

North Carolina: 2002

Issued December 2004

EC02TCF-NC

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

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

the local access plus line-haul links on this path provides the estimated distances used in CFS mileage computations. When rail and air freight were involved, these shipment distances were often averaged over more than one path between an origin-destination pair.

Mileage Data for Pipeline Shipments

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

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

EXPLANATION OF TERMS

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

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

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

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

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

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

For the 1997 and 2002 CFS, we made numerous efforts throughout our data collection and editing to produce consistent results from establishments shipping SCTG 29, Printed Products. As a result, we have included printed products in the average miles per shipment estimates for 1997 and 2002.

Distance shipped. In Table 3, shipment data are presented for various “distance shipped” intervals. Shipments were categorized into these “distance shipped” intervals based on the great circle distance between their origin and destination ZIP Code centroids. All other distance-related data in this and other tables (i.e., ton-miles and average miles per shipment) are based on the mileage calculations. (See the “Mileage Calculations” section for more details.)

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

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

Mode Definitions

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

1. **Parcel delivery/courier/U.S. Postal Service.** Delivery services that carry letters, parcels, packages, and other small shipments that typically weigh less than 100 pounds. Includes bus parcel delivery service.
2. **Private truck.** Trucks operated by a temporary or permanent employee of an establishment or the buyer/receiver of the shipment.
3. **For-hire truck.** Trucks that carry freight for a fee collected from the shipper, recipient of the shipment, or an arranger of the transportation.
4. **Railroad.** Any common carrier or private railroad.
5. **Shallow draft vessels.** Barges, ships, or ferries operating primarily on rivers and canals; in harbors, the Great Lakes, the Saint Lawrence Seaway; the Intra-coastal Waterway, the Inside Passage to Alaska, major bays and inlets; or in the ocean close to the shoreline.
6. **Deep draft vessel.** Barges, ships, or ferries operating primarily in the open ocean. Shipping on the Great Lakes and the Saint Lawrence Seaway is classified with shallow draft vessels.
7. **Pipeline.** Movements of oil, petroleum, gas, slurry, etc., through pipelines that extend to other establishments or locations beyond the shipper’s establishment. Aqueducts for the movement of water are not included.
8. **Air.** Commercial or private aircraft, and all air service for shipments that typically weigh more than 100 pounds. Includes air freight and air express.
9. **Other mode.** Any mode not listed above.
10. **Unknown.** The shipment was not carried by a parcel delivery/courier/U.S. Postal Service, and the respondent could not determine what mode of transportation was used.

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

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

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

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

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

Other Definitions and Terms

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

Standard Classification of Transported Goods (SCTG). The commodities shown in this report are classified using the SCTG coding system. The SCTG coding system was developed jointly by agencies of the United States and Canadian governments based on the Harmonized Commodity Description and Coding System (Harmonized System) to address statistical needs in regard to products transported. See Appendix D for more details.

Ton-miles. The shipment weight multiplied by the mileage traveled by the shipment. The respondents reported shipment weight in pounds. Aggregated pound-miles were converted to ton-miles. Mileage was calculated as the distance between the shipment origin and destination ZIP Codes. For shipments by truck, rail, or shallow draft vessels, the mileage excludes international segments. For example, mileages from Alaska to the continental United States exclude any mileages through Canada (see the "Mileage Calculations" section for more details). For trucks making multiple stops, the ton-miles are calculated for each delivery, and each drop-off point is treated as a final destination. Ton-miles estimates are displayed in millions.

Tons shipped. The total weight of the entire shipment. Respondents reported the weight in pounds. Aggregated pounds were converted to short-tons (2,000 pounds). For freight shipped to distribution centers for subsequent reshipment, the tonnage is counted each time the goods are transported.

Total modal activity (Table 2 only). The overall activity (e.g., ton-miles) of a specific mode of transportation, whether used in a single-mode shipment, or as part of a multiple-mode shipment. For example, the total modal activity for private truck is the total ton-miles carried by private truck in single-mode shipments, combined with the total ton-miles carried by private truck in all multiple-mode shipments that include private truck (private truck and for-hire truck, private truck and rail, private truck and air, etc.)

ABBREVIATIONS AND SYMBOLS

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

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

OTHER TRANSPORTATION DATA

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

Vehicle Inventory and Use Survey covers state and U.S. level statistics on the physical and operational characteristics of the nation's truck, van, minivan, and sport utility vehicle population. Some of the types of data collected include number of vehicles, major use, body type, annual miles, model year, vehicle size, fuel type, operator classification, engine size, range of operation, weeks operated, products carried, and hazardous materials carried. This survey shows comparative statistics reflecting percent changes in number of vehicles between 2002 and 1997 for most characteristics.

Service Annual Survey covers firms with paid employees that provide commercial motor freight transportation and public warehousing services. Data collected include operating revenue and operating revenue by source, percentage of motor carrier freight revenue by commodity type, size of shipments handled, length of haul, and vehicle fleet inventory.

For more information on any Census Bureau product, including a description of electronic and printed reports being issued, see the Web site or call Customer Services at 301-763-INFO (4636).

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

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

Mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Total	293 604	100.0	276 004	100.0	47 088	100.0	487
Single modes	270 923	92.3	266 387	96.5	45 933	97.5	259
Truck ²	264 443	90.1	241 308	87.4	39 049	82.9	250
For-hire truck	164 586	56.1	101 894	36.9	30 376	64.5	595
Private truck	98 966	33.7	133 901	48.5	8 322	17.7	70
Rail	2 772	.9	S	S	6 640	14.1	462
Water	S	S	S	S	S	S	59
Shallow draft	S	S	S	S	S	S	62
Great Lakes	S	S	S	S	S	S	—
Deep draft	S	S	S	S	S	S	3
Air (includes truck and air)	2 825	1.0	77	—	94	.2	1 222
Pipeline ³	S	S	S	S	S	S	S
Multiple modes	16 265	5.5	801	.3	695	1.5	783
Parcel, U.S. Postal Service or courier	15 846	5.4	662	.2	460	1.0	782
Truck and rail	332	.1	107	—	163	.3	1 733
Truck and water	87	—	31	—	S	S	4 969
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	6 416	2.2	8 816	3.2	460	1.0	76

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

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

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

³Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

Mode of transportation	Value (percent)		Tons (percent)		Ton-miles ¹ (percent)	
	2002	1997	2002	1997	2002	1997
Total	100.0	100.0	100.0	100.0	100.0	100.0
Single modes	92.3	90.8	96.5	98.6	97.5	96.1
Truck ²	90.1	87.3	87.4	92.9	82.9	83.4
For-hire truck	56.1	55.6	36.9	35.0	64.5	54.0
Private truck	33.7	30.6	48.5	54.5	17.7	28.5
Rail .....	.9	.9	S	4.5	14.1	11.9
Water	S	S	S	S	S	S
Shallow draft	S	S	S	S	S	S
Great Lakes	S	—	—	—	—	—
Deep draft	S	—	S	—	S	—
Air (includes truck and air)	1.0	2.4	—	—	.2	.2
Pipeline ³	S	.1	S	.5	S	S
Multiple modes	5.5	6.8	.3	.3	1.5	1.4
Parcel, U.S. Postal Service or courier	5.4	6.7	.2	.2	1.0	.7
Truck and rail .....	.1	.1	—	—	.3	.6
Truck and water	—	S	—	S	S	S
Rail and water	—	—	—	—	—	—
Other multiple modes	—	S	—	S	—	S
Other and unknown modes	2.2	2.4	3.2	1.1	1.0	2.5

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

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

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

³Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

Mode of transportation ¹	Ton-miles ²		Average miles per shipment
	2002 (millions)	Percent	
Total	47 088	100.0	487
Truck	39 049	82.9	250
Rail	6 640	14.1	462
Shallow draft	S	S	62
Great Lakes	-	-	-
Deep draft	S	S	3
Air	94	.2	1 222
Parcel, U.S. Postal Service or courier	S	S	S
Pipeline ³	S	S	S
Other and unknown modes	460	1.0	76

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

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

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

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

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

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

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

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

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

Mode of transportation and distance shipped ¹ (based on Great Circle Distance)	Value		Tons		Ton-miles ²	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Total	293 604	100.0	276 004	100.0	47 088	100.0
Less than 50 miles	76 620	26.1	160 607	58.2	3 347	7.1
50 to 99 miles	32 452	11.1	43 195	15.7	4 733	10.1
100 to 249 miles	52 064	17.7	32 890	11.9	6 384	13.6
250 to 499 miles	57 284	19.5	18 488	6.7	8 579	18.2
500 to 749 miles	39 510	13.5	11 867	4.3	9 092	19.3
750 to 999 miles	11 157	3.8	2 726	1.0	2 891	6.1
1,000 to 1,499 miles	8 903	3.0	3 129	1.1	4 292	9.1
1,500 to 1,999 miles	3 972	1.4	788	.3	1 641	3.5
2,000 miles or more	11 642	4.0	2 316	.8	6 129	13.0
Single modes	270 923	100.0	266 387	100.0	45 933	100.0
Less than 50 miles	72 273	26.7	152 757	57.3	3 260	7.1
50 to 99 miles	29 717	11.0	42 757	16.1	4 693	10.2
100 to 249 miles	48 876	18.0	32 448	12.2	6 291	13.7
250 to 499 miles	53 605	19.8	18 143	6.8	8 409	18.3
500 to 749 miles	35 287	13.0	11 598	4.4	8 891	19.4
750 to 999 miles	9 842	3.6	2 634	1.0	2 793	6.1
1,000 to 1,499 miles	7 797	2.9	3 089	1.2	4 238	9.2
1,500 to 1,999 miles	3 569	1.3	770	.3	1 604	3.5
2,000 miles or more	9 957	3.7	2 191	.8	5 753	12.5
Truck³	264 443	100.0	241 308	100.0	39 049	100.0
Less than 50 miles	71 336	27.0	147 499	61.1	3 081	7.9
50 to 99 miles	29 365	11.1	29 735	12.3	2 623	6.7
100 to 249 miles	48 258	18.2	29 990	12.4	5 699	14.6
250 to 499 miles	51 855	19.6	16 552	6.9	7 538	19.3
500 to 749 miles	33 856	12.8	9 601	4.0	7 028	18.0
750 to 999 miles	9 580	3.6	2 400	1.0	2 508	6.4
1,000 to 1,499 miles	7 455	2.8	2 699	1.1	3 572	9.1
1,500 to 1,999 miles	3 498	1.3	768	.3	1 600	4.1
2,000 miles or more	9 240	3.5	2 063	.9	5 400	13.8
For-hire truck	164 586	100.0	101 894	100.0	30 376	100.0
Less than 50 miles	22 759	13.8	41 883	41.1	1 213	4.0
50 to 99 miles	13 335	8.1	13 831	13.6	1 187	3.9
100 to 249 miles	28 490	17.3	16 826	16.5	3 279	10.8
250 to 499 miles	44 058	26.8	13 757	13.5	6 335	20.9
500 to 749 miles	28 613	17.4	8 369	8.2	6 136	20.2
750 to 999 miles	8 368	5.1	2 043	2.0	2 132	7.0
1,000 to 1,499 miles	6 363	3.9	2 374	2.3	3 135	10.3
1,500 to 1,999 miles	3 399	2.1	756	.7	1 578	5.2
2,000 miles or more	9 201	5.6	2 055	2.0	5 380	17.7
Private truck	98 966	100.0	133 901	100.0	8 322	100.0
Less than 50 miles	48 432	48.9	100 932	75.4	1 723	20.7
50 to 99 miles	15 940	16.1	15 733	11.8	1 419	17.0
100 to 249 miles	19 437	19.6	12 727	9.5	2 333	28.0
250 to 499 miles	7 598	7.7	2 619	2.0	1 128	13.5
500 to 749 miles	5 124	5.2	1 188	.9	864	10.4
750 to 999 miles	1 212	1.2	357	.3	376	4.5
1,000 to 1,499 miles	1 086	1.1	325	.2	436	5.2
1,500 to 1,999 miles	S	S	12	—	23	.3
2,000 miles or more	38	—	7	—	20	.2
Rail	2 772	100.0	S	S	6 640	100.0
Less than 50 miles	61	2.2	476	2.4	34	.5
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	455	16.4	2 428	12.0	585	8.8
250 to 499 miles	423	15.3	1 568	7.8	856	12.9
500 to 749 miles	S	S	1 986	9.8	1 851	27.9
750 to 999 miles	S	S	226	1.1	276	4.2
1,000 to 1,499 miles	S	S	372	1.8	634	9.5
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	153	5.5	S	S	S	S
Water	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
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	—	—	—	—	—	—
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	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—

See footnotes at end of table.

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

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

Mode of transportation and distance shipped ¹ (based on Great Circle Distance)	Value		Tons		Ton-miles ²	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Single modes—Con.						
Great Lakes	—	—	—	—	—	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Air (includes truck and air)	2 825	100.0	77	100.0	94	100.0
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	155	5.5	S	S	S	S
250 to 499 miles	1 327	47.0	23	30.2	15	15.9
500 to 749 miles	495	17.5	11	14.4	12	13.2
750 to 999 miles	101	3.6	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	71	2.5	S	S	S	S
2,000 miles or more	563	19.9	7	9.6	20	21.4
Pipeline⁴	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	—	—	—	—	S	S
750 to 999 miles	—	—	—	—	S	S
1,000 to 1,499 miles	—	—	—	—	S	S
1,500 to 1,999 miles	—	—	—	—	S	S
2,000 miles or more	—	—	—	—	S	S
Multiple modes	16 265	100.0	801	100.0	695	100.0
Less than 50 miles	1 482	9.1	58	7.3	2	.3
50 to 99 miles	1 665	10.2	83	10.4	8	1.1
100 to 249 miles	2 513	15.4	136	17.0	29	4.2
250 to 499 miles	3 163	19.4	197	24.6	102	14.7
500 to 749 miles	3 336	20.5	136	16.9	105	15.1
750 to 999 miles	1 097	6.7	41	5.1	45	6.4
1,000 to 1,499 miles	1 029	6.3	27	3.4	38	5.4
1,500 to 1,999 miles	370	2.3	15	1.8	31	4.4
2,000 miles or more	1 610	9.9	108	13.5	336	48.4
Parcel, U.S. Postal Service or courier	15 846	100.0	662	100.0	460	100.0
Less than 50 miles	1 482	9.4	58	8.8	2	.4
50 to 99 miles	1 665	10.5	83	12.5	8	1.7
100 to 249 miles	2 504	15.8	129	19.5	26	5.7
250 to 499 miles	3 113	19.6	129	19.5	63	13.7
500 to 749 miles	3 246	20.5	121	18.3	89	19.5
750 to 999 miles	1 045	6.6	37	5.6	40	8.6
1,000 to 1,499 miles	1 029	6.5	27	4.1	38	8.2
1,500 to 1,999 miles	366	2.3	15	2.2	30	6.6
2,000 miles or more	1 396	8.8	62	9.4	164	35.6
Truck and rail	332	100.0	107	100.0	163	100.0
Less than 50 miles	—	—	—	—	—	—
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	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	39	36.8	118	72.1
Truck and water	87	100.0	31	100.0	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	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

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	—	—	—	—	—	—
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	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—
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	—	—	—	—	—	—
Other and unknown modes	6 416	100.0	8 816	100.0	460	100.0
Less than 50 miles	2 865	44.7	7 792	88.4	84	18.3
50 to 99 miles	1 070	16.7	355	4.0	32	7.0
100 to 249 miles	676	10.5	306	3.5	64	13.9
250 to 499 miles	516	8.0	147	1.7	68	14.7
500 to 749 miles	886	13.8	133	1.5	96	21.0
750 to 999 miles	217	3.4	51	.6	53	11.6
1,000 to 1,499 miles	77	1.2	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	75	1.2	S	S	S	S

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

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

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

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

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

⁴Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Total	293 604	100.0	276 004	100.0	47 088	100.0	487
Less than 50 lb	17 344	5.9	570	.2	269	.6	601
50 to 99 lb	5 830	2.0	440	.2	146	.3	326
100 to 499 lb	22 408	7.6	2 710	1.0	945	2.0	367
500 to 749 lb	9 000	3.1	1 315	.5	381	.8	290
750 to 999 lb	7 381	2.5	1 184	.4	348	.7	295
1,000 to 9,999 lb	76 330	26.0	22 544	8.2	7 071	15.0	315
10,000 to 49,999 lb	142 967	48.7	166 383	60.3	27 297	58.0	179
50,000 to 99,999 lb	7 089	2.4	48 079	17.4	3 030	6.4	63
100,000 lb or more	5 254	1.8	32 780	11.9	7 601	16.1	255
Single modes	270 923	100.0	266 387	100.0	45 933	100.0	259
Less than 50 lb	6 892	2.5	244	—	50	.1	239
50 to 99 lb	3 182	1.2	300	.1	54	.1	181
100 to 499 lb	19 377	7.2	2 471	.9	800	1.7	334
500 to 749 lb	8 609	3.2	1 263	.5	370	.8	294
750 to 999 lb	7 003	2.6	1 152	.4	339	.7	295
1,000 to 9,999 lb	72 749	26.9	21 535	8.1	6 836	14.9	317
10,000 to 49,999 lb	141 042	52.1	161 061	60.5	26 879	58.5	183
50,000 to 99,999 lb	6 850	2.5	47 777	17.9	3 014	6.6	63
100,000 lb or more	5 219	1.9	30 585	11.5	7 591	16.5	266
Truck²	264 443	100.0	241 308	100.0	39 049	100.0	250
Less than 50 lb	6 261	2.4	239	.1	44	.1	217
50 to 99 lb	2 905	1.1	296	.1	51	.1	173
100 to 499 lb	18 394	7.0	2 404	1.0	780	2.0	331
500 to 749 lb	8 488	3.2	1 243	.5	365	.9	295
750 to 999 lb	6 899	2.6	1 102	.5	332	.9	303
1,000 to 9,999 lb	72 026	27.2	21 313	8.8	6 811	17.4	321
10,000 to 49,999 lb	140 768	53.2	161 007	66.7	26 797	68.6	182
50,000 to 99,999 lb	6 810	2.6	47 740	19.8	2 981	7.6	62
100,000 lb or more	1 892	.7	5 964	2.5	888	2.3	105
For-hire truck	164 586	100.0	101 894	100.0	30 376	100.0	595
Less than 50 lb	3 036	1.8	57	—	33	.1	601
50 to 99 lb	913	.6	54	—	35	.1	643
100 to 499 lb	11 735	7.1	1 019	1.0	662	2.2	680
500 to 749 lb	5 288	3.2	457	.4	297	1.0	644
750 to 999 lb	4 063	2.5	372	.4	267	.9	721
1,000 to 9,999 lb	45 573	27.7	8 747	8.6	5 515	18.2	674
10,000 to 49,999 lb	89 558	54.4	66 782	65.5	21 164	69.7	363
50,000 to 99,999 lb	2 839	1.7	21 609	21.2	1 829	6.0	82
100,000 lb or more	1 581	1.0	2 798	2.7	575	1.9	S
Private truck	98 966	100.0	133 901	100.0	8 322	100.0	70
Less than 50 lb	3 224	3.3	181	.1	11	.1	51
50 to 99 lb	1 989	2.0	242	.2	16	.2	69
100 to 499 lb	6 627	6.7	1 383	1.0	118	1.4	88
500 to 749 lb	3 168	3.2	784	.6	67	.8	88
750 to 999 lb	2 828	2.9	730	.5	65	.8	91
1,000 to 9,999 lb	26 350	26.6	12 531	9.4	1 293	15.5	100
10,000 to 49,999 lb	50 512	51.0	89 787	67.1	5 299	63.7	63
50,000 to 99,999 lb	3 958	4.0	25 095	18.7	1 139	13.7	46
100,000 lb or more	311	.3	3 167	2.4	313	3.8	71
Rail	2 772	100.0	S	S	6 640	100.0	462
Less than 50 lb	S	S	S	S	S	S	1 001
50 to 99 lb	S	S	S	S	S	S	1 018
100 to 499 lb	S	S	S	S	S	S	855
500 to 749 lb	S	S	S	S	S	S	851
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	489
10,000 to 49,999 lb	122	4.4	48	.2	74	1.1	1 820
50,000 to 99,999 lb	39	1.4	36	.2	S	S	1 024
100,000 lb or more	2 599	93.8	S	S	6 530	98.3	320
Water	S	S	S	S	S	S	59
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	59
Shallow draft	S	S	S	S	S	S	62
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	62

See footnotes at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Single modes—Con.							
Great Lakes	—	—	—	—	—	—	—
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Deep draft	\$	\$	\$	\$	\$	\$	3
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	\$	\$	\$	\$	\$	\$	3
Air (includes truck and air)	2 825	100.0	77	100.0	94	100.0	1 222
Less than 50 lb	630	22.3	5	6.1	5	5.5	1 196
50 to 99 lb	274	9.7	3	3.5	3	3.3	1 117
100 to 499 lb	949	33.6	13	17.5	19	19.7	1 515
500 to 749 lb	\$	\$	2	2.6	4	4.1	1 840
750 to 999 lb	81	2.9	\$	\$	\$	\$	1 078
1,000 to 9,999 lb	634	22.4	28	36.5	22	22.9	724
10,000 to 49,999 lb	\$	\$	\$	\$	\$	\$	1 727
50,000 to 99,999 lb	\$	\$	\$	\$	\$	\$	184
100,000 lb or more	\$	\$	\$	\$	\$	\$	1 811
Pipeline³	\$	\$	\$	\$	\$	\$	\$
Less than 50 lb	\$	\$	\$	\$	\$	\$	\$
50 to 99 lb	\$	\$	\$	\$	\$	\$	\$
100 to 499 lb	\$	\$	\$	\$	\$	\$	\$
500 to 749 lb	\$	\$	\$	\$	\$	\$	\$
750 to 999 lb	\$	\$	\$	\$	\$	\$	\$
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	\$
10,000 to 49,999 lb	\$	\$	\$	\$	\$	\$	\$
50,000 to 99,999 lb	\$	\$	\$	\$	\$	\$	\$
100,000 lb or more	\$	\$	\$	\$	\$	\$	\$
Multiple modes	16 265	100.0	801	100.0	695	100.0	783
Less than 50 lb	10 124	62.2	309	38.6	219	31.4	789
50 to 99 lb	2 591	15.9	131	16.4	91	13.0	666
100 to 499 lb	2 713	16.7	185	23.1	139	20.0	758
500 to 749 lb	229	1.4	26	3.3	7	1.0	\$
750 to 999 lb	208	1.3	11	1.4	6	.8	\$
1,000 to 9,999 lb	70	.4	\$	\$	\$	\$	4 885
10,000 to 49,999 lb	327	2.0	119	14.9	168	24.2	1 651
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	\$	\$	\$	\$	\$	\$	652
Parcel, U.S. Postal Service or courier	15 846	100.0	662	100.0	460	100.0	782
Less than 50 lb	10 124	63.9	309	46.7	219	47.6	789
50 to 99 lb	2 591	16.4	131	19.8	91	19.7	666
100 to 499 lb	2 711	17.1	185	27.9	139	30.2	757
500 to 749 lb	225	1.4	26	3.9	6	1.4	\$
750 to 999 lb	192	1.2	11	1.6	5	1.1	479
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	505
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	332	100.0	107	100.0	163	100.0	1 733
Less than 50 lb	\$	\$	\$	\$	\$	\$	716
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	\$	\$	\$	\$	\$	\$	2 357
500 to 749 lb	\$	\$	\$	\$	\$	\$	2 101
750 to 999 lb	\$	\$	\$	\$	\$	\$	2 313
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	2 497
10,000 to 49,999 lb	\$	\$	\$	\$	154	94.4	1 866
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	\$	\$	\$	\$	\$	\$	652
Truck and water	87	100.0	31	100.0	\$	\$	4 969
Less than 50 lb	\$	\$	\$	\$	\$	\$	5 191
50 to 99 lb	\$	\$	\$	\$	\$	\$	522
100 to 499 lb	\$	\$	\$	\$	\$	\$	3 241
500 to 749 lb	\$	\$	\$	\$	\$	\$	4 441
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	\$	\$	\$	\$	\$	\$	5 951
10,000 to 49,999 lb	\$	\$	\$	\$	14	19.5	759
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—

See footnotes at end of table.

Table 4. Shipment Characteristics by Mode of Transportation and Shipment 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	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
Other and unknown modes	6 416	100.0	8 816	100.0	460	100.0	76
Less than 50 lb	328	5.1	16	.2	1	.1	45
50 to 99 lb	56	.9	8	—	1	.2	S
100 to 499 lb	318	5.0	55	.6	5	1.1	S
500 to 749 lb	161	2.5	27	.3	4	.9	146
750 to 999 lb	S	S	21	.2	S	S	163
1,000 to 9,999 lb	3 511	54.7	996	11.3	174	37.8	193
10,000 to 49,999 lb	1 598	24.9	5 203	59.0	250	54.3	S
50,000 to 99,999 lb	239	3.7	S	S	16	3.5	S
100,000 lb or more	S	S	S	S	S	S	3

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

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

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

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

³Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

SCTG code	Commodity description	Value		Tons		Ton-miles ¹		Average miles per shipment
		2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
	Total²	293 604	100.0	276 004	100.0	47 088	100.0	487
01	Live animals and live fish	—	—	—	—	—	—	—
02	Cereal grains	S	S	S	S	S	S	39
03	Other agricultural products	2 694	.9	S	S	240	.5	57
04	Animal feed and products of animal origin, n.e.c.	1 403	.5	7 574	2.7	S	S	191
05	Meat, fish, seafood, and their preparations	6 751	2.3	4 748	1.7	2 532	5.4	S
06	Milled grain products and preparations, and bakery products	1 042	.4	S	S	316	.7	S
07	Other prepared foodstuffs and fats and oils	5 065	1.7	7 297	2.6	1 466	3.1	S
08	Alcoholic beverages	3 447	1.2	3 691	1.3	610	1.3	55
09	Tobacco products	19 366	6.6	S	S	145	.3	831
10	Monumental or building stone	S	S	S	S	S	S	186
11	Natural sands	186	—	25 238	9.1	1 715	3.6	61
12	Gravel and crushed stone	504	.2	57 442	20.8	1 668	3.5	21
13	Nonmetallic minerals n.e.c.	S	S	S	S	376	.8	418
14	Metallic ores and concentrates	359	.1	28	—	15	—	296
15	Coal	—	—	—	—	—	—	—
17	Gasoline and aviation turbine fuel	2 836	1.0	11 020	4.0	636	1.4	52
18	Fuel oils	1 617	.6	7 427	2.7	335	.7	24
19	Coal and petroleum products, n.e.c.	S	S	2 216	.8	S	S	S
20	Basic chemicals	4 840	1.6	5 161	1.9	828	1.8	S
21	Pharmaceutical products	28 167	9.6	2 173	.8	1 571	3.3	284
22	Fertilizers	S	S	S	S	S	S	729
23	Chemical products and preparations, n.e.c.	7 097	2.4	4 504	1.6	1 384	2.9	195
24	Plastics and rubber	S	S	6 132	2.2	S	S	542
25	Logs and other wood in the rough	S	S	S	S	S	S	S
26	Wood products	6 917	2.4	27 522	10.0	5 187	11.0	262
27	Pulp, newsprint, paper, and paperboard	3 854	1.3	5 222	1.9	2 260	4.8	291
28	Paper or paperboard articles	3 200	1.1	2 411	.9	676	1.4	192
29	Printed products	2 711	.9	428	.2	264	.6	823
30	Textiles, leather, and articles of textiles or leather	42 237	14.4	5 719	2.1	2 941	6.2	815
31	Nonmetallic mineral products	8 607	2.9	38 403	13.9	3 544	7.5	181
32	Base metal in primary or semifinished forms and in finished basic shapes	6 694	2.3	4 374	1.6	1 833	3.9	238
33	Articles of base metal	5 766	2.0	2 133	.8	920	2.0	538
34	Machinery	13 959	4.8	1 757	.6	1 126	2.4	259
35	Electronic and other electrical equipment and components and office equipment	20 113	6.9	1 448	.5	913	1.9	603
36	Motorized and other vehicles (including parts)	12 181	4.1	2 374	.9	1 188	2.5	211
37	Transportation equipment, n.e.c.	1 999	.7	S	S	S	S	1 203
38	Precision instruments and apparatus	2 234	.8	51	—	S	S	333
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	11 925	4.1	1 764	.6	1 022	2.2	660
40	Miscellaneous manufactured products	10 574	3.6	6 385	2.3	1 877	4.0	952
41	Waste and scrap	S	S	769	.3	97	.2	144
43	Mixed freight	35 466	12.1	15 609	5.7	2 125	4.5	203
--	Commodity unknown	616	.2	S	S	S	S	211

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

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

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

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

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

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

SCTG code	Commodity description	Value (percent)		Tons (percent)		Ton-miles ¹ (percent)	
		2002	1997	2002	1997	2002	1997
	Total²	100.0	100.0	100.0	100.0	100.0	100.0
01	Live animals and live fish	–	S	–	S	–	.2
02	Cereal grains	S	–	S	.8	S	.7
03	Other agricultural products .....	.9	1.6	S	1.4	.5	1.4
04	Animal feed and products of animal origin, n.e.c. ....	.5	.7	2.7	2.9	S	1.5
05	Meat, fish, seafood, and their preparations	2.3	2.0	1.7	1.1	5.4	2.3
06	Milled grain products and preparations, and bakery products .....	.4	.7	S	.6	.7	.7
07	Other prepared foodstuffs and fats and oils	1.7	3.1	2.6	4.6	3.1	3.9
08	Alcoholic beverages	1.2	.6	1.3	.7	1.3	.6
09	Tobacco products	6.6	6.2	S	.8	.3	.7
10	Monumental or building stone	S	S	S	S	S	.2
11	Natural sands	–	–	9.1	5.0	3.6	S
12	Gravel and crushed stone .....	.2	.2	20.8	30.5	3.5	17.0
13	Nonmetallic minerals n.e.c.	S	S	S	.8	.8	2.0
14	Metallic ores and concentrates .....	.1	S	–	S	–	S
15	Coal	–	S	–	S	–	S
17	Gasoline and aviation turbine fuel	1.0	1.4	4.0	5.0	1.4	1.4
18	Fuel oils .....	.6	.8	2.7	3.8	.7	1.0
19	Coal and petroleum products, n.e.c.	S	.6	.8	2.2	S	S
20	Basic chemicals	1.6	1.1	1.9	1.4	1.8	2.5
21	Pharmaceutical products	9.6	7.0	.8	.8	3.3	S
22	Fertilizers	S	.3	S	2.1	S	3.0
23	Chemical products and preparations, n.e.c.	2.4	1.8	1.6	.6	2.9	1.7
24	Plastics and rubber	S	4.2	2.2	1.8	S	4.3
25	Logs and other wood in the rough	S	–	S	1.4	S	.5
26	Wood products	2.4	2.2	10.0	8.2	11.0	8.8
27	Pulp, newsprint, paper, and paperboard	1.3	1.2	1.9	1.6	4.8	5.4
28	Paper or paperboard articles	1.1	1.1	.9	.8	1.4	1.4
29	Printed products .....	.9	1.2	.2	.3	.6	.7
30	Textiles, leather, and articles of textiles or leather	14.4	23.6	2.1	2.9	6.2	7.1
31	Nonmetallic mineral products	2.9	1.7	13.9	8.6	7.5	5.8
32	Base metal in primary or semifinished forms and in finished basic shapes	2.3	1.4	1.6	1.3	3.9	2.6
33	Articles of base metal	2.0	2.5	.8	1.0	2.0	2.0
34	Machinery	4.8	5.3	.6	.6	2.4	1.8
35	Electronic and other electrical equipment and components and office equipment	6.9	11.8	.5	.6	1.9	2.4
36	Motorized and other vehicles (including parts)	4.1	4.2	.9	.7	2.5	2.3
37	Transportation equipment, n.e.c. ....	.7	.4	S	–	S	S
38	Precision instruments and apparatus .....	.8	.7	–	–	S	–
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	4.1	3.2	.6	.6	2.2	2.1
40	Miscellaneous manufactured products	3.6	4.1	2.3	1.5	4.0	2.3
41	Waste and scrap	S	.2	.3	.8	.2	1.0
43	Mixed freight	12.1	2.0	5.7	1.1	4.5	.9
--	Commodity unknown .....	.2	.6	S	.2	S	.3

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

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

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

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

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

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							
Total²	293 604	100.0	276 004	100.0	47 088	100.0	487
Single modes	270 923	92.3	266 387	96.5	45 933	97.5	259
Truck ³	264 443	90.1	241 308	87.4	39 049	82.9	250
For-hire truck	164 586	56.1	101 894	36.9	30 376	64.5	595
Private truck	98 966	33.7	133 901	48.5	8 322	17.7	70
Rail	2 772	.9	S	S	6 640	14.1	462
Water	S	S	S	S	S	S	59
Shallow draft	S	S	S	S	S	S	62
Great Lakes	-	-	-	-	-	-	-
Deep draft	S	S	S	S	S	S	3
Air (includes truck and air)	2 825	1.0	77	-	94	.2	1 222
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	16 265	5.5	801	.3	695	1.5	783
Parcel, U.S. Postal Service or courier	15 846	5.4	662	.2	460	1.0	782
Truck and rail	332	.1	107	-	163	.3	1 733
Truck and water	87	-	31	-	S	S	4 969
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	6 416	2.2	8 816	3.2	460	1.0	76
SCTG 01, LIVE ANIMALS AND LIVE FISH							
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 02, CEREAL GRAINS							
Total	S	S	S	S	S	S	39
Single modes	S	S	S	S	S	S	39
Truck ³	S	S	S	S	S	S	39
For-hire truck	-	-	-	-	-	-	-
Private truck	S	S	S	S	S	S	39
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	-	-	-	-	-	-	-

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	2 694	100.0	S	S	240	100.0	S
Single modes	2 468	91.6	S	S	181	75.6	S
Truck ³	2 465	91.5	S	S	178	74.3	S
For-hire truck	S	S	506	27.8	125	51.9	299
Private truck	S	S	S	S	S	S	37
Rail	S	S	S	S	S	S	3 124
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	352
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 135
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	1 135
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	58	24.3	321
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	1 403	100.0	7 574	100.0	S	S	57
Single modes	1 385	98.7	7 478	98.7	S	S	58
Truck ³	1 381	98.4	7 461	98.5	S	S	58
For-hire truck	S	S	S	S	S	S	310
Private truck	1 300	92.7	7 009	92.5	377	71.8	46
Rail	S	S	S	S	S	S	279
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	143
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	33
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	6 751	100.0	4 748	100.0	2 532	100.0	191
Single modes	6 625	98.1	4 679	98.6	2 514	99.3	193
Truck ³	6 625	98.1	4 679	98.6	2 514	99.3	193
For-hire truck	3 648	54.0	2 808	59.1	1 864	73.6	524
Private truck	2 961	43.9	1 865	39.3	650	25.7	116
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	471
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	471
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 06, MILLED GRAIN PRODUCTS AND PREPARATIONS, AND BAKERY PRODUCTS							
Total	1 042	100.0	S	S	316	100.0	S
Single modes	1 041	99.9	S	S	316	100.0	S
Truck ³	1 041	99.9	S	S	316	100.0	S
For-hire truck	284	27.3	302	23.4	176	55.8	650
Private truck	S	S	S	S	S	S	129
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	737
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	737
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	5 065	100.0	7 297	100.0	1 466	100.0	S
Single modes	5 038	99.5	7 258	99.5	1 460	99.6	S
Truck ³	4 906	96.9	6 749	92.5	1 278	87.2	S
For-hire truck	2 263	44.7	1 996	27.4	828	56.5	469
Private truck	2 174	42.9	3 992	54.7	269	18.4	24
Rail	132	2.6	509	7.0	182	12.4	360
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	767
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	767
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	3 447	100.0	3 691	100.0	610	100.0	55
Single modes	3 029	87.9	3 352	90.8	592	97.1	54
Truck ³	2 990	86.7	3 260	88.3	542	88.9	53
For-hire truck	594	17.2	1 290	34.9	S	S	382
Private truck	2 396	69.5	1 971	53.4	S	S	49
Rail	S	S	S	S	S	S	539
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	2 089
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	2 089
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	55

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	19 366	100.0	S	S	145	100.0	831
Single modes	19 151	98.9	S	S	140	96.8	S
Truck ³	19 151	98.9	S	S	140	96.8	S
For-hire truck	12 507	64.6	S	S	138	95.8	S
Private truck	6 645	34.3	115	4.7	1	1.0	95
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	215	1.1	5	.2	5	3.2	926
Parcel, U.S. Postal Service or courier	215	1.1	5	.2	5	3.2	926
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	186
Single modes	S	S	S	S	S	S	186
Truck ³	S	S	S	S	S	S	186
For-hire truck	—	—	—	—	—	—	—
Private truck	S	S	S	S	S	S	186
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 11, NATURAL SANDS							
Total	186	100.0	25 238	100.0	1 715	100.0	61
Single modes	177	95.4	24 969	98.9	1 710	99.7	63
Truck ³	158	85.0	23 949	94.9	1 532	89.3	62
For-hire truck	138	74.1	S	S	1 428	83.2	S
Private truck	20	10.8	2 530	10.0	103	6.0	53
Rail	19	10.3	1 005	4.0	151	8.8	150
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 811
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	977
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	977
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 12, GRAVEL AND CRUSHED STONE							
Total	504	100.0	57 442	100.0	1 668	100.0	21
Single modes	487	96.7	55 185	96.1	1 638	98.2	21
Truck ³	466	92.5	53 219	92.6	1 170	70.2	20
For-hire truck	129	25.5	14 880	25.9	425	25.5	27
Private truck	290	57.6	33 736	58.7	600	36.0	16
Rail	21	4.2	1 966	3.4	468	28.0	219
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 13, NONMETALLIC MINERALS N.E.C.							
Total	S	S	S	S	376	100.0	418
Single modes	S	S	S	S	376	100.0	202
Truck ³	S	S	S	S	255	67.8	193
For-hire truck	59	51.1	469	33.1	221	58.9	467
Private truck	S	S	S	S	S	S	91
Rail	S	S	S	S	S	S	733
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	991
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	991
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	16
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	359	100.0	28	100.0	15	100.0	296
Single modes	359	100.0	28	100.0	15	100.0	296
Truck ³	359	100.0	28	100.0	15	100.0	296
For-hire truck	359	99.9	26	93.5	15	99.3	334
Private truck	S	S	S	S	S	S	36
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	—	—	—	—	—	—	—

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	—	—	—	—	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	2 836	100.0	11 020	100.0	636	100.0	52
Single modes	2 836	100.0	11 020	100.0	636	100.0	52
Truck ³	2 792	98.4	10 921	99.1	635	99.8	55
For-hire truck	1 323	46.6	5 527	50.2	357	56.1	69
Private truck	1 469	51.8	5 394	49.0	278	43.7	47
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	\$	\$	\$	\$	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 18, FUEL OILS							
Total	1 617	100.0	7 427	100.0	335	100.0	24
Single modes	1 609	99.5	7 403	99.7	335	100.0	24
Truck ³	1 599	98.9	7 373	99.3	334	99.9	25
For-hire truck	369	22.8	1 722	23.2	116	34.6	71
Private truck	\$	\$	\$	\$	217	64.8	\$
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	\$	\$	\$	\$	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	5
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	5
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	4

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	\$	\$	2 216	100.0	\$	\$	\$
Single modes	\$	\$	2 154	97.2	\$	\$	\$
Truck ³	\$	\$	1 974	89.1	\$	\$	\$
For-hire truck	\$	\$	\$	\$	\$	\$	192
Private truck	\$	\$	\$	\$	\$	\$	\$
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	\$	\$	\$	\$	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	\$
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	\$
Truck and rail	\$	\$	\$	\$	\$	\$	570
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	4
SCTG 20, BASIC CHEMICALS							
Total	4 840	100.0	5 161	100.0	828	100.0	\$
Single modes	4 785	98.9	5 150	99.8	827	99.9	\$
Truck ³	4 332	89.5	3 667	71.1	620	74.9	\$
For-hire truck	3 089	63.8	\$	\$	499	60.3	273
Private truck	1 244	25.7	1 382	26.8	121	14.6	\$
Rail	328	6.8	632	12.2	202	24.4	321
Water	\$	\$	\$	\$	\$	\$	3
Shallow draft	\$	\$	\$	\$	\$	\$	3
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	1 111
Pipeline ⁴	\$	\$	\$	\$	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	\$
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	\$
Truck and rail	—	—	—	—	—	—	—
Truck and water	\$	\$	\$	\$	\$	\$	522
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	57
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	28 167	100.0	2 173	100.0	1 571	100.0	284
Single modes	26 911	95.5	2 122	97.6	1 551	98.7	\$
Truck ³	26 143	92.8	2 119	97.5	1 549	98.6	\$
For-hire truck	17 072	60.6	1 743	80.2	1 453	92.5	\$
Private truck	9 072	32.2	377	17.3	96	6.1	\$
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	768	2.7	2	.1	2	.1	1 290
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	\$	\$	\$	\$	\$	\$	347
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	\$	\$	347
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	811

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	\$	\$	\$	\$	\$	\$	729
Single modes	\$	\$	\$	\$	\$	\$	729
Truck ³	40	5.8	\$	\$	52	3.8	284
For-hire truck	21	3.1	\$	\$	33	2.4	398
Private truck	\$	\$	\$	\$	19	1.4	179
Rail	\$	\$	\$	\$	\$	\$	1 167
Water	\$	\$	\$	\$	\$	\$	55
Shallow draft	\$	\$	\$	\$	\$	\$	55
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	7 097	100.0	4 504	100.0	1 384	100.0	195
Single modes	6 269	88.3	4 428	98.3	1 339	96.8	181
Truck ³	6 084	85.7	3 509	77.9	1 240	89.6	177
For-hire truck	5 069	71.4	2 602	57.8	1 167	84.3	401
Private truck	1 015	14.3	\$	\$	\$	\$	43
Rail	30	.4	\$	\$	\$	\$	981
Water	\$	\$	\$	\$	\$	\$	3
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	\$	\$	\$	\$	\$	\$	3
Air (includes truck and air)	\$	\$	\$	\$	\$	\$	714
Pipeline ⁴	\$	\$	\$	\$	\$	\$	\$
Multiple modes	795	11.2	72	1.6	44	3.2	\$
Parcel, U.S. Postal Service or courier	\$	\$	\$	\$	11	.8	\$
Truck and rail	\$	\$	\$	\$	\$	\$	2 048
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	34	.5	\$	\$	\$	\$	\$
SCTG 24, PLASTICS AND RUBBER							
Total	\$	\$	6 132	100.0	\$	\$	542
Single modes	\$	\$	5 932	96.7	\$	\$	439
Truck ³	\$	\$	5 882	95.9	\$	\$	432
For-hire truck	\$	\$	\$	\$	\$	\$	813
Private truck	2 349	14.0	917	15.0	192	4.6	\$
Rail	\$	\$	\$	\$	\$	\$	2 532
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	39	.2	\$	\$	\$	\$	1 297
Pipeline ⁴	—	—	—	—	\$	\$	\$
Multiple modes	543	3.2	\$	\$	66	1.6	829
Parcel, U.S. Postal Service or courier	505	3.0	\$	\$	\$	\$	829
Truck and rail	\$	\$	\$	\$	\$	\$	3 165
Truck and water	\$	\$	\$	\$	\$	\$	485
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	\$	\$	\$	\$	\$	\$	178

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	S
Single modes	S	S	S	S	S	S	S
Truck ³	S	S	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	S	S	60
Rail	S	S	S	S	S	S	2 950
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	245
SCTG 26, WOOD PRODUCTS							
Total	6 917	100.0	27 522	100.0	5 187	100.0	262
Single modes	6 782	98.0	27 398	99.5	5 142	99.1	186
Truck ³	6 307	91.2	15 173	55.1	2 906	56.0	170
For-hire truck	3 748	54.2	7 286	26.5	2 090	40.3	337
Private truck	2 556	37.0	S	S	816	15.7	72
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	1 030
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	11	.2	673
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	673
Truck and rail	S	S	S	S	S	S	713
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	44	.6	S	S	S	S	S
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	3 854	100.0	5 222	100.0	2 260	100.0	291
Single modes	3 749	97.3	5 193	99.5	2 256	99.8	233
Truck ³	3 511	91.1	4 662	89.3	1 852	82.0	222
For-hire truck	2 852	74.0	4 085	78.2	1 799	79.6	410
Private truck	658	17.1	577	11.0	53	2.3	80
Rail	227	5.9	511	9.8	399	17.7	746
Water	S	S	S	S	S	S	217
Shallow draft	S	S	S	S	S	S	217
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 212
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	2	—	1	—	569
Parcel, U.S. Postal Service or courier	S	S	2	—	1	—	569
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	34	.9	S	S	S	S	65

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	3 200	100.0	2 411	100.0	676	100.0	192
Single modes	3 101	96.9	2 374	98.5	664	98.1	161
Truck ³	3 097	96.8	2 373	98.4	664	98.1	161
For-hire truck	1 936	60.5	1 377	57.1	558	82.5	518
Private truck	1 161	36.3	995	41.3	105	15.6	54
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 085
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	21	.7	2	.1	1	.2	629
Parcel, U.S. Postal Service or courier	20	.6	2	—	1	.1	629
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	578
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	43
SCTG 29, PRINTED PRODUCTS							
Total	2 711	100.0	428	100.0	264	100.0	823
Single modes	903	33.3	325	76.0	173	65.5	311
Truck ³	889	32.8	324	75.7	172	65.0	188
For-hire truck	649	23.9	275	64.3	169	63.9	469
Private truck	240	8.9	49	11.4	3	1.2	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	813
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	843
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	843
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	176
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	42 237	100.0	5 719	100.0	2 941	100.0	815
Single modes	38 814	91.9	5 486	95.9	2 773	94.3	776
Truck ³	38 556	91.3	5 464	95.5	2 720	92.5	773
For-hire truck	26 418	62.5	3 664	64.1	2 249	76.5	908
Private truck	S	S	1 723	30.1	451	15.3	346
Rail	S	S	S	S	S	S	1 426
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	9	.2	15	.5	1 287
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 789	6.6	151	2.6	144	4.9	842
Parcel, U.S. Postal Service or courier	2 668	6.3	141	2.5	120	4.1	841
Truck and rail	S	S	S	S	24	.8	2 355
Truck and water	S	S	S	S	S	S	1 608
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	634	1.5	82	1.4	24	.8	184

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	8 607	100.0	38 403	100.0	3 544	100.0	181
Single modes	7 987	92.8	33 853	88.1	3 419	96.4	S
Truck ³	7 881	91.6	33 044	86.0	2 893	81.6	S
For-hire truck	S	S	4 114	10.7	S	S	460
Private truck	3 207	37.3	28 929	75.3	590	16.6	38
Rail	S	S	S	S	S	S	627
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	904
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	279	3.2	S	S	S	S	869
Parcel, U.S. Postal Service or courier	254	3.0	S	—	S	S	854
Truck and rail	S	S	S	S	S	S	3 018
Truck and water	S	S	S	S	S	S	7 248
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	341	4.0	S	S	S	S	S
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	6 694	100.0	4 374	100.0	1 833	100.0	238
Single modes	6 390	95.5	4 218	96.4	1 814	99.0	239
Truck ³	6 345	94.8	3 970	90.8	1 651	90.0	237
For-hire truck	4 314	64.4	2 490	56.9	1 406	76.7	607
Private truck	2 031	30.3	1 480	33.8	S	S	87
Rail	S	S	S	S	163	8.9	646
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	6	—	1	—	1	—	1 533
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	322
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	322
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	5 047
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	13	.7	S
SCTG 33, ARTICLES OF BASE METAL							
Total	5 766	100.0	2 133	100.0	920	100.0	538
Single modes	4 820	83.6	2 063	96.8	863	93.7	405
Truck ³	4 808	83.4	2 063	96.7	862	93.7	396
For-hire truck	3 546	61.5	1 400	65.6	749	81.3	658
Private truck	1 257	21.8	658	30.9	S	S	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	11	.2	S	S	S	S	1 609
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	835	14.5	S	S	S	S	754
Parcel, U.S. Postal Service or courier	835	14.5	S	S	S	S	754
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	112	1.9	S	S	S	S	140

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	13 959	100.0	1 757	100.0	1 126	100.0	259
Single modes	12 146	87.0	1 670	95.1	1 074	95.3	219
Truck ³	12 123	86.8	1 668	94.9	1 072	95.2	216
For-hire truck	9 744	69.8	1 356	77.2	973	86.4	374
Private truck	2 379	17.0	312	17.7	100	8.8	65
Rail	S	S	S	S	S	S	318
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	17	.1	1	—	1	—	981
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	1 541	11.0	48	2.7	33	2.9	365
Parcel, U.S. Postal Service or courier	1 514	10.8	41	2.4	14	1.2	364
Truck and rail	S	S	S	S	S	S	2 937
Truck and water	S	S	S	S	S	S	4 993
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	273	2.0	39	2.2	20	1.7	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	20 113	100.0	1 448	100.0	913	100.0	603
Single modes	16 307	81.1	1 359	93.9	856	93.8	435
Truck ³	14 513	72.2	1 315	90.8	816	89.4	344
For-hire truck	12 875	64.0	1 148	79.3	781	85.6	719
Private truck	1 637	8.1	167	11.6	35	3.8	S
Rail	S	S	13	.9	S	S	816
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	1 484	7.4	31	2.1	30	3.3	1 199
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 934	14.6	50	3.5	39	4.3	836
Parcel, U.S. Postal Service or courier	2 934	14.6	50	3.5	39	4.3	836
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	39	2.7	17	1.8	191
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	12 181	100.0	2 374	100.0	1 188	100.0	211
Single modes	9 822	80.6	2 099	88.4	1 148	96.7	206
Truck ³	9 798	80.4	2 098	88.3	1 147	96.6	203
For-hire truck	7 080	58.1	1 619	68.2	1 096	92.3	343
Private truck	2 686	22.0	476	20.0	51	4.3	34
Rail	S	S	S	S	S	S	365
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 502
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	287	2.4	14	.6	6	.5	388
Parcel, U.S. Postal Service or courier	287	2.4	14	.6	6	.5	388
Truck and rail	S	S	S	S	S	S	3 196
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 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	1 999	100.0	S	S	S	S	1 203
Single modes	1 870	93.5	S	S	S	S	1 393
Truck ³	S	S	S	S	S	S	734
For-hire truck	S	S	S	S	S	S	814
Private truck	S	S	S	S	S	S	541
Rail	S	S	S	S	S	S	925
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	41	2.1	S	S	S	S	1 968
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	129	6.4	S	S	S	S	1 154
Parcel, U.S. Postal Service or courier	129	6.4	S	S	S	S	1 154
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	4
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	2 234	100.0	51	100.0	S	S	333
Single modes	1 887	84.4	45	88.8	S	S	S
Truck ³	1 856	83.0	45	88.0	S	S	S
For-hire truck	991	44.3	23	45.6	S	S	655
Private truck	S	S	S	S	S	S	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	31	1.4	S	S	S	S	1 355
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	327	14.6	5	9.0	4	18.1	686
Parcel, U.S. Postal Service or courier	327	14.6	5	9.0	4	18.1	686
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	21	.9	S	S	S	S	S
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	11 925	100.0	1 764	100.0	1 022	100.0	660
Single modes	11 693	98.1	1 730	98.1	983	96.2	657
Truck ³	11 649	97.7	1 727	97.9	977	95.6	640
For-hire truck	7 134	59.8	1 022	57.9	738	72.2	843
Private truck	4 515	37.9	706	40.0	239	23.4	322
Rail	S	S	S	S	S	S	1 900
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 793
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	104	.9	S	S	S	S	765
Parcel, U.S. Postal Service or courier	47	.4	3	.2	3	.3	752
Truck and rail	S	S	S	S	S	S	2 853
Truck and water	S	S	S	S	S	S	S
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	532

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	10 574	100.0	6 385	100.0	1 877	100.0	952
Single modes	8 799	83.2	6 295	98.6	1 833	97.7	692
Truck ³	8 605	81.4	5 827	91.3	1 810	96.4	689
For-hire truck	7 245	68.5	2 328	36.5	1 502	80.0	895
Private truck	1 359	12.9	S	S	S	S	105
Rail	S	S	S	S	S	S	655
Water	S	S	S	S	S	S	3
Shallow draft	S	S	S	S	S	S	3
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	1 206
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	1 494	14.1	42	.7	30	1.6	1 013
Parcel, U.S. Postal Service or courier	1 494	14.1	42	.7	30	1.6	1 011
Truck and rail	-	-	-	-	-	-	-
Truck and water	S	S	S	S	S	S	5 192
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	49	.8	S	S	S
SCTG 41, WASTE AND SCRAP							
Total	S	S	769	100.0	97	100.0	144
Single modes	S	S	769	100.0	97	100.0	144
Truck ³	S	S	769	100.0	97	100.0	144
For-hire truck	S	S	S	S	74	76.8	161
Private truck	S	S	S	S	S	S	S
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 43, MIXED FREIGHT							
Total	35 466	100.0	15 609	100.0	2 125	100.0	203
Single modes	34 812	98.2	15 577	99.8	2 112	99.4	85
Truck ³	34 803	98.1	15 577	99.8	2 112	99.4	81
For-hire truck	7 257	20.5	1 489	9.5	409	19.2	366
Private truck	27 546	77.7	14 088	90.3	1 703	80.1	60
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	1 248
Pipeline ⁴	-	-	-	-	S	S	S
Multiple modes	616	1.7	27	.2	13	.6	562
Parcel, U.S. Postal Service or courier	616	1.7	27	.2	13	.6	562
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	38	.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	616	100.0	S	S	S	S	211
Single modes	604	97.9	S	S	S	S	142
Truck ³	378	61.3	207	41.7	S	S	S
For-hire truck	280	45.4	87	17.5	S	S	599
Private truck	98	16.0	120	24.2	4	1.4	22
Rail	S	S	S	S	S	S	925
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	581
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	10	1.7	1	.2	—	—	344
Parcel, U.S. Postal Service or courier	10	1.7	1	.2	—	—	344
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	1 099

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

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

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

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

⁴Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

State of destination	Value		Tons		Ton-miles ¹	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Total	293 604	100.0	276 004	100.0	47 088	100.0
NEW ENGLAND STATES						
Connecticut	1 532	.5	336	.1	229	.5
Maine	453	.2	114	—	106	.2
Massachusetts	3 586	1.2	730	.3	568	1.2
New Hampshire	709	.2	283	.1	235	.5
Rhode Island	316	.1	119	—	99	.2
Vermont	S	S	61	—	52	.1
MIDDLE ATLANTIC STATES						
New Jersey	7 091	2.4	2 025	.7	1 150	2.4
New York	7 039	2.4	2 209	.8	1 475	3.1
Pennsylvania	13 896	4.7	3 368	1.2	1 616	3.4
EAST NORTH CENTRAL STATES						
Illinois	5 613	1.9	1 487	.5	1 265	2.7
Indiana	4 644	1.6	1 533	.6	949	2.0
Michigan	5 480	1.9	1 626	.6	1 192	2.5
Ohio	5 207	1.8	2 137	.8	1 147	2.4
Wisconsin	1 924	.7	578	.2	572	1.2
WEST NORTH CENTRAL STATES						
Iowa	1 087	.4	466	.2	483	1.0
Kansas	1 148	.4	264	.1	305	.6
Minnesota	1 459	.5	475	.2	597	1.3
Missouri	2 223	.8	481	.2	436	.9
Nebraska	527	.2	134	—	185	.4
North Dakota	439	.1	88	—	152	.3
South Dakota	71	—	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	401	.1	232	—	96	.2
District of Columbia	330	.1	40	—	13	—
Florida	12 609	4.3	3 680	1.3	2 578	5.5
Georgia	15 452	5.3	6 597	2.4	2 001	4.2
Maryland	3 116	1.1	1 473	.5	533	1.1
North Carolina	115 794	39.4	205 211	74.4	9 252	19.6
South Carolina	19 171	6.5	13 055	4.7	2 003	4.3
Virginia	15 690	5.3	12 680	4.6	2 072	4.4
West Virginia	1 097	.4	925	.3	280	.6
EAST SOUTH CENTRAL STATES						
Alabama	3 606	1.2	1 258	.5	632	1.3
Kentucky	2 676	.9	893	.3	392	.8
Mississippi	1 348	.5	534	.2	345	.7
Tennessee	7 699	2.6	3 433	1.2	1 070	2.3
WEST SOUTH CENTRAL STATES						
Arkansas	1 166	.4	479	.2	432	.9
Louisiana	1 304	.4	345	.1	282	.6
Oklahoma	849	.3	S	S	S	S
Texas	10 380	3.5	2 686	1.0	3 364	7.1
MOUNTAIN STATES						
Arizona	1 807	.6	511	.2	1 107	2.4
Colorado	949	.3	204	—	341	.7
Idaho	189	—	31	—	73	.2
Montana	127	—	S	S	S	S
Nevada	916	.3	81	—	191	.4
New Mexico	182	—	25	—	42	—
Utah	595	.2	119	—	249	.5
Wyoming	S	S	S	S	S	S
PACIFIC STATES						
Alaska	249	—	S	S	S	S
California	9 000	3.1	1 785	.6	4 614	9.8
Hawaii	35	—	1	—	7	—
Oregon	524	.2	135	—	383	.8
Washington	1 498	.5	256	—	728	1.5

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

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

Note: Value-of-shippments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on 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 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	257 179	100.0	327 948	100.0	72 134	100.0
NEW ENGLAND STATES						
Connecticut	1 573	.6	266	—	200	.3
Maine	369	.1	S	S	S	S
Massachusetts	3 679	1.4	400	.1	346	.5
New Hampshire	409	.2	47	—	39	—
Rhode Island	309	.1	80	—	64	—
Vermont	S	S	48	—	42	—
MIDDLE ATLANTIC STATES						
New Jersey	4 932	1.9	1 537	.5	837	1.2
New York	4 480	1.7	2 803	.9	1 876	2.6
Pennsylvania	5 479	2.1	2 280	.7	1 069	1.5
EAST NORTH CENTRAL STATES						
Illinois	5 316	2.1	2 535	.8	2 156	3.0
Indiana	3 769	1.5	2 447	.7	1 803	2.5
Michigan	3 741	1.5	1 444	.4	1 082	1.5
Ohio	9 492	3.7	12 558	3.8	S	S
Wisconsin	2 152	.8	1 226	.4	1 290	1.8
WEST NORTH CENTRAL STATES						
Iowa	1 770	.7	505	.2	541	.8
Kansas	1 198	.5	1 039	.3	1 261	1.7
Minnesota	1 854	.7	546	.2	678	.9
Missouri	1 563	.6	658	.2	613	.8
Nebraska	590	.2	180	—	236	.3
North Dakota	58	—	S	S	S	S
South Dakota	172	—	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	341	.1	134	—	52	—
District of Columbia	S	S	13	—	4	—
Florida	6 142	2.4	2 306	.7	1 325	1.8
Georgia	14 784	5.7	9 974	3.0	3 247	4.5
Maryland	1 670	.6	1 436	.4	537	.7
North Carolina	115 794	45.0	205 211	62.6	9 252	12.8
South Carolina	16 920	6.6	14 777	4.5	2 305	3.2
Virginia	9 090	3.5	13 768	4.2	3 255	4.5
West Virginia	2 011	.8	14 402	4.4	5 994	8.3
EAST SOUTH CENTRAL STATES						
Alabama	3 125	1.2	2 300	.7	1 259	1.7
Kentucky	3 876	1.5	20 781	6.3	8 925	12.4
Mississippi	1 334	.5	861	.3	606	.8
Tennessee	10 584	4.1	4 246	1.3	1 547	2.1
WEST SOUTH CENTRAL STATES						
Arkansas	1 481	.6	605	.2	543	.8
Louisiana	944	.4	1 388	.4	1 271	1.8
Oklahoma	293	.1	88	—	105	.1
Texas	6 233	2.4	2 500	.8	3 221	4.5
MOUNTAIN STATES						
Arizona	885	.3	S	S	S	S
Colorado	569	.2	162	—	285	.4
Idaho	S	S	70	—	161	.2
Montana	55	—	58	—	138	.2
Nevada	211	—	S	S	74	.1
New Mexico	S	S	74	—	138	.2
Utah	264	.1	94	—	196	.3
Wyoming	23	—	280	—	618	.9
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	5 048	2.0	882	.3	2 361	3.3
Hawaii	S	S	S	S	S	S
Oregon	654	.3	160	—	475	.7
Washington	744	.3	84	—	233	.3

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

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

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

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

Discussion of Survey Changes and Comparing Estimates

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

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

INDUSTRY COVERAGE CHANGES

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

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

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

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

No adjustments have been made to the 1993 CFS estimates.

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

AUXILIARY ESTABLISHMENT COVERAGE CHANGES

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

COMPARISON DATA AND STATISTICAL VALIDITY

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

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

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

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

Mode of transportation	Value			Tons			Ton-miles ¹			Average miles per shipment		
	2002 (million dollars)	1997 (million dollars)	Percent change	2002 (thousands)	1997 (thousands)	Percent change	2002 (millions)	1997 (millions)	Percent change	2002	1997	Percent change
Total	293 604	264 761	10.9	276 004	255 488	8.0	47 088	45 168	4.2	487	386	26.2
Single modes	270 923	240 369	12.7	266 387	251 909	5.7	45 933	43 388	5.9	259	214	21.3
Truck ²	264 443	231 020	14.5	241 308	237 300	1.7	39 049	37 662	3.7	250	181	38.2
Rail	2 772	2 512	10.3	S	11 571	S	6 640	5 396	23.0	462	713	-35.2
Water	S	S	S	S	S	S	S	S	S	59	110	-46.3
Air (includes truck and air)	2 825	6 257	-54.8	77	97	-20.4	94	93	1.2	1 222	1 015	20.4
Pipeline ³	S	299	S	S	1 312	S	S	S	S	S	S	S
Multiple modes	16 265	18 084	-10.1	801	674	18.9	695	649	7.2	783	675	16.0
Parcel, U.S. Postal Service or courier ..	15 846	17 677	-10.4	662	538	23.1	460	336	36.7	782	674	16.0
Truck and rail	332	342	-2.7	107	133	-19.2	163	292	-44.1	1 733	1 504	15.2
All other multiple modes	87	S	S	31	S	S	S	S	S	4 969	5 451	-8.8
Other and unknown modes ...	6 416	6 308	1.7	8 816	2 905	203.5	460	1 131	-59.4	76	91	-15.8

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

¹Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.
²Truck² as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private truck and for-hire truck.

³Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

SCTG code	Commodity description	Value			Tons			Ton-miles ¹			Average miles per shipment		
		2002 (million dollars)	1997 (million dollars)	Percent change	2002 (thousands)	1997 (thousands)	Percent change	2002 (millions)	1997 (millions)	Percent change	2002	1997	Percent change
	Total²	293 604	264 761	10.9	276 004	255 488	8.0	47 088	45 168	4.2	487	386	26.2
01-05	Agricultural products and fish	10 970	11 743	-6.6	15 366	16 329	-5.9	3 345	2 751	21.6	163	S	S
06-09	Grains, alcohol, and tobacco products	28 920	27 935	3.5	14 716	17 076	-13.8	2 536	2 715	-6.6	239	52	358.7
10-14	Stones, nonmetallic minerals, and metallic ores	1 350	1 384	-2.5	84 247	94 322	-10.7	3 800	9 528	-60.1	50	104	-52.0
15-19	Coal and petroleum products	5 421	7 166	-24.3	20 662	28 054	-26.3	1 139	1 538	-26.0	S	35	S
20-24	Basic chemicals, chemical, and pharmaceutical products	57 513	37 994	51.4	21 572	17 123	26.0	9 358	7 065	32.4	348	287	21.2
25-30	Logs, wood products, and textile and leather	59 019	77 621	-24.0	43 346	38 895	11.4	11 463	10 827	5.9	746	610	22.3
31-34	Base metal and machinery ..	35 027	28 762	21.8	46 667	29 399	58.7	7 424	5 518	34.5	294	320	-8.0
35-38	Electronic, motorized vehicles, and precision instruments	36 528	45 395	-19.5	4 405	3 536	24.6	2 601	2 195	18.5	408	381	7.0
39-43	Furniture, mixed freight and misc. manufactured prod. ..	58 239	25 157	131.5	24 527	10 178	141.0	5 120	2 894	77.0	626	611	2.4
--	Commodity unknown	616	1 604	-61.6	S	575	S	S	137	S	211	266	-20.9

- 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.

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

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

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

Appendix A.

Comparability With the 1993 and 1997 Commodity Flow Surveys

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

Industry Coverage

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

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

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

Commodity Classification System

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

Sample Size

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

Survey Methodology

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

Reported Mode of Transportation

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

Data Items Requested

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

Appendix B.

Reliability of the Estimates

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

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

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

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

Sampling Error

Because the estimates are based on a sample, exact agreement with results that would be obtained from a complete enumeration of all shipments made in 2002 from all establishments included on the sampling frame using the same enumeration procedures is not expected. However, because probability sampling was used at each stage of selection, it is possible to estimate the sampling variability of the survey estimates. For CFS estimates, sampling variability arises from each of the three stages of sampling. (See Appendix C for a description of the sample design.)

The particular sample used in this survey is one of a large number of samples of the same size that could have been selected using the same design. If all possible samples had been surveyed under the same conditions, an estimate of a population parameter of interest could have been obtained from each sample. These samples give rise to a distribution of estimates for the population parameter. A statistical measure of the variability among these estimates is the standard error, which can be approximated from any one sample. The *standard error* is defined as the square root of the variance. The *coefficient of variation* (or relative standard error) of an estimator is the standard error of the estimator divided by the estimator. Note that measures of sampling variability, such as the standard error and coefficient of variation, are estimated from the sample and are also subject to sampling variability. (Technically, we should refer to the *estimated* standard error or the *estimated* coefficient of variation of an estimator. However, for the sake of brevity, we have omitted this detail.) It is important to note that the standard error only measures sampling variability. It does not measure systematic biases of the sample. The Census Bureau recommends that individuals using estimates contained in this report incorporate this information into their analyses, as sampling error could affect the conclusions drawn from these estimates.

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

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

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

Nonsampling Error

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

A potential source of bias in the estimates is nonresponse. Nonresponse is defined as the inability to obtain all the intended measurements or responses from all units in the sample. Four levels of nonresponse can occur in the CFS: item, shipment, quarter (reporting week), and establishment. Item nonresponse occurs either when a question is unanswered or the response to the question fails computer or analyst edits. Nonresponse to the shipment value or weight items is corrected by imputation, which is the procedure by which a missing value is replaced by a predicted value obtained from an appropriate model. (See Appendix C for a description of the imputation procedure.) Shipment, quarter, and establishment nonresponse are used to describe the inability to obtain any of the substantive measurements about a sampled shipment, quarter, or establishment, respectively. Shipment and quarter nonresponse are corrected by reweighting. Reweighting allocates characteristics to the nonrespondents in proportion to the characteristics observed for the respondents. The amount of bias introduced by this nonresponse adjustment procedure depends on the extent to which the nonrespondents differ, characteristically, from the respondents. Establishment nonresponse is corrected during the estimation procedure by the industry-level adjustment weight. (See Appendix C for a description of the estimation procedure.) In most cases of establishment nonresponse, none of the four questionnaires have been returned to the Census Bureau, after several attempts to elicit a response. Approximately 63 percent of the establishments provided at least one quarter of data that contributed to tabulation.

Some possible sources of bias that are attributed to respondent-conducted sampling include misunderstanding the definition of a shipment, constructing an incomplete frame of shipments from which to sample, ordering the shipment sampling frame by selected shipment characteristics, and selecting shipment records by a method other than the one specified in the questionnaire's instructions. We often contact respondents who reported shipments having an untypically large value or weight when compared to the rest of their reported shipments. Upon contact, if we are able to collect information on all of a given respondent's large shipments made either for a particular reporting week or for the entire quarter, then we identify these large shipments as certainty shipments. (See Appendix C for a description of how certainty shipments are used in the estimation process.)

DEFINITION OF TERMS

Confidentiality

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

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

Disclosure Limitation

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

Unpublished Estimates

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

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

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

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

Mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Total	5.1	—	11.8	—	10.6	—	7.2
Single modes	5.2	.7	11.3	.8	10.9	.4	8.3
Truck	5.4	1.0	9.8	2.7	8.8	2.5	8.4
For-hire truck	8.1	3.1	12.5	2.0	11.1	2.2	6.5
Private truck	10.9	3.2	12.6	3.8	7.3	2.0	16.7
Rail	22.2	.3	S	S	30.2	2.5	21.2
Water	S	S	S	S	S	S	27.4
Shallow draft	S	S	S	S	S	S	27.4
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	22.2	.2	27.8	—	36.3	—	8.3
Pipeline	S	S	S	S	S	S	S
Multiple modes	11.3	.5	19.5	—	14.4	.3	6.6
Parcel, U.S. Postal Service or courier	12.0	.5	19.6	—	19.8	.3	6.6
Truck and rail	48.7	—	48.5	—	33.5	.1	24.2
Truck and water	42.7	—	41.5	—	S	S	21.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	21.1	.5	38.1	.8	16.1	.2	27.4

— 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-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 .....	.7	.5	.8	.1	.4	.6
Truck	1.0	.9	2.7	1.3	2.5	1.2
For-hire truck	3.1	2.3	2.0	2.9	2.2	2.7
Private truck	3.2	2.1	3.8	3.1	2.0	2.3
Rail .....	.3	.1	S	.7	2.5	.9
Water	S	S	S	S	S	S
Shallow draft	S	S	S	S	S	S
Great Lakes	—	—	—	—	—	—
Deep draft	S	—	S	—	S	—
Air (includes truck and air) .....	.2	.8	—	—	—	—
Pipeline	S	—	S	.2	S	S
Multiple modes .....	.5	.4	—	—	.3	.2
Parcel, U.S. Postal Service or courier .....	.5	.4	—	—	.3	—
Truck and rail	—	—	—	—	.1	.2
Truck and water	—	S	—	S	S	S
Rail and water	—	—	—	—	—	—
Other multiple modes	—	S	—	S	—	S
Other and unknown modes .....	.5	.2	.8	.1	.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.

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	10.6	—	7.2
Truck	8.8	2.5	8.4
Rail	30.2	2.5	21.2
Shallow draft	S	S	27.4
Great Lakes	—	—	—
Deep draft	S	S	31.6
Air	36.3	—	8.3
Parcel, U.S. Postal Service or courier	S	S	S
Pipeline	S	S	S
Other and unknown modes	16.1	.2	27.4

— 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-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	5.1	—	11.8	—	10.6	—
Less than 50 miles	10.6	2.4	13.6	2.8	15.5	1.1
50 to 99 miles	12.5	1.1	32.8	2.7	44.5	2.5
100 to 249 miles	7.5	.6	10.1	1.4	9.5	1.2
250 to 499 miles	6.3	1.4	5.8	.9	6.0	1.4
500 to 749 miles	10.0	1.2	8.7	.9	9.5	2.1
750 to 999 miles	12.4	.5	13.1	.2	13.2	.6
1,000 to 1,499 miles	10.8	.3	22.1	.2	21.2	1.0
1,500 to 1,999 miles	25.2	.3	35.8	.1	36.3	.8
2,000 miles or more	15.2	.5	20.7	.2	20.1	1.7
Single modes	5.2	—	11.3	—	10.9	—
Less than 50 miles	10.7	2.5	12.6	2.7	15.6	1.1
50 to 99 miles	13.7	1.2	33.2	2.8	44.9	2.5
100 to 249 miles	7.8	.7	10.2	1.4	9.5	1.2
250 to 499 miles	6.5	1.4	6.1	.8	6.3	1.4
500 to 749 miles	9.8	1.2	8.8	.9	9.6	2.2
750 to 999 miles	12.9	.5	13.3	.2	13.3	.6
1,000 to 1,499 miles	11.4	.3	22.3	.2	21.4	1.0
1,500 to 1,999 miles	27.6	.3	36.7	.1	37.2	.8
2,000 miles or more	17.5	.5	22.3	.2	21.8	1.8
Truck	5.4	—	9.8	—	8.8	—
Less than 50 miles	11.1	2.5	12.6	2.3	15.2	1.2
50 to 99 miles	13.9	1.2	15.2	.9	15.1	1.1
100 to 249 miles	7.8	.7	10.9	1.3	10.2	1.3
250 to 499 miles	6.9	1.4	4.8	.9	4.9	1.6
500 to 749 miles	10.1	1.2	8.1	.5	8.3	1.1
750 to 999 miles	12.6	.5	12.1	.2	11.9	.7
1,000 to 1,499 miles	10.9	.3	24.8	.2	24.5	1.3
1,500 to 1,999 miles	27.7	.3	36.6	.1	37.1	.9
2,000 miles or more	17.8	.5	23.8	.2	23.3	1.9
For-hire truck	8.1	—	12.5	—	11.1	—
Less than 50 miles	26.8	2.8	20.6	3.9	30.5	1.0
50 to 99 miles	23.6	1.9	20.7	1.2	19.8	.7
100 to 249 miles	10.0	.6	11.9	1.7	11.4	1.1
250 to 499 miles	7.3	2.3	5.4	2.1	5.4	1.9
500 to 749 miles	9.2	1.3	8.9	1.1	9.0	1.3
750 to 999 miles	13.8	.6	12.9	.4	12.7	.8
1,000 to 1,499 miles	11.9	.4	23.9	.4	23.8	1.3
1,500 to 1,999 miles	27.8	.4	37.1	.3	37.5	1.0
2,000 miles or more	18.0	.7	23.9	.5	23.5	2.1
Private truck	10.9	—	12.6	—	7.3	—
Less than 50 miles	15.1	3.3	13.7	1.6	12.7	2.0
50 to 99 miles	9.8	1.0	18.4	1.1	18.1	1.9
100 to 249 miles	13.7	1.7	13.7	1.2	12.1	3.0
250 to 499 miles	27.3	1.4	9.7	.3	9.6	1.3
500 to 749 miles	28.9	1.2	11.7	.2	11.0	1.5
750 to 999 miles	29.0	.3	19.5	—	19.3	.9
1,000 to 1,499 miles	42.8	.3	38.7	.1	36.6	1.7
1,500 to 1,999 miles	S	S	36.1	—	36.3	—
2,000 miles or more	40.7	—	45.9	—	46.6	.1
Rail	22.2	—	S	S	30.2	—
Less than 50 miles	36.2	.7	45.5	1.1	39.0	.2
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	24.7	6.8	19.9	9.6	16.7	6.8
250 to 499 miles	28.6	6.7	31.6	2.9	30.2	2.5
500 to 749 miles	S	S	37.5	8.2	37.5	8.6
750 to 999 miles	S	S	39.1	1.3	39.7	2.6
1,000 to 1,499 miles	S	S	29.0	1.3	29.5	3.3
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	42.5	2.0	S	S	S	S
Water	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
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	—	—	—	—	—	—
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	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—

See footnotes at end of table.

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

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

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Single modes—Con.						
Great Lakes	—	—	—	—	—	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	—	—	—	—	—	—
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Air (includes truck and air)	22.2	—	27.8	—	36.3	—
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	43.4	5.2	S	S	S	S
250 to 499 miles	30.4	6.9	46.8	8.9	49.8	6.9
500 to 749 miles	18.4	4.8	35.4	5.9	40.1	7.8
750 to 999 miles	39.3	1.1	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	37.1	.8	S	S	S	S
2,000 miles or more	40.6	4.4	42.3	3.9	38.9	5.8
Pipeline	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	—	—	—	—	—	—
250 to 499 miles	S	S	S	S	S	S
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	—	—	—	—	—	—
Multiple modes	11.3	—	19.5	—	14.4	—
Less than 50 miles	29.9	2.2	30.5	1.3	32.8	—
50 to 99 miles	25.5	1.5	33.1	1.5	33.3	.3
100 to 249 miles	22.1	1.8	26.1	1.3	24.3	.6
250 to 499 miles	13.5	1.9	28.8	2.6	30.8	2.6
500 to 749 miles	13.4	1.8	12.2	3.2	12.1	3.4
750 to 999 miles	12.7	1.1	23.4	.9	23.2	1.2
1,000 to 1,499 miles	18.5	1.1	17.2	.5	17.0	.8
1,500 to 1,999 miles	23.5	.4	19.8	.3	19.7	.9
2,000 miles or more	15.6	1.2	19.4	3.3	19.8	6.6
Parcel, U.S. Postal Service or courier	12.0	—	19.6	—	19.8	—
Less than 50 miles	29.9	2.2	30.5	1.6	32.8	.1
50 to 99 miles	25.5	1.5	33.1	1.6	33.3	.3
100 to 249 miles	22.1	1.8	27.7	1.9	26.3	.7
250 to 499 miles	13.2	1.8	21.7	1.8	23.2	1.0
500 to 749 miles	14.5	2.0	16.1	2.8	16.1	2.9
750 to 999 miles	11.2	.9	26.0	.8	26.1	.8
1,000 to 1,499 miles	18.5	1.1	17.3	.8	17.1	1.4
1,500 to 1,999 miles	23.8	.4	20.0	.3	20.0	.8
2,000 miles or more	16.9	1.0	29.0	1.2	28.8	3.4
Truck and rail	48.7	—	48.5	—	33.5	—
Less than 50 miles	—	—	—	—	—	—
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	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	38.0	13.4	37.9	9.3
Truck and water	42.7	—	41.5	—	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	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

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	—	—	—	—	—	—
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	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—
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	—	—	—	—	—	—
Other and unknown modes	21.1	—	38.1	—	16.1	—
Less than 50 miles	24.9	8.1	43.1	13.0	34.1	8.0
50 to 99 miles	44.5	3.5	32.0	4.6	30.8	2.0
100 to 249 miles	27.4	3.4	27.4	4.2	26.9	2.6
250 to 499 miles	27.2	1.3	21.9	2.8	20.7	2.5
500 to 749 miles	45.1	5.1	30.4	1.9	29.6	3.8
750 to 999 miles	39.6	1.6	40.8	1.6	40.5	3.3
1,000 to 1,499 miles	42.9	.5	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	35.9	.4	S	S	S	S

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

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

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

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Total	5.1	—	11.8	—	10.6	—	7.2
Less than 50 lb	11.7	.5	17.0	—	24.1	.2	8.7
50 to 99 lb	6.9	.1	9.3	—	13.5	—	13.5
100 to 499 lb	7.0	.3	9.8	.2	13.3	.3	6.8
500 to 749 lb	8.7	.3	7.0	—	13.9	.1	13.2
750 to 999 lb	14.4	.3	14.8	—	13.2	.1	13.4
1,000 to 9,999 lb	11.4	2.5	12.5	1.3	16.5	1.7	11.2
10,000 to 49,999 lb	7.8	2.9	12.8	2.9	8.9	2.5	12.4
50,000 to 99,999 lb	13.0	.4	14.5	2.0	12.8	.7	11.9
100,000 lb or more	17.0	.3	35.4	2.3	27.3	2.5	33.2
Single modes	5.2	—	11.3	—	10.9	—	8.3
Less than 50 lb	18.3	.4	21.7	—	7.2	—	19.6
50 to 99 lb	9.7	.1	16.0	—	14.0	—	20.9
100 to 499 lb	6.4	.3	10.7	.1	15.2	.3	9.3
500 to 749 lb	9.0	.3	7.0	—	14.0	.1	13.3
750 to 999 lb	14.3	.3	15.2	—	13.8	.1	14.2
1,000 to 9,999 lb	11.2	2.6	13.1	1.3	17.0	1.7	11.4
10,000 to 49,999 lb	7.8	2.9	12.2	3.1	9.1	2.6	12.1
50,000 to 99,999 lb	13.6	.4	14.6	2.0	12.9	.7	11.9
100,000 lb or more	17.3	.4	38.2	2.4	27.4	2.6	31.5
Truck²	5.4	—	9.8	—	8.8	—	8.4
Less than 50 lb	19.1	.4	22.1	—	6.7	—	21.6
50 to 99 lb	10.6	.1	16.0	—	15.0	—	21.0
100 to 499 lb	7.1	.4	9.9	.1	15.2	.3	9.0
500 to 749 lb	8.9	.3	6.6	—	14.2	.1	13.0
750 to 999 lb	14.4	.3	14.3	—	13.8	.1	12.6
1,000 to 9,999 lb	11.4	2.7	12.9	1.4	17.1	2.0	10.9
10,000 to 49,999 lb	7.9	2.9	12.2	2.3	9.1	2.2	12.1
50,000 to 99,999 lb	13.7	.4	14.6	2.2	12.9	.8	12.0
100,000 lb or more	27.4	.2	19.0	.7	24.4	.4	45.4
For-hire truck	8.1	—	12.5	—	11.1	—	6.5
Less than 50 lb	29.1	.4	18.5	—	12.4	—	10.4
50 to 99 lb	16.3	—	12.6	—	14.7	—	10.6
100 to 499 lb	9.9	.6	11.8	.2	16.3	.3	7.6
500 to 749 lb	11.4	.5	11.9	.1	17.4	.2	14.3
750 to 999 lb	9.3	.2	8.5	—	15.5	.1	8.7
1,000 to 9,999 lb	12.7	1.9	12.8	1.8	19.5	2.0	8.9
10,000 to 49,999 lb	8.6	2.4	11.9	2.4	10.8	2.2	11.3
50,000 to 99,999 lb	14.5	.2	25.6	3.0	21.1	.8	20.5
100,000 lb or more	35.0	.2	35.2	.8	27.4	.4	S
Private truck	10.9	—	12.6	—	7.3	—	16.7
Less than 50 lb	24.2	1.0	30.9	—	22.5	—	28.4
50 to 99 lb	13.4	.4	18.8	—	25.6	—	31.3
100 to 499 lb	8.8	.9	12.2	.2	17.8	.2	23.1
500 to 749 lb	19.5	.5	12.3	.1	14.2	.1	19.3
750 to 999 lb	28.5	.6	20.3	.1	17.8	.2	16.4
1,000 to 9,999 lb	21.1	4.6	16.3	2.3	19.9	3.1	8.0
10,000 to 49,999 lb	21.3	5.7	17.6	4.0	11.5	3.6	10.4
50,000 to 99,999 lb	21.9	1.0	20.4	3.1	15.2	1.9	11.0
100,000 lb or more	32.2	.2	25.2	1.1	25.1	1.1	37.4
Rail	22.2	—	S	S	30.2	—	21.2
Less than 50 lb	S	S	S	S	S	S	36.1
50 to 99 lb	S	S	S	S	S	S	41.7
100 to 499 lb	S	S	S	S	S	S	38.0
500 to 749 lb	S	S	S	S	S	S	31.6
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	31.6
10,000 to 49,999 lb	47.7	1.5	34.6	.2	38.4	.3	20.9
50,000 to 99,999 lb	45.7	1.3	40.7	.4	S	S	27.7
100,000 lb or more	22.4	2.8	S	S	30.7	1.0	30.8
Water	S	S	S	S	S	S	27.4
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	27.4
Shallow draft	S	S	S	S	S	S	27.4
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	27.4

See footnote at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Single modes—Con.							
Great Lakes	—	—	—	—	—	—	—
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	31.6
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	31.6
Air (includes truck and air)	22.2	—	27.8	—	36.3	—	8.3
Less than 50 lb	21.8	4.2	36.0	2.4	30.1	2.0	8.5
50 to 99 lb	28.2	2.3	23.2	3.3	29.6	3.3	6.2
100 to 499 lb	34.9	5.4	29.7	5.9	32.6	7.2	9.0
500 to 749 lb	S	S	30.0	1.3	39.0	3.2	20.6
750 to 999 lb	32.8	1.1	S	S	S	S	24.1
1,000 to 9,999 lb	35.1	5.8	35.8	6.8	28.1	4.8	30.2
10,000 to 49,999 lb	S	S	S	S	S	S	27.6
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
100,000 lb or more	S	S	S	S	S	S	31.6
Pipeline³	S	S	S	S	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	S	S	S	S
750 to 999 lb	S	S	S	S	S	S	S
1,000 to 9,999 lb	S	S	S	S	S	S	S
10,000 to 49,999 lb	S	S	S	S	S	S	S
50,000 to 99,999 lb	S	S	S	S	S	S	S
100,000 lb or more	S	S	S	S	S	S	S
Multiple modes	11.3	—	19.5	—	14.4	—	6.6
Less than 50 lb	12.8	3.0	23.9	4.5	29.2	5.5	6.8
50 to 99 lb	11.5	1.0	24.1	1.8	21.7	2.8	10.9
100 to 499 lb	18.7	2.0	20.8	3.3	24.7	4.1	5.4
500 to 749 lb	37.3	.4	41.6	.9	26.7	.4	S
750 to 999 lb	35.0	.6	26.3	.6	43.4	.5	S
1,000 to 9,999 lb	38.4	.2	S	S	S	S	25.5
10,000 to 49,999 lb	43.9	1.3	42.0	3.9	30.5	7.5	19.1
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	12.0	—	19.6	—	19.8	—	6.6
Less than 50 lb	12.8	2.7	23.9	4.3	29.2	4.4	6.8
50 to 99 lb	11.5	1.0	24.1	2.1	21.7	2.6	10.9
100 to 499 lb	18.7	2.0	20.8	3.3	24.7	3.6	5.5
500 to 749 lb	37.8	.4	42.1	1.0	26.6	.6	S
750 to 999 lb	38.8	.7	27.7	.9	49.0	.7	47.6
1,000 to 9,999 lb	S	S	S	S	S	S	30.2
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	48.7	—	48.5	—	33.5	—	24.2
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	S	S	S	S	S	S	30.2
500 to 749 lb	S	S	S	S	S	S	30.3
750 to 999 lb	S	S	S	S	S	S	31.1
1,000 to 9,999 lb	S	S	S	S	S	S	29.9
10,000 to 49,999 lb	S	S	S	S	34.8	7.9	22.9
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	31.6
Truck and water	42.7	—	41.5	—	S	S	21.6
Less than 50 lb	S	S	S	S	S	S	27.9
50 to 99 lb	S	S	S	S	S	S	31.6
100 to 499 lb	S	S	S	S	S	S	31.7
500 to 749 lb	S	S	S	S	S	S	31.3
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	28.9
10,000 to 49,999 lb	S	S	S	S	49.2	13.5	26.9
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—

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	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
Other and unknown modes	21.1	—	38.1	—	16.1	—	27.4
Less than 50 lb	30.6	1.7	47.7	.7	16.5	—	38.7
50 to 99 lb	30.8	.4	30.4	.2	27.9	.1	S
100 to 499 lb	29.0	1.8	30.0	.9	26.8	.5	S
500 to 749 lb	44.7	1.6	30.3	.4	44.9	.6	46.1
750 to 999 lb	S	S	32.1	.5	S	S	40.0
1,000 to 9,999 lb	37.4	7.3	20.7	8.8	30.4	4.7	22.5
10,000 to 49,999 lb	12.7	6.0	39.2	8.3	9.3	5.4	S
50,000 to 99,999 lb	42.9	2.3	S	S	48.1	1.5	S
100,000 lb or more	S	S	S	S	S	S	30.3

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

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

Table B-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	5.1	—	11.8	—	10.6	—	7.2
01	Live animals and live fish	—	—	—	—	—	—	—
02	Cereal grains	S	S	S	S	S	S	31.6
03	Other agricultural products	43.2	.4	S	S	38.6	.3	S
04	Animal feed and products of animal origin, n.e.c.	48.0	.2	44.6	1.3	S	S	48.5
05	Meat, fish, seafood, and their preparations	18.5	.3	19.5	.3	30.9	1.0	35.0
06	Milled grain products and preparations, and bakery products	49.6	.2	S	S	43.9	.3	S
07	Other prepared foodstuffs and fats and oils	16.4	.3	22.5	.7	16.5	.7	S
08	Alcoholic beverages	25.6	.3	20.7	.3	35.7	.5	46.6
09	Tobacco products	30.6	1.9	S	S	33.0	.1	17.9
10	Monumental or building stone	S	S	S	S	S	S	31.5
11	Natural sands	24.0	—	43.9	2.6	37.7	1.2	33.3
12	Gravel and crushed stone	9.6	—	10.5	2.4	13.8	.3	9.6
13	Nonmetallic minerals n.e.c.	S	S	S	S	41.4	.3	24.6
14	Metallic ores and concentrates	44.7	—	40.5	—	41.1	—	40.5
15	Coal	—	—	—	—	—	—	—
17	Gasoline and aviation turbine fuel	14.9	.2	15.6	.8	26.6	.3	20.5
18	Fuel oils	43.9	.3	44.8	1.5	29.7	.3	47.7
19	Coal and petroleum products, n.e.c.	S	S	49.8	.4	S	S	S
20	Basic chemicals	26.5	.4	38.1	.5	21.3	.5	S
21	Pharmaceutical products	20.7	1.9	35.1	.3	38.6	1.3	45.1
22	Fertilizers	S	S	S	S	S	S	24.4
23	Chemical products and preparations, n.e.c.	21.9	.6	38.7	.6	28.6	1.1	26.8
24	Plastics and rubber	S	S	43.8	1.2	S	S	16.1
25	Logs and other wood in the rough	S	S	S	S	S	S	S
26	Wood products	10.0	.2	44.0	2.7	35.6	2.2	18.1
27	Pulp, newsprint, paper, and paperboard	23.0	.4	24.6	.6	24.7	.6	9.9
28	Paper or paperboard articles	24.3	.3	24.7	.2	21.8	.3	31.4
29	Printed products	31.4	.3	19.3	—	25.9	.2	16.8
30	Textiles, leather, and articles of textiles or leather	20.2	2.3	12.8	.3	11.1	.8	7.6
31	Nonmetallic mineral products	40.3	1.3	35.5	3.6	39.9	2.4	32.3
32	Base metal in primary or semifinished forms and in finished basic shapes	27.0	.7	22.4	.5	28.0	1.3	24.6
33	Articles of base metal	18.3	.4	30.1	.4	32.7	.8	14.9
34	Machinery	4.9	.3	9.2	.1	14.1	.4	12.5
35	Electronic and other electrical equipment and components and office equipment	17.1	.8	12.3	.1	13.2	.5	10.6
36	Motorized and other vehicles (including parts)	19.4	.8	23.6	.3	35.1	1.0	38.6
37	Transportation equipment, n.e.c.	44.6	.3	S	S	S	S	20.3
38	Precision instruments and apparatus	35.6	.3	43.3	—	S	S	28.8
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	18.3	.8	13.9	—	14.3	.3	11.6
40	Miscellaneous manufactured products	14.2	.5	29.9	.6	22.2	1.0	7.4
41	Waste and scrap	S	S	44.2	.1	45.8	—	36.8
43	Mixed freight	12.7	1.3	21.5	.8	19.4	1.2	22.5
--	Commodity unknown	39.3	.1	S	S	S	S	33.4

— 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	-	.1
02	Cereal grains	S	-	S	.2	S	.2
03	Other agricultural products .....	.4	.3	S	.4	.3	.3
04	Animal feed and products of animal origin, n.e.c. ....	.2	.1	1.3	.5	S	.4
05	Meat, fish, seafood, and their preparations .....	.3	.3	.3	.1	1.0	.4
06	Milled grain products and preparations, and bakery products .....	.2	.2	S	.1	.3	.2
07	Other prepared foodstuffs and fats and oils .....	.3	.6	.7	1.0	.7	.7
08	Alcoholic beverages .....	.3	-	.3	-	.5	.2
09	Tobacco products	1.9	1.8	S	.3	.1	.2
10	Monumental or building stone	S	S	S	S	S	-
11	Natural sands	-	-	2.6	2.4	1.2	S
12	Gravel and crushed stone	-	-	2.4	2.0	.3	2.2
13	Nonmetallic minerals n.e.c.	S	S	S	.3	.3	.6
14	Metallic ores and concentrates	-	S	-	S	-	S
15	Coal	-	S	-	S	-	S
17	Gasoline and aviation turbine fuel .....	.2	.1	.8	.5	.3	.2
18	Fuel oils .....	.3	.2	1.5	.7	.3	.3
19	Coal and petroleum products, n.e.c.	S	.1	.4	1.0	.6	.6
20	Basic chemicals .....	.4	.2	.5	.3	.5	.7
21	Pharmaceutical products	1.9	1.0	.3	.4	1.3	S
22	Fertilizers	S	.1	S	.8	S	1.3
23	Chemical products and preparations, n.e.c. ....	.6	.4	.6	-	1.1	.2
24	Plastics and rubber	S	.4	1.2	.3	S	.6
25	Logs and other wood in the rough	S	-	S	.2	S	.1
26	Wood products .....	.2	.2	2.7	1.7	2.2	1.0
27	Pulp, newsprint, paper, and paperboard .....	.4	.3	.6	.3	.6	1.5
28	Paper or paperboard articles .....	.3	.2	.2	.1	.3	.2
29	Printed products .....	.3	.2	-	-	.2	.1
30	Textiles, leather, and articles of textiles or leather	2.3	4.6	.3	.4	.8	.5
31	Nonmetallic mineral products	1.3	.3	3.6	1.8	2.4	.5
32	Base metal in primary or semifinished forms and in finished basic shapes .....	.7	.2	.5	.2	1.3	.9
33	Articles of base metal .....	.4	.4	.4	.2	.8	.4
34	Machinery .....	.3	.6	.1	-	.4	.3
35	Electronic and other electrical equipment and components and office equipment .....	.8	3.5	.1	.1	.5	.6
36	Motorized and other vehicles (including parts) .....	.8	.5	.3	-	1.0	.3
37	Transportation equipment, n.e.c. ....	.3	.1	S	-	S	S
38	Precision instruments and apparatus .....	.3	-	-	-	S	-
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs .....	.8	.4	-	-	.3	.2
40	Miscellaneous manufactured products .....	.5	.4	.6	.4	1.0	.4
41	Waste and scrap	S	-	.1	.2	-	.2
43	Mixed freight	1.3	.2	.8	.2	1.2	.1
--	Commodity unknown .....	.1	.2	S	.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	5.1	—	11.8	—	10.6	—	7.2
Single modes	5.2	.7	11.3	.8	10.9	.4	8.3
Truck	5.4	1.0	9.8	2.7	8.8	2.5	8.4
For-hire truck	8.1	3.1	12.5	2.0	11.1	2.2	6.5
Private truck	10.9	3.2	12.6	3.8	7.3	2.0	16.7
Rail	22.2	.3	S	S	30.2	2.5	21.2
Water	S	S	S	S	S	S	27.4
Shallow draft	S	S	S	S	S	S	27.4
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	22.2	.2	27.8	—	36.3	—	8.3
Pipeline	S	S	S	S	S	S	S
Multiple modes	11.3	.5	19.5	—	14.4	.3	6.6
Parcel, U.S. Postal Service or courier	12.0	.5	19.6	—	19.8	.3	6.6
Truck and rail	48.7	—	48.5	—	33.5	.1	24.2
Truck and water	42.7	—	41.5	—	S	S	21.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	21.1	.5	38.1	.8	16.1	.2	27.4
SCTG 01, LIVE ANIMALS AND LIVE FISH							
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 02, CEREAL GRAINS							
Total	S	S	S	S	S	S	31.6
Single modes	S	S	S	S	S	S	31.6
Truck	S	S	S	S	S	S	31.6
For-hire truck	S	S	S	S	S	S	31.6
Private truck	S	S	S	S	S	S	31.6
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

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	43.2	—	S	S	38.6	—	S
Single modes	46.6	10.6	S	S	39.1	10.2	S
Truck	46.6	10.7	S	S	40.0	10.7	S
For-hire truck	S	S	35.1	17.4	30.9	12.6	19.6
Private truck	S	S	S	S	S	S	26.1
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	30.1
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	30.1
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	42.7	6.9	25.4
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	48.0	—	44.6	—	S	S	48.5
Single modes	47.6	.4	44.2	.4	S	S	49.0
Truck	47.8	1.0	44.4	.6	S	S	49.1
For-hire truck	S	S	S	S	S	S	23.3
Private truck	48.9	10.0	45.1	9.9	46.8	9.0	28.6
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
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	31.5
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	18.5	—	19.5	—	30.9	—	35.0
Single modes	19.0	1.7	20.0	1.4	31.2	.7	34.9
Truck	19.0	1.7	20.0	1.4	31.2	.7	34.9
For-hire truck	23.7	7.8	24.4	7.4	31.6	7.4	12.3
Private truck	30.9	8.2	24.5	7.6	34.9	7.6	36.4
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	29.8
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	29.8
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnote at end of table.

Table B-6. 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	49.6	—	S	S	43.9	—	S
Single modes	49.6	.5	S	S	43.9	.7	S
Truck	49.6	.5	S	S	43.9	.7	S
For-hire truck	35.3	12.5	35.8	14.7	38.0	14.9	24.5
Private truck	S	S	S	S	S	S	30.9
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	29.9
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	29.9
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	16.4	—	22.5	—	16.5	—	S
Single modes	16.3	.2	22.4	.3	16.5	.1	S
Truck	16.5	.7	23.5	1.8	18.0	4.6	S
For-hire truck	25.2	7.3	15.0	5.0	19.4	4.2	10.2
Private truck	27.2	9.4	40.0	8.9	29.2	4.9	46.2
Rail	22.0	.7	20.7	1.8	31.1	4.6	21.2
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	25.9
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	25.9
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	25.6	—	20.7	—	35.7	—	46.6
Single modes	30.4	9.3	25.0	9.4	37.5	9.8	38.7
Truck	30.9	9.1	25.5	9.2	36.7	9.4	38.5
For-hire truck	41.2	13.6	41.1	14.4	S	S	25.9
Private truck	42.8	14.6	47.7	15.5	S	S	37.4
Rail	S	S	S	S	S	S	28.1
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.5
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.5
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6

See footnote at end of table.

Table B-6. 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	30.6	—	S	S	33.0	—	17.9
Single modes	30.6	.3	S	S	33.5	7.5	S
Truck	30.6	.3	S	S	33.5	7.5	S
For-hire truck	45.1	13.9	S	S	33.9	9.2	S
Private truck	43.4	13.7	43.3	12.8	47.7	1.7	29.0
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	42.4	.3	43.0	.5	42.5	7.5	15.8
Parcel, U.S. Postal Service or courier	42.4	.3	43.0	.5	42.5	7.5	15.8
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	31.5
Single modes	S	S	S	S	S	S	31.5
Truck	S	S	S	S	S	S	31.5
For-hire truck	—	—	—	—	—	—	—
Private truck	S	S	S	S	S	S	31.5
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 11, NATURAL SANDS							
Total	24.0	—	43.9	—	37.7	—	33.3
Single modes	23.7	2.4	43.9	.6	37.9	.3	32.6
Truck	28.6	10.0	46.0	9.3	43.1	12.4	33.0
For-hire truck	35.3	16.2	S	S	46.9	17.1	S
Private truck	38.0	11.4	47.1	12.7	40.8	10.4	22.6
Rail	37.2	10.2	37.7	9.5	38.6	12.7	23.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 12, GRAVEL AND CRUSHED STONE							
Total	9.6	—	10.5	—	13.8	—	9.6
Single modes	9.0	1.6	9.2	1.9	14.1	1.0	9.0
Truck	9.2	1.9	9.3	2.0	16.2	6.9	10.2
For-hire truck	18.9	4.8	17.6	4.4	36.3	6.4	18.2
Private truck	12.8	6.2	12.9	6.1	21.3	7.6	9.1
Rail	27.8	1.1	26.3	.9	43.8	7.0	32.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	S	S	S	S	41.4	—	24.6
Single modes	S	S	S	S	41.4	14.9	28.2
Truck	S	S	S	S	38.8	11.9	27.7
For-hire truck	43.5	11.7	43.0	10.8	44.2	13.2	21.7
Private truck	S	S	S	S	S	S	25.7
Rail	S	S	S	S	S	S	25.8
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	29.9
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	44.7	—	40.5	—	41.1	—	40.5
Single modes	44.7	—	40.5	—	41.1	—	40.5
Truck	44.7	—	40.5	—	41.1	—	40.5
For-hire truck	44.7	—	41.8	3.0	40.9	.2	43.6
Private truck	S	S	S	S	S	S	31.6
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

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	14.9	-	15.6	-	26.6	-	20.5
Single modes	14.9	-	15.6	-	26.6	-	20.5
Truck	14.6	1.1	15.5	.7	26.6	.1	19.3
For-hire truck	20.1	8.6	23.5	7.9	39.7	10.6	19.8
Private truck	25.6	8.4	24.5	7.7	30.1	10.6	24.9
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline	S	S	S	S	S	S	S
Multiple modes	-	-	-	-	-	-	-
Parcel, U.S. Postal Service or courier	-	-	-	-	-	-	-
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	-	-	-	-	-	-	-
SCTG 18, FUEL OILS							
Total	43.9	-	44.8	-	29.7	-	47.7
Single modes	44.1	.6	44.9	.6	29.8	.1	45.8
Truck	44.4	.8	45.1	.7	29.8	.1	43.5
For-hire truck	17.4	10.6	17.4	10.3	32.6	9.8	18.8
Private truck	S	S	S	S	47.2	9.6	S
Rail	-	-	-	-	-	-	-
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
Pipeline	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	S	S	S	S	31.6

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	S	S	49.8	—	S	S	S
Single modes	S	S	49.6	2.1	S	S	S
Truck	S	S	49.9	3.4	S	S	S
For-hire truck	S	S	S	S	S	S	38.5
Private truck	S	S	S	S	S	S	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	30.0
SCTG 20, BASIC CHEMICALS							
Total	26.5	—	38.1	—	21.3	—	S
Single modes	27.0	2.4	38.2	.3	21.3	.1	S
Truck	32.0	9.8	36.5	9.7	26.7	9.4	S
For-hire truck	41.3	12.1	S	S	32.1	9.1	40.1
Private truck	38.0	10.1	45.0	10.9	38.9	7.2	S
Rail	40.9	7.4	39.5	8.0	38.8	9.4	24.3
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	22.8
Pipeline	S	S	S	S	S	S	S
Multiple modes	S	S	S	S	S	S	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	33.2
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	20.7	—	35.1	—	38.6	—	45.1
Single modes	19.6	1.6	36.5	6.1	39.4	7.5	S
Truck	20.7	3.5	36.5	6.0	39.5	7.5	S
For-hire truck	20.8	7.3	39.7	9.8	40.2	8.6	S
Private truck	38.6	7.2	25.5	7.7	33.0	4.4	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	47.3	3.2	31.8	.2	34.7	.4	18.4
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	47.9
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	47.9
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	29.9

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	S	S	24.4
Single modes	S	S	S	S	S	S	24.4
Truck	48.3	4.0	S	S	47.3	1.4	24.5
For-hire truck	45.8	2.3	S	S	47.2	.9	24.9
Private truck	S	S	S	S	48.4	.5	40.9
Rail	S	S	S	S	S	S	23.7
Water	S	S	S	S	S	S	27.9
Shallow draft	S	S	S	S	S	S	27.9
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	-	-	-	-	-	-	-
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 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	21.9	-	38.7	-	28.6	-	26.8
Single modes	25.0	6.5	39.4	2.9	29.7	2.4	24.8
Truck	25.5	7.5	37.4	9.1	33.6	9.9	25.6
For-hire truck	28.9	9.9	39.7	10.9	35.9	10.7	20.0
Private truck	44.4	3.9	S	S	S	S	16.4
Rail	41.1	.6	S	S	S	S	30.7
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	33.5
Pipeline	S	S	S	S	S	S	S
Multiple modes	44.2	6.3	38.2	2.8	47.7	2.4	S
Parcel, U.S. Postal Service or courier	S	S	S	S	43.0	1.9	S
Truck and rail	S	S	S	S	S	S	30.5
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	48.9	.2	S	S	S	S	S
SCTG 24, PLASTICS AND RUBBER							
Total	S	S	43.8	-	S	S	16.1
Single modes	S	S	44.6	1.1	S	S	21.6
Truck	S	S	45.1	2.1	S	S	22.1
For-hire truck	S	S	S	S	S	S	11.6
Private truck	15.2	7.4	21.3	8.0	29.4	5.5	S
Rail	S	S	S	S	S	S	21.9
Water	-	-	-	-	-	-	-
Shallow draft	-	-	-	-	-	-	-
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	48.8	.1	S	S	S	S	13.4
Pipeline	-	-	-	-	S	S	S
Multiple modes	44.9	1.7	S	S	49.4	1.2	8.7
Parcel, U.S. Postal Service or courier	48.8	1.6	S	S	S	S	8.8
Truck and rail	S	S	S	S	S	S	27.9
Truck and water	S	S	S	S	S	S	31.6
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	S	S	S	S	47.0

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck	S	S	S	S	S	S	S
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	S	S	29.8
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	10.0	—	44.0	—	35.6	—	18.1
Single modes	10.1	.7	44.3	.8	36.0	1.3	23.1
Truck	12.1	4.8	32.0	13.9	15.4	12.0	25.5
For-hire truck	17.1	6.8	16.2	11.2	17.3	10.7	12.4
Private truck	20.7	6.1	S	S	24.2	4.0	33.6
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	29.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	47.3	.2	34.4
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	34.4
Truck and rail	S	S	S	S	S	S	29.8
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	44.6	.4	S	S	S	S	S
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	23.0	—	24.6	—	24.7	—	9.9
Single modes	23.6	1.2	24.8	.6	24.8	.2	11.6
Truck	25.4	3.4	26.5	4.3	28.4	4.9	12.6
For-hire truck	28.9	5.4	27.4	4.3	29.1	4.9	9.3
Private truck	25.1	3.8	41.0	2.4	26.5	.6	18.5
Rail	36.1	3.1	40.1	3.8	37.7	4.8	22.0
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	29.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	42.9	—	35.3	—	24.0
Parcel, U.S. Postal Service or courier	S	S	42.9	—	35.3	—	24.0
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	36.9	.6	S	S	S	S	29.8

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 28, PAPER OR PAPERBOARD ARTICLES							
Total	24.3	—	24.7	—	21.8	—	31.4
Single modes	23.4	.9	24.2	.6	21.3	.8	31.1
Truck	23.4	.9	24.2	.6	21.3	.8	31.3
For-hire truck	20.5	7.8	19.6	9.3	21.0	5.7	9.2
Private truck	33.8	7.6	38.5	9.0	46.6	5.3	31.6
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	30.6
Pipeline	S	S	S	S	S	S	S
Multiple modes	36.4	.3	21.3	—	29.3	.3	22.9
Parcel, U.S. Postal Service or courier	37.9	.3	24.1	—	35.0	—	22.9
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	46.7
SCTG 29, PRINTED PRODUCTS							
Total	31.4	—	19.3	—	25.9	—	16.8
Single modes	19.4	11.4	23.8	8.1	29.3	9.9	25.0
Truck	19.9	11.5	24.0	8.2	29.6	9.9	38.7
For-hire truck	22.5	9.1	25.4	7.9	29.6	9.8	14.0
Private truck	26.6	5.4	29.9	2.6	42.8	.4	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	28.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	16.0
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	16.0
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	46.6
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	20.2	—	12.8	—	11.1	—	7.6
Single modes	20.2	.8	13.2	.7	10.9	1.1	9.7
Truck	20.4	.9	13.2	.7	10.9	1.4	9.8
For-hire truck	6.6	6.0	11.2	5.2	9.7	4.0	6.9
Private truck	S	S	27.2	4.8	29.0	3.7	13.6
Rail	S	S	S	S	S	S	32.4
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	41.2	—	37.9	.2	25.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	25.2	1.0	29.4	.6	34.0	1.1	7.7
Parcel, U.S. Postal Service or courier	26.0	.8	31.8	.6	40.3	1.1	7.7
Truck and rail	S	S	S	S	46.6	.5	22.4
Truck and water	S	S	S	S	S	S	42.8
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	17.4	.3	30.7	.5	22.1	.2	30.9

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	40.3	—	35.5	—	39.9	—	32.3
Single modes	41.8	2.6	34.1	4.1	39.4	1.0	S
Truck	42.2	2.6	35.2	4.2	42.6	8.4	S
For-hire truck	S	S	31.4	13.7	S	S	17.6
Private truck	34.9	10.1	40.0	12.4	28.5	9.8	23.4
Rail	S	S	S	S	S	S	30.4
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	29.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	39.0	1.4	S	S	S	S	36.0
Parcel, U.S. Postal Service or courier	42.4	1.4	41.9	—	S	S	15.0
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	31.4
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	49.1	1.4	S	S	S	S	S
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	27.0	—	22.4	—	28.0	—	24.6
Single modes	27.6	3.5	22.1	1.5	27.9	.8	27.2
Truck	27.7	3.5	22.8	2.6	28.5	2.8	27.2
For-hire truck	30.8	6.5	22.1	7.8	30.7	4.8	7.2
Private truck	42.3	7.1	44.7	8.7	S	S	23.3
Rail	S	S	S	S	47.3	3.0	30.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	42.5	—	45.6	—	43.9	.1	15.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	43.2
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	35.1
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	45.5	.7	S
SCTG 33, ARTICLES OF BASE METAL							
Total	18.3	—	30.1	—	32.7	—	14.9
Single modes	19.2	3.9	31.5	3.6	35.7	6.0	15.8
Truck	19.2	3.9	31.5	3.6	35.8	6.1	16.1
For-hire truck	19.4	7.2	32.6	7.8	35.7	6.3	11.5
Private truck	30.7	4.5	48.5	6.5	S	S	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	40.3	—	S	S	S	S	21.0
Pipeline	S	S	S	S	S	S	S
Multiple modes	42.0	3.8	S	S	S	S	11.7
Parcel, U.S. Postal Service or courier	42.0	3.8	S	S	S	S	11.7
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	44.0	1.2	S	S	S	S	48.4

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	4.9	—	9.2	—	14.1	—	12.5
Single modes	5.5	2.9	9.6	1.4	14.4	1.4	15.4
Truck	5.5	2.9	9.6	1.5	14.4	1.4	14.9
For-hire truck	9.5	6.3	13.2	5.8	17.5	4.7	31.4
Private truck	30.8	4.7	31.2	5.5	35.7	4.7	21.6
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	29.5	—	44.4	—	40.4	—	10.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	23.7	2.6	37.1	1.2	40.3	1.2	26.5
Parcel, U.S. Postal Service or courier	24.2	2.6	36.8	1.1	36.6	.4	26.4
Truck and rail	S	S	S	S	S	S	25.8
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	31.9	.6	29.6	.6	44.2	.6	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	17.1	—	12.3	—	13.2	—	10.6
Single modes	16.9	2.2	12.9	1.4	13.6	1.5	18.0
Truck	16.1	2.7	12.9	1.8	13.1	2.1	19.7
For-hire truck	15.7	1.9	15.2	3.3	12.7	2.1	8.5
Private truck	24.2	1.4	20.6	3.0	28.3	.6	S
Rail	S	S	43.5	.5	S	S	26.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	29.7	1.7	47.6	.7	42.1	.8	9.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	16.7	2.4	19.5	.5	26.0	.9	7.0
Parcel, U.S. Postal Service or courier	16.7	2.4	19.5	.5	26.0	.9	7.0
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	40.6	1.2	49.8	1.0	45.6
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	19.4	—	23.6	—	35.1	—	38.6
Single modes	17.6	5.4	23.0	3.6	36.2	1.6	37.0
Truck	17.5	5.4	23.0	3.6	36.3	1.6	37.8
For-hire truck	21.4	7.8	26.4	6.7	38.2	4.9	30.7
Private truck	29.0	6.1	36.8	5.0	34.4	4.0	45.0
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	17.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	35.7	.6	36.5	.3	37.9	.5	19.2
Parcel, U.S. Postal Service or courier	35.7	.6	36.6	.3	38.3	.5	19.2
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	44.6	—	S	S	S	S	20.3
Single modes	46.1	11.8	S	S	S	S	25.2
Truck	S	S	S	S	S	S	25.0
For-hire truck	S	S	S	S	S	S	26.5
Private truck	S	S	S	S	S	S	27.6
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	49.1	3.0	S	S	S	S	27.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	42.9	11.8	S	S	S	S	21.6
Parcel, U.S. Postal Service or courier	42.9	11.8	S	S	S	S	21.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	35.6	—	43.3	—	S	S	28.8
Single modes	40.2	5.9	47.9	7.6	S	S	S
Truck	41.1	6.2	48.5	9.6	S	S	S
For-hire truck	29.6	8.5	45.5	10.2	S	S	12.7
Private truck	S	S	S	S	S	S	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	41.5	1.0	S	S	S	S	19.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	18.4	5.4	39.1	7.1	42.8	7.5	11.8
Parcel, U.S. Postal Service or courier	18.4	5.4	39.1	7.1	42.8	7.5	11.8
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	49.0	1.4	S	S	S	S	S
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	18.3	—	13.9	—	14.3	—	11.6
Single modes	18.8	1.0	14.3	1.3	15.3	4.2	12.0
Truck	18.9	1.1	14.4	1.3	15.4	4.2	11.9
For-hire truck	13.5	7.2	19.0	8.1	17.8	6.9	5.6
Private truck	38.5	6.7	33.9	7.7	34.6	5.9	14.5
Rail	S	S	S	S	S	S	29.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	21.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	34.7	.4	S	S	S	S	7.3
Parcel, U.S. Postal Service or courier	37.1	.3	39.9	—	44.9	.1	6.2
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	S
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	26.2

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	14.2	—	29.9	—	22.2	—	7.4
Single modes	14.9	2.3	30.4	1.1	22.8	1.6	9.5
Truck	16.0	3.2	34.4	8.7	23.2	2.0	9.6
For-hire truck	19.0	4.9	20.0	11.7	23.3	5.6	7.9
Private truck	27.9	3.9	S	S	S	S	40.6
Rail	S	S	S	S	S	S	28.5
Water	S	S	S	S	S	S	29.8
Shallow draft	S	S	S	S	S	S	29.8
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	15.2
Pipeline	S	S	S	S	S	S	S
Multiple modes	14.1	2.6	15.3	1.0	13.8	1.1	6.3
Parcel, U.S. Postal Service or courier	14.1	2.6	15.3	1.0	13.8	1.1	6.2
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	47.6	.6	S	S	S
SCTG 41, WASTE AND SCRAP							
Total	S	S	44.2	—	45.8	—	36.8
Single modes	S	S	44.2	—	45.8	—	36.8
Truck	S	S	44.2	—	45.8	—	36.8
For-hire truck	S	S	S	S	47.0	7.3	33.2
Private truck	S	S	S	S	S	S	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 43, MIXED FREIGHT							
Total	12.7	—	21.5	—	19.4	—	22.5
Single modes	12.8	.7	21.5	—	19.6	.3	31.5
Truck	12.8	.7	21.5	—	19.6	.3	31.1
For-hire truck	25.2	6.5	37.5	6.9	30.9	9.3	15.8
Private truck	19.7	6.3	25.6	6.9	27.1	9.3	19.4
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	19.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	34.9	.7	21.2	—	25.8	.3	17.7
Parcel, U.S. Postal Service or courier	34.9	.7	21.2	—	25.8	.3	17.7
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	44.9	—	40.7	—	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	39.3	—	S	S	S	S	33.4
Single modes	40.4	4.0	S	S	S	S	47.5
Truck	34.2	11.6	30.7	18.5	S	S	S
For-hire truck	47.4	11.6	42.8	9.4	S	S	22.2
Private truck	20.8	12.5	33.2	16.9	47.1	6.2	42.4
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	29.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	31.3	4.0	46.2	.2	33.1	1.8	48.1
Parcel, U.S. Postal Service or courier	31.3	4.0	46.2	.2	33.1	1.8	48.1
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	32.1

— 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.

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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	5.1	—	11.8	—	10.6	—
NEW ENGLAND STATES						
Connecticut	14.1	—	17.8	—	17.7	.1
Maine	22.9	—	35.4	—	33.4	—
Massachusetts	15.0	.2	8.5	—	8.7	.1
New Hampshire	25.2	—	43.3	—	44.7	.3
Rhode Island	20.9	—	20.3	—	21.1	—
Vermont	S	S	49.5	—	49.2	—
MIDDLE ATLANTIC STATES						
New Jersey	12.3	.4	11.6	.1	12.7	.3
New York	11.3	.2	9.5	.1	10.1	.3
Pennsylvania	15.3	.8	7.4	.2	6.9	.3
EAST NORTH CENTRAL STATES						
Illinois	12.9	.3	19.6	.1	21.6	.7
Indiana	33.4	.4	15.7	.1	12.8	.2
Michigan	14.1	.3	16.7	.1	16.9	.4
Ohio	10.5	.2	13.4	.1	15.1	.3
Wisconsin	13.3	.1	18.2	—	18.1	.2
WEST NORTH CENTRAL STATES						
Iowa	19.6	.1	32.7	—	30.4	.3
Kansas	19.3	—	28.8	—	29.6	.1
Minnesota	9.0	—	21.8	—	23.3	.1
Missouri	15.7	.1	23.9	—	26.3	.1
Nebraska	21.8	—	37.7	—	41.0	.1
North Dakota	44.5	—	48.3	—	49.6	.1
South Dakota	12.3	—	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	12.9	—	24.6	—	23.7	—
District of Columbia	41.5	—	34.9	—	37.2	—
Florida	15.6	.7	21.0	.6	27.1	1.9
Georgia	11.9	.5	13.7	.3	9.4	.6
Maryland	19.0	.2	11.8	—	12.1	—
North Carolina	9.3	3.0	14.7	2.5	26.4	2.7
South Carolina	10.6	.4	15.4	.6	15.0	.6
Virginia	9.2	.5	9.4	.5	8.6	.5
West Virginia	10.8	—	16.9	—	19.0	.2
EAST SOUTH CENTRAL STATES						
Alabama	26.5	.3	13.6	—	16.6	.2
Kentucky	11.9	.1	9.0	—	10.6	.1
Mississippi	18.0	—	16.1	—	16.2	.1
Tennessee	12.6	.3	14.1	.2	13.4	.3
WEST SOUTH CENTRAL STATES						
Arkansas	19.9	—	27.4	—	29.1	.3
Louisiana	17.8	—	29.8	—	30.2	.2
Oklahoma	28.2	—	S	S	S	S
Texas	10.9	.3	15.0	.2	14.5	.9
MOUNTAIN STATES						
Arizona	38.2	.2	48.7	.1	47.3	.8
Colorado	13.8	—	18.1	—	18.1	.1
Idaho	16.9	—	17.7	—	18.1	—
Montana	34.1	—	S	S	S	S
Nevada	26.5	—	22.6	—	22.4	—
New Mexico	30.5	—	38.9	—	38.7	—
Utah	15.9	—	26.7	—	27.7	—
Wyoming	S	S	S	S	S	S
PACIFIC STATES						
Alaska	43.3	—	S	S	S	S
California	16.7	.4	24.5	.2	24.1	1.6
Hawaii	29.9	—	26.1	—	26.5	—
Oregon	13.4	—	29.5	—	29.7	.3
Washington	20.1	.1	29.3	—	29.1	.4

— Represents data cell equal to zero or less than 1 unit of measure.
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Table B-8. **Estimated Measures of Reliability for Inbound Shipment Characteristics by State of Origin for State of Destination: 2002**

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

State of origin	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	5.7	—	9.4	—	8.1	—
NEW ENGLAND STATES						
Connecticut	32.8	.2	36.6	—	39.8	.1
Maine	26.0	—	S	S	S	S
Massachusetts	31.7	.4	27.9	—	33.5	.2
New Hampshire	13.0	—	27.6	—	26.2	—
Rhode Island	18.5	—	37.3	—	39.1	—
Vermont	S	S	37.8	—	35.6	—
MIDDLE ATLANTIC STATES						
New Jersey	12.5	.3	26.6	—	25.8	.3
New York	19.9	.3	41.3	.3	37.2	.8
Pennsylvania	10.9	.3	13.3	.1	13.6	.3
EAST NORTH CENTRAL STATES						
Illinois	14.7	.4	17.9	.1	18.2	.5
Indiana	13.9	.3	15.1	—	17.6	.4
Michigan	14.6	.2	36.1	.1	37.4	.5
Ohio	24.5	.9	49.0	2.7	S	S
Wisconsin	18.0	.1	24.6	.1	27.4	.4
WEST NORTH CENTRAL STATES						
Iowa	24.3	.2	14.7	—	14.8	.1
Kansas	21.3	.1	34.2	.1	38.1	.9
Minnesota	25.4	.2	33.5	—	33.4	.4
Missouri	9.2	—	27.8	—	29.8	.2
Nebraska	30.2	—	32.9	—	33.2	.1
North Dakota	41.2	—	S	S	S	S
South Dakota	31.6	—	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	30.8	—	25.1	—	20.7	—
District of Columbia	S	S	39.4	—	40.2	—
Florida	24.7	.6	25.4	.2	25.7	.4
Georgia	16.2	.8	19.2	.6	19.3	.8
Maryland	15.2	.1	32.1	.2	33.4	.3
North Carolina	9.3	2.3	14.7	4.3	26.4	3.2
South Carolina	15.0	.9	16.8	1.0	14.5	.7
Virginia	7.3	.4	21.2	.7	27.3	1.2
West Virginia	21.6	.2	38.0	1.7	35.9	2.4
EAST SOUTH CENTRAL STATES						
Alabama	14.5	.2	12.0	.1	13.5	.4
Kentucky	14.6	.2	24.2	1.2	24.4	2.1
Mississippi	17.6	—	22.4	—	22.5	.2
Tennessee	9.0	.3	18.9	.3	17.1	.4
WEST SOUTH CENTRAL STATES						
Arkansas	26.0	.1	24.1	—	25.6	.2
Louisiana	8.2	—	14.9	—	14.2	.4
Oklahoma	12.4	—	18.1	—	21.9	—
Texas	25.5	.6	5.6	.1	9.9	.6
MOUNTAIN STATES						
Arizona	37.7	.1	S	S	S	S
Colorado	20.1	—	22.6	—	22.6	.1
Idaho	S	S	34.8	—	35.0	—
Montana	42.2	—	32.7	—	33.2	—
Nevada	32.2	—	S	S	49.6	—
New Mexico	S	S	48.4	—	49.4	.1
Utah	35.5	—	47.1	—	47.3	.1
Wyoming	21.4	—	43.7	—	43.4	.4
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	8.6	.1	15.8	—	15.9	.7
Hawaii	S	S	S	S	S	S
Oregon	19.3	—	28.2	—	29.7	.2
Washington	26.4	—	23.3	—	23.4	—

— 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-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	5.1	8.3	10.8	11.8	5.0	13.8	10.6	4.7	12.1	7.2	10.5	16.1
Single modes	5.2	8.8	11.5	11.3	5.0	13.1	10.9	4.8	12.6	8.3	8.2	14.2
Truck	5.4	9.0	12.0	9.8	6.0	11.7	8.8	4.6	10.3	8.4	6.0	14.3
Rail	22.2	9.0	26.4	S	11.4	S	30.2	9.8	39.0	21.2	14.7	16.7
Water	S	S	S	S	S	S	S	S	S	27.4	30.5	22.0
Air (includes truck and air)	22.2	32.6	17.8	27.8	22.6	28.5	36.3	18.9	41.4	8.3	4.3	11.3
Pipeline	S	42.1	S	S	36.1	S	S	S	S	S	S	S
Multiple modes	11.3	7.2	12.0	19.5	7.9	25.0	14.4	15.6	22.8	6.6	5.7	10.1
Parcel, U.S. Postal Service or courier ..	12.0	7.4	12.6	19.6	5.9	25.2	19.8	7.1	28.7	6.6	5.8	10.1
Truck and rail	48.7	14.2	49.4	48.5	28.7	45.5	33.5	32.3	26.0	24.2	24.2	39.4
All other multiple modes	42.7	S	S	41.5	S	S	S	S	S	21.6	23.3	29.0
Other and unknown modes ...	21.1	4.2	21.9	38.1	7.1	117.5	16.1	27.0	12.8	27.4	14.0	25.9

- 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-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	5.1	8.3	10.8	11.8	5.0	13.8	10.6	4.7	12.1	7.2	10.5	16.1
01-05	Agricultural products and fish	13.7	9.4	15.5	23.9	10.8	24.7	22.3	9.1	29.3	28.6	S	S
06-09	Grains, alcohol, and tobacco products	19.7	18.5	28.0	20.7	17.8	23.5	11.1	14.0	16.7	36.3	17.4	184.8
10-14	Stones, nonmetallic minerals, and metallic ores	20.1	20.0	27.7	14.2	9.7	15.4	22.2	13.4	10.3	23.1	18.8	14.3
15-19	Coal and petroleum products	18.7	7.6	15.3	20.8	9.9	17.0	20.1	18.5	20.2	S	14.6	S
20-24	Basic chemicals, chemical, and pharmaceutical products	15.6	6.8	25.8	22.3	9.8	30.6	29.2	14.0	42.9	13.8	12.7	22.8
25-30	Logs, wood products, and textile and leather	14.9	28.7	24.6	29.3	11.4	35.1	20.8	7.2	23.3	7.5	6.7	12.3
31-34	Base metal and machinery ..	10.4	5.7	14.4	28.9	19.9	55.7	19.1	6.8	27.3	12.6	8.1	13.8
35-38	Electronic, motorized vehicles, and precision instruments	13.3	26.7	24.0	18.9	8.0	25.6	29.5	9.3	36.7	13.2	12.0	19.1
39-43	Furniture, mixed freight and misc. manufactured prod. ..	8.7	5.2	23.5	16.6	15.1	54.1	12.8	7.5	26.2	8.2	10.9	14.0
--	Commodity unknown	39.3	33.6	19.9	S	35.1	S	S	48.1	S	33.4	42.5	42.7

- 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.

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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.

