

Texas: 2002

Issued December 2004

EC02TCF-TX

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	589 064	100.0	1 082 596	100.0	229 846	100.0	358
Single modes	499 864	84.9	1 045 363	96.6	221 191	96.2	209
Truck ²	379 531	64.4	584 922	54.0	92 708	40.3	143
For-hire truck	200 250	34.0	235 303	21.7	63 046	27.4	498
Private truck	178 333	30.3	348 682	32.2	29 443	12.8	58
Rail	37 571	6.4	146 341	13.5	73 307	31.9	758
Water	16 268	2.8	72 177	6.7	28 590	12.4	317
Shallow draft	10 837	1.8	50 160	4.6	8 884	3.9	218
Great Lakes	—	—	—	—	—	—	—
Deep draft	5 431	.9	22 016	2.0	S	S	626
Air (includes truck and air)	12 428	2.1	146	—	229	.1	1 808
Pipeline ³	54 066	9.2	241 777	22.3	S	S	S
Multiple modes	66 258	11.2	12 397	1.1	6 054	2.6	724
Parcel, U.S. Postal Service or courier	63 096	10.7	1 292	.1	854	.4	722
Truck and rail	1 216	.2	S	S	1 491	.6	1 148
Truck and water	474	—	2 174	.2	1 377	.6	5 742
Rail and water	S	S	S	S	S	S	1 111
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	22 941	3.9	24 836	2.3	2 600	1.1	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	84.9	86.8	96.6	94.4	96.2	91.6
Truck ²	64.4	64.7	54.0	50.0	40.3	38.2
For-hire truck	34.0	34.8	21.7	21.2	27.4	27.3
Private truck	30.3	29.5	32.2	28.4	12.8	10.6
Rail	6.4	7.8	13.5	10.7	31.9	29.2
Water	2.8	3.5	6.7	10.6	12.4	15.2
Shallow draft	1.8	2.7	4.6	7.8	3.9	7.3
Great Lakes	—	—	—	—	—	—
Deep draft .....	.9	.8	2.0	2.9	S	7.9
Air (includes truck and air)	2.1	3.2	—	—	.1	.1
Pipeline ³	9.2	7.5	22.3	23.0	S	S
Multiple modes	11.2	10.4	1.1	.9	2.6	S
Parcel, U.S. Postal Service or courier	10.7	9.9	.1	.1	.4	.4
Truck and rail .....	.2	.4	S	.5	.6	1.5
Truck and water	—	S	.2	S	.6	S
Rail and water	S	S	S	S	S	S
Other multiple modes	S	—	S	S	S	S
Other and unknown modes	3.9	2.8	2.3	4.8	1.1	1.4

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

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

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	229 846	100.0	358
Truck	92 708	40.3	143
Rail	73 307	31.9	758
Shallow draft	8 884	3.9	218
Great Lakes	—	—	—
Deep draft	S	S	626
Air	229	.1	1 808
Parcel, U.S. Postal Service or courier	26 357	11.5	227
Pipeline ³	S	S	S
Other and unknown modes	2 600	1.1	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	589 064	100.0	1 082 596	100.0	229 846	100.0
Less than 50 miles	208 161	35.3	597 039	55.1	10 655	4.6
50 to 99 miles	43 909	7.5	151 709	14.0	11 698	5.1
100 to 249 miles	99 944	17.0	135 223	12.5	28 505	12.4
250 to 499 miles	62 794	10.7	85 946	7.9	34 227	14.9
500 to 749 miles	32 466	5.5	22 559	2.1	17 159	7.5
750 to 999 miles	53 536	9.1	35 817	3.3	38 452	16.7
1,000 to 1,499 miles	71 172	12.1	48 853	4.5	77 479	33.7
1,500 to 1,999 miles	16 996	2.8	5 153	.5	10 828	4.7
2,000 miles or more	685	.1	S	S	S	S
Single modes	499 864	100.0	1 045 363	100.0	221 191	100.0
Less than 50 miles	192 030	38.4	573 306	54.8	10 408	4.7
50 to 99 miles	41 306	8.3	150 847	14.4	11 587	5.2
100 to 249 miles	86 373	17.3	127 944	12.2	26 962	12.2
250 to 499 miles	55 186	11.0	84 637	8.1	33 616	15.2
500 to 749 miles	22 748	4.6	21 701	2.1	16 390	7.4
750 to 999 miles	40 181	8.0	34 750	3.3	37 083	16.8
1,000 to 1,499 miles	51 475	10.3	47 190	4.5	74 679	33.8
1,500 to 1,999 miles	10 177	2.0	4 750	.5	9 891	4.5
2,000 miles or more	S	S	S	S	S	S
Truck³	379 531	100.0	584 922	100.0	92 708	100.0
Less than 50 miles	144 928	38.2	360 777	61.7	6 701	7.2
50 to 99 miles	25 883	6.8	60 972	10.4	5 152	5.6
100 to 249 miles	78 470	20.7	80 132	13.7	15 834	17.1
250 to 499 miles	45 275	11.9	40 286	6.9	16 130	17.4
500 to 749 miles	17 928	4.7	12 712	2.2	9 336	10.1
750 to 999 miles	26 508	7.0	12 841	2.2	13 182	14.2
1,000 to 1,499 miles	33 524	8.8	14 399	2.5	20 663	22.3
1,500 to 1,999 miles	6 744	1.8	2 578	.4	5 167	5.6
2,000 miles or more	S	S	S	S	S	S
For-hire truck	200 250	100.0	235 303	100.0	63 046	100.0
Less than 50 miles	48 509	24.2	113 360	48.2	1 981	3.1
50 to 99 miles	8 380	4.2	22 415	9.5	1 912	3.0
100 to 249 miles	39 461	19.7	41 277	17.5	8 477	13.4
250 to 499 miles	30 768	15.4	23 027	9.8	9 298	14.7
500 to 749 miles	14 345	7.2	9 547	4.1	7 010	11.1
750 to 999 miles	22 667	11.3	10 168	4.3	10 481	16.6
1,000 to 1,499 miles	30 116	15.0	12 923	5.5	18 602	29.5
1,500 to 1,999 miles	5 735	2.9	2 362	1.0	4 746	7.5
2,000 miles or more	S	S	S	S	S	S
Private truck	178 333	100.0	348 682	100.0	29 443	100.0
Less than 50 miles	96 180	53.9	247 019	70.8	4 709	16.0
50 to 99 miles	17 444	9.8	38 405	11.0	3 226	11.0
100 to 249 miles	38 767	21.7	38 659	11.1	7 314	24.8
250 to 499 miles	14 314	8.0	17 182	4.9	6 798	23.1
500 to 749 miles	3 500	2.0	3 116	.9	2 288	7.8
750 to 999 miles	3 786	2.1	2 643	.8	2 670	9.1
1,000 to 1,499 miles	3 332	1.9	1 446	.4	2 019	6.9
1,500 to 1,999 miles	1 008	.6	213	—	417	1.4
2,000 miles or more	S	S	S	S	S	S
Rail	37 571	100.0	146 341	100.0	73 307	100.0
Less than 50 miles	5 363	14.3	25 355	17.3	812	1.1
50 to 99 miles	2 291	6.1	34 998	23.9	3 124	4.3
100 to 249 miles	2 675	7.1	27 996	19.1	7 014	9.6
250 to 499 miles	3 238	8.6	16 987	11.6	7 626	10.4
500 to 749 miles	2 712	7.2	6 544	4.5	5 338	7.3
750 to 999 miles	8 930	23.8	12 169	8.3	13 959	19.0
1,000 to 1,499 miles	10 401	27.7	20 928	14.3	32 445	44.3
1,500 to 1,999 miles	1 943	5.2	1 353	.9	2 965	4.0
2,000 miles or more	S	S	S	S	S	S
Water	16 268	100.0	72 177	100.0	28 590	100.0
Less than 50 miles	9 511	58.5	37 508	52.0	S	S
50 to 99 miles	826	5.1	5 130	7.1	608	2.1
100 to 249 miles	2 838	17.4	13 728	19.0	2 986	10.4
250 to 499 miles	487	3.0	2 464	3.4	1 198	4.2
500 to 749 miles	223	1.4	750	1.0	658	2.3
750 to 999 miles	1 375	8.5	5 433	7.5	6 248	21.9
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	—	—	—	—	—	—
Shallow draft	10 837	100.0	50 160	100.0	8 884	100.0
Less than 50 miles	6 844	63.2	30 746	61.3	S	S
50 to 99 miles	723	6.7	4 219	8.4	466	5.3
100 to 249 miles	2 214	20.4	10 138	20.2	1 954	22.0
250 to 499 miles	486	4.5	2 443	4.9	1 182	13.3
500 to 749 miles	223	2.1	750	1.5	658	7.4
750 to 999 miles	188	1.7	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—

See footnotes at end of table.

Table 3. Shipment Characteristics by Mode of Transportation and Distance Shipped for State of Origin: 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	5 431	100.0	22 016	100.0	S	S
Less than 50 miles	2 667	49.1	6 762	30.7	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	1 187	21.9	4 827	21.9	5 363	27.2
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	—	—	—	—	—	—
Air (includes truck and air)	12 428	100.0	146	100.0	229	100.0
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	1 161	9.3	12	8.1	5	2.2
250 to 499 miles	451	3.6	3	2.2	3	1.4
500 to 749 miles	1 519	12.2	32	21.9	40	17.4
750 to 999 miles	2 409	19.4	33	23.0	51	22.5
1,000 to 1,499 miles	5 447	43.8	52	35.5	93	40.6
1,500 to 1,999 miles	1 306	10.5	11	7.8	27	11.7
2,000 miles or more	S	S	S	S	S	S
Pipeline⁴	54 066	100.0	241 777	100.0	S	S
Less than 50 miles	32 228	59.6	149 666	61.9	S	S
50 to 99 miles	12 273	22.7	49 746	20.6	S	S
100 to 249 miles	1 228	2.3	6 076	2.5	S	S
250 to 499 miles	5 735	10.6	24 897	10.3	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
Multiple modes	66 258	100.0	12 397	100.0	6 054	100.0
Less than 50 miles	7 627	11.5	S	S	S	S
50 to 99 miles	1 316	2.0	S	S	S	S
100 to 249 miles	8 235	12.4	S	S	S	S
250 to 499 miles	6 583	9.9	S	S	S	S
500 to 749 miles	6 877	10.4	576	4.6	574	9.5
750 to 999 miles	12 628	19.1	908	7.3	1 207	19.9
1,000 to 1,499 miles	17 020	25.7	825	6.7	1 496	24.7
1,500 to 1,999 miles	5 740	8.7	S	S	S	S
2,000 miles or more	232	.4	28	.2	140	2.3
Parcel, U.S. Postal Service or courier	63 096	100.0	1 292	100.0	854	100.0
Less than 50 miles	7 242	11.5	258	20.0	6	.7
50 to 99 miles	1 178	1.9	37	2.8	3	.4
100 to 249 miles	7 029	11.1	191	14.8	41	4.8
250 to 499 miles	6 469	10.3	183	14.2	74	8.7
500 to 749 miles	6 721	10.7	193	15.0	142	16.6
750 to 999 miles	12 139	19.2	177	13.7	184	21.6
1,000 to 1,499 miles	16 531	26.2	201	15.5	291	34.0
1,500 to 1,999 miles	5 637	8.9	49	3.8	106	12.4
2,000 miles or more	151	.2	2	.2	7	.8
Truck and rail	1 216	100.0	S	S	1 491	100.0
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	32	2.6	S	S	S	S
750 to 999 miles	388	31.9	S	S	S	S
1,000 to 1,499 miles	412	33.9	418	14.9	694	46.5
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	—	—	—	—	—	—
Truck and water	474	100.0	2 174	100.0	1 377	100.0
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	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	—	—	—	—	—	—
2,000 miles or more	82	17.2	26	1.2	133	9.7

See footnotes at end of table.

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

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

Mode of transportation and distance shipped ¹ (based on Great Circle Distance)	Value		Tons		Ton-miles ²	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Multiple modes—Con.						
Rail and water	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	—	—	—	—	—	—
Other and unknown modes	22 941	100.0	24 836	100.0	2 600	100.0
Less than 50 miles	8 503	37.1	20 987	84.5	189	7.3
50 to 99 miles	1 287	5.6	324	1.3	30	1.2
100 to 249 miles	5 336	23.3	1 813	7.3	361	13.9
250 to 499 miles	1 026	4.5	358	1.4	141	5.4
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	728	3.2	159	.6	S	S
1,000 to 1,499 miles	2 676	11.7	838	3.4	S	S
1,500 to 1,999 miles	479	2.1	44	.2	89	3.4
2,000 miles or more	S	S	S	S	S	S

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

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

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

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

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

⁴Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Total	589 064	100.0	1 082 596	100.0	229 846	100.0	358
Less than 50 lb	61 042	10.4	1 057	.1	390	.2	454
50 to 99 lb	18 196	3.1	910	—	251	.1	278
100 to 499 lb	51 952	8.8	5 857	.5	1 449	.6	248
500 to 749 lb	13 652	2.3	2 479	.2	456	.2	183
750 to 999 lb	10 245	1.7	1 976	.2	367	.2	186
1,000 to 9,999 lb	87 166	14.8	38 799	3.6	9 062	3.9	220
10,000 to 49,999 lb	194 468	33.0	319 350	29.5	71 615	31.2	224
50,000 to 99,999 lb	40 506	6.9	156 265	14.4	10 887	4.7	67
100,000 lb or more	111 836	19.0	555 903	51.3	135 368	58.9	472
Single modes	499 864	100.0	1 045 363	100.0	221 191	100.0	209
Less than 50 lb	18 504	3.7	555	—	77	—	230
50 to 99 lb	7 861	1.6	638	—	104	—	164
100 to 499 lb	39 337	7.9	5 061	.5	1 030	.5	195
500 to 749 lb	11 702	2.3	2 257	.2	415	.2	183
750 to 999 lb	9 527	1.9	1 884	.2	355	.2	188
1,000 to 9,999 lb	82 232	16.5	37 735	3.6	8 734	3.9	217
10,000 to 49,999 lb	185 406	37.1	313 966	30.0	69 835	31.6	223
50,000 to 99,999 lb	36 773	7.4	155 180	14.8	10 646	4.8	66
100,000 lb or more	108 522	21.7	528 087	50.5	129 995	58.8	471
Truck²	379 531	100.0	584 922	100.0	92 708	100.0	143
Less than 50 lb	12 953	3.4	538	—	47	—	79
50 to 99 lb	6 829	1.8	629	.1	88	.1	137
100 to 499 lb	36 845	9.7	5 036	.9	987	1.1	186
500 to 749 lb	10 950	2.9	2 250	.4	407	.4	180
750 to 999 lb	9 059	2.4	1 880	.3	349	.4	186
1,000 to 9,999 lb	80 237	21.1	37 669	6.4	8 643	9.3	215
10,000 to 49,999 lb	182 123	48.0	311 772	53.3	67 345	72.6	217
50,000 to 99,999 lb	31 498	8.3	153 817	26.3	9 486	10.2	60
100,000 lb or more	9 038	2.4	71 330	12.2	5 356	5.8	82
For-hire truck	200 250	100.0	235 303	100.0	63 046	100.0	498
Less than 50 lb	4 056	2.0	54	—	29	—	433
50 to 99 lb	2 197	1.1	93	—	63	.1	681
100 to 499 lb	18 379	9.2	1 073	.5	711	1.1	669
500 to 749 lb	4 726	2.4	471	.2	281	.4	606
750 to 999 lb	2 760	1.4	347	.1	236	.4	685
1,000 to 9,999 lb	39 459	19.7	10 148	4.3	5 506	8.7	559
10,000 to 49,999 lb	109 948	54.9	138 533	58.9	48 109	76.3	365
50,000 to 99,999 lb	13 261	6.6	65 018	27.6	5 619	8.9	84
100,000 lb or more	5 465	2.7	19 566	8.3	2 492	4.0	262
Private truck	178 333	100.0	348 682	100.0	29 443	100.0	58
Less than 50 lb	8 891	5.0	484	.1	18	—	37
50 to 99 lb	4 630	2.6	535	.2	25	—	46
100 to 499 lb	18 405	10.3	3 954	1.1	273	.9	63
500 to 749 lb	6 190	3.5	1 775	.5	124	.4	70
750 to 999 lb	6 253	3.5	1 525	.4	111	.4	72
1,000 to 9,999 lb	40 384	22.6	27 419	7.9	3 099	10.5	107
10,000 to 49,999 lb	71 794	40.3	172 557	49.5	19 068	64.8	110
50,000 to 99,999 lb	18 218	10.2	88 700	25.4	3 863	13.1	43
100,000 lb or more	3 567	2.0	51 733	14.8	S	S	S
Rail	37 571	100.0	146 341	100.0	73 307	100.0	758
Less than 50 lb	S	S	S	S	S	S	783
50 to 99 lb	S	S	S	S	S	S	S
100 to 499 lb	S	S	S	S	S	S	959
500 to 749 lb	S	S	S	S	S	S	993
750 to 999 lb	S	S	S	S	S	S	213
1,000 to 9,999 lb	S	S	23	—	S	S	1 115
10,000 to 49,999 lb	2 651	7.1	1 369	.9	1 841	2.5	1 304
50,000 to 99,999 lb	5 105	13.6	1 264	.9	1 146	1.6	937
100,000 lb or more	29 439	78.4	143 681	98.2	70 286	95.9	694
Water	16 268	100.0	72 177	100.0	28 590	100.0	317
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	S	S	S	S	S	S	4
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	16 265	100.0	72 167	100.0	28 589	100.0	322
Shallow draft	10 837	100.0	50 160	100.0	8 884	100.0	218
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	S	S	S	S	S	S	49
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	10 836	100.0	50 160	100.0	8 884	100.0	218

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	5 431	100.0	22 016	100.0	S	S	626
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	S	S	S	S	S	S	1
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	5 429	100.0	22 008	100.0	S	S	665
Air (includes truck and air)	12 428	100.0	146	100.0	229	100.0	1 808
Less than 50 lb	5 551	44.7	17	12.0	30	13.2	1 808
50 to 99 lb	1 031	8.3	9	5.9	16	7.1	1 876
100 to 499 lb	2 455	19.8	23	15.9	40	17.5	1 843
500 to 749 lb	S	S	6	3.9	7	3.1	1 246
750 to 999 lb	S	S	S	S	S	S	2 295
1,000 to 9,999 lb	1 629	13.1	38	26.3	60	26.0	1 361
10,000 to 49,999 lb	S	S	S	S	S	S	1 697
50,000 to 99,999 lb	S	S	S	S	S	S	733
100,000 lb or more	—	—	—	—	—	—	—
Pipeline³	54 066	100.0	241 777	100.0	S	S	S
Less than 50 lb	S	S	S	S	S	S	S
50 to 99 lb	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
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	17	—	85	—	—	—	—
100,000 lb or more	53 781	99.5	240 909	99.6	S	S	S
Multiple modes	66 258	100.0	12 397	100.0	6 054	100.0	724
Less than 50 lb	40 806	61.6	432	3.5	307	5.1	731
50 to 99 lb	8 958	13.5	222	1.8	143	2.4	643
100 to 499 lb	11 414	17.2	527	4.2	391	6.5	735
500 to 749 lb	1 481	2.2	88	.7	31	.5	353
750 to 999 lb	470	.7	32	.3	9	.1	252
1,000 to 9,999 lb	290	.4	27	.2	53	.9	1 627
10,000 to 49,999 lb	658	1.0	508	4.1	653	10.8	1 287
50,000 to 99,999 lb	S	S	S	S	S	S	690
100,000 lb or more	S	S	S	S	4 403	72.7	764
Parcel, U.S. Postal Service or courier	63 096	100.0	1 292	100.0	854	100.0	722
Less than 50 lb	40 806	64.7	432	33.5	307	35.9	731
50 to 99 lb	8 954	14.2	221	17.1	140	16.4	634
100 to 499 lb	11 370	18.0	517	40.0	365	42.8	706
500 to 749 lb	1 476	2.3	86	6.6	31	3.6	352
750 to 999 lb	469	.7	32	2.5	8	1.0	248
1,000 to 9,999 lb	S	S	S	S	S	S	761
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	1 216	100.0	S	S	1 491	100.0	1 148
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	S	S	S	S	S	S	56
100 to 499 lb	S	S	S	S	S	S	1 317
500 to 749 lb	S	S	S	S	S	S	1 372
750 to 999 lb	S	S	S	S	S	S	1 111
1,000 to 9,999 lb	237	19.5	12	.4	14	.9	1 176
10,000 to 49,999 lb	614	50.5	438	15.6	583	39.1	1 341
50,000 to 99,999 lb	S	S	S	S	S	S	1 176
100,000 lb or more	348	28.6	S	S	830	55.6	755
Truck and water	474	100.0	2 174	100.0	1 377	100.0	5 742
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	S	S	S	S	S	S	8 112
100 to 499 lb	S	S	S	S	S	S	5 418
500 to 749 lb	S	S	S	S	S	S	4 030
750 to 999 lb	S	S	S	S	S	S	1 815
1,000 to 9,999 lb	17	3.5	S	S	S	S	6 360
10,000 to 49,999 lb	40	8.5	28	1.3	S	S	2 711
50,000 to 99,999 lb	S	S	S	S	S	S	7
100,000 lb or more	373	78.6	2 127	97.8	1 241	90.1	S

See footnotes at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
Multiple modes—Con.							
Rail and water	S	S	S	S	S	S	1 111
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	S	S	S	S	S	S	1 111
Other multiple modes	S	S	S	S	S	S	S
Less than 50 lb	S	S	S	S	S	S	11
50 to 99 lb	S	S	S	S	S	S	11
100 to 499 lb	S	S	S	S	S	S	11
500 to 749 lb	S	S	S	S	S	S	12
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	S	S	S	S	S	S	11
10,000 to 49,999 lb	S	S	S	S	S	S	3
50,000 to 99,999 lb	S	S	S	S	S	S	2
100,000 lb or more	S	S	S	S	S	S	1 346
Other and unknown modes	22 941	100.0	24 836	100.0	2 600	100.0	76
Less than 50 lb	1 732	7.5	70	.3	6	.2	58
50 to 99 lb	S	S	50	.2	S	S	S
100 to 499 lb	1 202	5.2	269	1.1	28	1.1	S
500 to 749 lb	468	2.0	134	.5	10	.4	S
750 to 999 lb	248	1.1	60	.2	4	.2	S
1,000 to 9,999 lb	4 644	20.2	1 036	4.2	275	10.6	248
10,000 to 49,999 lb	8 405	36.6	4 877	19.6	1 128	43.4	232
50,000 to 99,999 lb	S	S	1 008	4.1	S	S	182
100,000 lb or more	1 149	5.0	17 332	69.8	S	S	S

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

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

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

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

³Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

SCTG code	Commodity description	Value		Tons		Ton-miles ¹		Average miles per shipment
		2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
	Total²	589 064	100.0	1 082 596	100.0	229 846	100.0	358
01	Live animals and live fish	S	S	S	S	S	S	138
02	Cereal grains	3 591	.6	33 356	3.1	11 331	4.9	317
03	Other agricultural products	5 599	1.0	8 421	.8	S	S	S
04	Animal feed and products of animal origin, n.e.c.	S	S	S	S	1 679	.7	S
05	Meat, fish, seafood, and their preparations	17 146	2.9	6 974	.6	3 198	1.4	S
06	Milled grain products and preparations, and bakery products	4 533	.8	S	S	1 425	.6	S
07	Other prepared foodstuffs and fats and oils	13 764	2.3	17 305	1.6	6 308	2.7	S
08	Alcoholic beverages	8 046	1.4	6 230	.6	1 156	.5	30
09	Tobacco products	S	S	22	—	1	—	S
10	Monumental or building stone	S	S	959	—	28	—	S
11	Natural sands	286	—	S	S	1 446	.6	S
12	Gravel and crushed stone	680	.1	87 197	8.1	3 910	1.7	32
13	Nonmetallic minerals n.e.c.	S	S	1 834	.2	751	.3	267
14	Metallic ores and concentrates	705	.1	S	S	S	S	S
15	Coal	698	.1	60 466	5.6	5 986	2.6	S
17	Gasoline and aviation turbine fuel	47 715	8.1	201 530	18.6	28 765	12.5	64
18	Fuel oils	20 608	3.5	103 736	9.6	10 032	4.4	36
19	Coal and petroleum products, n.e.c.	16 450	2.8	100 534	9.3	25 194	11.0	362
20	Basic chemicals	41 865	7.1	126 505	11.7	36 967	16.1	224
21	Pharmaceutical products	25 443	4.3	996	—	337	.1	600
22	Fertilizers	698	.1	S	S	630	.3	S
23	Chemical products and preparations, n.e.c.	17 238	2.9	10 370	1.0	5 172	2.3	518
24	Plastics and rubber	30 060	5.1	25 198	2.3	16 401	7.1	407
25	Logs and other wood in the rough	S	S	S	S	S	S	217
26	Wood products	7 735	1.3	17 257	1.6	5 101	2.2	128
27	Pulp, newsprint, paper, and paperboard	3 724	.6	4 434	.4	2 524	1.1	174
28	Paper or paperboard articles	5 964	1.0	3 014	.3	815	.4	260
29	Printed products	4 881	.8	1 027	—	614	.3	850
30	Textiles, leather, and articles of textiles or leather	12 764	2.2	1 157	.1	688	.3	929
31	Nonmetallic mineral products	16 713	2.8	90 731	8.4	20 201	8.8	407
32	Base metal in primary or semifinished forms and in finished basic shapes	21 005	3.6	30 130	2.8	13 123	5.7	281
33	Articles of base metal	17 865	3.0	9 078	.8	3 775	1.6	178
34	Machinery	23 481	4.0	2 168	.2	1 183	.5	181
35	Electronic and other electrical equipment and components and office equipment	62 147	10.6	2 904	.3	S	S	620
36	Motorized and other vehicles (including parts)	42 578	7.2	6 325	.6	3 705	1.6	S
37	Transportation equipment, n.e.c.	5 083	.9	S	S	131	—	1 265
38	Precision instruments and apparatus	5 952	1.0	S	S	183	—	585
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	6 916	1.2	1 378	.1	793	.3	S
40	Miscellaneous manufactured products	27 878	4.7	5 126	.5	1 853	.8	585
41	Waste and scrap	S	S	5 990	.6	S	S	138
43	Mixed freight	57 376	9.7	21 431	2.0	3 754	1.6	220
--	Commodity unknown	S	S	S	S	S	S	S

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

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

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

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

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

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

SCTG code	Commodity description	Value (percent)		Tons (percent)		Ton-miles ¹ (percent)	
		2002	1997	2002	1997	2002	1997
	Total²	100.0	100.0	100.0	100.0	100.0	100.0
01	Live animals and live fish	S	—	S	—	S	—
02	Cereal grains .....	.6	.5	3.1	2.6	4.9	1.7
03	Other agricultural products	1.0	.7	.8	1.0	S	1.6
04	Animal feed and products of animal origin, n.e.c.	S	1.3	S	1.9	.7	1.4
05	Meat, fish, seafood, and their preparations	2.9	2.4	.6	.7	1.4	1.7
06	Milled grain products and preparations, and bakery products .....	.8	1.6	S	.6	.6	1.0
07	Other prepared foodstuffs and fats and oils	2.3	4.6	1.6	2.7	2.7	3.4
08	Alcoholic beverages	1.4	1.1	.6	.7	.5	.6
09	Tobacco products	S	.1	—	—	—	—
10	Monumental or building stone	S	S	—	—	—	S
11	Natural sands	—	—	S	2.6	.6	.7
12	Gravel and crushed stone .....	.1	—	8.1	8.0	1.7	1.9
13	Nonmetallic minerals n.e.c.	S	.1	.2	S	.3	1.0
14	Metallic ores and concentrates .....	.1	.2	S	S	S	1.2
15	Coal .....	.1	.1	5.6	5.5	2.6	.2
17	Gasoline and aviation turbine fuel	8.1	5.0	18.6	15.2	12.5	14.8
18	Fuel oils	3.5	2.8	9.6	10.7	4.4	4.6
19	Coal and petroleum products, n.e.c.	2.8	3.7	9.3	11.6	11.0	9.7
20	Basic chemicals	7.1	10.4	11.7	10.4	16.1	22.6
21	Pharmaceutical products	4.3	1.8	—	—	.1	.3
22	Fertilizers .....	.1	.3	S	.6	.3	.4
23	Chemical products and preparations, n.e.c.	2.9	2.5	1.0	1.0	2.3	2.2
24	Plastics and rubber	5.1	5.2	2.3	2.7	7.1	8.5
25	Logs and other wood in the rough	S	—	S	S	S	—
26	Wood products	1.3	1.0	1.6	1.3	2.2	1.5
27	Pulp, newsprint, paper, and paperboard .....	.6	.8	.4	.6	1.1	1.4
28	Paper or paperboard articles	1.0	1.0	.3	.4	.4	.5
29	Printed products .....	.8	.9	—	.1	.3	.2
30	Textiles, leather, and articles of textiles or leather	2.2	4.0	.1	.4	.3	.6
31	Nonmetallic mineral products	2.8	1.4	8.4	8.1	8.8	4.7
32	Base metal in primary or semifinished forms and in finished basic shapes	3.6	2.5	2.8	1.8	5.7	3.8
33	Articles of base metal	3.0	3.3	.8	1.4	1.6	2.0
34	Machinery	4.0	4.3	.2	.3	.5	.6
35	Electronic and other electrical equipment and components and office equipment	10.6	18.6	.3	.4	S	1.2
36	Motorized and other vehicles (including parts)	7.2	3.0	.6	.3	1.6	.4
37	Transportation equipment, n.e.c. ....	.9	.9	S	—	—	—
38	Precision instruments and apparatus	1.0	2.5	S	—	—	—
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	1.2	2.0	.1	.2	.3	.3
40	Miscellaneous manufactured products	4.7	5.3	.5	.8	.8	1.5
41	Waste and scrap	S	.2	.6	.8	S	.8
43	Mixed freight	9.7	3.5	2.0	.9	1.6	.6
--	Commodity unknown	S	.4	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	589 064	100.0	1 082 596	100.0	229 846	100.0	358
Single modes	499 864	84.9	1 045 363	96.6	221 191	96.2	209
Truck ³	379 531	64.4	584 922	54.0	92 708	40.3	143
For-hire truck	200 250	34.0	235 303	21.7	63 046	27.4	498
Private truck	178 333	30.3	348 682	32.2	29 443	12.8	58
Rail	37 571	6.4	146 341	13.5	73 307	31.9	758
Water	16 268	2.8	72 177	6.7	28 590	12.4	317
Shallow draft	10 837	1.8	50 160	4.6	8 884	3.9	218
Great Lakes	—	—	—	—	—	—	—
Deep draft	5 431	.9	22 016	2.0	—	—	626
Air (includes truck and air)	12 428	2.1	146	—	229	.1	1 808
Pipeline ⁴	54 066	9.2	241 777	22.3	—	—	—
Multiple modes	66 258	11.2	12 397	1.1	6 054	2.6	724
Parcel, U.S. Postal Service or courier	63 096	10.7	1 292	.1	854	.4	722
Truck and rail	1 216	.2	—	—	1 491	.6	1 148
Truck and water	474	—	2 174	.2	1 377	.6	5 742
Rail and water	—	—	—	—	—	—	1 111
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	22 941	3.9	24 836	2.3	2 600	1.1	76
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	—	—	—	—	—	—	138
Single modes	—	—	—	—	—	—	138
Truck ³	—	—	—	—	—	—	138
For-hire truck	—	—	—	—	33	30.3	109
Private truck	—	—	—	—	—	—	142
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 02, CEREAL GRAINS							
Total	3 591	100.0	33 356	100.0	11 331	100.0	317
Single modes	3 388	94.3	31 365	94.0	10 946	96.6	314
Truck ³	1 514	42.2	12 427	37.3	1 275	11.3	—
For-hire truck	1 311	36.5	10 970	32.9	1 116	9.8	—
Private truck	—	—	—	—	—	—	103
Rail	1 684	46.9	17 061	51.1	9 665	85.3	686
Water	—	—	—	—	—	—	3
Shallow draft	—	—	—	—	—	—	3
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	—	—	—
Multiple modes	—	—	—	—	—	—	495
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	495
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	5 599	100.0	8 421	100.0	S	S	S
Single modes	5 532	98.8	8 316	98.8	S	S	S
Truck ³	5 524	98.7	8 293	98.5	S	S	S
For-hire truck	S	S	4 828	57.3	S	S	531
Private truck	2 687	48.0	3 464	41.1	440	9.1	S
Rail	S	S	S	S	S	S	86
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 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	S	S	S	S	1 679	100.0	S
Single modes	S	S	S	S	1 654	98.5	S
Truck ³	S	S	S	S	1 556	92.7	S
For-hire truck	S	S	1 668	7.1	591	35.2	332
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	884
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	S
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	S
Truck and rail	S	S	S	S	S	S	1 287
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	17 146	100.0	6 974	100.0	3 198	100.0	S
Single modes	16 759	97.7	6 717	96.3	3 100	96.9	S
Truck ³	16 614	96.9	6 649	95.3	3 021	94.4	S
For-hire truck	7 448	43.4	2 676	38.4	2 354	73.6	881
Private truck	9 166	53.5	3 973	57.0	666	20.8	S
Rail	S	S	S	S	S	S	1 177
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	18
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	1 306
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	11
Other and unknown modes	356	2.1	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	4 533	100.0	5	5	1 425	100.0	5
Single modes	4 487	99.0	5	5	1 297	91.0	138
Truck ³	4 481	98.8	5	5	1 249	87.6	138
For-hire truck	S	S	S	S	920	64.5	406
Private truck	2 862	63.1	2 521	33.7	325	22.8	77
Rail	S	S	S	S	S	S	1 498
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	917
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	899
Truck and rail	S	S	S	S	S	S	1 525
Truck and water	S	S	S	S	S	S	7 220
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	13 764	100.0	17 305	100.0	6 308	100.0	S
Single modes	12 604	91.6	16 656	96.2	6 142	97.4	S
Truck ³	12 414	90.2	16 357	94.5	5 948	94.3	S
For-hire truck	6 748	49.0	8 492	49.1	4 983	79.0	624
Private truck	5 564	40.4	7 630	44.1	906	14.4	48
Rail	175	1.3	250	1.4	192	3.0	1 460
Water	S	S	S	S	S	S	3
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	3
Air (includes truck and air)	S	S	S	S	S	S	1 667
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	519
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	519
Truck and rail	S	S	S	S	S	S	1 472
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	650	4.7	575	3.3	S	S	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	8 046	100.0	6 230	100.0	1 156	100.0	30
Single modes	8 040	99.9	6 221	99.9	1 120	96.9	30
Truck ³	8 023	99.7	6 196	99.5	1 100	95.1	30
For-hire truck	1 826	22.7	2 469	39.6	868	75.1	360
Private truck	6 148	76.4	3 655	58.7	S	S	24
Rail	S	S	S	S	S	S	813
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	4 011
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	4 011
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 09, TOBACCO PRODUCTS							
Total	S	S	22	100.0	1	100.0	S
Single modes	S	S	22	100.0	1	100.0	S
Truck ³	S	S	22	100.0	1	100.0	S
For-hire truck	S	S	22	100.0	1	100.0	S
Private truck	S	S	22	100.0	1	100.0	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	S	S	S	S	S	S	8
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	S	S	959	100.0	28	100.0	S
Single modes	S	S	933	97.3	28	99.1	S
Truck ³	S	S	933	97.3	28	99.1	S
For-hire truck	S	S	S	S	S	S	S
Private truck	S	S	S	S	16	59.3	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	S	S	S	S	S	S	19
SCTG 11, NATURAL SANDS							
Total	286	100.0	S	S	1 446	100.0	S
Single modes	283	99.1	S	S	1 337	92.5	S
Truck ³	278	97.2	S	S	1 126	77.9	S
For-hire truck	57	20.0	5 341	12.6	348	24.1	S
Private truck	221	77.2	S	S	778	53.8	S
Rail	S	S	S	S	S	S	701
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 172
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	1 172
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	61

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	680	100.0	87 197	100.0	3 910	100.0	32
Single modes	680	99.9	87 110	99.9	3 909	100.0	32
Truck ³	661	97.1	84 672	97.1	3 227	82.5	29
For-hire truck	S	S	S	S	969	24.8	37
Private truck	406	59.7	60 946	69.9	S	S	24
Rail	19	2.8	2 439	2.8	682	17.4	286
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	7
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	7
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	17
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	S	S	1 834	100.0	751	100.0	267
Single modes	S	S	1 805	98.4	707	94.1	261
Truck ³	S	S	S	S	507	67.5	251
For-hire truck	S	S	S	S	468	62.3	289
Private truck	S	S	S	S	39	5.2	165
Rail	16	6.2	343	18.7	200	26.6	576
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	750
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	750
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	705	100.0	S	S	S	S	S
Single modes	563	79.8	S	S	S	S	S
Truck ³	S	S	S	S	S	S	372
For-hire truck	S	S	S	S	S	S	1 338
Private truck	S	S	S	S	S	S	350
Rail	118	16.8	720	29.1	670	47.1	1 058
Water	S	S	S	S	S	S	1 923
Shallow draft	S	S	S	S	S	S	1 923
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 873
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	495
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	493
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	2 600
Other and unknown modes	S	S	S	S	S	S	108

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	698	100.0	60 466	100.0	5 986	100.0	S
Single modes	474	67.9	46 394	76.7	5 876	98.2	S
Truck ³	87	12.4	5 422	9.0	41	.7	S
For-hire truck	S	S	S	S	S	S	58
Private truck	86	12.3	5 399	8.9	40	.7	13
Rail	387	55.5	40 972	67.8	S	S	142
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	224	32.1	14 071	23.3	110	1.8	8
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	47 715	100.0	201 530	100.0	28 765	100.0	64
Single modes	47 426	99.4	200 140	99.3	27 454	95.4	64
Truck ³	21 081	44.2	82 402	40.9	4 404	15.3	63
For-hire truck	8 797	18.4	S	S	1 980	6.9	62
Private truck	12 284	25.7	46 916	23.3	S	S	64
Rail	S	S	S	S	S	S	990
Water	S	S	S	S	S	S	244
Shallow draft	S	S	S	S	S	S	96
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	849
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	24 282	50.9	106 624	52.9	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	480
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	S	S	S	S	S	S	S
SCTG 18, FUEL OILS							
Total	20 608	100.0	103 736	100.0	10 032	100.0	36
Single modes	19 240	93.4	97 138	93.6	8 921	88.9	36
Truck ³	4 537	22.0	20 207	19.5	1 090	10.9	36
For-hire truck	1 438	7.0	7 137	6.9	512	5.1	80
Private truck	3 076	14.9	12 950	12.5	575	5.7	30
Rail	S	S	S	S	S	S	1 200
Water	1 371	6.7	9 320	9.0	1 018	10.2	106
Shallow draft	1 020	4.9	7 030	6.8	871	8.7	139
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	33
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	13 326	64.7	67 575	65.1	S	S	S
Multiple modes	S	S	S	S	S	S	13
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	13
Other and unknown modes	223	1.1	S	S	S	S	16

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	16 450	100.0	100 534	100.0	25 194	100.0	362
Single modes	16 104	97.9	99 661	99.1	24 432	97.0	297
Truck ³	5 489	33.4	32 315	32.1	3 329	13.2	289
For-hire truck	2 563	15.6	14 426	14.3	1 707	6.8	607
Private truck	2 827	17.2	S	S	S	S	68
Rail	2 299	14.0	25 030	24.9	6 115	24.3	653
Water	2 686	16.3	16 943	16.9	S	S	358
Shallow draft	1 712	10.4	10 546	10.5	789	3.1	79
Great Lakes	—	—	—	—	—	—	—
Deep draft	974	5.9	S	S	S	S	1 501
Air (includes truck and air)	S	S	S	S	S	S	830
Pipeline ⁴	5 631	34.2	25 373	25.2	S	S	S
Multiple modes	S	S	S	S	759	3.0	764
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	759
Truck and rail	S	S	S	S	S	S	2 121
Truck and water	S	S	S	S	S	S	1 499
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	3 078
Other and unknown modes	S	S	S	S	S	S	S
SCTG 20, BASIC CHEMICALS							
Total	41 865	100.0	126 505	100.0	36 967	100.0	224
Single modes	40 847	97.6	123 811	97.9	35 670	96.5	230
Truck ³	9 452	22.6	24 715	19.5	3 203	8.7	157
For-hire truck	7 873	18.8	S	S	2 780	7.5	189
Private truck	S	S	S	S	S	S	91
Rail	11 995	28.7	29 887	23.6	26 602	72.0	760
Water	8 805	21.0	27 995	22.1	5 116	13.8	297
Shallow draft	6 216	14.8	22 412	17.7	4 053	11.0	187
Great Lakes	—	—	—	—	—	—	—
Deep draft	2 589	6.2	5 582	4.4	S	S	S
Air (includes truck and air)	S	S	—	—	—	—	1 402
Pipeline ⁴	10 588	25.3	41 214	32.6	S	S	S
Multiple modes	591	1.4	2 211	1.7	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	1 281
Truck and water	S	S	S	S	S	S	213
Rail and water	S	S	S	S	S	S	1 111
Other multiple modes	S	S	S	S	S	S	1 396
Other and unknown modes	S	S	S	S	S	S	S
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	25 443	100.0	996	100.0	337	100.0	600
Single modes	12 648	49.7	821	82.4	277	82.3	263
Truck ³	12 181	47.9	819	82.2	273	81.1	193
For-hire truck	7 310	28.7	248	24.9	182	53.9	270
Private truck	4 871	19.1	571	57.3	92	27.2	118
Rail	S	S	S	S	S	S	1 538
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	465	1.8	2	.2	4	1.0	1 449
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	61	6.2	31	9.1	705
Parcel, U.S. Postal Service or courier	S	S	61	6.2	31	9.1	705
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	828	3.3	S	S	S	S	198

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	698	100.0	S	S	630	100.0	S
Single modes	630	90.4	S	S	628	99.7	S
Truck ³	558	80.0	S	S	495	78.7	S
For-hire truck	85	12.2	438	12.0	209	33.1	439
Private truck	S	S	S	S	287	45.5	S
Rail	S	S	S	S	S	S	472
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	6
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	17 238	100.0	10 370	100.0	5 172	100.0	518
Single modes	14 006	81.3	10 003	96.5	5 032	97.3	282
Truck ³	12 942	75.1	8 574	82.7	3 475	67.2	278
For-hire truck	9 603	55.7	6 241	60.2	3 182	61.5	550
Private truck	3 316	19.2	2 301	22.2	268	5.2	82
Rail	1 001	5.8	1 342	12.9	1 498	29.0	1 078
Water	S	S	S	S	S	S	487
Shallow draft	S	S	S	S	S	S	487
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 612
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 709	15.7	201	1.9	125	2.4	676
Parcel, U.S. Postal Service or courier	2 682	15.6	183	1.8	108	2.1	675
Truck and rail	S	S	S	S	S	S	522
Truck and water	S	S	S	S	S	S	3 630
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	59
SCTG 24, PLASTICS AND RUBBER							
Total	30 060	100.0	25 198	100.0	16 401	100.0	407
Single modes	27 997	93.1	24 806	98.4	16 131	98.4	400
Truck ³	18 762	62.4	10 222	40.6	4 982	30.4	228
For-hire truck	12 639	42.0	7 462	29.6	4 238	25.8	583
Private truck	6 123	20.4	2 760	11.0	S	S	95
Rail	8 974	29.9	14 461	57.4	11 136	67.9	807
Water	S	S	S	S	S	S	1
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	1
Air (includes truck and air)	S	S	5	—	S	S	2 072
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	1 335	4.4	127	.5	100	.6	708
Parcel, U.S. Postal Service or courier	1 217	4.0	82	.3	44	.3	707
Truck and rail	S	S	45	.2	55	.3	1 457
Truck and water	S	S	S	S	S	S	3 531
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	729	2.4	265	1.1	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 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	S	S	S	S	S	S	217
Single modes	S	S	S	S	S	S	210
Truck ³	S	S	S	S	S	S	206
For-hire truck	S	S	S	S	S	S	660
Private truck	S	S	S	S	S	S	88
Rail	S	S	S	S	S	S	503
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	1 012
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	823
Truck and rail	S	S	S	S	S	S	1 992
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	26
SCTG 26, WOOD PRODUCTS							
Total	7 735	100.0	17 257	100.0	5 101	100.0	128
Single modes	7 403	95.7	16 851	97.6	4 957	97.2	101
Truck ³	6 809	88.0	14 694	85.1	2 911	57.1	96
For-hire truck	2 058	26.6	4 735	27.4	1 473	28.9	231
Private truck	4 751	61.4	9 959	57.7	1 438	28.2	76
Rail	S	S	S	S	S	S	1 113
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	42	.5	S	S	S	S	975
Parcel, U.S. Postal Service or courier	29	.4	2	—	S	S	972
Truck and rail	S	S	S	S	S	S	1 646
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	289	3.7	S	S	89	1.8	S
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	3 724	100.0	4 434	100.0	2 524	100.0	174
Single modes	3 603	96.8	4 320	97.4	2 458	97.4	156
Truck ³	3 017	81.0	3 174	71.6	1 546	61.3	142
For-hire truck	1 931	51.8	2 086	47.0	1 115	44.2	327
Private truck	1 086	29.2	1 089	24.5	431	17.1	S
Rail	583	15.7	1 146	25.8	911	36.1	847
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	—	—	—	—	1 572
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	35	.8	S	S	301
Parcel, U.S. Postal Service or courier	S	S	11	.2	S	S	294
Truck and rail	S	S	S	S	S	S	1 774
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	1
Other and unknown modes	38	1.0	79	1.8	18	.7	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 28, PAPER OR PAPERBOARD ARTICLES							
Total	5 964	100.0	3 014	100.0	815	100.0	260
Single modes	5 457	91.5	2 935	97.4	793	97.3	116
Truck ³	5 453	91.4	2 935	97.4	793	97.2	112
For-hire truck	3 611	60.5	1 632	54.2	601	73.7	366
Private truck	1 842	30.9	1 302	43.2	192	23.5	62
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 471
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	439	7.4	28	.9	13	1.6	487
Parcel, U.S. Postal Service or courier	439	7.4	28	.9	13	1.6	487
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	68	1.1	S	S	S	S	S
SCTG 29, PRINTED PRODUCTS							
Total	4 881	100.0	1 027	100.0	614	100.0	850
Single modes	3 012	61.7	886	86.2	510	83.0	1 013
Truck ³	2 915	59.7	864	84.1	473	77.1	426
For-hire truck	1 743	35.7	669	65.1	446	72.5	888
Private truck	1 172	24.0	195	19.0	S	S	59
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 781
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	1 127	23.1	59	5.7	54	8.7	671
Parcel, U.S. Postal Service or courier	1 121	23.0	56	5.5	33	5.3	667
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	7 674
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	742	15.2	S	S	S	S	S
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	12 764	100.0	1 157	100.0	688	100.0	929
Single modes	9 110	71.4	1 033	89.3	592	86.0	794
Truck ³	8 997	70.5	997	86.2	526	76.4	781
For-hire truck	6 112	47.9	657	56.8	478	69.5	1 019
Private truck	2 884	22.6	339	29.3	48	6.9	94
Rail	S	S	S	S	S	S	1 751
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	13	.1	S	S	S	S	1 429
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 393	18.7	86	7.5	90	13.1	980
Parcel, U.S. Postal Service or courier	2 365	18.5	76	6.6	67	9.7	976
Truck and rail	8	—	7	.6	12	1.8	1 847
Truck and water	S	S	S	S	S	S	4 024
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 31, NONMETALLIC MINERAL PRODUCTS							
Total	16 713	100.0	90 731	100.0	20 201	100.0	407
Single modes	16 018	95.8	88 912	98.0	19 865	98.3	306
Truck ³	14 668	87.8	84 000	92.6	16 695	82.6	257
For-hire truck	7 367	44.1	34 016	37.5	11 424	56.6	420
Private truck	7 249	43.4	49 753	54.8	5 256	26.0	179
Rail	S	S	4 906	5.4	3 160	15.6	878
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	2 428
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	577	3.5	S	S	S	S	812
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	811
Truck and rail	S	S	S	S	S	S	1 200
Truck and water	S	S	S	S	S	S	4 169
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	4
Other and unknown modes	117	.7	S	S	110	.5	S
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	21 005	100.0	30 130	100.0	13 123	100.0	281
Single modes	19 445	92.6	28 711	95.3	12 527	95.5	172
Truck ³	17 930	85.4	25 060	83.2	8 322	63.4	164
For-hire truck	7 274	34.6	9 172	30.4	4 085	31.1	444
Private truck	10 655	50.7	S	S	S	S	84
Rail	1 307	6.2	2 521	8.4	2 446	18.6	804
Water	S	S	S	S	S	S	1 558
Shallow draft	S	S	S	S	S	S	1 558
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 505
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	783
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	781
Truck and rail	S	S	S	S	S	S	1 491
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 33, ARTICLES OF BASE METAL							
Total	17 865	100.0	9 078	100.0	3 775	100.0	178
Single modes	16 472	92.2	8 920	98.3	3 712	98.3	S
Truck ³	16 057	89.9	8 224	90.6	3 040	80.5	S
For-hire truck	9 753	54.6	5 374	59.2	2 418	64.1	493
Private truck	5 892	33.0	2 739	30.2	575	15.2	38
Rail	37	.2	64	.7	70	1.9	1 149
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 869
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	935	5.2	44	.5	27	.7	477
Parcel, U.S. Postal Service or courier	907	5.1	43	.5	25	.7	476
Truck and rail	S	S	S	S	S	S	1 419
Truck and water	S	S	S	S	S	S	182
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	458	2.6	114	1.3	36	1.0	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
SCTG 34, MACHINERY							
Total	23 481	100.0	2 168	100.0	1 183	100.0	181
Single modes	18 478	78.7	1 938	89.4	1 097	92.8	100
Truck ³	18 038	76.8	1 930	89.0	1 087	91.9	87
For-hire truck	11 170	47.6	1 328	61.3	988	83.5	285
Private truck	6 839	29.1	598	27.6	98	8.3	42
Rail	S	S	S	S	S	S	1 159
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	377	1.6	9	.4	10	.9	1 662
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 914	12.4	56	2.6	27	2.3	566
Parcel, U.S. Postal Service or courier	2 904	12.4	55	2.5	23	1.9	565
Truck and rail	S	S	S	S	S	S	1 685
Truck and water	S	S	S	S	S	S	8 019
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	173	8.0	S	S	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	62 147	100.0	2 904	100.0	S	S	620
Single modes	37 507	60.4	S	S	S	S	344
Truck ³	29 369	47.3	S	S	S	S	S
For-hire truck	23 279	37.5	S	S	S	S	613
Private truck	6 089	9.8	455	15.7	29	1.2	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	8 107	13.0	54	1.9	94	3.8	1 728
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	21 518	34.6	S	S	S	S	1 051
Parcel, U.S. Postal Service or courier	21 464	34.5	S	S	S	S	1 051
Truck and rail	S	S	S	S	S	S	1 772
Truck and water	S	S	S	S	S	S	7 462
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	3 121	5.0	99	3.4	S	S	141
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	42 578	100.0	6 325	100.0	3 705	100.0	S
Single modes	34 159	80.2	5 290	83.6	3 397	91.7	S
Truck ³	28 491	66.9	4 831	76.4	2 682	72.4	S
For-hire truck	23 611	55.5	3 547	56.1	2 106	56.9	283
Private truck	4 880	11.5	1 284	20.3	575	15.5	S
Rail	5 556	13.0	459	7.3	715	19.3	1 569
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	—	—	—	—	1 186
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	1 234	2.9	56	.9	34	.9	480
Parcel, U.S. Postal Service or courier	1 208	2.8	54	.8	26	.7	479
Truck and rail	S	S	S	S	S	S	1 542
Truck and water	S	S	S	S	S	S	4 024
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	5 083	100.0	S	S	131	100.0	1 265
Single modes	4 520	88.9	S	S	129	98.5	1 298
Truck ³	2 387	47.0	S	S	S	S	638
For-hire truck	2 216	43.6	S	S	S	S	628
Private truck	S	S	3	1.3	S	S	725
Rail	S	S	89	34.8	43	32.9	605
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	1 398	27.5	S	S	S	S	1 941
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	550	10.8	2	.6	2	1.3	1 185
Parcel, U.S. Postal Service or courier	550	10.8	2	.6	2	1.3	1 185
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	609
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	5 952	100.0	S	S	183	100.0	585
Single modes	3 554	59.7	S	S	167	91.0	197
Truck ³	3 360	56.4	S	S	166	90.5	S
For-hire truck	1 980	33.3	S	S	S	S	S
Private truck	S	S	S	S	S	S	81
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	195	3.3	1	—	1	.6	1 467
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	2 337	39.3	20	.7	15	8.1	919
Parcel, U.S. Postal Service or courier	2 337	39.3	20	.7	15	8.1	919
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	6 916	100.0	1 378	100.0	793	100.0	S
Single modes	S	S	1 358	98.5	786	99.1	S
Truck ³	S	S	1 206	87.5	701	88.4	S
For-hire truck	2 468	35.7	691	50.1	647	81.6	848
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	611
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 082
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	27	.4	1	—	1	—	1 223
Parcel, U.S. Postal Service or courier	27	.4	1	—	1	—	1 223
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	57	.8	19	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	
SCTG 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	27 878	100.0	5 126	100.0	1 853	100.0	585
Single modes	17 285	62.0	4 822	94.1	1 669	90.1	536
Truck ³	16 787	60.2	4 753	92.7	1 639	88.4	484
For-hire truck	12 509	44.9	2 782	54.3	1 243	67.1	772
Private truck	4 210	15.1	1 965	38.3	394	21.3	142
Rail	S	S	S	S	S	S	511
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	363	1.3	4	—	S	S	2 144
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	9 745	35.0	174	3.4	134	7.2	639
Parcel, U.S. Postal Service or courier	9 720	34.9	171	3.3	114	6.2	622
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	6 615
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	849	3.0	131	2.5	S	S	313
SCTG 41, WASTE AND SCRAP							
Total	S	S	5 990	100.0	S	S	138
Single modes	S	S	5 821	97.2	S	S	130
Truck ³	S	S	4 707	78.6	S	S	122
For-hire truck	S	S	S	S	S	S	228
Private truck	S	S	S	S	85	8.1	48
Rail	S	S	S	S	S	S	S
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	733
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	740
Truck and water	S	S	S	S	S	S	361
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	333
SCTG 43, MIXED FREIGHT							
Total	57 376	100.0	21 431	100.0	3 754	100.0	220
Single modes	53 723	93.6	20 985	97.9	3 630	96.7	96
Truck ³	53 228	92.8	20 976	97.9	3 621	96.5	93
For-hire truck	7 336	12.8	3 391	15.8	1 173	31.3	400
Private truck	45 865	79.9	17 574	82.0	2 446	65.2	79
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	1 540
Pipeline ⁴	—	—	—	—	S	S	S
Multiple modes	2 679	4.7	138	.6	85	2.3	496
Parcel, U.S. Postal Service or courier	2 323	4.0	119	.6	64	1.7	496
Truck and rail	356	.6	19	—	21	.6	1 139
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	974	1.7	S	S	S	S	S

See footnotes at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent	
COMMODITY UNKNOWN							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck ³	825	43.1	S	S	S	S	S
For-hire truck	412	21.5	203	5.2	62	14.7	378
Private truck	358	18.7	336	8.5	22	5.3	S
Rail	S	S	S	S	S	S	426
Water	S	S	S	S	S	S	92
Shallow draft	S	S	S	S	S	S	92
Great Lakes	-	-	-	-	-	-	-
Deep draft	-	-	-	-	-	-	-
Air (includes truck and air)	S	S	S	S	S	S	1 492
Pipeline ⁴	S	S	S	S	S	S	S
Multiple modes	22	1.1	S	S	S	S	389
Parcel, U.S. Postal Service or courier	22	1.1	S	S	S	S	389
Truck and rail	-	-	-	-	-	-	-
Truck and water	-	-	-	-	-	-	-
Rail and water	-	-	-	-	-	-	-
Other multiple modes	-	-	-	-	-	-	-
Other and unknown modes	S	S	S	S	S	S	S

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

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

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

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

⁴Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

State of destination	Value		Tons		Ton-miles ¹	
	2002 (million dollars)	Percent	2002 (thousands)	Percent	2002 (millions)	Percent
Total	589 064	100.0	1 082 596	100.0	229 846	100.0
NEW ENGLAND STATES						
Connecticut	1 057	.2	S	S	S	S
Maine	S	S	57	—	124	—
Massachusetts	1 769	.3	446	—	841	.4
New Hampshire	S	S	54	—	108	—
Rhode Island	115	—	45	—	88	—
Vermont	99	—	40	—	83	—
MIDDLE ATLANTIC STATES						
New Jersey	8 479	1.4	10 040	.9	16 565	7.2
New York	7 607	1.3	S	S	S	S
Pennsylvania	3 581	.6	2 134	.2	3 313	1.4
EAST NORTH CENTRAL STATES						
Illinois	12 066	2.0	10 989	1.0	11 094	4.8
Indiana	4 486	.8	2 655	.2	3 046	1.3
Michigan	6 019	1.0	S	S	S	S
Ohio	7 680	1.3	4 718	.4	6 855	3.0
Wisconsin	3 142	.5	3 120	.3	4 005	1.7
WEST NORTH CENTRAL STATES						
Iowa	2 282	.4	1 811	.2	1 751	.8
Kansas	5 617	1.0	7 464	.7	3 643	1.6
Minnesota	3 988	.7	1 140	.1	1 495	.7
Missouri	5 536	.9	3 195	.3	2 181	.9
Nebraska	1 127	.2	762	—	615	.3
North Dakota	514	—	337	—	553	.2
South Dakota	287	—	176	—	200	—
SOUTH ATLANTIC STATES						
Delaware	310	—	174	—	279	.1
District of Columbia	176	—	S	S	S	S
Florida	10 250	1.7	7 803	.7	7 727	3.4
Georgia	5 201	.9	2 933	.3	2 766	1.2
Maryland	2 903	.5	1 303	.1	1 932	.8
North Carolina	6 233	1.1	2 500	.2	3 221	1.4
South Carolina	3 279	.6	3 352	.3	4 368	1.9
Virginia	4 186	.7	2 116	.2	3 052	1.3
West Virginia	637	.1	388	—	558	.2
EAST SOUTH CENTRAL STATES						
Alabama	6 398	1.1	3 650	.3	2 587	1.1
Kentucky	3 641	.6	2 510	.2	2 596	1.1
Mississippi	3 864	.7	2 404	.2	1 252	.5
Tennessee	5 535	.9	4 184	.4	3 412	1.5
WEST SOUTH CENTRAL STATES						
Arkansas	6 206	1.1	6 133	.6	2 312	1.0
Louisiana	18 057	3.1	23 793	2.2	6 726	2.9
Oklahoma	11 509	2.0	6 978	.6	2 180	.9
Texas	365 644	62.1	915 369	84.6	69 342	30.2
MOUNTAIN STATES						
Arizona	5 725	1.0	4 593	.4	3 933	1.7
Colorado	6 556	1.1	4 271	.4	3 478	1.5
Idaho	524	—	210	—	353	.2
Montana	1 227	.2	413	—	751	.3
Nevada	820	.1	339	—	380	.2
New Mexico	7 534	1.3	9 700	.9	2 637	1.1
Utah	1 794	.3	770	—	1 078	.5
Wyoming	299	—	115	—	131	—
PACIFIC STATES						
Alaska	271	—	17	—	57	—
California	27 033	4.6	11 036	1.0	16 912	7.4
Hawaii	232	—	S	S	S	S
Oregon	1 629	.3	546	—	1 242	.5
Washington	4 225	.7	841	—	1 963	.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.

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	719 284	100.0	1 179 581	100.0	325 331	100.0
NEW ENGLAND STATES						
Connecticut	2 286	.3	158	—	300	—
Maine	370	—	85	—	166	—
Massachusetts	S	S	714	—	1 459	.4
New Hampshire	849	.1	155	—	309	.1
Rhode Island	631	—	53	—	105	—
Vermont	267	—	78	—	151	—
MIDDLE ATLANTIC STATES						
New Jersey	7 591	1.1	2 916	.2	5 053	1.6
New York	11 652	1.6	6 102	.5	9 016	2.8
Pennsylvania	9 915	1.4	2 897	.2	4 765	1.5
EAST NORTH CENTRAL STATES						
Illinois	17 320	2.4	8 042	.7	8 984	2.8
Indiana	13 831	1.9	4 575	.4	5 095	1.6
Michigan	11 989	1.7	3 726	.3	5 562	1.7
Ohio	21 726	3.0	8 662	.7	11 172	3.4
Wisconsin	8 866	1.2	3 270	.3	3 912	1.2
WEST NORTH CENTRAL STATES						
Iowa	5 567	.8	4 175	.4	4 317	1.3
Kansas	7 210	1.0	13 844	1.2	9 146	2.8
Minnesota	5 708	.8	2 753	.2	3 511	1.1
Missouri	9 121	1.3	13 102	1.1	9 854	3.0
Nebraska	3 322	.5	7 368	.6	8 920	2.7
North Dakota	403	—	689	—	1 028	.3
South Dakota	1 010	.1	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	400	—	153	—	252	—
District of Columbia	S	S	S	S	S	S
Florida	7 737	1.1	2 552	.2	3 232	1.0
Georgia	9 882	1.4	3 926	.3	3 726	1.1
Maryland	2 202	.3	362	—	545	.2
North Carolina	10 380	1.4	2 686	.2	3 364	1.0
South Carolina	5 923	.8	1 893	.2	2 287	.7
Virginia	3 898	.5	916	—	1 249	.4
West Virginia	1 552	.2	880	—	1 343	.4
EAST SOUTH CENTRAL STATES						
Alabama	6 663	.9	7 229	.6	6 406	2.0
Kentucky	8 628	1.2	6 351	.5	7 748	2.4
Mississippi	8 971	1.2	4 588	.4	2 694	.8
Tennessee	18 266	2.5	8 719	.7	6 135	1.9
WEST SOUTH CENTRAL STATES						
Arkansas	8 352	1.2	8 171	.7	3 087	.9
Louisiana	12 651	1.8	32 726	2.8	10 906	3.4
Oklahoma	17 055	2.4	18 330	1.6	4 765	1.5
Texas	365 644	50.8	915 369	77.6	69 342	21.3
MOUNTAIN STATES						
Arizona	8 241	1.1	2 021	.2	1 501	.5
Colorado	4 080	.6	4 733	.4	3 806	1.2
Idaho	1 092	.2	902	—	1 561	.5
Montana	151	—	S	S	S	S
Nevada	2 393	.3	S	S	S	S
New Mexico	2 471	.3	6 152	.5	2 211	.7
Utah	1 356	.2	1 302	.1	1 935	.6
Wyoming	658	—	55 108	4.7	75 682	23.3
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	50 066	7.0	7 127	.6	11 502	3.5
Hawaii	15	—	S	S	S	S
Oregon	1 843	.3	1 046	—	2 399	.7
Washington	2 600	.4	735	—	1 685	.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 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	589 064	561 516	4.9	1 082 596	895 115	20.9	229 846	205 463	11.9	358	403	-11.2
Single modes	499 864	487 319	2.6	1 045 363	844 902	23.7	221 191	188 262	17.5	209	179	16.8
Truck ²	379 531	363 368	4.4	584 922	447 364	30.7	92 708	78 479	18.1	143	143	-5
Rail	37 571	43 841	-14.3	146 341	95 987	52.5	73 307	59 935	22.3	758	903	-16.0
Water	16 268	19 701	-17.4	72 177	95 199	-24.2	28 590	31 164	-8.3	317	400	-20.8
Air (includes truck and air)	12 428	18 060	-31.2	146	149	-2.1	229	203	12.9	1 808	1 357	33.3
Pipeline ³	54 066	42 349	27.7	241 777	206 204	17.3	S	S	S	S	S	S
Multiple modes	66 258	58 390	13.5	12 397	7 630	62.5	6 054	S	S	724	799	-9.3
Parcel, U.S. Postal Service or courier ..	63 096	55 412	13.9	1 292	1 132	14.1	854	779	9.6	722	798	-9.5
Truck and rail	1 216	2 469	-50.7	S	4 147	S	1 491	2 986	-50.1	1 148	898	27.9
All other multiple modes	S	S	S	S	S	S	3 709	S	S	2 347	5 453	-56.9
Other and unknown modes ...	22 941	15 806	45.1	24 836	42 583	-41.7	2 600	2 959	-12.1	76	77	-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.
²Truck as a single mode includes shipments that were made by only private truck, only for-hire truck, or a combination of private truck and for-hire truck.

³Estimates for pipeline exclude shipments of crude petroleum.

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

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

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

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

SCTG code	Commodity description	Value			Tons			Ton-miles ¹			Average miles per shipment		
		2002 (million dollars)	1997 (million dollars)	Percent change	2002 (thousands)	1997 (thousands)	Percent change	2002 (millions)	1997 (millions)	Percent change	2002	1997	Percent change
	Total²	589 064	561 516	4.9	1 082 596	895 115	20.9	229 846	205 463	11.9	358	403	-11.2
01-05	Agricultural products and fish	33 264	27 819	19.6	72 957	54 902	32.9	21 151	13 085	61.6	S	77	S
06-09	Grains, alcohol, and tobacco products	27 459	41 528	-33.9	31 048	35 635	-12.9	8 890	10 100	-12.0	113	181	-37.7
10-14	Stones, nonmetallic minerals, and metallic ores	2 018	2 334	-13.5	134 894	125 181	7.8	7 557	9 827	-23.1	S	66	S
15-19	Coal and petroleum products	85 470	64 814	31.9	466 266	385 151	21.1	69 977	60 309	16.0	177	141	25.6
20-24	Basic chemicals, chemical, and pharmaceutical products	115 305	112 803	2.2	166 728	131 594	26.7	59 506	69 742	-14.7	473	365	29.6
25-30	Logs, wood products, and textile and leather	35 491	43 470	-18.4	28 277	26 342	7.3	10 165	8 765	16.0	696	546	27.4
31-34	Base metal and machinery ..	79 064	64 527	22.5	132 108	103 884	27.2	38 282	22 867	67.4	234	264	-11.5
35-38	Electronic, motorized vehicles, and precision instruments	115 760	140 335	-17.5	12 450	6 830	82.3	6 450	3 517	83.4	473	617	-23.3
39-43	Furniture, mixed freight and misc. manufactured prod. ..	93 319	61 763	51.1	33 925	23 744	42.9	7 441	6 630	12.2	354	495	-28.6
--	Commodity unknown	S	2 123	S	S	1 853	S	S	621	S	S	347	S

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

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

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

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

Appendix A.

Comparability With the 1993 and 1997 Commodity Flow Surveys

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

Industry Coverage

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

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

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

Commodity Classification System

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

Sample Size

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

Survey Methodology

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

Reported Mode of Transportation

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

Data Items Requested

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

Appendix B.

Reliability of the Estimates

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

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

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

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

Sampling Error

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

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

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

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

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

Nonsampling Error

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

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

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

DEFINITION OF TERMS

Confidentiality

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

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

Disclosure Limitation

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

Unpublished Estimates

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

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

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

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

Mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Total	3.7	—	8.0	—	8.0	—	7.3
Single modes	4.5	1.7	8.4	.6	8.3	.8	18.7
Truck	4.6	1.9	8.9	3.2	7.8	2.7	11.6
For-hire truck	4.4	1.4	10.9	2.3	9.8	2.8	6.2
Private truck	8.1	1.9	13.1	3.3	17.1	1.8	7.7
Rail	14.2	.9	14.9	1.5	13.3	3.3	11.2
Water	21.2	.5	20.2	1.3	36.3	3.0	26.0
Shallow draft	26.6	.4	20.8	.8	22.5	.8	41.3
Great Lakes	—	—	—	—	—	—	—
Deep draft	32.4	.3	37.1	.8	S	S	42.7
Air (includes truck and air)	21.8	.4	24.1	—	19.6	—	1.9
Pipeline	15.9	1.4	18.2	3.0	S	S	S
Multiple modes	15.4	1.6	43.9	.4	25.1	.7	6.4
Parcel, U.S. Postal Service or courier	16.3	1.6	14.9	—	17.6	—	6.5
Truck and rail	22.9	—	S	S	24.2	.2	9.3
Truck and water	31.7	—	41.3	—	42.7	.3	16.1
Rail and water	S	S	S	S	S	S	30.6
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	24.4	1.0	23.8	.7	29.1	.3	36.9

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

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

Mode of transportation	Value (percent)		Tons (percent)		Ton-miles (percent)	
	2002	1997	2002	1997	2002	1997
Total	—	—	—	—	—	—
Single modes	1.7	1.6	.6	.9	.8	3.8
Truck	1.9	1.6	3.2	2.6	2.7	2.1
For-hire truck	1.4	2.5	2.3	1.4	2.8	1.9
Private truck	1.9	2.9	3.3	2.9	1.8	1.5
Rail .....	.9	1.2	1.5	1.0	3.3	2.4
Water .....	.5	.5	1.3	1.4	3.0	2.3
Shallow draft .....	.4	.4	.8	1.3	.8	.8
Great Lakes	—	—	—	—	—	—
Deep draft .....	.3	.2	.8	.5	S	2.0
Air (includes truck and air) .....	.4	.9	—	—	—	—
Pipeline	1.4	1.0	3.0	1.3	S	S
Multiple modes	1.6	1.6	.4	.3	.7	S
Parcel, U.S. Postal Service or courier	1.6	1.6	—	—	—	—
Truck and rail	—	.1	S	.1	.2	.3
Truck and water	—	S	S	S	.3	S
Rail and water	S	S	S	S	S	S
Other multiple modes	S	—	S	S	S	S
Other and unknown modes	1.0	.2	.7	.8	.3	.2

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

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

Table B-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	8.0	—	7.3
Truck	7.8	2.7	11.6
Rail	13.3	3.3	11.2
Shallow draft	22.5	.8	41.3
Great Lakes	—	—	—
Deep draft	S	S	42.7
Air	19.6	—	1.9
Parcel, U.S. Postal Service or courier	21.1	2.8	29.6
Pipeline	S	S	S
Other and unknown modes	29.1	.3	36.9

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

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

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	3.7	—	8.0	—	8.0	—
Less than 50 miles	5.3	1.3	9.8	2.9	11.0	.4
50 to 99 miles	18.0	1.3	26.1	2.8	25.0	1.2
100 to 249 miles	9.9	1.6	16.2	1.8	18.2	2.1
250 to 499 miles	8.7	.9	12.1	1.6	10.7	3.1
500 to 749 miles	8.0	.5	8.3	.2	8.4	.8
750 to 999 miles	8.2	.6	14.5	.3	13.5	1.5
1,000 to 1,499 miles	12.7	1.2	19.2	.8	20.5	4.5
1,500 to 1,999 miles	18.0	.5	18.3	.1	19.9	1.0
2,000 miles or more	32.7	—	S	S	S	S
Single modes	4.5	—	8.4	—	8.3	—
Less than 50 miles	6.0	1.3	10.1	2.8	11.2	.5
50 to 99 miles	18.4	1.2	26.1	2.8	25.1	1.2
100 to 249 miles	11.4	1.6	17.0	1.9	19.1	2.2
250 to 499 miles	9.7	1.0	12.3	1.7	10.7	3.1
500 to 749 miles	5.3	.3	9.0	.2	8.8	.8
750 to 999 miles	7.6	.6	15.3	.4	14.4	1.6
1,000 to 1,499 miles	10.9	1.0	19.7	.9	21.1	4.5
1,500 to 1,999 miles	13.8	.3	16.2	—	16.9	.9
2,000 miles or more	S	S	S	S	S	S
Truck	4.6	—	8.9	—	7.8	—
Less than 50 miles	6.1	1.3	12.2	3.4	13.5	.9
50 to 99 miles	8.3	.5	23.0	2.3	22.1	.8
100 to 249 miles	12.1	1.8	12.3	1.2	12.4	1.4
250 to 499 miles	10.5	1.0	12.1	.8	11.5	1.7
500 to 749 miles	7.0	.3	10.6	.3	10.7	1.2
750 to 999 miles	6.4	.6	5.9	.2	6.0	.8
1,000 to 1,499 miles	10.6	.8	17.4	.4	17.6	2.2
1,500 to 1,999 miles	17.0	.3	19.5	—	19.6	.9
2,000 miles or more	S	S	S	S	S	S
For-hire truck	4.4	—	10.9	—	9.8	—
Less than 50 miles	7.5	1.6	16.4	4.0	16.7	.4
50 to 99 miles	19.7	.8	25.9	1.7	25.1	.6
100 to 249 miles	18.1	2.4	10.8	1.7	12.4	1.2
250 to 499 miles	13.0	1.9	9.5	1.3	9.2	1.3
500 to 749 miles	6.6	.6	11.7	.8	11.9	1.3
750 to 999 miles	7.1	.8	7.7	.3	7.7	.7
1,000 to 1,499 miles	10.2	1.8	20.1	1.0	20.3	2.9
1,500 to 1,999 miles	19.9	.5	19.9	.2	20.0	1.0
2,000 miles or more	S	S	S	S	S	S
Private truck	8.1	—	13.1	—	17.1	—
Less than 50 miles	8.4	2.1	16.4	4.6	16.6	2.7
50 to 99 miles	8.7	.5	29.7	3.3	28.1	2.4
100 to 249 miles	15.8	2.5	22.8	1.9	23.9	2.9
250 to 499 miles	16.7	.8	31.3	.6	30.2	2.8
500 to 749 miles	31.1	.5	30.5	.2	31.0	1.4
750 to 999 miles	24.9	.4	23.1	.1	22.7	1.7
1,000 to 1,499 miles	47.1	.7	22.6	—	21.8	.9
1,500 to 1,999 miles	49.7	.2	24.6	—	24.7	.4
2,000 miles or more	S	S	S	S	S	S
Rail	14.2	—	14.9	—	13.3	—
Less than 50 miles	21.7	2.9	48.1	4.2	48.4	.3
50 to 99 miles	36.1	2.2	33.7	6.7	36.1	1.6
100 to 249 miles	19.9	.8	42.9	6.1	46.5	4.0
250 to 499 miles	16.9	1.9	41.1	5.7	36.7	4.2
500 to 749 miles	14.7	1.4	19.7	.7	19.8	1.4
750 to 999 miles	26.7	2.9	19.9	1.1	19.9	2.1
1,000 to 1,499 miles	13.9	2.9	26.6	5.3	26.4	6.1
1,500 to 1,999 miles	42.6	1.0	10.1	.3	10.4	.7
2,000 miles or more	S	S	S	S	S	S
Water	21.2	—	20.2	—	36.3	—
Less than 50 miles	24.8	6.8	24.8	5.6	S	S
50 to 99 miles	42.6	3.7	32.7	3.7	36.1	1.7
100 to 249 miles	36.5	2.8	34.3	3.4	39.6	5.8
250 to 499 miles	40.6	1.1	32.7	.8	35.8	1.8
500 to 749 miles	38.1	.7	49.8	.9	41.2	1.6
750 to 999 miles	34.8	3.3	37.1	2.0	33.4	7.9
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	—	—	—	—	—	—
Shallow draft	26.6	—	20.8	—	22.5	—
Less than 50 miles	31.9	6.7	27.3	5.4	S	S
50 to 99 miles	49.6	6.3	39.4	3.9	43.9	2.3
100 to 249 miles	40.6	4.4	27.8	3.5	26.7	7.7
250 to 499 miles	40.6	2.4	33.1	1.4	36.5	6.4
500 to 749 miles	38.1	.9	49.8	1.1	41.2	1.8
750 to 999 miles	47.2	1.6	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—

See footnotes at end of table.

Table B-3. 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	32.4	—	37.1	—	S	S
Less than 50 miles	40.4	10.3	32.4	12.7	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	43.8	9.1	44.2	8.5	42.3	12.0
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	—	—	—	—	—	—
Air (includes truck and air)	21.8	—	24.1	—	19.6	—
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	32.5	1.6	39.6	3.9	47.4	.8
250 to 499 miles	32.9	2.3	33.6	.9	22.7	.4
500 to 749 miles	30.6	3.8	45.8	6.2	38.0	6.1
750 to 999 miles	30.3	6.8	30.3	6.4	32.9	7.4
1,000 to 1,499 miles	43.8	8.4	37.1	5.2	37.6	6.7
1,500 to 1,999 miles	31.8	3.2	30.8	4.0	30.6	3.9
2,000 miles or more	S	S	S	S	S	S
Pipeline	15.9	—	18.2	—	S	S
Less than 50 miles	16.9	4.3	19.6	4.5	S	S
50 to 99 miles	39.9	5.2	45.5	4.9	S	S
100 to 249 miles	25.8	.8	27.8	.9	S	S
250 to 499 miles	44.7	4.8	46.3	5.2	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
Multiple modes	15.4	—	43.9	—	25.1	—
Less than 50 miles	12.8	1.9	S	S	S	S
50 to 99 miles	13.2	.6	S	S	S	S
100 to 249 miles	14.6	2.5	S	S	S	S
250 to 499 miles	18.6	1.0	S	S	S	S
500 to 749 miles	18.9	1.0	42.3	1.7	49.1	2.1
750 to 999 miles	20.1	1.9	40.5	6.5	45.9	7.1
1,000 to 1,499 miles	23.5	2.6	18.6	3.8	21.8	8.4
1,500 to 1,999 miles	39.4	2.1	S	S	S	S
2,000 miles or more	32.2	.1	35.2	.2	32.4	.7
Parcel, U.S. Postal Service or courier	16.3	—	14.9	—	17.6	—
Less than 50 miles	11.8	1.9	21.0	4.8	18.5	.3
50 to 99 miles	10.8	.7	12.7	.5	13.2	.1
100 to 249 miles	11.4	2.1	18.4	1.5	18.8	.8
250 to 499 miles	19.4	1.0	20.7	1.4	20.4	.9
500 to 749 miles	19.8	1.1	36.7	2.9	37.7	4.2
750 to 999 miles	20.8	2.0	24.9	1.8	25.3	1.9
1,000 to 1,499 miles	24.3	2.6	16.8	2.0	16.1	3.2
1,500 to 1,999 miles	39.2	2.0	18.8	.4	22.6	1.6
2,000 miles or more	43.1	.1	38.9	—	38.7	.3
Truck and rail	22.9	—	S	S	24.2	—
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	43.3	1.4	S	S	S	S
750 to 999 miles	37.6	8.3	S	S	S	S
1,000 to 1,499 miles	21.0	8.5	24.2	14.0	23.4	11.7
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	—	—	—	—	—	—
Truck and water	31.7	—	41.3	—	42.7	—
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	S	S	S	S	S	S
500 to 749 miles	S	S	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	—	—	—	—	—	—
2,000 miles or more	25.9	11.4	36.4	11.5	33.1	14.8

See footnotes at end of table.

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

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

Mode of transportation and distance shipped (based on Great Circle Distance)	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Multiple modes—Con.						
Rail and water	S	S	S	S	S	S
Less than 50 miles	—	—	—	—	—	—
50 to 99 miles	S	S	S	S	S	S
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	—	—	—	—	—	—
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	—	—	—	—	—	—
1,500 to 1,999 miles	—	—	—	—	—	—
2,000 miles or more	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S
Less than 50 miles	S	S	S	S	S	S
50 to 99 miles	—	—	—	—	—	—
100 to 249 miles	S	S	S	S	S	S
250 to 499 miles	—	—	—	—	—	—
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	S	S	S	S	S	S
1,000 to 1,499 miles	S	S	S	S	S	S
1,500 to 1,999 miles	S	S	S	S	S	S
2,000 miles or more	—	—	—	—	—	—
Other and unknown modes	24.4	—	23.8	—	29.1	—
Less than 50 miles	17.1	5.6	28.1	7.2	23.2	4.8
50 to 99 miles	36.2	3.9	26.6	1.1	28.1	.6
100 to 249 miles	47.7	3.9	28.9	4.1	26.3	2.4
250 to 499 miles	45.8	1.0	16.6	1.1	17.9	2.7
500 to 749 miles	S	S	S	S	S	S
750 to 999 miles	35.5	2.1	49.2	.5	S	S
1,000 to 1,499 miles	42.4	3.0	49.6	1.3	S	S
1,500 to 1,999 miles	44.2	1.8	43.6	.1	43.0	2.4
2,000 miles or more	S	S	S	S	S	S

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

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

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

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Total	3.7	—	8.0	—	8.0	—	7.3
Less than 50 lb	14.7	1.5	11.7	—	13.3	—	9.9
50 to 99 lb	12.6	.3	7.4	—	10.9	—	10.7
100 to 499 lb	9.0	.7	7.3	—	11.5	—	12.7
500 to 749 lb	13.4	.3	7.3	—	12.5	—	13.6
750 to 999 lb	15.5	.2	5.7	—	15.0	—	15.1
1,000 to 9,999 lb	6.2	1.0	4.2	.3	6.5	.3	3.9
10,000 to 49,999 lb	6.8	2.0	10.4	2.3	8.7	2.7	8.4
50,000 to 99,999 lb	19.0	1.2	23.2	2.6	9.1	.4	15.2
100,000 lb or more	9.3	1.6	9.7	2.6	11.2	2.8	12.5
Single modes	4.5	—	8.4	—	8.3	—	18.7
Less than 50 lb	13.5	.5	22.2	—	18.6	—	39.9
50 to 99 lb	12.8	.2	11.6	—	12.5	—	13.0
100 to 499 lb	9.3	.6	8.5	—	13.9	—	14.9
500 to 749 lb	15.6	.3	8.0	—	13.4	—	16.6
750 to 999 lb	16.9	.3	6.2	—	15.8	—	18.1
1,000 to 9,999 lb	6.2	1.3	4.2	.3	6.7	.3	4.3
10,000 to 49,999 lb	7.2	2.1	10.7	2.4	8.7	2.5	8.4
50,000 to 99,999 lb	19.8	1.2	23.5	2.7	9.1	.4	15.5
100,000 lb or more	9.7	1.6	10.1	2.5	11.5	2.7	12.5
Truck²	4.6	—	8.9	—	7.8	—	11.6
Less than 50 lb	12.4	.4	22.3	—	17.7	—	20.9
50 to 99 lb	14.9	.2	11.5	—	14.2	—	16.6
100 to 499 lb	10.6	.8	8.4	.1	14.1	.2	15.4
500 to 749 lb	15.5	.4	8.0	—	14.0	.1	17.1
750 to 999 lb	18.2	.4	6.2	—	16.3	.1	18.3
1,000 to 9,999 lb	6.3	1.7	4.2	.8	6.8	.6	4.1
10,000 to 49,999 lb	7.3	1.9	10.9	4.1	9.4	2.0	8.3
50,000 to 99,999 lb	24.8	1.8	23.8	4.3	11.5	1.0	15.2
100,000 lb or more	14.7	.4	29.0	2.7	25.8	1.4	37.0
For-hire truck	4.4	—	10.9	—	9.8	—	6.2
Less than 50 lb	16.9	.4	15.4	—	23.7	—	16.6
50 to 99 lb	15.1	.2	16.7	—	21.0	—	8.9
100 to 499 lb	14.1	1.3	11.1	—	19.1	.3	9.9
500 to 749 lb	20.1	.5	13.9	—	19.4	.1	7.1
750 to 999 lb	20.4	.3	16.0	—	24.2	.1	10.6
1,000 to 9,999 lb	12.6	2.6	7.1	.5	8.7	.6	4.3
10,000 to 49,999 lb	9.2	3.2	10.3	3.0	11.4	1.8	8.6
50,000 to 99,999 lb	24.7	1.5	25.2	3.8	15.3	1.2	15.2
100,000 lb or more	16.8	.5	26.7	2.1	18.1	.6	17.7
Private truck	8.1	—	13.1	—	17.1	—	7.7
Less than 50 lb	18.4	.9	24.2	—	21.6	—	7.3
50 to 99 lb	19.4	.5	15.1	—	22.3	—	13.3
100 to 499 lb	12.9	.7	11.5	.3	18.2	.1	10.6
500 to 749 lb	18.3	.5	9.9	—	12.0	—	14.0
750 to 999 lb	26.3	.7	8.7	—	15.0	—	15.6
1,000 to 9,999 lb	7.2	1.9	4.7	1.3	7.8	1.6	7.2
10,000 to 49,999 lb	13.0	2.5	18.2	5.3	19.3	3.2	8.9
50,000 to 99,999 lb	29.4	2.4	31.2	5.1	21.8	2.3	20.3
100,000 lb or more	30.8	.6	42.4	4.6	S	S	S
Rail	14.2	—	14.9	—	13.3	—	11.2
Less than 50 lb	S	S	S	S	S	S	32.5
50 to 99 lb	S	S	S	S	S	S	S
100 to 499 lb	S	S	S	S	S	S	27.7
500 to 749 lb	S	S	S	S	S	S	30.9
750 to 999 lb	S	S	S	S	S	S	29.8
1,000 to 9,999 lb	S	S	38.9	—	S	S	17.3
10,000 to 49,999 lb	42.5	3.1	36.8	.6	47.3	.9	14.2
50,000 to 99,999 lb	39.5	3.3	34.6	.3	32.5	.4	12.5
100,000 lb or more	13.4	5.2	15.1	.8	13.1	1.1	9.4
Water	21.2	—	20.2	—	36.3	—	26.0
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	S	S	S	S	S	S	44.1
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	21.2	—	20.2	—	36.3	—	25.4
Shallow draft	26.6	—	20.8	—	22.5	—	41.3
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	S	S	S	S	S	S	47.3
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	26.6	—	20.8	—	22.5	—	41.3

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	32.4	—	37.1	—	S	S	42.7
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	—	—	—	—	—	—	—
100 to 499 lb	—	—	—	—	—	—	—
500 to 749 lb	—	—	—	—	—	—	—
750 to 999 lb	—	—	—	—	—	—	—
1,000 to 9,999 lb	—	—	—	—	—	—	—
10,000 to 49,999 lb	S	S	S	S	S	S	33.1
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	32.4	.1	37.1	.1	S	S	39.8
Air (includes truck and air)	21.8	—	24.1	—	19.6	—	1.9
Less than 50 lb	44.0	9.1	29.0	5.0	25.9	4.8	3.1
50 to 99 lb	28.0	2.9	46.5	3.8	45.5	4.3	8.4
100 to 499 lb	26.2	8.8	22.9	5.1	23.7	4.6	8.2
500 to 749 lb	S	S	36.6	.9	34.9	.8	15.8
750 to 999 lb	S	S	S	S	S	S	21.6
1,000 to 9,999 lb	46.1	4.0	35.4	7.3	32.4	7.7	19.3
10,000 to 49,999 lb	S	S	S	S	S	S	24.1
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
100,000 lb or more	—	—	—	—	—	—	—
Pipeline³	15.9	—	18.2	—	S	S	S
Less than 50 lb	S	S	S	S	S	S	S
50 to 99 lb	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
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	32.6	—	30.3	—	—	—	—
100,000 lb or more	15.8	.2	18.1	.2	S	S	S
Multiple modes	15.4	—	43.9	—	25.1	—	6.4
Less than 50 lb	17.8	3.9	15.7	2.1	17.4	2.0	6.8
50 to 99 lb	28.0	1.7	15.8	1.1	15.7	1.1	8.1
100 to 499 lb	20.9	2.4	18.4	2.9	22.6	2.8	7.4
500 to 749 lb	20.8	.9	19.1	.7	20.8	.7	21.4
750 to 999 lb	44.7	.3	37.0	.3	34.5	.3	44.9
1,000 to 9,999 lb	35.1	.2	29.8	.2	46.3	.4	35.9
10,000 to 49,999 lb	18.6	.2	30.2	7.3	29.4	8.3	14.9
50,000 to 99,999 lb	S	S	S	S	S	S	30.5
100,000 lb or more	S	S	S	S	34.5	12.5	21.6
Parcel, U.S. Postal Service or courier	16.3	—	14.9	—	17.6	—	6.5
Less than 50 lb	17.8	3.7	15.8	1.8	17.4	3.3	6.8
50 to 99 lb	28.0	1.8	15.8	1.3	15.8	1.8	8.6
100 to 499 lb	20.9	2.5	18.9	1.7	23.3	2.7	7.5
500 to 749 lb	21.0	.9	18.4	1.5	21.2	1.3	20.7
750 to 999 lb	44.8	.4	37.2	1.1	35.4	.7	44.8
1,000 to 9,999 lb	S	S	S	S	S	S	30.9
10,000 to 49,999 lb	—	—	—	—	—	—	—
50,000 to 99,999 lb	—	—	—	—	—	—	—
100,000 lb or more	—	—	—	—	—	—	—
Truck and rail	22.9	—	S	S	24.2	—	9.3
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	S	S	S	S	S	S	31.6
100 to 499 lb	S	S	S	S	S	S	29.4
500 to 749 lb	S	S	S	S	S	S	29.8
750 to 999 lb	S	S	S	S	S	S	29.3
1,000 to 9,999 lb	43.5	4.9	35.7	.3	35.4	.3	15.2
10,000 to 49,999 lb	18.8	8.0	35.1	15.8	34.3	13.3	7.4
50,000 to 99,999 lb	S	S	S	S	S	S	29.1
100,000 lb or more	47.2	6.7	S	S	44.0	12.6	30.1
Truck and water	31.7	—	41.3	—	42.7	—	16.1
Less than 50 lb	—	—	—	—	—	—	—
50 to 99 lb	S	S	S	S	S	S	30.3
100 to 499 lb	S	S	S	S	S	S	24.7
500 to 749 lb	S	S	S	S	S	S	31.6
750 to 999 lb	S	S	S	S	S	S	31.6
1,000 to 9,999 lb	37.5	1.1	S	S	S	S	24.8
10,000 to 49,999 lb	40.4	10.8	33.5	15.1	S	S	32.4
50,000 to 99,999 lb	S	S	S	S	S	S	31.6
100,000 lb or more	41.3	14.9	41.9	17.9	47.4	16.8	S

See footnote at end of table.

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

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

Mode of transportation and shipment weight	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
Multiple modes—Con.							
Rail and water	S	S	S	S	S	S	30.6
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	30.6
Other multiple modes	S	S	S	S	S	S	S
Less than 50 lb	S	S	S	S	S	S	31.6
50 to 99 lb	S	S	S	S	S	S	31.6
100 to 499 lb	S	S	S	S	S	S	29.6
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	S	S	S	S	S	S	30.0
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	29.3
Other and unknown modes	24.4	—	23.8	—	29.1	—	36.9
Less than 50 lb	26.7	3.0	21.2	—	44.2	—	35.6
50 to 99 lb	S	S	23.9	.1	S	S	S
100 to 499 lb	28.9	1.7	29.2	1.2	47.2	.7	S
500 to 749 lb	29.4	.7	25.9	.4	33.2	.2	S
750 to 999 lb	33.9	.3	34.0	.1	45.7	—	S
1,000 to 9,999 lb	14.2	7.0	17.4	2.6	16.8	4.4	15.9
10,000 to 49,999 lb	35.5	7.0	40.6	5.2	35.3	7.7	19.7
50,000 to 99,999 lb	S	S	35.5	3.9	S	S	28.7
100,000 lb or more	46.2	2.0	29.9	11.1	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-5a. Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity for State of Origin: 2002

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

SCTG code	Commodity description	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
		Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
	Total	3.7	—	8.0	—	8.0	—	7.3
01	Live animals and live fish	S	S	S	S	S	S	31.1
02	Cereal grains	21.0	.1	25.8	1.1	42.4	2.7	43.7
03	Other agricultural products	35.2	.3	30.8	.2	S	S	S
04	Animal feed and products of animal origin, n.e.c.	S	S	S	S	36.9	.3	S
05	Meat, fish, seafood, and their preparations	21.3	.6	23.3	.2	21.7	.4	S
06	Milled grain products and preparations, and bakery products	38.0	.3	S	S	34.7	.2	S
07	Other prepared foodstuffs and fats and oils	19.5	.5	26.2	.4	40.0	1.5	S
08	Alcoholic beverages	19.2	.3	16.4	.1	17.0	—	13.3
09	Tobacco products	S	S	35.9	—	25.2	—	S
10	Monumental or building stone	S	S	43.2	—	28.7	—	S
11	Natural sands	37.3	—	S	S	27.1	.2	S
12	Gravel and crushed stone	29.6	—	27.4	2.3	37.5	.6	23.7
13	Nonmetallic minerals n.e.c.	S	S	41.1	—	38.6	.1	21.8
14	Metallic ores and concentrates	40.1	—	S	S	S	S	S
15	Coal	15.0	—	17.7	.8	41.2	1.0	S
17	Gasoline and aviation turbine fuel	23.1	1.8	23.6	2.8	27.1	3.3	21.9
18	Fuel oils	23.1	.8	24.6	1.7	33.0	1.7	15.1
19	Coal and petroleum products, n.e.c.	12.3	.3	15.4	1.6	39.2	2.9	27.9
20	Basic chemicals	20.3	1.4	27.9	2.5	26.3	3.1	15.8
21	Pharmaceutical products	37.3	1.3	24.4	—	21.6	—	12.6
22	Fertilizers	47.8	—	S	S	29.6	—	S
23	Chemical products and preparations, n.e.c.	15.9	.4	21.0	.2	18.8	.5	16.2
24	Plastics and rubber	6.2	.4	5.0	.3	8.8	.6	31.3
25	Logs and other wood in the rough	S	S	S	S	S	S	30.9
26	Wood products	29.3	.4	33.9	.4	36.2	.5	23.7
27	Pulp, newsprint, paper, and paperboard	16.8	.1	12.5	—	14.3	.1	26.1
28	Paper or paperboard articles	30.5	.4	17.8	—	24.7	.1	20.4
29	Printed products	15.8	.1	16.9	—	31.3	.1	15.4
30	Textiles, leather, and articles of textiles or leather	21.6	.5	19.8	—	29.3	.1	7.1
31	Nonmetallic mineral products	21.1	.6	13.4	1.4	23.5	1.7	18.2
32	Base metal in primary or semifinished forms and in finished basic shapes	24.5	.8	40.2	.9	37.7	2.0	21.0
33	Articles of base metal	9.0	.3	13.2	.1	21.2	.5	43.2
34	Machinery	13.9	.5	19.2	—	32.2	.1	19.5
35	Electronic and other electrical equipment and components and office equipment	11.8	1.3	47.9	.2	S	S	11.9
36	Motorized and other vehicles (including parts)	25.5	1.8	23.8	.2	22.5	.4	S
37	Transportation equipment, n.e.c.	26.1	.2	S	S	41.8	—	7.9
38	Precision instruments and apparatus	15.8	.2	S	S	41.1	—	17.3
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs	49.8	.5	35.5	—	37.2	.2	S
40	Miscellaneous manufactured products	16.3	.9	22.6	.1	19.4	.2	16.7
41	Waste and scrap	S	S	47.6	.3	S	S	31.4
43	Mixed freight	12.5	1.1	19.1	.3	19.8	.3	32.8
--	Commodity unknown	S	S	S	S	S	S	S

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

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

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

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

SCTG code	Commodity description	Value (percent)		Tons (percent)		Ton-miles ¹ (percent)	
		2002	1997	2002	1997	2002	1997
	Total	-	-	-	-	-	-
01	Live animals and live fish	S	-	S	-	S	-
02	Cereal grains .....	.1	.1	1.1	.3	2.7	.6
03	Other agricultural products .....	.3	.1	.2	.2	S	.6
04	Animal feed and products of animal origin, n.e.c.	S	.3	S	.4	.3	.3
05	Meat, fish, seafood, and their preparations .....	.6	.3	.2	.1	.4	.3
06	Milled grain products and preparations, and bakery products .....	.3	.6	S	.1	.2	.3
07	Other prepared foodstuffs and fats and oils .....	.5	.9	.4	.2	1.5	.6
08	Alcoholic beverages .....	.3	.1	.1	-	-	.1
09	Tobacco products	S	-	-	-	-	-
10	Monumental or building stone	S	S	-	-	-	S
11	Natural sands	-	-	S	.4	.2	.2
12	Gravel and crushed stone	-	-	2.3	1.8	.6	.5
13	Nonmetallic minerals n.e.c.	S	-	-	S	.1	.4
14	Metallic ores and concentrates	-	.1	S	S	S	.4
15	Coal	-	-	.8	1.2	1.0	-
17	Gasoline and aviation turbine fuel	1.8	.5	2.8	1.2	3.3	4.1
18	Fuel oils .....	.8	.7	1.7	2.1	1.7	1.3
19	Coal and petroleum products, n.e.c. ....	.3	.5	1.6	1.2	2.9	2.1
20	Basic chemicals	1.4	2.4	2.5	2.2	3.1	4.1
21	Pharmaceutical products	1.3	.2	-	-	-	-
22	Fertilizers	-	.1	S	.1	-	-
23	Chemical products and preparations, n.e.c. ....	.4	.3	.2	.1	.5	.2
24	Plastics and rubber .....	.4	.4	.3	.3	.6	1.2
25	Logs and other wood in the rough	S	-	S	S	S	-
26	Wood products .....	.4	.1	.4	.2	.5	.2
27	Pulp, newsprint, paper, and paperboard .....	.1	.2	-	-	.1	.2
28	Paper or paperboard articles .....	.4	.2	-	-	.1	.1
29	Printed products .....	.1	.1	-	-	.1	-
30	Textiles, leather, and articles of textiles or leather .....	.5	1.5	-	.2	.1	.2
31	Nonmetallic mineral products .....	.6	-	1.4	1.0	1.7	.6
32	Base metal in primary or semifinished forms and in finished basic shapes .....	.8	.2	.9	.2	2.0	.6
33	Articles of base metal .....	.3	.2	.1	.2	.5	.4
34	Machinery .....	.5	.4	-	-	.1	.1
35	Electronic and other electrical equipment and components and office equipment	1.3	2.5	.2	-	S	.1
36	Motorized and other vehicles (including parts)	1.8	.3	.2	-	.4	-
37	Transportation equipment, n.e.c. ....	.2	.2	S	-	-	-
38	Precision instruments and apparatus .....	.2	1.1	S	-	-	-
39	Furniture, mattresses and mattress supports, lamps, lighting fittings, and illuminated signs .....	.5	.7	-	-	.2	-
40	Miscellaneous manufactured products .....	.9	1.2	.1	.1	.2	.3
41	Waste and scrap	S	-	.3	.2	.6	.2
43	Mixed freight	1.1	1.5	.3	.3	.3	.2
--	Commodity unknown	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-6. Estimated Measures of Reliability for Shipment Characteristics by Two-Digit Commodity and Mode of Transportation for State of Origin: 2002

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
ALL COMMODITIES							
Total	3.7	—	8.0	—	8.0	—	7.3
Single modes	4.5	1.7	8.4	.6	8.3	.8	18.7
Truck	4.6	1.9	8.9	3.2	7.8	2.7	11.6
For-hire truck	4.4	1.4	10.9	2.3	9.8	2.8	6.2
Private truck	8.1	1.9	13.1	3.3	17.1	1.8	7.7
Rail	14.2	.9	14.9	1.5	13.3	3.3	11.2
Water	21.2	.5	20.2	1.3	36.3	3.0	26.0
Shallow draft	26.6	.4	20.8	.8	22.5	.8	41.3
Great Lakes	—	—	—	—	—	—	—
Deep draft	32.4	.3	37.1	.8	S	S	42.7
Air (includes truck and air)	21.8	.4	24.1	—	19.6	—	1.9
Pipeline	15.9	1.4	18.2	3.0	S	S	S
Multiple modes	15.4	1.6	43.9	.4	25.1	.7	6.4
Parcel, U.S. Postal Service or courier	16.3	1.6	14.9	—	17.6	—	6.5
Truck and rail	22.9	—	S	S	24.2	.2	9.3
Truck and water	31.7	—	41.3	—	42.7	.3	16.1
Rail and water	S	S	S	S	S	S	30.6
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	24.4	1.0	23.8	.7	29.1	.3	36.9
SCTG 01, LIVE ANIMALS AND LIVE FISH							
Total	S	S	S	S	S	S	31.1
Single modes	S	S	S	S	S	S	31.1
Truck	S	S	S	S	S	S	31.1
For-hire truck	S	S	S	S	37.9	19.7	41.1
Private truck	S	S	S	S	S	S	30.8
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	—	—	—	—	—	—	—
SCTG 02, CEREAL GRAINS							
Total	21.0	—	25.8	—	42.4	—	43.7
Single modes	23.5	6.0	28.2	5.6	43.9	5.7	44.1
Truck	24.8	10.3	30.0	11.0	39.5	14.8	S
For-hire truck	27.5	10.0	32.8	11.3	42.9	11.0	S
Private truck	S	S	S	S	S	S	28.2
Rail	37.9	10.8	42.7	11.8	45.3	18.5	30.9
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	31.6
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	35.2	—	30.8	—	S	S	S
Single modes	35.5	1.4	31.2	1.7	S	S	S
Truck	35.5	1.4	31.1	1.6	S	S	S
For-hire truck	S	S	49.6	15.0	S	S	46.9
Private truck	45.4	12.9	40.1	14.4	39.1	17.4	S
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	S
SCTG 04, ANIMAL FEED AND PRODUCTS OF ANIMAL ORIGIN, N.E.C.							
Total	S	S	S	S	36.9	—	S
Single modes	S	S	S	S	37.9	5.9	S
Truck	S	S	S	S	38.2	6.8	S
For-hire truck	S	S	46.3	16.9	44.3	11.0	21.9
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	28.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	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	S
SCTG 05, MEAT, FISH, SEAFOOD, AND THEIR PREPARATIONS							
Total	21.3	—	23.3	—	21.7	—	S
Single modes	21.4	.8	23.8	2.0	21.1	1.2	S
Truck	21.6	.9	23.9	2.0	21.3	2.1	S
For-hire truck	22.6	9.0	20.8	8.7	22.9	5.1	4.0
Private truck	37.3	8.6	34.7	7.8	34.5	5.0	S
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	45.9	.8	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	38.0	—	S	S	34.7	—	S
Single modes	38.4	3.4	S	S	37.8	8.8	23.7
Truck	38.4	3.4	S	S	38.9	8.8	22.7
For-hire truck	S	S	S	S	49.6	11.3	27.9
Private truck	47.2	10.1	38.4	11.2	41.2	9.3	32.3
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	26.2
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	27.4
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 07, OTHER PREPARED FOODSTUFFS AND FATS AND OILS							
Total	19.5	—	26.2	—	40.0	—	S
Single modes	22.2	5.0	27.5	4.5	41.4	2.4	S
Truck	22.2	5.0	27.9	4.8	42.2	3.0	S
For-hire truck	32.3	7.5	41.7	7.5	45.4	5.8	13.0
Private truck	20.9	8.9	22.5	8.3	30.1	5.3	44.2
Rail	43.2	.4	49.1	.9	44.5	1.9	21.0
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	29.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	39.4
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	34.5
Truck and rail	S	S	S	S	S	S	29.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	34.9	3.5	42.9	4.3	S	S	S
SCTG 08, ALCOHOLIC BEVERAGES							
Total	19.2	—	16.4	—	17.0	—	13.3
Single modes	19.2	.1	16.4	.2	17.3	2.5	12.3
Truck	19.3	.4	16.6	.7	17.7	2.9	12.3
For-hire truck	29.4	6.3	28.0	9.0	24.5	14.4	20.1
Private truck	21.6	6.6	22.7	9.5	S	S	8.4
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	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	—	—	—	—	—	—	—

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	S	S	35.9	—	25.2	—	S
Single modes	S	S	35.9	—	25.2	—	S
Truck	S	S	35.9	—	25.2	—	S
For-hire truck	—	—	—	—	—	—	—
Private truck	S	S	35.9	—	25.2	—	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	30.5
SCTG 10, MONUMENTAL OR BUILDING STONE							
Total	S	S	43.2	—	28.7	—	S
Single modes	S	S	44.5	2.2	28.7	.3	S
Truck	S	S	44.5	2.2	28.7	.3	S
For-hire truck	S	S	—	—	—	—	—
Private truck	S	S	—	—	39.0	10.7	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	—	—	—	—	—	—	—
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	29.5
SCTG 11, NATURAL SANDS							
Total	37.3	—	S	S	27.1	—	S
Single modes	37.7	1.2	S	S	29.6	5.6	S
Truck	38.7	3.3	S	S	32.6	9.3	S
For-hire truck	28.6	11.6	48.1	12.8	43.6	12.1	S
Private truck	43.4	13.3	S	S	46.1	14.7	S
Rail	S	S	S	S	S	S	26.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	29.9
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	29.9
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	36.8

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 12, GRAVEL AND CRUSHED STONE							
Total	29.6	—	27.4	—	37.5	—	23.7
Single modes	29.6	.2	27.4	.3	37.6	—	23.8
Truck	30.2	2.5	27.6	1.3	43.2	6.4	25.0
For-hire truck	S	S	S	S	23.1	9.2	32.3
Private truck	39.0	8.6	37.9	8.1	S	S	32.8
Rail	28.8	2.4	31.2	1.0	32.7	6.3	16.1
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
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	30.4
SCTG 13, NONMETALLIC MINERALS N.E.C.							
Total	S	S	41.1	—	38.6	—	21.8
Single modes	S	S	40.5	.5	36.9	2.2	19.9
Truck	S	S	S	S	46.7	12.8	21.7
For-hire truck	S	S	S	S	47.8	12.1	29.5
Private truck	S	S	S	S	45.1	3.4	35.3
Rail	48.4	10.9	34.6	12.8	42.0	13.4	29.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 14, METALLIC ORES AND CONCENTRATES							
Total	40.1	—	S	S	S	S	S
Single modes	48.4	10.2	S	S	S	S	S
Truck	S	S	S	S	S	S	43.4
For-hire truck	S	S	S	S	S	S	31.3
Private truck	S	S	S	S	S	S	31.2
Rail	43.3	13.4	44.3	12.9	43.2	14.6	26.1
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	31.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	30.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	30.6
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	S	S	S	S	S	S	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 15, COAL							
Total	15.0	—	17.7	—	41.2	—	S
Single modes	26.9	11.7	27.8	12.5	42.3	15.2	S
Truck	36.5	9.9	41.3	10.1	39.6	10.9	S
For-hire truck	S	S	S	S	S	S	32.4
Private truck	36.9	3.9	41.5	3.3	41.6	3.0	45.8
Rail	31.4	13.1	31.2	15.2	S	S	26.0
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	34.7	11.7	38.7	12.5	39.4	15.2	18.3
SCTG 17, GASOLINE AND AVIATION TURBINE FUEL							
Total	23.1	—	23.6	—	27.1	—	21.9
Single modes	23.3	.7	23.8	.8	25.3	1.9	22.0
Truck	34.9	6.0	39.0	6.3	33.2	5.3	22.4
For-hire truck	46.1	3.5	S	S	31.9	3.8	33.0
Private truck	32.2	4.9	34.7	4.8	S	S	25.1
Rail	S	S	S	S	S	S	30.3
Water	S	S	S	S	S	S	32.2
Shallow draft	S	S	S	S	S	S	28.9
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	28.0
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	21.6	6.3	21.2	6.7	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	30.4
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	S
Other and unknown modes	S	S	S	S	S	S	S
SCTG 18, FUEL OILS							
Total	23.1	—	24.6	—	33.0	—	15.1
Single modes	23.8	3.8	25.8	3.9	28.6	4.1	15.0
Truck	15.6	7.5	17.1	7.4	18.7	9.3	14.8
For-hire truck	20.6	3.1	22.6	3.4	24.0	1.8	21.8
Private truck	16.1	4.7	17.0	4.3	32.0	7.9	17.1
Rail	S	S	S	S	S	S	30.7
Water	28.5	2.0	24.3	2.8	24.2	8.7	25.2
Shallow draft	27.0	1.7	20.8	2.6	27.0	8.9	19.9
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	49.6
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	32.5	7.5	35.1	7.8	S	S	S
Multiple modes	S	S	S	S	S	S	31.3
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.3
Other and unknown modes	42.6	.6	S	S	S	S	27.3

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 19, COAL AND PETROLEUM PRODUCTS, N.E.C.							
Total	12.3	—	15.4	—	39.2	—	27.9
Single modes	12.6	1.0	15.6	.8	40.2	1.6	31.3
Truck	11.2	4.3	37.6	7.8	31.5	8.0	33.2
For-hire truck	30.6	4.5	32.4	6.0	26.4	5.2	25.5
Private truck	25.6	4.9	S	S	S	S	12.5
Rail	37.5	3.6	27.2	5.1	31.7	7.0	12.2
Water	24.3	3.4	24.9	3.6	S	S	48.9
Shallow draft	29.3	2.8	23.7	2.5	39.5	1.6	28.8
Great Lakes	—	—	—	—	—	—	—
Deep draft	49.3	2.7	S	S	S	S	26.3
Air (includes truck and air)	S	S	S	S	S	S	31.6
Pipeline	22.6	5.9	22.4	7.4	S	S	S
Multiple modes	S	S	S	S	49.4	1.6	47.0
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	28.0
Truck and rail	S	S	S	S	S	S	29.9
Truck and water	S	S	S	S	S	S	30.3
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	29.8
Other and unknown modes	S	S	S	S	S	S	S
SCTG 20, BASIC CHEMICALS							
Total	20.3	—	27.9	—	26.3	—	15.8
Single modes	20.3	.8	27.9	.8	27.5	2.2	14.5
Truck	29.0	3.6	41.6	3.0	25.2	1.7	15.6
For-hire truck	35.8	3.1	S	S	27.1	1.4	27.4
Private truck	S	S	S	S	S	S	22.4
Rail	29.1	3.5	27.1	4.4	34.5	5.8	7.3
Water	17.6	3.1	15.6	4.1	19.6	4.0	30.9
Shallow draft	23.7	3.5	18.8	3.5	21.3	4.0	36.5
Great Lakes	—	—	—	—	—	—	—
Deep draft	43.0	2.2	33.7	1.9	S	S	S
Air (includes truck and air)	S	S	41.9	—	49.6	—	25.9
Pipeline	28.5	3.2	40.1	3.9	S	S	S
Multiple modes	28.7	.6	41.6	.8	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	18.9
Truck and water	S	S	S	S	S	S	32.3
Rail and water	S	S	S	S	S	S	30.6
Other multiple modes	S	S	S	S	S	S	30.8
Other and unknown modes	S	S	S	S	S	S	S
SCTG 21, PHARMACEUTICAL PRODUCTS							
Total	37.3	—	24.4	—	21.6	—	12.6
Single modes	29.3	7.0	23.7	4.7	23.8	6.2	17.5
Truck	29.2	6.9	23.7	4.6	24.3	6.0	11.7
For-hire truck	35.0	7.7	28.3	8.6	35.9	11.0	11.2
Private truck	43.2	4.4	33.5	9.1	34.9	7.7	29.3
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	46.4	.8	45.4	.1	48.1	1.5	12.5
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	18.6	1.9	28.1	5.0	15.3
Parcel, U.S. Postal Service or courier	S	S	18.6	1.9	28.1	5.0	15.3
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	40.5	2.6	S	S	S	S	29.3

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 22, FERTILIZERS							
Total	47.8	—	S	S	29.6	—	S
Single modes	42.7	3.2	S	S	29.5	.1	S
Truck	47.2	5.7	S	S	23.4	7.5	S
For-hire truck	37.0	7.0	36.1	7.8	37.6	12.0	20.7
Private truck	S	S	S	S	42.7	12.3	S
Rail	S	S	S	S	S	S	29.8
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	S	S	S	S	S	S	31.6
SCTG 23, CHEMICAL PRODUCTS AND PREPARATIONS, N.E.C.							
Total	15.9	—	21.0	—	18.8	—	16.2
Single modes	21.3	7.8	21.9	3.1	19.5	1.9	21.3
Truck	22.8	7.2	23.5	5.5	24.0	8.7	21.8
For-hire truck	30.3	8.0	33.2	7.9	27.0	8.1	14.3
Private truck	29.6	4.4	37.5	6.5	30.9	2.9	19.7
Rail	33.2	2.2	42.5	4.8	42.3	9.1	14.3
Water	S	S	S	S	S	S	32.4
Shallow draft	S	S	S	S	S	S	32.4
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	21.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	44.9	7.7	42.4	1.0	41.9	1.8	14.5
Parcel, U.S. Postal Service or courier	45.4	7.7	46.1	1.0	49.8	1.9	14.8
Truck and rail	S	S	S	S	S	S	39.4
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	19.2
SCTG 24, PLASTICS AND RUBBER							
Total	6.2	—	5.0	—	8.8	—	31.3
Single modes	6.4	1.2	5.1	.4	8.6	.6	34.4
Truck	9.5	3.0	14.3	4.2	13.5	4.5	27.3
For-hire truck	10.6	3.8	14.0	3.2	11.3	3.3	14.0
Private truck	20.2	3.2	20.1	1.7	S	S	18.6
Rail	8.9	2.4	6.1	4.3	12.5	4.4	9.5
Water	S	S	S	S	S	S	31.6
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	S	S	S	S	S	S	31.6
Air (includes truck and air)	S	S	41.1	—	S	S	18.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	26.6	1.2	15.4	—	22.4	.1	10.8
Parcel, U.S. Postal Service or courier	29.8	1.2	23.2	—	28.9	—	10.8
Truck and rail	S	S	42.2	—	37.8	.1	16.1
Truck and water	S	S	S	S	S	S	30.1
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	37.9	.8	37.4	.4	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 25, LOGS AND OTHER WOOD IN THE ROUGH							
Total	S	S	S	S	S	S	30.9
Single modes	S	S	S	S	S	S	31.2
Truck	S	S	S	S	S	S	30.2
For-hire truck	S	S	S	S	S	S	30.3
Private truck	S	S	S	S	S	S	46.3
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.6
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	31.6
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	31.6
SCTG 26, WOOD PRODUCTS							
Total	29.3	—	33.9	—	36.2	—	23.7
Single modes	30.1	2.3	33.8	1.1	37.2	2.0	13.2
Truck	28.1	2.5	30.1	3.0	28.2	6.7	14.0
For-hire truck	22.5	3.1	27.9	3.1	30.9	5.0	26.7
Private truck	31.8	2.7	32.8	3.3	26.8	3.3	14.0
Rail	S	S	S	S	S	S	9.4
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	46.5	.5	S	S	S	S	22.4
Parcel, U.S. Postal Service or courier	45.6	.4	44.8	—	S	S	22.4
Truck and rail	S	S	S	—	S	S	31.6
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	44.3	2.0	S	S	25.1	1.2	S
SCTG 27, PULP, NEWSPRINT, PAPER, AND PAPERBOARD							
Total	16.8	—	12.5	—	14.3	—	26.1
Single modes	17.4	1.5	12.7	.8	14.3	1.0	25.5
Truck	19.3	4.1	14.1	5.3	13.1	5.8	26.3
For-hire truck	24.2	5.2	16.3	5.1	12.3	7.4	12.9
Private truck	20.0	4.3	21.1	3.8	47.1	6.0	S
Rail	38.2	4.1	33.3	5.8	30.3	6.3	8.1
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	32.3	—	35.5	—	20.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	49.1	.4	S	S	45.0
Parcel, U.S. Postal Service or courier	S	S	42.2	.1	S	S	45.9
Truck and rail	S	S	S	S	S	S	24.8
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	27.8	.3	34.0	.6	41.7	.2	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 28, PAPER OR PAPERBOARD ARTICLES							
Total	30.5	—	17.8	—	24.7	—	20.4
Single modes	31.7	3.3	18.0	1.0	25.4	1.2	26.3
Truck	31.7	3.2	18.0	1.0	25.5	1.1	28.4
For-hire truck	43.4	8.5	26.0	7.8	29.6	8.3	15.5
Private truck	20.7	8.4	24.6	7.7	30.8	8.0	28.3
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	28.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	38.5	3.1	43.6	.5	49.4	.9	27.4
Parcel, U.S. Postal Service or courier	38.5	3.1	43.6	.5	49.4	.9	27.4
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	44.5	.9	S	S	S	S	S
SCTG 29, PRINTED PRODUCTS							
Total	15.8	—	16.9	—	31.3	—	15.4
Single modes	18.8	5.0	15.5	2.3	28.6	3.1	21.5
Truck	19.1	5.2	14.9	3.0	25.4	4.3	26.4
For-hire truck	19.6	5.1	16.5	6.1	26.1	4.0	15.5
Private truck	37.0	4.7	21.8	5.6	S	S	24.6
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	14.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	20.1	4.3	23.4	1.6	45.9	2.7	13.0
Parcel, U.S. Postal Service or courier	19.8	4.3	21.0	1.5	23.3	2.6	13.2
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	39.1	5.5	S	S	S	S	S
SCTG 30, TEXTILES, LEATHER, AND ARTICLES OF TEXTILES OR LEATHER							
Total	21.6	—	19.8	—	29.3	—	7.1
Single modes	23.9	5.9	22.2	3.1	32.9	4.3	15.3
Truck	23.9	5.8	22.9	3.3	36.2	4.6	15.6
For-hire truck	24.2	6.9	32.5	8.6	38.2	5.0	7.5
Private truck	42.7	4.7	21.4	8.9	30.6	2.6	24.5
Rail	S	S	S	S	S	S	28.4
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	41.0	—	S	S	S	S	31.9
Pipeline	—	—	—	—	S	S	S
Multiple modes	18.4	5.3	17.7	2.7	17.6	4.2	6.1
Parcel, U.S. Postal Service or courier	18.9	5.4	22.0	2.8	24.2	4.7	6.3
Truck and rail	36.6	—	39.2	.2	40.8	.8	24.5
Truck and water	S	S	S	S	S	S	30.7
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 31, NONMETALLIC MINERAL PRODUCTS							
Total	21.1	—	13.4	—	23.5	—	18.2
Single modes	20.9	.9	13.4	.9	23.1	.4	26.1
Truck	19.2	2.2	14.2	2.0	26.5	3.5	21.7
For-hire truck	23.3	7.5	21.3	5.3	36.9	6.8	16.8
Private truck	31.8	6.6	18.3	5.8	33.2	6.0	37.2
Rail	S	S	17.6	1.9	24.3	3.6	14.7
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	25.0
Pipeline	—	—	—	—	S	S	S
Multiple modes	44.6	1.0	S	S	S	S	16.5
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	16.8
Truck and rail	S	S	S	S	S	S	27.3
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	S	S	S	S	S	S	31.6
Other and unknown modes	28.8	.2	S	S	25.9	.2	S
SCTG 32, BASE METAL IN PRIMARY OR SEMIFINISHED FORMS AND IN FINISHED BASIC SHAPES							
Total	24.5	—	40.2	—	37.7	—	21.0
Single modes	25.1	2.7	41.8	2.1	38.7	1.8	26.6
Truck	25.7	3.8	44.8	5.0	45.4	7.6	26.1
For-hire truck	25.7	7.1	34.8	8.2	29.8	9.7	13.2
Private truck	44.9	8.7	S	S	S	S	21.3
Rail	28.4	1.7	31.9	2.2	34.0	5.2	12.2
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	22.6
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	15.3
Parcel, U.S. Postal Service or courier	S	S	S	S	S	S	15.9
Truck and rail	S	S	S	S	S	S	28.7
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 33, ARTICLES OF BASE METAL							
Total	9.0	—	13.2	—	21.2	—	43.2
Single modes	9.9	2.3	13.5	.6	21.3	.8	S
Truck	10.4	2.6	14.5	5.1	17.7	6.7	S
For-hire truck	17.7	6.1	18.8	5.3	19.5	6.6	17.2
Private truck	15.5	5.5	16.8	4.6	27.2	3.4	40.2
Rail	38.1	—	35.8	.4	34.0	1.0	23.5
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	12.0
Pipeline	S	S	S	S	S	S	S
Multiple modes	33.6	1.6	24.2	—	38.8	.1	21.7
Parcel, U.S. Postal Service or courier	34.6	1.6	25.0	—	42.4	.1	21.7
Truck and rail	S	S	S	S	S	S	31.0
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	29.1	.8	21.3	.6	34.3	.8	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 34, MACHINERY							
Total	13.9	—	19.2	—	32.2	—	19.5
Single modes	14.2	3.0	21.3	3.2	34.8	2.9	15.2
Truck	14.6	3.0	21.3	3.2	35.1	3.2	17.0
For-hire truck	21.0	4.8	31.8	6.7	38.9	5.6	41.1
Private truck	18.0	3.6	15.2	6.5	35.9	5.0	11.2
Rail	S	S	S	S	S	S	31.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	28.1	.6	39.8	.2	38.5	.4	3.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	25.6	2.3	26.1	.7	10.6	.7	12.3
Parcel, U.S. Postal Service or courier	25.8	2.4	26.2	.7	16.4	.6	12.3
Truck and rail	S	S	S	S	S	S	29.8
Truck and water	S	S	S	S	S	S	30.3
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	47.1	3.3	S	S	S
SCTG 35, ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS AND OFFICE EQUIPMENT							
Total	11.8	—	47.9	—	S	S	11.9
Single modes	10.6	4.9	S	S	S	S	26.8
Truck	14.3	5.6	S	S	S	S	S
For-hire truck	20.2	5.8	S	S	S	S	17.7
Private truck	31.9	4.6	39.3	6.9	32.1	1.2	S
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	27.2	3.5	25.1	1.7	24.3	3.4	6.8
Pipeline	S	S	S	S	S	S	S
Multiple modes	27.4	5.6	S	S	S	S	5.2
Parcel, U.S. Postal Service or courier	27.5	5.6	S	S	S	S	5.1
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	43.8	2.7	36.0	2.0	S	S	31.9
SCTG 36, MOTORIZED AND OTHER VEHICLES (INCLUDING PARTS)							
Total	25.5	—	23.8	—	22.5	—	S
Single modes	29.4	6.5	23.9	4.7	21.1	3.4	S
Truck	35.8	7.9	27.1	6.7	28.0	9.1	S
For-hire truck	38.4	7.6	33.1	7.6	32.1	9.9	45.9
Private truck	26.5	4.1	22.9	4.8	39.5	5.1	S
Rail	43.5	6.4	43.6	4.1	45.1	8.7	21.5
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	38.7	—	38.7	—	21.7
Pipeline	—	—	—	—	S	S	S
Multiple modes	47.1	1.1	45.8	.6	38.7	.9	18.8
Parcel, U.S. Postal Service or courier	48.5	1.2	48.2	.6	49.2	1.0	19.5
Truck and rail	S	S	S	S	S	S	31.6
Truck and water	S	S	S	S	S	S	27.9
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
SCTG 37, TRANSPORTATION EQUIPMENT, N.E.C.							
Total	26.1	—	S	S	41.8	—	7.9
Single modes	28.8	6.1	S	S	42.1	2.4	9.7
Truck	34.4	8.6	S	S	S	S	14.4
For-hire truck	38.4	8.4	S	S	S	S	17.5
Private truck	S	S	39.8	3.5	S	S	27.3
Rail	S	S	32.5	14.6	43.3	11.8	27.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	44.7	7.6	S	S	S	S	7.2
Pipeline	—	—	—	—	S	S	S
Multiple modes	46.5	5.7	43.2	.5	42.0	1.0	9.9
Parcel, U.S. Postal Service or courier	46.5	5.7	43.2	.5	42.0	1.0	9.9
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	40.1
SCTG 38, PRECISION INSTRUMENTS AND APPARATUS							
Total	15.8	—	S	S	41.1	—	17.3
Single modes	29.9	10.4	S	S	45.4	14.9	46.1
Truck	31.7	10.7	S	S	45.8	16.3	S
For-hire truck	36.7	8.8	S	S	S	S	S
Private truck	S	S	S	S	S	S	22.5
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	40.0	1.3	33.5	1.1	36.2	2.4	11.6
Pipeline	S	S	S	S	S	S	S
Multiple modes	21.4	10.6	20.3	15.5	32.4	15.0	13.4
Parcel, U.S. Postal Service or courier	21.4	10.6	20.3	15.5	32.4	15.0	13.4
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S
SCTG 39, FURNITURE, MATTRESSES AND MATTRESS SUPPORTS, LAMPS, LIGHTING FITTINGS, AND ILLUMINATED SIGNS							
Total	49.8	—	35.5	—	37.2	—	S
Single modes	S	S	36.0	1.7	37.5	.6	S
Truck	S	S	40.4	7.0	41.3	5.8	S
For-hire truck	35.5	13.5	48.5	10.2	44.5	6.1	12.3
Private truck	S	S	S	S	S	S	S
Rail	S	S	S	S	S	S	33.9
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	31.4
Pipeline	—	—	—	—	S	S	S
Multiple modes	47.7	.3	43.3	—	34.4	—	25.4
Parcel, U.S. Postal Service or courier	47.7	.3	43.3	—	34.4	—	25.4
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	48.4	1.4	47.5	1.7	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	
SCTG 40, MISCELLANEOUS MANUFACTURED PRODUCTS							
Total	16.3	—	22.6	—	19.4	—	16.7
Single modes	16.3	8.3	24.0	2.5	22.0	3.5	13.0
Truck	15.9	7.9	23.4	2.5	21.9	3.7	14.8
For-hire truck	19.3	6.4	28.4	5.1	24.7	4.5	13.6
Private truck	19.4	4.0	27.8	6.1	28.2	5.1	38.2
Rail	S	S	S	S	S	S	44.6
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	38.6	.5	45.7	—	S	S	15.3
Pipeline	—	—	—	—	S	S	S
Multiple modes	49.8	8.4	31.6	1.8	22.1	3.3	23.4
Parcel, U.S. Postal Service or courier	49.9	8.4	32.6	1.8	25.6	2.7	23.0
Truck and rail	—	—	—	—	—	—	—
Truck and water	S	S	S	S	S	S	28.4
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	41.8	1.7	28.3	.9	S	S	34.7
SCTG 41, WASTE AND SCRAP							
Total	S	S	47.6	—	S	S	31.4
Single modes	S	S	47.4	1.2	S	S	33.0
Truck	S	S	48.6	7.1	S	S	29.4
For-hire truck	S	S	S	S	S	S	44.2
Private truck	S	S	S	S	48.2	10.2	38.4
Rail	S	S	S	S	S	S	S
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	—	—	—	—	—	—	—
Pipeline	—	—	—	—	S	S	S
Multiple modes	S	S	S	S	S	S	31.8
Parcel, U.S. Postal Service or courier	—	—	—	—	—	—	—
Truck and rail	S	S	S	S	S	S	32.9
Truck and water	S	S	S	S	S	S	31.6
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	30.8
SCTG 43, MIXED FREIGHT							
Total	12.5	—	19.1	—	19.8	—	32.8
Single modes	13.1	2.2	19.5	1.0	20.4	1.3	17.7
Truck	13.5	2.3	19.5	1.0	20.5	1.4	14.8
For-hire truck	12.2	2.5	34.4	3.0	26.2	4.6	14.1
Private truck	15.7	4.2	19.5	2.9	24.0	5.1	12.6
Rail	—	—	—	—	—	—	—
Water	—	—	—	—	—	—	—
Shallow draft	—	—	—	—	—	—	—
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	21.8
Pipeline	—	—	—	—	S	S	S
Multiple modes	35.4	2.1	29.7	.5	31.6	1.3	19.5
Parcel, U.S. Postal Service or courier	36.9	1.9	29.8	.4	37.2	1.1	19.5
Truck and rail	46.6	.3	44.1	—	42.8	.3	23.7
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	38.7	.8	S	S	S	S	S

See footnote at end of table.

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

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

SCTG code, description, and mode of transportation	Value		Tons		Ton-miles		Average miles per shipment—coefficient of variation
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	
COMMODITY UNKNOWN							
Total	S	S	S	S	S	S	S
Single modes	S	S	S	S	S	S	S
Truck	34.0	14.6	S	S	S	S	S
For-hire truck	47.2	11.3	34.7	13.9	25.4	15.2	31.8
Private truck	46.1	12.1	48.8	18.7	46.1	13.0	S
Rail	S	S	S	S	S	S	30.5
Water	S	S	S	S	S	S	31.6
Shallow draft	S	S	S	S	S	S	31.6
Great Lakes	—	—	—	—	—	—	—
Deep draft	—	—	—	—	—	—	—
Air (includes truck and air)	S	S	S	S	S	S	28.0
Pipeline	S	S	S	S	S	S	S
Multiple modes	36.5	1.6	S	S	S	S	22.7
Parcel, U.S. Postal Service or courier	36.5	1.6	S	S	S	S	22.7
Truck and rail	—	—	—	—	—	—	—
Truck and water	—	—	—	—	—	—	—
Rail and water	—	—	—	—	—	—	—
Other multiple modes	—	—	—	—	—	—	—
Other and unknown modes	S	S	S	S	S	S	S

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

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

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

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

State of destination	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	3.7	—	8.0	—	8.0	—
NEW ENGLAND STATES						
Connecticut	27.0	—	S	S	S	S
Maine	S	S	45.8	—	49.3	—
Massachusetts	28.8	—	14.7	—	14.0	—
New Hampshire	S	S	35.9	—	38.0	—
Rhode Island	33.6	—	40.9	—	43.0	—
Vermont	27.4	—	47.3	—	48.7	—
MIDDLE ATLANTIC STATES						
New Jersey	24.8	.3	38.0	.5	35.1	2.6
New York	34.2	.4	S	S	S	S
Pennsylvania	7.7	—	12.3	—	12.1	.2
EAST NORTH CENTRAL STATES						
Illinois	13.7	.3	32.8	.3	27.6	1.3
Indiana	16.0	.1	14.1	—	16.9	.3
Michigan	13.1	—	S	S	S	S
Ohio	12.7	.1	15.2	—	21.3	.6
Wisconsin	13.4	—	40.5	—	41.7	.5
WEST NORTH CENTRAL STATES						
Iowa	24.3	—	27.8	—	28.4	.2
Kansas	22.7	.2	43.4	.2	38.9	.6
Minnesota	23.8	.2	17.2	—	17.9	.1
Missouri	17.0	.1	10.7	—	12.0	.1
Nebraska	19.6	—	21.3	—	21.6	—
North Dakota	20.1	—	37.1	—	42.6	.1
South Dakota	19.4	—	23.5	—	24.8	—
SOUTH ATLANTIC STATES						
Delaware	35.2	—	33.3	—	32.7	—
District of Columbia	27.3	—	S	S	S	S
Florida	10.7	.2	29.7	.2	25.5	.7
Georgia	12.1	—	8.6	—	9.6	.1
Maryland	24.1	.1	40.1	—	39.1	.3
North Carolina	25.5	.2	5.6	—	9.9	.3
South Carolina	21.6	.1	34.4	—	39.1	.7
Virginia	24.9	.2	42.2	—	40.6	.3
West Virginia	25.1	—	28.5	—	28.2	—
EAST SOUTH CENTRAL STATES						
Alabama	36.5	.4	16.8	—	14.5	.2
Kentucky	12.2	—	18.7	—	19.3	.2
Mississippi	21.9	.1	20.5	—	19.5	.1
Tennessee	7.3	—	14.8	—	20.4	.2
WEST SOUTH CENTRAL STATES						
Arkansas	9.0	—	18.5	—	22.7	.2
Louisiana	17.2	.4	29.5	.5	27.0	.7
Oklahoma	11.2	.2	15.7	.1	20.1	.2
Texas	4.4	2.0	8.4	1.1	6.0	3.2
MOUNTAIN STATES						
Arizona	17.6	.2	35.6	.2	32.7	.5
Colorado	16.0	.2	20.4	—	23.4	.3
Idaho	27.1	—	29.8	—	32.2	—
Montana	30.5	—	21.4	—	22.5	—
Nevada	23.3	—	46.3	—	36.8	—
New Mexico	24.4	.3	43.9	.4	36.8	.4
Utah	39.6	.1	14.5	—	15.8	—
Wyoming	36.9	—	33.9	—	33.0	—
PACIFIC STATES						
Alaska	39.7	—	47.1	—	44.4	—
California	17.8	.7	17.2	.2	16.0	.9
Hawaii	35.1	—	S	S	S	S
Oregon	30.8	—	15.6	—	17.2	.1
Washington	22.0	.2	37.0	—	38.0	.2

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

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

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

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

State of origin	Value		Tons		Ton-miles	
	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage	Coefficient of variation of number	Standard error of percentage
Total	4.1	–	6.5	–	7.7	–
NEW ENGLAND STATES						
Connecticut	13.7	–	14.1	–	13.5	–
Maine	25.4	–	24.5	–	23.2	–
Massachusetts	S	S	38.0	–	40.7	.2
New Hampshire	11.8	–	37.4	–	36.8	–
Rhode Island	16.4	–	19.6	–	19.7	–
Vermont	17.5	–	28.0	–	27.2	–
MIDDLE ATLANTIC STATES						
New Jersey	11.2	–	22.8	–	23.1	.3
New York	13.4	.3	40.2	.2	38.5	.9
Pennsylvania	11.6	.1	20.7	–	22.6	.4
EAST NORTH CENTRAL STATES						
Illinois	8.1	.2	16.3	.2	22.2	.7
Indiana	18.7	.4	17.9	–	16.7	.3
Michigan	15.1	.2	17.8	–	20.1	.3
Ohio	17.6	.4	11.0	–	11.6	.5
Wisconsin	17.1	.2	15.2	–	15.2	.2
WEST NORTH CENTRAL STATES						
Iowa	13.5	.1	17.2	–	17.8	.3
Kansas	13.1	.2	33.3	.4	43.7	1.3
Minnesota	13.8	.1	42.8	–	44.2	.5
Missouri	7.7	–	27.0	.4	28.0	.9
Nebraska	19.9	–	41.4	.3	45.5	1.5
North Dakota	26.0	–	36.3	–	36.2	.1
South Dakota	29.6	–	S	S	S	S
SOUTH ATLANTIC STATES						
Delaware	27.5	–	25.5	–	25.3	–
District of Columbia	S	S	S	S	S	S
Florida	16.2	.2	23.9	–	27.2	.3
Georgia	7.6	.1	11.1	–	9.9	.2
Maryland	22.4	–	26.7	–	26.1	–
North Carolina	10.9	.1	15.0	–	14.5	.2
South Carolina	16.1	.1	16.8	–	17.7	.2
Virginia	11.9	–	7.4	–	7.6	–
West Virginia	26.0	–	30.7	–	36.3	.2
EAST SOUTH CENTRAL STATES						
Alabama	19.8	.2	39.4	.3	46.5	.6
Kentucky	35.9	.3	28.4	.2	28.5	.7
Mississippi	21.1	.3	13.1	–	17.1	.2
Tennessee	17.6	.4	29.5	.2	26.6	.6
WEST SOUTH CENTRAL STATES						
Arkansas	14.3	.2	16.4	.1	13.3	.2
Louisiana	5.2	–	12.3	.3	14.0	.6
Oklahoma	44.4	.8	14.5	.3	7.5	.1
Texas	4.4	1.7	8.4	1.9	6.0	1.8
MOUNTAIN STATES						
Arizona	16.6	.2	14.2	–	16.2	–
Colorado	6.6	–	19.8	–	23.5	.2
Idaho	32.6	–	28.2	–	28.7	.1
Montana	23.8	–	S	S	S	S
Nevada	41.9	.2	S	S	S	S
New Mexico	43.4	.1	45.0	.2	32.4	.3
Utah	10.5	–	31.5	–	31.3	.2
Wyoming	17.5	–	27.6	1.3	29.3	4.3
PACIFIC STATES						
Alaska	S	S	S	S	S	S
California	28.7	1.7	12.4	–	12.7	.5
Hawaii	45.3	–	S	S	S	S
Oregon	12.9	–	23.9	–	24.8	.2
Washington	10.9	–	17.5	–	19.7	.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–9. Estimated Measures of Reliability for Shipment Characteristics by Mode of Transportation for State of Origin: 2002 and 1997

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

Mode of transportation	Value			Tons			Ton-miles			Average miles per shipment		
	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
	2002	1997		2002	1997		2002	1997		2002	1997	
Total	3.7	6.3	7.7	8.0	5.0	11.4	8.0	11.4	15.6	7.3	6.9	8.9
Single modes	4.5	7.2	8.7	8.4	4.9	12.0	8.3	12.0	17.2	18.7	10.4	25.0
Truck	4.6	7.8	9.4	8.9	6.8	14.7	7.8	10.3	15.3	11.6	11.1	16.0
Rail	14.2	25.6	25.1	14.9	12.7	29.9	13.3	18.5	27.8	11.2	6.3	10.8
Water	21.2	10.0	19.4	20.2	10.7	17.3	36.3	13.8	35.6	26.0	16.6	24.4
Air (includes truck and air)	21.8	29.5	25.3	24.1	14.4	27.5	19.6	15.0	27.9	1.9	3.4	5.2
Pipeline	15.9	9.0	23.3	18.2	7.7	23.2	S	S	S	S	S	S
Multiple modes	15.4	16.3	25.4	43.9	25.7	82.7	25.1	S	S	6.4	4.7	7.2
Parcel, U.S. Postal Service or courier ..	16.3	17.2	27.0	14.9	8.2	19.4	17.6	10.1	22.3	6.5	4.7	7.2
Truck and rail	22.9	25.2	16.8	S	28.0	S	24.2	25.6	17.6	9.3	17.4	25.2
All other multiple modes	S	S	S	S	S	S	39.9	S	S	42.9	20.5	20.5
Other and unknown modes ...	24.4	8.6	37.5	23.8	19.6	18.0	29.1	17.6	29.9	36.9	7.7	37.5

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

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

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

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

SCTG code	Commodity description	Value			Tons			Ton-miles			Average miles per shipment		
		Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change	Coefficient of variation of number		Standard error of percent change
		2002	1997		2002	1997		2002	1997		2002	1997	
	Total	3.7	6.3	7.7	8.0	5.0	11.4	8.0	11.4	15.6	7.3	6.9	8.9
01-05	Agricultural products and fish	15.0	13.8	24.4	24.8	8.6	34.9	22.0	12.3	40.7	S	26.5	S
06-09	Grains, alcohol, and tobacco products	12.5	19.3	15.2	25.3	7.7	23.0	31.0	7.6	28.1	25.1	34.5	26.6
10-14	Stones, nonmetallic minerals, and metallic ores	14.0	20.0	21.1	27.6	16.8	34.8	17.4	12.4	16.5	S	18.5	S
15-19	Coal and petroleum products	18.3	7.4	26.0	16.2	9.2	22.5	16.2	19.7	29.6	30.4	26.7	50.8
20-24	Basic chemicals, chemical, and pharmaceutical products	11.1	17.1	20.8	21.0	18.7	35.7	16.9	26.2	26.6	10.0	11.1	19.4
25-30	Logs, wood products, and textile and leather	11.7	19.7	18.7	20.4	12.0	25.4	19.1	5.0	22.8	11.5	11.5	20.7
31-34	Base metal and machinery ..	10.4	4.4	13.8	10.5	9.0	17.6	17.6	9.9	33.8	11.8	12.3	15.1
35-38	Electronic, motorized vehicles, and precision instruments	12.3	17.8	17.8	22.7	12.2	47.0	21.1	11.8	44.3	14.3	9.7	13.3
39-43	Furniture, mixed freight and misc. manufactured prod. ..	9.7	19.5	32.8	16.4	14.1	30.9	12.8	10.9	18.8	11.3	12.3	11.9
--	Commodity unknown	S	16.0	S	S	28.3	S	S	26.5	S	S	11.7	S

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

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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.

