1
Idaho	4 630	.5	1 825	.2	1 625	.5
Montana	637	–	1 606	.2	2 453	.8
Nevada	11 591	1.3	5 895	.6	2 059	.7
New Mexico	700	–	430	–	354	.1
Utah	8 698	1.0	11 497	1.2	9 647	3.2
Wyoming	493	–	1 209	.1	1 365	.5
PACIFIC STATES						
Alaska	63	–	S	S	S	S
California	557 566	62.3	822 876	84.5	44 777	14.8
Hawaii	340	–	S	S	S	S
Oregon	17 501	2.0	10 926	1.1	8 705	2.9
Washington	11 661	1.3	7 608	.8	7 840	2.6

– 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.

[1]Ton-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.

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	**923 669**	**790 384**	**16.9**	**903 954**	**763 957**	**18.3**	**166 862**	**131 211**	**27.2**	**782**	**682**	**14.6**
Single modes	**709 161**	**607 007**	**16.8**	**873 245**	**728 181**	**19.9**	**143 025**	**104 853**	**36.4**	**457**	**315**	**45.0**
Truck[2]	625 530	535 879	16.7	767 680	630 070	21.8	114 225	81 982	39.3	237	234	1.5
Rail	9 718	7 059	37.7	21 358	14 041	52.1	22 836	15 860	44.0	1 730	1 702	1.6
Water	1 789	S	S	8 673	S	S	S	S	S	2 383	1 740	37.0
Air (includes truck and air)	51 996	46 658	11.4	636	1 099	–42.2	933	1 952	–52.2	2 826	1 954	44.7
Pipeline[3]	20 129	14 127	42.5	74 898	62 990	18.9	S	S	S	S	S	S
Multiple modes	**181 123**	**137 347**	**31.9**	**11 567**	**5 994**	**93.0**	**19 804**	**11 012**	**79.8**	**1 152**	**1 189**	**–3.1**
Parcel, U.S. Postal Service or courier	175 036	130 338	34.3	2 891	2 573	12.4	3 220	3 032	6.2	1 151	1 187	–3.0
Truck and rail	3 946	5 361	–26.4	5 261	2 540	107.1	7 508	5 452	37.7	1 895	2 237	–15.3
All other multiple modes	2 141	1 648	29.9	3 414	880	287.8	9 076	2 528	259.0	2 568	2 408	6.7
Other and unknown modes	**33 385**	**46 030**	**–27.5**	**19 142**	**29 782**	**–35.7**	**4 033**	**15 346**	**–73.7**	**272**	**319**	**–14.9**

– 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.

[1]Ton-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.
[3]Estimates 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
	Total[2]	**923 669**	**790 384**	**16.9**	**903 954**	**763 957**	**18.3**	**166 862**	**131 211**	**27.2**	**782**	**682**	**14.6**
01-05	Agricultural products and fish	55 024	41 694	32.0	61 725	43 753	41.1	32 660	15 174	115.2	245	182	34.5
06-09	Grains, alcohol, and tobacco products	69 938	62 619	11.7	61 706	64 593	–4.5	30 926	26 012	18.9	160	131	22.0
10-14	Stones, nonmetallic minerals, and metallic ores	2 871	3 040	–5.6	228 413	202 735	12.7	12 737	7 740	64.6	S	47	S
15-19	Coal and petroleum products	56 669	50 240	12.8	222 115	208 315	6.6	15 628	12 759	22.5	S	44	S
20-24	Basic chemicals, chemical, and pharmaceutical products	76 390	64 167	19.0	56 526	29 526	91.4	13 360	8 760	52.5	718	528	35.9
25-30	Logs, wood products, and textile and leather	97 276	86 884	12.0	33 463	45 808	–26.9	11 626	14 844	–21.7	949	960	–1.1
31-34	Base metal and machinery	99 658	84 373	18.1	160 105	109 073	46.8	27 851	22 372	24.5	569	519	9.7
35-38	Electronic, motorized vehicles, and precision instruments	299 611	281 102	6.6	15 228	9 330	63.2	6 472	7 711	–16.1	989	871	13.6
39-43	Furniture, mixed freight and misc. manufactured prod.	163 662	111 632	46.6	63 444	47 534	33.5	15 450	15 244	1.4	1 025	1 114	–8.0
--	Commodity unknown	2 572	4 632	–44.5	1 229	S	S	153	594	–74.2	559	493	13.4

– 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.

[1]Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.
[2]Estimates exclude shipments of crude petroleum (SCTG 16).

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

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)

[1]Because 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.

[2]Coverage 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	**4.0**	**–**	**9.6**	**–**	**5.8**	**–**	**8.4**
Single modes	**4.8**	**1.7**	**9.9**	**.7**	**4.9**	**2.4**	**23.5**
Truck	4.9	1.6	12.4	2.7	6.7	3.3	22.6
For-hire truck	9.2	2.3	16.5	2.9	6.0	3.6	9.2
Private truck	6.2	2.0	13.9	3.6	20.5	2.7	29.5
Rail	23.6	.2	23.1	.7	14.0	1.8	8.7
Water	43.0	–	39.2	.4	S	S	13.2
Shallow draft	S	S	S	S	S	S	S
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	48.8	.4	S	S	14.4
Air (includes truck and air)	15.0	.8	41.4	–	23.2	.2	5.7
Pipeline	18.8	.4	18.4	2.1	S	S	S
Multiple modes	**7.6**	**1.4**	**18.5**	**.2**	**24.6**	**2.4**	**5.6**
Parcel, U.S. Postal Service or courier	7.5	1.4	9.8	–	13.5	.3	5.6
Truck and rail	21.2	–	28.5	.2	31.5	1.1	6.5
Truck and water	37.7	–	S	S	S	S	1.9
Rail and water	S	S	S	S	S	S	30.0
Other multiple modes	S	S	S	S	S	S	34.2
Other and unknown modes	**11.2**	**.4**	**29.8**	**.7**	**12.8**	**.3**	**18.0**

– 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	**1.7**	**1.1**	**.7**	**.6**	**2.4**	**2.0**
Truck	1.6	1.0	2.7	1.4	3.3	2.5
For-hire truck	2.3	1.6	2.9	2.6	3.6	2.2
Private truck	2.0	1.6	3.6	2.2	2.7	1.4
Rail	.2	–	.7	.4	1.8	1.1
Water	–	S	.4	S	S	S
Shallow draft	S	S	S	S	S	S
Great Lakes	–	–	–	–	–	–
Deep draft	S	S	.4	S	S	S
Air (includes truck and air)	.8	.6	–	–	.2	.3
Pipeline	.4	.3	2.1	.8	S	S
Multiple modes	**1.4**	**.8**	**.2**	**.1**	**2.4**	**.8**
Parcel, U.S. Postal Service or courier	1.4	.9	–	–	.3	.1
Truck and rail	–	.2	.2	–	1.1	.9
Truck and water	–	–	S	–	S	.3
Rail and water	S	–	S	–	S	–
Other multiple modes	S	–	S	–	S	S
Other and unknown modes	**.4**	**.6**	**.7**	**.6**	**.3**	**2.4**

– 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–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	**5.8**	**–**	**8.4**
Truck	6.7	3.3	22.6
Rail	14.0	1.8	8.7
Shallow draft	S	S	S
Great Lakes	–	–	–
Deep draft	S	S	14.4
Air	23.2	.2	5.7
Parcel, U.S. Postal Service or courier	26.6	.3	26.0
Pipeline	S	S	S
Other and unknown modes	12.8	.3	18.0

– 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	**4.0**	**–**	**9.6**	**–**	**5.8**	**–**
Less than 50 miles	3.2	1.2	12.6	2.4	15.9	1.2
50 to 99 miles	7.1	.6	16.0	.9	15.1	.5
100 to 249 miles	8.2	.5	10.2	.9	12.6	1.2
250 to 499 miles	10.4	.8	9.7	.7	10.0	1.0
500 to 749 miles	29.4	1.2	9.3	.2	11.3	.7
750 to 999 miles	12.1	.3	14.8	.3	15.0	1.1
1,000 to 1,499 miles	9.9	.5	13.7	.2	13.5	1.2
1,500 to 1,999 miles	7.0	.7	18.1	.4	18.4	3.3
2,000 miles or more	6.9	.6	8.5	.2	8.3	1.9
Single modes	**4.8**	**–**	**9.9**	**–**	**4.9**	**–**
Less than 50 miles	3.2	1.5	13.0	2.5	16.4	1.4
50 to 99 miles	8.9	.7	16.9	.9	15.8	.7
100 to 249 miles	9.0	.7	9.8	1.0	12.3	1.2
250 to 499 miles	11.1	.9	10.0	.7	10.3	1.2
500 to 749 miles	38.3	1.5	9.4	.2	11.7	.7
750 to 999 miles	15.1	.4	15.2	.3	15.4	1.1
1,000 to 1,499 miles	13.7	.6	13.5	.2	13.4	1.2
1,500 to 1,999 miles	12.6	.9	16.1	.4	15.3	2.3
2,000 miles or more	7.6	.6	10.3	.2	10.2	2.3
Truck	**4.9**	**–**	**12.4**	**–**	**6.7**	**–**
Less than 50 miles	3.3	1.8	16.1	3.0	18.0	2.0
50 to 99 miles	8.9	.8	17.1	1.0	16.2	.9
100 to 249 miles	9.9	.7	12.6	1.0	15.6	1.8
250 to 499 miles	13.4	.9	12.2	1.0	12.2	1.3
500 to 749 miles	41.6	1.7	10.0	.2	10.3	.4
750 to 999 miles	16.3	.4	12.5	.2	12.5	.7
1,000 to 1,499 miles	14.6	.6	16.0	.2	16.1	.9
1,500 to 1,999 miles	16.0	1.0	21.5	.4	20.9	2.4
2,000 miles or more	8.3	.6	11.8	.3	11.7	2.4
For-hire truck	**9.2**	**–**	**16.5**	**–**	**6.0**	**–**
Less than 50 miles	11.0	2.0	24.0	4.2	26.4	1.4
50 to 99 miles	17.5	.9	23.9	1.7	21.4	.8
100 to 249 miles	13.7	1.2	18.7	1.4	23.9	2.0
250 to 499 miles	15.3	1.3	10.3	1.2	11.0	1.0
500 to 749 miles	S	S	13.6	.5	13.4	.4
750 to 999 miles	20.6	.8	17.0	.6	16.9	1.1
1,000 to 1,499 miles	15.9	1.0	14.1	.4	14.1	1.4
1,500 to 1,999 miles	16.3	1.7	15.6	.6	14.8	2.0
2,000 miles or more	6.8	1.0	13.0	.6	12.6	3.4
Private truck	**6.2**	**–**	**13.9**	**–**	**20.5**	**–**
Less than 50 miles	6.3	1.8	16.6	2.6	17.4	4.4
50 to 99 miles	10.2	1.1	13.2	.7	13.4	1.4
100 to 249 miles	7.1	.4	12.7	.9	11.3	2.5
250 to 499 miles	11.3	.6	22.7	1.1	22.1	2.9
500 to 749 miles	37.6	.6	25.9	.2	28.1	1.1
750 to 999 miles	22.4	.2	14.7	–	14.9	.6
1,000 to 1,499 miles	31.8	.7	34.6	.1	34.7	1.2
1,500 to 1,999 miles	24.2	.5	S	S	S	S
2,000 miles or more	33.1	.7	42.4	.2	42.7	2.9
Rail	**23.6**	**–**	**23.1**	**–**	**14.0**	**–**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	37.8	3.2	43.1	2.2	47.3	.3
100 to 249 miles	45.2	1.5	S	S	S	S
250 to 499 miles	26.6	3.7	35.3	4.1	33.3	1.7
500 to 749 miles	S	S	45.9	2.6	46.4	1.3
750 to 999 miles	48.8	.6	48.7	3.5	48.0	4.3
1,000 to 1,499 miles	22.8	2.2	24.4	4.3	25.8	4.8
1,500 to 1,999 miles	29.9	3.9	20.2	4.3	19.7	5.0
2,000 miles or more	25.7	1.8	29.4	2.1	30.0	4.0
Water	**43.0**	**–**	**39.2**	**–**	**S**	**S**
Less than 50 miles	44.2	12.7	43.4	14.0	43.1	8.9
50 to 99 miles	–	–	–	–	–	–
100 to 249 miles	–	–	–	–	–	–
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	–	–	–	–	–	–
1,500 to 1,999 miles	–	–	–	–	–	–
2,000 miles or more	30.7	17.2	27.1	19.2	S	S
Shallow 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	–	–	–	–	–	–

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**	**48.8**	**–**	**S**	**S**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	–	–	–	–	–	–
100 to 249 miles	–	–	–	–	–	–
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	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
Air (includes truck and air)	**15.0**	**–**	**41.4**	**–**	**23.2**	**–**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	29.0	1.3	S	S	S	S
100 to 249 miles	30.0	1.7	S	S	S	S
250 to 499 miles	30.0	5.4	28.0	4.0	48.1	3.2
500 to 749 miles	35.6	1.6	30.6	1.6	34.5	1.5
750 to 999 miles	26.2	.7	32.5	2.1	36.0	1.3
1,000 to 1,499 miles	29.4	1.7	24.6	1.0	24.2	1.9
1,500 to 1,999 miles	16.6	4.2	32.1	4.3	32.7	4.1
2,000 miles or more	22.9	3.3	27.7	7.3	28.6	6.2
Pipeline	**18.8**	**–**	**18.4**	**–**	**S**	**S**
Less than 50 miles	20.0	5.0	19.8	5.6	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	S	S	S	S
750 to 999 miles	–	–	–	–	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	S	S	S	S	S	S
Multiple modes	**7.6**	**–**	**18.5**	**–**	**24.6**	**–**
Less than 50 miles	9.0	2.4	16.6	1.9	14.7	–
50 to 99 miles	20.7	1.4	28.0	1.6	31.2	.1
100 to 249 miles	10.0	.6	S	S	S	S
250 to 499 miles	17.9	1.3	22.0	1.7	23.4	.9
500 to 749 miles	17.0	.5	28.6	1.0	27.1	.7
750 to 999 miles	10.0	.2	12.9	.7	13.8	.6
1,000 to 1,499 miles	10.5	.6	41.0	2.4	39.8	3.1
1,500 to 1,999 miles	15.8	2.3	44.3	7.4	45.5	9.3
2,000 miles or more	12.6	1.8	31.4	6.1	30.0	7.4
Parcel, U.S. Postal Service or courier	**7.5**	**–**	**9.8**	**–**	**13.5**	**–**
Less than 50 miles	9.0	2.5	11.0	2.4	14.1	.1
50 to 99 miles	20.7	1.4	15.3	1.3	17.8	.1
100 to 249 miles	10.8	.7	14.6	.7	15.6	.2
250 to 499 miles	17.9	1.4	14.1	1.2	13.3	.7
500 to 749 miles	17.0	.5	14.9	.5	14.2	.4
750 to 999 miles	10.2	.2	14.1	.4	14.6	.5
1,000 to 1,499 miles	10.4	.6	15.5	.7	15.9	.9
1,500 to 1,999 miles	17.2	2.4	12.9	.9	12.6	1.5
2,000 miles or more	12.2	1.8	16.5	1.8	16.6	2.1
Truck and rail	**21.2**	**–**	**28.5**	**–**	**31.5**	**–**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	44.6	2.8	47.7	.3
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	31.7	2.0	42.5	3.3	41.2	1.4
500 to 749 miles	40.9	.9	46.0	2.1	42.0	1.1
750 to 999 miles	41.2	2.0	31.4	1.0	31.3	.6
1,000 to 1,499 miles	S	S	S	S	48.9	4.7
1,500 to 1,999 miles	31.1	6.1	41.1	6.9	40.5	5.8
2,000 miles or more	13.4	4.6	24.2	4.6	24.9	4.5
Truck and water	**37.7**	**–**	**S**	**S**	**S**	**S**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	–	–	–	–	–	–
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	41.6	5.7	S	S	S	S

See footnotes at end of table.

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

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

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Multiple modes—Con.						
Rail and water	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 miles	–	–	–	–	–	–
50 to 99 miles	–	–	–	–	–	–
100 to 249 miles	–	–	–	–	–	–
250 to 499 miles	–	–	–	–	–	–
500 to 749 miles	–	–	–	–	–	–
750 to 999 miles	–	–	–	–	–	–
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	–	–	–	–	–	–
Other multiple modes	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	–	–	–	–	–	–
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	–	–	–	–	–	–
Other and unknown modes	**11.2**	**–**	**29.8**	**–**	**12.8**	**–**
Less than 50 miles	10.9	3.3	41.4	8.2	S	S
50 to 99 miles	19.1	.9	30.1	2.4	28.2	1.3
100 to 249 miles	32.0	1.2	30.4	3.1	33.1	1.4
250 to 499 miles	40.2	1.7	17.0	1.6	17.4	1.1
500 to 749 miles	25.3	.8	26.0	.8	27.0	1.8
750 to 999 miles	47.1	.8	41.7	.4	41.4	1.0
1,000 to 1,499 miles	33.0	1.5	32.9	.6	32.3	1.8
1,500 to 1,999 miles	28.6	2.9	37.9	1.8	36.6	6.4
2,000 miles or more	18.9	1.5	18.4	2.1	18.5	6.2

– 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.

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	**4.0**	**–**	**9.6**	**–**	**5.8**	**–**	**8.4**
Less than 50 lb	8.7	1.5	9.7	–	12.2	.1	6.5
50 to 99 lb	23.0	1.2	12.7	–	15.9	.1	8.3
100 to 499 lb	5.3	.6	13.5	.2	14.6	.3	10.1
500 to 749 lb	5.4	.2	19.2	.2	13.5	.1	12.1
750 to 999 lb	9.5	.3	23.0	.2	11.7	–	17.7
1,000 to 9,999 lb	6.9	1.3	9.9	1.1	14.8	1.9	13.2
10,000 to 49,999 lb	10.5	2.1	14.3	2.2	10.0	2.7	16.2
50,000 to 99,999 lb	9.0	.4	16.6	2.1	12.1	1.6	11.4
100,000 lb or more	12.4	.6	9.4	3.4	15.5	3.3	14.0
Single modes	**4.8**	**–**	**9.9**	**–**	**4.9**	**–**	**23.5**
Less than 50 lb	9.6	.8	9.5	–	16.2	–	22.1
50 to 99 lb	36.0	1.4	11.8	–	22.3	–	17.0
100 to 499 lb	7.8	.9	14.6	.2	15.9	.2	13.4
500 to 749 lb	6.4	.3	20.6	.2	13.6	.1	10.9
750 to 999 lb	9.8	.4	23.9	.2	13.2	.1	18.1
1,000 to 9,999 lb	7.4	1.6	9.6	1.1	15.7	1.9	13.8
10,000 to 49,999 lb	10.8	2.3	14.7	2.2	9.4	2.8	17.2
50,000 to 99,999 lb	9.2	.6	16.9	2.2	12.5	1.7	11.4
100,000 lb or more	12.8	.8	10.1	3.5	10.3	2.6	14.7
Truck[2]	**4.9**	**–**	**12.4**	**–**	**6.7**	**–**	**22.6**
Less than 50 lb	10.0	.7	10.0	–	19.6	–	36.6
50 to 99 lb	42.6	1.6	11.5	–	23.1	–	23.6
100 to 499 lb	9.6	1.0	14.6	.3	16.9	.2	14.0
500 to 749 lb	7.4	.3	20.7	.2	14.2	.2	10.6
750 to 999 lb	11.5	.4	24.1	.2	14.3	.1	17.6
1,000 to 9,999 lb	7.2	1.6	9.6	1.3	15.6	2.0	13.9
10,000 to 49,999 lb	10.8	2.8	14.8	2.1	9.7	3.3	17.7
50,000 to 99,999 lb	9.5	.7	17.0	1.9	12.9	2.4	11.5
100,000 lb or more	15.7	.4	18.4	2.4	22.1	2.1	29.7
For-hire truck	**9.2**	**–**	**16.5**	**–**	**6.0**	**–**	**9.2**
Less than 50 lb	14.0	.7	14.8	–	21.5	–	8.8
50 to 99 lb	S	S	21.8	–	23.7	–	14.1
100 to 499 lb	7.4	.8	12.5	.1	14.0	.3	17.8
500 to 749 lb	12.7	.6	11.8	–	11.9	.1	10.6
750 to 999 lb	13.9	.6	17.1	–	13.1	.1	12.2
1,000 to 9,999 lb	10.1	2.1	10.2	1.0	12.5	2.0	7.7
10,000 to 49,999 lb	12.0	2.1	15.8	2.2	11.0	3.8	14.4
50,000 to 99,999 lb	11.4	.7	25.7	3.4	19.5	2.8	15.9
100,000 lb or more	22.0	.5	22.0	2.9	26.9	2.2	31.3
Private truck	**6.2**	**–**	**13.9**	**–**	**20.5**	**–**	**29.5**
Less than 50 lb	13.0	.9	12.6	–	19.3	–	S
50 to 99 lb	5.9	.2	15.1	–	25.7	–	34.8
100 to 499 lb	14.4	1.6	19.2	.4	25.2	.5	19.8
500 to 749 lb	18.4	.7	25.6	.3	30.3	.4	8.2
750 to 999 lb	16.3	.6	29.7	.3	28.3	.3	30.9
1,000 to 9,999 lb	6.7	1.9	13.5	1.6	34.1	2.9	31.5
10,000 to 49,999 lb	18.7	3.8	17.5	2.9	24.2	2.2	32.8
50,000 to 99,999 lb	10.9	.9	18.6	2.4	11.0	2.9	16.2
100,000 lb or more	23.3	.5	27.3	2.8	30.3	2.3	37.2
Rail	**23.6**	**–**	**23.1**	**–**	**14.0**	**–**	**8.7**
Less than 50 lb	S	S	S	S	S	S	30.4
50 to 99 lb	S	S	S	S	S	S	28.8
100 to 499 lb	S	S	S	S	S	S	26.7
500 to 749 lb	S	S	S	S	S	S	33.9
750 to 999 lb	S	S	S	S	S	S	42.5
1,000 to 9,999 lb	S	S	S	S	S	S	18.1
10,000 to 49,999 lb	33.1	4.0	34.3	2.9	36.5	5.0	3.9
50,000 to 99,999 lb	43.6	1.3	39.3	.9	41.9	.6	36.2
100,000 lb or more	26.5	8.2	23.9	3.8	15.2	5.7	11.0
Water	**43.0**	**–**	**39.2**	**–**	**S**	**S**	**13.2**
Less than 50 lb	S	S	S	S	S	S	28.6
50 to 99 lb	S	S	S	S	S	S	27.9
100 to 499 lb	S	S	41.5	1.4	41.7	1.4	23.6
500 to 749 lb	S	S	S	S	S	S	28.1
750 to 999 lb	–	–	–	–	–	–	–
1,000 to 9,999 lb	S	S	S	S	S	S	23.6
10,000 to 49,999 lb	45.6	15.4	30.0	19.3	26.2	19.5	18.7
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
100,000 lb or more	48.8	18.8	S	S	S	S	38.6
Shallow draft	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	–	–	–	–	–	–	–
100 to 499 lb	–	–	–	–	–	–	–
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	–	–	–	–	–	–	–
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	27.2

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	
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**	**48.8**	**–**	**S**	**S**	**14.4**
Less than 50 lb	S	S	S	S	S	S	29.0
50 to 99 lb	S	S	S	S	S	S	27.9
100 to 499 lb	S	S	41.5	1.4	41.7	1.4	23.6
500 to 749 lb	S	S	S	S	S	S	28.1
750 to 999 lb	–	–	–	–	–	–	–
1,000 to 9,999 lb	S	S	S	S	S	S	23.6
10,000 to 49,999 lb	45.6	18.4	S	S	S	S	18.7
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	33.3
Air (includes truck and air)	**15.0**	**–**	**41.4**	**–**	**23.2**	**–**	**5.7**
Less than 50 lb	17.3	5.3	26.3	4.3	28.7	4.5	5.5
50 to 99 lb	31.7	2.3	38.0	2.3	46.6	3.3	11.7
100 to 499 lb	26.0	2.5	15.6	3.7	18.1	3.4	7.5
500 to 749 lb	43.6	1.7	21.8	1.7	24.9	1.4	13.1
750 to 999 lb	40.4	1.6	S	S	S	S	9.1
1,000 to 9,999 lb	29.3	2.5	23.1	7.5	24.8	6.2	11.0
10,000 to 49,999 lb	S	S	44.9	4.6	S	S	23.3
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	S	S	S	S	S	S	S
Pipeline[3]	**18.8**	**–**	**18.4**	**–**	**S**	**S**	**S**
Less than 50 lb	S	S	S	S	S	S	S
50 to 99 lb	S	S	S	S	S	S	S
100 to 499 lb	S	S	S	S	S	S	S
500 to 749 lb	–	–	–	–	S	S	S
750 to 999 lb	–	–	–	–	S	S	S
1,000 to 9,999 lb	S	S	S	S	S	S	S
10,000 to 49,999 lb	40.2	.4	43.9	.6	S	S	S
50,000 to 99,999 lb	S	S	S	S	S	S	S
100,000 lb or more	18.3	1.8	18.6	1.3	S	S	S
Multiple modes	**7.6**	**–**	**18.5**	**–**	**24.6**	**–**	**5.6**
Less than 50 lb	9.4	2.5	11.0	3.6	14.1	2.9	5.9
50 to 99 lb	10.8	1.0	15.8	2.0	16.2	1.4	4.8
100 to 499 lb	14.8	1.8	12.2	2.6	15.8	2.6	4.8
500 to 749 lb	17.8	.7	19.4	1.1	30.2	.8	22.1
750 to 999 lb	43.7	1.1	40.7	1.3	16.3	.3	25.3
1,000 to 9,999 lb	S	S	S	S	S	S	7.9
10,000 to 49,999 lb	18.7	.3	29.8	6.2	29.2	6.4	2.2
50,000 to 99,999 lb	42.5	–	47.6	2.7	S	S	S
100,000 lb or more	46.4	.2	47.9	10.0	S	S	23.5
Parcel, U.S. Postal Service or courier	**7.5**	**–**	**9.8**	**–**	**13.5**	**–**	**5.6**
Less than 50 lb	9.4	2.4	11.0	2.3	14.1	2.3	5.9
50 to 99 lb	10.8	1.1	15.8	1.3	16.2	.7	4.9
100 to 499 lb	14.8	1.9	12.3	1.7	15.9	2.2	4.8
500 to 749 lb	18.3	.7	20.3	1.8	29.6	1.5	23.7
750 to 999 lb	44.4	1.1	44.4	1.8	24.2	.9	27.7
1,000 to 9,999 lb	S	S	S	S	S	S	31.5
10,000 to 49,999 lb	–	–	–	–	–	–	–
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	–	–	–	–	–	–	–
Truck and rail	**21.2**	**–**	**28.5**	**–**	**31.5**	**–**	**6.5**
Less than 50 lb	S	S	S	S	S	S	28.1
50 to 99 lb	S	S	S	S	S	S	38.0
100 to 499 lb	S	S	S	S	S	S	21.2
500 to 749 lb	S	S	S	S	S	S	25.6
750 to 999 lb	S	S	S	S	S	S	26.0
1,000 to 9,999 lb	46.1	2.1	S	S	S	S	7.5
10,000 to 49,999 lb	23.2	5.4	36.6	10.1	35.5	6.3	2.3
50,000 to 99,999 lb	23.6	.5	S	S	39.6	.6	S
100,000 lb or more	S	S	S	S	S	S	22.3
Truck and water	**37.7**	**–**	**S**	**S**	**S**	**S**	**1.9**
Less than 50 lb	S	S	S	S	S	S	10.7
50 to 99 lb	45.0	.3	42.3	–	42.6	–	21.3
100 to 499 lb	35.9	6.4	30.8	.8	30.6	.8	3.3
500 to 749 lb	40.3	2.8	S	S	S	S	17.6
750 to 999 lb	46.1	.6	S	S	S	S	18.9
1,000 to 9,999 lb	S	S	42.7	6.2	43.1	6.6	2.1
10,000 to 49,999 lb	30.8	9.2	S	S	S	S	1.9
50,000 to 99,999 lb	S	S	S	S	S	S	25.9
100,000 lb or more	S	S	S	S	S	S	31.6

See footnote at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Multiple modes—Con.							
Rail and water	**S**	**S**	**S**	**S**	**S**	**S**	**30.0**
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	S	S	S	S	S	S	30.0
Other multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**34.2**
Less than 50 lb	S	S	S	S	S	S	34.0
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	–	–	–	–	–	–	–
50,000 to 99,999 lb	–	–	–	–	–	–	–
100,000 lb or more	–	–	–	–	–	–	–
Other and unknown modes	**11.2**	**–**	**29.8**	**–**	**12.8**	**–**	**18.0**
Less than 50 lb	22.3	5.1	25.7	.8	31.7	.2	22.4
50 to 99 lb	19.1	.9	27.7	.6	23.0	.1	S
100 to 499 lb	17.3	1.8	17.3	1.0	44.8	.8	26.6
500 to 749 lb	28.7	.3	32.8	.7	47.0	.3	40.2
750 to 999 lb	S	S	31.9	.2	S	S	S
1,000 to 9,999 lb	15.3	5.6	34.1	5.9	16.8	6.2	38.4
10,000 to 49,999 lb	39.6	4.1	30.8	6.5	20.1	5.7	43.6
50,000 to 99,999 lb	26.8	.5	31.3	5.8	29.4	2.0	S
100,000 lb or more	24.5	.5	S	S	46.6	7.6	34.4

– 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–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	**4.0**	**–**	**9.6**	**–**	**5.8**	**–**	**8.4**
01	Live animals and live fish	S	S	S	S	47.9	–	25.1
02	Cereal grains	31.5	–	35.5	.3	S	S	S
03	Other agricultural products	25.8	.9	27.6	1.0	29.1	3.2	S
04	Animal feed and products of animal origin, n.e.c.	S	S	S	S	S	S	17.8
05	Meat, fish, seafood, and their preparations	29.8	.5	32.3	.3	36.9	.4	S
06	Milled grain products and preparations, and bakery products	28.5	.4	37.2	.3	22.4	.6	45.6
07	Other prepared foodstuffs and fats and oils	15.5	.7	15.1	1.1	20.7	2.1	22.5
08	Alcoholic beverages	13.0	.3	10.5	.3	16.1	.6	22.9
09	Tobacco products	40.4	–	S	S	S	S	27.1
10	Monumental or building stone	S	S	S	S	S	S	27.1
11	Natural sands	37.4	–	41.2	1.1	47.0	.3	10.8
12	Gravel and crushed stone	14.8	–	22.5	2.8	25.7	1.7	49.2
13	Nonmetallic minerals n.e.c.	29.1	–	33.1	.2	33.2	.3	S
14	Metallic ores and concentrates	32.4	–	36.6	–	36.8	–	23.3
15	Coal	–	–	–	–	–	–	–
17	Gasoline and aviation turbine fuel	11.6	.5	10.2	2.1	22.0	1.0	47.8
18	Fuel oils	19.8	.3	20.2	1.4	37.8	.8	S
19	Coal and petroleum products, n.e.c.	23.8	.2	24.1	1.5	28.4	.8	S
20	Basic chemicals	22.4	.2	21.1	.3	32.6	.7	29.9
21	Pharmaceutical products	7.3	.3	17.2	–	20.7	–	10.3
22	Fertilizers	S	S	S	S	38.5	.3	S
23	Chemical products and preparations, n.e.c.	15.8	.3	18.3	.2	33.4	.7	26.1
24	Plastics and rubber	16.2	.3	33.6	.2	42.8	.9	12.6
25	Logs and other wood in the rough	S	S	S	S	S	S	29.2
26	Wood products	12.1	.2	14.0	.2	13.9	.4	27.1
27	Pulp, newsprint, paper, and paperboard	25.7	.1	28.4	.2	30.5	.3	19.7
28	Paper or paperboard articles	18.4	.2	15.7	.1	27.3	.2	40.6
29	Printed products	14.1	.2	26.5	–	22.9	.2	12.4
30	Textiles, leather, and articles of textiles or leather	23.3	1.3	14.6	–	19.3	.3	5.5
31	Nonmetallic mineral products	22.2	.4	24.6	2.6	45.4	3.4	28.7
32	Base metal in primary or semifinished forms and in finished basic shapes	23.1	.4	22.5	.4	30.0	1.3	28.6
33	Articles of base metal	11.3	.3	16.4	.2	21.4	.5	14.4
34	Machinery	18.2	.7	19.3	–	33.3	.4	21.6
35	Electronic and other electrical equipment and components and office equipment	11.9	1.9	24.5	.2	10.7	.2	12.5
36	Motorized and other vehicles (including parts)	32.1	1.0	S	S	23.6	.3	24.0
37	Transportation equipment, n.e.c.	16.8	.2	39.9	–	49.1	–	10.4
38	Precision instruments and apparatus	19.4	1.5	34.7	–	18.3	.1	16.8
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	28.9	.5	30.2	–	24.2	.2	37.0
40	Miscellaneous manufactured products	20.0	1.2	25.8	.4	35.5	1.5	9.8
41	Waste and scrap	23.0	.2	35.5	.8	33.3	.6	S
43	Mixed freight	13.9	1.2	14.2	.5	17.0	.4	22.8
--	Commodity unknown	42.4	.1	40.9	–	34.3	–	17.4

– 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
02	Cereal grains	–	–	.3	.1	S	S
03	Other agricultural products	.9	.2	1.0	.5	3.2	1.2
04	Animal feed and products of animal origin, n.e.c	S	.1	S	.7	S	.4
05	Meat, fish, seafood, and their preparations	.5	.2	.3	.2	.4	.2
06	Milled grain products and preparations, and bakery products	.4	.2	.3	.3	.6	.3
07	Other prepared foodstuffs and fats and oils	.7	.3	1.1	.9	2.1	1.6
08	Alcoholic beverages	.3	.1	.3	.3	.6	1.1
09	Tobacco products	–	–	S	–	S	–
10	Monumental or building stone	S	S	S	.1	S	S
11	Natural sands	–	–	1.1	1.4	.3	.2
12	Gravel and crushed stone	–	–	2.8	3.3	1.7	.9
13	Nonmetallic minerals n.e.c.	–	S	.2	.1	.3	.6
14	Metallic ores and concentrates	–	–	–	–	–	S
15	Coal	–	S	–	S	–	S
17	Gasoline and aviation turbine fuel	.5	.5	2.1	1.5	1.0	.8
18	Fuel oils	.3	.1	1.4	.8	.8	1.0
19	Coal and petroleum products, n.e.c.	.2	.1	1.5	1.2	.8	.6
20	Basic chemicals	.2	.1	.3	.1	.7	.3
21	Pharmaceutical products	.3	.4	–	–	–	–
22	Fertilizers	S	–	S	S	.3	.3
23	Chemical products and preparations, n.e.c.	.3	.3	.2	.2	.7	.4
24	Plastics and rubber	.3	.1	.2	.1	.9	.2
25	Logs and other wood in the rough	S	–	S	–	S	.2
26	Wood products	.2	.1	.2	.3	.4	.4
27	Pulp, newsprint, paper, and paperboard	.1	.1	.2	.1	.3	.3
28	Paper or paperboard articles	.2	.1	.1	.5	.2	.2
29	Printed products	.2	.1	–	–	.2	.4
30	Textiles, leather, and articles of textiles or leather	1.3	.7	–	–	.3	.3
31	Nonmetallic mineral products	.4	.2	2.6	1.1	3.4	.3
32	Base metal in primary or semifinished forms and in finished basic shapes	.4	.3	.4	.2	1.3	1.1
33	Articles of base metal	.3	.2	.2	.2	.5	.5
34	Machinery	.7	.2	–	–	.4	.7
35	Electronic and other electrical equipment and components and office equipment	1.9	1.4	.2	.2	.2	1.1
36	Motorized and other vehicles (including parts)	1.0	.4	S	–	.3	.3
37	Transportation equipment, n.e.c.	.2	.7	–	–	–	–
38	Precision instruments and apparatus	1.5	.2	–	–	.1	–
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	.5	.1	–	–	.2	.2
40	Miscellaneous manufactured products	1.2	2.7	.4	.5	1.5	S
41	Waste and scrap	.2	.1	.8	.5	.6	.7
43	Mixed freight	1.2	1.2	.5	.7	.4	.8
--	Commodity unknown	.1	.1	–	S	–	.1

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

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	**4.0**	**–**	**9.6**	**–**	**5.8**	**–**	**8.4**
Single modes	**4.8**	**1.7**	**9.9**	**.7**	**4.9**	**2.4**	**23.5**
Truck	4.9	1.6	12.4	2.7	6.7	3.3	22.6
For-hire truck	9.2	2.3	16.5	2.9	6.0	3.6	9.2
Private truck	6.2	2.0	13.9	3.6	20.5	2.7	29.5
Rail	23.6	.2	23.1	.7	14.0	1.8	8.7
Water	43.0	–	39.2	.4	S	S	13.2
Shallow draft	S	S	S	S	S	S	S
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	48.8	.4	S	S	14.4
Air (includes truck and air)	15.0	.8	41.4	–	23.2	.2	5.7
Pipeline	18.8	.4	18.4	2.1	S	S	S
Multiple modes	**7.6**	**1.4**	**18.5**	**.2**	**24.6**	**2.4**	**5.6**
Parcel, U.S. Postal Service or courier	7.5	1.4	9.8	–	13.5	.3	5.6
Truck and rail	21.2	–	28.5	.2	31.5	1.1	6.5
Truck and water	37.7	–	S	S	S	S	1.9
Rail and water	S	S	S	S	S	S	30.0
Other multiple modes	S	S	S	S	S	S	34.2
Other and unknown modes	**11.2**	**.4**	**29.8**	**.7**	**12.8**	**.3**	**18.0**
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	**S**	**S**	**S**	**S**	**47.9**	**–**	**25.1**
Single modes	**S**	**S**	**S**	**S**	**42.2**	**11.6**	**31.8**
Truck	S	S	S	S	S	S	29.2
For-hire truck	S	S	S	S	48.5	–	28.8
Private truck	S	S	S	S	S	S	31.6
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	41.8	10.3	41.9	10.6	42.0	11.5	25.8
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
SCTG 02, CEREAL GRAINS							
Total	**31.5**	**–**	**35.5**	**–**	**S**	**S**	**S**
Single modes	**32.8**	**7.9**	**36.6**	**9.4**	**S**	**S**	**S**
Truck	46.6	15.1	S	S	S	S	S
For-hire truck	S	S	S	S	42.5	15.6	S
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	24.2
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)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**29.8**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
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	S	S	S	S	S	S	31.6
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**48.3**

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	**25.8**	**–**	**27.6**	**–**	**29.1**	**–**	**S**
Single modes	**26.6**	**2.1**	**27.8**	**.7**	**29.4**	**2.2**	**S**
Truck	26.5	2.3	28.2	2.0	32.1	5.9	S
For-hire truck	33.4	8.6	32.4	8.5	27.5	6.2	15.6
Private truck	39.7	9.3	37.6	9.5	S	S	S
Rail	S	S	S	S	S	S	16.4
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	44.7	.5	48.0	.2	S	S	7.9
Pipeline	–	–	–	–	S	S	S
Multiple modes	**24.7**	**.8**	**47.0**	**.8**	**S**	**S**	**11.9**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	21.6
Truck and rail	30.7	.4	34.8	.5	39.3	1.5	4.6
Truck and water	S	S	S	S	S	S	25.9
Rail and water	S	S	S	S	S	S	31.6
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**34.4**	**2.1**	**S**	**S**	**36.5**	**.9**	**38.5**
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**17.8**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**18.0**
Truck	S	S	S	S	S	S	18.0
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	S	S	17.7
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**	**23.9**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	29.8
Truck and rail	S	S	S	S	S	S	39.6
Truck and water	S	S	S	S	S	S	29.8
Rail and water	S	S	S	S	S	S	31.6
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	**29.8**	**–**	**32.3**	**–**	**36.9**	**–**	**S**
Single modes	**30.2**	**.5**	**32.5**	**.6**	**37.7**	**2.0**	**S**
Truck	30.5	1.9	33.2	2.4	38.4	2.3	S
For-hire truck	40.8	6.7	30.3	5.6	35.5	8.5	27.9
Private truck	35.5	6.7	38.3	6.8	S	S	23.9
Rail	S	S	S	S	S	S	31.6
Water	S	S	S	S	S	S	31.6
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	S	S	S	S	S	S	26.3
Pipeline	–	–	–	–	S	S	S
Multiple modes	**33.9**	**.2**	**43.6**	**.1**	**S**	**S**	**27.4**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	41.0
Truck and rail	–	–	–	–	–	–	–
Truck and water	41.2	.1	46.7	.1	S	S	18.0
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**39.8**	**.4**	**S**	**S**	**47.5**	**1.5**	**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 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	**28.5**	**–**	**37.2**	**–**	**22.4**	**–**	**45.6**
Single modes	**28.7**	**.4**	**37.4**	**.4**	**22.7**	**1.0**	**47.7**
Truck	28.8	.6	38.6	3.1	26.5	5.5	47.9
For-hire truck	42.7	9.0	29.8	10.3	30.3	7.0	19.8
Private truck	46.7	8.9	S	S	S	S	21.1
Rail	39.1	.5	37.5	3.0	39.9	5.0	21.4
Water	S	S	S	S	S	S	31.6
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	–	–	–	–	S	S	S
Multiple modes	**24.3**	**.4**	**21.8**	**.3**	**23.2**	**.9**	**38.9**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	29.1
Truck and rail	38.0	.3	32.8	.2	32.1	.6	18.9
Truck and water	S	S	S	S	S	S	23.6
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	**15.5**	**–**	**15.1**	**–**	**20.7**	**–**	**22.5**
Single modes	**15.5**	**1.7**	**15.8**	**2.2**	**20.8**	**5.0**	**24.3**
Truck	16.0	1.7	16.3	2.3	24.0	6.1	24.3
For-hire truck	12.3	4.9	11.5	5.1	25.5	5.7	15.6
Private truck	26.4	5.1	27.6	5.6	27.9	3.3	19.5
Rail	21.7	.6	26.4	.8	29.2	4.1	12.6
Water	S	S	S	S	S	S	28.8
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	28.8
Air (includes truck and air)	S	S	S	S	S	S	24.1
Pipeline	S	S	S	S	S	S	S
Multiple modes	**42.3**	**1.8**	**S**	**S**	**S**	**S**	**S**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	S	S	S	S	S	S	7.5
Truck and water	26.5	–	36.5	–	36.4	.5	.8
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 08, ALCOHOLIC BEVERAGES							
Total	**13.0**	**–**	**10.5**	**–**	**16.1**	**–**	**22.9**
Single modes	**12.8**	**1.1**	**11.0**	**1.1**	**17.9**	**3.6**	**34.2**
Truck	14.6	3.7	13.6	4.7	21.3	9.1	34.9
For-hire truck	20.7	6.1	20.0	5.6	23.5	8.8	S
Private truck	21.2	6.3	20.5	6.6	18.0	1.9	37.6
Rail	S	S	S	S	S	S	23.2
Water	S	S	S	S	S	S	29.8
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	29.8
Air (includes truck and air)	S	S	S	S	S	S	26.3
Pipeline	S	S	S	S	S	S	S
Multiple modes	**26.0**	**1.1**	**26.0**	**1.2**	**27.0**	**3.3**	**35.0**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	25.6
Truck and rail	24.9	1.0	30.5	1.2	31.3	3.5	12.1
Truck and water	27.2	–	36.0	–	35.5	.6	1.5
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**26.8**

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	**40.4**	**–**	**S**	**S**	**S**	**S**	**27.1**
Single modes	**40.4**	**–**	**S**	**S**	**S**	**S**	**27.1**
Truck	40.4	–	S	S	S	S	27.1
For-hire truck	–	–	–	–	–	–	–
Private truck	40.4	–	S	S	S	S	27.1
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 10, MONUMENTAL OR BUILDING STONE							
Total	**S**	**S**	**S**	**S**	**S**	**S**	**27.1**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**27.1**
Truck	S	S	S	S	48.4	15.2	27.7
For-hire truck	–	–	–	–	–	–	–
Private truck	S	S	S	S	48.4	15.2	27.7
Rail	–	–	–	–	–	–	–
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)	–	–	–	–	–	–	–
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 11, NATURAL SANDS							
Total	**37.4**	**–**	**41.2**	**–**	**47.0**	**–**	**10.8**
Single modes	**37.4**	**.4**	**41.3**	**.4**	**47.0**	**–**	**10.7**
Truck	37.4	.4	41.3	.4	47.0	–	10.7
For-hire truck	41.6	7.2	S	S	48.6	8.0	11.3
Private truck	39.8	7.2	23.3	9.3	48.7	7.9	18.8
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**42.6**

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	**14.8**	**–**	**22.5**	**–**	**25.7**	**–**	**49.2**
Single modes	**15.1**	**3.0**	**23.4**	**2.9**	**26.4**	**2.7**	**20.0**
Truck	16.5	3.7	25.1	3.9	24.2	10.8	18.7
For-hire truck	27.4	7.9	33.9	8.9	30.4	7.7	33.6
Private truck	21.1	8.2	31.0	9.2	34.4	11.9	15.1
Rail	S	S	S	S	S	S	27.2
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)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	**29.1**	**–**	**33.1**	**–**	**33.2**	**–**	**S**
Single modes	**29.1**	**5.0**	**33.7**	**8.5**	**32.5**	**10.0**	**S**
Truck	34.7	10.6	45.9	12.3	27.5	13.5	S
For-hire truck	44.8	10.7	47.5	10.6	S	S	34.3
Private truck	26.3	12.4	S	S	34.5	14.2	S
Rail	46.8	10.2	48.1	10.2	42.4	14.4	26.3
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	**45.4**	**1.6**	**S**	**S**	**S**	**S**	**S**
Parcel, U.S. Postal Service or courier	S	S	S	S	49.3	–	49.2
Truck and rail	S	S	S	S	S	S	26.1
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**	**S**	**S**	**34.6**
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	**32.4**	**–**	**36.6**	**–**	**36.8**	**–**	**23.3**
Single modes	**32.9**	**4.1**	**36.6**	**.3**	**36.9**	**5.7**	**S**
Truck	32.9	4.1	36.6	.3	36.9	5.7	S
For-hire truck	36.3	9.7	36.7	10.5	37.3	10.4	S
Private truck	S	S	S	S	S	S	30.4
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**34.8**	**4.1**	**34.0**	**.3**	**37.6**	**5.7**	**24.6**
Parcel, U.S. Postal Service or courier	34.8	4.1	34.0	.3	37.6	5.7	24.6
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 15, COAL							
Total	–	–	–	–	–	–	–
Single modes	–	–	–	–	–	–	–
Truck	–	–	–	–	–	–	–
For-hire truck	–	–	–	–	–	–	–
Private truck	–	–	–	–	–	–	–
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	–	–	–	–	–	–	–
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	–	–	–	–	–	–	–
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	**11.6**	**–**	**10.2**	**–**	**22.0**	**–**	**47.8**
Single modes	**11.8**	**.9**	**10.5**	**.8**	**22.3**	**2.6**	**47.8**
Truck	11.0	5.1	11.3	5.2	19.5	9.4	49.5
For-hire truck	19.1	3.3	17.8	3.0	24.1	6.0	20.7
Private truck	15.0	4.4	16.2	4.8	28.2	6.2	28.6
Rail	–	–	–	–	–	–	–
Water	S	S	S	S	S	S	29.8
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	29.8
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	20.2	5.1	18.9	5.5	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**29.8**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	S	S	S	S	S	S	29.8
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 18, FUEL OILS							
Total	**19.8**	**–**	**20.2**	**–**	**37.8**	**–**	**S**
Single modes	**20.5**	**2.2**	**20.8**	**2.0**	**38.1**	**.8**	**S**
Truck	23.5	7.1	24.8	7.1	29.8	11.8	S
For-hire truck	19.4	5.5	19.8	4.8	36.3	9.8	20.6
Private truck	36.6	5.5	37.0	5.3	40.8	8.6	S
Rail	–	–	–	–	–	–	–
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.0
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	29.9	8.7	30.9	9.3	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**	**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 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	**23.8**	**–**	**24.1**	**–**	**28.4**	**–**	**S**
Single modes	**25.8**	**5.4**	**23.9**	**2.8**	**25.3**	**5.0**	**S**
Truck	27.9	7.8	23.6	7.1	38.6	8.1	S
For-hire truck	40.1	7.3	31.5	8.9	S	S	S
Private truck	28.1	10.7	32.9	12.2	31.1	9.2	14.0
Rail	S	S	S	S	33.1	9.5	30.0
Water	S	S	S	S	S	S	30.8
Shallow draft	S	S	S	S	S	S	30.0
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	29.8
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	S	S	S	S	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**27.1**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	29.2
Truck and rail	S	S	S	S	S	S	27.8
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 20, BASIC CHEMICALS							
Total	**22.4**	**–**	**21.1**	**–**	**32.6**	**–**	**29.9**
Single modes	**21.8**	**4.3**	**21.3**	**.9**	**33.1**	**4.6**	**S**
Truck	21.8	4.2	22.3	4.8	30.4	10.7	S
For-hire truck	39.4	9.6	33.1	10.5	S	S	22.1
Private truck	28.1	10.2	27.5	10.6	41.9	10.6	S
Rail	43.0	1.2	S	S	S	S	26.5
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	23.9
Pipeline	S	S	S	S	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**29.4**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	21.5
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	31.2
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**45.2**	**.7**	**S**	**S**	**S**
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	**7.3**	**–**	**17.2**	**–**	**20.7**	**–**	**10.3**
Single modes	**17.7**	**8.1**	**20.3**	**6.2**	**21.9**	**4.2**	**21.7**
Truck	17.3	6.3	20.5	6.4	23.2	4.9	31.0
For-hire truck	22.8	5.9	17.9	5.8	24.5	4.9	39.8
Private truck	22.4	1.9	39.0	5.2	32.8	2.2	S
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	38.8	5.0	23.2	.6	22.0	1.4	5.2
Pipeline	–	–	–	–	S	S	S
Multiple modes	**17.5**	**7.8**	**20.0**	**5.9**	**33.8**	**4.1**	**11.9**
Parcel, U.S. Postal Service or courier	17.5	7.8	20.2	6.0	34.4	4.2	11.9
Truck and rail	–	–	–	–	–	–	–
Truck and water	S	S	S	S	S	S	31.6
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**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 22, FERTILIZERS							
Total	**S**	**S**	**S**	**S**	**38.5**	**–**	**S**
Single modes	**S**	**S**	**S**	**S**	**38.6**	**1.4**	**S**
Truck	S	S	S	S	32.2	9.0	S
For-hire truck	49.9	12.9	S	S	49.5	12.7	39.9
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	26.1
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	**15.8**	**–**	**18.3**	**–**	**33.4**	**–**	**26.1**
Single modes	**16.4**	**3.5**	**18.6**	**.8**	**35.8**	**4.6**	**S**
Truck	16.8	4.4	19.5	2.7	42.3	8.7	S
For-hire truck	24.9	7.8	45.1	9.2	S	S	19.2
Private truck	22.9	8.2	27.5	9.4	S	S	S
Rail	S	S	S	S	S	S	21.1
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	34.5	–	S	S	S	S	20.6
Pipeline	–	–	–	–	S	S	S
Multiple modes	**35.3**	**3.2**	**32.4**	**.5**	**40.7**	**2.4**	**14.0**
Parcel, U.S. Postal Service or courier	34.4	3.0	29.2	.3	47.6	.6	14.1
Truck and rail	S	S	S	S	S	S	24.7
Truck and water	S	S	S	S	S	S	27.9
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**47.8**	**.7**	**S**	**S**	**S**
SCTG 24, PLASTICS AND RUBBER							
Total	**16.2**	**–**	**33.6**	**–**	**42.8**	**–**	**12.6**
Single modes	**19.5**	**3.4**	**32.6**	**2.8**	**38.9**	**4.6**	**16.7**
Truck	20.1	3.7	24.9	6.2	29.3	8.0	22.3
For-hire truck	28.6	5.3	24.6	6.3	30.6	7.6	15.5
Private truck	19.8	3.7	30.7	5.2	28.0	2.2	21.7
Rail	S	S	S	S	S	S	29.5
Water	S	S	S	S	S	S	31.6
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	48.1	1.6	S	S	S	S	10.2
Pipeline	–	–	–	–	S	S	S
Multiple modes	**15.0**	**3.2**	**21.4**	**1.7**	**28.4**	**4.9**	**14.3**
Parcel, U.S. Postal Service or courier	14.8	3.1	15.4	1.4	29.8	4.5	14.3
Truck and rail	S	S	S	S	S	S	27.9
Truck and water	S	S	S	S	S	S	18.0
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**30.8**	**1.7**	**S**	**S**	**S**	**S**	**31.7**

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**	**29.2**
Single modes	**S**	**S**	**S**	**S**	**S**	**S**	**29.1**
Truck	S	S	S	S	S	S	29.2
For-hire truck	S	S	S	S	S	S	33.8
Private truck	S	S	S	S	S	S	28.6
Rail	S	S	S	S	S	S	31.6
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	–	–	–	–	–	–	–
Pipeline	–	–	–	–	S	S	S
Multiple modes	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**31.6**
SCTG 26, WOOD PRODUCTS							
Total	**12.1**	**–**	**14.0**	**–**	**13.9**	**–**	**27.1**
Single modes	**13.3**	**3.9**	**14.0**	**.5**	**13.7**	**1.7**	**25.7**
Truck	13.5	4.2	14.1	.8	17.5	3.9	26.4
For-hire truck	20.9	6.1	20.6	6.8	24.4	6.3	15.4
Private truck	22.9	6.5	25.8	6.7	34.9	5.0	12.3
Rail	20.1	.4	20.6	.7	16.0	3.5	48.8
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)	S	S	S	S	S	S	28.7
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**31.4**	**.3**	**29.4**	**1.6**	**14.1**
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	16.0
Truck and rail	46.5	.3	40.0	.2	44.9	1.4	21.9
Truck and water	S	S	S	S	S	S	22.9
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**33.8**	**.9**	**41.2**	**.4**	**42.3**	**.5**	**S**
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	**25.7**	**–**	**28.4**	**–**	**30.5**	**–**	**19.7**
Single modes	**26.7**	**3.0**	**29.0**	**4.9**	**29.5**	**8.2**	**22.4**
Truck	27.0	3.3	25.0	5.1	29.1	8.8	22.9
For-hire truck	36.8	6.6	29.8	7.3	30.9	9.3	18.8
Private truck	24.9	6.7	28.3	5.0	31.3	1.7	12.1
Rail	S	S	S	S	S	S	32.3
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	35.3
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**44.1**
Parcel, U.S. Postal Service or courier	S	S	49.3	–	46.9	–	S
Truck and rail	S	S	S	S	S	S	28.4
Truck and water	S	S	S	S	S	S	31.6
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**38.9**	**5.0**	**39.9**	**7.9**	**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	**18.4**	**–**	**15.7**	**–**	**27.3**	**–**	**40.6**
Single modes	**20.6**	**5.0**	**16.1**	**1.9**	**29.3**	**5.0**	**30.4**
Truck	20.7	5.0	16.1	1.9	30.2	4.9	23.6
For-hire truck	30.2	6.8	21.8	5.8	33.7	5.9	34.2
Private truck	19.9	6.3	21.8	5.8	19.7	3.8	31.9
Rail	40.8	.1	43.3	.1	S	S	28.6
Water	S	S	S	S	S	S	29.8
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	29.8
Air (includes truck and air)	40.2	.1	41.5	–	39.0	–	19.4
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**33.6**	**.3**	**36.1**	**1.8**	**17.0**
Parcel, U.S. Postal Service or courier	S	S	41.3	.1	S	S	17.3
Truck and rail	S	S	S	S	S	S	29.9
Truck and water	41.5	.2	43.7	.1	43.8	1.4	21.1
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**39.6**	**1.7**	**S**	**S**	**S**
SCTG 29, PRINTED PRODUCTS							
Total	**14.1**	**–**	**26.5**	**–**	**22.9**	**–**	**12.4**
Single modes	**13.1**	**5.2**	**29.4**	**2.5**	**19.2**	**5.8**	**19.6**
Truck	13.7	5.2	30.2	2.9	18.8	7.4	30.3
For-hire truck	11.9	4.7	17.1	4.5	20.7	5.6	15.9
Private truck	22.4	6.1	46.4	6.6	41.0	3.8	S
Rail	S	S	S	S	S	S	28.1
Water	S	S	S	S	S	S	28.6
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	28.6
Air (includes truck and air)	40.5	.3	43.3	.2	41.2	1.3	10.5
Pipeline	–	–	–	–	S	S	S
Multiple modes	**40.3**	**5.8**	**48.0**	**2.3**	**S**	**S**	**14.4**
Parcel, U.S. Postal Service or courier	38.0	5.4	38.4	1.7	38.0	2.4	14.4
Truck and rail	–	–	–	–	–	–	–
Truck and water	S	S	S	S	S	S	23.6
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**27.0**	**1.3**	**24.6**	**1.0**	**S**	**S**	**S**
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	**23.3**	**–**	**14.6**	**–**	**19.3**	**–**	**5.5**
Single modes	**28.2**	**6.3**	**16.7**	**2.8**	**21.6**	**3.5**	**10.5**
Truck	28.4	6.4	16.7	2.9	21.6	3.6	11.1
For-hire truck	33.2	7.3	18.1	5.4	23.2	5.1	6.2
Private truck	31.0	4.9	32.3	5.5	S	S	24.6
Rail	S	S	S	S	S	S	28.1
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)	35.9	.3	37.5	.1	33.7	.1	6.1
Pipeline	–	–	–	–	S	S	S
Multiple modes	**16.6**	**6.3**	**14.0**	**2.1**	**15.4**	**3.8**	**6.0**
Parcel, U.S. Postal Service or courier	17.0	6.3	14.6	2.1	16.1	3.7	6.0
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	41.9	.1	38.3	–	42.7	.2	17.2
Rail and water	–	–	–	–	–	–	–
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	**30.1**	**2.5**	**40.6**	**2.5**	**46.6**	**1.5**	**30.5**

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 31, NONMETALLIC MINERAL PRODUCTS							
Total	**22.2**	**–**	**24.6**	**–**	**45.4**	**–**	**28.7**
Single modes	**23.6**	**3.8**	**25.4**	**2.5**	**46.3**	**2.7**	**35.4**
Truck	23.7	3.9	25.3	2.5	47.2	3.6	35.6
For-hire truck	37.4	6.9	49.1	8.0	31.1	9.9	40.7
Private truck	32.9	7.9	28.9	9.5	S	S	36.6
Rail	47.9	.5	S	S	S	S	S
Water	S	S	S	S	S	S	31.6
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	S	S	S	S	S	S	28.6
Pipeline	–	–	–	–	S	S	S
Multiple modes	**48.2**	**3.5**	**34.8**	**–**	**32.5**	**.9**	**7.9**
Parcel, U.S. Postal Service or courier	48.9	3.5	44.0	–	45.8	.9	7.9
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	38.3	–	38.4	.2	18.3
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**31.3**	**2.1**	**36.7**	**2.5**	**39.7**	**2.7**	**26.0**
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	**23.1**	**–**	**22.5**	**–**	**30.0**	**–**	**28.6**
Single modes	**21.7**	**2.9**	**21.6**	**2.1**	**28.9**	**3.7**	**36.1**
Truck	21.3	3.1	19.8	3.8	27.4	5.6	38.0
For-hire truck	22.6	2.0	18.5	3.8	31.5	4.9	26.5
Private truck	22.7	3.4	22.3	3.4	24.4	3.0	S
Rail	48.4	.6	S	S	S	S	30.8
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)	36.9	.3	S	S	S	S	18.3
Pipeline	S	S	S	S	S	S	S
Multiple modes	**43.9**	**1.4**	**S**	**S**	**S**	**S**	**27.4**
Parcel, U.S. Postal Service or courier	47.0	1.5	S	S	49.6	.6	27.5
Truck and rail	S	S	S	S	S	S	28.0
Truck and water	S	S	44.6	–	45.2	.4	23.6
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**45.7**	**1.6**	**S**	**S**	**S**	**S**	**S**
SCTG 33, ARTICLES OF BASE METAL							
Total	**11.3**	**–**	**16.4**	**–**	**21.4**	**–**	**14.4**
Single modes	**14.0**	**4.8**	**16.9**	**1.8**	**23.3**	**6.5**	**21.4**
Truck	14.9	5.2	17.4	4.0	27.5	8.4	23.5
For-hire truck	19.6	5.4	16.4	4.4	28.6	7.5	15.0
Private truck	19.6	5.2	24.7	5.7	36.3	5.4	36.6
Rail	35.5	2.3	44.2	4.2	40.9	7.8	29.7
Water	S	S	S	S	S	S	27.9
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	27.9
Air (includes truck and air)	44.4	.5	S	S	S	S	19.7
Pipeline	S	S	S	S	S	S	S
Multiple modes	**21.5**	**4.8**	**28.9**	**.6**	**41.3**	**1.8**	**15.8**
Parcel, U.S. Postal Service or courier	21.5	4.8	21.8	.6	29.3	1.8	15.8
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	21.1
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**28.3**	**.9**	**28.3**	**1.5**	**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	**18.2**	**–**	**19.3**	**–**	**33.3**	**–**	**21.6**
Single modes	**15.2**	**2.9**	**18.9**	**2.4**	**33.9**	**4.6**	**37.7**
Truck	14.5	3.5	19.1	2.8	32.2	4.5	39.6
For-hire truck	23.2	4.7	19.9	7.1	33.4	4.8	17.2
Private truck	17.2	5.8	29.3	7.8	34.6	4.5	S
Rail	S	S	S	S	S	S	S
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	8.8
Pipeline	S	S	S	S	S	S	S
Multiple modes	**32.9**	**2.2**	**38.4**	**2.2**	**43.9**	**4.8**	**11.2**
Parcel, U.S. Postal Service or courier	31.3	2.0	38.5	2.1	40.9	4.4	11.2
Truck and rail	S	S	S	S	S	S	27.9
Truck and water	S	S	S	S	S	S	23.6
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**40.7**	**1.0**	**39.6**	**.8**	**44.4**	**.6**	**48.1**
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	**11.9**	**–**	**24.5**	**–**	**10.7**	**–**	**12.5**
Single modes	**18.3**	**4.6**	**28.1**	**4.6**	**14.3**	**5.0**	**35.8**
Truck	21.7	4.9	28.9	5.0	14.7	4.9	37.2
For-hire truck	29.9	5.0	21.3	5.4	16.1	4.4	13.3
Private truck	17.4	2.4	45.5	8.2	35.6	2.9	S
Rail	48.8	.3	S	S	S	S	26.4
Water	S	S	S	S	S	S	31.9
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	31.7
Air (includes truck and air)	29.1	3.4	28.5	.6	34.3	2.2	5.1
Pipeline	–	–	–	–	S	S	S
Multiple modes	**15.1**	**4.8**	**23.1**	**4.1**	**23.8**	**4.5**	**8.2**
Parcel, U.S. Postal Service or courier	15.1	4.7	23.6	4.0	24.6	4.4	8.2
Truck and rail	S	S	S	S	S	S	30.6
Truck and water	S	S	S	S	S	S	21.2
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**25.8**	**1.0**	**37.5**	**1.8**	**30.1**	**1.6**	**26.7**
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	**32.1**	**–**	**S**	**S**	**23.6**	**–**	**24.0**
Single modes	**46.8**	**9.7**	**S**	**S**	**26.2**	**5.4**	**30.0**
Truck	48.0	9.8	S	S	26.8	5.5	S
For-hire truck	18.7	7.0	25.7	9.4	32.8	10.5	17.4
Private truck	S	S	S	S	32.1	8.7	46.2
Rail	S	S	S	S	S	S	31.6
Water	S	S	S	S	S	S	31.6
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	S	S	48.8	.2	S	S	14.5
Pipeline	–	–	–	–	S	S	S
Multiple modes	**23.8**	**4.8**	**25.6**	**1.4**	**26.7**	**2.6**	**14.4**
Parcel, U.S. Postal Service or courier	23.6	4.7	25.8	1.3	20.7	1.3	14.4
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	–	–	–	–	–	–	–
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 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	**16.8**	**–**	**39.9**	**–**	**49.1**	**–**	**10.4**
Single modes	**24.4**	**8.4**	**47.8**	**10.0**	**S**	**S**	**12.4**
Truck	30.6	6.1	50.0	10.5	S	S	18.3
For-hire truck	38.9	5.7	S	S	S	S	15.8
Private truck	43.6	4.4	S	S	S	S	31.1
Rail	–	–	–	–	–	–	–
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	29.0	5.6	31.8	3.5	36.8	6.5	7.7
Pipeline	S	S	S	S	S	S	S
Multiple modes	**29.7**	**7.9**	**34.1**	**11.7**	**45.0**	**10.6**	**14.5**
Parcel, U.S. Postal Service or courier	29.7	7.9	34.1	11.7	45.0	10.6	14.5
Truck and rail	–	–	–	–	–	–	–
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**30.4**
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	**19.4**	**–**	**34.7**	**–**	**18.3**	**–**	**16.8**
Single modes	**18.6**	**7.6**	**40.9**	**11.4**	**24.5**	**9.0**	**13.1**
Truck	24.1	8.7	42.8	12.9	30.3	10.8	17.2
For-hire truck	30.0	8.5	49.4	13.3	31.0	11.1	14.5
Private truck	34.4	1.1	S	S	S	S	42.3
Rail	–	–	–	–	–	–	–
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	35.7	3.6	40.3	3.2	42.6	5.5	8.4
Pipeline	–	–	–	–	S	S	S
Multiple modes	**27.9**	**8.1**	**28.0**	**11.0**	**24.9**	**9.2**	**27.4**
Parcel, U.S. Postal Service or courier	27.9	8.1	28.4	11.0	25.3	9.3	27.4
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	**27.0**	**.8**	**41.8**	**1.2**	**S**	**S**	**26.3**
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	**28.9**	**–**	**30.2**	**–**	**24.2**	**–**	**37.0**
Single modes	**30.9**	**5.8**	**31.3**	**1.7**	**22.1**	**5.2**	**35.9**
Truck	31.0	6.2	31.3	2.0	22.8	5.4	36.7
For-hire truck	33.6	8.4	S	S	27.6	6.3	19.6
Private truck	31.2	7.3	35.1	8.3	34.3	4.3	32.9
Rail	S	S	S	S	S	S	28.2
Water	S	S	S	S	S	S	29.8
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	29.8
Air (includes truck and air)	S	S	S	S	49.5	–	27.4
Pipeline	–	–	–	–	S	S	S
Multiple modes	**25.0**	**5.5**	**46.4**	**1.6**	**S**	**S**	**30.4**
Parcel, U.S. Postal Service or courier	33.7	5.6	34.7	1.6	44.4	.8	30.9
Truck and rail	S	S	S	S	S	S	23.8
Truck and water	38.0	–	47.3	–	45.4	.2	21.4
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**S**	**S**	**S**	**S**	**S**

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	**20.0**	**–**	**25.8**	**–**	**35.5**	**–**	**9.8**
Single modes	**25.3**	**3.4**	**26.0**	**2.6**	**40.3**	**3.9**	**20.4**
Truck	27.2	4.4	26.1	2.7	40.0	4.2	25.5
For-hire truck	39.5	5.8	29.0	5.0	43.6	5.3	12.9
Private truck	23.6	4.7	40.8	6.9	46.5	2.8	17.1
Rail	S	S	S	S	S	S	25.2
Water	S	S	S	S	S	S	29.8
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	29.8
Air (includes truck and air)	30.8	2.3	S	S	S	S	8.7
Pipeline	S	S	S	S	S	S	S
Multiple modes	**13.7**	**2.5**	**21.2**	**1.1**	**18.0**	**2.3**	**8.1**
Parcel, U.S. Postal Service or courier	13.7	2.5	21.5	1.1	18.0	2.3	8.1
Truck and rail	S	S	S	S	S	S	28.8
Truck and water	S	S	45.0	–	44.2	.1	21.2
Rail and water	–	–	–	–	–	–	–
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	**26.4**	**1.7**	**S**	**S**	**39.8**	**2.6**	**S**
SCTG 41, WASTE AND SCRAP							
Total	**23.0**	**–**	**35.5**	**–**	**33.3**	**–**	**S**
Single modes	**23.1**	**3.9**	**35.7**	**2.3**	**38.0**	**10.5**	**S**
Truck	27.3	10.5	35.8	8.3	40.6	15.2	S
For-hire truck	30.3	9.7	S	S	48.3	15.3	S
Private truck	35.4	10.3	S	S	S	S	S
Rail	S	S	S	S	S	S	31.8
Water	S	S	S	S	S	S	36.0
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	36.0
Air (includes truck and air)	S	S	S	S	S	S	26.0
Pipeline	–	–	–	–	S	S	S
Multiple modes	**S**	**S**	**S**	**S**	**S**	**S**	**24.0**
Parcel, U.S. Postal Service or courier	–	–	–	–	–	–	–
Truck and rail	S	S	S	S	S	S	24.0
Truck and water	–	–	–	–	–	–	–
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**S**	**S**	**47.3**	**.4**	**S**	**S**	**S**
SCTG 43, MIXED FREIGHT							
Total	**13.9**	**–**	**14.2**	**–**	**17.0**	**–**	**22.8**
Single modes	**14.8**	**1.9**	**14.2**	**.6**	**18.7**	**2.8**	**33.0**
Truck	14.7	2.1	14.3	1.2	12.1	5.1	38.1
For-hire truck	23.2	3.9	10.4	2.0	23.7	6.4	18.9
Private truck	17.0	4.6	17.0	2.6	14.0	6.2	S
Rail	S	S	S	S	S	S	29.8
Water	S	S	S	S	S	S	S
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	S	S	S	S	S	S	S
Air (includes truck and air)	S	S	S	S	S	S	20.6
Pipeline	S	S	S	S	S	S	S
Multiple modes	**23.6**	**1.1**	**19.6**	**.3**	**24.1**	**2.5**	**24.5**
Parcel, U.S. Postal Service or courier	26.0	1.0	21.5	.2	27.5	.5	24.5
Truck and rail	S	S	S	S	S	S	25.8
Truck and water	28.8	.1	27.9	.1	30.5	2.0	11.1
Rail and water	–	–	–	–	–	–	–
Other multiple modes	–	–	–	–	–	–	–
Other and unknown modes	**37.8**	**1.0**	**41.6**	**.4**	**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	**42.4**	**–**	**40.9**	**–**	**34.3**	**–**	**17.4**
Single modes	**24.4**	**10.4**	**41.9**	**7.1**	**37.5**	**11.1**	**25.8**
Truck	25.3	9.2	23.0	12.6	39.9	10.5	47.6
For-hire truck	46.8	3.5	25.6	8.8	46.0	9.5	21.2
Private truck	31.3	10.9	31.4	10.4	S	S	S
Rail	S	S	S	S	S	S	44.4
Water	–	–	–	–	–	–	–
Shallow draft	–	–	–	–	–	–	–
Great Lakes	–	–	–	–	–	–	–
Deep draft	–	–	–	–	–	–	–
Air (includes truck and air)	S	S	S	S	S	S	24.2
Pipeline	S	S	S	S	S	S	S
Multiple modes	**S**	**S**	**49.4**	**1.0**	**S**	**S**	**20.9**
Parcel, U.S. Postal Service or courier	S	S	31.7	.5	41.6	4.7	20.9
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**

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

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

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

State of destination	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	**4.0**	**–**	**9.6**	**–**	**5.8**	**–**
NEW ENGLAND STATES						
Connecticut	16.4	–	29.9	–	29.7	.2
Maine	27.9	–	49.2	–	48.9	.1
Massachusetts	18.2	.1	23.6	–	23.7	.4
New Hampshire	43.2	.1	S	S	S	S
Rhode Island	29.9	–	24.8	–	24.6	–
Vermont	25.7	–	43.1	–	42.9	–
MIDDLE ATLANTIC STATES						
New Jersey	17.5	.2	22.1	–	22.5	.5
New York	8.5	.1	27.1	–	26.5	.6
Pennsylvania	13.7	.2	12.2	–	12.8	.4
EAST NORTH CENTRAL STATES						
Illinois	23.2	.6	40.4	.2	39.3	1.5
Indiana	32.0	.3	16.3	–	15.6	.3
Michigan	15.0	.2	20.6	–	21.5	.8
Ohio	12.5	.2	26.5	–	26.7	.7
Wisconsin	22.8	.2	16.3	–	16.7	.2
WEST NORTH CENTRAL STATES						
Iowa	34.1	.1	24.0	–	23.9	.1
Kansas	20.5	–	48.4	–	46.5	.7
Minnesota	13.4	–	32.3	–	33.6	.4
Missouri	19.6	.1	35.6	–	34.3	.4
Nebraska	24.6	–	39.8	–	38.3	–
North Dakota	S	S	48.7	–	49.3	–
South Dakota	41.8	–	27.8	–	28.6	–
SOUTH ATLANTIC STATES						
Delaware	31.7	–	S	S	S	S
District of Columbia	S	S	35.7	–	36.3	–
Florida	10.0	.2	16.7	–	16.7	.4
Georgia	11.4	.1	14.8	–	15.5	.2
Maryland	20.5	.1	19.5	–	19.6	.3
North Carolina	8.6	–	15.8	–	15.9	.3
South Carolina	S	S	19.2	–	19.1	.1
Virginia	20.4	.2	15.1	–	16.6	.1
West Virginia	35.2	–	43.6	–	43.6	–
EAST SOUTH CENTRAL STATES						
Alabama	21.5	–	47.6	.1	46.3	.7
Kentucky	17.6	–	S	S	S	S
Mississippi	33.0	–	S	S	S	S
Tennessee	14.5	.1	17.3	–	17.9	.2
WEST SOUTH CENTRAL STATES						
Arkansas	S	S	48.8	–	47.4	.2
Louisiana	41.2	.2	S	S	S	S
Oklahoma	13.6	–	21.5	–	25.2	.2
Texas	28.7	1.3	12.4	.1	12.7	.5
MOUNTAIN STATES						
Arizona	5.3	.1	8.0	–	7.6	.2
Colorado	13.2	.1	16.4	–	15.0	.2
Idaho	13.3	–	39.0	–	39.5	.2
Montana	28.5	–	S	S	S	S
Nevada	22.4	.3	16.3	.2	16.0	.2
New Mexico	23.6	–	27.5	–	24.5	–
Utah	10.9	.1	18.0	–	17.4	.2
Wyoming	22.6	–	17.3	–	17.8	–
PACIFIC STATES						
Alaska	S	S	17.7	–	20.7	–
California	3.5	1.6	10.7	1.2	5.8	2.1
Hawaii	26.1	–	S	S	S	S
Oregon	34.2	.4	18.2	.2	24.0	1.0
Washington	14.4	.3	20.6	.1	21.6	.9

– 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	**2.9**	**–**	**8.6**	**–**	**16.6**	**–**
NEW ENGLAND STATES						
Connecticut	14.7	–	11.9	–	12.2	–
Maine	14.2	–	16.6	–	16.5	–
Massachusetts	10.2	–	21.3	–	21.6	.1
New Hampshire	22.6	–	25.3	–	25.8	–
Rhode Island	36.1	–	S	S	S	S
Vermont	28.2	–	28.3	–	27.9	–
MIDDLE ATLANTIC STATES						
New Jersey	10.4	.1	28.4	–	29.2	.3
New York	16.1	.3	24.2	–	37.7	1.0
Pennsylvania	12.7	.1	13.5	–	13.6	.3
EAST NORTH CENTRAL STATES						
Illinois	10.6	.2	12.7	–	12.7	.6
Indiana	18.9	.2	23.4	–	22.8	.8
Michigan	12.5	.1	13.1	–	13.4	.3
Ohio	16.6	.3	20.3	.1	21.0	1.0
Wisconsin	11.5	.1	11.0	–	10.9	.2
WEST NORTH CENTRAL STATES						
Iowa	29.7	.2	S	S	S	S
Kansas	15.0	–	9.1	–	8.8	.1
Minnesota	12.5	–	42.0	.2	40.1	1.4
Missouri	8.1	–	11.0	–	11.2	.3
Nebraska	10.0	–	30.3	.1	32.6	.7
North Dakota	19.8	–	40.9	–	41.4	.2
South Dakota	S	S	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	34.1	–	21.2	–	21.1	–
District of Columbia	42.1	–	S	S	S	S
Florida	7.3	–	15.0	–	15.3	.3
Georgia	17.5	.2	10.5	–	11.1	.3
Maryland	13.7	–	30.1	–	31.4	.2
North Carolina	16.7	.2	24.5	–	24.1	.5
South Carolina	7.9	–	16.7	–	16.9	.2
Virginia	31.2	.2	15.2	–	15.8	.2
West Virginia	22.7	–	45.8	–	45.6	.2
EAST SOUTH CENTRAL STATES						
Alabama	20.7	–	35.4	.1	38.2	.9
Kentucky	30.0	.2	24.0	–	27.3	.4
Mississippi	21.0	.1	49.3	.2	S	S
Tennessee	29.0	.6	21.2	–	20.7	.2
WEST SOUTH CENTRAL STATES						
Arkansas	39.0	.2	19.4	–	20.4	.4
Louisiana	13.3	–	11.7	–	23.2	.6
Oklahoma	9.5	–	14.8	–	15.3	.1
Texas	17.8	.5	17.2	.2	16.0	1.1
MOUNTAIN STATES						
Arizona	21.3	.4	15.8	–	17.7	.1
Colorado	31.8	.3	31.4	–	31.0	.4
Idaho	34.6	.2	14.6	–	15.5	.1
Montana	18.0	–	33.9	–	40.5	.4
Nevada	16.5	.2	26.4	.1	25.0	.2
New Mexico	17.4	–	25.0	–	23.1	–
Utah	27.4	.3	14.9	.2	15.4	.6
Wyoming	11.5	–	19.8	–	20.0	.1
PACIFIC STATES						
Alaska	44.6	–	S	S	S	S
California	3.5	1.3	10.7	3.0	5.8	1.8
Hawaii	23.1	–	S	S	S	S
Oregon	33.1	.6	13.0	.2	14.2	.5
Washington	15.3	.2	20.2	.2	20.0	.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.

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–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	**4.0**	**3.4**	**6.1**	**9.6**	**8.5**	**15.2**	**5.8**	**4.6**	**9.3**	**8.4**	**4.7**	**11.0**
Single modes	**4.8**	**4.5**	**7.7**	**9.9**	**8.7**	**15.8**	**4.9**	**3.1**	**8.0**	**23.5**	**10.5**	**37.3**
Truck	4.9	4.3	7.6	12.4	9.2	18.8	6.7	3.8	10.8	22.6	13.5	26.7
Rail	23.6	8.4	34.5	23.1	12.5	40.0	14.0	10.6	25.2	8.7	5.8	10.6
Water	43.0	S	S	39.2	S	S	S	S	S	13.2	14.5	26.9
Air (includes truck and air)	15.0	11.2	20.9	41.4	15.5	25.6	23.2	18.4	14.1	5.7	2.4	8.9
Pipeline	18.8	13.9	33.2	18.4	12.1	26.2	S	S	S	S	S	S
Multiple modes	**7.6**	**3.3**	**10.9**	**18.5**	**5.2**	**37.1**	**24.6**	**10.5**	**48.1**	**5.6**	**3.3**	**6.3**
Parcel, U.S. Postal Service or courier	7.5	3.9	11.4	9.8	5.3	12.5	13.5	8.1	16.7	5.6	3.4	6.3
Truck and rail	21.2	41.9	34.6	28.5	15.6	67.4	31.5	21.4	52.4	6.5	4.4	6.7
All other multiple modes	34.3	14.1	48.2	48.9	16.9	200.8	47.9	20.0	186.3	1.9	4.1	4.8
Other and unknown modes	**11.2**	**10.2**	**11.0**	**29.8**	**17.7**	**22.3**	**12.8**	**27.2**	**7.9**	**18.0**	**23.9**	**25.5**

– 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.

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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	**4.0**	**3.4**	**6.1**	**9.6**	**8.5**	**15.2**	**5.8**	**4.6**	**9.3**	**8.4**	**4.7**	**11.0**
01-05	Agricultural products and fish	18.8	5.6	25.9	33.8	13.1	51.2	22.6	11.2	54.3	41.9	24.4	65.2
06-09	Grains, alcohol, and tobacco products	11.7	4.5	14.0	10.5	9.4	13.5	12.8	8.4	18.2	18.5	21.4	34.6
10-14	Stones, nonmetallic minerals, and metallic ores	10.8	21.6	22.8	23.9	23.3	37.6	20.5	17.7	44.5	S	29.4	S
15-19	Coal and petroleum products	8.7	9.9	14.9	8.7	8.7	13.1	17.5	13.3	27.0	S	24.4	S
20-24	Basic chemicals, chemical, and pharmaceutical products	6.7	4.9	9.9	29.4	20.1	68.2	19.1	5.9	30.5	13.2	8.1	21.1
25-30	Logs, wood products, and textile and leather	15.3	7.1	19.0	12.6	11.5	12.5	8.4	8.7	9.4	6.5	6.9	9.3
31-34	Base metal and machinery	11.2	4.0	14.1	21.9	10.8	35.8	26.6	7.7	34.5	18.7	8.4	22.5
35-38	Electronic, motorized vehicles, and precision instruments	7.7	3.9	9.2	34.5	10.7	59.0	11.5	20.4	19.6	7.5	5.1	10.3
39-43	Furniture, mixed freight and misc. manufactured prod.	9.8	21.3	34.4	17.1	14.9	30.3	14.1	26.6	30.5	13.6	8.1	14.6
--	Commodity unknown	42.4	28.3	28.3	40.9	S	S	34.3	31.3	12.0	17.4	25.0	34.5

– Represents data cell equal to zero or less than 1 unit of measure.
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Appendix C. Sample Design, Data Collection, and Estimation

INTRODUCTION

The primary goal for the 2002 Commodity Flow Survey (CFS) is to estimate *shipping volumes* (value, tons, and ton-miles) by *commodity* and *mode of transportation* at varying levels of geographic detail. A secondary objective is to estimate the volume of shipments moving from one geographic area to another (i.e., flows of commodities between states, regions, etc.) by mode and commodity. A detailed description of the sample design for the 2002 CFS is provided below.

SAMPLE DESIGN

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

First Stage

Sampling frame

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

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

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

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

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

Stratification

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

Sample size and allocation

To reduce the sampling variability of the estimates, we used a stratified design with a certainty component. Within each primary stratum, a boundary (or cutoff) that divides the certainty establishments from the noncertainty establishments was determined using the 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.